IBM Planning Analytics
Version 2 Release 0

Installation and Configuration
Note
Before you use this information and the product it supports, read the information in “Notices” on page 319.
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**CreateNewCAMClients**

DataBaseDirectory

DefaultMeasuresDimension

DisableMemoryCache

DisableSandboxing

Display_Info_DBType_R8

DistributedPlanningOutputDir

DownTime

EnableNewHierarchyCreation

EnableSandboxDimension

EnableTIDebugging

ExcelWebPublishEnabled

FileRetry.Count

FileRetry.Delay

FileRetry.FileSpec

FIPSOperationMode

ForceReevaluationOfFeedersForFedCellsOnDataChange

HTTPPortNumber

HTTPSSessionTimeoutMinutes

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AdminSvrSSLCertRevList
AdminSvrSSLExportKeyID
AdvancedRulesEditor

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Introduction

This document describes how to install, upgrade, and configure IBM® Planning Analytics Local software components on Microsoft Windows and UNIX operating systems.

Audience
Planning Analytics Local integrates business planning, performance measurement, and operational data to enable companies to optimize business effectiveness and customer interaction regardless of geography or structure. Planning Analytics provides immediate visibility into data, accountability within a collaborative process, and a consistent view of information, allowing managers to quickly stabilize operational fluctuations and take advantage of new opportunities.

To use this document, you should be familiar with:

• installation concepts
• security issues
• basic Windows or UNIX administration skills
• the existing server environment and security infrastructure in your organization
• your Planning Analytics system and network requirements

Finding information
To find documentation on the web, including all translated documentation, access IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).

Security considerations
For security considerations for IBM Planning Analytics, see “Security considerations when using Cognos TM1 Applications” on page 29. Information on managing user and group authentication can be found in the Managing Users and Groups chapter of the TM1 Operations documentation.

Accessibility features
Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. The installation wizard has accessibility features. For more information, see Accessibility features.

IBM HTML documentation has accessibility features. PDF documents are supplemental and include no added accessibility features.

Forward-looking statements
This documentation describes the current functionality of the product. References to items that are not currently available may be included. No implication of any future availability should be inferred. Any such references are not a commitment, promise, or legal obligation to deliver any material, code, or functionality. The development, release, and timing of features or functionality remain at the sole discretion of IBM.

Samples disclaimer
The Sample Outdoors Company, Great Outdoors Company, GO Sales, any variation of the Sample Outdoors or Great Outdoors names, and Planning Sample depict fictitious business operations with sample data used to develop sample applications for IBM and IBM customers. These fictitious records include sample data for sales transactions, product distribution, finance, and human resources. Any resemblance to actual names, addresses, contact numbers, or transaction values is coincidental. Other sample files may contain fictional data manually or machine generated, factual data compiled from academic or public sources, or data used with permission of the copyright holder, for use as sample data to develop sample applications. Product names referenced may be the trademarks of their respective owners. Unauthorized duplication is prohibited.
Chapter 1. What's new for IBM Planning Analytics Local installation and configuration

There are new features in Planning Analytics Local installation and configuration. For more information, see the IBM Planning Analytics documentation in IBM Knowledge Center.

2.0.3 - Feature updates, September 19, 2017

IBM Planning Analytics Local release 2.0.3 installation and configuration includes the following features.

**Deprecation of AIX for Planning Analytics Local 2.0.3**

**Important:** Planning Analytics Local 2.0.2 is the last release with AIX® support.

Planning Analytics Local 2.0.3 is not supported on AIX.

**New runtime C/C++ libraries for TM1 server installed on UNIX or Linux**

If you are running TM1 server on Red Hat Enterprise Linux or Ubuntu, you must install the runtime C/C++ libraries before you install Planning Analytics Local 2.0.3. You can create a detailed system requirements report by using the Software Product Compatibility Reports tool (https://www.ibm.com/software/reports/compatibility/clarity/index.html).

2.0.0 - Feature updates, December 16, 2016

IBM Planning Analytics Local release 2.0.0 installation and configuration includes the following features.

**WebSphere Liberty Profile is the default application server**

IBM Planning Analytics installs a WebSphere® Liberty Profile as the default application server. Apache Tomcat is no longer installed as the default application server as it was for IBM Cognos TM1.

**Note:** In IBM Planning Analytics Local 2.0.0, Performance Manager Hub can deploy only to another WebSphere Liberty Profile server; other versions of WebSphere are not supported.

WebSphere Liberty Profile uses the same default port numbers as were used for the Apache Tomcat server. For example, the default port number 9300 is also used for the WebSphere Liberty Profile.

**Changes to selectable components in the TM1 server installation wizard**

In the TM1 server installation wizard, the tiers containing the selectable components have been renamed.

- The TM1 Application Tier was renamed the TM1 Data Tier.
- The Web Application Tier was renamed the TM1 Web Tier.
- The TM1 Client Tier and the Developer Tier were merged to form the newly named TM1 Rich Tier.
- The Samples component was moved under the TM1 Data Tier.
Chapter 2. Planning your Planning Analytics installation

The key to a successful installation is planning. This chapter describes choices that will make the implementation process proceed smoothly.

When implementing IBM Planning Analytics, decide how you will install and configure it to provide the best possible performance. The installation and configuration choices that you make depend on your requirements, resources, and preferences.

Available installation programs

IBM Planning Analytics Local provides a collection of installation programs for installing and configuring Planning Analytics components on different operating systems and for different deployment scenarios.

You can download all of the Planning Analytics Local installation programs from IBM Passport Advantage®. For download instructions, see Planning Analytics Local 2.0 (http://www.ibm.com/support/docview.wss?uid=swg24042732).

The installation programs and component options are organized by operating system and architecture tier to support deployment in single and multiple computer environments.

The available Planning Analytics Local 2.0.0 installation programs are described below.

**Planning Analytics Local for Windows 32-bit**

Includes a collection of all the 32-bit Planning Analytics components that are available for Microsoft Windows.

Use this installation program to install TM1 components on a single 32-bit Windows system. Only TM1 clients are available for Windows 32-bit.

**Planning Analytics Local for Windows 64-bit**

Includes a combined collection of 32-bit and 64-bit components for installation on a 64-bit Microsoft Windows system.

This installation program will only run on a 64-bit Windows system.

Use this installation program to install all components on a single 64-bit Windows system or to selectively install individual components, such as the Cognos TM1 Admin Server and Cognos TM1 Server, on separate 64-bit Windows systems.

By default, this installation program automatically installs the IBM Cognos Configuration utility for managing the Cognos TM1 Admin Server, Cognos TM1 Server and Cognos TM1 Applications components.

**Planning Analytics Local Client-only**

Includes only the standard Cognos TM1 clients / user interfaces and related TM1 API support files. These components are only available as 32-bit versions.

- Cognos TM1 Architect
- Cognos TM1 Perspectives
- Cognos TM1 APIs
- Cognos TM1 Performance Modeler
- Cognos Insight

Use this installation program to distribute and install Cognos TM1 clients to multiple end-user computers in your environment.

**Note:** You can also use the TM1 Client installation program to enable IBM Cognos Analytics reporting against Cognos TM1 data sources. Using the TM1 Client installation program for this purpose will install the required Cognos TM1 API files on your Cognos Analytics servers that are running report services on Microsoft Windows. For more details, see “Enabling Cognos Analytics reporting on Cognos TM1 data sources” on page 50.
Planning Analytics Workspace

Use this installation program to install IBM® Planning Analytics Workspace as part of your IBM Planning Analytics Local on premises installation. Planning Analytics Workspace is the web-based interface for IBM Planning Analytics.

Before you install IBM Planning Analytics Workspace, you must have IBM Planning Analytics Local 2.0.0 or greater installed.

For information about installing Planning Analytics Workspace, see Chapter 12, “Planning Analytics Workspace installation,” on page 127.

Planning Analytics for Microsoft Excel

Use this installation program to distribute and install Planning Analytics for Microsoft Excel.

Planning Analytics includes samples that you can use with IBM Planning Analytics for Microsoft Excel.

Planning Analytics for UNIX and Linux

Includes only the UNIX and Linux versions of the following Cognos TM1 components.

- Cognos TM1 Admin Server
- Cognos TM1 Server
- Cognos TM1 web application servers (Cognos TM1 Web, Cognos TM1 Applications, Cognos TM1 Operations Console)

Use the Cognos TM1 UNIX installation program to install these components on any of the supported UNIX or Linux operating systems. A separate installation program is available for each of these supported operating systems.

By default, this installation program automatically installs the IBM Cognos Configuration utility for managing the Cognos TM1 Admin Server and Cognos TM1 Server components.

TM1 Package Connector for Business Intelligence

Optional installation program

Installs components that support IBM Planning Analytics connectivity to IBM Cognos Analytics packages with SAP Business Warehouse data sources and other relational and ODBC data sources.

Available components

IBM Cognos TM1 includes a collection of server and client components for administering, monitoring, modeling, analyzing, and interacting with Cognos TM1 data.

The installation program organizes the different Cognos TM1 components into groups based on architecture tier. You can install different combinations of components onto a single computer or across multiple computers, depending on your specific requirements, operating system and environment. Each component requires a specific operating system and software environment. Refer to the following sections for information on the installation components.

By default, IBM Planning Analytics uses a WebSphere Application Server Liberty Profile as the application server. You can configure Planning Analytics to run on other supported application servers that you currently use in your environment.

TM1 Data Tier installation components

The Data Tier in the IBM Cognos TM1 installation program includes the fundamental components such as the Cognos TM1 Admin and Cognos TM1 server components.

The following table includes the description and operating system for each Cognos TM1 component in the Data Tier.
Table 1: System requirements for Cognos TM1 Data Tier components

<table>
<thead>
<tr>
<th>Component</th>
<th>Operating System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1 Server</td>
<td>32-bit Windows</td>
<td>The Cognos TM1 Server manages requests from Cognos TM1 clients. It loads the names of all available permanent objects, such as cubes and dimensions into memory. It responds to client requests by completing calculations, consolidations, and updates as required. The Cognos TM1 Server also manages security by granting or denying access to server objects and maintaining a log of changes to the database. See Chapter 8, “Cognos TM1 Server installation,” on page 61.</td>
</tr>
<tr>
<td></td>
<td>64-bit Windows</td>
<td></td>
</tr>
<tr>
<td></td>
<td>64-bit UNIX</td>
<td></td>
</tr>
<tr>
<td>TM Admin Server</td>
<td>32-bit Windows</td>
<td>A process that tracks all Cognos TM1 servers that run on a network. An Admin Server runs on an Admin Host server. When a Cognos TM1 server starts, the server registers itself with an Admin Server that is running on a specified Admin Host. Cognos TM1 clients reference the Admin Server to determine which Cognos TM1 servers are available on the network. See Chapter 8, “Cognos TM1 Server installation,” on page 61.</td>
</tr>
<tr>
<td></td>
<td>64-bit Windows</td>
<td></td>
</tr>
<tr>
<td></td>
<td>64-bit UNIX</td>
<td></td>
</tr>
<tr>
<td>TM1 Tools</td>
<td>Supported operating systems vary by tool.</td>
<td>Includes the following collection of tools and utilities for Cognos TM1 administrators, developers, and modelers: TIRunTI, TM1xfer. See Chapter 17, “Cognos TM1 tools installation,” on page 183.</td>
</tr>
<tr>
<td>Samples</td>
<td>32-bit Windows</td>
<td>Installs Cognos TM1 samples databases: Chapter 16, “Cognos TM1 sample databases installation,” on page 173.</td>
</tr>
<tr>
<td></td>
<td>64-bit Windows</td>
<td></td>
</tr>
<tr>
<td></td>
<td>64-bit UNIX</td>
<td></td>
</tr>
</tbody>
</table>

**TM1 Web Tier installation components**

The TM1 Web Tier installation components require a web application server on which to run. By default, they are configured to work with the provided Java web application server. The following table includes the description and operating system for each Cognos TM1 component in the TM1 Web Tier.
<table>
<thead>
<tr>
<th>Component</th>
<th>Operating System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognos TM1 Application Gateway</td>
<td>32-bit Windows</td>
<td>Java web component that provides the provisioning of the Cognos TM1 Performance Modeler and Cognos Insight components to remote users. This component is installed with the Cognos TM1 Application Server component. See Chapter 11, “Cognos TM1 Application Server installation,” on page 105.</td>
</tr>
<tr>
<td></td>
<td>64-bit Windows</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>This component requires a Java web application server and the Java ™ Runtime Environment (JRE). You can use the WebSphere® Liberty application server that is installed by default or your own instance of an application server such as IBM WebSphere Application Server. An IBM JRE is installed automatically with Cognos TM1 Applications. If you are using an application server, use the JRE that is installed with it. See Chapter 11, “Cognos TM1 Application Server installation,” on page 105.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM1 Web</td>
<td>32-bit Windows</td>
<td>Web server and client components that run on the provided Java web application server. Cognos TM1 Web enables users to connect to Cognos TM1 servers and interact with data using one of the supported web browsers. See Chapter 10, “Cognos TM1 Web installation,” on page 83.</td>
</tr>
<tr>
<td></td>
<td>64-bit Windows</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: TM1 Web Tier components (continued)

<table>
<thead>
<tr>
<th>Component</th>
<th>Operating System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1 Operations Console</td>
<td>32-bit Windows</td>
<td>Java web application that provides a web-based monitoring tool for Cognos TM1 administrators to monitor and act on TM1 server activity.</td>
</tr>
<tr>
<td></td>
<td>64-bit Windows</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IBM Cognos TM1 Operations Console provides a simple and effective way to understand how Cognos TM1 servers and user loads are working.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>You can use this component with the WebSphere® Liberty application server that is installed by default or your own installation of a supported application server.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>An IBM JRE is installed automatically with Cognos TM1 on Windows. If you are using an application server, use the JRE that is installed with it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See “Installing Cognos TM1 Operations Console using the provided WebSphere® Liberty webserver software” on page 75.</td>
</tr>
</tbody>
</table>

TM1 Rich Tier installation components

The Rich Tier in the IBM Cognos TM1 installation program contains tools for end-users and a collection of Cognos TM1 APIs.

The following table includes the description and operating system for each Cognos TM1 component in the Rich Tier.

Table 3: Rich Tier components

<table>
<thead>
<tr>
<th>Component</th>
<th>Operating System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1 Architect</td>
<td>32-bit Windows</td>
<td>A Windows desktop application for administering, creating, and maintaining data and metadata on both local and remote Cognos TM1 servers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See “Installing Cognos TM1 Architect” on page 142.</td>
</tr>
<tr>
<td>TM1 Performance Modeler</td>
<td>32-bit Windows</td>
<td>Java, Eclipse-based rich client interface that is started from the Cognos TM1 Applications portal page.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enables developers to build planning and analysis models in the Cognos TM1 environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Available as a selectable component in the Client-only, and 32-bit and 64-bit Windows installation programs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>By default, this component is available but not selected in the 32-bit and 64-bit Windows installation programs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See “Installing Cognos TM1 Performance Modeler” on page 143.</td>
</tr>
<tr>
<td>TM1 Perspectives</td>
<td>32-bit Windows</td>
<td>Cognos TM1 add-in client for Microsoft Excel.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enables you to use the features of Excel to perform complex analysis on data that is stored in a Cognos TM1 server. Can also create and maintain objects and data on both local and remote Cognos TM1 Servers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See “Installing Cognos TM1 Perspectives” on page 141.</td>
</tr>
<tr>
<td>Component</td>
<td>Operating System</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cognos Insight</td>
<td>32-bit Windows</td>
<td>Java, Eclipse-based rich client interface that can be started independently or from the Cognos TM1 Applications portal page. Available as a selectable component in the Client-only, and 32-bit and 64-bit Windows installation programs. By default, this component is available but not selected in the 32-bit and 64-bit Windows installation programs. See “Installing Cognos Insight” on page 147.</td>
</tr>
</tbody>
</table>
| TM1 APIs           | Dependent upon specific APIs | Installs the required files that enable developers to work with the following Cognos TM1 application programming interfaces (APIs).  
**TM1 API** - Allows developers to create custom C, C++ and VB applications that interact with TM1.  
**TM1 Java API** - Allows developers to create custom Java applications that interact with TM1.  
**TM1 .NET API** - Allows developers to create custom Microsoft .NET applications that interact with TM1. See “Installing Cognos TM1 APIs” on page 151. |

**Translated documentation installation component**

This component enables you to select and install translated documentation for the non-English languages that are supported in IBM Cognos TM1.

By default, English documentation is always installed and cannot be unselected. You can select or deselect specific languages, however the installation time increases with the number of languages selected.

For information about supported languages, see “Cognos TM1 language codes” on page 67.

The translated documentation option does not affect the languages for messages and user interfaces:

- This option does not affect messages issued by the software, which are always installed for all supported languages.
- This option does not affect the language used in the Cognos TM1 user interface, which is based on the setting in your operating system for the current user. For information about configuring languages, see “Cognos TM1 language configuration” on page 66.

**Additional installation components not listed**

Some components are not listed or selectable in the installation program.

The following table includes the description and operating system for required components that are not listed or selectable in the installation program but are installed by default with the installation of other selectable components.

<table>
<thead>
<tr>
<th>Component</th>
<th>Operating System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1 OLE DB Provider Application</td>
<td>32-bit Windows</td>
<td>Allows third party software to retrieve cube data from the Cognos TM1 server using MDX queries.</td>
</tr>
<tr>
<td></td>
<td>64-bit Windows</td>
<td></td>
</tr>
</tbody>
</table>
IBM Cognos TM1 provides multiple clients for developers, administrators, and users. Understanding these clients and their differences can help you decide which client is most appropriate for your needs.

All clients are described fully in the IBM Cognos TM1 documentation.

- Planning Analytics for Microsoft Excel documentation describes how to build reports that use data sources from IBM Cognos TM1 or IBM Cognos Analytics.
- TM1 Performance Modeler documentation describes the development and administrative capabilities of Cognos TM1 Performance Modeler.
- TM1 Developer documentation describes the development and administrative capabilities of Cognos TM1 Architect and Cognos TM1 Perspectives.
- TM1 Operation documentation describes the operation of the TM1 Server and how to use TM1 Operations Console to monitor servers.
- TM1 Perspectives, TM1 Architect, and TM1 Web documentation describes the user analysis capabilities of Cognos TM1 Architect, Cognos TM1 Perspectives, and Cognos TM1 Web.
- TM1 Applications documentation describes the user analysis capabilities of Cognos TM1 Application Web.
- Cognos Insight documentation describes the user analysis capabilities of Cognos Insight.

End-user clients

You can use several user clients to interact with IBM Cognos TM1 data.

**IBM Planning Analytics Workspace**

IBM Planning Analytics Workspace is a web-based interface for IBM Planning Analytics. You can connect to TM1 data to plan, create, and analyze your content.

For more information, see Planning Analytics Workspace installation on IBM Knowledge Center (https://www.ibm.com/support/knowledgecenter/SSD29G_2.0.0/com.ibm.swg.ba.cognos.tm1_inst.2.0.0.doc/c_paw_install_overview.html).

**IBM Planning Analytics for Microsoft Excel**

IBM Planning Analytics for Microsoft Excel is intended for users who work in global networked environments. It is the client of choice for users who primarily employ Microsoft Excel for analyzing TM1 information and build their own custom layouts by using Microsoft Excel functions. Planning Analytics for Microsoft Excel is also beneficial for users who need to access both Cognos TM1 and Cognos Analytics data from the same Excel client interface.

Planning Analytics for Microsoft Excel offers the following benefits:

- Optimized for wide area networks
- Provides a familiar spreadsheet environment that does not require a power-user level of knowledge in Excel to analyze and contribute to Cognos TM1 data
- Combines the capabilities of Microsoft Excel with a drag and drop approach to analyzing Cognos TM1 cubes
- Provides a flexible range-based mode to add formats and user calculations directly within a spreadsheet
- Provides access to TM1 data objects, such as cubes, views, dimension subsets, aliases, and sandboxes
- Combines read/write Microsoft Excel-based TM1 Planning with read-only analysis against Cognos Analytics data sources in the same spreadsheet interface

For more information, see the Planning Analytics for Microsoft Excel documentation.

**IBM Cognos TM1 Application Web**

IBM Cognos TM1 Application Web is a zero-footprint web client that you can use to open Cognos TM1 Applications with any supported web browser. From the Cognos TM1 Application Web workflow page, you can open a node, take ownership, enter data, and contribute to a plan. Cognos TM1 Application Web is most useful when a corporate policy prohibits the installation of a local client, or when you use an operating system other than Microsoft Windows.
IBM Cognos TM1 Web

IBM Cognos TM1 Web is a zero-footprint web client that you can use to analyze and modify Cognos TM1 data from any supported web browser. You cannot use Cognos TM1 Web to access the Cognos TM1 Application Web workflow page. Therefore, you cannot participate in Cognos TM1 Applications with TM1 Web.

IBM Cognos Insight

IBM Cognos Insight is a client for TM1 Application Web and a personal analysis tool that you can use to analyze almost any set of data. In the context of Cognos TM1 Application Web, Cognos Insight is a full client application that is provisioned locally or as a remote download. When used as a client for Cognos TM1 Application Web, you can use the Connected Mode and the Disconnected Mode of Cognos Insight.

Connected Mode

Connected Mode creates a live, bidirectional connection to the Cognos TM1 server. Any data that is updated on the TM1 server is updated in the Insight client when you perform a recalculation in Insight. This approach ensures that the data on the Insight client is always current when you analyze or contribute to a plan. The trade-off for the live connection to the TM1 server is that more traffic is generated on the LAN and a heavier load is placed on the TM1 server as compared to Disconnected Mode.

Connected Mode should be used by users who have a fast connection to the TM1 server and do not suffer from any network latency.

Disconnected Mode

Disconnected Mode is available only with child level nodes. Disconnected Mode downloads and creates a local copy of the Cognos TM1 server slice (TM1 model and data portion) with which you are working. This approach distributes the workload that the TM1 server must maintain in any other connection mode. Processing is distributed between the client and the TM1 server in this mode.

Disconnected Mode is beneficial to users on a high latency LAN or users who are geographically far from the TM1 server. When a user opens Cognos Insight in Disconnected Mode, the TM1 model slice is downloaded and cached. All interaction with data occurs against the local cache, which increases the speed of response.

Administration clients

You can use IBM Cognos TM1 administration clients to administer your Cognos TM1 data and models.

IBM Cognos TM1 Performance Modeler

IBM Cognos TM1 Performance Modeler is the newest Cognos TM1 modeling tool, which you can use to create or generate dimensions, cubes, rules, processes, and other objects. Performance Modeler simplifies the modeling process by automatically generating the rules and feeders that are required for your applications. Performance Modeler also introduces guided import, a simplified process for importing data and metadata into a TM1 server. Performance Modeler should be used as the primary development and maintenance tool for all new and existing Cognos TM1 models.

IBM Cognos TM1 Architect

IBM Cognos TM1 Architect is an older Cognos TM1 modeling tool that supports the creation and maintenance of all TM1 objects. TM1 Architect does not support automatic feeder and rules generation, and does not provide guided import capabilities. Architect users are encouraged use Cognos TM1 Performance Modeler as the primary development environment for all TM1 models.

IBM Cognos TM1 Perspectives

IBM Cognos TM1 Perspectives is the TM1 Excel Add-In. Cognos TM1 Perspectives can be used for Cognos TM1 model development and for analyzing data with Microsoft Excel capabilities. Like Cognos TM1 Architect, Perspectives support the creation and maintenance of all TM1 objects, but do not provide the advanced capabilities of Performance Modeler. Users that require an Excel Add-In interface and the ability to use Microsoft Excel functions, such as charting of TM1 data, can use Perspectives. Otherwise, administrators are encouraged to use Performance Modeler as the primary development environment for all TM1 models.
IBM Cognos TM1 Operations Console

IBM Cognos TM1 Operations Console is a web-based operations tool that is designed to facilitate the monitoring, support, and management of Cognos TM1 servers, providing greater insight into day-to-day server operations. The Cognos TM1 Operations Console lets you monitor threads that run on multiple TM1 servers at the same time dynamically. You can sort and filter thread activity, and schedule the logging of server activity. The Operations Console also provides a health check feature that determines the current state of each TM1 server that is being monitored. The Operations Console should be the interface of choice for Cognos TM1 administrators who are managing an enterprise-scale TM1 environment.

Software requirements

Before you install IBM Cognos TM1 server or client components, review system requirements and set up resources in your environment so that the components can operate.

For an updated list of environments that are supported by IBM Cognos TM1 including information about operating systems, servers, and databases, create a detailed system requirements report using the Software Product Compatibility Reports tool (https://www.ibm.com/software/reports/compatibility/clarity/index.html).

Prerequisite software

Cognos TM1 requires the installation of specific software components before it can be installed and used.

Table 5: Required third-party components

<table>
<thead>
<tr>
<th>Prerequisite Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Excel</td>
<td>Required for Cognos TM1 Perspectives.</td>
</tr>
<tr>
<td>Microsoft .NET Framework</td>
<td>Required for Cognos TM1 Perspectives and Cognos TM1 Architect.</td>
</tr>
</tbody>
</table>

Download and install these components on the target system before installing the related Cognos TM1 components.

Default installation values

This topic describes the set of default values used by the IBM Cognos TM1 installation.

The Cognos TM1 installation uses the following default configuration values:

Table 6: Default configuration values for Cognos TM1 installation

<table>
<thead>
<tr>
<th>Item</th>
<th>Description and Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default install location</td>
<td>On a 32-bit Microsoft Windows system: C:\Program Files\IBM\Cognos\TM1</td>
</tr>
<tr>
<td></td>
<td>On a 64-bit Microsoft Windows system: C:\Program Files\IBM\cognos\tm1_64</td>
</tr>
<tr>
<td>Admin Server port number</td>
<td>The TCP/IP port number on which the Admin Server listens for client requests. Default value is 5495 (unsecured). This value is set in IBM Cognos Configuration.</td>
</tr>
<tr>
<td>Item</td>
<td>Description and Default Value</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Admin Server SSL port number</td>
<td>The TCP/IP port number on which all Cognos TM1 components communicate with the Cognos TM1 Admin Server using Secure Socket Layer (SSL). Default value is 5498 (secured) This value is set in IBM Cognos Configuration.</td>
</tr>
<tr>
<td>Cognos TM1 server port number</td>
<td>The port on which the Cognos TM1 server runs. This parameter is used to distinguish multiple Cognos TM1 servers running on the same computer. Valid port values fall between 5000 and 49151. The default is 12345. This value is set with the PortNumber parameter in the Tm1s.cfg server configuration file.</td>
</tr>
<tr>
<td>Cognos TM1 Client Message port number</td>
<td>This port number establishes a secondary port for client progress messages to use when a lengthy operation is waiting to be cancelled. This value is set with the ClientMessagePortNumber parameter in the Tm1s.cfg server configuration file. The default value is blank. By default, this port number is automatically and dynamically assigned when the Cognos TM1 server starts. You do not have to set ClientMessagePortNumber to a specific number unless firewalls or other network issues require the listener port to be a well-known number. <strong>CAUTION:</strong> If you choose to set a specific value for the ClientMessagePortNumber parameter, instead of having it dynamically assigned, be sure to assign unique port numbers for all the Cognos TM1 server and client message ports you are using. If you have two servers running on the same machine using the same port number, the message activity may cause a system conflict or hang.</td>
</tr>
<tr>
<td>Admin Server host name</td>
<td>Specifies the computer name or IP address of the Admin Host on which a Cognos TM1 Admin Server is running. Default value is blank which uses localhost to represent the computer on which the installation is run. This value is set with the AdminHost parameter in the Tm1s.cfg and Tm1p.cfg configuration files.</td>
</tr>
<tr>
<td>Item</td>
<td>Description and Default Value</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------</td>
</tr>
</tbody>
</table>
| Sample Cognos TM1 server names | Planning Analytics Sample  
  PlanSamp  
  SData  
  GO_New_Stores  
  PData  
  Proven_Techniques  
  GO_scorecards  
  24Retail  
  Login credentials:  
  **User name:** admin  
  **Password:** apple |
| Default port numbers for sample servers | PlanSamp - port 12354  
  SData - port 8010  
  GO_New_Stores - port 5010  
  PData - port 8011  
  Proven_Techniques - port 5011  
  GO_scorecards - port 44312  
  24Retail - port 8004  
  You can change a port number for a server by editing the HTTPPortNumber value in the tm1s.cfg file. For more information, see “HTTPPortNumber” on page 270. |
| Default data directory for sample Cognos TM1 servers | C:\Program Files\IBM\cognos\tm1\samples\tm1\PlanSamp  
  C:\Program Files\IBM\cognos\tm1\samples\tm1\SData  
  C:\Program Files\IBM\cognos\tm1\samples\tm1\GO_New_Stores  
  C:\Program Files\IBM\cognos\tm1\samples\tm1\PData  
  C:\Program Files\IBM\cognos\tm1\samples\tm1\Proven_Techniques  
  C:\Program Files\IBM\cognos\tm1\samples\tm1\GO_scorecards  
  C:\Program Files\IBM\cognos\tm1\samples\tm1\24Retail |
| Security mode | A Standard installation uses Cognos TM1 Authentication. In this mode, the Cognos TM1 server prompts users for a user name and password when they log in to Cognos TM1 components. |

**Configuration overview**

After installing IBM Cognos TM1, use the Cognos Configuration tool and the Cognos TM1 configuration file parameters to configure the program for optimal performance.
**Cognos Configuration and Cognos TM1**

The IBM Cognos Configuration tool is used to start, stop, configure, and save the setting for each IBM Cognos TM1 server.

Use Cognos Configuration to manage the following components and tasks:

<table>
<thead>
<tr>
<th>Component/task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognos TM1 Admin Server</td>
<td>Start and stop the server.</td>
</tr>
<tr>
<td>Cognos TM1 Server</td>
<td>Start, stop and add Cognos TM1 Servers.</td>
</tr>
</tbody>
</table>
| Cognos TM1 Application Server   | Start and stop the provided WebSphere® Liberty web application server that supports the following components:  
                                  • IBM Cognos TM1 Web  
                                  • IBM Cognos TM1 Applications  
                                  • IBM Cognos TM1 Operations Console  
                                  If you are using your own installation of Tomcat or another web application server, configure and run the Cognos TM1 Application Server outside of Cognos Configuration. |
| Saving configuration information| When you save the configuration setting in the Cognos Configuration tool, the tool:  
                                  • verifies the configuration  
                                  • generates cryptographic information  
                                  • checks integrity of encrypted data  
                                  • saves configuration for Cognos TM1 servers  
                                  • backs up configuration files  
                                  • saves configuration parameters  
                                  • updates Tomcat configuration file |
| Creating war files for deployment| If you want to deploy the Cognos TM1 Application Server with your own web application server, use Cognos Configuration to create the required web application (war) file.  
                                  In Cognos Configuration click **Actions > Build Application Files**. |

### Cognos TM1 configuration files and parameters

IBM Cognos TM1 uses a collection of configuration files and parameters to control the behavior of the client and server components.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
</tr>
</thead>
</table>
| Tm1s.cfg file | Cognos TM1 server configuration  
                                  See Appendix A, “The tm1s.cfg Server Configuration File,” on page 255. |
| Tm1p.ini file | Client configuration for Cognos TM1 Architect and Cognos TM1 Perspectives  
| Cognos TM1 Web| Cognos TM1 Web configuration and settings  
                                  See “Modifying Cognos TM1 Web Configuration Parameters” on page 88. |

---

14 IBM Planning Analytics: Installation and Configuration
### Table 8: Summary of configuration options for different Cognos TM1 components (continued)

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognos TM1 Applications</td>
<td><strong>Configuration</strong> files</td>
</tr>
<tr>
<td>pmpsvc_config.xml</td>
<td>Client settings are stored in the pmpsvc_config.xml file.</td>
</tr>
<tr>
<td>fpmsvc_config.xml</td>
<td>Server settings are stored in the fpmsvc_config.xml file.</td>
</tr>
<tr>
<td></td>
<td>See Chapter 11, “Cognos TM1 Application Server installation,” on page 105 and “Backing up your Cognos TM1 Applications data” on page 246.</td>
</tr>
<tr>
<td>Cognos TM1 Operations Console</td>
<td>Configuration files</td>
</tr>
<tr>
<td></td>
<td>See “Installing Cognos TM1 Operations Console using the provided WebSphere® Liberty webserver software” on page 75.</td>
</tr>
</tbody>
</table>

### User accounts for running Cognos TM1 services on Windows

When you use IBM Cognos Configuration to start the Cognos TM1 Admin Server and Cognos TM1 Server, they are registered to run as Windows services using the predefined Microsoft Windows Local System Account. You should manually change these services to run under a specific user account.

**Note:** If Cognos TM1 Server requires access to external data sources via ODBC or ODBO, you must manually change it to run under a specific user account which has access to these data sources.

**Run Cognos TM1 services under a specific Windows user account**

By default, Cognos Configuration registers the following Cognos TM1 services to run under the Microsoft Windows Local System Account:

- Cognos TM1 Admin Server
- Cognos TM1 Server

**Important:** Change these Cognos TM1 services to run under a specific user account on Microsoft Windows.

For details on how to change the account for a Cognos TM1 component running as a Windows service, see “Changing Cognos TM1 services to run as a specific user account on Windows” on page 62.

After making these changes, you will still be able to use Cognos Configuration to start and stop these services.

**Required privileges for a specific Windows user account**

The user account for running Cognos TM1 services on Windows should be included in the database owner group to access SQL tables and views.

The account must have the following privileges on the local machine:

**Note:** Not all of these properties are available in all versions of Windows, such as Windows Server 2008 R2 and newer. Refer to Microsoft Windows documentation for the currently available properties.

- Act as part of the operating system
- Bypass traverse checking
- Increase quotas (Adjust memory quotas for a process)
- Replace a process level token
- Log on as a service
- Have read and write privileges on the Windows Registry item

Use the Security Settings and Group Policy features in Microsoft Windows to configure these security privileges. For example, in Microsoft Windows 7, click **Administrative Tools > Local Security Policy**, and then click to expand **Security Settings > Local Policies > User Rights Assignment**.
To set read and write privileges for the Windows Registry, use the Windows Registry editor.

**Installing TM1 on Networks without domains**

If you install IBM Cognos TM1 in a network that does not use a domain controller, you can set your Cognos TM1 services to use local accounts.

For details on configuring Cognos TM1 services, see “Changing Cognos TM1 services to run as a specific user account on Windows” on page 62.

If you use one or more local accounts for your Cognos TM1 services, you must be sure these accounts have the following privileges on their local machines:

- Act as part of the operating system
- Bypass traverse checking
- Increase quotas
- Replace a process-level token
- Log on as a service

If you set up file shares in your Windows network for use by Cognos TM1 components, be sure that each local account that you set up to run a Cognos TM1 service has access to those shares.

**Note:** If you install on a machine that does not participate in a Microsoft Windows domain, you cannot use Integrated Login.

**Local machine syntax**

Do not use dot (.) as an abbreviation for the local machine domain when you specify login information.

You must explicitly enter the machine name. In certain configurations, using the ".\username" syntax may cause serious problems.
Chapter 3. Architecture

To understand the architecture of the major IBM Cognos TM1 components, you should be familiar with your information technology infrastructure and with the business needs of people in your organization who will use IBM Cognos TM1.

For details about Cognos TM1 login authentication and communication security, see “Authentication security ” on page 185.

Cognos TM1 architecture

IBM Cognos TM1 employs a distributed, client-server architecture that consists of the IBM Cognos TM1 server to which a combination of different clients can connect.

![Diagram of Cognos TM1 architecture](image.png)

Figure 1: High-level overview of the Cognos TM1 client-server architecture

Cognos TM1 provides the following clients and user interfaces:

- Cognos TM1 Perspectives
- Cognos TM1 Architect
- Cognos TM1 Web client
- Cognos TM1 Application portal and workflow (using the Cognos TM1 Application Server)
- Cognos TM1 Performance Modeler
- Cognos Insight

In this environment, corporate data resides on remote servers, which authorized clients can access. Depending on how you set up the system, clients can access one or more remote TM1 servers to obtain different kinds of data. Cognos TM1 clients are described in detail in IBM Cognos TM1 Perspectives, TM1 Architect, and TM1 Web.

Windows desktop clients

TM1 Perspectives and TM1 Architect can connect to a local IBM Cognos TM1 server, which acts as a repository for private TM1 data. If you have the proper authority, you can copy data from a remote server to your local server by replicating that data, and then synchronize your updates back to the remote server.

TM1 Perspectives, TM1 Architect, and TM1 Client are standard TM1 clients. In a normal LAN or WAN environment, these clients all communicate with a remote server using the TCP/IP network protocol.
**Cognos TM1 Admin Server overview**

The IBM Cognos TM1 Admin Server is a process that keeps track of all Cognos TM1 servers running on a network. An Admin Server runs on a computer known as an Admin Host.

When the Cognos TM1 server starts, the server registers itself with an Admin Server that is running on a specified Admin Host. TM1 clients reference the Admin Server to determine which Cognos TM1 servers are available on the network.

The Admin Server maintains the following information for each available Cognos TM1 server:

- Server name
- IP address
- Protocol
- Port number

All this information is supplied by the Cognos TM1 server when the server registers itself on the Admin Server.

An Admin Server must be running before a Cognos TM1 server can start. If you have specified an Admin Host in the Tm1s.cfg file or the server command line, the Cognos TM1 server will attempt to connect to an Admin Server on that host. The Cognos TM1 server will fail to come up if it is unable to connect to the Admin Server for any reason.

If you have not specified an Admin Host, the Cognos TM1 server attempts to connect to an Admin Server on the local machine. If an Admin Server is not currently running on the local machine, the Cognos TM1 server starts a new Admin Server and connects to it.

The Admin Server becomes aware of Cognos TM1 servers on the network by listening for notification from the servers. Usually, the Cognos TM1 server sends notification of its presence at a regular interval called the "heartbeat interval," which is 60 seconds by default. When the Admin Server detects the Cognos TM1 server, that server becomes registered and available to clients on the network. However, if the Admin Server does not detect the presence of a registered Cognos TM1 server over a period equal to three times the heartbeat interval, that Cognos TM1 server is removed from the list of servers available on the network. Consequently, the Cognos TM1 server will not be available to clients on the network.

By default, the Admin Server uses port 5495. If port 5495 is already in use, you can assign a new port number by creating a new service called Tm1admsrv. All Cognos TM1 applications look for a named service called Tm1admsrv, and if that service exists, the applications use the port number assigned to the service. If the service does not exist, Cognos TM1 applications use port 5495.

**Cognos TM1 Server overview**

The IBM Cognos TM1 Server manages access to the Cognos TM1 data directory for Cognos TM1 clients.

The following figure illustrates the operations of a remote Cognos TM1 server. These operations are explained in the text that follows.
TM1 clients retrieve cube values from the server. Clients also send edits to cube values to the TM1 server.

While the TM1 server is running, all cube data resides in RAM. All edits received from TM1 clients are stored in a transaction log file named Tm1s.log.

When the TM1 server is started, all TM1 data is loaded from the TM1 data directory into RAM on the server machine.

When the TM1 server is shut down, or when an explicit Save Data command is issued, any changes to cube values are written from the transactional log file to the data directory.

When the TM1 server is started, all TM1 data is loaded from the TM1 data directory into RAM on the server machine.

When the TM1 server is shut down, or when an explicit Save Data command is issued, any changes to cube values are written from the transactional log file to the data directory.

Figure 2: Operations of a remote server

- On startup, the remote server loads dimensions and cubes from the data directory into the server machine RAM. At the same time, the server opens a new transactional log file called Tm1s.log in the data directory. After the cubes are loaded, the remote server is available.
- The remote Cognos TM1 server registers itself with one or more Admin Servers so that clients can connect to the remote Cognos TM1 server.
- Client applications contact Admin Servers to locate available Cognos TM1 servers. The clients log into the Cognos TM1 servers whose data they want to access.
- Clients edit the cube data, sending the values back to the Cognos TM1 server.
- As new values are received from clients, the Cognos TM1 server writes the records to the Tm1s.log file, keeping track of every data change, including the date and time the edit occurred, and the ID of the client who made the edit.
- As the server calculates new values in response to client requests, the server stores them in memory, increasing the amount of memory used by the server.
- When the server shuts down, all records in the Tm1s.log file are saved to disk, and the transaction log file is renamed by appending a date/time stamp to it. The Tm1s.log file is saved in the server's data directory to back out data transactions. For details, see the topic “Backing Out Records from the TransactionLog” in IBM Cognos TM1 Operations.

If the server is intentionally shut down without saving the changes, the log file is saved with a time/date stamp and the extension is changed to .rej. You can process the Tm1syyyyymmddhhmss.rej file through TurboIntegrator to recover the transactions.

- To save all changes to the data on a Cognos TM1 server at any time without shutting down the server, right-click a server in Server Explorer and Click Save Data. All records in the Tm1s.log file are immediately written to disk, the transaction log file is renamed by appending a date/time stamp to it, and a new Tm1s.log file is created to accept any subsequent edits to cube values.

Any changes to the metadata, such as dimension definitions and cube definitions, are immediately saved to disk. The changes to the metadata are not written to the transaction log file.

Cognos TM1 files overview

IBM Cognos TM1 requires numerous object and system files, most of which are stored in the Cognos TM1 server's data directory.

Some of these are installed with the product, while others are generated for each dimension and cube you create. Yet other files are generated by Cognos TM1 to store metadata, such as security information.

The following table lists the files that define cubes, dimensions, and other Cognos TM1 objects. These files are located in the data directory, which is described later in this section.
Table 9: Files that define cubes, dimensions, and other objects

<table>
<thead>
<tr>
<th>File Extension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.blb</td>
<td>Cube formatting file</td>
</tr>
<tr>
<td>.cho</td>
<td>Chore definition file</td>
</tr>
<tr>
<td>.cub</td>
<td>Cube database file</td>
</tr>
<tr>
<td>.dim</td>
<td>Compiled dimension</td>
</tr>
<tr>
<td>.dit</td>
<td>ASCII dimension source file</td>
</tr>
<tr>
<td>.pro</td>
<td>TurboIntegrator process definition file</td>
</tr>
<tr>
<td>.rux</td>
<td>Compiled rule</td>
</tr>
<tr>
<td>.sub</td>
<td>Dimension subset</td>
</tr>
<tr>
<td>.tbu</td>
<td>ASCII source for view file</td>
</tr>
<tr>
<td>.tqu</td>
<td>Saved query</td>
</tr>
<tr>
<td>.tru</td>
<td>ASCII source for a rule file</td>
</tr>
<tr>
<td>.vue</td>
<td>Saved view</td>
</tr>
<tr>
<td>.xdi</td>
<td>Excel dimension worksheet</td>
</tr>
<tr>
<td>.xru</td>
<td>Excel rule worksheet</td>
</tr>
</tbody>
</table>

Data directory overview

The data directory contains the cubes, dimensions, and system information that are loaded into memory when a Cognos TM1 server is started. When you access a server from any Cognos TM1 client, Cognos TM1 reads data from that server’s data directory.

When you run Cognos TM1, the changes you make to cube values are immediately stored in memory and in the transaction log (Tm1s.log). Cognos TM1 then saves the data back to the data directory when any of the following occur:

- Cognos TM1 server is shut down.
- An administrator right-clicks a server icon in Server Explorer and choose Save Data from the pop-up menu. This directs Cognos TM1 to save the changes to the selected server.
- An administrator chooses File, Save Data All in Server Explorer. This directs Cognos TM1 to save the changes to all the connected servers, if you have the proper authority.
- A user saves the batch updates.

Choose the path for your data directory when you install Cognos TM1.

Table 10: Default Data Directory Paths

<table>
<thead>
<tr>
<th>Data Directory</th>
<th>Default Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognos TM1 local server</td>
<td>installation_location\custom\tm1data\pdata</td>
</tr>
<tr>
<td>Windows Cognos TM1 remote server for sample data</td>
<td>installation_location\custom\tm1data\sdata</td>
</tr>
</tbody>
</table>
### Table 10: Default Data Directory Paths (continued)

<table>
<thead>
<tr>
<th>Data Directory</th>
<th>Default Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIX Cognos TM1 server</td>
<td>\texttt{installation_location/custom/tm1data/sdata}</td>
</tr>
</tbody>
</table>

#### Required network access

A client's ability to save data is determined by the IBM Cognos TM1 security scheme.

For information, see *IBM Cognos TM1 Developer*.

**Important:** Make this directory visible only to administrators and to the login that is used by the server.

#### Multiple data directories

You can specify that you want IBM Cognos TM1 to use multiple data directories by separating the directory names with semicolons. When you specify multiple data directories, Cognos TM1 does the following.

- Accesses cubes and dimensions from each of the specified directories. If there is a duplicate object, Cognos TM1 accesses the object from the first directory specified.
- Writes changes to the directory where the object is located. When you create a new object, Cognos TM1 writes to the first directory you had specified.

For example, suppose you want to store dimensions in a directory called \texttt{tm1dims}, and cubes in a directory called \texttt{tm1cubes}. You would specify the following in the \texttt{Tm1s.cfg} file:

```
DatabaseDirectory="c:\tm1dims;c:\tm1cubes"
```

By concatenating the two directories, you can access these objects through Server Explorer as if they were in a single location.

**Note:** You cannot store cube (.cub) and rules (.rux) files in separate data directories. The .rux file must reside in the same directory as the .cub file with which it is associated. If the .rux file is not in the same directory as the associated .cub file, rules will not load properly.

#### Data directory location

You specify the location of the data directory differently for local and remote servers.

- For a local server, specify the location of the data directory by naming this directory in the \texttt{DataBaseDirectory} parameter of the \texttt{Tm1p.ini} file.
  
  You can change the .ini file by using the IBM Cognos TM1 Options menu in Server Explorer.

  For more information, see Appendix B, “The \texttt{Tm1p.ini} Client Configuration File,” on page 303.

- For a remote server, specify the location of the data directory by using either the \texttt{DatabaseDirectory} parameter in the \texttt{Tm1s.cfg} file or the -d command-line parameter when you bring up the server.

For information on server parameters, see Appendix A, “The \texttt{tm1s.cfg} Server Configuration File,” on page 255.

A remote server must be able to recognize the drive where the data directory resides. If the directory is on a remote drive, you must map that drive to a local drive letter.

**Tip:** When you access a remote server, you do not need to map to the drive where the server data directory resides.

If you do not specify the location of the data directory, the Cognos TM1 server will not be able to start and the following error message displays.

```
```

#### Cognos TM1 Web architecture

IBM Cognos TM1 Web uses a multi-tiered architecture that enables users to access and interact with Cognos TM1 data using any supported web browser.
The IBM Cognos TM1 Web multi-tiered architecture includes web client, web application server and data component tiers.

**Tier 1: Web Clients**

The web clients tier allows users to access and interact with Cognos TM1 data using any of the supported web browsers. Users can work with Cognos TM1 cubes and Cognos TM1 Websheets.

For an updated list of environments that are supported by Cognos TM1 including information about operating systems, Cognos servers, and databases, create a detailed system requirements report using the Software Product Compatibility Reports tool (https://www.ibm.com/software/reports/compatibility/clarity/index.html).

**Tier 2: Web application server**

Cognos TM1 Web runs on a Java-based web application server.

This tier provides support for converting and displaying Microsoft Excel worksheets as Cognos TM1 Websheets. This service also exports Websheets back to Microsoft Excel and PDF formats.

**Tier 3: Data**

This tier includes the Cognos TM1 Admin Server and at least one Cognos TM1 Server.

**IBM Cognos TM1 Admin server**

The Cognos TM1 Admin Server can be installed on any computer on your LAN but it must reside in the same LAN segment as your Cognos TM1 Server. Typically, the Cognos TM1 Server and the Cognos TM1 Admin Server are installed on the same computer.

**IBM Cognos TM1 server**

The Cognos TM1 server can be installed on the same computer that hosts your Web server, but installing on a separate computer is more efficient.

The version of the Cognos TM1 server that is used in your Cognos TM1 Web environment must be equal to or more recent than the version of Cognos TM1 Web that you are running. If the version of Cognos TM1 Web you are running is more recent than the version of the Cognos TM1 server, users will receive an error when attempting to log in to Cognos TM1 Web.
Accessing multiple Cognos TM1 servers from Cognos TM1 Web

IBM Cognos TM1 Web provides multi-database support, allowing users to access multiple Cognos TM1 servers that are registered on the same Cognos TM1 Admin Server and where users have the same user name and password combination.

When you log in, Cognos TM1 Web displays the Navigation pane for the primary server that you selected on the login screen. However, if your user name and password combination matches other Cognos TM1 servers registered under the same Cognos TM1 Admin Server, then IBM Cognos TM1 Web will automatically log you in to these other servers on an as-needed basis. This behavior is different from Cognos TM1 Architect and Cognos TM1 Perspectives where you have to log into other Cognos TM1 servers as a separate, manual step.

Multi-database support mainly applies to Websheets because they can contain Cognos TM1 formulas and references that point to other Cognos TM1 servers. For example, if you open a Websheet that does contain Cognos TM1 references to another server registered under the same Admin Server, Cognos TM1 Web will attempt to log you into this other server using your current user name and password.

Limiting access to a single Cognos TM1 server from Cognos TM1 Web

If you want to prevent IBM Cognos TM1 Web users from using multi-database support to access other Cognos TM1 servers under the same Admin Server, you can use a different Admin Server to register each Cognos TM1 server.

For example, with this configuration, if you log into Cognos TM1 Web and try to open a Websheet that references another Cognos TM1 server registered under a different Admin Server, the data will not display even if you have the same user name and password for that server.

Tip: If you configure your Cognos TM1 servers to run under separate Admin Servers, but still want to access them from Cognos TM1 Web, Cognos TM1 Architect, or Cognos TM1 Perspectives, you can use the AdminHost parameter. This parameter lets you specify multiple Admin Hosts so users can access any Cognos TM1 servers that are registered with the Admin Servers on the specified hosts.

- For information about configuring IBM Cognos TM1 Web to access multiple Admin Servers, see “Configuring the Login Page using AdminHostName and TM1ServerName” in IBM Cognos TM1 Operation.
- For information about configuring Cognos TM1 Architect and Cognos TM1 Perspectives to access multiple Admin Servers, see “Specifying multiple Cognos TM1 Admin Hosts” on page 71.

Cognos TM1 Applications architecture

IBM Cognos TM1 Applications has a multi-tiered architecture that consists of three tiers: Web clients, Web application servers, and data.

The following diagram shows the multi-tiered architecture and basic communication paths for all the Cognos TM1 Applications components.
Cognos TM1 Application Gateway

Java-based web application server (IBM WebSphere or Apache Tomcat)

Cognos TM1 Admin Server

Cognos TM1 Server

Figure 4: Cognos TM1 Applications architecture overview diagram

The lines in the Cognos TM1 Applications architecture diagram are primarily intended to show the typical communication paths required for the tasks managed by the Cognos TM1 Application Server, such as keeping track of workflow states.

In addition to these communication lines, Cognos TM1 Performance Modeler and Cognos Insight also require a direct connection to the underlying Cognos TM1 Server at all times. As an exception, when using Cognos Insight in Distributed mode, it does not require a constant connection to the Cognos TM1 Server.

Cognos TM1 Applications Tier 1: Web clients

The Web clients tier contains all the user interfaces for IBM Cognos TM1 Applications. These user interfaces are used by end-users, administrators, and planning application developers.

Cognos TM1 Applications

The main Cognos TM1 Applications client is a web browser-based user interface supported by a Java-based web application server, such as the provided installation of WebSphere Liberty. The user interfaces for Cognos TM1 Applications are organized into two main sub-pages and three different data contribution clients.

Cognos TM1 Applications page

The Cognos TM1 Applications page (portal page) is the main starting point for both administrator and non-administrator users. This page provides a list of available applications that is filtered for the current user. Clicking on an application in this page opens the workflow page.

Administrators and application developers can also open Cognos TM1 Performance Modeler and Cognos Insight from the Cognos TM1 Applications toolbar.

Cognos TM1 Application page

The Cognos TM1 Application page (workflow page) allows you to manage tasks within a single application. This client displays each node that a user is responsible for contributing to and/or reviewing in a specific plan. Depending on how you configure the application, the user can open the Cognos Insight client or Cognos TM1 Application Web client for any accessible node in this client.
Data contribution clients

The following table summarizes the Cognos TM1 Applications data contribution clients that enable users to work with data in grid and chart formats.

<table>
<thead>
<tr>
<th>Client</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Cognos TM1 Application Web</td>
<td>Default client. Processing is in real time with the server. Enables users to view and edit application data in a grid format using Cognos TM1 cube views or TM1 Websheets based on infrastructure from Cognos TM1 Web</td>
</tr>
<tr>
<td>IBM Cognos Insight - Connected</td>
<td>IBM Cognos Insight client. Processing is in real time with the server. Enables users to view and edit application data in a dashboard or workspace format. This client can be provisioned and installed from the Cognos TM1 Application Gateway or installed remotely by a system administrator using a Windows Installer command line and other software management tools.</td>
</tr>
<tr>
<td>IBM Cognos Insight - Distributed</td>
<td>IBM Cognos Insight client with local processing of data. Data is updated to the server only when a commit data action is performed. Same provisioning and installation options as the Cognos Insight - Connected client.</td>
</tr>
</tbody>
</table>

Cognos TM1 Performance Modeler

The Cognos TM1 Performance Modeler client provides the user interface for administrators and developers to design and deploy applications.

This user interface must be installed locally on the user's computer. Users can provision and install this client from the Cognos TM1 Application Gateway the first time they open the client. System administrators can also distribute and install the program remotely using Windows Installer and other software management tools. For details, see “Installing Cognos TM1 Performance Modeler” on page 143.

Cognos Insight

Cognos Insight can run separate from Cognos TM1 Applications to enable users to create workspaces to use within an application.

This user interface must be installed locally on the user’s computer. It can be provisioned from the Cognos TM1 Application Gateway and installed by the user the first time they open the client. System administrators can also distribute and install the program remotely using a Windows Installer command line and other software management tools. For details, see “Installing Cognos Insight” on page 147.

Cognos TM1 Applications Tier 2: Web server

The Web servers tier contains the required Java-based web application server.

Java web application server

The following components require a Java-based web application server. You can use the version of WebSphere Liberty that is provided with the installation or your own installation of one of the supported Java-based web application servers.

**Cognos TM1 Application Server**

Java-based web application that provides the primary support for IBM Cognos TM1 Applications.

**Cognos TM1 Application Gateway**

Java-based web component that provides the provisioning of the Cognos TM1 Performance Modeler and Cognos Insight components to remote end users.
Cognos TM1 Application Web client
An optional user interface based on Cognos TM1 Web technology for viewing and editing application data. If you are using this option, the supporting files for it run on this same web application server.

Using security and web server provided by Cognos Analytics
If you use Cognos TM1 Applications with a Cognos TM1 Server that is using IBM Cognos security, you can deploy the Cognos TM1 Application Server with the WebSphere Liberty web server that is supplied with IBM Cognos. For details, see “Using Cognos TM1 Applications with Cognos security” on page 218.

Cognos TM1 Applications Tier 3: Data
The data tier for IBM Cognos TM1 Applications includes the IBM Cognos TM1 Admin Server and one or more IBM Cognos TM1 servers running on either a Microsoft Windows or UNIX-based system. The Cognos TM1 Application Server and related client interfaces communicate with the components in the data tier to access Cognos TM1 data.

Cognos TM1 Admin Server
The Cognos TM1 Admin Server is a process that keeps track of all Cognos TM1 servers running on a network. The Cognos TM1 Application Server communicates with the Cognos TM1 Admin Server to determine which Cognos TM1 servers are available on the network.

Cognos TM1 Server
The Cognos TM1 Server contains the data for the applications that you build and deploy with Cognos TM1 Applications.
Chapter 4. Deployment

This section describes some of the typical installation and deployment scenarios for the available IBM Cognos TM1 components. Use this section to help you plan the installation and configuration of Cognos TM1 in different computer environments and to maximize its performance.

You can install and deploy components on a single computer or across multiple computers in a networked environment.

For each component you want to install on a different computer, run the Cognos TM1 Installation Wizard on that computer.

Server components
You can install the following server components on separate dedicated computers:

- Cognos TM1 Admin Server and Cognos TM1 Server
- Cognos TM1 Web
- Cognos TM1 Application Server

Client components
You can install the following client components on multiple computers:

- Cognos TM1 Perspectives
- Cognos TM1 Architect
- Cognos TM1 Performance Modeler
- Cognos Insight

Deploying Cognos TM1 on a single Windows computer

Installing IBM Cognos TM1 components on one computer running Microsoft Windows is a practical approach for proof of concept, test, demonstration, development and training environments.

You can use either the Cognos TM1 32-bit or 64-bit installation program for Windows.

Installation on a single Windows computer is primarily intended for a single user on one of the supported 32-bit or 64-bit Windows operating systems. For example, Microsoft Windows XP, Windows Vista, or Windows 7. However these are not server class, production level operating systems and this type of deployment should only be used for individual use and not in a production environment with multiple users.

Typical single computer installation

A typical Cognos TM1 installation on a single Windows computer includes the following components:

TM1 Data Tier

- Cognos TM1 Server
- Cognos TM1 Admin server
- Cognos TM1 Tools
- TM1 Samples

TM1 Web Tier

- TM1 Application Gateway
- TM1 Application Server
- TM1 Web
- Cognos Access Manager
TM1 Rich Tier

- TM1 Architect
- Performance Modeler
- TM1 Perspectives
- Cognos Insight
- TM1 APIs

You can adjust which components you install based on your specific needs.

Deployment differences between 64-bit and 32-bit installations

Not all TM1 components are available for 64-bit systems. If the component is available as a 64-bit installation, the default installation directory is different from the default installation directory that is used in a 32-bit installation.

Deploying Cognos TM1 Admin Server and TM1 Server

You can install the IBM Cognos TM1 Admin Server and Cognos TM1 Server components on a separate Microsoft Windows and UNIX computer in your hardware environment.

For each component you want to install on a different computer, run the Cognos TM1 Installation Wizard on that computer.

You can install the Cognos TM1 Admin Server on the same computer on which the Cognos TM1 Server is installed or another computer on your network.

When a Cognos TM1 server is running, it registers itself on the specified Admin Server. Cognos TM1 clients then connect to this same Admin Server to obtain information about Cognos TM1 servers available on a network.

If you distribute the server components throughout your network, you must know certain information about where your components will be installed, and the configuration of those components. The following list provides information about what you need to know to install each component.

**Table 12: Installing Cognos TM1 server components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognos TM1 Server</td>
<td>To install and configure the Cognos TM1 server, you must know the name of the computer on which the Cognos TM1 Admin Server is running.</td>
</tr>
<tr>
<td>Cognos TM1 Admin Server</td>
<td>This can be installed without any knowledge of your network topology.</td>
</tr>
</tbody>
</table>

Important Notes on Distributed Installations

Cognos TM1 services must run on computers set to the same locale. You cannot, for example, install some services on a computer running the US English locale, and other services on a computer running the German locale. Set the locale using the Standards and Formats option in Microsoft Windows Start Menu, Regional and Local Settings.

Deploying Cognos TM1 Web

Depending on your requirements, you can deploy IBM Cognos TM1 Web in a number of different ways.

How you deploy Cognos TM1 Web depends on how you plan to use the component. The typical deployment scenarios include:

- As the primary web-based user interface that enables users to access Cognos TM1 data using a web browser.
  
  For details, see Chapter 10, “Cognos TM1 Web installation,” on page 83.
- To support the IBM Cognos TM1 Application Web client in IBM Cognos TM1 Applications.
The Cognos TM1 Application Web client uses the infrastructure of Cognos TM1 Web. For details, see “Cognos TM1 Applications architecture” on page 23 and Chapter 11, “Cognos TM1 Application Server installation,” on page 105.

- To support integration with IBM Cognos Analytics components, such as using Cognos TM1 Viewer Portlets and iWidgets.

For details, see “Cognos TM1 iWidgets and Cognos Workspace” on page 50.

### Deploying Cognos TM1 Applications

Depending on your specific network environment and business requirements, you can install IBM Cognos TM1 Applications on a single computer or distribute the components to separate computers in a network.

#### Security considerations when using Cognos TM1 Applications

You can use either IBM Cognos TM1 standard security authentication or IBM Cognos security for the Cognos TM1 servers you use with Cognos TM1 Applications.

Do not use a combination of different security authentication modes for the same installation of Cognos TM1 Applications.

Determine the security mode before you configure Cognos TM1 Applications to use a Cognos TM1 server and use that same security mode with any additional servers you add.

For details about using Cognos security, see: “Using Cognos TM1 Applications with Cognos security” on page 218.

#### Using the IntegratedSecurityMode parameter with Cognos TM1 Applications

To set the Cognos TM1 security authentication mode use the IntegratedSecurityMode parameter in the Tm1s.cfg file of each Cognos TM1 server you want to use.

**Important:** The Cognos TM1 Applications component is compatible only with Cognos TM1 security authentication modes 1 and 5.

For example, to use Cognos TM1 standard security authentication, set the IntegratedSecurityMode parameter to 1 for each server.

IntegratedSecurityMode=1

To use IBM Cognos security, set the IntegratedSecurityMode parameter to 5.

IntegratedSecurityMode=5

For more details about the IntegratedSecurityMode parameter, see the "TM1 System Configuration" section in IBM Cognos TM1 Operations.

If IntegratedSecurityMode=5 is used for the IBM Cognos TM1 Server and IBM Cognos TM1 Applications, it is not possible to assign rights to native TM1 groups within the Manage rights dialog. Only Cognos Groups imported into the TM1 Server, are available. This means you cannot use native TM1 groups and Cognos groups in parallel because the SecMode is limiting which groups can be used.

#### Configuring Cognos TM1 Applications security for multiple Cognos TM1 Servers

If you want to use multiple Cognos TM1 servers with Cognos TM1 Applications, they must all be configured to use the same security authentication (either Cognos TM1 standard authentication or Cognos security) and include the same administrator user name and password.

For more details, see “Configuring Cognos TM1 Application Web to use Multiple Cognos TM1 Servers” on page 120.

### Deploying all Cognos TM1 Applications components on a single computer

For development, testing, or demonstration purposes, you may want to install all of the required components for IBM Cognos TM1 Applications onto a single computer running Microsoft Windows.

Deploying Cognos TM1 Applications to a single computer is the quickest way to get the program up and running.
Installation program

Use either the 32- or 64-bit Cognos TM1 installation program for Windows to install Cognos TM1 Applications on a single Windows-based computer.

Required Cognos TM1 components

The following components are required to deploy and run Cognos TM1 Applications on a single Windows-based computer.

- Cognos TM1 Admin Server
- Cognos TM1 Server
- Cognos TM1 Application Server
- Cognos TM1 Application Gateway
- Cognos TM1 Web
- Cognos TM1 Sample databases (optional) - Allows you to easily run a sample Cognos TM1 server for testing purposes.

By default, the Cognos Configuration tool is required and automatically installed with this configuration. After completing the installation, you use Cognos Configuration to deploy and start the Cognos TM1 Application Server and manage your Cognos TM1 servers.

A version of WebSphere Liberty web application server is also automatically installed for use with Cognos TM1 Applications.

Cognos TM1 Web is required if you plan to use the Cognos TM1 Applications Web client.

Required web application servers

Cognos TM1 Applications requires a Java-based web application server.

You can deploy Cognos TM1 Applications to one of the following Java-based web application servers:

- Use the version of IBM WebSphere Liberty that is provided with the installation.
- Use your own instance of Apache Tomcat
- Use your own instance of IBM Websphere Liberty

Deploying Cognos TM1 Applications components on separate computers

Deploying some or all of the IBM Cognos TM1 Applications components on separate, dedicated computers can improve performance, availability, and capacity.

Depending on your network environment and business requirements, you can distribute the TM1 Web Tier and TM1 Data Tier across multiple computers in a number of different ways.

Deploy TM1 Web Tier and TM1 Data Tier on separate computers.

This configuration combines the Java web application server for Cognos TM1 Applications and IBM Cognos TM1 Web on the same computer but locates the TM1 Data Tier (Cognos TM1 server) on a separate computer.

Deploy web application servers on separate computers

This configuration places the Java web application server for Cognos TM1 Applications and Cognos TM1 Web on their own computers. The TM1 Data Tier could also be installed on one of these computers or its own dedicated computer.

Deploy all components on separate computers

This configuration places the Java web application servers for Cognos TM1 Applications and Cognos TM1 Web and the Cognos TM1 Admin Server and the Cognos TM1 server(s) all on separate computers.
Checklist for deploying Cognos TM1 Applications

Use the following checklist to help you install the IBM Cognos TM1 Application Server and related components on separate computers.

Table 13: Installation scenarios for deploying IBM Cognos TM1 Applications

<table>
<thead>
<tr>
<th>Installation scenario</th>
<th>Installation steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running all the Java web applications together on a separate computer</td>
<td>Use the Cognos TM1 installation program to install the Cognos TM1 Application Server, Cognos TM1 Application Gateway, and Cognos TM1 Web on the computer running the Java web application server.</td>
</tr>
<tr>
<td>Running Cognos TM1 Web on a separate computer</td>
<td>Use the Cognos TM1 installation program to install Cognos TM1 Web on a separate computer. The Installation Wizard installs the required files for the Cognos TM1 Application Web client - one of the client interfaces for viewing and editing application data.</td>
</tr>
<tr>
<td>Running the TM1 Data Tier on a separate computer</td>
<td>Use the TM1 installation program to install the TM1 Admin Server and TM1 Server components on that computer. For more information, see “Deploying Cognos TM1 Admin Server and TM1 Server” on page 28</td>
</tr>
</tbody>
</table>

Deploying Cognos TM1 client applications

This section describes how to deploy the different IBM Cognos TM1 client (user interfaces) in your network environment.

The different Cognos TM1 clients include:

- Cognos TM1 Perspectives
- Cognos TM1 Architect
- Cognos TM1 Performance Modeler
- Cognos TM1 Web (using a URL or web link)
- Cognos TM1 Applications (using a URL or web link)
- Cognos Insight
Chapter 5. Upgrading

Upgrading an earlier version of IBM Cognos TM1 to the newest version should be considered a process that you perform in stages.

You should treat upgrading as an IT project that requires careful planning, adequate time, and resources.

Upgrading from Planning Analytics version 2.0.0
Upgrading from Planning Analytics version 2.0.0 to version 2.0.x does not require an uninstall. You can install version 2.0.x directly over version 2.0.0.

For more information, see “Upgrading from Planning Analytics version 2.0.0” on page 35.

Upgrading Planning Analytics for Microsoft Excel
Upgrading IBM Planning Analytics for Microsoft Excel requires a full manual uninstall, and then a full installation of the new version.

For more information, see “Upgrading Planning Analytics for Microsoft Excel” on page 35.

Upgrading from TM1 10.2.x
Upgrading from Cognos TM1 version 10.2.x requires a full manual uninstall, and then a full installation of the new version.

For more information, see “Upgrading from Cognos TM1 version 10.2.x” on page 36.

Upgrading from TM1 10.1.x
Upgrading from Cognos TM1 version 10.1 or 10.1.1 requires a full manual uninstall, and then a full installation of the new version.

One main difference between versions 10.1.x and 10.2.x, is the required web application server for Cognos TM1 Web. Starting with version 10.2.0, Cognos TM1 Web does not use Microsoft Internet Information Services (IIS) but instead uses a Java web application server, such as the provided version of WebSphere Liberty.

For more information, see “Upgrading from Cognos TM1 version 10.1.x” on page 36.

Upgrading from TM1 9.x
Upgrading from Cognos TM1 version 9.0.x, 9.1.x, or 9.5.x requires a full manual uninstall, and then a full installation of the new version.

Note: TM1 9.0.x and 9.1.x databases are automatically converted to Unicode when they are opened (started) with a TM1 server version 9.4 or higher. Once an older TM1 database is converted to Unicode, it can no longer be opened in the earlier versions of TM1.

For more information, see “Upgrading from Cognos TM1 version 9.x” on page 37.

Upgrade process
When you upgrade, you perform several distinct activities:

1. Stopping all related services.
2. Backing up your existing data and applications.
3. Removing the previous version of the product.
4. Installing the new version of the product.
5. Restoring your data, configuration settings, and applications with the new version of the product.
Planning the upgrade

The steps to upgrade an existing IBM Planning Analytics installation depend on the Cognos TM1 components you currently use and have deployed.

Additional steps are required if you are also upgrading a previous version of Cognos TM1 Contributor to Cognos TM1 Applications.

Before you upgrade

Review the following considerations before you upgrade.

Cognos TM1 Admin Server

As of IBM Cognos TM1 version 10.1.0, the TM1 Admin Server configuration file, Tm1admsrv.ini, is no longer used or supported by Cognos TM1. You must use Cognos Configuration to configure the Cognos TM1 Admin Server.

Cognos TM1 Server

- TM1 9.0.x and 9.1.x databases are automatically converted to Unicode when they are opened (started) with a Cognos TM1 server version 9.4 or higher. Once an older TM1 database is converted to Unicode, it can no longer be opened in the earlier versions of TM1.
- In IBM Cognos TM1 version 10.1.0, you can use Cognos Configuration to start, stop, and manage your Cognos TM1 servers.

Cognos TM1 Web

As of IBM Cognos TM1 version 10.2.0, Cognos TM1 Web now runs on a Java web application server, such as the provided version of WebSphere® Liberty. Cognos TM1 Web version 10.2.0 and later does not require or use the Microsoft .NET Framework.

- As of Cognos TM1 Web version 10.2.0, the default installation directory for Cognos TM1 Web has changed from C:\inetpub\wwwroot\TM1Web to <TM1_Install>\tm1web.
- Cognos TM1 Web version 10.2.0 and later uses a new configuration file named tm1web_config.xml. This file replaces the web.config file from previous Cognos TM1 Web versions. The new file includes a subset of the previous parameters because the parameters related to Microsoft .NET Framework have been removed.
  
  The location of the new configuration file is:

  <TM1_install>\webapps\tm1web\web-inf\configuration

  If you want to use any settings from your previous Cognos TM1 Web configuration file, you can selectively merge parameters settings from your previous Web.config file into the new tm1web_config.xml file.
- A number of steps have changed for configuring the different types of authentication and data transmission security for TM1 Web.

Cognos TM1 Applications

- **Attention:** You will need to edit your previous applications in Cognos TM1 Performance Modeler if they use the following features:
  - Dynamic Subsets cannot be used as the approval hierarchy in Cognos TM1 Applications.
  - Applications cannot share the same approval cubes in Cognos TM1 Applications.
- A version of WebSphere® Liberty web application server is installed with the new version of Cognos TM1. You can use this instance of WebSphere® Liberty to run Cognos TM1 Applications and manage it using Cognos Configuration.
- If you plan to use Cognos TM1 Applications without Microsoft Excel installed on the web server where you are running Cognos TM1 Web, you will need to explicitly set the ExcelWebPublishEnabled parameter to True (T) in the tm1s.cfg configuration file for your Cognos TM1 servers. Earlier versions of Cognos TM1 Contributor did not require this parameter to be set.
**Backing up your existing data**

Before you upgrade, ensure that you back up your existing data, application, and configuration files to a safe place. Depending on your network architecture and deployment of Cognos TM1, your Cognos TM1 data might reside on more than one computer. Make a list of where this data is located and create a plan to back up the data.

The following files need to be backed up:

- Cognos TM1 Admin Server configuration files
- Cognos TM1 Server configuration and database files
- Cognos TM1 Web server configuration and custom files
- Cognos TM1 Architect client configuration file
- Cognos TM1 Perspectives client configuration file
- Cognos TM1 Contributor application and configuration files
- Cognos TM1 samples, if you use them

**Upgrading from Planning Analytics version 2.0.0**

When you upgrade Planning Analytics version 2.0.0 Local to IBM Planning Analytics version 2.0.x Local, you do not need to uninstall the previous version. You can install IBM Planning Analytics version 2.0.x directly over version 2.0.0.

If you use the Cognos TM1 samples and want to keep any updates you have made to them, you must back them up prior to starting the upgrade. After the upgrade you must copy or move them back to the installation location. For more information, see “Upgrading the samples” on page 181.

For information about installing the current version, see the following topics, depending on your computer environment and which Cognos TM1 components you want to install.

- Chapter 7, “Planning Analytics single-computer installation,” on page 53
- Chapter 8, “Cognos TM1 Server installation,” on page 61
- Chapter 10, “Cognos TM1 Web installation,” on page 83
- Chapter 11, “Cognos TM1 Application Server installation,” on page 105
- Chapter 14, “TM1 Rich Tier installation,” on page 141
- “Installing Cognos TM1 Operations Console using the provided WebSphere® Liberty webservice software” on page 75

**Upgrading Planning Analytics for Microsoft Excel**

When you upgrade IBM Planning Analytics for Microsoft Excel, you need to uninstall the previous version and then install the current version. You cannot install Planning Analytics for Microsoft Excel directly over the previous version.

**Before you begin**

You should back up existing data and configuration files before uninstalling the previous version.

**Procedure**

1. Close all Microsoft Excel windows.
2. Back up existing data and configuration files.
3. Uninstall the previous version of Planning Analytics for Microsoft Excel. Refer to this topic for more details: “Uninstalling IBM Planning Analytics for Microsoft Excel” on page 159.
4. Download and extract the installation program.
5. Install the new version of Planning Analytics for Microsoft Excel. Refer to this topic for more details: “Installing IBM Planning Analytics for Microsoft Excel” on page 158.

**Note:** If upgrading from Cognos Analysis for Microsoft Excel to Planning Analytics for Microsoft Excel, you must delete the following folder:
Upgrading from Cognos TM1 version 10.2.x

When you upgrade IBM Cognos TM1 version 10.2.x to IBM Planning Analytics version 2.0.0, you need to uninstall the previous version and then install the current version. You cannot install IBM Planning Analytics version 2.0.0 directly over version 10.2.x. You should also plan to back up existing data and configuration files before uninstalling the previous version.

About this task
The following steps provide guidelines for upgrading Cognos TM1 version 10.2.x to the current version.

Procedure

1. Back up existing data and configuration files:
   You should plan to back up existing data and configuration files to a safe location for all computers where Cognos TM1 components were installed. For details see the following topics:
   - “Backing up data and configuration files for Cognos TM1” on page 243
   - “Backing up your Cognos TM1 Applications data” on page 246

2. Uninstall all Cognos TM1 components:
   If you installed the previous version of Cognos TM1 in a distributed environment, you will need to uninstall the TM1 components from each computer.
   - “Uninstalling IBM Planning Analytics” on page 245
   - “Uninstalling and undeploying Cognos TM1 Applications” on page 246

3. Install the current version of IBM Cognos TM1:
   Refer to the following topics, depending on your computer environment and which Cognos TM1 components you want to install.
   - Chapter 7, “Planning Analytics single-computer installation,” on page 53
   - Chapter 8, “Cognos TM1 Server installation,” on page 61
   - Chapter 10, “Cognos TM1 Web installation,” on page 83
   - Chapter 11, “Cognos TM1 Application Server installation,” on page 105
   - Chapter 14, “TM1 Rich Tier installation,” on page 141
   - “Installing Cognos TM1 Operations Console using the provided WebSphere® Liberty webserver software” on page 75

4. After installing the new version of Cognos TM1 Applications, remove the cache of your web browser. If the cache is not removed, the browser may mix old Cognos TM1 Applications and new Cognos TM1 Applications files together.

5. Restore previous Cognos TM1 data and configuration files:
   Depending on which components you installed, update each computer with your previous data and configuration files.
   - “Restoring data and configuration files in IBM Planning Analytics version 2.0.0” on page 249
   - “Restoring application and configuration files in Cognos TM1 Applications” on page 250

Upgrading from Cognos TM1 version 10.1.x

When you upgrade IBM Cognos TM1 version 10.1.x to IBM Planning Analytics version 2.0.0, you need to uninstall the previous version and then install the current version. You cannot install IBM Planning Analytics version 2.0.0 directly over Cognos TM1 version 10.1.x. You should also plan to back up existing data and configuration files before uninstalling the previous version.
Before you begin
Review the information in “Planning the upgrade” on page 34.

One main difference between versions 10.1.x and 10.2.x, is the required web application server for Cognos TM1 Web. Cognos TM1 Web version 10.2.x does not use Microsoft Internet Information Services (IIS) but instead uses a Java web application server, such as the provided version of Apache Tomcat.

About this task
The following steps provide guidelines for upgrading Cognos TM1 version 10.1.x to the current version.

Procedure
1. Back up existing data and configuration files:
   You should plan to back up existing data and configuration files to a safe location for all computers where Cognos TM1 components were installed. For details see the following topics:
   • “Backing up data and configuration files for Cognos TM1” on page 243
   • “Backing up your Cognos TM1 Applications data” on page 246

2. Uninstall all Cognos TM1 components:
   If you installed the previous version of Cognos TM1 in a distributed environment, you will need to uninstall the TM1 components from each computer.
   • “Uninstalling IBM Planning Analytics” on page 245
   • “Uninstalling and undeploying Cognos TM1 Applications” on page 246

3. Install the current version of IBM Cognos TM1:
   Refer to the following topics, depending on your computer environment and which Cognos TM1 components you want to install.
   • Chapter 7, “Planning Analytics single-computer installation,” on page 53
   • Chapter 8, “Cognos TM1 Server installation,” on page 61
   • Chapter 10, “Cognos TM1 Web installation,” on page 83
   • Chapter 11, “Cognos TM1 Application Server installation,” on page 105
   • Chapter 14, “TM1 Rich Tier installation,” on page 141
   • “Installing Cognos TM1 Operations Console using the provided WebSphere® Liberty webserver software” on page 75

4. After installing the new version of Cognos TM1 Applications, remove the cache of your web browser. If the cache is not removed, the browser may mix old Cognos TM1 Applications and new Cognos TM1 Applications files together.

5. Restore previous Cognos TM1 data and configuration files:
   Depending on which components you installed, update each computer with your previous data and configuration files.
   • “Restoring data and configuration files in IBM Planning Analytics version 2.0.0” on page 249
   • “Restoring application and configuration files in Cognos TM1 Applications” on page 250

Upgrading from Cognos TM1 version 9.x
Upgrading IBM Cognos TM1 from version 9.x to IBM Planning Analytics version 2.0.0 requires a full uninstall and install procedure.

Before you begin
Review the differences between Cognos TM1 version 9.x and the current version. A number of configuration steps and installation directories have changed between version 9.x and 10.x. For details, see “Planning the upgrade” on page 34.

About this task
The following steps provide guidelines for upgrading Cognos TM1 version 9.x to the current version.
Procedure
1. Stop services for Cognos TM1 9.x components.
2. Back up data and configuration files.
3. Uninstall Cognos TM1 version 9.x.
4. Install the current version.
5. Restore data and configuration files.

Stopping Cognos TM1 9.x services before upgrading
All services for IBM Cognos TM1 version 9.x must be stopped before upgrading to the new version.

Procedure
1. Use Windows Services to stop all Cognos TM1 9.x services. This includes:
   • Cognos TM1 Admin Server
   • Cognos TM1 Excel service
   • Cognos TM1 Server services
2. If you were using Cognos TM1 Contributor, stop the Cognos TM1 Contributor pmpsve application.
   To do this, use the management tools for the web application server that is running Cognos TM1 Contributor.
3. If you are using IBM Cognos Analytics security with Cognos TM1 Applications, stop the IBM Cognos Analytics service.

What to do next
Back up your existing data and applications. For more information, see “Backing up data for a previous version of Cognos TM1 9.x” on page 38.

Backing up data for a previous version of Cognos TM1 9.x
This topic provides guidelines for backing up data and configuration files for all IBM Cognos TM1 9.x components.

Before you begin
Stop all related services. For more information, see “Stopping Cognos TM1 9.x services before upgrading” on page 38.

About this task
If you are currently using a previous version of Cognos TM1 9.x, you must back up your Cognos TM1 data directory and configuration files before installing the new 10.x version of Cognos TM1.
If you are using Cognos TM1 Web 9.x or Cognos TM1 Contributor 9.5.x, you should also back up the related data and configuration files for those components.

Procedure
1. Back up Cognos TM1 Admin Server configuration files you may want to retain, such as the tm1admsrv.ini file located in the <TM1_Install>\bin\ directory.
2. Back up Cognos TM1 Server data and configuration files <TM1_Install>\Custom\TM1Data data directory and subdirectories to a secure location.
   Tip: The default data location for Cognos TM1 9.5 was: C:\Program Files\Cognos\TM1\Custom\TM1Data.
3. Back up Cognos TM1 Architect and Cognos TM1 Perspectives configuration files:
   a) Back up the system default Tm1p.ini file located here:
      %ALLUSERSPROFILE%\Application Data\Applix\TM1\Tm1p.ini
      For example: C:\Documents and Settings\All Users\Application Data\Applix\TM1\Tm1p.ini
   b) Back up the user-specific Tm1p.ini file located here:
      %APPDATA%\Applix\TM1\Tm1p.ini
For example: `C:\Documents and Settings\user name\ApplicationData\Applix\TM1\Tm1p.ini`

4. Back up Cognos TM1 Web configuration and custom files to a secure location. The default location of Cognos TM1 Web 9.x was `C:\inetpub\wwwroot\TM1Web`
   a) Back up a copy of the `web.config` file.
      Tip: You might want to use some of the settings in this file when you configure your new installation of Cognos TM1 Web.
   b) Backup any custom web server pages you might have created.

5. Back up your Cognos TM1 Contributor 9.5.x applications folder and `pmpssvc_config.xml` configuration file to a safe location.
   a) Back up the folder `\webapps\pmps\WEB-INF\applications`.
   b) Backup your configuration file `\webapps\pmps\WEB-INF\configuration\pmpssvc_config.xml`.

If you deployed with your own installation of Apache Tomcat, check here: `Program Files\Apache Software Foundation\Tomcat 6.0`.

If you deployed with the WebSphere® Liberty server provided with IBM Cognos Analytics, check here: `Program Files\cognos\c8`.

What to do next
Remove the previous version of the product. For more information, see “Uninstalling a previous version of IBM Cognos TM1 9.x” on page 39.

Uninstalling a previous version of IBM Cognos TM1 9.x
All components of a previous version of IBM Cognos TM1 must be removed and uninstalled.

Before you begin
Make sure that you have backed up all of your data and configuration files. For more information, see “Backing up data for a previous version of Cognos TM1 9.x” on page 38.

About this task
Perform these steps on every computer that is to be upgraded.

Procedure
1. To uninstall an earlier version of Cognos TM1 Server, Cognos TM1 Architect, Cognos TM1 Perspectives, and Cognos TM1 Web:
   a) From the Windows Control Panel, click Add or Remove Programs.
   b) In the list of currently installed programs, select IBM Cognos TM1.
   c) Click Remove and follow the instructions to complete the process.
2. To uninstall Cognos TM1 Contributor:
   • Undeploy Cognos TM1 Contributor from the web application server you are using.
   • Uninstall the Cognos TM1 Contributor 9.5.x Administration tool and IBM Cognos Rich Client Framework.

For details, see “Upgrading Cognos TM1 Contributor to Cognos TM1 Applications” on page 41.

What to do next
Install the new version of the product.

Upgrading a single computer installation of Cognos TM1
This topic describes how to upgrade IBM Cognos TM1 on a single computer running on Microsoft Windows operating system.

After removing the previous version of the product, you are ready to install.

When that is done, complete the upgrade by restoring your data, configuration settings, and applications.
Upgrading Cognos TM1 Server on UNIX or Linux
You can upgrade the Cognos TM1 server components on a 64-bit computer running either a UNIX or Linux operating system.

After removing the previous version of the product, you are ready to install.
When that is done, complete the upgrade by restoring your data, configuration settings, and applications.

Upgrading Cognos TM1 Server on Windows
You can upgrade the Cognos TM1 server components on either 32-bit or 64-bit computers running the Microsoft Windows operating system.

After removing the previous version of the product, you are ready to install.
When that is done, complete the upgrade by restoring your data, configuration settings, and applications.

Upgrading Cognos TM1 Architect and Perspectives clients
You can upgrade IBM Cognos TM1 client components using the Cognos TM1 server installation program or the Cognos TM1 client installation program.

After removing the previous version of the product, you are ready to install.
When that is done, complete the upgrade by restoring your data, configuration settings, and applications.

Upgrading Cognos TM1 Web
If you have IBM Cognos TM1 Web on a computer that is separate from the computer where you installed the Cognos TM1 server then do these steps to upgrade the web server.

After removing the previous version of the product, you are ready to install.
When that is done, complete the upgrade by restoring your data, configuration settings, and applications.
You can install IBM Cognos TM1 Web on a computer that is separate from the computer where you installed the Cognos TM1 server and other Cognos TM1 components.

**Upgrading Cognos TM1 Contributor to Cognos TM1 Applications**

Upgrading Cognos TM1 Contributor to Cognos TM1 Applications requires a series of steps. These steps include a process to move your old application files into Cognos TM1 Applications.

**Before you begin**

Review the following considerations before you upgrade your application files from Cognos TM1 Contributor to Cognos TM1 Applications.

⚠️ **Attention:** You might need to edit your old applications to make them compatible with the newer version.

- Dynamic Subsets cannot be used as the approval hierarchy in Cognos TM1 Applications.
- Applications cannot share the same approval cubes in Cognos TM1 Applications.

If an application cannot be upgraded, a message is displayed during the upgrade process and the application is moved to an undeployed state. Undeployed applications do not appear in the Cognos TM1 Applications portal, but instead, appear in the Cognos TM1 Performance Modeler application design tab. You can use Cognos TM1 Performance Modeler to edit and fix the application and then validate and deploy it.

**Procedure**

1. Stop related services.
   See “Stopping Cognos TM1 9.x services before upgrading” on page 38.

2. Back up your Cognos TM1 Contributor 9.5.x applications folder and pmpsVC_config.xml configuration file to a safe location.
   a) Back up the folder \webapps\pmpsVC\WEB-INF\applications.
   b) Back up your configuration file \webapps\pmpsVC\WEB-INF\configuration\pmpsVC_config.xml.

   If you deployed with your own installation of Apache Tomcat, check here: Program Files\Apache Software Foundation\Tomcat 6.0.

   If you deployed with the WebSphere® Liberty server provided with IBM Cognos Analytics, check here: Program Files\cognos\c8.

3. Uninstall IBM Cognos TM1 9.5.x.
   See “Uninstalling a previous version of IBM Cognos TM1 9.x” on page 39

4. Uninstall the Cognos TM1 Contributor 9.5.x Administration tool and IBM Cognos Rich Client Framework:
   **Tip:** You will need to repeat these steps for each computer where the Cognos TM1 Contributor 9.5.x Administration tool was installed.
   a) In Microsoft Windows, open **Add or Remove Programs**.

      ⚠️ **Attention:** Depending on how the Administration tool was installed, you might only see one entry.
   b) If the entry exists, first remove IBM Cognos TM1 Contributor Administration.
   c) Remove the IBM Cognos Rich Client Framework.

5. Undeploy the Cognos TM1 Contributor pmpsVC web application:
   - If you deployed with your own installation of Apache Tomcat or IBM Websphere, use the respective management tool to undeploy the pmpsVC web application.
   - If you deployed with IBM Cognos Analytics, the program files are located in the following locations:
     - C:\Program Files\cognos\c8\webapps\pmpsVC
     - C:\Program Files\cognos\c8\tomcat4.1.27\work\Standalone\localhost\pmpsVC

6. Install Cognos TM1 Applications.
   For details, see Chapter 11, “Cognos TM1 Application Server installation,” on page 105.
7. Restore your data files for each Cognos TM1 server you plan to use with Cognos TM1 Applications.
   For details, see “Restoring data and configuration files from Cognos TM1 version 9.x into the current version” on page 42.

8. Edit the tm1s.cfg configuration file for each Cognos TM1 server that you want to use with Cognos TM1 Applications:
   a) Configure the ExcelWebPublishEnabled parameter.
      
      **Important:** Earlier versions of Cognos TM1 Contributor always considered this parameter was set to True and did not use the actual setting in the Cognos TM1 server tm1s.cfg file. As of Cognos TM1 10.1, Cognos TM1 Applications uses this parameter, requiring you to explicitly configure the parameter in the tm1s.cfg file.
      
      For more details, see “ExcelWebPublishEnabled” on page 267.
   b) Configure the AllowSeparateNandCRules and DistributedPlanningOutputDir parameters.
      
      For more details, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

9. If you want to use any of your old configuration settings, manually copy them from your old file into the new configuration files for Cognos TM1 Applications.

   **Attention:** In Cognos TM1 Applications, the contents of the previous pmpsvc_config.xml configuration file has been reorganized into two separate files; pmpsvc_config.xml and fpmsvc_config.xml.

   a) Copy client settings from the old pmpsvc_config.xml file into the new pmpsvc_config.xml file.
   b) Copy server related settings from the old pmpsvc_config.xml file into the new fpmsvc_config.xml file.

10. Copy your previous Cognos TM1 Contributor 9.5.x applications folder into the new location for Cognos TM1 Applications:
    For example, C:\Program Files\IBM\cognos\tm1\webapps\pmpsvc\WEB-INF\applications

11. Start the related Cognos TM1 services using IBM Cognos Configuration.
    a) **TM1 Admin Server**
    b) **TM1 Application Server**
    c) Start any Cognos TM1 servers you are using with Cognos TM1 Applications.

12. Log in to the Cognos TM1 Applications portal as an administrator to upgrade your applications.
    During the login process, the application files in the webapps/pmpsvc/WEB-INF/application folder will be upgraded from Cognos TM1 Contributor 9.5.2 to Cognos TM1 Applications.

    **Note:** The upgrade process may take some time depending on the amount of rights that need to be applied in the application. For more information, see “Saving security rights when importing or restoring a Cognos TM1 Application” on page 44.

13. If you are prompted about dynamic subsets during the upgrade process, edit the application to make it compatible.
    a) Open Cognos TM1 Performance Modeler.
    b) Change the subset from dynamic to static or select a new static subset to use
    c) Redeploy the application and review the security for the application. Some security may have changed requiring you to recreate the security assignments using the Manage Rights options.

    For details, see the TM1 Performance Modeler documentation.

14. If you are prompted about shared views during the upgrade process, edit the application to make it compatible.
    a) Open Cognos TM1 Performance Modeler.
    b) To fix the issue, you will need to reorganize the TM1 data so that approval cubes are not shared by applications.
    c) Save and deploy the application.

    For details, see the TM1 Performance Modeler documentation.

---

**Restoring data and configuration files from Cognos TM1 version 9.x into the current version**

After installing the newer version of IBM Cognos TM1, complete these steps to restore your previous Cognos TM1 9.x configuration and database files.
Before you begin
Install the new version of the product.

Procedure

1. **Restore your Cognos TM1 Admin Server configuration files:**

   **Attention:** As of IBM Cognos TM1 version 10.1.0, the TM1 Admin Server configuration file, Tm1admsrv.ini, is no longer used or supported by Cognos TM1. The configuration settings for the Cognos TM1 Admin Server are now exclusively configured and stored in the IBM Cognos Configuration tool. You must use Cognos Configuration to configure the Cognos TM1 Admin Server.

   a) Open IBM Cognos Configuration.
   b) In the Cognos Configuration **Explorer** pane, expand **Local Configuration > Environment** and click **TM1 Admin Server**.
      
      The parameters for the Admin Server display in the **Properties** pane.
   c) Open the old Tm1admsrv.ini file.
   d) For each parameter you want to use with your new installation, copy the value of the parameter from the Tm1admsrv.ini file into the matching parameters in Cognos Configuration.
      
      For example, if you were using custom SSL settings with your previous installation, copy the values for these parameters into Cognos Configuration.
   e) In Cognos Configuration, click **File > Save**.

2. **Restore your Cognos TM1 Server data and configuration files:**

   **Tip:** As of IBM Cognos TM1 version 10.1.0, you can use Cognos Configuration to start, stop, and manage your Cognos TM1 servers.

   a) For each Cognos TM1 server that you want to restore, copy its data directory and subdirectories to the new location for data: `<TM1_Install>`\samples\tm1.
   b) Add each Cognos TM1 server in Cognos Configuration where you can start, stop, and manage the server.
      
      For details, see “Adding an existing Cognos TM1 server in Cognos Configuration” on page 70.

3. **Restore your Cognos TM1 Architect and Cognos TM1 Perspectives configuration files:**

   If you want to restore any settings from your previous installation of Cognos TM1 Architect or Cognos TM1 Perspectives, copy the values from your old Tm1p.ini file into the new Tm1p.ini file.

   **Attention:** If you leave your old Tm1p.ini files in place, you might need to update the directory path in the file for the AdminSvrSSLCertAuthority parameter. For example, if you are using the default Cognos TM1 SSL certificate, manually change the value for this parameter to the new install path C:\Program Files\IBM\cognos\tm1\bin\ssl\applixca.pem.

   a) Update the new system default Tm1p.ini file located here:
      
      `%ALLUSERSPROFILE%\Application Data\Applix\TM1\Tm1p.ini`
      
      For example: C:\Documents and Settings\All Users\Application Data\Applix\TM1\Tm1p.ini
   b) Update the new user-specific Tm1p.ini file located here:
      
      `%APPDATA%\Applix\TM1\Tm1p.ini`
      
      For example: C:\Documents and Settings\user name\ApplicationData\Applix\TM1\Tm1p.ini

4. **Restore your Cognos TM1 Web files:**

   If you are using the new version of Cognos TM1 Web, you can restore some of the configuration settings that you want to use.

   Open your old Web.config file and selectively merge the lines and parameters that you want to use into the new tm1web_config.xml file located in `<TM1_install>`\webapps\tm1web\web-inf\configuration.
**Note:** Cognos TM1 Web version 10.2.0 uses a new configuration file named `tm1web_config.xml`. This file replaces the `web.config` file from previous Cognos TM1 Web versions. For more information, see “Modifying Cognos TM1 Web Configuration Parameters” on page 88.

5. **Restore your application and configuration files in Cognos TM1 Applications:**

   To restore application and configuration files from Cognos TM1 Contributor 9.5.x into the current version of Cognos TM1 Applications, see “Upgrading Cognos TM1 Contributor to Cognos TM1 Applications” on page 41.

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**Microsoft Excel .xls worksheets**

IBM Cognos TM1 Web versions 10.2.0 and later use the Open XML file formats for Microsoft Excel worksheets created using Excel 2007 or later.

If you are using existing Microsoft Excel files in the older .xls format, use the Cognos TM1 conversion tool to convert the files. If your original file contained macros, the Cognos TM1 conversion tool converts the original file into a macro-enabled .xlsm file, otherwise it is converted into a standard .xlsx file.

The **Convert Excel files to OpenXML Excel format** option in Cognos TM1 Architect Server Explorer converts a single .xls worksheet or all worksheets in a folder. Only administrative users have this option available. The conversion renames the files to preserve as many links as possible after the conversion. Some links and action buttons need to be updated depending on permissions that may have changed as a result of the move to cell-based security that occurred in version 10.2.0.

In some cases, the Named Ranges from the original file could be renamed in the converted file during the conversion process.

By default a backup of the pre-converted worksheets is saved. By default a log file is also generated.

---

**Saving security rights when importing or restoring a Cognos TM1 Application**

In IBM Cognos TM1 Applications 10.2, the operation to save security rights in a Cognos TM1 Application for the very first time may be significantly slower than in previous releases. You may experience this delay when performing an upgrade and either manually restoring application files or importing an application and the related security rights.

This is a known effect of a new security design for TM1 Applications that provides greater application design flexibility. Specifically, the ability to share an Approval Hierarchy dimension across more than one application has been added to Cognos TM1 Applications 10.2. Cognos TM1 Applications now also allows you to deploy multiple applications, independently secured, for different cycles of your business process. For example, to operate a Budgeting application and a Forecasting application at the same time, based on the same underlying cube, permitting real-time Budget versus Forecast variances.

It is important to note that the significant performance delay is only seen the very first time that rights are saved for an application. The rights-saving operation is also performed when manually restoring application files or when an application is imported in the Cognos TM1 Applications portal and you select the option to include security rights during the import process.

On subsequent saving of the rights, a differential analysis is performed to ensure that the time taken to process the rights is a function of the degree of change being made. For example, a small change to the rights will be processed quickly. This is the key factor in the day-to-day operation of a TM1 Application, where you are likely to routinely update rights to reflect incremental changes to your business. Large-scale changes are unusual after an application is in production, so you will see routine changes to the rights processed quickly.

**Note:** You previously had to change these rights manually from the Cognos TM1 Performance Modeler or Cognos TM1 Applications portal user interface. However, the Cognos TM1 10.2 release gives you the ability to automate these changes from the command line for the first time.
Chapter 6. Planning Analytics integration with IBM Cognos software

There are a number of different ways that you can integrate IBM Planning Analytics with IBM Cognos Analytics and IBM Cognos applications. This topic summarizes some of the most typical integration approaches and includes links to the related documentation.

The main options for integrating Planning Analytics with Cognos software include authentication security, data reporting, and data/object interaction. Configuring integration between Planning Analytics and Cognos Analytics involves a combination of installation and configuration tasks on the computers hosting the server and web server components. In some cases, installation and configuration is required on individual end-user computers.

### Authentication Security

You can configure the Cognos TM1 server to authenticate users using Cognos Analytics security. With this configuration, any Cognos TM1 user interface or other custom application must use a valid user name and password from the Cognos Analytics server to access Cognos TM1 data.

### Importing Cognos Analytics data into Planning Analytics

The IBM Cognos TM1 Package Connector is currently supported for use with IBM Cognos Business Intelligence packages against SAP Business Warehouse and other relational and ODBC data sources. You can use the Cognos TM1 Package Connector to import data from these sources into Planning Analytics using a Cognos TM1 TurboIntegrator process.

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**Figure 5: Overview of Planning Analytics integration with IBM Cognos applications**

**Authentication Security**

You can configure the Cognos TM1 server to authenticate users using Cognos Analytics security. With this configuration, any Cognos TM1 user interface or other custom application must use a valid user name and password from the Cognos Analytics server to access Cognos TM1 data.

**Importing Cognos Analytics data into Planning Analytics**

The IBM Cognos TM1 Package Connector is currently supported for use with IBM Cognos Business Intelligence packages against SAP Business Warehouse and other relational and ODBC data sources. You can use the Cognos TM1 Package Connector to import data from these sources into Planning Analytics using a Cognos TM1 TurboIntegrator process.
Using Cognos TM1 as a datasource with Cognos software

You can configure IBM Cognos Analytics to access Cognos TM1 servers and cubes from Cognos Analytics applications such as Cognos Report Studio and Cognos Query Studio.

You can also access TM1 data inside of IBM Planning Analytics for Microsoft Excel.

Displaying and interacting with Cognos TM1 data objects

You can access, view, and interact with the following Cognos TM1 data objects in IBM Cognos Workspace and IBM Cognos Insight:

- TM1 cube views and charts
- TM1 Websheets
- TM1 Scorecarding cubes and diagrams

Planning Analytics and Cognos Analytics security

You can configure the Cognos TM1 server to authenticate users using Cognos Analytics security. With this configuration, any Cognos TM1 user interface or other custom application must use a valid user name and password from the Cognos Analytics server to access Cognos TM1 data. You can also configure IBM Cognos TM1 Applications to use Cognos Analytics security.

For details, see the following topics:

- “Using Cognos security with Cognos TM1” on page 211
- “Using Cognos TM1 Applications with Cognos security” on page 218

Using the Cognos TM1 Package Connector to import Cognos Analytics data into Cognos TM1

The IBM Cognos TM1 Package Connector is currently supported for use with IBM Cognos Analytics packages against SAP Business Warehouse and other relational and ODBC data sources. You can use the Cognos TM1 Package Connector to import data from these sources into Cognos TM1 using a Cognos TM1 TurboIntegrator process.

The IBM Cognos TM1 Package Connector is an optional component, separate from the main TM1 installation, available as its own CD or download. This component must be installed on both the TM1 server and the administrative client machines where TurboIntegrator processes are being created against a BW package.

- See “Cognos TM1 Package Connector installation” on page 46 for installation instructions.
- See the "Importing Data Using the IBM Cognos TM1 Package Connector" chapter in IBM Cognos TM1 TurboIntegrator for more information about using the TM1 Package Connector.
- See IBM Cognos Framework Manager about creating packages.
- See your SAP documentation for SAP related topics.

Cognos TM1 Package Connector installation

IBM Cognos TM1 supports connectivity to IBM Cognos Analytics packages against certain data sources.

The Cognos TM1 Package Connector is an optional 32-bit component available as a separate CD or download from the main Planning Analytics installation. This component should be installed into its own directory.

For an updated list of environments that are supported by IBM Cognos, create a detailed system requirements report using the Software Product Compatibility Reports tool (https://www.ibm.com/software/reports/compatibility/clarity/index.html).
For information about using the Cognos TM1 Package Connector, see the "Importing Data Using the IBM Cognos TM1 Package Connector" section in *IBM Cognos TM1 TurboIntegrator*.

**Cognos TM1 Package Connector requirements**

Refer to the IBM Cognos Analytics and IBM Planning Analytics Knowledge Centers for more details on the supported platforms, versions, and requirements.

The Cognos TM1 Package Connector requires the following components:

- **Cognos TM1 9.5.1 or later.**
  The Cognos TM1 Package Connector must be installed on both the Cognos TM1 server and the administrative client machines where TurboIntegrator processes are being created for any datasource you are using.
- **For an updated list of environments that are supported by Cognos TM1 including information about operating systems, Cognos servers, and databases, create a detailed system requirements report using the Software Product Compatibility Reports tool ([https://www.ibm.com/software/reports/compatibility/clarity/index.html](https://www.ibm.com/software/reports/compatibility/clarity/index.html)).**
- **IBM Cognos Analytics Server.**
  For information about the specific supported versions, see *IBM Cognos Analytics 11.0 documentation* on IBM Knowledge Center ([http://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0](http://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0)).
- **IBM Cognos Framework Manager for package creation.**
- **If your datasource is SAP, then SAP Business Warehouse is required.** See the Knowledge Center for specific versions supported.
- **32-bit database client software is required on all platforms where the Cognos TM1 Package Connector is installed for the specific data source being used.** For SAP BW, this requires the SAP GUI or the SAP RFCSDK library files and DLLs. See "Enabling connectivity to SAP from Planning Analytics " on page 47.

**Installing the Cognos TM1 Package Connector**

Follow these steps to install the IBM Cognos TM1 Package Connector:

**Procedure**

1. Insert the Cognos TM1 Package Connector disc into the Cognos TM1 server machine.
2. Run `issetup.exe` found in the system folder for your operating system, for example `win32`.
   This launches the Cognos Installer.
3. Complete the installation prompts as appropriate for your installation.
   Install the Cognos TM1 Package Connector into its own directory. Do not install it into an existing Cognos Analytics folder.
4. On the Finish screen, select the **Start IBM Cognos Configuration** check box to launch the configuration window automatically. If you prefer, you can leave this box unchecked and launch the Cognos Configuration manually after you have installed.

**Installing the Cognos TM1 Package Connector on Windows 7 or Vista**

By default, the temp directory for the IBM Cognos TM1 Package Connector in Cognos Configuration is in the Program Files location.

Microsoft Vista or Windows 7 applications are not allowed to write in the Program Files location. This can result in an error when choosing the Cognos TM1 Package Connector from Cognos TM1 Perspectives on Windows 7 and Vista.

To avoid this problem, choose **Run as Administrator** when running Microsoft Excel. Or, in the Cognos Configuration for Cognos TM1 Package Connector you can change the **Temporary files location** setting to a directory that is writable by the user.

**Enabling connectivity to SAP from Planning Analytics**

To enable connectivity to the SAP server requires the 32-bit SAP RFCSDK library files and DLLs on both the IBM Cognos TM1 Admin Client and the IBM Cognos TM1 server.

To obtain these files on Microsoft Windows, install the SAP GUI. For UNIX see “Installing the Cognos TM1 Package Connector on UNIX ” on page 49.
Configuring the Cognos TM1 Package Connector

Once you have installed the IBM Cognos Analytics TM1 Package Connector, you have access to the IBM Configuration tool.

If the Cognos Configuration tool did not launch automatically, you can use the Start Menu > IBM Cognos > IBM Cognos Configuration option to launch it.

Procedure

1. Launch or open Cognos Configuration.
2. Select the Environment node on the Local Configuration Explorer window. The current settings for URI display.
3. Set the Gateway URI to point to the Cognos Analytics server where packages are deployed.
   
   The Gateway URI is in the form of
   ```
   http[s]://<host IP address>:<port>/<BI_SERVER_virtual_dir>/cgi-bin/cognos.cgi.
   ```
   
   See the TM1 Operations documentation or the Cognos Analytics documentation for more information on URIs.
4. Enter the URI in the Value column of the Other URI settings node.
   
   The Dispatch URI is in the form of
   ```
   http[s]://<host IP address>:<port>/p2pd/servlet/dispatch.
   ```
5. Once the URI is set, Save the configuration.
   
   The configuration progress window checks the status of your entries. When it is complete, click Close. If you encountered an error, check your settings and re-enter the values.
6. Close the Cognos Configuration window.

Setting the environment variable

On Microsoft Windows, after you have installed the IBM Cognos TM1 Package Connector, the TM1_PACKAGE_CONNECTOR system environment variable is set to the installation directory specified in the installation, for example C:\Program Files\ibm\Cognos\c10\bin.

You can change this location if necessary by editing the variable or creating a system environment variable.

The system variable is created by the most recent installation of the Cognos TM1 Package Connector.

The default Microsoft Windows installation location for Cognos TM1 Package Connector10 is C:\program Files \ibm\cognos\c10.

Setting the Cognos TM1 server configuration parameter (optional)

For the IBM Cognos TM1 TurboIntegrator process to run on the Cognos TM1 server, add the CognosTM1InterfacePath parameter to the TM1 server configuration file (tm1s.cfg) for the Cognos TM1 server where your data will reside after the import from the Cognos Analytics package.

**Attention:** The following information applies only when using a Microsoft Windows operating system.

The value of CognosTM1InterfacePath tells the Cognos TM1 Server where to find the Cognos TM1 Package Connector. This is not needed if the TM1_PACKAGE_CONNECTOR environment variable is defined. If this parameter is defined, it overrides the TM1_PACKAGE_CONNECTOR environment variable.

Enter the Cognos TM1 Package Connector location into the Cognos TM1 server tm1s.cfg file where the Cognos TM1 Package Connector is installed, for example:

```
CognosTM1InterfacePath=C:\Program Files\ibm\cognos\c10\bin
```

**Remember:**

CognosTM1InterfacePath variable is required only when using the Cognos TM1 Package Connector on UNIX (AIX, Solaris, Linux).
The TM1_Package_CONNETOR is a system environmental variable that identifies the Cognos TM1 Package Connector installation location on a Windows operating system.

cognosTM1InterfacePath is used in the Cognos TM1 server's tm1s.cfg on UNIX, however if it is added to a TM1server's tm1s.cfg file on Windows, it can overwrite the value set in TM1_Package_Connector.

**Cognos TM1 Package Connector on the client computer**
After you have installed and configured the IBM Cognos TM1 Package Connector on the Cognos TM1 server, install and configure another copy on the admin client computer. Use the same settings for both installations.

**Running the TM1 Package Connector**
See "Importing Data Using the IBM Cognos TM1 Package Connector" chapter of the *TM1 TurboIntegrator* documentation for details on how to run the Cognos TM1 Package Connector.

**Installing the Cognos TM1 Package Connector on UNIX**
To install the IBM Cognos TM1 Package Connector on UNIX follow the same instructions as for the Microsoft Windows installation making the following adjustments:

**Procedure**
2. Set the environment variable JAVA_HOME=<java_location> where <java_location> is the 32-bit Java installation location.
3. Copy the files at <Package_Connector_install_location>/bin/jre/6.0/lib/ext* to JAVA_HOME/jre/lib/ext.
4. Start cogconfig.sh from the <Package_Connector_install_location>/bin.
5. Place the 32-bit SAP RFCSDK library files and DLLs on the UNIX machine.
6. Set a locale that uses the UTF-8 code page to handle Unicode data. This is optional.
7. Configure the Cognos TM1 server by adding the parameter to the tm1s.cfg file:

   CognosTM1InterfacePath=/<Package_Connector_install_location>/bin

8. Configure your environment to use the SAP DLLs and the Cognos TM1 Package Connector:
   a) Include RFCSDK’s lib directory in the search path of:, $LD_LIBRARY_PATH or $LIBPATH
   b) Export (make public) these variables: $LIBPATH and $LD_LIBRARY_PATH
      • Where the libraries are found is different on various UNIX platforms:
         Solaris and Linux: LD_LIBRARY_PATH
         HPUX: SHLIB_PATH
         AIX: LIBPATH

**Cognos TM1 as a datasource with Cognos Analytics**

You can configure IBM Cognos Analytics to access Cognos TM1 servers and cubes from Cognos Report Studio and Cognos Query Studio.

To enable Cognos Analytics reporting against Cognos TM1 data sources, install the required Cognos TM1 API files on all Cognos Analytics servers that are running query and report services on Microsoft Windows. See “Enabling Cognos Analytics reporting on Cognos TM1 data sources” on page 50.

For more details about Cognos Analytics, see the following resources:

- *IBM Cognos Analytics 11.0 documentation* on IBM Knowledge Center (https://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0).
- *Administration Guide* > "Data Sources and Connections" > "TM1 Data Sources"
Enabling Cognos Analytics reporting on Cognos TM1 data sources

To enable Cognos Analytics reporting against Cognos TM1 data sources, use the Cognos TM1 Client installation program to install the required Cognos TM1 API files on all Cognos Analytics servers that are running query and report services on Microsoft Windows.

About this task

These steps apply to new installations of IBM Planning Analytics 2.0.0 and existing IBM Planning Analytics 2.0.0 installations that subsequently set up Cognos Analytics on systems running Microsoft Windows.

Procedure

1. Run the IBM Cognos TM1 Client installation program:
   • On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, right-click the issetup.exe file and click **Run as Administrator**.
   • For other Windows operating systems, double-click the issetup.exe file.
2. On the **Installation Location** page, select an adjacent directory on the Cognos Analytics server that is running query or report services on Microsoft Windows.
3. On the **Component Selection** page, expand **TM1 Rich Tier**, and select the following option:
   **TM1 APIs**
   Leave all the other check boxes unselected.
4. Follow the prompts and click **Finish** to complete the installation.

Cognos TM1 iWidgets and Cognos Workspace

You can display IBM Cognos TM1 Web data objects, such as cube views, charts, and Websheets, in IBM Cognos Workspace.

After successfully installing and running Cognos TM1 Web, you configure and work with Cognos TM1 iWidgets in your IBM Cognos Business Intelligence and Cognos Workspace environment.

Configuring Cognos Workspace to use Cognos TM1 iWidgets

To use IBM Cognos TM1 data in IBM Cognos Workspace, you must modify the following configuration files in your IBM Cognos Analytics installation.

- tm1_contribution.atom
- tm1_en.properties

For more information, see the topic Configuring IBM Cognos Workspace to use IBM Cognos TM1 data (https://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0/com.ibm.swg.ba.cognos.inst_cr_winux.doc/c_cnfgbux4tm1.html) in IBM Cognos Analytics 11.0 documentation on IBM Knowledge Center (https://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0).

Working with Cognos TM1 data in Cognos Workspace

You can access data objects developed in Cognos TM1 from within Cognos Workspace in real time. In Cognos Workspace, you can navigate TM1 content in the Content tab and add TM1 reports to the workspace under the following conditions:

- Cognos TM1 is installed and configured as part of your IBM Cognos Analytics environment. If you change the Cognos Analytics environment to use SSL, you must also change TM1 Web to use SSL.
- You have the permissions and capabilities to view and interact with Cognos TM1 content

For more information about using TM1 data in Cognos Workspace, see the following topics in IBM Cognos Workspace in IBM Cognos Analytics 11.0 documentation on IBM Knowledge Center (https://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0).
Cognos TM1 Applications integration with Cognos Analytics and the Cognos Connection portal

If your TM1 installation uses Cognos security for authentication, your Cognos Analytics users can use the Cognos Connection portal to open TM1 applications instead of the TM1 Applications portal. However, administrators still need to use TM1 Applications to configure and manage applications.

When you configure TM1 Applications to use Cognos security, you also enable the Cognos Connection portal to display a folder that contains links to the available TM1 applications. The exact list of displayed applications depends on the rights of the current user.

The planning.html file provides the information for Cognos Analytics and the Cognos Connection portal to display links to TM1 Applications. For more information, see “Using Cognos TM1 Applications with Cognos security” on page 218.

Note: You must have the TM1_PATH environment variable specified before connecting to Cognos TM1 under a UNIX environment.
Chapter 7. Planning Analytics single-computer installation

This type of installation puts Planning Analytics on a single computer running the Microsoft Windows operating system and using default settings. Use this kind of installation to get up and running quickly with Planning Analytics or to install a test or evaluation environment.

The single computer installation explains how to install and run:

- Cognos TM1 Admin Server
- Cognos TM1 Server
- Cognos TM1 Perspectives
- Cognos TM1 Architect
- Cognos TM1 Web
- Cognos TM1 Application Server
- Cognos TM1 Application Web
- Cognos Insight
- Cognos TM1 Performance Modeler

This installation scenario assumes:

- You are on a single 32- or 64-bit computer running the Microsoft Windows operating system.
- You use the WebSphere® Liberty web server software installed by the Planning Analytics installation.
- You use the default, standard Cognos TM1 authentication.
- You accept the default configurations including English as the language.

Not all Cognos TM1 components are available for 64-bit systems. If the component is available as a 64-bit installation, it is installed in a directory identified as a 64-bit location instead of in the default 32-bit installation directory location. For example, bin64 instead of bin.

Remember: Your browser may use a slightly different interface than the browser used in the steps described here.

Related concepts
Upgrading a single computer installation of Cognos TM1
This topic describes how to upgrade IBM Cognos TM1 on a single computer running on Microsoft Windows operating system.

Install the prerequisite software

You need the prerequisite software before you install IBM Cognos TM1.

About this task
If you do not have these prerequisites in place, the Cognos TM1 Installation wizard displays a message about them. If you are missing any of the prerequisites, you need to install them before you can continue. You may already have this software installed.

Procedure
For Cognos TM1 Perspectives or Cognos TM1 Architect, install or confirm that you have:

- Microsoft .NET Framework
- Microsoft Visual C++ 2010 Redistributable Package
- Microsoft Excel

Review the latest list of environments supported by IBM Cognos TM1 including information on operating systems, patches, web servers and web browsers, by using the Software Product Compatibility Reports tool (https://www.ibm.com/software/reports/compatibility/clarity/index.html).
Install the basic Cognos TM1 components

Use the installation program to select the components you want to install and the location on your computer where you want to install them.

Before you begin

- Ensure that you have administrator privileges for the computer on which you are installing software.
- Ensure that the computer has a TEMP system variable that points to the directory where you want to store temporary files. During installation, files are temporarily copied to this directory.
- Some Microsoft Windows web server software does not support non-ASCII characters in directory names. Ensure that the directories where you install IBM Cognos TM1 components contain only ASCII characters in the path name.
- Ensure that all of the prerequisite software has been installed.
- There are several varieties of installation program available to you. Depending on which operating system you are using, go to the directory where the one you want to install is stored:
  - TM1 for 32-bit Windows
  - TM1 for 64-bit Windows

Procedure

1. To start the installation:
   - Go to the download location for the Cognos TM1 installation program that you want to use.
   - Or, insert the IBM Cognos TM1 product disk.
     If the installation wizard does not open automatically, go to the operating system directory to locate the `issetup.exe` command.

2. Depending on your operating system software, right-click or double-click the `issetup.exe` file:
   - On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, right-click the `issetup.exe` file and click `Run as Administrator`.
   - For all other Windows operating system software, double-click `issetup.exe`.

3. Follow the directions in the installation wizard to select all of the components.
   The components that you need to run the software are selected by default.
   If you do not want to install Cognos Insight or Cognos TM1 Performance Modeler, skip to Step 5.

4. To include Cognos Insight in the installation, expand the TM1 Rich Tier and then select Cognos Insight.

5. To include Cognos TM1 Performance Modeler in the installation, select TM1 Performance Modeler.

6. Click Next until the installation begins.
   The installation runs until all components have been installed. This may take a significant amount of time.
   **Tip:** For earlier Windows operating systems, you can check Start Cognos Configuration on the last screen of the installation to immediately run the configuration tool. On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, do not check that box and instead use the Start menu so you can choose Run as Administrator when launching the Cognos Configuration tool.

7. Click Finish.

Use Cognos Configuration to start the Cognos TM1 components

Before you can use Cognos TM1, you need to start the IBM Cognos TM1 Admin Server, the TM1 Application Server, and at least one IBM Cognos TM1 sample database server. This action registers the servers in the Windows service registry. Then you need to configure the services so that they run under a specific user. Servers that are running in a Microsoft Windows environment are referred to as "services."
Procedure

1. If it is not already running, start the configuration tool by clicking Start > All Programs > IBM Cognos TM1 > IBM Cognos Configuration.

   **Remember:** Right-click and use Run as Administrator on Windows Vista, Windows 7, and Windows Server 2008 operating system software.

2. In the Cognos Configuration Explorer pane, expand Local Configuration > Environment.

3. Right-click each component that you want to start and select Start:
   a) TM1 Admin Server
      It is best to start the TM1 Admin Server first since that server must be running before any sample database can run.

      The Cognos Configuration tool prompts you to save any edits made to the configuration settings. This process will take longer the first time you save a setting as the cryptographic settings and other actions take place for the first time. Click Yes in response to the message asking you to save the settings. You will also see this type of message when you close Cognos Configuration.
   b) TM1 Application Server

4. Expand the Data Access > TM1 Server node and right-click each Cognos TM1 sample database server that you want to start and select Start.

   For example, start the provided sample databases:
   a) SData
   b) Planning Sample
   c) GO_New_Stores

5. Click File > Save.

6. Now that the services are all registered in the Windows services registry, you can reconfigure them to use a specific user account:
   a) In Cognos Configuration, right-click each service you want to change and select Stop.
   b) Open Windows Services.
   c) Right-click on each service and select Properties.
   d) Enter a user name and password valid on your system with the appropriate rights for the service.

      See “User accounts for running Cognos TM1 services on Windows” on page 15.
   e) Close Windows Services.

7. In Cognos Configuration, right-click each server and select Start.

8. Close Cognos Configuration.

Run Cognos TM1 Perspectives

After installation, you can run IBM Cognos TM1 Perspectives.

Procedure

1. From the Windows Start menu, click IBM Cognos TM1 > Perspectives.

   If the component does not start, ensure that the servers you started with Cognos Configuration are still running.

2. Click Enable Macros when the security warning displays.

3. Click TM1 > Server Explorer, then expand TM1 to see the servers that are available.

4. Double-click a Cognos TM1 Server to log in.

   For SData, Planning Sample, or GO_New_Stores use these login credentials:

   - **User name:** admin
   - **Password:** apple
Tip: To load Cognos TM1 Perspectives automatically whenever you start Microsoft Excel, add `TM1_location/Tm1p.xla` to Microsoft Excel's add-in tool list, where `TM1_location` is the file directory where Cognos TM1 is installed. After completing this step, "TM1" displays on the Microsoft Excel menu bar.

### Run Cognos TM1 Architect

After installation, you can run the non-Microsoft Excel version of IBM Cognos TM1 called IBM Cognos TM1 Architect.

**Procedure**

1. From the Windows **Start** click **All Programs > IBM Cognos TM1 > Architect**. If Cognos TM1 Architect does not start up, ensure that the servers you started with Cognos Configuration are still running.
2. Expand **TM1** to see the servers that are available.
3. Double-click a Cognos TM1 Server to log in.
4. Use these credentials to log into the SData, Planning Sample, or GO_New_Stores sample databases:
   - **User name:** admin
   - **Password:** apple

### Run Cognos TM1 Web

The IBM Cognos TM1 installation configures IBM Cognos TM1 Web to run with the provided version of the WebSphere® Liberty web application server.

**Procedure**

1. In a web browser, enter the following URL: `http://localhost:9510/tm1web/`
   - You can use the "localhost" term to make the computer location default to use your current computer. Or you can explicitly enter the IP address or name for the computer where you installed Cognos TM1.
2. Depending on what other components you have launched, the Log In box values will usually be automatically entered for you. If they are not, you can enter or change those values as needed.
3. Click **Log In**.

### Run the Cognos TM1 Application Web

IBM Cognos TM1 Application Web is the web-based client and portal used to run planning applications built using IBM Cognos TM1 data.

**About this task**

Cognos TM1 Application Web is also used to launch IBM Cognos TM1 Performance Modeler and can be used to launch IBM Cognos Insight.

**Procedure**

1. In a web browser, enter the following URL: `http://localhost:9510/pmpsvc` where 9510 is the usual port used by Cognos TM1 Application Server. If you used a different port when you installed, enter that other value here.
2. Specify the configuration settings the Admin Host, server, types of clients, and the URL for Cognos TM1 Application Web.
3. Click **OK**.
4. Enter **admin** and **apple** for the **username** and **password** for the sample TM1 servers.
5. To complete the installation, dismiss the message about editing the following parameters in the `tm1s.cfg` file.
   - `AllowSeparateNandCRules`
IBM Cognos TM1 Performance Modeler is available as an unselected component of the IBM Cognos TM1 installation. You launch Cognos TM1 Performance Modeler from the IBM Cognos TM1 Applications portal.

**About this task**

After Cognos TM1 Performance Modeler is installed, you can also start the program from the desktop icon that gets installed or from the Microsoft Windows Start menu. Click **Start > All Programs > IBM Cognos TM1 Performance Modeler > IBM Cognos TM1 Performance Modeler**.

**Procedure**

1. From the Cognos TM1 Applications portal, click the **Open Performance Modeler** icon.

   **Remember:** Depending on your browser, you may see slightly different steps used to install downloaded components such as Cognos TM1 Performance Modeler.

2. Click **OK** with the **Open with IBM Cognos RCP Application Updater** selected on the **provagent.cogrcp_modeler** dialog box.

3. Click **OK** to dismiss the configuration settings message and complete the installation.

   You do not need to edit those parameters until you begin working with the clients.

4. Click the **Model Design** tab to see the GO_New_Stores data cubes and structure.

5. Click the **Application Design** tab to build a new application using GO_New_Stores.

   The **TM1 Performance Modeler** documentation provides details on building models.

---

IBM Cognos Insight is available as an unselected component of the IBM Cognos TM1 installation. Cognos Insight can be used as a client for contributing to applications and also as a dynamic workspace builder for creating interactive contributing user experiences.

**Procedure**

1. To run Cognos Insight, complete one of the following actions:

   - From the Cognos TM1 Applications portal, click the Cognos Insight icon.
   
     Or you can:
   
     - Right-click a node of an application that has been configured to use Cognos Insight.
     - You can also click the Cognos Insight desktop icon that gets installed.
     - Use the Microsoft Windows Start menu. Click **Start > All Programs > IBM Cognos Insight > IBM Cognos Insight**.
     - Cognos Insight can also be installed as a stand-alone component.

   **Remember:** Depending on your browser, you may see slightly different steps used to install downloaded components such as Cognos Insight.

2. Click **OK** with the **Open With IBM Cognos RCP Application Updater** selected on the **provagent.cogrcp_insight** dialog box.

3. If you see an Executable file warning, click **OK** to proceed with the installation.
What to do next

See the Cognos Insight documentation for details about creating Cognos Insight workspaces and using Cognos Insight as a client for contributing to applications.

Use Cognos TM1 Application Web

The IBM Cognos TM1 Application Web is a web-based client used to contribute to planning applications and to work with IBM Cognos TM1 Websheets.

Before you begin

You need a planning application before you can use Cognos TM1 Application Web. The application designer identifies which clients can be used with a particular application.

Tip: You can see which clients the designer made available for an application by right-clicking a node of the application when it is displayed in the IBM Cognos TM1 Application Web.

Procedure

1. In Cognos TM1 Application Web, click a planning application.
2. Click Open Cognos TM1 Application to launch the Cognos TM1 Application Web client.

See the TM1 Architect, Perspectives, and TM1 Web and the TM1 Applications documentation for details on how to contribute to an application using Cognos TM1 Application Web.

Other Cognos TM1 components

The IBM Cognos TM1 installation makes many other components available and has many other ways to customize the installation.

See the following the documentation and components for details about other ways to install, deploy, and configure Cognos TM1:

Other Cognos TM1 components

See the related documentation for details on these additional components for Cognos TM1.

IBM Cognos TM1 Operations Console

The IBM Cognos TM1 Operations Console is a tool used by administrators to monitor the activity of TM1 servers on the network. See IBM Cognos TM1 Operations Console for more information.

Scorecarding with IBM Cognos TM1

Scorecarding with IBM Cognos TM1 integrates scorecarding and strategy management capabilities into Cognos TM1 to provide better integration of performance management with planning. You can create scorecard solutions that contain interactive impact diagrams, strategy maps, and custom diagrams that monitor your key performance indicators (KPIs). For more information, see IBM Cognos TM1 Performance Modeler.

Cognos TM1 integration with other IBM Cognos software

See the "Cognos TM1 integration with other IBM Cognos software" chapter for details on the following ways to integrate Cognos TM1 with other IBM Cognos software.

IBM Cognos Analytics security

You can configure the Cognos TM1 server to authenticate users using IBM Cognos Analytics security.

IBM Cognos Analytics reporting

You can configure IBM Cognos Analytics to access Cognos TM1 servers and cubes from Cognos Analytics applications such as Cognos Report Studio and Cognos Query Studio.
iWidgets in IBM Cognos Workspace

You can display IBM Cognos TM1 Web data objects, such as cube views, charts, and Websheets as iWidgets in IBM Cognos Workspace.

IBM Planning Analytics for Microsoft Excel

Use IBM Planning Analytics for Microsoft Excel with IBM Cognos TM1 data sources to enter and write back values to TM1 cubes.

IBM Cognos TM1 Package Connector

The IBM Cognos TM1 Package Connector is used to import IBM Cognos Framework Manager packages. See IBM Cognos TM1 TurboIntegrator for more information.

Configuring client computers to export Cognos TM1 data in PDF format

To export IBM Cognos TM1 data to Adobe PDF format from IBM Cognos TM1 client applications running in Microsoft Windows, set PDFCamp as your default printer. These steps apply to IBM Cognos TM1 Perspectives, IBM Cognos TM1 Architect, and IBM Cognos TM1 Web.

Before you begin
Verify that PDFCamp is installed correctly by confirming that PDFCamp Printer Driver exists in the Windows Printers and Faxes configuration.

Procedure
1. In Windows, open the Printers and Faxes configuration window.
2. Right-click PDFCamp Printer Driver and select Set as Default Printer.
Use this section to install and configure the IBM Cognos TM1 Admin Server and IBM Cognos TM1 Server on a dedicated computer running either the Microsoft Windows, UNIX, or Linux operating system.

The Cognos TM1 Admin Server can reside on the same computer as the Cognos TM1 Server or another computer on your network.

The server components can be installed on either 32-bit or 64-bit computers running the Microsoft Windows operating system. For UNIX or Linux operating systems, only 64-bit computers are supported.

For more details on deployment scenarios and options, see “Deploying Cognos TM1 Admin Server and TM1 Server” on page 28.

**Server components**

The Cognos TM1 server components include the following:

- Cognos TM1 Admin Server - required
- Cognos TM1 Server - required
- Cognos TM1 Tools - optional

These components are grouped together under the TM1 Data Tier in the installation program.

**IBM Cognos Configuration**

By default, IBM Cognos Configuration is also installed with the required components on Windows, UNIX, and Linux as the primary tool for managing the Cognos TM1 Admin Server and Cognos TM1 Server. This tool provides a user interface for stopping and starting the server components.

---

**Installing Cognos TM1 Server on Windows**

You can install the Cognos TM1 server components on either 32-bit or 64-bit computers running the Microsoft Windows operating system. Use this type of installation to install and run the Cognos TM1 server on a dedicated computer that remote users can access.

**Related concepts**

Upgrading Cognos TM1 Server on Windows

You can upgrade the Cognos TM1 server components on either 32-bit or 64-bit computers running the Microsoft Windows operating system.

**Install Cognos TM1 Server components on Windows**

Install the IBM Cognos TM1 Server components on a computer that uses Microsoft Windows.

**Procedure**

1. Choose the installation program that matches the type of computer being used for the Cognos TM1 Server:
   - Cognos TM1 32-bit for Windows
   - Cognos TM1 64-bit for Windows
2. On Microsoft Windows Vista, Windows 7 or Windows Server 2008 operating system software, right-click the `issetup.exe` file and click **Run as Administrator**. For other operating systems, double-click the `issetup.exe` file to start the installation wizard.
3. Follow the directions in the installation wizard and advance to the **Component Selection** page.
4. Unselect all the components. By default, all components are initially selected.
5. Expand the **TM1 Data Tier** and select the following components:
   - **TM1 Server**
6. Follow the directions in the installation wizard to complete the installation.
7. In the **Finish** page of the installation wizard, click **Finish**.

**Use Cognos Configuration to start Cognos TM1 servers on Windows**

Before you can use the Cognos TM1 Server, you need to start the IBM Cognos TM1 Admin Server in IBM Cognos Configuration. Servers that are running in a Microsoft Windows environment are referred to as "services."

**About this task**

By default, Cognos Configuration registers TM1 server components to run as Windows services using the predefined Local System account. However, the TM1 components should be run as a specific user.

**Important:** Change the following Cognos TM1 services that are created by Cognos Configuration so that the services run under a specific user account on Microsoft Windows:

- Cognos TM1 Admin Server
- Cognos TM1 Server

For details, see, “User accounts for running Cognos TM1 services on Windows” on page 15.

**Procedure**

1. If it is not already running, start the configuration tool by clicking **Start > All Programs > IBM Cognos TM1 > IBM Cognos Configuration**.
   
   **Remember:** Right-click and use **Run as Administrator** on Windows Vista, Windows 7, and Windows Server 2008 operating system software.

2. In the Cognos Configuration **Explorer** pane, expand **Local Configuration > Environment**.

3. Right-click each server that you want to start and select **Start**:
   
   a) **TM1 Admin Server**

   **Tip:** The Cognos Configuration tool prompts you to save any edits made to the configuration settings. This process will take longer the first time you save a setting as the cryptographic settings and other actions take place for the first time. Click **Yes** in response to the message asking you to save the settings. You will also see this type of message when you close Cognos Configuration.

4. Expand the **Data Access > TM1 Server** node and right-click each Cognos TM1 sample database server that you want to start and select **Start**.

   For example, start the provided sample databases:
   
   a) **SData**
   
   b) **Planning Sample**
   
   c) **GO_New_Stores**

5. Click **File > Save**.

6. Edit the entries for the Cognos TM1 components in Windows Services so that they run under a specific user account.

   For details, see, “Changing Cognos TM1 services to run as a specific user account on Windows” on page 62.

**Changing Cognos TM1 services to run as a specific user account on Windows**

When using IBM Cognos Configuration to manage Cognos TM1 services, you need to change the default user account that runs the Microsoft Windows services for the Cognos TM1 Admin Server and any Cognos TM1 servers that you start with Cognos Configuration. By default, Cognos Configuration registers these services under the predefined Microsoft Windows Local System account. However, these services should be changed to run as a specific user account.
Before you begin

Review the required account privileges for using a user account other than Local System account. For details, see “User accounts for running Cognos TM1 services on Windows” on page 15.

About this task

Use Windows Services to change the user account for a Cognos TM1 component that is configured to run as a service.

Procedure

1. Open IBM Cognos Configuration.
2. Expand the Explorer > Local Configuration tree:
   a) Expand the Local Configuration > Environment node.
   b) Expand the Data Access > TM1 Server node.
3. Right-click on each Cognos TM1 component you want to change and select Stop.
   - TM1 Admin Server
   - Cognos TM1 Server name - the name for each server you have in Cognos Configuration.

   Tip: You do not need to stop the TM1 Application Server component.
5. Locate the Cognos TM1 component that you want to update and change the user account for the Windows service that runs it:
   a) Right-click on the service, select Properties and then click the Log On tab.
   b) Enter a new user name and password for the service.
   c) Repeat these steps for any other Cognos TM1 component running as a Windows service that you want to change.
7. In Cognos Configuration, restart each service that you changed:
   - Right-click on the item and select Start
8. Close Cognos Configuration.

Installing Cognos TM1 Server on UNIX or Linux

You can install the Cognos TM1 server components on a 64-bit computer running either a UNIX or Linux operating system. Use this type of installation to install and run the Cognos TM1 server on a dedicated computer that remote users can access.

Managing components after installing

After completing the installation, you can use IBM Cognos Configuration to manage the servers you want to run. You can also use the start and stop scripts that are provided with the installation.

Accessing and viewing data

To view and interact with the data stored in a Cognos TM1 server running on a UNIX system, use one of the Cognos TM1 clients on a computer running Microsoft Windows.

Tip: You can use Cognos TM1 Architect on a computer running Microsoft Windows to remotely log into a server running on a UNIX system.

Related concepts

Upgrading Cognos TM1 Server on UNIX or Linux
You can upgrade the Cognos TM1 server components on a 64-bit computer running either a UNIX or Linux operating system.

Install Cognos TM1 Server components on UNIX or Linux operating systems

Use the installation wizard to select the server components for installation and the installation location on your computer.

For a complete list of supported UNIX and Linux operating systems, create a detailed system requirements report for IBM Planning Analytics Local software by using the Software Product Compatibility Reports tool (https://www.ibm.com/software/reports/compatibility/clarity/index.html).

Before you begin

When you install Cognos TM1 on UNIX or Linux operating systems, configure the components to run as a user with appropriate permissions for Cognos TM1 binaries and TM1 databases.

Note: Only the Cognos TM1 server components can run on UNIX or Linux. You cannot run Cognos TM1 clients on UNIX.

Complete the following prerequisites:

1. Familiarize yourself with Cognos TM1 terms and concepts.
   For more information, see the TM1 Architect, Perspectives, and TM1 Web documentation and the TM1 for Developers documentation.

2. Determine which components you want to install and how they must be distributed across your hardware environment.
   For more information on how to design the optimal TM1 environment, see Chapter 3, “Architecture,” on page 17 and Chapter 4, “Deployment,” on page 27.

3. Determine your hardware and software requirements.
   Review the latest list of environments that are supported by Cognos TM1, including information on operating systems, patches, web servers, and web browsers, by creating a detailed system requirements report for IBM Planning Analytics Local software with the Software Product Compatibility Reports tool (https://www.ibm.com/software/reports/compatibility/clarity/index.html).

   • If you plan to import data from another relational database, install your database software first.
   • If you are running Oracle on UNIX, install the appropriate UNIX client software for your Oracle database on the UNIX machine. Use the Oracle Network Configuration Assistant to specify a local net service name.
   • If you are running on Red Hat Enterprise Linux or Ubuntu, install the required runtime C/C++ libraries that are listed in the Prerequisites tab of the Detailed Systems Requirements Report or verify that they are already available.

4. Install your own copy of the Java Runtime Environment (JRE).
   The Cognos TM1 installation does not provide a JRE for UNIX installations.

5. Check the X-server software on your UNIX machine.
   To run the Graphical User Interface UNIX Installation Wizard, X-server software must be installed on the machine that hosts your TM1 components. You must install X-server client software on the machine from which you run the TM1 Installation Wizard. If X-server software is not installed on the UNIX machine, run the console installation.
   If you do not use X-server software, you must use an unattended installation. For more information, see Appendix C, “Setting up unattended installations and configurations,” on page 313.

6. Install and configure the Cognos TM1 components to run as a user with appropriate permissions for Cognos TM1 binaries and TM1 databases.

Procedure

1. Go to the location where the installation files were downloaded and extracted, or insert the product disk.
2. Go to the operating system directory and then type the following command:
   ./issetup
3. Follow the directions in the installation wizard and copy the required files to your computer.
4. Select the components that you want to install. By default, all components are installed.

5. In the **Finish** page of the installation wizard, click **Finish**.

6. If you are installing the IBM Cognos TM1 Application server on Linux with a Sun Java Runtime Environment, you must also complete the following steps to install required Xerces files.
   b) Download the binary distribution for Java: Xerces-J-bin.2.11.0.zip.
   c) Extract xercesImpl.jar and xml-apis.jar and copy them to your `tm1_install_dir/webapps/pmpsvc/WEB-INF/lib` directory.
   d) Restart the TM1 Applications service.

**Update your Java environment**

To be able to start IBM Cognos Configuration on UNIX and Linux operating systems you must set the `JAVA_HOME` environment variable.

**Procedure**

Ensure that the `JAVA_HOME` environment variable is set to a valid JRE location.

**Start Cognos Configuration on UNIX or Linux operating systems**

Use IBM Cognos Configuration to configure your Cognos TM1 components and to start and stop services.

**Before you begin**

You must have set the `JAVA_HOME` environment variable before you can start IBM Cognos Configuration.

**Procedure**

Go to the `install_location/bin64` directory and then type

`./cogconfig.sh`

**Starting a Cognos TM1 Server on UNIX**

You can use IBM Cognos Configuration to start and stop your Cognos TM1 servers on UNIX or Linux. You can also use the start and stop scripts that are provided with the installation.

**About this task**

On UNIX, you can also use the following commands and scripts to start and stop Cognos TM1 server components. See "Starting a UNIX TM1 Server" and "Stopping a UNIX TM1 Server" in the *TM1 Operations* documentation for more details.

- `startup_tm1admsrv.sh` - start Cognos TM1 Admin Server
- `shutdown_tm1admsrv.sh` - shutdown Cognos TM1 Admin Server
- `startup_tm1s.sh` - start Cognos TM1 Server
- `tm1srvstop.exe` - utility for stopping a Cognos TM1 Server
- `shutdown_tm1s.sh` - alternate method to shut down a Cognos TM1 Server
- `startup_pmpsvc.sh` - start Cognos TM1 Application Server
- `shutdown_pmpsvc.sh` - shutdown Cognos TM1 Application Server

**Procedure**

1. Start IBM Cognos Configuration.
2. In the **Explorer** window, click **Local Configuration > Environment**.
3. Right-click **Cognos TM1 Admin Server**, and click **Start**.
4. Under **Data Access > Cognos TM1 Server**, right-click a server, and click **Start**.
Cognos TM1 Object Names and Character Encoding for Cognos TM1 Servers on UNIX and Windows Systems

The following guidelines are related to ensuring correct and consistent character encoding in your Cognos TM1 object names for objects such as cubes, views, dimensions, and subsets.

Moving Cognos TM1 Databases Between Windows and UNIX Systems

Do not manually move and use Cognos TM1 database files from a Microsoft Windows system to a UNIX system (or from UNIX to Windows) when your Cognos TM1 object names contain non-ASCII characters (characters beyond the original 128 ASCII character set).

Instead of manually moving files, use the tm1xfer utility to move TM1 data between different platforms.

tm1xfer utility

The tm1xfer utility compresses and moves TM1 server objects from one platform to another platform while preserving mixed case names for objects on both Microsoft Windows and UNIX platforms. For more information, see the "tm1xfer" topic in TM1 Operations.

Manually moving files

Manually moving files is an issue because of the possible incompatible character encoding or mapping between these two platforms. The Windows operating system stores directory and file names in UTF-16 character encoding, while the UNIX operating system can store names using different character encodings, depending on which locale is currently being used.

For example, Cognos TM1 object names for cubes and dimensions that include non-ASCII characters would not display correctly in Cognos TM1 client applications if the Cognos TM1 database files were copied from one platform and run on another where different character encoding is used.

Use the same locale as the UNIX system when starting a Cognos TM1 Server with non-ASCII characters in the name

If your Cognos TM1 object names (for cubes, views, dimensions, subsets, etc.) include non-ASCII characters, use the same locale when starting up a Cognos TM1 server on a UNIX system.

This ensures that Cognos TM1 object names and the related Cognos TM1 directory and file names on the UNIX system always use the same character encoding. Starting the Cognos TM1 server under a different locale than previously used could cause Cognos TM1 object names to display incorrectly if the names were originally created and stored in a different locale.

For example, Cognos TM1 object names for cubes and dimensions that are saved when the server is running under the en_US locale might not display correctly if the server is re-started using the ja_JP locale.

Cognos TM1 language configuration

IBM Cognos TM1 automatically configures language for the Cognos TM1 Server, client user interfaces, and messages by detecting the current language of the operating system user account or web browser where they are running. You can override this automatic configuration and configure Cognos TM1 to use a specific language from any of the supported languages.

For details about supported languages, see “Cognos TM1 language codes” on page 67.

Automatic detection of language

Cognos TM1 uses the following process to automatically detect and configure language at runtime:

1. The Cognos TM1 server and clients that run in Microsoft Windows try to detect and use the language that is configured in the locale of the operating system for the current user. On Windows, this is configured with Regional and Language Options. The detected language will be used if it matches one of the supported languages.

Important: By default, any Cognos TM1 Server that you start with IBM Cognos Configuration is initially configured to run as a Windows service using the Windows Local System reserved user account. If you want the Cognos TM1
Server to use the language based on a specific user account, change the service to run as that user and configure the language for the user with the Windows Regional and Language Options. For details, see “Changing Cognos TM1 services to run as a specific user account on Windows” on page 62.

2. The server and client components also check for an override based on the Cognos TM1 Language configuration parameter:
   - The server checks the Language parameter in the Tm1s.cfg configuration file. If a valid language code is configured, that language is used for the server messages.
   - The client components check the Language parameter in the Tm1p.ini configuration file. If a valid language code is configured, that language is used in the user interface.

3. If the language configured in any of the above does not match a valid supported language, English is used.

**Language configuration for Cognos TM1 components**

Languages are set separately for the following Cognos TM1 components.

<table>
<thead>
<tr>
<th>Component</th>
<th>Language Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognos TM1 Server</td>
<td>Use the Language parameter in the Tm1s.cfg file to configure a specific language for a Cognos TM1 Server. For details, see “Configuring language for the Cognos TM1 server” on page 68</td>
</tr>
<tr>
<td>Cognos TM1 Architect, Cognos TM1 Perspectives</td>
<td>Use the Language parameter in the Tm1p.ini file to configure a specific language for Cognos TM1 clients that run on Microsoft Windows. For details, see “Configuring language for Cognos TM1 clients on Windows” on page 68</td>
</tr>
<tr>
<td>Cognos TM1 Web</td>
<td>Use the language settings in your web browser to select a specific language for Cognos TM1 Web. For details, see “Configuring web browser language for Cognos TM1 Web” on page 69</td>
</tr>
</tbody>
</table>

**Cognos TM1 language codes**

The following table summarizes the language codes for the supported languages in IBM Cognos TM1.

<table>
<thead>
<tr>
<th>Language</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazilian Portuguese</td>
<td>bra</td>
</tr>
<tr>
<td>Croatian</td>
<td>hrv</td>
</tr>
<tr>
<td>Czech</td>
<td>csy</td>
</tr>
<tr>
<td>Chinese (Simplified)</td>
<td>sch</td>
</tr>
<tr>
<td>Chinese (Traditional)</td>
<td>tch</td>
</tr>
<tr>
<td>Danish</td>
<td>dan</td>
</tr>
<tr>
<td>Dutch</td>
<td>nld</td>
</tr>
<tr>
<td>German</td>
<td>deu</td>
</tr>
<tr>
<td>Finnish</td>
<td>fin</td>
</tr>
<tr>
<td>French</td>
<td>fra</td>
</tr>
<tr>
<td>Hungarian</td>
<td>hun</td>
</tr>
</tbody>
</table>
Configuring language for the Cognos TM1 server

Use the Language parameter in the Tm1s.cfg file to configure a specific language for the IBM Cognos TM1 Server.

About this task

The Language configuration parameter for the Cognos TM1 Server controls the language for messages generated by the server. The parameter also applies to the user interface of the dialog box when you run the server as an application instead of a Windows service.

For more details about the Cognos TM1 Server Language parameter, see Language parameter in the Tm1s.cfg file.

Note: If you want the Cognos TM1 Server to use a language based on a user account instead of the Language parameter, change the Microsoft Windows service that runs the Cognos TM1 Server to run as a specific user. For details, see “Changing Cognos TM1 services to run as a specific user account on Windows” on page 62.

Procedure

1. Use a text editor to open the Cognos TM1 Server configuration file, Tm1s.cfg.
   For location details, see “Location of the tm1s.cfg File” on page 255.
2. Edit or add the Language parameter with the language code you want to use.
   For example:
   Language=deu
   For a list of supported language codes, see “Cognos TM1 language codes” on page 67.
3. Save and close the Tm1s.cfg file.
4. Restart the Cognos TM1 Server.

Configuring language for Cognos TM1 clients on Windows

Use the Language parameter in the Tm1p.ini file to configure a specific language for IBM Cognos TM1 clients that run on Microsoft Windows such as Cognos TM1 Architect and Cognos TM1 Perspectives.

About this task

For details about this parameter, see Language parameter in the Tm1p.ini file.
Note: The Language parameter for Cognos TM1 clients is separate from the parameter of the same name for the Cognos TM1 Server.

Procedure
1. Use a text editor to open the Cognos TM1 client configuration file, Tm1p.ini.
   For location details, see “Location of the Tm1p.ini File” on page 303.
2. Edit or add the Language parameter with the language code you want to use.
   For example:
   
   Language=sch
   
   For a list of supported language codes, see “Cognos TM1 language codes” on page 67.
3. Save and close the Tm1p.ini file.
4. Restart the Cognos TM1 client.

Configuring web browser language for Cognos TM1 Web
The language settings in your web browser determine which language is used in the IBM Cognos TM1 Web interface.

About this task
Follow these general steps to configure Microsoft Internet Explorer and Mozilla Firefox to display IBM Cognos TM1 Web in your primary language. For more detailed information, see the documentation for your web browser.

Procedure
1. Depending on which web browser you are using, use the available language options to select and configure your primary language.
   - In Internet Explorer, the language options are typically located under Tools menu > Internet Options > General > Languages.
   - In Firefox, the language options are typically located under Tools menu > Options > Content > Languages.
2. Add your language to the language list.
3. Organize the list so that your preferred language is at the top of the list.

Creating a new empty Cognos TM1 server in Cognos Configuration
You can use IBM Cognos Configuration to create a new empty Cognos TM1 server.

About this task
These steps create the tms.cfg configuration file and other required files for a new empty Cognos TM1 Server. Perform these steps only on an empty directory that does not contain any other files.

Tip: If you want to add an existing TM1 Server to Cognos Configuration, see “Adding an existing Cognos TM1 server in Cognos Configuration” on page 70.

Procedure
1. Use your operating system to create an empty folder for the new Cognos TM1 Server files.
2. Open IBM Cognos Configuration.
3. In the Explorer panel, under Data Access, right click TM1 Server, and click New Resource > TM1 Server Instances.
4. In the Name box, enter a name for your server.
5. In the Type box, select TM1 Server instance and click OK.

The new server is added under the TM1 Server node and the properties for it are displayed in the TM1 Server instances - Resource Properties list.
6. In the **Resource Properties** list, click the entry box and click the edit icon.
7. Enter or browse to the path for the empty folder where you want to create the new Cognos TM1 server.
   
   **Tip:** Do not include the file name in this path. You only need to select the folder.
8. Click **Select**.
9. Click **File > Save**.
   
   A new `tms.cfg` file is automatically created in the folder. Values for the following configuration parameters are automatically added to the file.
   
   - The `ServerName` parameter is set to the server name that you specified.
   - The `DataBaseDirectory` parameter is set to the data directory that you specified.
   - The `PortNumber` parameter is set to a random auto-generated port number.
10. If you are using this database with Cognos TM1 Applications, edit the `tms.cfg` file with the required parameter values.
    
    For details, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.
11. In the Cognos Configuration **Explorer** panel, right-click the new server and click **Start**.
    
    The basic files for the new Cognos TM1 server are created in the folder.
12. To test the new Cognos TM1 server, start Cognos TM1 Architect and log in to the database with user name `admin` and no password.

**Adding an existing Cognos TM1 server in Cognos Configuration**

You can manage an existing Cognos TM1 server by adding it to IBM Cognos Configuration.

**Before you begin**

This procedure requires that you have an existing Cognos TM1 data directory with a valid `tm1s.cfg` file.

**Procedure**

1. Open IBM Cognos Configuration.
2. In the **Explorer** panel, under **Data Access**, right click **TM1 Server**, and click **New Resource > TM1 Server Instances**.
3. In the **Name** box, enter the same name that is set for the `ServerName` parameter in the `tm1s.cfg` file.
4. In the **Type** box, select **TM1 Server instance** and click **OK**.
   
   The new server is added under the **TM1 Server** node and the properties for it are displayed in the **TM1 Server instances - Resource Properties** list.
5. In the **Resource Properties** list, click the box to the right of the **TM1 Server configuration path** and click the edit icon.
6. Enter or browse to the path for the existing Cognos TM1 data directory.
   
   **Tip:** Do not include the file name in this path. You only need to select the folder.
7. Click **Select**.
8. Click **File > Save**.
9. In the Cognos Configuration **Explorer** panel, right-click the new server and click **Start**.
10. To test this Cognos TM1 server, start Cognos TM1 Architect and log in to the database.
Specifying the location of the Cognos TM1 Admin Host

You specify the location of the IBM Cognos TM1 Admin Host differently for clients (user interfaces) and remote servers.

About this task

The Admin Host is the computer where the Cognos TM1 Admin Server is running.

Procedure

1. To specify the Admin Host referenced by clients such as Cognos TM1 Architect or Cognos TM1 Perspectives:
   - Change the Tm1p.ini file by using the Cognos TM1 Options menu in Server Explorer.
   - You can also manually edit the AdminHost parameter in the Tm1p. ini client configuration file.
   For more information, see Appendix B, “The Tm1p.ini Client Configuration File,” on page 303.

2. To specify the Admin Host with which remote servers register, use one of the following methods:
   - Edit the AdminHost parameter in the Tm1s.cfg file.
   - Use the -v command-line parameter when you bring up the Windows version of the Cognos TM1 server.
   For information, see Appendix A, “The tm1s.cfg Server Configuration File,” on page 255.

Specifying multiple Cognos TM1 Admin Hosts

You can configure an IBM Cognos TM1 client to reference multiple Admin Hosts by separating host names with semicolons.

About this task

A client that specifies multiple Admin Hosts can access any Cognos TM1 servers that are registered with the Cognos TM1 Admin Servers on the specified hosts.

Procedure

To specify multiple Admin Hosts referenced by clients such as Cognos TM1 Architect or Cognos TM1 Perspectives, separate the host names with semicolons:
   - Change the Tm1p.ini file by using the Cognos TM1 Options menu in Server Explorer.
   - You can also manually edit the AdminHost parameter in the Tm1p. ini client configuration file.
   For more information, see Appendix B, “The Tm1p.ini Client Configuration File,” on page 303.

Advanced Cognos TM1 Admin Server and Cognos TM1 Server configuration

This section describes advanced configuration to customize IBM Cognos TM1 for your specific business requirements and environment after you have completed the initial installation steps.

Changing default port numbers for Cognos TM1 Admin Server

If you change the default values for the TM1 Admin Server host port number or the TM1 Admin Server SSL port number in IBM Cognos Configuration, you need to manually update the new values in the UNIX and Microsoft Windows services file across all the affected computers in your environment. This operating system file is not updated by Cognos TM1.

About this task

Update the operating system services file on any computer running Cognos TM1 components that need to communicate with the Cognos TM1 Admin Server. For example:
• Cognos TM1 Server
• Cognos TM1 desktop clients such as Cognos TM1 Architect or Cognos TM1 Perspectives
• Custom Cognos TM1 applications created with the Cognos TM1 API.
• Cognos TM1 Web (web server only)

Procedure
1. Locate and open the services file for the specific operating system.
   a) For UNIX, the typical location of the services file is:
      /etc/services
   b) For Windows, the typical location of the services file is:
      C:\Windows\system32\drivers\etc\services
2. Add or edit the following entries in the services file with the new port numbers. For example:
   tm1adminsvr 5400/tcp # Added by IBM Cognos TM1
   tm1admsrv_ssl 5403/tcp # Added by IBM Cognos TM1
3. Save and close the file.
4. Repeat these steps for each computer running Cognos TM1 components that communicate with the Cognos TM1 Admin Server.
5. Edit the tm1web_config.xml file to specify the port number of the Admin Server.
   a) If you are using SSL, edit the AdminHostSSLPort parameter.
   b) If you are not using SSL, edit the AdminHostPort parameter.
   The tm1web_config.xml file is located in <TM1 install location>\webapps\tm1web\WEB-INF\configuration\.
   For more details about the tm1web_config.xml file, see “Editing the Cognos TM1 Web configuration file” on page 93 and “Cognos TM1 Web Configuration Parameters” on page 88.

Configuring Cognos TM1 to use IPv6
To use IBM Cognos TM1 with internet protocol version 6 (IPv6), you configure a combination of Cognos TM1 parameters and an operating system environment variable.

About this task
By default, Cognos TM1 uses IPv4.

You can configure Cognos TM1 to use one of the following modes to specify which internet protocol that you want Cognos TM1 to use with your network.

ipv4
   Default setting. Used for IPv4 networks.
dual
   Used to transition from IPv4 to IPv6. Both protocols are supported.
ipv6
   Used for IPv6 networks.

Procedure
1. Configure the Cognos TM1 Admin Server:
   a) On the computer where the Cognos TM1 Admin Server is running, open Cognos Configuration.
   b) Expand the Local Configuration > Environment node and click TM1 Admin Server.
   c) In the Component Properties pane, set the TM1 Admin Server IP support option to either Dual (IPv4 and IPv6), IPv4, or IPv6.
d) If needed, add the IPv6 address to the /etc/hosts operating system file on UNIX and Microsoft Windows. In some cases, depending on your network environment and DNS configuration, you may need to perform this additional step to successfully run the Cognos TM1 Admin Server and Cognos TM1 Server in IPv6 mode.

e) Add the TM1_IPVersion environment variable as described in step 3.

2. Configure the Cognos TM1 Server:
   a) On the computer where the Cognos TM1 Server is running, open the tm1s.cfg file.
   b) Set the IPVersion parameter to the IP mode that you want to use.
      For example, to specify that your network uses the IPv6 protocol, add the parameter as follows:
      
      IPVersion=ipv6
      
      For more details, see “IPVersion” on page 272.
   c) If needed, add the IPv6 address to the /etc/hosts operating system file on UNIX and Microsoft Windows.
   d) Add the TM1_IPVersion environment variable as described in step 3.

3. Add the TM1_IPVersion environment variable to the operating system for each computer that communicates directly with the Cognos TM1 Admin Server and/or TM1 Server.

   Use the following variable name and value format:

   TM1_IPVersion=ip_mode

   where ip_mode can be one of the following values:

   • Dual
   • IPv6
   • IPv4

   The TM1_IPVersion environment variable is required on any computer that is running any of the following Cognos TM1 components:

   • Cognos TM1 Admin Server
   • Cognos TM1 Server
   • Cognos TM1 administrator tools, such as TM1 Top, ETLDAP, or the tm1srvstop.exe utility.
   • Cognos TM1 Web (web server only)
   • Cognos TM1 Application server
   • Cognos TM1 clients:
      • Cognos TM1 Architect
      • Cognos TM1 Perspectives
      • Cognos Insight
      • Cognos TM1 Performance Modeler
   • Custom applications that use the Cognos TM1 API.

   Note: You do not need to set this environment variable on computers that use only a web browser to access Cognos TM1 Web.

4. Restart any Cognos TM1 servers that you modified.

5. Test the connection between your Cognos TM1 server and client applications.

---

**Monitoring TM1 Server license usage**

IBM Cognos TM1 Server generates IBM Software License Metric Tag (SLMT) files. Versions of IBM License Metric Tool that support SLMT files can generate License Consumption Reports that provide information about license usage for your TM1 Server.

For complete details on installing and using IBM License Metric Tool, see IBM License Metric Tool on IBM Knowledge Center.

The initial generation of SLMT files is determined by the LicenseMetricTime Tm1s.cfg parameter. Once the generation of SMLT files is enabled with LicenseMetricTime, a new SLMT file is created every 24 hours.
About the AUTHORIZED_USER metric

The AUTHORIZED_USER metric can have the following subtypes:

- **IBM Cognos Enterprise Planning TM1 Modeler** - Any user that is a member of the Admin, DataAdmin, or SecurityAdmin user groups on the TM1 Server.
- **IBM Cognos Enterprise Planning TM1 Contributor** - Any user that is not a Modeler, but is assigned to a group with write access to at least one cube on a TM1 Server. A group is defined to have write access for a cube if the group is assigned one of the following security permissions for the cube: Write, Lock, Reserve or Admin.
- **IBM Cognos Enterprise Planning TM1 Explorer** - Any user that is not a Modeler or a Contributor.

For each of these subtypes, the AUTHORIZED_USER metric records the number of users who have logged on to the TM1 Server during the period identified in the SLMT file.

Location of Software License Metric Tag files

On all operating systems, the SLMT files are created in the slmtag directory at the same level as the bin or bin64 directory in the TM1 install location. For example, \Program Files\IBM\cognos\tm1_64\slmtag. All SLMT files use the .slmtag file extension.

Troubleshooting

To help you understand how the number of Modelers, Contributors, and Explorers are calculated when producing an SLMT file, the TM1 server also produces an identically named file, but with the .slmtagraw file extension. These .slmtagraw files are created in a folder named slmtagraw, which exists at the same level as the slmtag folder.

The .slmtagraw files are not consumed by the IBM License Metric Tool. They exist solely to provide you with insight regarding metric calculation. For instance, in the following excerpt from a .slmtagraw file you can see that the user named Planner is a Contributor. The user belongs to the BUDGET PLANNER group, and that group has WRITE permission on the plan_BudgetPlan cube.

```
<Metric LogTime="2016-10-18T14:45:20Z">
  <Type>GROUP_INFO</Type>
  <SubType>GROUP_DETAIL</SubType>
  <Value><![CDATA[Group BUDGET PLANNER is a contributor group: Group BUDGET PLANNER has WRITE permission on cube plan_BudgetPlan.]]></Value>
  <Period>
    <StartTime>2016-10-18T14:44:50Z</StartTime>
    <EndTime>2016-10-18T14:45:20Z</EndTime>
  </Period>
</Metric>

<Metric LogTime="2016-10-18T14:45:20Z">
  <Type>USER_INFO</Type>
  <SubType>MODELER</SubType>
  <Value><![CDATA[User Planner is a Contributor. Belongs to group BUDGET PLANNER. Group BUDGET PLANNER has WRITE permission on cube plan_BudgetPlan.]]></Value>
  <Period>
    <StartTime>2016-10-18T14:44:50Z</StartTime>
    <EndTime>2016-10-18T14:45:20Z</EndTime>
  </Period>
</Metric>
```
Chapter 9. Cognos TM1 Operations Console installation

The IBM Cognos TM1 installation program installs the IBM Cognos TM1 Operations Console with the provided web application server. You can also install TM1 Operations Console with your own web application server. The TM1 Operations Console is a Java-based, optional component used to monitor the activity of Cognos TM1 servers.

Installing Cognos TM1 Operations Console using the provided WebSphere® Liberty webservice software

The IBM Cognos TM1 Operations Console is a Java-based, optional component used to monitor the activity of Cognos TM1 servers.

Before you begin

The Cognos TM1 Operations Console is installed by default when you install Cognos TM1 and uses the provided WebSphere® Liberty web server software.

Before installing the Cognos TM1 Operations Console:

• Ensure that the Cognos TM1 prerequisite software is installed.
• Ensure that the Cognos TM1 Admin Server, the TM1 Application Server, the Cognos TM1 server that you want to monitor, and the TM1 Sdata server are installed and running.
• Ensure that you can start Cognos TM1 Architect and can log in as an administrator to the Cognos TM1 server that you want to monitor.
• All services must be running under a single domain account. The Cognos TM1 Installation Wizard sets the parameters of the domain account for you, but you must create the account under which the services run before you run the installation. If services are running under different accounts, they will not be able to communicate with each other.
• It is possible to monitor Cognos TM1 version 9.5.2 servers using Cognos TM1 Operations Console. However, because not all the functionality is available within the 9.5.2 system, you can only run the basic monitoring and view a heartbeat status for either running or offline 9.5.2 servers.
• Upgrading: because of the changes to configuration, in particular shared log schedule files, it is not possible to use Cognos TM1 Operations Console configuration files from a 9.x version. The server data, user configuration, and schedule information must be re-entered.

Procedure

1. On Microsoft Windows Vista, Windows 7 or Windows Server 2008 operating system software, right-click the setup.exe command and click Run as Administrator. For other operating systems, double-click the setup.exe file on the IBM CognosTM1 installation disk or from the location where the CognosTM1 installation files were downloaded and extracted.
2. Ensure the Web Application Tier > Cognos TM1 Operations Console component is selected.

Remember: Install IBM Cognos TM1 components in a directory that contains only ASCII characters in the path name. Some Windows web servers do not support non-ASCII characters in directory names.

Using Cognos Configuration to deploy Cognos TM1 Operations Console

Start the TM1 Applications Server in Cognos Configuration to deploy the WebSphere® Liberty server needed to run the TM1 Operations Console.

Before you begin

If you installed the product from the Program Files (x86) directory on a computer running Microsoft Windows Vista, Windows 7, or Windows 2008 operating system software, start IBM Cognos Configuration as an Administrator.
Procedure

1. Click **Start > All Programs > IBM Cognos TM1 > IBM Cognos Configuration**.

2. Right-click **TM1 Application Server** and click **Start**.
   
   This step starts the version of WebSphere® Liberty provided with Cognos TM1, and automatically deploys the Cognos TM1 Operations Console.

3. Save the configuration data by clicking **File > Save**.

4. Close Cognos Configuration by clicking **File > Exit**.

---

**Advanced Cognos TM1 Operations Console installation**

The following topics provide additional information about other ways to install Cognos TM1 Operations Console.

### Installing Cognos TM1 Operations Console on a separate machine

You can install only the Cognos TM1 Operations Console on a machine that is separate from the servers being monitored.

#### Procedure

1. Install Cognos TM1 following the usual process, but select only the TM1 Operations Console from the Web Components list.
   
   By default this also installs the Cognos TM1 Applications Server and other services.

2. After installation, on the separate machine stop the TM1 Application Service.

3. Delete the `installation_location/webapps/pmpsvc` directory and the `installation_location/webapps/p2pd` directories.

4. Restart the TM1 Application Service.

### Installing Cognos TM1 Operations Console with your own installation of Apache Tomcat web application server

This section describes how to install Cognos TM1 Applications on a separate computer and deploy it with your own installation of Apache Tomcat.

When you deploy Cognos TM1 Operations Console, Performance Management Hub is also deployed.

This installation is intended for an environment where the TM1 Admin Server and TM1 Server are running on another computer. When using your own web server software, you must install certificates and deploy the war files.

See "Using SSL when monitoring the TM1 Applications Server" in *Cognos TM1 Operations Console* for more information about installing certificates.

#### Verify JRE user environment variable

Cognos TM1 Operations Console needs the classpath user environment variable set.

If you are using your own installation of Apache Tomcat, verify that you have the following Microsoft Windows user environment variable for the JRE path.

- **Variable name:** classpath
- **Variable value:** `.;C:\Program Files\Java\jre7\bin`

If you are using the Tomcat provided with the Cognos TM1 installation, the variable is set for you.

#### Add certificates to the JRE keystore

The IBM Cognos TM1 Operations Console requires a certificate in the Java Runtime Environment (JRE) keystore.

#### Procedure

1. Run the Java keytool command to import the certificate into the keystore.

   a) Open a command prompt and change to the following directory:
CAUTION: On 64-bit computers, be sure to add the certificates to the bin64 folder.

b) Run the following command line. For formatting purposes the command is shown here with line breaks but you should enter the command all on one line.

```bash
keytool -import -file "C:\location\bin\ssl\applixca.pem" -keystore "C:\location\bin\jre\7.0\lib\security\cacerts" -storepass "changeit"
```

For 64-bit installations, target the 64-bit folder when dealing with the certificates. For example, this sample command targets the 64-bit jre:

```bash
cd C:\Program Files\ibm\cognos\TM1_64\bin64\jre\7.0\bin
```

The following command is an example used on 64-bit systems. For formatting purposes this command is shown with line breaks but you should enter the command all on one line.

```bash
keytool -import -file "C:\Program Files\ibm\cognos\TM1_64\bin64\ssl\tm1ca_v2.pem" -keystore "C:\Program Files\ibm\cognos\TM1_64\bin64\jre\7.0\lib\security\cacerts" -storepass "changeit"
```

If you do not correctly target the 64-bit locations for certificates when running a 64-bit installation, you receive a warning message indicating that you cannot contact the servers.

c) Enter yes when prompted to trust or add the certificate.

The following message displays: **Certificate was added to keystore**

2. You may need to restart your application server to have the change take effect.

   **Remember:** Re-add certificates any time you re-install Cognos TM1.

### Deploy the Cognos TM1 Operations Console to Apache Tomcat

If you are using your own installation of Apache Tomcat, you must deploy IBM Cognos TM1 Operations Console to Tomcat.

#### Before you begin

- Start an instance of Apache Tomcat on the computer where you want to deploy the Cognos TM1 Operations Console.
- Ensure that you can access the Apache Tomcat Manager console.
- If you have not used Tomcat Manager before, add a user and role to the `tomcat-users.xml` file before you can log in. For more information, see your Apache Tomcat documentation.
- Build the application files using IBM Cognos Configuration. See “Building application files for an Apache Tomcat or WebSphere® Liberty server” on page 113

#### Procedure

1. With Apache Tomcat running, click **Start > Programs > Tomcat Manager**. Enter the username and password if they are required by your Apache Tomcat instance.
2. In **Tomcat Manager**, scroll down to the **Deploy** section and locate the **WAR file to deploy** subsection.

   **Remember:** If an earlier version of the Cognos TM1 Operations Console has already been deployed, use the **undeploy** option in **Tomcat Manager** to undeploy the earlier version.
3. Click **Browse** to locate the Cognos TM1 Operations Console web application archive file that you built using IBM Cognos Configuration.
4. Click **OK**.
5. In **Tomcat Manager**, click **Deploy**.
When the deployment is complete, the Cognos TM1 Operations Console displays as `/tm1operationsconsole` in the Applications section of Tomcat Manager.

**Installing Cognos TM1 Operations Console to IBM WebSphere**

You can deploy Cognos TM1 Operations Console to IBM WebSphere Application Server. When you deploy Cognos TM1 Operations Console, Performance Management Hub is also deployed.

This installation is intended for an environment where the TM1 Admin Server and TM1 servers are running on another computer.

To deploy Operations Console to WebSphere, complete these tasks:

- Build the application files using Cognos Configuration. See “Building application files for an IBM WebSphere server” on page 116. A pmhub.war file is created in the same location as the tm1web.war and pmpsvc.war files. The default location is `<your installation location>/ibm/cognos/TM1/pmhub.war`.

  **Note:** You can use the EAR file format instead of WAR.

- Deploy the pmhub.war file to the Websphere application server
- Retrieve certificates from the TM1 Admin Server and TM1 servers
- Configure outgoing communications from Websphere to the TM1 Admin Server

**Deploying Cognos TM1 Operations Console to an IBM WebSphere Application Server**

Use the IBM WebSphere administrative console to deploy and run TM1 Operations Console on a WebSphere Application Server.

**Before you begin**

- Install IBM WebSphere Application Server.
- Create a profile using the Profile Management Tool.
- Start the WebSphere Application Server using the profile that you created.

  In Microsoft Windows, click **Start** > **All Programs** > **IBM WebSphere Application Server** > **Profiles** > **[Profile Name]** > **Start the server**.

  A command window opens and displays the start up progress. After the start up process is complete, the command window displays the message, "Server started." You can minimize this command window, but do not close it. This window must remain open while WebSphere is running.

- Build the application files using Cognos Configuration. See “Building application files for an IBM WebSphere server” on page 116. Operations Console and Performance Management Hub are contained in the pmhub.war file.

For information about installing WebSphere and creating a profile, see the WebSphere documentation.

**About this task**

These steps are based on IBM WebSphere Application Server 8.5.5. The steps for version 8.5 are similar.

**Note:** After you start completing steps in the WebSphere application installation wizard, click **Cancel** to exit if you decide not to install the application. Do not simply move to another administrative console page without first clicking **Cancel** on an application installation page.

**Procedure**

1. Open the WebSphere administrative console.
   - In Windows, click **Start** > **All Programs** > **IBM WebSphere Application Server** > **Profiles** > **[Profile Name]** > **Administrative console**. Or, go to https://localhost:9043/ibm/console/.
   - In UNIX, click **Applications** > **IBM Websphere** > **IBM WebSphere Application Server** > **Profiles** > **[Profile Name]** > **Admin Console**. Or, go to https://localhost:9043/ibm/console/.

2. Log in using the WebSphere profile that you created.
   - The administrative console opens.

3. Set the JVM stack memory size.
a) Click **Servers > Server Types > WebSphere application servers.**
b) Click the server where you are deploying Operations Console.
c) Under Server Infrastructure, click **Java and Process Management > Process Definition.**
d) Under Additional Properties, click **Java Virtual Machine.**
e) In the **Generic JVM arguments** field, add `-Xmso512k`.

**Note:** Do not deploy Operations Console until you have set the stack memory. If you do so, Operations Console will be deployed but the WebSphere Application Server will not start.

Do not use the `startServer.sh` file to set the stack memory size. WebSphere removes the `-Xmso` setting from the file when the server starts and overrides it with the default value, which is too small.

f) Click **Apply**, and then click **OK**. Click **Save**.

4. Click **Applications > New Application**, and then click **New Enterprise Application.**
5. Click **Browse** to locate and select the `pmhub.war` file that you generated using the Build Application File command in Cognos Configuration. Click **Open**.
6. Click **Next**.
7. Click **Fast Path**, and then click **Next**.
8. Click **Step 4: Map context roots for Web modules**.
9. In the Context Root box, enter `/pmhub`. Click **Next**.
10. Click **Finish**.

WebSphere installs the application. This process can take a few minutes to complete.

When installation is complete, WebSphere displays "Application pmhub_war installed successfully."

11. Click **Save**.
12. Click **Applications > Application Types > Websphere Enterprise Applications**.
13. Select the check box next to pmhub_war, and then click **Start**.

WebSphere displays "Application pmhub_war on server server_name and node node started successfully. The collection may need to be refreshed to show the current status."

**What to do next**

The next step is to retrieve SSL certificates from the TM1 Admin Server and TM1 servers.

**Retrieving SSL certificates from the TM1 Admin Server and TM1 servers**

After you have deployed the applications file, `pmhub.war`, to the IBM WebSphere Application Server, the next step is to retrieve SSL certificates from the TM1 Admin Server and TM1 servers.

**Procedure**

1. In the IBM WebSphere administrative console, expand **Security** and then click **SSL certificate and key management**.
2. Under Related Items, click **Key stores and certificates**.
3. Click the **NodeDefaultTrustStore** keystore.
4. Under Additional Properties, click **Signer certificates**.
5. Click **Retrieve from port**. Enter the following information:
   - In the **Host** field, enter the host name of the TM1 Admin Server.
   - In the **Port** field, enter 5498, the port number of the TM1 Admin Server.
   - In the **Alias** field, enter `TM1AdminServer_cert`.
6. Click **Retrieve signer information**. Websphere retrieves the SSL certificate from the TM1 Admin Server.
7. Verify that the certificate information is for a certificate that you can trust.
8. Click **Apply**, and then click **Save**.
9. Repeat these steps for the TM1 servers you want to monitor with Operations Console.

   For example:
   - In the **Host** field, enter the host name of the TM1 server.
• In the **Port** field, enter the port number of the TM1 server.
• In the **Alias** field, enter **TM1ServerName_cert**.

**Tip:** The port number of a TM1 server is configured in the `tm1s.cfg` file in the PortNumber parameter.

10. Save your changes.

**What to do next**
The next step is to configure outgoing communications between Websphere and the TM1 Admin Server.

**Configuring outgoing communications to the TM1 Admin Server**
After you have deployed the applications file, `pmhub.war`, to the IBM WebSphere Application Server and retrieved SSL certificates, the next step is to set up outgoing communications from WebSphere to the TM1 Admin Server.

**Procedure**
1. In the WebSphere administrative console, expand Security and click **SSL certificate and key management**.
2. Under Configuration settings, click **Manage endpoint security configurations**.
3. Expand **Outbound** > `[node]Node01Cell > nodes`.
4. Click `[node]Node01Cell`, where `node` is the name of the server where you are deploying Operations Console.
5. Under Related Items, click **Dynamic outbound endpoint SSL configurations**.
6. Click the **NodeDefaultTrustStore** keystore.
7. Click **New**.
8. In the **Name** field, enter **tm1admin**.
9. In the **Description** field, enter **ssl connection**.
10. Under Connection Information, enter 
    `*,*,5498`, and then click **Add**.

    **Note:** The value 5498 is the SSL port number of the TM1 Admin Server as specified in Cognos Configuration.
11. Click **Apply**, and then click **OK**.
12. Save your changes.
13. Restart the WebSphere Application Server.
14. In a web browser, enter the URL to run Operations Console, 
    Replace `port` with the port number of the virtual host where you deployed `pmhub.war`.
    For example: `http://localhost:9080/pmhbu/pm/opsconsole/`.
    The Operations Console login page is displayed.

**Configuring the Cognos TM1 Operations Console**
By default the Cognos TM1 Operations Console is configured to use a sample adminhost of localhost, server of sdata, and a group called admin for authentication so you can get up and running quickly. If you prefer, you can edit these configurations to customize the authentication server.

**Procedure**
1. Enter `http://servername:port number/pmhbu/pm/admin` to open the configuration screen.
2. To change the default adminhost, server, and group for monitoring, expand **Configurations > Operations Console TM1 Monitors**. Click in each setting to change it.
   
   If you want to use Microsoft Internet Explorer 8 with the Cognos TM1 Operations Console see the Microsoft Internet Explorer documentation and ensure these settings:
   
   • Enable the option to refresh web pages with every visit
   • Disable the options for script debugging
Starting and logging into the Cognos TM1 Operations Console

To open the IBM Cognos TM1 Operations Console, enter the URL that identifies the port and server name for the component.

Procedure

1. In a web browser, type the following web address: http://servername:port number/pmhub/pm/opsconsole
   where
   - server_name is the computer where the Cognos TM1 Operations Console and your web application server are installed. You can use the keyword localhost if you are currently logged on to the Web server that is running Cognos TM1 Application Web. Or you can use the machine name, domain name, or IP address of the Web server hosting the application.
   - port_number is the port number where your web application server is running. For the version of WebSphere® Liberty that is provided with the Cognos TM1 installation, the default port number is 9510. For Apache Tomcat, open the Apache Tomcat server.xml file in the C:\Program Files\Apache Software Foundation\Tomcat 6.0\conf\location to determine the port setting that your version of Tomcat is using.

2. On the log in page, enter values for the following fields, and then click Log In.

   To use the default monitoring group, enter
   - Namespace: Use the pull-down to select the available Namespace. If the system is a CAM-secured system, the namespace is the Cognos Analytics namespace that the TM1 system is secured against. If the system isn't CAM secured the namespace is adminhost/tm1 server for example localhost/SData
   - User Name: admin
   - Password: apple

See Setting up the Cognos TM1 Operations Console to get started.
Chapter 10. Cognos TM1 Web installation

You can install IBM Cognos TM1 Web on a computer that is separate from the computer where you installed the Cognos TM1 server and other Cognos TM1 components.

You can deploy TM1 Web on an Apache Tomcat application server or on IBM WebSphere Application Server. See:

- “Installing TM1 Web with the provided WebSphere® Liberty application server” on page 83
- “Installing TM1 Web with IBM WebSphere” on page 86

When you install TM1 Web, TM1 Applications Web is also installed.

For details about Cognos TM1 Web architecture, see “Cognos TM1 Web architecture” on page 21.

Checklist for installing Cognos TM1 Web

The following items are an overall checklist for installing Cognos TM1 Web.

- Install Cognos TM1 Web.
- If you are using Tomcat, use IBM Cognos Configuration to start the web application server for Cognos TM1 Web.
  
  If you are using WebSphere Application Server, use the WebSphere administrative console to start the application server.
- Run and test Cognos TM1 Web from your network environment.
- Edit the Cognos TM1 Web configuration file to support a multiple computer environment. See “Configuring the Cognos TM1 Web Login Page using AdminHostName and TM1ServerName parameters” on page 94.
- Configure additional options in the CognosTM1 Web configuration file. See “Modifying Cognos TM1 Web Configuration Parameters” on page 88.
- Configure the web browsers in your environment. See “Web browser configuration for Cognos TM1 Web” on page 103.

Related concepts

Upgrading Cognos TM1 Web

If you have IBM Cognos TM1 Web on a computer that is separate from the computer where you installed the Cognos TM1 server then do these steps to upgrade the web server.

Installing TM1 Web with the provided WebSphere® Liberty application server

You can install Cognos TM1 Web on a separate computer and deploy it with the instance of WebSphere® Liberty that is provided with the installation.

The IBM Cognos TM1 installation configures Cognos TM1 Web to run with the provided version of the WebSphere® Liberty web application server.

After you have installed the Cognos TM1 Web on the separate computer, edit the Cognos TM1 Web configuration file to identify the remote computer where the Cognos TM1 Admin Server is running.

Installing and configuring Cognos TM1 Web on Microsoft Windows

These steps describe how to install IBM Cognos TM1 Web on a separate computer that is running Microsoft Windows. These steps apply when you are using the provided WebSphere® Liberty application server.

About this task

This procedure also installs the IBM Cognos Configuration utility. You use Cognos Configuration to start and stop the application server.

When IBM Cognos TM1 Web is installed on a separate computer, edit the configuration file to identify the IBM Cognos TM1 Admin Server and IBM Cognos TM1 servers in your network that you want to use with Cognos TM1 Web.
Procedure

1. Run the installation program that matches the type of computer being used for Cognos TM1 Web:
   - 32-bit for Windows
   - 64-bit for Windows

2. On Microsoft Windows Vista, Windows 7 or Windows Server 2008 operating system software, right-click the issetup.exe file and click Run as Administrator. For other operating systems, double-click the issetup.exe file.

3. Select only the following **TM1 Web Tier** components: **TM1 Web**, **TM1 Application Server**, and **Cognos Access Manager**.
   Deselect all the other components.

   **Important:**
   Cognos Access Manager must be installed as part of the web tier installation. If Cognos Access Manager is not installed, then Cognos TM1 Web and the PMPSVC web application cannot connect to the Cognos TM1 Admin Server and the Cognos TM1 Server.

4. Follow the prompts in the installation wizard to complete the installation.

5. Start IBM Cognos Configuration.

   **Attention:** If you installed the product from the Program Files (x86) directory on a computer running Windows Vista, Windows 7, or Windows Server 2008 operating system software, start IBM Cognos Configuration as an Administrator.

6. In the Cognos Configuration **Explorer** panel, expand the **Local Configuration > Environment** node, right-click **TM1 Application Server** and select **Start**.
   This starts the provided web application server for Cognos TM1 Web.

7. Confirm that Cognos TM1 Web is running by entering the URL for Cognos TM1 Web in a web browser. For example:
   - http://localhost:9510/tm1web/
   On a remote computer, replace localhost with the name or IP address of the computer where Cognos TM1 Web is running.

8. Configure Cognos TM1 Web to connect to remote Cognos TM1 servers in your network.
   If you want Cognos TM1 Web to connect to a specific Cognos TM1 Admin Server or Cognos TM1 server in your network, configure the AdminHostName and TM1ServerName parameters in the Cognos TM1 Web configuration file, tm1web_config.xml.
   See “Configuring the Cognos TM1 Web Login Page using AdminHostName and TM1ServerName parameters” on page 94.

   You can configure authentication security, such as Integrated Login or IBM Cognos Security, and data transmission security, such as SSL, depending on your system and network environment.

10. Configure additional options in the Cognos TM1 Web configuration file.
    See “Modifying Cognos TM1 Web Configuration Parameters” on page 88.

11. Review the steps for web browser configuration.
    You can configure web browser options such as language and regional settings for your users.
    See “Web browser configuration for Cognos TM1 Web” on page 103.
Installing and configuring Cognos TM1 Web on UNIX

Installing IBM Cognos TM1 Web on a UNIX system requires that you import the certificate to the Java keystore on UNIX. These steps apply if you are using the provided WebSphere® Liberty application server.

Before you begin
You must set the JAVA_HOME environment variable before you can start IBM Cognos Configuration. Cognos Configuration is used for starting the web application server for Cognos TM1 Web.

About this task
Importing the certificate to the Java keystore on UNIX is required to enable Cognos TM1 Web to display the list of the available Cognos TM1 servers.

Procedure
1. Run the installation program:
   a) Go to the location where the installation files were downloaded and extracted, or insert the product disk.
   b) Go to the operating system directory and then type
      ./issetup
   c) Advance to the Component Selection screen.
   d) Select the following TM1 Web Tier components: TM1 Web, TM1 Application Server, and Cognos Access Manager.
      Deselect all the other components.
      Important: Cognos Access Manager must be installed as part of the web tier installation. If Cognos Access Manager is not installed, then Cognos TM1 Web and the PMPSVC web application cannot connect to the Cognos TM1 Admin Server and the Cognos TM1 Server.
   e) Follow the prompts in the installation wizard to complete the installation.
2. Import the certificate to the Java keystore on UNIX.
   a) Change directory to the bin location that is associated to JAVA_HOME.
   b) Run the following command:
      keytool -import -file "/bin64/ssl/applixca.pem" -keystore "/usr/java7/jre/lib/security/cacerts" -storepass "changeit"
3. Start IBM Cognos Configuration:
   Go to the install_location/bin64 directory and then type the following command:
   ./cogconfig.sh
4. Start the web application server for Cognos TM1 Web:
   In the Cognos Configuration Explorer panel, expand the Local Configuration > Environment node, right-click TM1 Application Server and select Start.
5. Confirm that Cognos TM1 Web is running by entering the URL for Cognos TM1 Web in a web browser on a remote computer. For example:
   http://<unix_web_server>:9510/tm1web/
   Replace <unix_web_server> with the name or IP address of the computer where Cognos TM1 Web is running.

What to do next
Depending on your system and network environment, perform the following additional configuration steps:
• Configure Cognos TM1 Web to connect to a specific Cognos TM1 Admin Server or Cognos TM1 server in your network.
  See “Configuring the Cognos TM1 Web Login Page using AdminHostName and TM1ServerName parameters” on page 94.
• Configure security options for Cognos TM1 Web.
• Configure additional options in the CognosTM1 Web configuration file.
  See “Modifying Cognos TM1 Web Configuration Parameters” on page 88.
• Review the steps for web browser configuration.
  See “Web browser configuration for Cognos TM1 Web” on page 103.

Installing TM1 Web with IBM WebSphere

You can deploy Cognos TM1 Web to IBM WebSphere Application Server. When you install TM1 Web, TM1 Applications Web is also installed.

To install TM1 Web and TM1 Applications Web on a WebSphere application server, complete these tasks:
• Build the application files using Cognos Configuration. See “Building application files for an IBM WebSphere server” on page 116. A tm1web.war file is created. The default location is <your installation location>/ibm/cognos/TM1/tm1web.war.
  Note: You can use the EAR file format instead of WAR.
• Deploy the tm1web.war file to the WebSphere application server
• Import the TM1 SSL certificate to WebSphere

Deploying TM1 Web to an IBM WebSphere Application Server

Use the IBM WebSphere administrative console to deploy and run TM1 Web and TM1 Applications Web on a WebSphere Application Server

Before you begin
• Install IBM WebSphere Application Server.
• Create a profile using the Profile Management Tool.
• Start the WebSphere Application Server using the profile that you created.

In Microsoft Windows, click Start > All Programs > IBM WebSphere Application Server > Profiles > [Profile Name] > Start the server.

A command window opens and displays the start progress. After the start process is complete, the command window displays the message, “Server started.” You can minimize this command window, but do not close it. This window must remain open while WebSphere is running.
• Build the application files using Cognos Configuration. See “Building application files for an IBM WebSphere server” on page 116.

For information about installing WebSphere and creating a profile, see the WebSphere documentation.

About this task

These steps are based on IBM WebSphere Application Server 8.5.5. The steps for version 8.5 are similar.

Note: After you start completing steps in the WebSphere application installation wizard, click Cancel to exit if you decide not to install the application. Do not simply move to another administrative console page without first clicking Cancel on an application installation page.

Procedure

1. Open the WebSphere administrative console.
   • In Windows, click Start > All Programs > IBM WebSphere Application Server > Profiles > [Profile Name] > Administrative console. Or, go to https://localhost:9043/ibm/console/.
   • In UNIX, click Applications > IBM Websphere > IBM Websphere Application Server > Profiles > [Profile Name] > Admin Console. Or, go to https://localhost:9043/ibm/console/.
2. Log in using the WebSphere profile that you created.
The administrative console opens.

3. Click **Applications > New Application**, and then click **New Enterprise Application**.

4. Click **Browse** to locate and select the tm1web.war file that you generated using the Build Application File command in Cognos Configuration. Click **Open**.

5. Click **Next**.

6. Click **Fast Path**, and then click **Next**.

7. Click **Step 4: Map context roots for Web modules**.

8. In the Context Root box, enter /tm1web. Click **Next**.

9. Click **Finish**.

   WebSphere installs the application. This process can take a few minutes to complete.

   When installation is complete, WebSphere displays "Application tm1web_war installed successfully."

10. Click **Save**.

11. Click **Applications > Application Types > Websphere Enterprise Applications**.

12. Select the check box next to tm1web_war, and then click **Start**.

   WebSphere displays "Application tm1web_war on server server_name and node node started successfully. The collection may need to be refreshed to show the current status."

**What to do next**

The next step is to import TM1 certificates to the keystore.

**Importing SSL certificates for TM1 Web**

After you have deployed the applications file, tm1web.war, to the IBM WebSphere Application Server, the next step is to import the TM1 SSL certificates to the keystore.

**About this task**

For TM1 Web, all root certificates must be installed in the certificate store on the computer where TM1 Web is running.

**Procedure**

1. In the IBM WebSphere administrative console, expand **Security** and then click **SSL certificate and key management**.

2. Under Related Items, click **Key stores and certificates**.

3. Click the **NodeDefaultTrustStore** keystore.

4. Under Additional Properties, click **Signer certificates**.

5. Click **Add**.

6. Enter the following information:
   - In the **Alias** field, enter applixca.pem.
   - In the **File name** field, enter the full path and file name of the SSL certificate for TM1, for example TM1_install_dir\bin\SSL\applixca.pem
     
     **Note**: If you are using your own SSL certificates, enter the path and file name of the root certificate
   - For the **Data type** field, keep the default value.

7. Click **Apply**, and then click **OK**.

8. Confirm that Cognos TM1 Web is running by entering the URL for Cognos TM1 Web in a web browser. For example:

   http://host:port/tm1web/

   On a remote computer, replace host with the name or IP address of the computer where Cognos TM1 Web is running. Replace port with the port number of the virtual host where you deployed tm1web.war. For example: http://server1:9080/tm1web.
What to do next
The next step is to configure TM1 Web. See “Modifying Cognos TM1 Web Configuration Parameters” on page 88 and “Web browser configuration for Cognos TM1 Web” on page 103.

Modifying Cognos TM1 Web Configuration Parameters

The `tm1web_config.xml` file is an XML file that contains configuration parameters for IBM Cognos TM1 Web.

As of Cognos TM1 Web version 10.2, the new `tm1web_config.xml` file replaces the `web.config` file from previous Cognos TM1 Web versions.

The parameters in this file control the following IBM Cognos TM1 Web features.

- View node
- Cube Viewer page size
- Number of sheets to export from a Cube Viewer
- IBM Cognos TM1 Web startup and appearance settings

Cognos TM1 Web Configuration Parameters

The configuration parameters for IBM Cognos TM1 Web are stored in the `tm1web_config.xml` file.

The `tm1web_config.xml` file is located in the following location:

```text
<TM1 install location><webapps>tm1webWEB-INFconfiguration
```

The following parameters are available.

**ActionButtonFullRecalculationEnabled**

Determines the level of recalculation that occurs as part of the execution of an action button. This parameter is only applicable to action buttons that have **Automatically Recalculate Sheet** selected as the **Calculation** type.

- If set to true, a full recalculation occurs on the target workbook.
- If set to false, a partial recalculation occurs on the target workbook. Only the visible portions of the target workbook are recalculated. This recalculation includes any Active Forms, DBS/DBSW/DBR/DBRW/DBRA/DBSA formulas, and dependencies of cells in the visible area. Any portions beyond the scrolling boundary of the target workbook are not recalculated. False is the default value, which can result in improved performance, especially in large workbooks.

**AdminHostName**

If set, users are not asked to enter a value for Admin Host during login.

See “Configuring the Cognos TM1 Web Login Page using AdminHostName and TM1ServerName parameters” on page 94.

**AdminHostPort**

If set, the client tries to use this port instead of the default Admin Host port.

**AdminHostSSLPort**

If set, the client tries to use this port instead of the default Admin SSL Host port.

**CamLoginApiRedirectEnabled**

Default value is false.

When enabled, CAM authentication from the TM1 Web API (either URL API or JavaScript Library) performs a redirect to the CAM login page of Cognos Analytics. This behavior differs from the default behavior of showing CAM login page of Cognos Analytics in a dialog box. This parameter must be enabled in cases where Cognos Analytics includes an X-Frame-Options header with a value of SAMEORIGIN or DENY, which is used to improve protection against Click-jacking attacks.

**CleanDimensionMetaDataCache**

During websheet calculation, the `CleanDimensionMetaDataCache` parameter specifies whether dimension elements are retrieved from the TM1 server or by using cached elements from TM1 Web.

Default value: false
• If CleanDimensionMetaDataCache is set to false, elements from the tm1web cache are used.
• If CleanDimensionMetaDataCache is set to true: tm1web dimension elements are cleaned from the cache and the elements are retrieved directly from the TM1 server.

CrossDomainAccessList
Specifies a list of cross-domain URLs that are allowed to access TM1Web. You can use this parameter to specify the domain where IBM Cognos Workspace is running, if it's running on a domain separate from TM1 Web.
Use an asterisk (*) to allow any domain to access TM1 Web.
If you specify multiple URLs, separate each one by using a comma.
If this parameter is not set or the parameter value is empty, no cross-domain access to TM1 Web is allowed.

CubeViewerColumnPageSize
Specifies the number of columns to fetch in a page of Cubeviewer. See “Changing the Cube Viewer Page Size” on page 101.

CubeViewerHiddenDimensionsEnabled
Allows you to hide dimensions in the TM1 Web cube viewer. Hidden dimensions are part of the context of a view, but do not show up as context dimensions in the TM1 Web cube viewer. Instead, they reside in a region of the dimension bar labeled Hidden.
To use hidden dimensions in the TM1 Web cube viewer, you must set CubeViewerHiddenDimensionsEnabled="true" in the tm1web_config.xml file. When the feature is enabled, the Hidden region appears on the cube viewer.
You can drag and drop dimensions to and from the Hidden region just as you can for the Rows, Columns, and Context regions.
When a view includes hidden dimensions, the number of hidden dimensions is displayed below the Hidden label. When you click the Hidden region, you can see which dimensions and elements are hidden.
You cannot change the element for a hidden dimension. If you want to change an element, you must show the dimensions by dragging it to the Rows, Columns, or Context region, and then change the element. You can then return the dimension to the hidden region.

CubeViewerRowPageSize
Specifies the number of rows to fetch in a page of Cubeviewer. See “Changing the Cube Viewer Page Size” on page 101.

CubeviewerStringWrap
Settings for string cell wrapping in the Cubeviewer. See “Wrapping string values in cube views” on page 102.

CustomCAMLogoutUrl
Specifies the URL of a dedicated Logout page for CA SiteMinder when TM1 is configured to use CAM security (mode 4 or 5). This Logout page must be accessed on logout so that the SiteMinder session cookie can be invalidated.
When a user clicks Logoff in TM1 Web, the CAM logout occurs first. Then, the SiteMinder Logout page is called.

EvaluationServiceURL
Specifies the location of the evaluation service. Valid value is hostname:port_number. If no value is assigned, the location is assumed to be http://localhost:9510.

ExportCellsThreshold
Specifies the maximum number of cells that an export of a Websheet or a cube view can contain. If the number of selected cells exceeds the threshold, a warning message is displayed and the export does not start.
Edit the ExportCellsThreshold parameter in the tm1web_config.xml file by using the following format:

```xml
<add key="ExportCellsThreshold" value="CellsThreshold" />
```
where \textit{CellsThreshold} is the cell count threshold determined by multiplying the number of rows by the number of columns per sheet, and then multiplying that result by the number of iterations and context members that the export is selected for.

For example, if a Websheet has two sheets and each sheet has 1000 rows and 25 columns, and the export is selected for four context members, the cell count is calculated as $25,000 \times 2 \text{ sheets} \times 4 \text{ context members} = 200,000$ cells. If the \textit{CellsThreshold} is 150,000, this Websheet export would be rejected.

\textbf{ExternalUrl}

Set the ExternalUrl parameter if you are using TM1® Web and Cognos security (CAM) authentication with an external load balancer that modifies the original startup URL for TM1 Web. The ExternalUrl parameter provides the correct URL so that Cognos security can successfully redirect back to TM1 Web.

Set the value to the same URL that you use to start TM1 Web, for example

\begin{verbatim}
<add key="ExternalUrl" value="http://mycomputer/TM1Web" />
\end{verbatim}

\textbf{GzipCompressionEnabled}

Determines if the web server responses will be compressed. Valid values are \texttt{true}/\texttt{false}.

\textbf{HideCubeviewerToolBar}

If set to true, all Cubeviewer toolbar are not displayed.

See “HideCubeviewerToolBar Parameter” on page 100.

\textbf{HideTabBar}

If set to true, multiple tabs are not displayed.

See “HideTabBar Parameter” on page 99.

\textbf{HideWebsheetToolBar}

If set to true, all websheet toolbars are not displayed.

See “HideWebsheetToolBar Parameter” on page 100.

\textbf{HomePageObject}

If set, the object of type of Websheet, Cubeviewer, or URL will be displayed after a user logs in.

See “Configuring a Global Homepage for All Users” on page 96.

\textbf{LegacyUrlApiSessionDiscoveryEnabled}

Use the \texttt{LegacyUrlApiSessionDiscoveryEnabled} configuration parameter to control how the TM1 Web URL API handles login sessions. Configure this parameter to specify whether or not the URL API tracks separate unique login sessions.

This parameter enables the URL API session to be reused based on the specified admin host, TM1 server, and (optional) user name.

If you are using the session token login approach with the URL API, you must set the \texttt{LegacyUrlApiSessionDiscoveryEnabled} configuration parameter in the \texttt{tm1web_config.xml} file to \texttt{False}. For more information about logging in with a session token, see TM1 Web API session login.

Use this format:

\begin{verbatim}
<add key="LegacyUrlApiSessionDiscoveryEnabled" value=\texttt{True} or \texttt{False}/>
\end{verbatim}

For example:

\begin{verbatim}
<add key="LegacyUrlApiSessionDiscoveryEnabled" value="\texttt{False}"/>
\end{verbatim}

The default value is \texttt{True}.

- \texttt{True}
  
  TM1 Web tries to match new login request with an existing login session based on the provided information (TM1 Admin host, TM1 Server, user name).
  
  This parameter should only be set to \texttt{True} if a single login will occur for a unique TM1 Admin Host, TM1 server, and user name combination.
• False
  Specifies that a session token must be provided every time that you open a TM1 Web object with the TM1 Web URL API. Otherwise, the user is prompted.

  Set this parameter to False if you plan to use multiple login sessions with TM1 Web URL API. You also use this configuration if you are using multiple login sessions with the URL API and other TM1 Web clients such as TM1 Web and TM1 Application Web. This configuration uses the session token to keep the user sessions separate and unique.

**MaximumConcurrentExports**
  Determines the maximum number of concurrent exports that can be executed from TM1 Web. The default value is 5.
  
  You can set MaximumConcurrentExports to 0 to allow an unlimited number of concurrent exports. This setting is analogous to export behavior in TM1 Web before version 10.3.

  If the maximum number of concurrent exports is reached, and additional exports are then initiated, the additional exports are queued until an export slot is available. The initiator of a queued export does not receive notification of queuing.

  The optimal parameter setting depends on your RAM capacity and your user requirements. Generally, the more RAM you have available to TM1 Web, the higher the parameter setting can be. Increasing the value results in increased memory consumption, but reduces export queuing. (Setting the parameter to 0 eliminates export queuing.) Conversely, decreasing the parameter value reduces memory consumption that results from exports, but can result in more frequent export queuing.

**MaximumSheetsForExport**
  Specifies the maximum number of sheets that are allowed to export.

  See “Setting the Maximum Number of Sheets to Export from a Cube Viewer” on page 101.

**MixedCellPaste**
  If the MixedCellPaste parameter is set to true, when you copy values to a mixed range of leaves and consolidated values in a Websheet, the pasted values will match exactly.

  **Note:** This parameter applies to Websheets only; it does not apply to CubeViewer.

  The default value is false.

**NavTreeCollapsedOnStart**
  Determines whether the navigation panel will be collapsed or expanded after a user logs in.

  See “NavTreeCollapsedOnStart Parameter” on page 99.

**NavTreeDisplayServerView**
  Specifies whether to display the Server View node in the navigation tree. Valid values are Y and N.

  See “Displaying or Hiding the Views Node in the Navigation Pane” on page 100.

**NavTreeHidden**
  Determines whether the navigation panel will be displayed after a user logs in.

  See “NavTreeHidden Parameter” on page 99.

**RecalcOnActivate**
  If RecalcOnActivate is set to true, a recalculate is performed each time a websheet or cubeview is activated in TM1 Web, for example, when you switch tabs.

  Valid values are true or false.

**RecalcOnDataValidationChange**
  Specifies whether the default recalculation behavior will be overridden when changing the value of a data validation list.

  If set to true, a recalculation will be triggered when a value in a data validation list is changed.

  If set to false, a recalculation will not be triggered when a value in a data validation list is changed.
**RecalcOnPicklistChange**
Specifies whether the default recalculation behavior will be overridden when changing the value of a picklist.
If set to true, a recalculation will be triggered when a value in a picklist is changed.
If set to false, a recalculation will not be triggered when a value in a picklist is changed.

**RelationalResultMaxRows**
If a value greater than -1 is specified, then relational query ResultSets are limited to returning the specified number of rows.

**TM1DatabaseLabel**
If set to "Y", the name of the database is displayed beside the user on the TM1 Web banner. For example, "Welcome: Admin / Planning Sample". The default is "N". When this option is set to "N", nothing is displayed beside the user.

See “TM1DatabaseLabel Parameter” on page 101 in Configuring IBM Cognos TM1 Web Startup and Appearance Settings.

**TM1ServerName**
If set, users will not be asked to select a TM1 Server to connect to during login.

See “Configuring the Cognos TM1 Web Login Page using AdminHostName and TM1ServerName parameters” on page 94.

**UseBookRecalcSetting**
The UseBookRecalcSetting parameter is included in the tm1web_config.xml file. When set to true, the web server honors the mode in which the Excel sheet was published. If the Excel sheet was published in Manual recalc mode, websheet data is not resent to the client until a recalculation is performed.

The UseBookRecalcSetting parameter uses the following format in the tm1web_config.xml file:

```
<add key="UseBookRecalcSetting" value="false" />
```

where value is either "false" or "true"

If you set UseBookRecalcSetting to true, TM1 Web honors the recalculation settings in the Excel worksheet.

When Calculation Options is set to Automatic:
- If you set UseBookRecalcSetting = "true", the websheet is recalculated automatically when you change the SUBNM function.
- If you set UseBookRecalcSetting = "false", the websheet is recalculated automatically when you change the SUBNM function.

When Calculation Options is set to Manual:
- If you set UseBookRecalcSetting = "true", the websheet is not recalculated automatically. To recalculate, you must manually click the **recalc** button.
- If you set UseBookRecalcSetting = "false", the websheet is recalculated automatically when you change the SUBNM function.

**WebsheetBackgroundRecalculationMode**
Specifies the level of background recalculation that occurs for a websheet.

WebSheetService.scrollWebSheet calls can take several seconds because the data is not readily available. Use the WebsheetBackgroundRecalculationMode parameter to recalculate the book in the background so that the necessary data is ready when it is requested.

If set to 0 (default value), only the buffered (visible) area is calculated on a refresh of a sheet.

If set to 1, the area that is adjacent to the buffered area is calculated, in addition to the buffered area. This improves wait times if the user scrolls slightly away from the initially visible area.

If set to 2, the entire current worksheet is calculated. This improves wait times if the user scrolls to any area of the current sheet.
If set to 3, the entire current workbook is calculated. This improves wait times if the user moves to any area of the current worksheet or to another worksheet.

**Note:** The higher the setting number, the more cells are calculated meaning that there would be a higher load on the web server.

**WorkbookMaxCellCount**

Specifies the maximum cell count of a workbook as a number with no thousands separators.

The TM1Web application server validates the size of a workbook that is published to TM1 server. Workbooks that contain ActiveForms might be uploaded only with their master row. At publish time, the workbook can have multiple rows but when it is opened and rebuilt it can display many more rows. You can use WorkbookMaxCellCount to avoid issues opening workbooks with many cells.

If this parameter is present in tm1web_config.xml and it is not the default, when the user opens a workbook, the server validates its cell count against WorkbookMaxCellCount. If the cell count of the workbook exceeds WorkbookMaxCellCount, an error message is logged and the workbook is not opened. The user sees the `<book_name> exceeds maximum cell count` error message in the tm1web.log file. For more information, see Using IBM Cognos TM1 Web Logging.

- Leaving this parameter blank or setting it to less than 0 indicates that an unlimited cell count for workbooks is allowed.
- The default value is -1, which indicates an unlimited number of cells are allowed in a workbook.
- Setting this parameter to 0 indicates that workbooks cannot have any cells. Therefore, anything above 0 is recommended.

**Note:** Changes to this parameter require a restart of the application server.

**X-Frame-Options**

The X-Frame-Options parameter sets the X-Frame-Options response header value. The parameter (and the response header value) specifies whether a browser should be allowed to render a TM1 Web page in a `<frame>`, `<iframe>`, or `<object>`. Use this parameter to prevent Click-jacking attacks and ensure that TM1 Web content is not embedded into other sites. There are three possible parameter values.

- **0** corresponds to the DENY response header value, which prevents any domain from framing TM1 Web content.
- **1** corresponds to the SAMEORIGIN response header value, which allows only the current domain to frame TM1 Web content.
- **2** corresponds to the ALLOW-FROM response header value. In this case, TM1 Web checks the CrossDomainAccessList parameter in tm1web_config.xml for the list of cross-domain URLs that are allowed to access and frame TM1Web content.

The ALLOW-FROM response header does not have universal browser support. TM1 Web uses the values in CrossDomainAccessList to determine whether the domain is allowed or not. If not, TM1 Web includes the DENY response header value, which prevents framing. In certain circumstances, TM1 Web might be unable to determine the requesting domain. In this case, the SAMEORIGIN response header value is included.

If the X-Frame-Options parameter is missing or empty, 2 is the default value.

The .jsp files in TM1Web include the response header X-Frame-Options only for the DENY and SAMEORIGIN values. If the domain is confirmed to be allowed, then no X-Frame-Options header is included.

**Editing the Cognos TM1 Web configuration file**

You can edit the IBM Cognos TM1 Web configuration file to configure different parameters.

The Cognos TM1 Web configuration file is an xml file and should be opened only with an XML-type editor. Opening it using a regular text editor such as Microsoft Wordpad can result in incorrect characters being added that may corrupt the file.

As of Cognos TM1 Web version 10.2, the new tm1web_config.xml file replaces the web.config file from previous Cognos TM1 Web versions.
**Procedure**

1. Locate and open the `tm1web_config.xml` file in the following location:

   `<TM1 install location>/webapps/tm1web/WEB-INF/configuration/`

   **Note:** The `tm1web_config.xml` file is an xml file and should be opened only with an XML-type editor. Opening it using a regular text editor such as Microsoft Word Pad can result in incorrect characters being added that may corrupt the file.

2. Edit the parameters and save your changes.

3. Log in to IBM Cognos TM1 Web to see the result of your edits.

**Configuring the Cognos TM1 Web Login Page using AdminHostName and TM1ServerName parameters**

The AdminHostName and TM1ServerName parameters control whether the IBM Cognos TM1 Web login page prompts the user to enter values for the TM1 Admin Host and TM1 server.

If you set a value for either of these parameters in the `tm1web_config.xml` file, then the login process uses the specified value and does not prompt the user for this information.

**AdminHostName Parameter**

This parameter specifies the name of the Admin Host on which a TM1 Admin Server is running. Edit the AdminHostName parameter in the `tm1web_config.xml` file using the following format:

```
<add key="AdminHostName" value="HostName"/>
```

where `HostName` can be one of the following values:

- If `HostName` is blank (default value), then the login page displays the Admin Host prompt.
- If `HostName` is set to the name of a valid TM1 Admin Host, then IBM Cognos TM1 Web uses that Admin Host for the login process and does not prompt the user.

**TM1ServerName Parameter**

This parameter sets the name of the TM1 server. Edit the TM1ServerName parameter in the `tm1web_config.xml` file using the following format:

```
<add key="TM1ServerName" value="ServerName"/>
```

where `ServerName` can be one of the following values:

- If `ServerName` is blank (default value), then the TM1 server prompt is displayed on the IBM Cognos TM1 Web login page.
- If `ServerName` is set to a valid TM1 server name, then the login page does not display a prompt for either the Admin Host or the TM1 server.
- If the AdminSvrSSLCertID parameter is incorrectly configured, the server name pull-down displays as empty and an error is logged in the Cognos TM1 Web log file. For more information, see *Running TM1 in Secure Mode using SSL* in *TM1 Operation*.

After the user enters a valid User Name and Password, IBM Cognos TM1 Web will log in to the TM1 server specified by the TM1ServerName parameter in the `tm1web_config.xml` file.

For example, the TM1ServerName parameter could be set to planning sample, as shown in the following code.

```
<add key="TM1ServerName" value="planning sample"/>
```
Configuring a Custom Homepage for IBM Cognos TM1 Web

You can configure a custom homepage for IBM Cognos TM1 Web to display a Websheet, cube view, or a URL after users have successfully logged into IBM Cognos TM1 Web. This homepage can provide users with a starting point for accessing and working with TM1 data.

A homepage can be configured globally for all IBM Cognos TM1 Web users or assigned individually for different users or sets of users. For example, if you configure the homepage option to display an HTML file or other type of web page, then you can provide users with instructions, tasks, links, or any other content that can be displayed in a web page.

If a homepage is configured, it displays on the first tab in IBM Cognos TM1 Web and cannot be closed by users. When configured, a Home link is displayed in the header area of IBM Cognos TM1 Web that allows users to easily return to the homepage.

An IBM Cognos TM1 Web homepage can be configured in one of the following two ways:

**Different homepage for different IBM Cognos TM1 Web users**
Use the Client Settings dialog in TM1 Architect and Server Explorer to configure a startup homepage for different clients (users) of IBM Cognos TM1 Web.

**Global homepage for all IBM Cognos TM1 Web users**
Use the HomePageObject parameter in the tm1web_config.xml file to configure a homepage that applies globally to all IBM Cognos TM1 Web users.

*Note:* Any homepage assignment you make with the Client Settings dialog can override the global setting in the tm1web_config.xml file if you set AllowOverwrite=true in the HomePageObject parameter of the tm1web_config.xml file.

**Configuring Different Homepages for Individual Users**
The Client Settings dialog box, in Architect and Server Explorer, configures a startup homepage for different IBM Cognos TM1 Web clients (users).

For example, you can assign one homepage for IBM Cognos TM1 Web users in the Sales department and another homepage for users in the Finance department.

*Note:* You can use the **Client Settings** dialog box to assign homepages for specific users, over-riding the global homepage setting for the HomePageObject parameter in the tm1web_config.xml file.

**Procedure**

1. In Architect or Server Explorer, right click the server and select **Security, Clients/Groups**.
   The Clients/Groups dialog box opens.
2. Click **Settings**.
   The Client Settings dialog box opens.
3. Select the client from the **Current Client** list for which the homepage setting will apply.
4. Enter a Websheet, cube view, or URL for the homepage as follows:
   - To display a URL, type the URL address, including the http:// protocol, into the Homepage box. You can enter a URL for either a website or an individual file.
   - To select a Websheet or cube view as the homepage, click **Browse**. The Select an IBM Cognos TM1 Web Homepage dialog box opens where you can select a reference to a Websheet or cube view from the Application tree.
   After selecting a Websheet or cube view reference, click **OK** to return to the Client Settings dialog box.
5. Select the settings that control the appearance of the Navigation pane.
   *Note:* The Navigation pane settings you set here will only apply if the corresponding parameter in the tm1web_config.xml file is set to AllowOverwrite=true. For details, see “Configuring IBM Cognos TM1 Web Startup and Appearance Settings” on page 99.
   The available settings for controlling the appearance of the Navigation pane include:
   - **Include the Navigation Pane** - Determines whether the Navigation pane is displayed or not displayed when the selected client logs in to IBM Cognos TM1 Web.
6. Select one of the options from the **Apply To** list to configure which client or clients will be able to view the homepage.

- **Current Client** - Applies the homepage setting for only the client selected in the current Client list.
- **Selected Clients** - Enables the Select button so you can open the Subset Editor to select a collection of clients that will use the same homepage setting.
- **All Clients** - Applies the same homepage setting to all TM1 clients.

If you choose **Selected Clients**, and then click **Select**, the Subset Editor opens so you can select a subset of TM1 clients that can use the homepage.

Use the Subset Editor to select a subset of clients and then click **OK** to return to the Client Settings dialog box. The number of clients selected in the Subset Editor is summarized in the Client Settings dialog box.

7. Click **Apply Settings** to configure the homepage for the client or clients that you selected in the Apply To list.

8. Repeat steps 4, 5, 6, and 7 to configure a homepage for a different set of TM1 clients.

9. Click **OK** to close the Client Settings dialog box.

You have now configured a homepage for IBM Cognos TM1 Web. The selected IBM Cognos TM1 Web clients will see the assigned homepage the next time they successfully log in to IBM Cognos TM1 Web.

### Configuring a Global Homepage for All Users

The **HomePageObject** parameter, in the `tm1web_config.xml` file, enables a global homepage that displays for all IBM Cognos TM1 Web users.

**Note:** You can override the global **HomePageObject** parameter by using the Client Settings dialog to assign different homepage's for individual Cognos TM1 users. For details, see “Configuring Different Homepages for Individual Users” on page 95.

The **HomePageObject** parameter works for three types of objects:

- Cubeviewer
- Websheet
- URL

The homepage object displays after the user successfully logs in to IBM Cognos TM1 Web.

### Using the HomePageObject Parameter

How to use the **HomePageObject** parameter.

The **HomePageObject** parameter uses the following format:

```xml
<add key="HomePageObject" value="ObjectPath ;Type=ObjectType ;Description=ObjectTitle ;AllowOverwrite=true" />
```

where:

- **ObjectPath** is the path to the Websheet, cube view, or URL object that you want to open. The exact format of the path depends on the type of object.
- **ObjectType** is the keyword for the object you want to open; websheet, cubeviewer, or URL.
- **ObjectTitle** is a brief title you assign to the object that displays in the title bar of the web browser and on the homepage tab in IBM Cognos TM1 Web.
- **AllowOverwrite** can be set to a value of true or false as follows:

If you set AllowOverwrite=true then the **HomePageObject** parameter can be overridden by setting a different homepage for individual clients using the Client Settings dialog in Architect and Server Explorer.
If you set AllowOverwrite=false then the HomePageObject parameter applies globally to all TM1 users and can not be individually configured with the Client Settings dialog in Architect and Server Explorer.

The following sections describe using the HomePageObject parameter for Websheets, cube views, and URLs.

### Setting a Global IBM Cognos TM1 Web Homepage to a Cube View
Use the following format to set a cube view as the homepage for IBM Cognos TM1 Web.

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>CubeName$$ViewName$$Status</td>
</tr>
</tbody>
</table>

where the following arguments are separated by $$ characters:

- **CubeName** is the name of cube to which the view belongs.
- **ViewName** is the name of the cube view to display.
- **Status** is the public or private status of the cube view.

**Note:** You must include a value of either PUBLIC or PRIVATE to correctly identify the specific cube view that you want to open.

For example, to open a public view named Price from the SalesCube:

```xml
&ltadd key="HomePageObject" value="SalesCube$$Price$$Public;Type=cubeviewer;Description=MyStartCube;AllowOverwrite=true" />
```

### Setting a Global IBM Cognos TM1 Web Homepage to a Websheet
You can assign a Websheet as the IBM Cognos TM1 Web homepage, depending on how the Excel file was added to TM1.

#### Opening a Websheet that references an Excel file outside of TM1
You can open a Websheet that references an Excel file.

**Procedure**

Use the format:

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>WebsheetPath</td>
</tr>
</tbody>
</table>

where WebsheetPath is the location and name of the Excel file. This can be either a path for a local file, or a UNC path for a file located on a network.

For example, to set a UNC network path for Websheet:

```xml
value=//MySystem/Samples/classic_slice.xls
```

**Results**

The complete HomePageObject parameter looks like this:

```xml
<add key="HomePageObject" value="/MySystem/Samples/classic_slice.xls;Type=websheet;Description=MyWebsheet;AllowOverwrite=true" />
```

#### Opening a Websheet object that was uploaded to the TM1 server
You can open a Websheet object that was uploaded.

**Procedure**

1. In Server Explorer, use the Properties pane to find the TM1 assigned name for the uploaded Excel file.
2. Set the value parameter using the following format:

```
value="TM1://ServerName/blob/PUBLIC/\}Externals\TM1_Filename"
```

where:
- `ServerName` is the name of the TM1 sever where the Excel file is located.
- `TM1_Filename` is the name that TM1 assigned to the uploaded Excel file.

For example:

```
value="TM1://sdata/blob/PUBLIC/\}Externals\Report_2006.xls_20070123212746.xls"
```

The complete HomePageObject parameter line looks like this:

```
<add key="HomePageObject" value="TM1://sdata/blob/PUBLIC/\}Externals\Report_2006.xls_20070123212746.xls;Type=websheet;Description=My Uploaded Websheet;AllowOverwrite=true" />
```

### Setting a Global IBM Cognos TM1 Web Homepage to a URL

You can set the HomePageObject parameter to a URL.

Use this format:

```
value="URL_Path"
```

Where `URL_Path` can point to a web site or an individual web page file.

For example:

- To set the homepage to a URL that points to a file:
  
  ```
  <add key="HomePageObject" value="homepage.html;Type=URL;
  Description=MyStart Page;AllowOverwrite=true"
  />
  ```

- To set the homepage to a URL that points to a web site:
  
  ```
  <add key="HomePageObject" value="http://www.ibm.com;Type=URL;
  Description=IBM;AllowOverwrite=true"
  />
  ```
Configuring IBM Cognos TM1 Web Startup and Appearance Settings

You can control the appearance of the Navigation pane, tab bar, and Websheet and Cubeviewer toolbars when users log in to IBM Cognos TM1 Web.

These parameters are located in the `tm1web_config.xml` file and apply globally to all users of IBM Cognos TM1 Web.

**Note:** For details on using the HomePageObject parameter to set a custom homepage, see “Configuring a Custom Homepage for IBM Cognos TM1 Web” on page 95.

**NavTreeHidden Parameter**

The `NavTreeHidden` parameter determines if the Navigation pane displays when users log in to IBM Cognos TM1 Web. This can be helpful if you are displaying a custom homepage for users and you want to completely hide the Navigation pane.

The `NavTreeHidden` parameter uses the following format in the `tm1web_config.xml` file:

```xml
<add key="NavTreeHidden" value="false;AllowOverwrite=true" />
```

where:

- **value** can be either true or false.
  - If set to false, the Navigation pane will be displayed when user's log in to IBM Cognos TM1 Web.
  - If set to true, the Navigation pane will not be displayed when user's log in to IBM Cognos TM1 Web.

- **AllowOverwrite** can be set to true or false as follows:
  - If you set `AllowOverwrite=true`, the `NavTreeHidden` parameter is assigned globally to all users, but can be overridden for individual clients using the Client Settings dialog in Architect and Server Explorer.
  - If you set `AllowOverwrite=false`, the `NavTreeHidden` parameter applies globally to all TM1 users and can not be overridden for individual clients using the Client Settings dialog in Architect and Server Explorer.

**NavTreeCollapsedOnStart Parameter**

The `NavTreeCollapsedOnStart` parameter determines if the Navigation pane will be minimized or expanded when users log in. If collapsed, a small vertical bar displays to provide the user with a way to restore the pane.

The `NavTreeCollapsedOnStart` parameter uses the following format in the `tm1web_config.xml` file:

```xml
<add key="NavTreeCollapsedOnStart" value="false;AllowOverwrite=true" />
```

where:

- **value** can be either true or false.
  - If value is set to false, the Navigation pane will be expanded and display in its default mode when user's log in to IBM Cognos TM1 Web.
  - If value is set to true, the Navigation pane will be collapsed when user's log in to IBM Cognos TM1 Web.

- **AllowOverwrite** can be set to true or false as follows:
  - If you set `AllowOverwrite=true`, the `NavTreeCollapsedOnStart` parameter is assigned globally to all users, but can be overridden for individual clients using the Client Settings dialog in TM1 Architect and Server Explorer.
  - If you set `AllowOverwrite=false`, the `NavTreeCollapsedOnStart` parameter applies globally to all TM1 users and cannot be overridden for individual clients using the Client Settings dialog in TM1 Architect and Server Explorer.

**HideTabBar Parameter**

The `HideTabBar` parameter determines if IBM Cognos TM1 Web can display multiple tabs when a user opens multiple IBM Cognos TM1 Web objects, or if only one view is displayed.

This can be useful if you want to limit users to one view at a time.
Example of HideTabBar parameter set to false

Figure 7: Example of HideTabBar parameter

The HideTabBar parameter uses the following format in the tm1web_config.xml file:

```
<add key="HideTabBar" value="false;AllowOverwrite=true"
/>
```

where value can be either true or false.

- If value is set to false, multiple tabs can be displayed. This is the default behavior of IBM Cognos TM1 Web.
- If value is set to true, multiple tabs are not displayed and only one object can be opened at a time.

The AllowOverwrite option is not currently used for this parameter.

**HideWebsheetToolBar Parameter**

The HideWebsheetToolBar parameter determines if the Websheet toolbar is displayed when users open a Websheet.

The HideWebsheetToolBar parameter uses the following format in the tm1web_config.xml file:

```
<add key="HideWebsheetToolBar" value="false;AllowOverwrite=true"
/>
```

where value can be either true or false.

- If value is set to false, the Websheet toolbar will display in IBM Cognos TM1 Web.
- If value is set to true, the Websheet toolbar will not display in IBM Cognos TM1 Web.

The AllowOverwrite option is not currently used for this parameter.

**HideCubeviewerToolBar Parameter**

The HideCubeviewerToolBar parameter determines if the Cubeviewer toolbar is displayed when users open a cube view.

The HideCubeviewerToolBar parameter uses the following format in the tm1web_config.xml file:

```
<add key="HideCubeviewerToolBar" value="false;AllowOverwrite=true"
/>
```

where value can be either true or false.

- If value is set to false, the Websheet toolbar will display in IBM Cognos TM1 Web.
- If value is set to true, the Websheet toolbar will not display in IBM Cognos TM1 Web.

The AllowOverwrite option is not currently used for this parameter.

**Displaying or Hiding the Views Node in the Navigation Pane**

You can display or hide the Views node in the Navigation pane.

**Procedure**

1. Edit tm1web_config.xml in the IBM Cognos TM1 Web virtual directory.
2. Locate the `NavTreeDisplayServerView`, which controls the display of the **Server View** node. The default value, *Y*, displays the **Views** node in the Navigation pane.

```xml
<!--NavTreeDisplayServerView: Y/N - Wether to display
"Server View" node in navigation tree -->

<add key="NavTreeDisplayServerView" value="Y" />
```

3. To hide the Views node, change the `NavTreeDisplayServerView` value to *N*.
4. Save `tm1web_config.xml`.
5. Log in to IBM Cognos TM1 Web.

Now the Navigation pane displays without the View node.

### TM1DatabaseLabel Parameter

This parameter displays the TM1 database label in the banner beside the user name.

Edit the `TM1DatabaseLabel` parameter in the `tm1web_config.xml` file using the following format:

```xml
<add key="TM1DatabaseLabel" value="Y" />
```

where `TM1DatabaseLabel` can be either *N* or *Y*.

- If `TM1DatabaseLabel` is set to *N*, the database label is not displayed. This is the default behavior of IBM Cognos TM1 Web.
- If `TM1DatabaseLabel` is set to *Y*, the database label appears in beside the logged in user name in the banner as "Welcome: <user name> / <TM1 database label>".

### Changing the Cube Viewer Page Size

You can change the number of rows and columns displayed in the Cube Viewer of IBM Cognos TM1 Web.

By default, Web Cube Viewer displays pages of TM1 data with 20 columns and 100 rows, and includes the dimensions list in the row count.

**Procedure**

1. Edit `tm1web_config.xml`.
2. Locate the following code:
   ```xml
   CubeViewerRowPageSize
   CubeViewerColumnPageSize
   ```
3. Change the value for the row and/or column page size.
4. Save `tm1web_config.xml`.
5. Log in to IBM Cognos TM1 Web.

For example, if you set the row page size to 10, the Cube Viewer displays nine rows of data, plus the row of dimensions.

### Setting the Maximum Number of Sheets to Export from a Cube Viewer

By default, the maximum number of sheets you can export from a Cube Viewer to a printer is 100. You can configure IBM Cognos TM1 Web to export more sheets.

**Procedure**

1. Edit `tm1web_config.xml`.
2. Locate the following code:
   ```xml
   MaximumSheetsForExport
   ```
3. Change the value for the maximum number of sheets to export.
4. Save tm1web_config.xml.
5. Log in to IBM Cognos TM1 Web.

**Wrapping string values in cube views**

Use CubeviewerStringWrap to set the parameters used when viewing string element cells in a Web Cube View.

To control the way a view is displayed and wrapped, set the values using the CubeviewerStringWrap parameter and save the web configuration file. Cells that are not displayed are still editable in a scrollable area by clicking in the wrapped region.

**Enabled**
- Turn wrapping of string cells in this view on or off. When set to "False" the column width is as wide as the longest string for any row in the current view. Set to "True" by default to turn on wrapping using these default parameters.

**MinCharactersToWrap**
- Set the minimum number of characters needed before wrapping. For instance, string values with less than 50 characters will not wrap within a cell. Set to 50 by default.

**MaxDisplayCharacters**
- Set the maximum number of characters to display within the string cell. The cell may contain more than this number of characters, but they will only be displayed when double-clicking on the cell. If the MinCharactersToWrap is 50 and the MaxDisplayCharacters is 200, string cells containing 200 or more characters will consume approximately 4 lines. Set to 200 by default.

**WidthOfWrapCell**
- Set the number of characters used in the wrapped portion of the display. Set to 240 by default.

Use the following format in the tm1web_config.xml file (the following listing has a return in it for clarity but you should not enter a return).

```xml
<add key="CubeviewerStringWrap" value="Enabled=true;MinCharactersToWrap=50;MaxDisplayCharacters=200;WidthOfWrapCell=240" />
```

**Remember:** CubeviewerStringWrap does not apply to Websheets.

---

**Setting the TM1 Web session timeout**

The default TM1 Web session timeout is 20 minutes. When TM1 Websheets are deployed to IBM Planning Analytics Workspace, you might encounter TM1 Web session timeouts. You can modify this setting in your environment.

**About this task**

The TM1 Web session timeout is determined by the `<session-timeout>` setting in web.xml.

**Note:** When TM1 Websheets are deployed to Planning Analytics Workspace, the recommended session timeout is 60 minutes.

```xml
<session-config>
    <session-timeout>20</session-timeout>
</session-config>
```

The web.xml file is located in your `<installation_directory>\webapps\tm1web\WEB-INF` directory. For example, C:\Program Files\IBM\cognos\tm1_64\webapps\tm1web\WEB-INF.

**Procedure**

1. Open web.xml in a text editor.
2. Change the `<session-timeout>` value to 60 or a value that is required by your environment.
3. Save and close web.xml.
4. Restart the IBM TM1 Application Server service.
Web browser configuration for Cognos TM1 Web

This section describes web browser configuration steps for IBM Cognos TM1 Web that may be needed for your environment after you complete the initial installation.

Users connect to Cognos TM1 Web using one of the supported web browsers running on their own computers. Some additional configuration may be required.

Configuring web browser language for Cognos TM1 Web

The language settings in your web browser determine which language is used in the IBM Cognos TM1 Web interface.

About this task

Follow these general steps to configure Microsoft Internet Explorer and Mozilla Firefox to display IBM Cognos TM1 Web in your primary language. For more detailed information, see the documentation for your web browser.

Procedure

1. Depending on which web browser you are using, use the available language options to select and configure your primary language.
   - In Internet Explorer, the language options are typically located under Tools menu > Internet Options > General > Languages.
   - In Firefox, the language options are typically located under Tools menu > Options > Content > Languages.
2. Add your language to the language list.
3. Organize the list so that your preferred language is at the top of the list.

Displaying and entering numbers in Cognos TM1 Web based on Regional Settings

If you are running the IBM Cognos TM1 Web client in a language other than the language of your operating system, you must ensure that your web browser language and Microsoft Windows regional setting are set to the same value.

This will enable you to display and enter numbers in Cognos TM1 Web based on a specific regional setting.

For example, if you have an English OS, but want to run Cognos TM1 Web in French, your browser language must be set to French and your computer's regional setting language must be set to French.

Windows Regional and Language Settings

Access the Windows regional settings by opening the Regional and Language Options feature in the Windows Control Panel.

Web Browser Language Settings

Access the web browser language setting as described in the section “Configuring web browser language for Cognos TM1 Web” on page 69.

Configuring Internet Explorer for Cognos TM1 Web

If you are using IBM Cognos TM1 Web with Microsoft Internet Explorer, make sure you have this security setting enabled to allow Cognos TM1 Web dialog windows to display correctly.

Change the security settings as follows:
   - Allow websites to open windows without address bars or status bars.
   - Allow script-initiated windows without size or position constraints.

If Internet Explorer is not configured correctly, some Cognos TM1 Web dialogs can appear truncated.
Running Cognos TM1 Web on a WAN Server and exporting Excel and PDF files

If you are running IBM Cognos TM1 Web on a WAN (Wide Area Network) server and want to allow users to export Microsoft Excel and PDF files from Cognos TM1 Web, you need to configure specific security settings in Microsoft Internet Explorer.

Because a WAN server resides in the Internet zone, Internet Explorer applies a different security profile as compared to servers in the Local Intranet zone. To successfully export files from Cognos TM1 Web in a WAN environment, you must add the Cognos TM1 Web server as a trusted site in the security settings for Internet Explorer.

Adding Cognos TM1 Web as a trusted site in Internet Explorer

If you are using Microsoft Internet Explorer and running IBM Cognos TM1 Web on a WAN server, you must add the Cognos TM1 Web server as a trusted site and then customize the security settings for trusted sites.

Procedure

1. Open Microsoft Internet Explorer.
2. Click Tools > Internet Options.
   The Internet Options dialog opens.
3. Click the Security tab.
4. Click Trusted Sites and then click the Sites button.
5. Enter the URL of the Cognos TM1 Web server in the Add this Web site to the zone box.
6. Click Add.
7. Close the Trusted Sites dialog box.
8. On the Security tab of the Internet Options dialog, click Trusted sites and then click the Custom Level button.
   The Security Settings - Trusted Sites Zone dialog opens.
9. Locate the settings for Downloads and click Enable for the Automatic prompting for file downloads option.
10. Click OK.
Chapter 11. Cognos TM1 Application Server installation

You can install the web application server components for IBM Cognos TM1 on a separate, dedicated computer so that users in a network environment can access the program. These components include the Cognos TM1 Application Server and the Cognos TM1 Application Gateway.

The Cognos TM1 Applications Server requires deployment on a Java-based web application server. When installing Cognos TM1 Application Server, first determine which of the following web application servers you want to use:

- the provided WebSphere Liberty Profile application server
- your own installation of Apache Tomcat
- your own installation of IBM WebSphere Application Server

For details about Cognos TM1 Application Server architecture and deployment, see:

- “Cognos TM1 Applications architecture” on page 23
- “Deploying Cognos TM1 Applications” on page 29

Deploying with the provided version of WebSphere Liberty Profile server

The fastest and easiest way to install and deploy Cognos TM1 Application Server is to use the version of WebSphere Liberty Profile server that is provided and installed with the IBM Cognos TM1 installation program. This way uses Cognos Configuration to start and stop the Cognos TM1 Application Server.

For details, see “Installing Cognos TM1 Application Server with the provided WebSphere Liberty Profile” on page 106.

Deploying to your own web application server

To deploy Cognos TM1 Application Server with your own instance of a Java-based web application server, use IBM Cognos Configuration to first create the pmpsvc.war web application archive file, and then manually deploy the file.

For details, see the following topics:

- “Install Cognos TM1 Application Server with your own installation of Apache Tomcat web application server” on page 113
- “Install Cognos TM1 Application Server with your own installation of IBM Websphere” on page 116

Cognos TM1 Application Server with x64 Windows

When running Cognos TM1 Application Server on an x64 Microsoft Windows system with WebSphere Liberty Profile server, use the same 32-bit or 64-bit versions of the Java Runtime Environment (JRE) and WebSphere Liberty Profile web server. Do not mix platform versions. For example, if you are using the 64-bit version of JRE, then you should also use the 64-bit version of WebSphere Liberty Profile.

Integrating Cognos TM1 Application Server with Cognos Analytics and Cognos Connection portal

If your TM1 installation uses Cognos security for authentication, your Cognos Analytics users can use the Cognos Connection portal to open TM1 applications instead of the TM1 Applications Web portal. However, administrators still need to use TM1 Applications Web to configure and manage applications.

When you configure TM1 Application Server to use Cognos security, you also enable the Cognos Connection portal to display a folder that contains links to the available TM1 applications. The exact list of displayed applications depends on the rights of the current user.

The planning.html file provides the information for Cognos Analytics and the Cognos Connection portal to display links to TM1 applications. For more information, see “Using Cognos TM1 Applications with Cognos security” on page 218.
Installing Cognos TM1 Application Server with the provided WebSphere Liberty Profile

You can install Cognos TM1 Application Server on a separate computer and deploy it with the instance of WebSphere Liberty Profile that is provided with the installation.

This installation is intended for an environment where the Cognos TM1 Admin Server and Cognos TM1 Server are running on another computer.

Installing Cognos TM1 Web Tier components

This topic provides the steps to install the required files for IBM Cognos TM1 Application Server and its components on a separate computer.

About this task

Use one of the following installation programs to install Cognos TM1 Web Tier components:

- IBM Cognos TM1 32-bit for Windows
- IBM Cognos TM1 64-bit for Windows

Remember: If you plan to use the Cognos TM1 Web client, you need an installation of Cognos TM1 Web on either the same computer or different computer in your network. To install Cognos TM1 Web on a different computer, see Chapter 10, “Cognos TM1 Web installation,” on page 83

Procedure

1. On Microsoft Windows Vista, Windows 7 or Windows Server 2008 operating system software, right-click the issetup.exe file and click Run as Administrator. For other operating systems, double-click the issetup.exe file.
2. In the installation program select only the following components:
   - TM1 Application Gateway
   - TM1 Application Server
   - TM1 Web - This component is optional. Select this to install Cognos TM1 Web on the same computer as Cognos TM1 Application Server.
3. Follow the prompts to complete the installation.

Deploying the Cognos TM1 Application Server with the provided WebSphere Liberty Profile application server

The IBM Cognos TM1 Application Server runs in the WebSphere Liberty Profile application server that is provided with the installation. Use Cognos Configuration to deploy and start WebSphere Liberty and Cognos TM1 Application Server.

Procedure

1. Click Start > All Programs > IBM Cognos TM1 > IBM Cognos Configuration.
   If you installed the product from the Program Files (x86) directory on a computer running Windows Vista, Windows 7, or Windows 2008 operating system software, start IBM Cognos Configuration as an Administrator.
2. In the Cognos Configuration Explorer panel, expand the Local Configuration > Environment node, right-click TM1 Application Server and select Start.
   This will start the provided version of WebSphere Liberty Profile server and then deploy and start the Cognos TM1 Application Server.
3. Click File > Save and close IBM Cognos Configuration.
Configuring authentication security for Cognos TM1 Application Web

For the IBM Cognos TM1 servers used with Cognos TM1 Application Web, use either TM1 standard security authentication or IBM Cognos security.

About this task

Configure the authentication login mode using the IntegratedSecurityMode parameter in the Tm1s.cfg file of each Cognos TM1 server that you want to use.

Cognos TM1 Application Web is compatible only with the following TM1 security authentication modes:

- Authentication mode 1 - TM1 standard security authentication
- Authentication mode 5 - IBM Cognos security

Important: Do not use a combination of different security authentication modes for the same installation of Cognos TM1 Application Web.

For best practice, determine the security mode before you configure Cognos TM1 Application Web to use a Cognos TM1 server and use that same security mode with any additional servers you add.

For more details about security authentication and the IntegratedSecurityMode parameter, see:

- “Authentication security” on page 185
- “IntegratedSecurityMode” on page 270

Procedure

1. Open the file TM1 server data directory/Tm1s.cfg
2. Set the IntegratedSecurityMode parameter for the Cognos TM1 Server.
   - To use Cognos TM1 standard security authentication, set IntegratedSecurityMode=1
   - To use IBM Cognos security, set IntegratedSecurityMode=5
   
   For details about using IBM Cognos security, see:
   - “Using Cognos TM1 Applications with Cognos security” on page 218
   - “Using Cognos security with Cognos TM1” on page 211
3. Save and close the Tm1s.cfg file.
4. Restart the Cognos TM1 Server.
5. Repeat these steps for any other Cognos TM1 Server you want to use with Cognos TM1 Application Web.

Configuring the server and client environment for Cognos TM1 Application Web

Before you use IBM Cognos TM1 Application Web, you need to specify the TM1 Admin Host, TM1 Server, and client user interfaces that you want to use. The first time that you start Cognos TM1 Application Web, the program prompts you to configure these options.

Before you begin

Ensure that the TM1 Admin Server and at least one TM1 Server is running on the local computer or a remote computer that you can access.

Ensure that each TM1 Server that you want to use is configured with the required parameter values. For details, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

If you plan to use Cognos TM1 Application Web, ensure that you know the web server name and port number where Cognos TM1 Web is running.

Procedure

1. Start and log in to Cognos TM1 Application Web:
   a) In a web browser, type the URL for Cognos TM1 Application Web:
http://localhost:9510/pmpsVC
b) Replace localhost with the name of the computer where the Cognos TM1 Application Server is installed.

2. Open the Cognos TM1 Application Configuration page:
   - If this is the first time that Cognos TM1 Application Web has been started since the installation, the Configuration page opens.
   - If Cognos TM1 Application Web has already been configured, you are prompted for a user name and password and then you can open the configuration page by clicking the Administer IBM Cognos TM1 Applications button on the toolbar of the Cognos TM1 Application Web main page.

3. In the Admin Host field, enter the name or IP address of the computer where the Cognos TM1 Admin Server is running.
   Note: The Admin Host and Server Name fields appear blank if you have not started the Cognos TM1 Admin Server and at least one Cognos TM1 server.

4. In the Server Name field, enter the name of the TM1 Server that you want to use with Cognos TM1 Application Web.
   For example, you could specify the sample TM1 server GO_New_Stores.
   Click the Refresh button to refresh the list of available servers.

5. Select the data contribution clients that you want to use with Cognos TM1 Application Web.
   These clients will be available when you create applications with IBM Cognos TM1 Performance Modeler.
   - Include Cognos Insight - Connected - IBM Cognos Insight client using real time processing with the TM1 server.
   - Include Cognos Insight - Distributed - IBM Cognos Insight client with local processing of data. Data is updated to the TM1 server only when a commit data action is performed.
   - Include TM1 Application Web - Default client. Processing is in real time with the server. This option uses the data grid and charting client infrastructure from Cognos TM1 Web and requires that you enter a value for the TM1 Application Web URL option.

6. If you selected the Include TM1 Application Web option, enter a value for the TM1 Application Web URL option.
   This URL points to the Contributor.jsp file on the web server that is hosting Cognos TM1 Web.
   For example:
   http://WebServer:9510/tm1web/Contributor.jsp
   where WebServer is the name of the computer where Cognos TM1 Web is installed.

7. Click OK.

8. If prompted, enter the username and password for the server and click Login.
   Tip: Use admin and apple for the user name and password if you are using one of the installed sample databases.
   The Cognos TM1 Application Web main page displays. This page appears blank until you build and deploy applications inside of Cognos TM1 Application Web. For more details, see the IBM Cognos Performance Modeler and IBM Cognos Insight documentation.

Results
The following message indicates that the Cognos TM1 server that you are using is not properly configured for use with Cognos TM1 Application Web:
The new server can be added but it may not be configured with all the options required by IBM Cognos TM1 Applications.
For information on how to configure this server, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

Cognos TM1 Application Server settings in Cognos Configuration
You can configure settings for Cognos TM1 Application Server in Cognos Configuration.

In Cognos Configuration, click Environment > TM1 Application Server.
**Session timeout (min)**
Time after which if there is no activity that the TM1 server disconnects. Default is 60 minutes.

**Force qualified paths**
When set to True, a machine name that is provided as the Admin Host resolves to a fully qualified domain name. When set to False, only the machine name is used.

**Notifications provider**
- DLS (Delivery Service): If a mail server is configured, emails are sent but no notifications display in the Cognos Inbox.
- HTS (Human Task Service): Notifications are sent to the Cognos Inbox, and emails also sent if a mail server is configured.

By default left blank for no notifications.

**Enable Business Viewpoint**
True means Business Viewpoint can interact with this installation. False prevents Business Viewpoint from interacting.

**Cognos Connection Folder Name**
Specifies the name of the Cognos Connection folder in which hyperlinks to deployed TM1 applications are contained. Default is IBM Cognos TM1 Application - My Applications

**TM1 Application Service Dispatcher URI**
The URI used for the dispatcher servlet, for example http://localhost:9510/pmpsvc/dispatcher/servlet

**User ID and Password**
User ID and Password used to authenticate.

Under TM1 Application Server, click **TM1 Clients**.

**Provisioning URI**
Specifies a URI to use to manually set the msi locations.

**Allow provisioned installs**
True permits users without the clients installed to provision and install them from TM1 Application Server. False blocks users from provisioning and installing client software.

**Allow provisioned updates**
True permits updates that are installed on the TM1 Application Server such as a Fix Pack version to be provisioned to clients when users next connect. False prevents updates from being provisioned.

**Enable publish from Cognos Insight**
True permits a user with Admin rights to publish from Cognos Insight. False disallows the Publish operation for all users.

**Cognos Insight ping frequency (seconds)**
Determines the frequency with which Cognos Insight verifies connectivity to the TM1 Application Server. If Cognos Insight receives no response while in Distributed mode, it is implicitly placed in Offline mode. Default is 30 seconds.

**Determining the URL startup link for Cognos TM1 Application Web**
The exact link to start and log on to Cognos TM1 Application Web depends on which web server you are running and how it is configured.

You can see the default startup URL for Cognos TM1 Application Web in IBM Cognos Configuration.

1. Open Cognos Configuration.
2. Click to expand Local Configuration > Environment and then select TM1 Application Server.
3. The URL is listed in the value column for the **TM1 Application Server Gateway URI** field.
   For example: http://localhost:9510/pmpsvc

**Link Parameters**
Use the following format for the URL to log in to Cognos TM1 Application Web.

https://WebServer:PortNumber/pmpsvc
Table 15: Cognos TM1 Application Web - URL parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebServer</td>
<td>Can be one of the following:</td>
</tr>
<tr>
<td></td>
<td>The keyword <code>localhost</code> if you are currently logged on to the web server that is running Cognos TM1 Application Server.</td>
</tr>
<tr>
<td></td>
<td>The machine name or domain name of the web server hosting the Cognos TM1 Application Server.</td>
</tr>
<tr>
<td></td>
<td>The IP address of the web server hosting the Cognos TM1 Application Server.</td>
</tr>
<tr>
<td>PortNumber</td>
<td>The port number you configured with web application server.</td>
</tr>
<tr>
<td></td>
<td>IBM WebSphere - Click the <strong>Web Server</strong> link in the WebSphere Administrative Console to view and edit port settings.</td>
</tr>
<tr>
<td></td>
<td>Apache Tomcat - Open the Apache Tomcat <code>server.xml</code> file in the following location to view and edit the port settings:</td>
</tr>
<tr>
<td></td>
<td><code>C:\Program Files\Apache Software Foundation\Tomcat 6.0\conf\server.xml</code>.</td>
</tr>
</tbody>
</table>

Link Examples

Table 16: Cognos TM1 Application Web - link examples

<table>
<thead>
<tr>
<th>Web Application Server</th>
<th>Header</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebSphere Liberty Profile provided with the installation</td>
<td>The default link when using the provided version of WebSphere Liberty Profile is:</td>
</tr>
<tr>
<td>Apache Tomcat</td>
<td>The usual link for Cognos TM1 Application Web with Apache Tomcat is:</td>
</tr>
<tr>
<td>IBM WebSphere Application Server</td>
<td>The usual link for Cognos TM1 Application Web running on IBM WebSphere Application Server is:</td>
</tr>
</tbody>
</table>

Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web

Before using the IBM Cognos TM1 Server with IBM Cognos TM1 Application Web, edit the TM1 server's configuration file to include the required parameters and values.

About this task

The following configuration parameters in the Cognos TM1 Server `Tm1s.cfg` file support different subcomponents of Cognos TM1 Application Web.

- **AllowSeparateNandCRules** parameter - supports Cognos TM1 Performance Modeler with Cognos TM1 Application Web.
  
  See “AllowSeparateNandCRules” on page 257.

- **DistributedPlanningOutputDir** parameter - supports Cognos Insight - Distributed client with Cognos TM1 Application Web.
See “DistributedPlanningOutputDir” on page 266.

- ForceReevaluationOfFeedersForFedCellsOnDataChange parameter - supports Cognos TM1 Performance Modeler with Cognos TM1 Application Web. When this parameter is set, a feeder statement is forced to be re-evaluated when data changes.

  See “ForceReevaluationOfFeedersForFedCellsOnDataChange” on page 269.

**Procedure**

1. Open the Cognos TM1 Server configuration file, Tm1s.cfg.
2. To support Cognos TM1 Performance Modeler, edit or add the following line:
   ```
   AllowSeparateNandCRules=T
   ```
3. To support the Cognos Insight – Distributed client, edit or add the following line:
   ```
   DistributedPlanningOutputDir=.	unit
   ```
4. Edit or add the ForceReevaluationOfFeedersForFedCellsOnDataChange parameter.
5. Save the Tm1s.cfg file.
6. Restart the Cognos TM1 Server.
7. Repeat these steps for any other Cognos TM1 servers you want to use with Cognos TM1 Application Web.

**Configuring IBM Cognos TM1 Application Web**

IBM Cognos TM1 uses IBM Cognos TM1 Web to support the Cognos TM1 Application Web client. Cognos TM1 Application Web enables users to view and edit planning application data in grid format. If you want to allow users to use Cognos TM1 Application Web, you need to configure this option.

**About this task**

When you install Cognos TM1 Web, the required files for Cognos TM1 Application Web are copied to the Cognos TM1 Web installation location.

The main file for Cognos TM1 Application Web is:

- Contributor.jsp

The default install location is:

- `TM1_install_location\webapps\tm1web`

Configure the Cognos TM1 Application Web URL parameter in Cognos TM1 Application Web to point to the `Contributor.jsp` file in this location.

**Procedure**

1. Open the Configuration page in Cognos TM1 Application Web:
   - If you are running Cognos TM1 Application Web for the first time, use the Configuration page that opens when you start the program.
     
     For more details, see “Configuring the server and client environment for Cognos TM1 Application Web” on page 107.
   - If you are already using Cognos TM1 Application Web, you can re-open the Configuration page by clicking the Administer IBM Cognos TM1 Applications button on the toolbar in Cognos TM1 Application Web.

2. In the **TM1 Application Web URL** field, enter the URL location of the `Contributor.jsp` file.

   Use the format:
   ```
   http://WebServer:port_number/tm1web/Contributor.jsp
   ```

   For example:
http://webserver.example.com:9510/tm1web/Contributor.jsp

3. Click **OK**.
   The Login page for Cognos TM1 Application Web is displayed.

---

**Cognos TM1 Application Server Logging**

You can monitor the activity and performance of IBM Cognos TM1 Application Server by configuring and viewing the TM1 Application Server log file.

Cognos TM1 Application Server uses the log4j framework to control the Planning Services (pmpservlet) logging. The logging settings are dynamic - any changes you make to the logging properties file will be detected while the service is running.

**Logging properties file**

Logging is configured in the following file:

```text
<tm1_installation_location>/webapps/pmpservlet/WEB-INF/configuration/log4j.properties
```

For example, the default installation location on a 32-bit Microsoft Windows system is:

```
C:\Program Files\IBM\cognos\tm1\webapps\pmpservlet/WEB-INF/configuration/
```

On a 64-bit Windows system:
```
C:\Program Files\IBM\cognos\tm1_64\webapps\pmpservlet/WEB-INF/configuration/
```

**Log file output**

By default, the service is configured to log only ERROR messages into a text file which contains all the log entries for a 24 hour period. The log file and directory are located here:

```text
<tm1_installation_location>/webapps/pmpservlet/WEB-INF/logs/pmpservlet.log
```

Older log files for previous days are named with the format:

```
pmpservlet.log.YYYY-MM-DD
```

**Log file message levels**

There are four levels of detail which can be logged. Each level contains all log entries for that level and each higher level.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERROR</td>
<td>Outputs exceptional events which cause the service not to be able to complete the current operation.</td>
</tr>
<tr>
<td>WARNING</td>
<td>Outputs conditions from which the service can continue but should be addressed by an administrator.</td>
</tr>
<tr>
<td>INFO</td>
<td>Outputs information for each of the service operations.</td>
</tr>
<tr>
<td>DEBUG</td>
<td>Outputs details tracing information for the service operations.</td>
</tr>
</tbody>
</table>

**Table 17: Level Description**

**Examples of enabling logging**

The logging level of information is controlled by changing the level under the following two roots of the service:

- `log4j.logger.com.ibm.cognos`
• log4j.logger.com.cognos

All the components of the service are situated beneath these trees, so changing the logging level for these will log all events at that level.

For example, to change the service to log at the INFO level, change these entries to the following:

```properties
#System logging settings
log4j.rootLogger=ERROR, TextFile
log4j.logger.com.ibm.cognos=INFO
log4j.logger.com.cognos=INFO
```

More specific logging is available by changing the logging level for classes lower than these top levels. For example, it is possible to get WARNING logging for everything but to log TurboIntegrator process calls at the DEBUG level.

```properties
#System logging settings
log4j.rootLogger=ERROR, TextFile
log4j.logger.com.ibm.cognos=WARNING
log4j.logger.com.cognos=WARNING
```

You can enable performance logging in the service by commenting out the standard logging and including the following performance entries in the properties file:

```properties
# System logging settings
#log4j.rootLogger=ERROR, Console, TextFile
#log4j.logger.com.ibm.cognos=DEBUG
#log4j.logger.com.cognos=DEBUG
#log4j.logger.com.cognos.org=ERROR
#log4j.logger.com.ibm.cognos.perf=ERROR

# Performance logging settings
log4j.rootLogger=ERROR, perfConsole, perfText
log4j.logger.com.ibm.cognos.perf=DEBUG
```

**Note:** You can also monitor TM1 Application Server using TM1 Operations Console. See *IBM Cognos TM1 Operations Console*.

---

**Cognos TM1 Application Server advanced installation and configuration**

You can perform advanced installation and configuration tasks to customize your installation of the IBM Cognos TM Application Server components.

**Install Cognos TM1 Application Server with your own installation of Apache Tomcat web application server**

This section describes how to install Cognos TM1 Application Server on a separate computer and deploy it with your own installation of Apache Tomcat.

This installation is intended for an environment where the TM1 Admin Server and TM1 Server are running on another computer.

**Building application files for an Apache Tomcat or WebSphere® Liberty server**

You use IBM Cognos Configuration to build the application files to deploy to your WebSphere® Liberty or Apache Tomcat server.

**About this task**

You can create a Web archive (WAR) file or an Enterprise archive (EAR) file. For information about WAR and EAR files and which is supported by your application server, see the documentation for your application server.
Procedure

1. Click Start > All Programs > IBM Cognos TM1 > IBM Cognos Configuration.
2. Click Action > Build Application Files.
3. Under Applications, select TM1 Application Server.
4. Check the application server type Apache Tomcat. Click Next.
5. Select the file type and the location to save the files.
   The default location is <your installation location>/ibm/cognos/TM1/. Click Next.
6. Wait for the Build Application Wizard to complete the process. Click Finish.

**What to do next**
You can deploy the application file to your application server.

**Configuring authentication security for Cognos TM1 Application Web**
For the IBM Cognos TM1 servers used with Cognos TM1 Application Web, use either TM1 standard security authentication or IBM Cognos security.

**About this task**
Configure the authentication login mode using the IntegratedSecurityMode parameter in the Tm1s.cfg file of each Cognos TM1 server that you want to use.

Cognos TM1 Application Web is compatible only with the following TM1 security authentication modes:

- Authentication mode 1 - TM1 standard security authentication
- Authentication mode 5 - IBM Cognos security

**Important:** Do not use a combination of different security authentication modes for the same installation of Cognos TM1 Application Web.

For best practice, determine the security mode before you configure Cognos TM1 Application Web to use a Cognos TM1 server and use that same security mode with any additional servers you add.

For more details about security authentication and the IntegratedSecurityMode parameter, see:

- “Authentication security ” on page 185
- “IntegratedSecurityMode” on page 270

**Procedure**

1. Open the file TM1 server data directory/Tm1s.cfg
2. Set the IntegratedSecurityMode parameter for the Cognos TM1 Server.
   - To use Cognos TM1 standard security authentication, set IntegratedSecurityMode=1
   - To use IBM Cognos security, set IntegratedSecurityMode=5
     For details about using IBM Cognos security, see:
     - “Using Cognos TM1 Applications with Cognos security” on page 218
     - “Using Cognos security with Cognos TM1” on page 211
3. Save and close the Tm1s.cfg file.
4. Restart the Cognos TM1 Server.
5. Repeat these steps for any other Cognos TM1 Server you want to use with Cognos TM1 Application Web.

**Configuring the server and client environment for Cognos TM1 Application Web**
Before you use IBM Cognos TM1 Application Web, you need to specify the TM1 Admin Host, TM1 Server, and client user interfaces that you want to use. The first time that you start Cognos TM1 Application Web, the program prompts you to configure these options.
Before you begin

Ensure that the TM1 Admin Server and at least one TM1 Server is running on the local computer or a remote computer that you can access.

Ensure that each TM1 Server that you want to use is configured with the required parameter values. For details, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

If you plan to use Cognos TM1 Application Web, ensure that you know the web server name and port number where Cognos TM1 Web is running.

Procedure

1. Start and log in to Cognos TM1 Application Web:
   a) In a web browser, type the URL for Cognos TM1 Application Web:
      http://localhost:9510/pmpsvc
   b) Replace localhost with the name of the computer where the Cognos TM1 Application Server is installed.
2. Open the Cognos TM1 Application Configuration page:
   • If this is the first time that Cognos TM1 Application Web has been started since the installation, the Configuration page opens.
   • If Cognos TM1 Application Web has already been configured, you are prompted for a user name and password and then you can open the configuration page by clicking the Administer IBM Cognos TM1 Applications button on the toolbar of the Cognos TM1 Application Web main page.
3. In the Admin Host field, enter the name or IP address of the computer where the Cognos TM1 Admin Server is running.
   **Note:** The Admin Host and Server Name fields appear blank if you have not started the Cognos TM1 Admin Server and at least one Cognos TM1 server.
4. In the Server Name field, enter the name of the TM1 Server that you want to use with Cognos TM1 Application Web.
   For example, you could specify the sample TM1 server GO_New_Stores.
   Click the Refresh button to refresh the list of available servers.
5. Select the data contribution clients that you want to use with Cognos TM1 Application Web.
   These clients will be available when you create applications with IBM Cognos TM1 Performance Modeler.
   • Include Cognos Insight - Connected - IBM Cognos Insight client using real time processing with the TM1 server.
   • Include Cognos Insight - Distributed - IBM Cognos Insight client with local processing of data. Data is updated to the TM1 server only when a commit data action is performed.
   • Include TM1 Application Web - Default client. Processing is in real time with the server. This option uses the data grid and charting client infrastructure from Cognos TM1 Web and requires that you enter a value for the TM1 Application Web URL option.
6. If you selected the Include TM1 Application Web option, enter a value for the TM1 Application Web URL option.
   This URL points to the Contributor.jsp file on the web server that is hosting Cognos TM1 Web.
   For example:
   http://WebServer:9510/tm1web/Contributor.jsp
   where WebServer is the name of the computer where Cognos TM1 Web is installed.
7. Click OK.
8. If prompted, enter the username and password for the server and click Login.
   **Tip:** Use admin and apple for the user name and password if you are using one of the installed sample databases.
   The Cognos TM1 Application Web main page displays. This page appears blank until you build and deploy applications inside of Cognos TM1 Application Web. For more details, see the IBM Cognos Performance Modeler and IBM Cognos Insight documentation.
Results

The following message indicates that the Cognos TM1 server that you are using is not properly configured for use with Cognos TM1 Application Web:

The new server can be added but it may not be configured with all the options required by IBM Cognos TM1 Applications.

For information on how to configure this server, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

Install Cognos TM1 Application Server with your own installation of IBM Websphere

This section describes how to install Cognos TM1 Application Server on a separate computer and deploy it with your own installation of IBM Websphere.

This installation is intended for an environment where the TM1 Admin Server and TM1 Server are running on another computer.

To deploy the TM1 Application Server to WebSphere, complete these tasks:

• Build the application files using Cognos Configuration. See “Building application files for an IBM WebSphere server” on page 116. A pmsvc.war file is created. The default location is <your installation location>\ibm\cognos\TM1>.

  Note: You can use the EAR file format instead of WAR.

• Deploy the pmsvc.war file to the WebSphere application server

Building application files for an IBM WebSphere server

You use IBM Cognos Configuration to build application files to deploy to an IBM WebSphere server.

About this task

You can create a web archive (WAR) file or enterprise archive (EAR) file for the following TM1 applications:

• TM1 Planning Services: pmsvc.war/ear
• TM1 Web and TM1 Applications Web tm1web.war/ear
• IBM Performance Management Hub and TM1 Operations Console: pmhub.war/ear

You can then deploy the WAR or EAR files to WebSphere.

Procedure

1. Click Start > All Programs > IBM Cognos TM1 > IBM Cognos Configuration.
2. Click Actions > Build Application Files.
3. Under Applications, select TM1 Application Server.
4. Under Application Server Type, select IBM Websphere. Click Next.
5. Select the file type.
6. Specify where to save the application files.
   The default location is <your installation location>\ibm\cognos\TM1>. Click Next.
7. Wait for the Build Application Wizard to complete the process. Click Finish.

What to do next

You can deploy the application files to your WebSphere Application Server. See “Deploying TM1 Application Server to an IBM WebSphere Application Server” on page 116, “Installing TM1 Web with IBM WebSphere” on page 86 and “Installing Cognos TM1 Operations Console to IBM WebSphere” on page 78.

Deploying TM1 Application Server to an IBM WebSphere Application Server

You can deploy and run IBM Cognos TM1 Application Server to an IBM WebSphere Application Server.
Before you begin

- Install IBM WebSphere Application Server.
- Create a profile using the Profile Management Tool.
- Start the WebSphere Application Server using the profile that you created.

In Microsoft Windows, click **Start > All Programs > IBM WebSphere Application Server > Profiles > [Profile Name] > Start the server.**

A command window opens and displays the start progress. After the start process is complete, the command window displays the message, “Server started.” You can minimize this command window, but do not close it. This window must remain open while WebSphere is running.

- Build the application files using Cognos Configuration. See “Building application files for an IBM WebSphere server” on page 116.

For information about installing WebSphere and creating a profile, see the WebSphere documentation.

About this task

These steps are based on IBM WebSphere Application Server 8.5.5. The steps for version 8.5 are similar.

**Note:** After you start completing steps in the WebSphere application installation wizard, click **Cancel** to exit if you decide not to install the application. Do not simply move to another administrative console page without first clicking **Cancel** on an application installation page.

Procedure

1. Verify that you have a minimum of 6 GB of free disk space on the computer where WebSphere is installed.
   - On UNIX, ensure that the disk mounted to `/tmp` has at least 6 GB available. Use `df` to check both the total space and percent used for `tmpfs`.
   
   **Note:** Do not deploy TM1 Application Server until you have verified that sufficient disk space is available.

2. Open the WebSphere administrative console.
   - In Windows, click **Start > All Programs > IBM WebSphere Application Server > Profiles > [Profile Name] > Administrative console.** Or, go to `https://localhost:9043/ibm/console/`.
   - In UNIX, click **Applications > IBM Websphere > IBM Websphere Application Server > Profiles > [Profile Name] > Admin Console.** Or, go to `https://localhost:9043/ibm/console/`.

3. Log in using the WebSphere profile that you created.
   The administrative console opens.

4. Set the JVM stack memory size.
   a) Click **Servers > Server Types > WebSphere application servers.**
   b) Click the server where you are deploying TM1 Application Server.
   c) Under Server Infrastructure, click **Java and Process Management > Process Definition.**
   d) Under Additional Properties, click **Java Virtual Machine.**
   e) In the **Generic JVM arguments** field, add `-Xmso512k`.

   **DANGER:** Do not deploy TM1 Application Server until you have set the stack memory.

   Do not use the `startServer.sh` file to set the stack memory size. WebSphere removes the `-Xmso` setting from the file when the server starts and overrides it with the default value, which is too small.

   f) Click **Apply**, and then click **OK**. Click **Save**.

5. Click **Applications > New Application**, and then click **New Enterprise Application**.

6. Click **Browse** to locate and select the `pmpsvc.war` file that you generated using the Build Application File command in Cognos Configuration. Click **Open**.

7. Click **Next**.

8. Click **Fast Path**, and then click **Next**.

9. Click **Step 4: Map context roots for Web modules.**
10. In the Context Root box, enter /pmpsvc. Click **Next**.

11. Click **Finish**.
   WebSphere installs the application. This process can take a few minutes to complete.
   When installation is complete, WebSphere displays "Application pmpsvc_war installed successfully."

12. Click **Save**.
13. Click **Applications > Application Types > WebSphere Enterprise Applications**.
14. Select the check box next to pmpsvc_war, and then click **Start**.
   WebSphere displays "Application pmpsvc_war on server server_name and node node started successfully. The collection may need to be refreshed to show the current status."

**Troubleshooting TM1 Application Server deployment on IBM WebSphere**

If the TM1 Application Server (pmpsvc.war) deployment fails with a Java heap space error message, try adjusting the Java parameters in the WebSphere administrative console.

**Note:** You may have to reapply this change if you upgrade or modify your installation of WebSphere at a later date.

**Procedure**

1. Open the WebSphere administrative console.
   - In Windows, click **Start > All Programs > IBM WebSphere Application Server > Profiles > [Profile Name] > Administrative console**. Or, go to https://localhost:9043/ibm/console/.
   - In UNIX, click **Applications > IBM Websphere > IBM Websphere Application Server > Profiles > [Profile Name] > Admin Console**. Or, go to https://localhost:9043/ibm/console/.

2. Log in using the WebSphere profile that you used to deploy TM1 Application Server.
   The administrative console opens.

3. Click **Servers > Server Types > WebSphere application servers**.
4. Click the server where you deployed TM1 Application Server.
5. Under Server Infrastructure, click **Java and Process Management > Process Definition**.
6. Under Additional Properties, click **Java Virtual Machine**.
7. In the **Initial heap size** field, type 1024.
8. In the **Maximum heap size** field, type 2048.
9. Click **Apply**, and then click **OK**. Click **Save**.
10. Restart WebSphere.

**Configuring authentication security for Cognos TM1 Application Web**

For the IBM Cognos TM1 servers used with Cognos TM1 Application Web, use either TM1 standard security authentication or IBM Cognos security.

**About this task**

Configure the authentication login mode using the IntegratedSecurityMode parameter in the Tm1s.cfg file of each Cognos TM1 server that you want to use.

Cognos TM1 Application Web is compatible only with the following TM1 security authentication modes:

- Authentication mode 1 - TM1 standard security authentication
- Authentication mode 5 - IBM Cognos security

**Important:** Do not use a combination of different security authentication modes for the same installation of Cognos TM1 Application Web.

For best practice, determine the security mode before you configure Cognos TM1 Application Web to use a Cognos TM1 server and use that same security mode with any additional servers you add.

For more details about security authentication and the IntegratedSecurityMode parameter, see:

- "Authentication security " on page 185
- "IntegratedSecurityMode" on page 270
Procedure

1. Open the file `TM1 server data directory/Tm1s.cfg`
2. Set the `IntegratedSecurityMode` parameter for the Cognos TM1 Server.
   - To use Cognos TM1 standard security authentication, set `IntegratedSecurityMode=1`
   - To use IBM Cognos security, set `IntegratedSecurityMode=5`

   For details about using IBM Cognos security, see:
   - “Using Cognos TM1 Applications with Cognos security” on page 218
   - “Using Cognos security with Cognos TM1” on page 211
3. Save and close the `Tm1s.cfg` file.
4. Restart the Cognos TM1 Server.
5. Repeat these steps for any other Cognos TM1 Server you want to use with Cognos TM1 Application Web.

Configuring the server and client environment for Cognos TM1 Application Web

Before you use IBM Cognos TM1 Application Web, you need to specify the TM1 Admin Host, TM1 Server, and client user interfaces that you want to use. The first time that you start Cognos TM1 Application Web, the program prompts you to configure these options.

Before you begin

Ensure that the TM1 Admin Server and at least one TM1 Server is running on the local computer or a remote computer that you can access.

Ensure that each TM1 Server that you want to use is configured with the required parameter values. For details, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

If you plan to use Cognos TM1 Application Web, ensure that you know the web server name and port number where Cognos TM1 Web is running.

Procedure

1. Start and log in to Cognos TM1 Application Web:
   a) In a web browser, type the URL for Cognos TM1 Application Web:
      `http://localhost:9510/pmpsvc`
   b) Replace `localhost` with the name of the computer where the Cognos TM1 Application Server is installed.
2. Open the Cognos TM1 Application Configuration page:
   - If this is the first time that Cognos TM1 Application Web has been started since the installation, the Configuration page opens.
   - If Cognos TM1 Application Web has already been configured, you are prompted for a user name and password and then you can open the configuration page by clicking the Administer IBM Cognos TM1 Applications button on the toolbar of the Cognos TM1 Application Web main page.
3. In the `Admin Host` field, enter the name or IP address of the computer where the Cognos TM1 Admin Server is running.
   - Note: The `Admin Host` and `Server Name` fields appear blank if you have not started the Cognos TM1 Admin Server and at least one Cognos TM1 server.
4. In the `Server Name` field, enter the name of the TM1 Server that you want to use with Cognos TM1 Application Web.
   - For example, you could specify the sample TM1 server `GO_New_Stores`.
   - Click the `Refresh` button to refresh the list of available servers.
5. Select the data contribution clients that you want to use with Cognos TM1 Application Web.
   - These clients will be available when you create applications with IBM Cognos TM1 Performance Modeler.
   - Include Cognos Insight - Connected - IBM Cognos Insight client using real time processing with the TM1 server.
• Include Cognos Insight - Distributed - IBM Cognos Insight client with local processing of data. Data is updated to the TM1 server only when a commit data action is performed.
• Include TM1 Application Web - Default client. Processing is in real time with the server. This option uses the data grid and charting client infrastructure from Cognos TM1 Web and requires that you enter a value for the **TM1 Application Web URL** option.

6. If you selected the **Include TM1 Application Web** option, enter a value for the **TM1 Application Web URL** option. This URL points to the **Contributor.jsp** file on the web server that is hosting Cognos TM1 Web.
   
   For example:
   
   http://WebServer:9510/tm1web/Contributor.jsp
   
   where **WebServer** is the name of the computer where Cognos TM1 Web is installed.

7. Click **OK**.

8. If prompted, enter the **username** and **password** for the server and click **Login**.

   **Tip:** Use **admin** and **apple** for the user name and password if you are using one of the installed sample databases.

   The Cognos TM1 Application Web main page displays. This page appears blank until you build and deploy applications inside of Cognos TM1 Application Web. For more details, see the IBM Cognos Performance Modeler and IBM Cognos Insight documentation.

**Results**

The following message indicates that the Cognos TM1 server that you are using is not properly configured for use with Cognos TM1 Application Web:

The new server can be added but it may not be configured with all the options required by IBM Cognos TM1 Applications.

For information on how to configure this server, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

**Configuring Cognos TM1 Application Web to use Multiple Cognos TM1 Servers**

When you start IBM Cognos TM1 Application Web for the first time, you can enter only one Cognos TM1 server with which you want to work.

To enter additional servers, use the Configuration page in Cognos TM1 Application Web.

**Important:** In order to use multiple Cognos TM1 servers in Cognos TM1 Application Web, the servers must all use the same security authentication (either Cognos TM1 standard authentication or Cognos Analytics security) and include the same administrator user name and password. For details, see “Security considerations when using Cognos TM1 Applications” on page 29.

After you add multiple Cognos TM1 servers, they are available when you use IBM Cognos TM1 Performance Modeler to design your planning applications.

For more details, see the **TM1 Performance Modeler** documentation.

**Procedure**

1. Log in to Cognos TM1 Application Web.

2. On the toolbar of the, click the **Administer Cognos TM1 Applications** button.

   The **IBM Cognos TM1 Applications Configuration** page opens

3. In the **Server Names** section, click **Add**.

   The **Add Server** dialog box opens.

4. Enter values for the following:

   • **Admin Host** - Specify the computer name or IP address of the Admin Host on which the Cognos TM1 Admin Server is running.
Click the Refresh button to update the Server Name list with the available servers for the Admin Host you entered.

- **Server Name** - Select a Cognos TM1 server to use with Cognos TM1 Application Web. For example: Planning Sample.

5. Click **OK**.

If you receive a warning message about the configuration of the TM1 Server, make a note of the warnings and then click **Close** to continue. For information about the required settings, see “Configuring a Cognos TM1 Server to work with Cognos TM1 Application Web” on page 110.

The Admin Host and Cognos TM1 server name you entered are added to the **Server Names** section.

6. To add more servers, click **Add** and repeat the steps.

7. When you are finished adding TM1 servers, click **OK** on the IBM Cognos TM1 Applications Configuration page.

**Results**
The Cognos TM1 servers you added can now be used to design your planning applications.

**Using a proxy**
You can set up a proxy server that forwards requests from IBM Cognos TM1 client applications to the TM1 Application Server.

A proxy server (sometimes called a reverse proxy) can provide benefits such as the following:

- Hide the existence and characteristics of the application server
- Optimize request processing
- Distribute load
- Perform front-end auditing
- Perform additional security

Also, a proxy is required when the internal domains and ports of the TM1 Application Server are not available for direct access from the Internet where TM1 client applications are used.

A proxy environment consists of the following components:

- The TM1 client application, such as IBM Planning Analytics for Microsoft Excel, in the Internet
- Proxy server, TM1 Application Server, and TM1 Server in the internal network
- If you are using Cognos security with TM1, the Cognos Business Analytics in the internal network

![Diagram](image)

**Setting up IBM Cognos TM1 to operate with a proxy**
You can set up IBM Cognos TM1 to operate with a proxy.

**Procedure**

1. Install and configure TM1 Application Server, TM1 Admin Server, and TM1 server. Follow the installation and configuration procedures in the IBM Cognos TM1 documentation.

2. If you want to use Cognos security with TM1, set up Cognos security and test the environment before you introduce the proxy. For more details about Cognos security, see “Overview to Cognos security ” on page 211.
3. Install and configure the proxy to interoperate with the TM1 Application Server. The details of this step are highly dependent on the type of proxy software you are using and are therefore beyond the scope of the TM1 documentation.

In general, the proxy should permit access to the internal network domain and to the port running TM1 Application Server, with particular access to the following contexts and their sub-contexts: pmhub.

4. Install and run the TM1 client application, such as Planning Analytics for Microsoft Excel, within the internal network. This step ensures that you have configured TM1 and the client application before you enhance the setup to include the proxy.

5. Configure TM1 Application Server to interoperate with the proxy. For more information, see “Configuring IBM Cognos TM1 Application Server to interoperate with a proxy” on page 122.

Configuring IBM Cognos TM1 Application Server to interoperate with a proxy

After you have set up TM1 and the proxy server, the next step is to configure the TM1 Application Server to interoperate with the proxy.

About this task

Use IBM Cognos Configuration to configure the TM1 Application Server to interoperate with a proxy.

Note: This topic applies to IBM Planning Analytics for Microsoft Excel, IBM Cognos Performance Management Hub, and IBM Cognos Operations Console.

Procedure

1. Open IBM Cognos Configuration.
2. Stop the TM1 Application Server.
3. Change the External server URI property.
   Change the default value of http://localhost:9510 to the protocol, domain, and port of the proxy as it should be addressed from a running instance of the TM1 client application in the Internet. Use a fully qualified host domain. For example: http://myproxy.mycompany.com:1234

   Important: Use fully qualified domain names (for example, myproxy.mycompany.com rather than myproxy) when you set the External server URI property. Connection definitions (for example, within Planning Analytics for Microsoft Excel) and navigation by users within browsers should reference the matching fully qualified name. A mix of short names (myproxy) and long names (myproxy.mycompany.com) is not recommended.

4. Restart the TM1 Application Server.
5. If you are using Cognos security (Cognos Access Manager) with TM1, see “Configuring IBM Cognos TM1 Application Server for IBM Cognos security when using a proxy” on page 122.
6. Test your configuration changes.
   a) Connect a running instance of the client application, such as Planning Analytics for Microsoft Excel, using the proxy address rather than the default address.
   b) Log in to IBM Cognos Performance Management Hub using the following URL: http://myproxy.mycompany.com:1234/pmhub/pm/security/login

Configuring IBM Cognos TM1 Application Server for IBM Cognos security when using a proxy

In a TM1 installation that uses IBM Cognos security (CAM), you need to do additional steps to support the proxy.

Before you begin

• TM1 is configured with Cognos security
• IBM Cognos Analytics software is already installed and configured with namespaces.

Procedure

1. Disable anonymous access.
   a) Open IBM Cognos Configuration in the Cognos Analytics installation location, not in the TM1 installation location.
   b) Expand Security > Authentication and then click Cognos.
c) Ensure that Allow anonymous access is set to False.

2. Set the Cognos security URL in IBM Cognos Performance Management Hub (PM Hub).
   a) Go to the PM Hub portal Login page using a proxy-based URL such as http://myproxy.mycompany.com:1234/pmhub/pm/security/login
   b) Click the Namespace list and select any TM1 server instance. Enter your Cognos user name and password and log in.
   c) Click the Administration and Configuration link.
   d) Expand com.ibm.ba.pm.resource.security and click com.ibm.ba.pm.resource.security.dictionary.
   e) Edit the CAMBIURL property.

     If the TM1 Application Server can access the Cognos Analytics dispatcher directly within the network, you can use a direct URL: http://internal.bi.server:9300/p2pd/dispatch

     If the proxy is protecting the internal URI behind a secured firewall, specify the proxy in the URL: http://myproxy.mycompany.com:1234/p2pd/dispatch

     **Note:** Configure the proxy server to redirect requests to the Cognos Analytics dispatcher for the URL context p2pd in the same way as for other TM1 based contexts such as pmhub, tm1web, and pmpsvc.

     If you are using Single Signon with the Analytics gateway, you might need to set the CAMGatewayURL property. Set CAMGatewayURL by using the same steps as you used to set CAMBIURL.

3. Test the configuration.
   a) Log out of PM Hub.
   b) Go back to the PM Hub portal Login page.
   c) Click the Namespace list. You should see TM1 servers in the list, as before, plus IBM Cognos Analytics namespaces.

     **Note:** Cognos Analytics namespaces must be defined in your Cognos Analytics installation configuration to appear in the Namespace list.

### Troubleshooting proxy setup for TM1

Follow these steps to troubleshoot connection issues in a TM1 environment that includes a proxy.

1. Determine where the problem is occurring:
   - In a TM1 client application, access the TM1 server directly, without using the proxy URI. For example, start Cognos TM1 Performance Modeler and click **Connect Directly**.
   - If you are using Cognos security, use a TM1 web application, such as TM1 Web, to access the Cognos Analytics server, without the proxy URI. Try again using the proxy URI.
   - In a TM1 web application, such as TM1 Web, access the TM1 server via TM1 Application Server, without using the proxy URI. Try again using the proxy URI.
   - In a TM1 client application, such as Planning Analytics for Microsoft Excel, access the TM1 server via TM1 Application Server, without using the proxy URI. Try again using the proxy URI.

     **Note:** You might have difficulty with accessing the servers if the proxy is a firewall. In this case, run the TM1 client or web application within the firewall to test connections without the proxy.

2. If one of the tests in Step 1 fails, check the configuration for that connection, retry, and then continue with the next test.

### Configuring Cognos TM1 TurboIntegrator function security in Insight

When you open an IBM Cognos Insight workspace that has been shared through IBM Cognos Connection, you may want to restrict the execution of some TurboIntegrator functions, particularly those that can destroy or modify data files.

Several TurboIntegrator functions exist that can write files, delete files, and execute commands. When you receive a shared Insight workspace, it is possible that TurboIntegrator processes within the workspace could include functions that perform undesirable actions. To prevent processes from performing potentially harmful actions, your Insight installation includes a configuration file named TMIFunctions.cfg, which can be used to prevent or restrict the execution of TurboIntegrator functions.
Any TurboIntegrator function can be entirely prevented from executing. The ASCIIOutput, TextOutput, and ASCIIDelete functions can also be configured to run in restricted mode. When a function runs in restricted mode, it is limited to acting upon files within the TM1 server data directory and its subdirectories.

When you install IBM Cognos Insight, a default version of TM1Functions.cfg is created in C:\Documents and Settings \<user>\Application Data\IBM\Cognos Insight\bins\bin_****. <user> is the username under which you installed Insight and **** is the version of your installation.

The default version of TM1Functions.cfg appears as follows:

<table>
<thead>
<tr>
<th>Function</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExecuteCommand</td>
<td>0</td>
</tr>
<tr>
<td>AsciiOutput</td>
<td>1</td>
</tr>
<tr>
<td>TextOutput</td>
<td>1</td>
</tr>
<tr>
<td>AsciiDelete</td>
<td>1</td>
</tr>
</tbody>
</table>

When a function is set to 0 in TM1Functions.cfg, the function is prevented from executing. Any attempt to execute that function will cause TurboIntegrator to throw a security exception.

When a function is set to 1 in TM1Functions.cfg, the function runs in restricted mode. Only the ASCIIOutput, TextOutput, and ASCIIDelete functions can be set to run in restricted mode.

When a function is not present in TM1Functions.cfg, it runs completely unrestricted.

**Examples of functions running in restricted mode**

When a function is configured to run in restricted mode, any relative path passed as an argument to the function is assumed to be rooted in the TM1 server data directory and is allowed. Any absolute path to a directory above the TM1 server data directory prevents the function from executing and causes a security exception to be thrown at runtime.

For example, assume AsciiDelete=1 in TM1Functions.cfg. In this case, the function

```plaintext
ASCIIDelete('logs\sample.log');
```

is allowed and deletes the file sample.log from the logs subdirectory of the TM1 server data directory.

However, the function

```plaintext
ASCIIDelete('c:\autoexec.bat');
```

will not execute and will cause a security exception, as it specifies a file at the root level of the drive, which is above the TM1 server data directory.

Similarly, assume TextOutput=1 in TM1Functions.cfg. In this case, the function

```plaintext
TextOutput('logs\sample.txt', 'this is sample text');
```

is allowed and writes a string to the sample.txt file in the logs subdirectory of the TM1 server data directory.

Conversely, the function

```plaintext
TextOutput('c:\autoexec.bat', 'del *.* -r -f');
```

is not allowed due to the path being specified at the root level of the drive. This function will cause a security exception to be thrown at runtime.

**Editing the TM1Functions.cfg file**

The TM1Functions.cfg file lets you prevent or restrict the execution of potentially harmful TurboIntegrator functions contained within a shared IBM Cognos Insight workspace.

**About this task**

When you install IBM Cognos Insight, a default version of TM1Functions.cfg is created in C:\Documents and Settings \<user>\Application Data\IBM\Cognos Insight\bins\bin_****. <user> is the username under which you installed Insight and **** is the version of your installation. You can modify this configuration file to further restrict function execution or allow function execution.
**Procedure**

1. Open TM1Functions.cfg in a text editor.
2. To completely prevent a function from executing, set the function name equal to 0. For example, `ExecuteCommand=0` or `ServerShutdown=0`.
3. To allow a function to run in restricted mode, set the function name equal to 1. For example, `AsciiDelete=1`.
   Only the ASCIIOutput, TextOutput, and ASCIIDelete functions can be set to run in restricted mode.
4. To allow a function to run unimpeded, delete the function name from TM1Functions.cfg.
5. Save and close TM1Functions.cfg.
Chapter 12. Planning Analytics Workspace installation

IBM Planning Analytics Workspace is a web-based interface for IBM Planning Analytics. It provides an interface to TM1 data, with exciting ways to plan, create, and analyze your content.

Planning Analytics Workspace architecture

IBM Planning Analytics Workspace can be colocated with IBM Planning Analytics Local or it can reside on its own. In either case, it must connect to the TM1 servers in your Planning Analytics Local system and to an authentication system.

The following diagram shows where Planning Analytics Workspace fits into your IBM Planning Analytics Local architecture:

Authentication modes

You can use standard TM1 security (mode 1) or Cognos Analytics security (IBM Cognos security mode 5) to authenticate Planning Analytics Workspace users.
Planning Analytics Workspace installation overview

The following diagram shows the workflow for installation. If you are viewing this diagram from IBM Knowledge Center, you can click on a task to go to the procedure for that task.

1. “Prerequisites” on page 128
2. “Installing Docker” on page 129
3. “Installing Planning Analytics Workspace” on page 130
4. “Connecting Planning Analytics Workspace to Cognos TM1 and authentication servers” on page 131

Prerequisites

Before you install IBM Planning Analytics Workspace, you must have IBM Planning Analytics Local 2.0.0 or greater installed.

For information about late-breaking installation and configuration issues for Planning Analytics Workspace, see Critical usage notes for IBM Planning Analytics.

Note: Planning Analytics Workspace is included as part of IBM Planning Analytics Local. If you haven’t downloaded the Planning Analytics Workspace installation kit, refer to the IBM Planning Analytics Local download document for information about how to do so.

If you are using IBM Cognos Analytics (IBM Cognos Business Intelligence) as your authentication provider, then you must have IBM Cognos Analytics 10.2.2 (IBM Cognos Business Intelligence 10.2.2) or greater installed.
Planning Analytics Workspace communicates with TM1 servers using the TM1 REST API. In the Tm1s.cfg file for all TM1 Servers, set the HTTPPortNumber property to a free port on the server.

The following table contains information about Docker requirements and the installation kit name for different operating systems supported by Planning Analytics Workspace.

<table>
<thead>
<tr>
<th>Operating System (OS)</th>
<th>Docker requirements</th>
<th>Planning Analytics Workspace installation kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows (other than Server 2016)</td>
<td>Docker runs on a Linux virtual machine (VM). Requires hardware virtualization.</td>
<td>ipa_workspace_local_&lt;version&gt;.zip</td>
</tr>
<tr>
<td>Microsoft Windows Server 2016</td>
<td>Docker runs on a physical Microsoft Windows Server 2016 or a VM with Microsoft Windows Server 2016 running under VMware or Microsoft Hyper-V. No hardware virtualization required.</td>
<td>ipa_workspace_local_win_&lt;version&gt;.zip</td>
</tr>
<tr>
<td>Linux</td>
<td>Docker runs directly on Linux OS.</td>
<td>ipa_workspace_local_&lt;version&gt;.zip</td>
</tr>
</tbody>
</table>

Additional requirements for Microsoft Windows Server 2016

- Ensure that the virus protection software you use fully supports Windows Server 2016 and Docker
- Install the latest patches for Microsoft Windows Server 2016

**Installing Docker**

Docker is the environment in which Planning Analytics Workspace runs.

**Before you begin**

If you're installing Docker on a Microsoft Windows OS other than Microsoft Windows Server 2016, your system must support hardware virtualization and you must enable it. If you are installing on a Linux or a Microsoft Windows Server 2016 OS, then you don't need to enable hardware virtualization.

**About this task**

If you're not familiar with Docker and want information about it, see [What is Docker?](https://www.docker.com/what-docker).

**Procedure**

1. Skip this step if you are installing on a Microsoft Windows Server 2016 or Linux OS. Install the Docker Toolbox. For information about installing Docker Toolbox, see [Docker Toolbox](https://www.docker.com/products/docker-toolbox).
   
   If you are prompted to allow VirtualBox Interface to make changes to your computer, reply "Yes". You don't need to start the Docker Quickstart Terminal.

2. If you're installing on a Linux OS, do the following steps:
   a) Install the Docker engine. For information, see [Install Docker Engine on Linux](https://docs.docker.com/engine/installation/linux/).
   b) Install Docker Compose (minimum version 1.8.1). For information, see [Install Docker Compose](https://docs.docker.com/compose/install/).

3. If you're installing on a Microsoft Windows Server 2016 OS, do the following steps:
   a) Install Docker Enterprise Edition by following the instructions at [Install Docker Enterprise Edition for Windows Server 2016](https://docs.docker.com/docker-ee-for-windows/install/).
   b) Download Docker Compose from [https://github.com/docker/compose/releases/](https://github.com/docker/compose/releases/). Go to the Downloads section, right-click the docker-compose-Windows-x86_64.exe file, and save it as docker-compose.exe in C:\Program Files\Docker.
c) Pull images from Docker Hub. Open a command window, and type the following commands:

```bash
docker pull microsoft/windowsservercore:latest

docker pull mongo:3.2-windowsservercore
```

**Note:** The Docker image is large. The download may take a long time.

### Installing Planning Analytics Workspace

You install IBM Planning Analytics Workspace on a Microsoft Windows OS that is running a Linux VM or directly on a Linux or Microsoft Windows Server 2016 OS.

#### Before you begin

Extract the installation kit for your operating system. Use a directory structure that groups the Planning Analytics Workspace installation kits into one directory and clearly indicates the version number of each kit. For example, if you are installing on the Linux OS,

```
paw_install_kits/ipa_workspace_local_2.0.19.744.2
```

#### About this task

The start script does the following things:

- Checks that the required ports are available (Microsoft Windows with Docker Toolbox only).
- If you are installing on a Microsoft Windows OS other than Microsoft Windows Server 2016, it creates a Linux virtual machine (VM) called "paw" on which Planning Analytics Workspace runs. You can change the following default values for the VM settings:
  - 8192 MB of memory
  - 4 CPUs
  - 70,000 MB (70 GB) of storage
- Installs the Planning Analytics Workspace Docker images
- Opens the Planning Analytics Workspace administration tool

Here’s a short video that shows the installation of Planning Analytics Workspace on a Microsoft Windows OS:

https://youtu.be/8jOfrXapczM

#### Procedure

1. Run the start script:
   a) If you are installing on a Microsoft Windows OS other than Microsoft Windows Server 2016 OS, go to the directory where you extracted the installation kit and double-click `Start.bat`.
   b) If you are installing on a Linux OS, open a terminal window, go to the directory where you extracted the installation kit, and type the following command:

```
./Start.sh
```
   c) If you are installing on a Windows Server 2016 OS, open a PowerShell terminal window, go to the directory where you extracted the installation kit, and type the following command:

```
./Start.ps1
```

**Note:** The first time you run the start script, it automatically installs the Docker images. The next time you run the start script, you can skip installing or updating the Docker images and go straight into the administration tool.

2. Reply "y" when you are asked if you want to start the administration tool.
Note: Keep the command or terminal window open. Closing the window stops the administration tool.

Results
The Planning Analytics Workspace administration tool opens in your browser. If the administration tool doesn't open, copy and paste the address shown in the command or terminal window into a browser window.

Connecting Planning Analytics Workspace to Cognos TM1 and authentication servers
Use the Planning Analytics Workspace administration tool to configure the Cognos TM1 URIs that point to the Cognos TM1 servers and the servers that do authentication.

About this task
Use fully qualified host names or IP addresses for the URIs. Do not use localhost.

If you are installing on a Microsoft Windows OS other than Microsoft Windows Server 2016 and Planning Analytics Workspace is installed on the same computer as Cognos TM1, then you can use the IP address 192.168.40.1 in the URIs. For more information, see “Planning Analytics Workspace and Cognos TM1 installed on one computer” on page 133.

Here’s a short video that shows how to do the configuration:

https://youtu.be/CipjgA4nc7I

Procedure
1. In the Planning Analytics Workspace administration tool on the Configuration tab, enter the URIs for the following servers:
   - **TM1 Admin Server URI** (the default value is 5898 for the HTTPS REST API port, and 5895 for the HTTP REST API port)
   - **TM1 Application Server Gateway URI**

2. Under Authentication Mode, select **TM1** or **CAM**.
   Choose **TM1** if you're using standard TM1 authentication. Choose **CAM** if you're using IBM Cognos security for authentication.
   a) If you selected **TM1**, enter the value for the **TM1 Login Server URI**.
      Planning Analytics Workspace users authenticate to the system by logging into the TM1 Login Server. Users must have the same credentials on any other TM1 server they access.
   b) If you selected **CAM**, enter the following values:
      - **IBM Cognos BI Gateway URI**
      - **IBM Cognos BI Dispatcher URI**
      - **IBM Cognos BI Authentication Namespace ID**

3. Click **Validate**.
   Planning Analytics Workspace verifies that it can communicate with the servers and that they are configured for use with it. If a server is not successfully validated, an error message is displayed.

4. Click **OK**.
5. Click **Update** and **OK** to save your configuration settings.

What to do next
Verify that the Planning Analytics Workspace services started. For more information about the services, see “Checking the status of the services” on page 133.

Access Planning Analytics Workspace by entering http://<host-name>/ where <host-name> is the host name or IP address of your computer, in the address field of your browser. For information on how to use Planning Analytics Workspace, see the Planning Analytics Workspace guide.
Important: If Planning Analytics Workspace is installed on a Microsoft Windows Server 2016 OS, then you must access it from a different computer. This is a limitation of Microsoft's NAT network driver.

Read “Planning Analytics Workspace and Cognos TM1 installed on one computer” on page 133 for special considerations if you have Planning Analytics Workspace and Cognos TM1 installed on one computer.

Planning Analytics Workspace configuration parameters

You can change the configuration of IBM Planning Analytics Workspace by modifying a file that contains the configuration parameters.

The default values for the configuration parameters are stored in defaults.ps1 for the Microsoft Windows operating system and defaults.env for Linux. If you want to change any of the parameters, open the paw.ps1 file or paw.env in a text editor, and add the parameters. If a parameter is specified in paw.ps1 or paw.env, the value in paw.ps1 or paw.env overrides the value in defaults.ps1 or defaults.env.

Tip: When specifying a parameter in paw.ps1, use the format shown in defaults.ps1. When specifying a parameter in paw.env, use the format shown in defaults.env. Some parameters are specified with quotation marks and some are not, depending on your operating system.

The following list describes the parameters in defaults.env and defaults.ps1.

Important: Do not change the values in defaults.ps1. Use paw.ps1 to override a value in defaults.ps1. Do not change the values in defaults.env. Use paw.env to override a value in defaults.env.

**LOG_DIR**

- Host directory for storing service logs. Ensure that services can create directories here. Value is log.

**TM1CredentialStoreKeyFile**

- Path to and name of the random credential store key, which is generated the first time you start Planning Analytics Workspace. Value is config/credential_store.key.

**TM1APIPort**

- Port for the TM1 Admin Host. The value is empty which means to use the default port.

**REGISTRY**

- Docker registry. Value is pa-docker:5000/planninganalytics.

**EnableSSL**

- Set to true if you are using SSL. Value is false. Leave all other SSL options at default values if you want to run using a self-signed test certificate.

**ServerName**

- Domain name used to access Planning Analytics Workspace. This value is used by the gateway as the redirect target for non-SSL requests. Value is pa-gateway.

**SslCertificateFile**

- Path to a PEM-encoded file containing the private key, server certificate, and optionally, the entire certificate Trust Chain. Value is config/pa-workspace.pem.

**PAGatewayHTTPPort**

- HTTP port mapped to the host by pa-gateway. Value is 80.

**PAGatewayHTTPSPort**

- HTTPS port mapped to the host by pa-gateway. Value is 443.

**ProxyTimeoutSeconds**

- Maximum number of seconds the gateway waits for a backend service response. Value is 120.

**PAW_NET**

- Name of the PAW bridge network. Value is paw_net.

**EnableIPv6**

- Flag to enable IPv6 on the bridge network. Value is false.

**PAW_V6_SUBNET**

- IPv6 subnet for Docker containers. Value is fddf:297:e511:0:d0c::/80.

**VIRTUAL_BOX_AS_SERVICE**

- If you are running the VM as a service using "VBoxVmService", set this parameter to true to suppress scripts from probing or starting the VM using VirtualBox tools. Value is false.

You configure the following values as part of the Planning Analytics Workspace installation process by using the Planning Analytics Workspace administration tool. After the initial installation, you can change these values by modifying the paw.ps1 or paw.env file in a text editor or through the Planning Analytics Workspace administration tool.
tool. For more information about the Planning Analytics Workspace administration tool, see “Connecting Planning Analytics Workspace to Cognos TM1 and authentication servers” on page 131.

**TM1Location**  
URI of the TM1 Admin Host. Value is https://tm1adminhost:5898.

**TM1ApplicationsLocation**  
URI of the TM1 Application Server. Value is http://tm1appshost:9510.

**PAAuthMode**  
Supported authentication modes. Value can be `cam` for IBM Cognos security authentication or `tm1basic` for standard TM1 authentication.

**IBMCognosGateway**  
Gateway URI of the IBM Cognos BI server. Specify only when `PAAuthMode` = cam.

**IBMCognosServlet**  
Dispatcher URI of your IBM Cognos BI server. Specify only when `PAAuthMode` = cam.

**CAMLoginNamespace**  
IBM Cognos BI CAM authentication namespace ID. Specify only when `PAAuthMode` = cam.

**TM1LoginServerURL**  
URI of the TM1 server to be used for Planning Analytics Workspace authentication. Specify only when `PAAuthMode` = tm1basic.

### Checking the status of the services

The **Status** tab in the Planning Analytics Workspace administration tool displays the status, up time, CPU usage, memory usage, and percentage of memory used for each service.

**About this task**

Here's a short video overview of the **Status** tab:

https://youtu.be/AlsSZ4m52u0

**Procedure**

1. Run the **Start.bat** (Microsoft Windows), **Start.sh** (Linux), or **Start.ps1** (Microsoft Windows Server 2016) script.
2. Reply "n" when you are prompted to install the Docker images.
3. Reply "y" when you are prompted to start the administration tool.  
   If the administration tool doesn't open, copy and paste the address shown in the command or terminal window into a browser window.
4. In the Planning Analytics Workspace administration tool, click the **Status** tab.
5. Click **Refresh** and then verify that all services in the list have a status of "running".  
   When you are installing, wait until all services have started (the CPU % for services drops) before accessing Planning Analytics Workspace.
6. To stop, start, or restart one service, select (highlight) it in the list, and then click **Stop**, **Start**, or **Restart**.
7. To stop, start, or restart all services, make sure that no services are selected in the list, and then click **Stop**, **Start**, or **Restart**.

### Planning Analytics Workspace and Cognos TM1 installed on one computer

There are some things to be aware of when IBM Planning Analytics Workspace and Cognos TM1 are installed together on a Microsoft Windows OS.

The VM that contains Planning Analytics Workspace has an IP address of 192.168.40.100 and it uses 192.168.40.1 to access Cognos TM1. 192.168.40.1 is the address of the VirtualBox Host-Only Network adapter on the Microsoft Windows OS and provides a reliable connection in a standalone or demonstration environment.

If you are physically logged in to the computer that has Planning Analytics Workspace installed, you can access Planning Analytics Workspace by using http://192.168.40.100/.
When you configure the TM1 URIs that Planning Analytics Workspace connects to, you can use the IP address 192.168.40.1 in the URI.

**Configuring SSL for Planning Analytics Workspace**

To configure Secure Sockets Layer (SSL) for IBM Planning Analytics Workspace, you create a privacy enhanced mail (pem) file that contains your security certificates.

**Before you begin**

You must have the private key, primary, intermediate, and root certificates from your certificate authority provider.

**Procedure**

1. Open a text editor and paste the body of each certificate into the file in the following order. Make sure you include the beginning and end tags on each certificate:

   - **private key**
     - `<your_domain_name>.key`
   - **primary certificate**
     - `<your_domain_name>.crt`
   - **intermediate certificate**
     - `IntermediateCA.crt`
   - **root certificate**
     - `TrustedRoot.crt`

   Here is an example:

   ```
   -----BEGIN RSA PRIVATE KEY-----
   (Your Private Key: your_domain_name.key)
   -----END RSA PRIVATE KEY-----
   -----BEGIN CERTIFICATE-----
   (Your Server certificate: your_domain_name.crt)
   -----END CERTIFICATE-----
   -----BEGIN CERTIFICATE-----
   (Your Intermediate certificate: IntermediateCA.crt)
   -----END CERTIFICATE-----
   -----BEGIN CERTIFICATE-----
   (Your Root certificate: TrustedRoot.crt)
   -----END CERTIFICATE-----
   ```

2. Save the file as `pa-workspace.pem` and then copy or move it to the `<paw_install_location>/config` directory.

   If the `pa-workspace.pem` already exists in the directory, overwrite it.

3. Open the `<paw_install_location>/config/paw.env` file and add the following lines at the end:

   ```
   export EnableSSL=true
   export ServerName=<paw-server-name>
   ```

   where `<paw-server-name>` is the name of the server on which Planning Analytics Workspace is installed.

4. Save the `<paw_install_location>/config/paw.env` file.

5. Open the Planning Analytics Workspace administration tool and restart all services.

   For information about how to open the administration tool, see “Checking the status of the services” on page 133.
Configuring SSL between Planning Analytics Workspace and other servers

If you are using self-signed SSL certificates for TM1 servers or IBM Cognos Analytics, you might need to add the certificate authority certificates for them to the list of CA certificates that are used by IBM Planning Analytics Workspace.

About this task

This task creates a file called cacerts that contains your CA certificates. The cacerts file is used by the Java services in Planning Analytics Workspace.

If you get a Java certificate chaining error when you log in to Cognos Analytics, performing these steps will resolve it.

Procedure

1. Put the certificate authority (CA) certificates files in the `<paw_install_location>/config/certs` directory.
2. Run the `<paw_install_location>/scripts/process_certs.ps1` (Microsoft Windows Server 2016 OS) or `process_certs.sh` (Linux OS or Microsoft Windows other than Windows Server 2016 OS) script.
3. Open the Planning Analytics Workspace administration tool and restart all services.

   For information about how to open the administration tool, see “Checking the status of the services” on page 133.

Results

The cacerts file is created in the `<paw_install_location>/config` directory.

Note: If you need to change the set of CA certificates, put the CA certificates into the `<paw_install_location>/config/certs` directory and run the process_certs script again.

Configuring a Linux virtual machine to start automatically

IBM Planning Analytics Workspace that is installed on a Microsoft Windows OS requires a Linux virtual machine (VM). You can configure the VM to start automatically when you log in to the Microsoft Windows OS.

Procedure

1. Open Oracle VM VirtualBox Manager, right-click the VM, and select Create Shortcut on Desktop.
2. Click Win-R, type `shell:startup`, and press Enter.
3. Drag the shortcut icon into the Startup folder.
Chapter 13. Administer Planning Analytics Workspace

This section explains how to perform administration tasks such as backup and restore.

Viewing logs

You can use the Status tab of the Planning Analytics Workspace administration tool to view logs.

About this task

The log directory in the installation directory contains a subdirectory for each service.

Procedure

1. Run one of the following scripts from the <paw_install_location> folder:

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Script to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows other than Microsoft Windows Server 2016</td>
<td>Start.bat</td>
</tr>
<tr>
<td>Microsoft Windows Server 2016</td>
<td>Start.ps1</td>
</tr>
<tr>
<td>Linux</td>
<td>Start.sh</td>
</tr>
</tbody>
</table>

2. Reply "n" when you are prompted to install the Docker images.
3. Reply "y" when you are prompted to start the administration tool.
   If the administration tool doesn't open, copy and paste the address shown in the command or terminal window into a browser window.
4. In the Planning Analytics Workspace administration tool, click the Status tab.
5. To see the logs of one service, select (highlight) a service in the list by clicking it, and then clicking Logs.
   The last 1000 lines in the log file for the service are displayed.
   Tip: If you want to see more content, you can open the file from the log directory in a text editor. This is also a way to view the logs without using the administration tool.

Accessing the Planning Analytics Workspace administration tool remotely

By default you access the Planning Analytics Workspace administration tool from the computer on which it is installed. To access the administration tool from another computer, you can set an environment variable.

About this task

This task applies to IBM Planning Analytics Workspace installed on a Linux OS only.

Important: Running the Planning Analytics Workspace administration tool this way is not secure so you may want to restrict access to specific remote IP addresses using the OS firewall.

Procedure

1. In a terminal window, enter the following command:

   ```
   export ADMINTOOL_IP=<ip address>
   ```

   where <ip address> is the IP address of the computer that is running IBM Planning Analytics Workspace.
2. Run the Start.sh script.
3. Access the administration tool from the remote computer by copying and pasting the address shown in the command or terminal window into a browser window on the remote computer.

**Users in Planning Analytics Workspace**

The first user that logs in to IBM Planning Analytics Workspace is given the administrator role. Users that log in after the first user are given the analyst role.

For more information about managing users, see the *Planning Analytics Workspace* guide.

**Backing up or restoring Planning Analytics Workspace**

When you back up IBM Planning Analytics Workspace, you are saving user information such as preferences, book assets, chat history, recently visited sites, and book marks.

**Before you begin**

You must perform this task during a system maintenance window because services are stopped and started.

**About this task**

All data is backed up or restored. You can't selectively back up or restore.

**Procedure**

To back up:

1. If you are backing up from a Microsoft Windows other than Microsoft Windows Server 2016 OS, then do the following steps:
   a) Run the `Start.bat` script.
   b) Answer `n` to the questions about installing Docker images and starting the administration tool.
2. Run one of the following scripts from the `<paw_install_location>/scripts` folder:

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Script to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows other than Microsoft Windows Server 2016, Linux</td>
<td><code>backup.sh &lt;folder-name&gt;</code></td>
</tr>
<tr>
<td>Microsoft Windows Server 2016</td>
<td><code>backup.ps1 &lt;folder-name&gt;</code></td>
</tr>
</tbody>
</table>

   where `<folder-name>` is the file path and name of the folder to back up to. If you omit `<folder-name >`, a folder with the current time is created in the backup directory.

To restore:

3. Run one of the following scripts from the `<paw_install_location>/scripts` folder:

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Script to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows other than Microsoft Windows Server 2016, Linux</td>
<td><code>restore.sh &lt;folder-name&gt;</code></td>
</tr>
<tr>
<td>Microsoft Windows Server 2016</td>
<td><code>restore.ps1 &lt;folder-name&gt;</code></td>
</tr>
</tbody>
</table>

   where `<folder-name>` is the path and name that contains the data to restore.
Upgrading Planning Analytics Workspace

To upgrade IBM Planning Analytics Workspace, you install a new version of Planning Analytics Workspace.

Before you begin

Go to Fix Central (https://www.ibm.com/support/fixcentral/) and download the version of Planning Analytics Workspace software that you want to upgrade to. Put the ipa_workspace_local_<version>.zip file in a directory that is separate from your current installation and extract it.

Important: You must perform this task during a system maintenance window because services are stopped and started.

Procedure

1. Copy the <paw_install_location>/config/paw.env file from your current installation to the new installation location.
2. Copy the <paw_install_location>/config/certs directory from your current installation to the new installation location.
3. Perform "Installing Planning Analytics Workspace" on page 130.
   - Reply "y" when you are prompted to install the Docker images. Reply "y" when you are prompted to open the administration tool.
4. In the Planning Analytics Workspace administration tool, restart all the services.

Uninstalling Planning Analytics Workspace

When you uninstall IBM Planning Analytics Workspace, you delete all Docker containers, Planning Analytics Workspace databases, and all Docker images.

Procedure

1. If you are uninstalling from a Microsoft Windows OS, other than Microsoft Windows Server 2016, in Oracle VM VirtualBox, stop the "paw" VM and then delete it.
2. If you are uninstalling from a Microsoft Windows Server 2016 OS, open a command window, go to the directory where you extracted the installation kit, and enter the following commands:

   ```
   scripts/paw.ps1 stop
   scripts/paw.ps1 rm -v
   docker rm $(docker ps -a -q)
   docker rmi $(docker images -q)
   ```

3. If you are uninstalling from a Linux OS, open a terminal window, go to the directory where you extracted the installation kit, and enter the following commands:

   ```
   scripts/paw.sh stop
   scripts/paw.sh rm -v
   docker rm $(docker ps -a -q)
   docker rmi $(docker images -q)
   ```

4. Delete the files in the directory where you extracted the installation kit.
Chapter 14. TM1 Rich Tier installation

You can install TM1 Rich Tier components using the TM1 server installation program or the TM1 client installation program.

You can install the following Rich Tier components:

• TM1 Architect
• Performance Modeler
• TM1 Perspectives
• Cognos Insight
• Cognos TM1 APIs

For information about using the TM1 APIs to enable Cognos Analytics reporting against Cognos TM1 data sources, see “Cognos TM1 as a datasource with Cognos Analytics” on page 49 and “Enabling Cognos Analytics reporting on Cognos TM1 data sources” on page 50.

Related concepts
Upgrading Cognos TM1 Architect and Perspectives clients
You can upgrade IBM Cognos TM1 client components using the Cognos TM1 server installation program or the Cognos TM1 client installation program.

Installing Cognos TM1 Perspectives

You can install IBM Cognos TM1 Perspectives, which is an add-in for Microsoft Excel.

Before you begin
Before you install IBM Cognos TM1 Perspectives, complete the following tasks:

1. Install the software that is necessary for you to run Cognos TM1 Perspectives. For more information, see “Install the prerequisite software” on page 53.
2. Ensure that the Cognos TM1 Admin Server and the Cognos TM1 Server that you want to connect to are running on an accessible computer in your network. For details, see Chapter 8, “Cognos TM1 Server installation,” on page 61.
3. Ensure that users have access to the Cognos TM1 servers that they need to use running under that Cognos TM1 Admin Server. As a Cognos TM1 administrator, you must set up a user name and password for each user before a user can access that server.

About this task
The following steps install Cognos TM1 Perspectives on a single computer, configure it to locate a Cognos TM1 Administration Server on your network, and then connect to a server. You can also create an unattended installation.

Use the same 32-bit or 64-bit versions of TM1 Perspectives and Microsoft Excel. Do not mix platform versions. For example, if you are using the 64-bit version of Microsoft Excel, then use the 64-bit version of TM1 Perspectives.

Attention: If you are upgrading and leave your old Tm1p.ini client configuration files in place, you might need to update the directory path in the file for the AdminSvrSSLCertAuthority parameter. For example, if you are using the default Cognos TM1 SSL certificate, manually change the value for this parameter to the new install path C:\Program Files\IBM\cognos\tm1\bin\ssl\applixca.pem.

Procedure
1. Install Cognos TM1 Perspectives:
   a) On Microsoft Windows Vista, Windows 7 or Windows Server 2008 operating system software, right-click the isetup.exe file and click **Run as Administrator**. For other operating systems, double-click the isetup.exe file on the IBM Cognos TM1 client installation disk or from the location where the Cognos TM1 client installation files were downloaded and extracted.
b) On the Component Selection page, expand TM1 Rich Tier, and select the TM1 Perspectives check box. Leave all the other check boxes unselected.

c) Follow the prompts and click Finish to complete the installation.

2. Run Cognos TM1 Perspectives:
   a) Click Start > IBM Cognos TM1 > Perspectives for MS Excel.
      If the component does not start, ensure that the servers you started with Cognos Configuration are still running.
   b) Click Enable Macros when the security warning displays.

3. Configure Cognos TM1 Perspectives to locate a Cognos TM1 Admin Server:
   a) In Microsoft Excel, click TM1 > Options.
      The TM1 Options dialog box opens.
   b) In the Admin Host field, specify the name of the computer on which the Cognos TM1 Admin Server is running. If you want to access servers registered on different Admin Servers, use a semicolon to separate the name of each Admin Host. You must enter a name, not an IP address, in the Admin Host field.
   c) Click OK.
   d) When prompted about disconnecting from currently accessed servers, click Yes if you want to access a new list of servers. Servers available through Admin Server on the specified Admin Host appear. If you want to continue to see the current list of remote servers during this session, click No.

4. Launch Server Explorer.

5. Double-click a Cognos TM1 Server to log in.

   For either Planning Sample or SData, use these login credentials:
   - **User name:** admin
   - **Password:** apple

   **Tip:** To load Cognos TM1 Perspectives automatically whenever you start Microsoft Excel, add TM1_location/Tm1p.xla to Microsoft Excel's add-in tool list. If you are using 32-bit Microsoft Excel, the default location is C:\Program Files\ibm\cognos\tm1_64\bin\Tm1p.xla. If you are using 64-bit Microsoft Excel, the default location is C:\Program Files\ibm\cognos\tm1_64\bin64\Tm1p.xla. After completing this step, "TM1" displays on the Microsoft Excel menu bar.

6. If you want to install Cognos TM1 Perspectives on multiple computers, use the previous steps to create an unattended installation that can. For details, see Appendix C, “Setting up unattended installations and configurations,” on page 313.

---

**Installing Cognos TM1 Architect**

You can install IBM Cognos TM1 Architect by performing the following steps.

**Before you begin**

Before you install Cognos TM1 Architect, complete the following tasks:

- Install the software that is necessary for you to run Cognos TM1 Architect. For more information, see “Install the prerequisite software” on page 53.
- Ensure that the Cognos TM1 Admin Server and the Cognos TM1 Server that you want to connect to are running on an accessible computer in your network. For details, see Chapter 8, “Cognos TM1 Server installation,” on page 61.
- Ensure that users have access to the Cognos TM1 servers that they need to use running under that Cognos TM1 Admin Server. As a Cognos TM1 administrator, you must set up a user name and password for each user before a user can access that server.

**About this task**

You can configure IBM Cognos TM1 Architect to locate a Cognos TM1 Administration Server on your network, and then connect to a server. You can also create an unattended installation.

**Attention:** If you are upgrading and leave your old Tm1p.ini client configuration files in place, you might need to update the directory path in the file for the AdminSvrSSLCertAuthority parameter. For example, if you are
using the default Cognos TM1 SSL certificate, manually change the value for this parameter to the new install path C:\Program Files\IBM\cognos\tm1\bin\ssl\applixca.pem.

**Procedure**

1. **Install Cognos TM1 Architect:**
   - a) On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, right-click the issetup.exe file and click **Run as Administrator**. For other operating systems, double-click the issetup.exe file on the IBM Cognos TM1 client installation disk or from the location where the IBM Cognos TM1 client installation files were downloaded and extracted.
   - b) On the **Component Selection** page, expand **TM1 Rich Tier**, and select the **TM1 Architect** check box. Leave all the other check boxes unselected.
   - c) Follow the prompts and click **Finish** to complete the installation.

2. **Run Cognos TM1 Architect:**
   - a) Click **Start > IBM Cognos TM1 > Architect**. If the component does not start, ensure that the servers you started with Cognos Configuration are still running.

3. **Configure Cognos TM1 Architect to locate a Cognos TM1 Admin Server:**
   - a) Open Server Explorer.
   - b) Select **TM1**.
   - c) Click **File > TM1 Options**.
   - d) In the **Admin Host** field, specify the name of the computer on which the TM1 Admin Server is running. You must enter a name, not an IP address, in the Admin Host field.

     **Tip:** If you want to access servers registered on different Admin Servers, use a semicolon to separate the name of each Admin Host.
   - e) Click **OK**.
   - f) When prompted about disconnecting from currently accessed servers, click **Yes** if you want to access a new list of servers. Servers available through Admin Server on the specified Admin Host appear. If you want to continue to see the current list of remote servers during this session, click **No**.

4. **Double-click a Cognos TM1 Server to log in.**

   For either Planning Sample or SData, use these login credentials:
   - **User name:** admin
   - **Password:** apple

5. **If you want to install Cognos TM1 Architect on multiple computers, use the previous steps to create an unattended installation. For details, see Appendix C, “Setting up unattended installations and configurations,” on page 313.**

### Installing Cognos TM1 Performance Modeler

You can choose different ways to distribute and install IBM Cognos TM1 Performance Modeler across multiple computers.

The following table summarizes the different ways to distribute and install Cognos TM1 Performance Modeler across multiple computers.

| Table 19: Multiple computer installation options for Cognos TM1 Performance Modeler |
|---|---|
| **Installation option** | **Description** |
| “Installing Cognos TM1 Performance Modeler using the installation program” on page 144 | Administrators or end users can install Cognos TM1 Performance Modeler on a single computer using the IBM Cognos TM1 Client-only installation program. Optionally, use these steps to create an unattended installation to install Cognos TM1 Performance Modeler on multiple computers. |
Table 19: Multiple computer installation options for Cognos TM1 Performance Modeler (continued)

<table>
<thead>
<tr>
<th>Installation option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Installing Cognos TM1 Performance Modeler from the Cognos TM1 Applications portal”</td>
<td>As a prerequisite, an administrator must install Planning Analytics Applications. This allows Planning Analytics users to install Cognos TM1 Performance Modeler onto their computers the first time that they launch it from the IBM Cognos Applications Portal. This is called a provisioned installation. For more information about publishing workspaces, see IBM Cognos TM1 Performance Modeler.</td>
</tr>
<tr>
<td>“Remotely installing Cognos TM1 Performance Modeler on multiple computers”</td>
<td>An administrator can use third-party network installation tools to push Cognos TM1 Performance Modeler out to multiple remote client systems.</td>
</tr>
</tbody>
</table>

Installing Cognos TM1 Performance Modeler using the installation program

You can interactively install a stand-alone version of IBM Cognos TM1 Performance Modeler on one or more computers.

**Procedure**

1. Run the installation program:
   - On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, right-click the issetup.exe file and click Run as Administrator.
   - For other operating systems, double-click the issetup.exe file on the IBM Cognos TM1 client installation disk or from the location where the IBM Cognos TM1 client installation files were downloaded and extracted.
2. On the **Component Selection** page, expand TM1 Rich Tier, and select the **Performance Modeler** check box. Leave all the other check boxes unselected.
3. Follow the prompts and click **Finish** to complete the installation.
4. To test the installation, open Cognos TM1 Performance Modeler from the toolbar of the Cognos TM1 Applications portal page.
   a) In a web browser, type the Cognos TM1 Applications URI:
      For example, http://localhost:9510/pmpsvec
      - Replace localhost with the name of the computer where the Cognos TM1 Application Server is installed.
      - If required, change the port number if you used a different value in IBM Cognos Configuration for the **TM1 Application Server Gateway URI** property.
   b) From the Cognos TM1 Applications portal, click the **Open Performance Modeler** icon.
5. If you want to install the program on multiple computers, use the previous steps to create an unattended installation. For details, see Appendix C, “Setting up unattended installations and configurations,” on page 313.

Installing Cognos TM1 Performance Modeler from the Cognos TM1 Applications portal

You can install IBM Cognos TM1 Performance Modeler the first time you run the component from the IBM Cognos TM1 Applications portal.

**Before you begin**
Before you install Cognos TM1 Performance Modeler from the Cognos TM1 Applications portal, the administrator must install Cognos TM1 Applications.

**Procedure**

1. In a web browser, type the Cognos TM1 Applications portal URI:
   For example, http://localhost:9510/pmpsvec
a) Replace localhost with the name of the computer where the Cognos TM1 Application Server is installed.
b) If required, change the port number if you used a different value in IBM Cognos Configuration for the TM1 Application Server Gateway URI property.

2. From the Cognos TM1 Applications portal, click the Open Performance Modeler icon.

   If this is the first time you have used Cognos TM1 Performance Modeler, the Install Now icon displays to indicate that you are about to install the Cognos TM1 Performance Modeler client to your computer.

3. Click Install Now.
4. Click Finish to complete the installation.

What to do next

For information on using IBM Cognos TM1 Performance Modeler, see the TM1 Performance Modeler documentation.

Remotely installing Cognos TM1 Performance Modeler on multiple computers

As an administrator, you can push the IBM Cognos TM1 Performance Modeler installation to users automatically. First, you make the Cognos TM1 Performance Modeler installer file available in a shared folder on your network. You can then use an application such as Microsoft Active Directory to automatically install the client application to authenticated users.

About this task

Cognos TM1 Performance Modeler is installed using an installer file that you put in a shared location. You can use Active Directory to install Cognos TM1 Performance Modeler directly to users' computers.

Use the PerformanceModeler.msi file to install Cognos TM1 Performance Modeler. This file is installed to the following location when you install the Cognos TM1 Application Gateway component:

```
tm1 location\webapps\mpsvc\rcp_installs
```

You can use the PerformanceModeler.msi file with Windows Installer command line options and also use Active Directory or other software management tools to push the install out to remote computers.

The PerformanceModeler.msi file is a standard Microsoft Windows Installer file. You can use the PerformanceModeler.msi file with Windows Installer command line options and also use Active Directory or other software management tools to push the install out to remote computers.

The following table lists some of the property values that administrators can use to install the PerformanceModeler.msi file. For complete details, see the Microsoft developer web site for documentation about the "Windows Installer Guide" and "Windows Installer Property Reference".

<table>
<thead>
<tr>
<th>Property</th>
<th>Property Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLUSERS</td>
<td>1</td>
<td>Installs Cognos TM1 Performance Modeler for all users. This property value ensures that the registry entries for Cognos TM1 Performance Modeler are located in HKEY_LOCAL_MACHINE. <strong>Note:</strong> You must use this property with the TARGETDIR property.</td>
</tr>
<tr>
<td>ALLUSERS</td>
<td>&quot;&quot; (default value)</td>
<td>Installs Cognos TM1 Performance Modeler only for the user who is running the installation. Only that user will have access to the application.</td>
</tr>
<tr>
<td>TARGETDIR</td>
<td>&quot;Performance Modeler_install location&quot;</td>
<td>Specifies the installation location for Cognos TM1 Performance Modeler. For example, TARGETDIR=&quot;C:\Program Files&quot;</td>
</tr>
</tbody>
</table>
### Table 20: Property values for Cognos TM1 Performance Modeler (continued)

<table>
<thead>
<tr>
<th>Property</th>
<th>Property Value</th>
<th>Description</th>
</tr>
</thead>
</table>
| TARGETDIR    | "" (default value) | Sets the installation location for Cognos TM1 Performance Modeler when TARGETDIR is not specified and ALLUSERS is specified as follows: When used with ALLUSERS="":  
  - On Windows XP, the installation location is C:\Documents and Settings\username\Application Data\IBM \Cognos TM1 Performance Modeler  
  - On Windows 7, the installation location is C:\Users \username\AppData\Roaming\IBM\Cognos TM1 Performance Modeler  
  When used with ALLUSERS=1:  
  - On Windows XP, the installation location is C:\Documents and Settings\All Users\Application Data\IBM \Cognos TM1 Performance Modeler  
  - On Windows 7, the installation location is C:\Program Data\IBM\Cognos TM1 Performance Modeler |
| NOUPDATE     | Yes            | Prevents Cognos TM1 Performance Modeler users from receiving automatic updates.  
  This value is recommended when end users do not have write access to the application installation location. Auto-updating requires that Cognos TM1 Performance Modeler users can write to the location specified, or defaulted to, by the TARGETDIR property. |
| NOUPDATE     | No (default value) | Allows Cognos TM1 Performance Modeler users to receive automatic updates. |

An example is shown in the following steps.

**Procedure**

1. Open a command prompt, and navigate to the location of the PerformanceModeler.msi file.
2. To install Cognos TM1 Performance Modeler for all users, type the following command

   ```
   PerformanceModeler.msi TARGETDIR="install_location" ALLUSERS=1
   ```

**Configuring logging for Cognos TM1 Performance Modeler**

You can enable logging for IBM Cognos TM1 Performance Modeler using the same logging framework as other components in IBM Cognos TM1.

**Procedure**

1. Locate the provagent_NOT.ini and rename the file to provagent.ini.
   
   This file is located here:  
   
   C:\Users\<user_name>\AppData\Roaming\IBM\Cognos Performance Modeler
2. Edit the provagent.ini to uncomment the following line.
   
   Change #app-debug=true to app-debug=true.
3. In this same directory location, open and edit the defaultLog.properties file to configure logging.
**Note:** By default, logging is configured to log ERROR level messages for day-to-day purposes and typically does not need to be adjusted. This can be changed to WARNING, INFO, or DEBUG level messages to get varying levels of logging information. Work with IBM Customer Support to change the logging configuration to record more specific messages.

**Results**

Log files are typically written out to the following location:

%appdata%/IBM/application_name/logs

---

**Installing Cognos Insight**

You can choose different ways to distribute and install IBM Cognos Insight across multiple computers.

Depending on your computer network environment and business needs, you can install the application, allow users to install as needed, or remotely push the application out.

The following table summarizes the different ways to distribute and install IBM Cognos Insight across multiple computers.

<table>
<thead>
<tr>
<th>Table 21: Multiple computer installation options for Cognos Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Installation option</strong></td>
</tr>
<tr>
<td>“Installing Cognos Insight using the installation program”</td>
</tr>
<tr>
<td>“Installing Cognos Insight from the Cognos TM1 Applications portal”</td>
</tr>
<tr>
<td>“Remotely installing Cognos Insight on multiple computers”</td>
</tr>
</tbody>
</table>

**Installing Cognos Insight using the installation program**

You can interactively install a stand-alone version of IBM Cognos Insight on one or more computers.

**Procedure**

1. On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, right-click the issetup.exe file and click **Run as Administrator**. For other operating systems, double-click the issetup.exe file on the IBM Cognos TM1 client installation disk or from the location where the IBM Cognos TM1 client installation files were downloaded and extracted.
2. On the **Component Selection** page, expand **TM1 Rich Tier** and select the **Cognos Insight** check box. Leave all the other check boxes unselected.
3. Follow the prompts and click **Finish** to complete the installation.
4. To test the installation, open Cognos Insight from **Start > Programs > IBM Cognos Insight > IBM Cognos Insight**.
5. To install the program on multiple computers, use the previous steps to create an unattended installation. For details, see Appendix C, “Setting up unattended installations and configurations,” on page 313.
Installing Cognos Insight from the Cognos TM1 Applications portal

You can install IBM Cognos Insight the first time you run the component from the toolbar of the IBM Cognos TM1 Applications portal.

Before you begin
Before you install Cognos Insight from Cognos TM1 Applications, the administrator must install Cognos TM1 Applications.

Procedure

1. In a web browser, type the Cognos TM1 Applications portal URI:

   For example, `http://localhost:9510/pmpsvc`

   a) Replace `localhost` with the name of the computer where the Cognos TM1 Applications Portal is installed.
   b) If required, change the port number if you used a different value in IBM Cognos Configuration for the `TM1 Application Gateway URI` property.

2. From the Cognos TM1 Applications portal, click the Open IBM Cognos Insight icon.

   If this is the first time you have used Cognos Insight, the Install Now icon displays to indicate that you are about to install the Cognos Insight client to your computer.

3. Click Install Now.

4. Click Finish to complete the installation.

What to do next

Cognos Insight is now installed in a folder on your computer. You will be able to run and use Cognos Insight in the following ways:

- You can launch Cognos Insight using the Open Cognos Insight icon in Cognos TM1 Applications.
- You can launch the Cognos Insight client by right-clicking a node of an application that has been configured to use Cognos Insight.

   Cognos Insight is available as a client from an application only if you configured the client environment for Cognos TM1 Applications to use the Cognos Insight Distributed or Connected client. For more information, see “Configuring the server and client environment for Cognos TM1 Application Web” on page 107.
- You can launch Cognos Insight as a stand-alone product from the Windows Start > Programs > IBM Cognos Insight menu.

Remotely installing Cognos Insight on multiple computers

As an administrator, you can push the IBM Cognos Insight installation to users automatically. First, you make the Cognos Insight installer file available in a shared folder on your network. Then, you can use an application such as Microsoft Active Directory to directly install the client application to authenticated users.

About this task

Cognos Insight is installed by using the CognosInsight.msi file that you put in a shared location. This file is installed to the following location when you install the IBM Cognos TM1 Application Gateway component:

```
tm1_location\webapps\pmpsvc\rcp_installs
```

The CognosInsight.msi file is a standard Microsoft Windows Installer file. You can use the CognosInsight.msi file with Windows Installer command line options and also use Active Directory or other software management tools to push the install out to remote computers.

The format for the command is the Cognos Insight MSI file name followed by the property values. For example, you could enter `CognosInsight.msi TARGETDIR="C:\Program Files" USERDATADIR=%%USERNAME%%`.

You can use the following property values alone or in combination with each other.
<table>
<thead>
<tr>
<th>Property</th>
<th>Property Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLUSERS</td>
<td>1</td>
<td>Installs Cognos Insight for all users. Setting this property value sets the default installation location to <code>C:\Program Files</code>.</td>
</tr>
<tr>
<td>ALLUSERS</td>
<td>&quot;&quot; (default value)</td>
<td>Installs Cognos Insight only for the user who is running the installation. Only that user will have access to the application. Setting <code>ALLUSERS=&quot;&quot;</code> or omitting the ALLUSERS property installs Cognos Insight in the user's context, and sets the TARGETDIR property to <code>C:\Users\username\AppData\Local\Programs\IBM\Cognos Insight</code>.</td>
</tr>
<tr>
<td>TARGETDIR</td>
<td>&quot;Cognos_Insight_install_location&quot;</td>
<td>Specifies the installation location for Cognos Insight. For example, <code>TARGETDIR=&quot;C:\Program Files&quot;</code>.</td>
</tr>
</tbody>
</table>
| TARGETDIR    | (default value) | Sets the installation location for Cognos Insight when `TARGETDIR` is not specified and `ALLUSERS` is specified as follows:  
When used with `ALLUSERS=""`:  
• On a Microsoft Windows XP operating system, the installation location is `C:\Documents and Settings\username\Local Settings\Application Data\Programs`  
• On a Microsoft Windows 7 operating system, the installation location is `C:\Users\username\AppData\Local\Programs`  
When used with `ALLUSERS="1"`:  
• On a 32-bit Microsoft Windows operating system, the installation location is `C:\Program Files`  
• On a 64-bit Microsoft Windows operating system, the installation location is `C:\Program Files (x86)` |
| NOUPDATE     | Yes            | Prevents Cognos Insight users from receiving automatic updates. This value is recommended when users do not have write access to the application installation location. Automatic updates require that Cognos Insight users can write to the installation location specified by the TARGETDIR property. |
| NOUPDATE     | No (default value) | Allows Cognos Insight users to receive automatic updates. |

Table 22: Property values for Cognos Insight
Table 22: Property values for Cognos Insight (continued)

<table>
<thead>
<tr>
<th>Property</th>
<th>Property Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USERDATADIR</td>
<td>&quot;location&quot;</td>
<td>Specifies the location for the .CognosInsight folder. The .CognosInsight folder contains Cognos Insight themes, IBM Cognos TM1 data that is copied to your computer when you work from a Cognos TM1 server, and the thumbnail graphics of recent workspaces that appear on the Getting Started page of Cognos Insight.</td>
</tr>
</tbody>
</table>
| USERDATADIR| "" (default value) | When USERDATADIR is not specified, the .CognosInsight folder is located in one of the following locations:  
  - On a Microsoft Windows XP operating system: C:\Documents and Settings\username .CognosInsight.  
  - On a Microsoft Windows 7 operating system: C:\Users\username .CognosInsight.  
  When ALLUSERS=1, and you want to specify the USERDATADIR, the USERDATADIR property should include an environment variable that will resolve differently for each user.  
  For example, the command CognosInsight.msi ALLUSERS=1 USERDATADIR=\%USERPROFILE\% specifies that Cognos Insight be installed at C:\Program Files and that the .CognosInsight folder be installed in each user's user profile folder. |

For complete details, see the Microsoft developer website for documentation about the Microsoft Windows Installer Guide and Microsoft Windows Installer Property Reference.

An example is shown in the following steps.

**Procedure**

1. Open a command prompt, and navigate to the location of the CognosInsight.msi file.
2. To install Cognos Insight for all users, type the following command

   CognosInsight.msi TARGETDIR="install_location" ALLUSERS=1

**Configuring logging for Cognos Insight**

You can enable logging for IBM Cognos Insight using the same logging framework as other components in IBM Cognos TM1.

**Procedure**

1. Locate the provagent_NOT.ini and rename the file to provagent.ini.
   
   This file is located here:  
   
   C:\Users\<user_name>\AppData\Local\Programs\IBM\Cognos Insight

2. Edit the provagent.ini to uncomment the following line:

   Change #app-debug=true to app-debug=true.

3. In this same directory location, open and edit the defaultLog.properties file to configure logging.
Note: By default, logging is configured to log ERROR level messages for day-to-day purposes and typically does not need to be adjusted. This can be changed to WARNING, INFO, or DEBUG level messages to get varying levels of logging information. Work with IBM Customer Support to change the logging configuration to record more specific messages.

Results
Log files are typically written out to the following location:
%appdata%/IBM/application_name/logs

Installing Cognos TM1 APIs

Use the TM1 API installation option to install the required files that enable programmers to work with the Cognos TM1 application programming interfaces (APIs). This installation option can also be installed on Cognos Analytics servers to enable Cognos Analytics reporting against Cognos TM1 data sources.

About this task
This option installs files for the following Cognos TM1 APIs:

**TM1 API**
Allows developers to create custom C, C++, and VB applications that interact with TM1.

**TM1 Java API**
Allows developers to create custom Java applications that interact with TM1.

**TM1 .NET API**
Allows developers to create custom Microsoft .NET applications that interact with TM1.

⚠️ Attention: For information about using the TM1 APIs to enable Cognos Analytics reporting against Cognos TM1 data sources, see “Cognos TM1 as a datasource with Cognos Analytics” on page 49.

Procedure
1. Run either the full IBM Planning Analytics installation program or the client-only installation program:
   - On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, right-click the istsetup.exe file and click Run as Administrator.
   - For other Windows operating systems, double-click the istsetup.exe file.

2. Select the installation location on the Installation Location page:
   - If you are planning on using the TM1 APIs for programming, accept the default installation.
   - If you are using the TM1 APIs to enable Cognos Analytics reporting against Cognos TM1 data sources, select an adjacent directory on the Cognos Analytics server that is running report services on Microsoft Windows.

3. On the Component Selection page:
   a) Expand the TM1 Client Tier and select the TM1 APIs option.
   b) Clear the check boxes for all the other components.

4. Follow the prompts and click Finish to complete the installation.

Configuring client computers to export Cognos TM1 data in PDF format

To export IBM Cognos TM1 data to Adobe PDF format from IBM Cognos TM1 client applications running in Microsoft Windows, set PDFCamp as your default printer. These steps apply to IBM Cognos TM1 Perspectives, IBM Cognos TM1 Architect, and IBM Cognos TM1 Web.

**Before you begin**
Verify that PDFCamp is installed correctly by confirming that PDFCamp Printer Driver exists in the Windows Printers and Faxes configuration.
Procedure
1. In Windows, open the **Printers and Faxes** configuration window.
2. Right-click **PDFCamp Printer Driver** and select **Set as Default Printer**.
Chapter 15. IBM Planning Analytics for Microsoft Excel installation and configuration

IBM Planning Analytics for Microsoft Excel is a Microsoft Excel-based tool that professional report authors use to build sophisticated, multiple-sheet, multiple-query reports against multiple databases.

Users can build sophisticated multiple-sheet, multiple-query reports in Excel from different kinds of data sources, and analyze and explore IBM Cognos dimensionally modeled data. The application provides formula-based data access so that users can solve business problems and present key results in a format that is most convenient to them.

For IBM Cognos TM1, this application is used by financial analysts and planners who plan and measure business and operational data.

What's new?

This section contains a list of new or changed features for this release. It helps you to plan your upgrade and application deployment strategies and the training requirements for your users.

New features in version 2.0.0
The information in this section lists new features since the last release.

- IBM Planning Analytics for Microsoft Excel requires Microsoft .NET Framework 4.6.1 or later to be installed.
- IBM Planning Analytics for Microsoft Excel supports security authentication modes 1, 2, 3, 4, 5. Previous versions supported modes 1 and 5.

However, when connecting to IBM Planning Analytics Workspace, only security authentication modes 1 and 5 can be used.

Forms based authentication is no longer supported for IBM Planning Analytics servers in IBM Planning Analytics for Microsoft Excel.

New features in version 10.3.0
The information later in this section lists new features since the last release.

- If your servers use Transport Layer Security (TLS), you must use Microsoft .NET Framework 4.5 or later with IBM Cognos Analysis for Microsoft Excel. New servers, and servers that have been patched to address the POODLE security vulnerability in SSL use TLS.

New features in version 10.2.0
The information later in this section lists new features since the last release. Links to directly related topics are included.

- IBM Cognos Office products, such as IBM Cognos Analysis for Microsoft Excel and IBM Cognos BI for Microsoft Office now require the use of Microsoft .NET Framework 4.

This updated conformance has implications for upgrading systems. If you are a current user of an IBM Cognos Office product and installed only Microsoft .NET Framework 2, you must also install .NET Framework 4. You must install the updated .NET Framework before installing IBM Cognos Office products. Microsoft .NET Framework versions can work along side each other. You do not need to uninstall previous versions.

- Additional language support

The following additional languages are available for IBM Cognos Office products: Croatian, Danish, Kazakh, Slovenian, and Thai.
New features in version 10.1.1

The information later in this section lists new features since the last release. Links to directly related topics are included.

Enhancements to supported environments and platforms
Enhancements were made to extend support for multiple platforms and environments.

Support for 64-bit installation

IBM Planning Analytics for Microsoft Excel supports a 64-bit environment. 64-bit environments have the ability to provide better memory management and improved scalability and performance. You now have a choice between installing and running 32-bit and 64-bit versions of IBM Planning Analytics for Microsoft Excel. The IBM Cognos application is able to run in a 32-bit and 64-bit Microsoft Office version of Excel, on a 64-bit operating system.

If you perform a 64-bit installation, the default path that is used for installation is different from the default path that is used in a 32-bit installation. The following is the default installation directory:

- For a 32-bit installation, C:\Program Files\IBM\cognos\Cognos for Microsoft Office
- For a 64-bit installation in 64-bit OS, C:\Program Files\IBM\cognos\Cognos for Microsoft Office
- For a 32-bit installation in 64-bit OS, C:\Program Files(X86)\IBM\cognos\Cognos for Microsoft Office

Support for Microsoft Office 2010

Version 2010 of the Microsoft Excel software is supported for IBM Planning Analytics for Microsoft Excel.

Because the new Office Open XML format is a recognized industry standard supported by ECMA International, the new format, which is supported by Microsoft Office 2010, facilitates extensibility and interoperability by enabling implementations on multiple platforms.

Support for Mozilla Firefox

Version 4 of the Mozilla Firefox web browser is supported for IBM Planning Analytics for Microsoft Excel.

Support for Internet Explorer

Version 9 of the Microsoft Internet Explorer web browser is supported for IBM Planning Analytics for Microsoft Excel.

Additional language support

IBM Cognos Analysis for Microsoft Excel now supports Norwegian.

Installation overview

To use IBM Planning Analytics for Microsoft Excel, you must install Microsoft .NET Framework and the IBM Planning Analytics for Microsoft Excel components.

IBM Cognos TM1 includes samples that you can use with IBM Planning Analytics for Microsoft Excel. The samples illustrate product features and technical and business best practices using fictitious data. You can also use the samples to experiment with and share report design techniques, and for troubleshooting. To use the samples, your administrator must set up and configure them. Contact your administrator to find out where they are installed.

Uninstall older versions of IBM Planning Analytics for Microsoft Excel before you install a new version.

Procedure

1. Complete the prerequisite tasks.
   a) Install Microsoft .NET Framework.
      For more information, see Installing Microsoft .NET Framework.
   b) Install Primary Interop Assemblies.
      For more information, see Installing Primary Interop Assemblies.
c) Uninstall previous versions of IBM Planning Analytics for Microsoft Excel.
   For more information, see “Uninstalling previous versions of IBM Cognos for Microsoft Excel” on page 156.
d) “Connect to IBM Planning Analytics Workspace Local” on page 157.
e) Configure your antivirus software to allow connections from Microsoft .NET Runtime and Microsoft Excel.
f) “Ensure that you are using IBM ID” on page 158.
g) “Using Cognos security” on page 158.

2. Install IBM Planning Analytics for Microsoft Excel components.
   For more information, see Installing IBM Cognos Analysis for Microsoft Excel components.

3. Test IBM Planning Analytics for Microsoft Excel.
   For more information, see Testing IBM Cognos Analysis for Microsoft Excel.

Prerequisites for installing Planning Analytics for Microsoft Excel

You must complete the tasks in this section before you install Planning Analytics for Microsoft Excel.

Installing Microsoft .NET Framework

IBM Planning Analytics for Microsoft Excel requires Microsoft .NET Framework version 4.6.1 or later to be installed on all user computers.

For a list of supported versions of Microsoft .NET Framework, see the IBM Software Product Compatibility Reports (http://www.ibm.com/software/reports/compatibility/clarity/index.jsp).

When you install Microsoft .NET Framework on a non-English operating system, Microsoft .NET error messages, shortcuts, and utilities appear in English.

For a language other than English, you can apply the Microsoft .NET Framework Language Pack to view error messages, shortcuts, and utilities in the language of your operating system. For example, if your operating system is French and you installed Microsoft .NET Framework, you must also apply Microsoft .NET French Language Pack.

Procedure

1. Go to the Microsoft download website.
2. Search for .NET Framework 4.6.1 or later, select the redistributable package, and follow the instructions to download it.
3. Check for other security updates that relate to your version of .NET Framework and download them.

Primary interop assemblies (PIAs) for Microsoft Excel

To use the features of IBM Planning Analytics for Microsoft Excel, you must have installed the primary interop assemblies (PIAs) for Excel. Typically, the PIAs are installed automatically when you install Microsoft Office on the computer. However, in some cases you might need to install the PIAs separately.

Computer workstations must have the PIAs installed and registered in the global assembly cache to run Office solutions that target .NET Framework.

You can install the complete set of PIAs in the global assembly cache in two ways:

• Modify the Microsoft Office setup.

   If you did not install .NET Framework before you installed the Office system, the PIAs are not installed with your Office installation. If you installed .NET Framework after you installed the Office system, you can install the PIAs by modifying the Office setup.

• Install them from the redistributable PIA package.

The Microsoft Office PIAs are installed in the global assembly cache in drive:/WINDOWS/assembly or drive:/WINNT/assembly.

IBM Planning Analytics for Microsoft Excel installation and configuration 155
Modifying the Microsoft Office setup to install primary interop assemblies for Excel

To use the features of IBM Planning Analytics for Microsoft Excel, you must have installed the primary interop assemblies (PIAs) for Excel. Typically, the PIAs are installed automatically when you install Microsoft Office on the computer. However, in some cases you might need to install the PIAs separately.

Computer workstations must have the PIAs installed and registered in the global assembly cache to run Office solutions that target .NET Framework 4.5.1 or later.

If you did not install .NET Framework before you installed the Office system, the PIAs are not installed with your Office installation. If you installed .NET Framework after you installed the Office system, you can install the PIAs by modifying the Office setup.

The Microsoft Office PIAs are installed in the global assembly cache in drive:/WINDOWS/assembly or drive:/WINNT/assembly.

Before you begin

You must be an administrator on the computer to install the .NET Framework and the Microsoft Office PIAs.

Procedure

1. From the Start menu, click Control Panel, and then click Programs and Features.
2. In the list of programs, click the Microsoft Office version, and then click Change.
3. In the Microsoft Office Setup wizard, select Add or Remove Features, and then click Continue.
4. In the Installation Options page, expand Microsoft Excel.
5. Click the symbol next to the .Net Programmability Support feature, and then click Run from my computer.
6. Click Continue.
7. Click Close.

Installing PIAs for Microsoft Excel

To use the features of IBM Planning Analytics for Microsoft Excel, you must have installed the primary interop assemblies (PIAs) for Excel. Typically, the PIAs are installed automatically when you install Microsoft Office on the computer. However, in some cases you might need to install the PIAs separately. If you did not install .NET Framework before you installed the Office system, the PIAs are not installed with your Office installation. You can install them from the redistributable PIA package.

Computer workstations must have the PIAs installed and registered in the global assembly cache to run Office solutions that target .NET Framework 4.5 or later.

The Microsoft Office PIAs are installed in the global assembly cache in drive:/WINDOWS/assembly or drive:/WINNT/assembly.

Before you begin

You must be an administrator on the computer to install .NET Framework and the Microsoft Office PIAs.

Procedure

1. Ensure that .NET Framework is installed. For more information, see “Installing Microsoft .NET Framework” on page 155.
2. Go to the Microsoft download website.
3. Follow the instructions in the download page to install the primary interop assemblies.

Uninstalling previous versions of IBM Cognos for Microsoft Excel

Previous versions of IBM Planning Analytics for Microsoft Excel were called IBM Cognos for Microsoft Office. If you have a previous version of IBM Cognos for Microsoft Office, you must uninstall it before you can install the new version of IBM Planning Analytics for Microsoft Excel.

The uninstall does not completely remove all application files or directories during the uninstall process; therefore, you may have to perform this action manually.
If you installed more than one component in the same location, you can choose the packages to uninstall using the uninstall wizard. All components of the package will be uninstalled.

**Before you begin**

Before uninstalling, close all Microsoft Office applications.

**Procedure**

1. From the Start menu, click **Programs, IBM Cognos for Microsoft Office, Uninstall IBM Cognos, Uninstall IBM Cognos**.

   The Uninstall wizard appears.

   **Tip:** IBM Cognos for Microsoft Office was the default name of the Program Folder that was created during previous installations. If you chose another name, go to that folder to find the program.

2. Follow the instructions to uninstall the component.

   The cognos_uninst_log.txt file records the activities that the Uninstall wizard performs while uninstalling files.

   **Tip:** To find the log file, look in the Temp directory.

**Connect to IBM Planning Analytics Workspace Local**

Before running Planning Analytics for Microsoft Excel, Planning Analytics users must connect to an instance of Planning Analytics Workspace Local that is installed in their environment.

**Note:** A user does not need to install Planning Analytics Workspace Local on their own computer. They only need to connect to a single Planning Analytics Workspace Local installation so that they can use the set editor or the cube viewer.

For more information, see Chapter 12, “Planning Analytics Workspace installation,” on page 127.

**Setting up connections for TM1 REST APIs**

IBM Planning Analytics for Microsoft Excel requires the use of TM1 REST APIs. To enable these APIs in IBM TM1 Server, an administrator may need to configure the HTTP port number in the IBM TM1 Server configuration files for each TM1 Server.

**Before you begin**

When an IBM TM1 Server is created, the HTTP port number may not be set by default. This task requires you to edit the configuration file for each IBM TM1 Server and set the HTTP port number. Contact your administrator if you do not have access to the configuration file.

**Procedure**

1. Stop the TM1 Server
2. Locate the tm1s.cfg file. The location of the file may differ depending on the type of server you are using.
3. Open the tm1s.cfg file in an editor.
4. Locate the line containing the following: `HTTPPortNumber = XXXX`.
5. Replace `XXXX` with a valid port number which is not currently in use.
6. Save the tm1s.cfg file.
7. Restart IBM TM1 Server

**Results**

IBM Planning Analytics for Microsoft Excel will have access to TM1 Server data through the TM1 REST APIs.
Configure your antivirus software

To run Planning Analytics for Microsoft Excel, you must first configure your antivirus software to allow connections from both Microsoft .NET Runtime and Microsoft Excel.

If you do not configure your antivirus software to allow these two connections, an error message may appear, as described in “COI-ERR-2019 Connection failed” on page 170.

Ensure that you are using IBM ID

To use Planning Analytics for Microsoft Excel, you must enter your IBM ID to authenticate yourself.

Tip: To register for your IBM ID, go to the IBM ID registration page (https://ibm.biz/BdHtLT).

Using Cognos security

To log into Planning Analytics for Microsoft Excel with Cognos security authentication enabled, you must:

• Ensure that Planning Analytics for Microsoft Excel is pointing to the same Planning Analytics Workspace URL as in the Cognos TM1 Operations Console.
• Update the pmhub.html and planning.html files to include the Planning Analytics Workspace URL.
• Ensure that the settings in the Cognos TM1 Operations Console are correct. Refer to “Configuring Cognos TM1 Operations Console to use Cognos security” on page 217 for more information.

If you do not configure Planning Analytics for Microsoft Excel for use with Cognos security, you may not be able to log into Planning Analytics for Microsoft Excel.

Installation tasks

Perform the tasks in this section to install Planning Analytics for Microsoft Excel.

Installing IBM Planning Analytics for Microsoft Excel

To install IBM Planning Analytics for Microsoft Excel, you must download and run an installation program.

IBM Cognos TM1 includes sample data, which you can use in Planning Analytics for Microsoft Excel. If you want to use the samples, your IBM Cognos administrator must install the samples on the IBM Cognos system.

Before you begin

Planning Analytics for Microsoft Excel is available as a 32-bit or 64-bit installation. The corresponding installation must be installed on either the 32-bit or 64-bit version of Microsoft Office.

Before you update and install components, ensure that the following statements are true:

• You have administrative privileges on the computer.
• Microsoft .NET Framework 4.6.1 or later is installed.
• You have uninstalled any previous version of IBM Planning Analytics for Microsoft Excel.
• You have the appropriate license to use your IBM Cognos for Microsoft Office product.
• You have configured your antivirus software to allow or unblock connections from the following two applications:
  – Microsoft .NET Runtime
  – Microsoft Excel

Procedure

1. Close all Microsoft Excel windows.
2. Download and extract the installation program.
3. If you have the 32-bit version of Microsoft Office installed, navigate to the win32 folder. If you have the 64-bit version of Microsoft Office installed, navigate to the winx64h folder.
4. Right-click the issetup.exe file and select Run as Administrator.
   The Welcome page appears in a new window.
5. Select the language to use for the installation.
   The language that you select determines the language of the installation user interface. The language of the product user interface is defined by the display/primary language settings in Microsoft Windows.

6. In the Component Selection page, select Planning Analytics for Microsoft Excel.
7. Follow the directions in the installation wizard to copy the required files to your computer.

**Testing IBM Planning Analytics for Microsoft Excel**
You can test the installation of the client components by starting the application.

**Procedure**
1. Start Microsoft Excel or open a Microsoft Excel spreadsheet.

2. Confirm that IBM Planning Analytics appears in the ribbon.
   If the IBM Planning Analytics tab is not displayed on the ribbon, see “The Cognos Office interface fails to initialize in Microsoft Office” on page 166.

3. Click the IBM Planning Analytics tab, and then click Task Pane.
   The IBM pane is displayed.

   **Tip:** You can ignore the following message, if it appears:
   Microsoft Excel must be restarted to complete the registration in order to use custom reports.

**What to do next**
To start working with IBM Planning Analytics for Microsoft Excel, you must configure connections to IBM Planning Analytics servers. See the *IBM Planning Analytics for Microsoft Excel User Guide*.

**Uninstalling IBM Planning Analytics for Microsoft Excel**
Uninstall the current version of IBM Planning Analytics for Microsoft Excel.

The uninstall does not completely remove all application files or directories during the uninstall process; therefore, you may have to perform this action manually.

If you installed more than one component in the same location, you can choose the packages to uninstall using the uninstall wizard. All components of the package will be uninstalled.

**Before you begin**
Before uninstalling, close all Microsoft Office applications.

**Procedure**
1. From the Start menu, click Programs, IBM Planning Analytics for Microsoft Office, Uninstall IBM Office Addins, Uninstall IBM Office Addins.
   The Uninstall wizard appears.

   **Tip:** IBM Planning Analytics for Microsoft Office is the default name of the Program Folder that is created during the installation. If you chose another name, go to that folder to find the program.

2. Follow the instructions to uninstall the component.

   You can find log files that record the uninstall process in the install_location/ibm/cognos/IBM for Microsoft Office/instlog/ directory
Registering the IBM Cognos Office Reporting TM1 Addin using a script

You can use a script to register the IBM Cognos Office Reporting TM1 Addin (CognosOfficeTM1.xll) with Microsoft Excel. You can use a registry command or you can modify and then use the Register Cognos XLL.vbs script.

Registering the IBM Cognos Office Reporting TM1 Addin using a registry command

You can use a registry command to register the IBM Cognos Office Reporting TM1 Addin (CognosOfficeTM1.xll) with Microsoft Excel.

The following sample script shows the basic registry command to add the CognosOfficeTM1.xll reference to Microsoft Excel.

```
[HKEY_CURRENT_USER\Software\Microsoft\Office\15.0\Excel\Options]
"OPEN"="/R "C:\Program Files\IBM\cognos\Cognos for Microsoft Office\CognosOfficeTM1.xll"
```

Note: This is a sample only. You must modify the command to use the appropriate path and key for your environment.

Registering the IBM Cognos Office Reporting TM1 Addin using the Register Cognos XLL.vbs script

Cognos Analysis for Microsoft Excel provides a VBS script called Register Cognos XLL.vbs. By default, this script is set up to register CognosOfficeBI.xll, which is the Cognos for Microsoft Office Addin. You can modify this script to register the IBM Cognos Office Reporting TM1 Addin. You can then run the script directly or include it in a deployment script.

Procedure

1. Go to the location where Cognos Analysis for Microsoft Excel is installed.
   On Windows 7, the default installation location is C:\Program Files (x86)\IBM\cognos\Cognos for Microsoft Office.
2. Create a backup copy of Register Cognos XLL.vbs.
3. Open the file Register Cognos XLL.vbs in a text editor.
4. On line 19, set the path to the location of the CognosOfficeTM1.xll file.
   For example:
   ```vbs
   path = "C:\Program Files (x86)\IBM\cognos\Cognos for Microsoft Office\"
   ```
5. On line 20, replace CognosOfficeBI.xll with CognosOfficeTM1.xll.
   For example:
   ```vbs
   file = "CognosOfficeTM1.xll 
   ```
6. Save the file.

Configure Planning Analytics for Microsoft Excel single sign-on

Planning Analytics for Microsoft Excel access requires some files to be dropped into the IBM Cognos Analytics Gateway installation location and some configuration settings to be implemented.

About this task

Planning Analytics for Microsoft Excel requires an instance of Cognos Analytics Gateway for a dedicated entry point. This Cognos Analytics Gateway instance must be enabled according to the steps described in “Using Cognos TM1 Applications with Cognos security” on page 218. In particular, this ensures that the Gateway installation is supplemented by the three files that are required (pmhub.html, planning.html, and variables_plan.xml).

Note: The required files are included in the bi_interop.zip file that is located in the directory <TM1 installation location>\bi_interop.
Procedure

1. On the Cognos Analytics Gateway installation that is selected for the Planning Analytics for Microsoft Excel entry point, navigate to `Cognos_root\templates\ps\portal\` where `Cognos_root` is the installation location of Cognos Analytics.
2. Open the file `variables_plan.xml`.
3. Verify that the `<url>../pmhub.html</url>` tag exists below `<url>../planning.html</url>`.
   The following text is an example of the `variables_plan.xml` file:
   ```xml
   <?xml version="1.0" encoding="UTF-8"?>
   <CRNenv>
   <urls>
   <url>../planning.html</url>
   <url>../pmhub.html</url>
   </urls>
   <cookies>
   <param name="cam_passport"/>
   <param name="CRN"/>
   </cookies>
   </CRNenv>
   ```
5. Navigate to `Cognos_root\webcontent` where `Cognos_root` is the installation location of Cognos Analytics.
6. Open `pmhub.html` to edit it.
7. Add the fully qualified Planning Analytics Workspace domain name and port number (if applicable).
   This enables SSO to operate.
8. Make sure that the user account that is running the web server has permission to access `pmhub.html`.
   If you cannot access the `pmhub.html` in a web browser, check the `pmhub.html` file properties.

Troubleshoot

Use this troubleshooting reference information as a resource to help you solve specific problems you may encounter during or after the installation of IBM Planning Analytics for Microsoft Excel.

Troubleshoot a problem

Troubleshooting is a systematic approach to solving a problem. The goal of troubleshooting is to determine why something does not work as expected and how to resolve the problem.

The first step in the troubleshooting process is to describe the problem completely. Problem descriptions help you and the IBM technical-support representative know where to start to find the cause of the problem. This step includes asking yourself basic questions:

- What are the symptoms of the problem?
- Where does the problem occur?
- When does the problem occur?
- Under which conditions does the problem occur?
- Can the problem be reproduced?

The answers to these questions typically lead to a good description of the problem, which can then lead to a resolution of the problem.

What are the symptoms of the problem?

When starting to describe a problem, the most obvious question is "What is the problem?" This question might seem straightforward; however, you can break it down into several focused questions that create a more descriptive picture of the problem. These questions can include:

- Who, or what, is reporting the problem?
• What are the error codes and messages?
• How does the system fail? For example, is the problem a loop, hang, crash, performance degradation, or incorrect result?

Where does the problem occur?
Determining where the problem originates is not always easy, but it is one of the most important steps in resolving a problem. Many layers of technology can exist between the reporting and failing components. Networks, disks, and drivers are only a few of the components to consider when you are investigating problems.

The following questions help you to isolate the problem layer:
• Is the problem specific to one platform or operating system, or is it common across multiple platforms or operating systems?
• Is the current environment and configuration supported?

If one layer reports the problem, the problem does not necessarily originate in that layer. Part of identifying where a problem originates is understanding the environment in which it exists. Take some time to completely describe the problem environment, including the operating system and version, all corresponding software and versions, and the hardware. Confirm that you are running within an environment that is supported; many problems can be traced back to incompatible levels of software that are not intended to run together or have not been fully tested together.

When does the problem occur?
Develop a detailed timeline of events leading up to a failure, especially for cases that are one-time occurrences. You can most easily develop a timeline by working backward: Start at the time an error was reported (as precisely as possible, even down to the millisecond), and work backward through the available logs and information. Typically, you need to look only as far as the first suspicious event that you find in a diagnostic log.

To develop a detailed timeline of events, answer these questions:
• Does the problem happen only at a certain time of day or night?
• How often does the problem happen?
• What sequence of events leads up to the time that the problem is reported?
• Does the problem happen after an environment change, such as an upgrade or an installation of software or hardware?

Under which conditions does the problem occur?
Knowing which systems and applications are running at the time that a problem occurs is an important part of troubleshooting. These questions about your environment can help you to identify the cause of the problem:
• Does the problem always occur when the same task is being performed?
• Does a certain sequence of events need to occur for the problem to occur?
• Do any other applications fail at the same time?

Answering these types of questions can help you explain the environment in which the problem occurs and correlate any dependencies. Remember that just because multiple problems might have occurred around the same time, the problems are not necessarily related.

Can the problem be reproduced?
Problems that you can reproduce are often easier to solve. However, problems that you can reproduce can have a disadvantage. If the problem as a significant business impact, you do not want it to recur. If possible, re-create the problem in a test or development environment, which typically offers you more flexibility and control during your investigation. Answer the following questions:
• Can the problem be re-created on a test system?
• Are multiple users or applications encountering the same type of problem?
• Can the problem be re-created by running a single command, a set of commands, or a particular application?
Get fixes
A product fix might be available to resolve your problem.

Procedure
To find and install fixes:
1. Determine which fix you need by using Fix Central (opens in new window) (http://www.ibm.com/support/fixcentral/)
2. Download the fix. Open the download document and follow the link in the "Download package" section.
3. Apply the fix by following the instructions in the "Installation Instructions" section of the download document.
4. Subscribe to receive weekly email notifications about fixes and other IBM Support information.

Contact IBM Support
IBM Support provides access to a variety of IBM resources for help with software questions.

Before you begin
After trying to find your answer or solution by using other self-help options such as technotes, you can contact IBM Support. Before contacting IBM Support, your company must have an active IBM maintenance contract, and you must be authorized to submit problems to IBM. You should also have the following information at hand:

• Your customer identification number
• Your service request number, if it is an ongoing service request
• The phone number where you can be reached
• The version of the software you use
• The version of the operating environment you use
• A description of what you were doing when the problem occurred
• The exact wording of any error messages that display
• Any steps you took to attempt to solve the problem

For information about the types of available support, see the Support portfolio topic in the Software Support Handbook (opens in new window).

Procedure
Complete the following steps to contact IBM Support with a problem:
1. Define the problem, gather background information, and determine the severity of the problem. For more information, see the Getting IBM support (opens in new window) topic in the Software Support Handbook.
2. Gather diagnostic information.
3. Submit the problem to IBM Support in one of the following ways:
   • Using IBM Support Assistant (ISA): Use this feature to open, update, and view an Electronic Service Request with IBM. Any data that has been collected can be attached to the service request. This expedites the analysis and reduces the time to resolution.
   • Online through the IBM Support Portal (opens in new window): You can open, update, and view all your Service Requests from the Service Request portlet on the Service Request page.
   • By phone: For the phone number to call, see the Directory of worldwide contacts (opens in new window) web page.

Results
If the problem that you submit is for a software defect or for missing or inaccurate documentation, IBM Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.
Exchange information with IBM
To diagnose or identify a problem, you might need to provide IBM Support with data and information from your system. In other cases, IBM Support might provide you with tools or utilities to use for problem determination.

Send information to IBM Support
To reduce the time that it takes to resolve your problem, you can send trace and diagnostic information to IBM Support.

Procedure
To submit diagnostic information to IBM Support:
1. Open a problem management record (PMR). You can use the IBM Support Assistant (opens in new window) or the IBM Service Request tool (opens in new window).
2. Collect the diagnostic data that you need. Diagnostic data helps reduce the time that it takes to resolve your PMR. You can collect the diagnostic data manually or automatically.
3. Compress the files by using the TRSMAIN or AMATERSE program. Download the free utility from the IBM web site to the IBM Cognos system and then install the utility using the TSO RECEIVE command.
4. Transfer the files to IBM. You can use one of the following methods to transfer the files to IBM:
   - The Service Request tool (opens in new window)
   - Standard data upload methods: FTP, HTTP
   - Secure data upload methods: FTPS, SFTP, HTTPS
   - Email

If you are using an IBM Cognos product and you use ServiceLink / IBMLink to submit PMRs, you can send diagnostic data to IBM Support in an email or by using FTP.

All of these data exchange methods are explained on the IBM Support site (opens in new window).

Receive information from IBM Support
Occasionally an IBM technical-support representative might ask you to download diagnostic tools or other files. You can use FTP to download these files.

Before you begin
Ensure that your IBM technical-support representative provided you with the preferred server to use for downloading the files and the exact directory and file names to access.

Procedure
To download files from IBM Support:
1. Use FTP to connect to the site that your IBM technical-support representative provided and log in as anonymous. Use your email address as the password.
2. Change to the appropriate directory:
   a) Change to the /fromibm directory.

```
cd fromibm
```

b) Change to the directory that your IBM technical-support representative provided.

```
cd nameofdirectory
```
3. Enable binary mode for your session.

```
binary
```
4. Use the get command to download the file that your IBM technical-support representative specified.

```
get filename.extension
```
5. End your FTP session.

Subscribe to Support updates

To stay informed of important information about the IBM products that you use, you can subscribe to updates.

About this task

By subscribing to receive updates, you can receive important technical information and updates for specific Support tools and resources. You can subscribe to updates by using one of two approaches:

RSS feeds and social media subscriptions

The following RSS feeds and social media subscriptions are available:

• RSS feed for the Support site for IBM Cognos Analysis for Microsoft Excel
• RSS feed for the Support site for IBM Cognos TM1
• RSS feed for a developerWorks® forum

For general information about RSS, including steps for getting started and a list of RSS-enabled IBM web pages, visit the IBM Software Support RSS feeds (opens in new window) site.

My Notifications

With My Notifications, you can subscribe to Support updates for any IBM product. You can specify that you want to receive daily or weekly email announcements. You can specify what type of information you want to receive, such as publications, hints and tips, product flashes (also known as alerts), downloads, and drivers. My Notifications enables you to customize and categorize the products that you want to be informed about and the delivery methods that best suit your needs.

Procedure

To subscribe to Support updates:

1. Subscribe to the Product RSS feeds.
2. To subscribe to My Notifications, begin by going to the IBM Support Portal (opens in new window) and clicking My Notifications in the Notifications portlet.
3. If you have already registered for My Support, sign in and skip to the next step. If you have not registered, click Register now. Complete the registration form using your email address as your IBMid and click Submit.
4. Click Edit profile.
5. Click Add products and choose a product category; for example, Software.
6. In the second list, select a product segment; for example, Data & Information Management.
7. In the third list, select a product subsegment, for example, Databases.
8. Select the products that you want to receive updates for.
9. Click Add products.
10. After selecting all products that are of interest to you, click Subscribe to email on the Edit profile tab.
11. Select Please send these documents by weekly email.
12. Update your email address as needed.
13. In the Documents list, select the product category; for example, Software.
14. Select the types of documents that you want to receive information for.
15. Click Update.

Results

Until you modify your RSS feeds and My Notifications preferences, you receive notifications of updates that you have requested. You can modify your preferences when needed (for example, if you stop using one product and begin using another product).
Common errors
This section lists the most-common errors that you might encounter.

Configuration Issues
These issues are related to configuration and setup.

Convert to Formulas does not show value
You can create an Exploration View without experiencing an error, but when you convert that exploration sheet to formulas, cells no longer display values properly. In one of the cells that has no value, you click the cell and it shows the COGVAL formula, such as =COGVAL($C$1, $C$2, $B10, C$8, $B$8). Attempting to do this on another workstation you find that values are displayed correctly. If a user with administrative rights to the workstation attempts to convert to formulas, the values are displayed correctly in the cells of the worksheet.

The user did not use Microsoft Excel before IBM Planning Analytics for Microsoft Excel was installed and did not get registered properly. There are two ways to resolve this problem. You can give the affected user local administration rights to the workstation or you can run the file Register Cognos XLL.vbs, which will add the proper registry entries for the new user.

For the Register Cognos XLL.vbs file process to work (both during the installation of the software or when run separately to add a new user) the Microsoft Excel registry entries must have been created by Microsoft Excel itself. You must ensure that the user run Microsoft Excel first, before attempting to add registry entries for IBM Planning Analytics for Microsoft Excel. You can examine the ntuser.dat that the script writes to check whether the user has been properly added.

The Cognos Office interface fails to initialize in Microsoft Office
IBM Cognos Office may not initialize when the Microsoft .NET Framework is not installed or the version is not correct. The required Microsoft .NET Framework version is 4.6.1 or later. Another possible reason for this condition is that the add-in is either not installed or not registered.

If you are running the wrong version of Microsoft .NET Framework, uninstall it and then reinstall Microsoft .NET Framework.

To install the IBM Cognos add-in, run the installation program.

Before you attempt to install Microsoft .NET Programmability Support, you must have installed Microsoft .NET Framework.

Microsoft Office does not open a Microsoft Office document published from Cognos Office
If you observe Microsoft Office trying to open a published document twice when you double-click the workbook, document, or presentation from Microsoft Windows Explorer, the file association is either corrupted or not installed properly.

There are two options to resolve this issue. You can start the Microsoft Office application first, and then open the document using the Open command from the File menu, or you can reregister the file type.

Re-register file types with a Microsoft Office program
When you are not able to open a Microsoft Office document even though it is associated with the correct file type, you must re-register the file type with the appropriate Microsoft Office program, such as Excel, Word, or PowerPoint.

About this task
In these steps, program.exe is a placeholder for the executable file for the Microsoft Office program that you want to re-register. If you installed Microsoft Office to another location, use the path that is correct for that location.

Note: If you are using the command line on version 7 of Microsoft Windows operating system, you must elevate the rights of the command line to perform certain tasks, such as re-registering file types. To open an elevated command prompt, or a command prompt in Administrator mode, right-click the command prompt shortcut, and select Run as Administrator.

Procedure
1. From the Start menu, click Run.
2. To disassociate the program version, in the Open box, type the following command, and then click OK:
3. To specify the default version, from the Start menu, click Run.

4. In the Open box, type the following command, and then click OK:
   
   `program.exe/regserver`

.NET Messages are not in the installed .NET Framework language
When you install a non-English version of .NET Framework in a non-English operating system, you will notice that the error messages, .NET shortcut, and .NET Console are in English.

To solve this issue, you must apply the .NET Framework Language Pack for your language.
The subkey numbers relate to the language. For example, English, French, German, and Japanese are listed here: 1033=en-en, 1036=fr-fr, 1031=de-de, and 1041=ja. Refer to the Microsoft Support Site to obtain subkey numbers for other languages.
If you are missing the language pack subkeys, you must install the .NET language pack, which is available from the Microsoft support Web site.

Workbook closes unexpectedly
If you install the COM add-in and your Microsoft Excel workbook name contains a square bracket, Excel stops responding or closes unexpectedly after opening.

To resolve this problem, rename the workbook so that it does not contain square brackets.

Processing issues
The following issues are related to processing and rendering reports.

Improve performance for TM1 data
If you experience unacceptable performance when you work with TM1 data, the administrator of the TM1 system might be able to change cube or system settings to improve performance. To help the TM1 administrator evaluate the performance issue, provide the administrator with the details of the data you are using and a description of actions that result in unacceptable performance.

The following are examples of TM1 settings that affect performance.

VVM (CubeProperties)
For each cube, this property determines the amount of RAM reserved on the server for the storage of stargate views. The more memory made available for stargate views, the better performance will be. Sufficient memory must be available for the TM1 server to load all cubes.

VMT (CubeProperties)
If the time required to calculate a cube view surpasses the specified threshold, TM1 attempts to store a stargate view. If there is not enough memory available to store the stargate view, TM1 purges the oldest stargate view that is not currently in use, and continues to purge views in this manner until sufficient memory is made available.

The IBM Cognos TM1 Operation documentation includes more information about the CubeProperties and other tuning options.

DPR-ERR-2079 Firewall Security Rejection
If you run a report after your session has expired and then try to navigate away from the first page of the report, you encounter an error.

DPR-ERR-2079 Firewall Security Rejection. Your request was rejected by the security firewall. CAF rejection details are available in the log. Please contact your administrator.

When the DPR-ERR-2079 error occurs after an expired session, you must log on again to resolve the problem.

Procedure
1. In the report list, right-click the node item, which appears before other items.
2. Click Log On.
3. Provide your authentication credentials as prompted and click **OK**.

**Item cannot be expanded**
Microsoft Excel has reached the maximum number of rows or columns for this worksheet. The number of rows and columns is limited in Microsoft Excel. Expanding the current item is not possible because it would shift rows or columns beyond this worksheet limit. Microsoft Excel cannot shift nonblank cells off the worksheet.

Manually move items so that the row or column item can expand without reaching the limit, or move your Exploration View, list, or report to another worksheet. Or, you can move the data to a new location and try again.

**Results have exceeded the Excel row or column limit**
Microsoft Excel has reached the maximum number of rows or columns for this worksheet. The number of rows and columns is limited in Microsoft Excel. Items are truncated.

Filter items so that the row or column items can be displayed without reaching the limit. Consider creating additional Exploration Views, lists, or reports to spread the data over more than one worksheet. Consider using a new version of Microsoft Excel that has larger limits for rows and columns.

**Error: Exception from HRESULT:<location>**
If you import a data item where the path to the data item exceeds 256 characters it results in the error: Exception from HRESULT.

You must create names and unique data identifiers that keep to the 256-character limit inside Microsoft Excel.

**Error refreshing exploration saved in earlier version of Microsoft Excel**
This workbook may have been created with an older version of Microsoft Excel that has a set maximum number of rows or columns. Rows or columns that go beyond the maximum limits are truncated.

Although you are no longer using that version, the application is working within the limits of the older version of Excel. You might encounter this situation when you are expanding items or when you are refreshing items that have grown in size since the workbook was created.

To correct the problem, you must save the workbook with the .xlsx extension. Opening the workbook that contains the exploration in a more recent version of Excel does not convert it to the new format. Saving the workbook with the .xlsx extension converts the workbook to the new format.

**Security Issues**
The following issues are related to security setup.

**Cognos Office Unable to Create Trust Relationship**
If you are using HTTPS to Report Data Service and you receive an error in IBM Cognos Office about being unable to trust the relationship, the Certificate Authority (CA) certificate that was issued by the Web server is not trusted on the client workstation.

To resolve this problem, you must ensure that the Certificate Authority (CA) that issued the Web server certificate is also trusted on the client workstation. If the certificate is not from an authority that is already trusted on the client, such as Verisign, you must install the CA certificate in the trust store on the client.

**Procedure**
1. Retrieve the CA certificate from the issuing authority.
   - The file has a .cer extension. This is not the same certificate as the one used by the Web server. It is the certificate for the issuing authority itself.
2. Double-click the .cer file, click **Install Certificate**, and then click **Next**.
3. Click **Place all certificates in the following store**.
4. Click **Browse**, click **Trusted Root Certification Authorities**, and then click **Next**.
5. Click **Finish**.
Cognos Office Numbered Error Messages
The following error messages may appear in a dialog box and are recorded in the IBM Cognos Office log.

COI-ERR-2002 Block type is not valid
An internal processing error occurred. The block object was not able to be processed.
Contact IBM Cognos Resource Center. Be ready to supply all relevant logs and details related to this error.

COI-ERR-2003 Unexpected type: stacked block
An internal processing error occurred. The data object was not of the expected type and could not be processed.
Contact IBM Cognos Resource Center. Be ready to supply all relevant logs and details related to this error.

COI-ERR-2005 This version of Microsoft Office is not supported
IBM Cognos Office supports only specific versions of Microsoft Office applications.
Load the report content into one of the supported applications and environments.
To review an up-to-date list of environments supported by IBM Cognos Office products, including operating systems, patches, browsers, web servers, directory servers, database servers, and application servers, go to the IBM Support Portal for IBM Cognos Analysis for Microsoft Excel or the IBM Support Portal for IBM Cognos for Microsoft Office.

COI-ERR-2006 This Microsoft Office product is not supported
IBM Cognos Office supports only specific Microsoft Office applications, such as Microsoft Excel, Microsoft Word, and Microsoft PowerPoint. You cannot load IBM Cognos Office content to another Microsoft Office application, such as Microsoft Access even when there is an add-in that enables these applications to interoperate.
Load the report content into one of the supported applications and environments.
To review an up-to-date list of environments supported by IBM Cognos Office products, including operating systems, patches, browsers, web servers, directory servers, database servers, and application servers, go to the IBM Support Portal for IBM Cognos Analysis for Microsoft Excel or the IBM Support Portal for IBM Cognos for Microsoft Office.

COI-ERR-2008 Unable to Retrieve from Resources. Tried '{0}'
An internal processing error occurred.
Contact IBM Cognos Resource Center. Be ready to supply all relevant logs and details related to this error.

COI-ERR-2009 Unable to Perform This Operation Because Microsoft Excel is in Edit Mode
Report content cannot be refreshed while one of the cells of the workbook is being edited.
Click outside the active cell to return it to a non-edit mode and try again.

COI-ERR-2010 The name {0} is not valid. A name must not contain both a quote ("), character and an apostrophe (') character
When you create a folder, rename a folder, or publish a document, the name can contain an apostrophe or a quote, but not both.
To resolve this problem, rename the folder or document. Exclude the apostrophe or quote character from the name.

COI-ERR-2013 Unable to load metadata
You may be unable to load metadata because you do not have security rights to all of the items in the worksheet or because the items were removed or changed on the server.
Ensure that you have security rights to all of the items that you are trying to view. If this does not fix the problem, ensure that the server and package information are correct and that any items that have been removed from the source database are also removed from the worksheet.

COI-ERR-2015 There was a problem parsing the MIME encoded server response. Tried to find the boundary [{0}] but found the boundary [{1}] instead
While using GZip compression, an option for compressing data that is retrieved from the server, an error occurred. The codes to decompress the data are missing or unrecognized by IBM Cognos Office.
Turn compression off. Although compression is turned on by default, it can be turned off by setting the UseGzipCompression property to false in the CommManagerSettings.xml file, which, by default, is located in the Office Connection directory, such as C:\Documents and Settings\user name\Local Settings\Application Data\Cognos\Office Connection or C:\Users\user name\AppData\Local\Cognos\Office Connection.
Turn compression off if you need to run tests or perform troubleshooting.
To turn gzip compression off set the following attribute:

```xml
<setting name="UseGzipCompression">False</setting>
```

**COI-ERR-2016 Worksheet protected, IBM Cognos styles cannot be populated**

If the worksheet is protected, the IBM Cognos styles cannot be applied.

You must unprotect the worksheet for the styles to be applied during a refresh of the data.

**COI-ERR-2019 Connection failed**

In Planning Analytics for Microsoft Excel, when you try to connect to a IBM Planning Analytics server, the following error message appears:

```
COI-ERR-2019 Connection failed. Connection returned an error. Verify that the connection string, including the server name and port number, is correct.
```

To resolve this issue, you must configure your antivirus software to allow connections from both Microsoft .NET Runtime and Microsoft Excel.

**IBM Planning Analytics for Microsoft Excel numbered error messages**

The following error messages may appear in a dialog box and are recorded in the IBM Cognos Office log.

**COR-ERR-2004 Axis specification is not valid**

The workbook specification is not capable of being generated because of an anomaly.

To fix the problem, you may attempt to do any of the following:

- Click **Undo**.
- Click **Clear All Data**.
- Close the workbook and open it again.

The workbook should now accept data from the source tree.

**COR-ERR-2007 Error retrieving from resources. Tried '{0}'**

The exploration sheet experienced a bad state.

Contact IBM Cognos Resource Center.

**COR-ERR-2009 Name formula is not valid**

The COGNAME formula did not parse correctly. It may have been altered manually and may have a missing argument.

Check the COGNAME formula in the active cell and ensure that it is in the correct format, or optionally, insert the member from the source tree.

**COR-ERR-2010 Formula is not valid**

If an argument to a COGNAME or COGVAL formula references a cell and that cell does not contain the expected string formula you receive this error.

Check the cell and its dependents. Look for #REF or #VALUE in the cell. The contents of the cell may have accidentally been deleted.

**COR-ERR-2011 Invalid range: Please enter a valid range for crosstab or list**

The range is not valid or is outside of the range of the data type.

To avoid this limitation, limit your data selections.

**COR-ERR-2013 Exploration cannot be converted to formula based because at least one context item contains a selection**

With more than one item in the Context drop zone there is no way for the multiple items to be rendered into the cells of the worksheet.

Remove one dimension from the Context drop zone. You must have one item per dimension to convert to a formula-based analysis.

**COR-ERR-2014 Due to Excel worksheet limitations the results may be truncated**

If the data that you receive back exceeds the row or column limits of Microsoft Excel, the result is truncated. You receive this message to make you aware of the truncation.

To avoid this limitation, limit your data selections.
**COR-ERR-2015** The current exploration cannot be rendered at this location on the worksheet

The exploration cannot write data outside the limits of the current worksheet. Either the exploration is too large for Microsoft Excel or you have designated a starting location too close to the limit.

Try to move your start location. If that fails to fix the problem, try creating an Exploration View with fewer rows or columns.

**COR-ERR-2016** Unable to retrieve package <Name>

After you selected a package using the **Open Package** dialog box, an error occurred when trying to download the package from the server.

This is an internal error.

Contact IBM Cognos Resource Center.

**ValueNotInPickList (243)**

The value you are trying to commit is not an available option in the picklist.

When entering a value into a report cell, ensure that the value is an available option in the picklist.

**Microsoft Excel limits**

There are specifications and limits in Microsoft Excel 2013-2016 that may affect the performance of Planning Analytics for Microsoft Excel.

The following tables group the specifications and limits into categories:

- Worksheet and workbook
- Calculation

<table>
<thead>
<tr>
<th>Specification</th>
<th>Maximum limit</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column width</td>
<td>255 characters</td>
<td>If the data that you enter or receive exceeds the column limits of Microsoft Excel, the result is truncated.</td>
</tr>
<tr>
<td>Row height</td>
<td>409 points</td>
<td>If the data that you enter or receive exceeds the row limits of Microsoft Excel, the result is truncated.</td>
</tr>
<tr>
<td>Total number of characters that a cell can contain</td>
<td>32,767 characters</td>
<td>If the data that you enter or receive exceeds the cell character limits of Microsoft Excel, the result is truncated.</td>
</tr>
<tr>
<td>Maximum limits of memory storage and file size for Data Model workbooks</td>
<td>32-bit environment is subject to 2 gigabytes (GB) of virtual address space, shared by Excel, the workbook, and add-ins that run in the same process. A data model's share of the address space might run up to 500 – 700 megabytes (MB), but could be less if other data models and add-ins are loaded. 64-bit environment imposes no hard limits on file size. Workbook size is limited only by available memory and system resources.</td>
<td>Due to the limitations with add-ins, users can only copy and paste once on top of a DBRW formula. Adding tables to the Data Model increases the file size. If you don't plan to create complex Data Model relationships using many data sources and data types in your workbook, uncheck the Add this data to the Data Model box when you import or create tables, pivot tables, or data connections.</td>
</tr>
<tr>
<td>Specification</td>
<td>Maximum limit</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Length of formula contents</td>
<td>8,192 characters</td>
<td>If the formula that you enter exceeds the formula content limit of Microsoft Excel, the result is truncated.</td>
</tr>
<tr>
<td>Internal length of formula</td>
<td>16,384 bytes</td>
<td>If the formula that you enter exceeds the internal length of formula limit of Microsoft Excel, the result is truncated.</td>
</tr>
<tr>
<td>Number of arguments that worksheet functions can contain</td>
<td>30</td>
<td>Due to a limitation with Microsoft Excel, worksheet functions can contain no more than 30 arguments. When you construct a cube reference, one argument must be the cube name, which leaves 29 arguments for specifying the cube dimensions.</td>
</tr>
</tbody>
</table>
IBM Cognos TM1 samples illustrate product features and technical and business best practices. You can also use them for learning the product, testing, and troubleshooting.

**Cognos TM1 samples overview**

Cognos TM1 samples are available for a variety of uses and are optimized for different clients. Some of the samples are ready to use right after installation while others require extra steps to use them. By default Cognos TM1 samples are installed in two different locations. If selected in the installation wizard, the product samples are installed as follows:

- **SData, Planning Sample, GO_New_Stores, GO_Scorecards, Proven_Techniques, and 24Retail**
  These samples are installed by default in the `tm1_location\samples\tm1` location.
  SData and Planning Sample were specifically designed to be used with Cognos TM1.
  To use them, start each sample database in Cognos Configuration after installation.
  GO_New_Stores and Proven_Techniques are designed to highlight Cognos TM1 Performance Modeler, TM1 Applications, and Cognos Insight features.
  The Proven_Techniques sample highlights cube calculations and functions. You can also import multiple applications in the portal and view them using Cognos Insight Connected mode.
  The GO_Scorecards sample includes data that is optimized for use with the IBM Cognos Scorecard features found in Cognos TM1 Performance Modeler.
  The 24Retail sample represents a fictitious company, named 24Retail, that sells cellphones, computers, and other widgets. Its data can be used by Planning Analytics Workspace, Planning Analytics for Microsoft Excel, Architect, and TM1 Web.
  See “Using the sample databases installed by default” on page 174 for more information.

- **PData, Rules_Guide_Data, TI_Data**
  These samples are also designed specifically for Cognos TM1, however to use them you must first add each server in Cognos Configuration and then start them individually. They are installed into the `tm1_location\samples\tm1` location.

- **GO_Contributor.zip, sample_outdoors.zip, advanced_techniques.zip, greatoutdoors.zip, and GreatOutdoorsSales.zip**
  These samples are installed to the `tm1_location\webcontent\samples\datasources\cubes\amdtool` directory.
  The GreatOutdoorsSales.zip samples require you to restore a database and connect to the database using an OLAP data source. The database files are installed with the samples, and are provided for IBM DB2®, Microsoft SQL Server, and Oracle databases.
  The other samples are based on .csv files for their content and do not require a database to be restored. See “Using the GO_Contributor and Outdoors Company sample databases” on page 174 for more information.

- **HumanResources.cdd, Orders.cdd and Training.cdd.**
  A set of .cdd and data samples have been specifically designed for use with Cognos Insight workspace builder. These samples with localized versions are available `TM1 installation location\webcontent\samples\datasources\cubes\amdtool\Source_files\desktop`.
  On UNIX, use the `.startup_tm1s.sh` command to start sample database servers. See "Starting a UNIX TM1 Server" and "Stopping a UNIX TM1 Server" in *IBM Cognos TM1 Operations* for more details.
Using the sample databases installed by default

The following sample databases are installed by default and can all be started from Cognos Configuration.

**About this task**
These databases are installed by default into the sample database location.

For example C:/Program Files/IBM/cognos/tm1/samples/tm1/SData

**SData**
Data designed for use with TM1.

**PlanSamp**
Data designed for use with the Planning clients.

**GO_New_Stores**
Data designed for use with TM1 Applications, Cognos Insight, and Cognos TM1 Performance Modeler.

**GO_Scorecards**
Data designed for use the TM1 Scorecarding in TM1 Performance Modeler.

**Proven_Techniques**
This sample database uses cube calculations and features from more recent releases. This database is also designed for use with the TM1 Scorecard features in Cognos TM1 Performance Modeler.

**Procedure**

1. In Cognos Configuration, right click the database you want to start and select **Start**.
2. To open the databases, in TM1 Architect or TM1 Performance Modeler, double-click the database and use the default username of **admin** and password of apple.

Using the GO_Contributor and Outdoors Company sample databases

The following GO_Contributor and Outdoors Company samples are installed as .zip files that you must unzipped in order to use them.

**Procedure**

1. On the computer where you installed the TM1 server component, go to the \samples\datasources\cubes\amdtool folder.
2. Extract the contents of the GO_Contributor.zip or the Outdoors_Company.zip file. Be sure to do the extraction close to the root location such as c: so that the file path is not too long.
3. In the folder where you extracted the filea, go to the Data Files folder, and open the tm1s.cfg file in a text editor.
   a) Ensure that the DatabaseDirectory location, the LoggingDirectory location, and the DistributedPlanningOutputDir use the correct path for the Data Files folder location where you extracted the Go_Contributor.zip and Outdoors_Company.zip files.
   b) Save and close the files.
4. Open IBM Cognos Configuration.
5. In the **Explorer** panel, under **Data Access**, right click **TM1 Server**, and click **New Resource > TM1 Server Instances**.
   a) In the **Name** box, enter **GO Contributor** or **Outdoor Company**.
   b) For the TM1 Server configuration path value, enter the path to the Data Files folder where you extracted the files.
      For example, \samples\GO_Contributor
   c) In the **Explorer** panel, right-click **GO Contributor** or **Outdoor Company** and click **Start**.
6. Test that the new servers are available to Architect.
   a) Open Architect.
b) Double click the server.
c) In the **Server Login** box, enter `admin` in the **UserName** box and `apple` in the **Password** box.

7. To test that the new servers are available in the IBM Cognos Applications portal:
   a) Open the portal by typing the following: `http://server_name:9510/pmpsvc`.
   b) Click the **Administer IBM Cognos TM1 Application** icon.
   c) Under **Server Names**, click **Add**.
   d) Type the server name in **Admin Host** and then click the **Refresh** button.
   e) Select the sample you just added, and click **OK**.

**Using the Great Outdoors Sales server samples based on the sample database**

The Great Outdoors Sales sample uses data from a database. To use this sample you must restore the database, create an ODBC connection to the database, and then add the sample server to your system.

The database is provided for IBM DB2, Microsoft SQL Server, and Oracle.

The sample database and the Cognos TM1 server using the database are installed with Cognos TM1 server in the `tm1_location/webcontent/samples/datasources` folder.

When you create your ODBC connection, use `GOSALESDBN` as the data source name. On Microsoft Windows operating systems, create the ODBC connection as a System DSN.

**Restoring backup files for IBM DB2**

Use the script that is provided to restore sample databases on IBM DB2.

To set up the sample database, you must extract the `GS_DB.tar.gz` file, customize a configuration file, and run the setup script.

**Procedure**

1. Go to the `tm1_location/webcontent/samples/datasources` folder.
2. Extract the `GS_DB.tar.gz` file and retain the original directory structure.
   - If you use WinZip to extract the `GS_DB.tar.gz` file on a Microsoft Windows operating system, ensure that the TAR file smart CR/LF conversion option is not selected.
3. On Linux and UNIX operating systems, modify the file permissions on the setupGSDB.sh file so that it is executable.
   - For example,
     ```bash
     chmod u+x setupGSDB.sh
     ```
4. If you want to change the sample configuration file to use settings other than the default values, edit the GOSalesConfig file.

   The configuration file on Windows is `GOSalesConfig.bat`. The configuration file on Linux and UNIX is `GOSalesConfig.sh`.

   The `GOSalesConfig` configuration file contains the default configuration options that are used when creating the `GOSALES` data. The default configuration settings are listed in the following table

<table>
<thead>
<tr>
<th>Configuration Setting</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOSALES_INST</td>
<td>GS_DB</td>
<td>Used to set the name or alias of the database.</td>
</tr>
<tr>
<td>GOSALES_CREATEDB</td>
<td></td>
<td>Optional: Causes an existing database with the same name to be dropped.</td>
</tr>
</tbody>
</table>
### Table 25: Default configuration settings for GOSALES data (continued)

<table>
<thead>
<tr>
<th>Configuration Setting</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOSALES_DB_TERRITORY</td>
<td>US</td>
<td>When creating a database this is the territory of the UTF-8 database that is created.</td>
</tr>
<tr>
<td>GOSALES_BP</td>
<td>GOSALES_BP</td>
<td>Optional: Enter the buffer pool and tablespace name, if these are to be created by the script.</td>
</tr>
<tr>
<td>GOSALES_TS</td>
<td>GOSALES_TS</td>
<td></td>
</tr>
<tr>
<td>GOSALES_GRANTEES</td>
<td>GOSALES, DB2ADMIN</td>
<td>Enter the list of users, groups or PUBLIC that will have CONTROL permissions for the GOSALES, GOSALESHR, GOSALESMR and GOSALESRT schemas. This string needs to follow the syntax of the GRANT command.</td>
</tr>
<tr>
<td>GOSALESDW_GRANTEES</td>
<td>GOSALESDW DB2ADMIN</td>
<td>Enter the list of users, groups or PUBLIC that will have CONTROL permissions for the GOSALESDW schema.</td>
</tr>
<tr>
<td>GOSALES_DPF</td>
<td>N</td>
<td>Change to 'Y' if installing a database partitioned environment (DPF)</td>
</tr>
<tr>
<td>GOSALES_SCHEMA</td>
<td>GOSALES</td>
<td>Enter the names to be used for each schema.</td>
</tr>
<tr>
<td>GOSALESHR_SCHEMA</td>
<td>GOSALESHR</td>
<td></td>
</tr>
<tr>
<td>GOSALESMR_SCHEMA</td>
<td>GOSALESMR</td>
<td></td>
</tr>
<tr>
<td>GOSALESRT_SCHEMA</td>
<td>GOSALESRT</td>
<td></td>
</tr>
<tr>
<td>GOSALESDW_SCHEMA</td>
<td>GOSALESDW</td>
<td></td>
</tr>
</tbody>
</table>

By default, the GS_DB database name is used and permissions are granted to the DB2ADMIN (Linux, UNIX, Windows) and GOSALES users.

5. To run the setupGSDB script in interactive mode, run following command:
   - On Windows computers, in an IBM DB2 command window, change to the GS_DB\win directory and run the setupGSDB.bat script.
   - On UNIX computers, from a shell prompt, source the db2profile, change to the GS_DB/unix directory, and run the setupGSDB.sh script.

   The script displays a summary of your choices before you commit to changes to your environment. If you approve the choices, press Enter.

6. To run the setupGSDB script from the command line, run the following command:
   - On Windows computers, run the setupGSDB .bat script.
   - On UNIX computers, run the setupGSDB .sh script.

   You can run the setupGSDB script with the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-createdb</td>
<td>Creates the database. This option drops any existing database with the same name. It creates the required buffer pool and table space.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>-database database name</td>
<td>Specifies the name of the database. This value overrides the default value of GS_DB.</td>
</tr>
<tr>
<td>-userid administration_user_ID</td>
<td>Specifies the name of the DB2 administrator user ID that is used to create the database.</td>
</tr>
<tr>
<td>-password administration_user_ID</td>
<td>Specifies the password for the DB2 administrator user ID.</td>
</tr>
<tr>
<td>-noprompt</td>
<td>Indicates that no prompt will display. This option runs the script in silent mode. Any missing information causes the script to fail. You will not be prompted for any confirmations.</td>
</tr>
</tbody>
</table>

For example, if you are an IBM DB2 administrator and want to create the default GS_DB database on the local node, use the following command:

```
setupGSDB -createDB -noprompt
```

If you want to create the tables in an existing database named SAMPLE, and you want to use the administrator user ID db2admin, run the following command:

```
setupGSDB -database SAMPLE -userid db2admin
```

The script prompts you for the password when it connects to the database. The script will replace any tables that already exist in the database, unless you choose to drop the database.

7. If the GS_DB sample database is installed on a remote server in your environment, you can link to it by cataloguing the remote database on your local computer and then running the setup script locally.
   a) If the sample database does not yet exist on the remote server, create it by using `CREATE DATABASE` command.
      The database requires a UTF-8 codeset and a default table space with a pagesize of 16 KB or larger. For example, on the remote server, create the database by running the following command:

      ```
      CREATE DATABASE GS_DB USING CODESET UTF-8 TERRITORY US PAGESIZE 16k
      ```
   b) On your local computer, catalog the remote database by using the following command:

      ```
      db2 catalog tcpip node nodename remote ipaddr server port_number
db2 catalog database GS_DB as GS_DB at node nodename
      ```
   c) On your local computer, run the following command:

      ```
      setupGSDB -database GS_DB -userid administration_user_ID
      ```

      You are prompted for a password to connect to the database.

**Restoring backup files for Oracle**

Use the scripts that are installed with TM1 to quickly and conveniently restore backup files for sample databases in Oracle.

**About this task**

To set up the sample database, you must extract the `GS_DB ORA.tar.gz` file, customize a configuration file, and run the setup script.
Procedure

1. Go to the `tm1_location/webcontent/samples/datasources`.
2. Extract the `GS_DB_ORA.tar.gz` file and retain the original directory structure.
3. On Linux and UNIX operating systems, modify the file permissions on the `setupGSDB.sh` file so that it is executable:
   ```bash
   chmod u+x setupGSDB.sh
   ```
4. Ensure that the user ID used to set up the Oracle database has authority to create users and run the import utility.
5. Optional - If you want to change the sample configuration file to use settings other than the default values, edit the `GOSalesConfig` file.
   The configuration file on Windows is `GOSalesConfig.bat`. The configuration file on UNIX is `GOSalesConfig.sh`.
   The `GOSalesConfig` configuration file contains the default configuration options that are used when creating the GOSALES data. The default configuration settings are listed in the following table.

<table>
<thead>
<tr>
<th>Configuration Setting</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOSALES_IMP_CMD</td>
<td>imp</td>
<td>If necessary can be modified to specify the complete path to the correct version of the import utility.</td>
</tr>
<tr>
<td>GOSALES_INST</td>
<td></td>
<td>Oracle host string.</td>
</tr>
<tr>
<td>GOSALES_TS</td>
<td>GOSALES_TS</td>
<td>If users are created by scripts, used to enter the tablespace name to assign to users.</td>
</tr>
<tr>
<td>GOSALES_CREATE_TS</td>
<td></td>
<td>Optional: Used to create the default tablespace for users.</td>
</tr>
<tr>
<td>GOSALES_TEMP_TS</td>
<td></td>
<td>If users are created by scripts, used to name a temporary tablespace to assign to users. Leave blank to use the default temporary tablespace.</td>
</tr>
<tr>
<td>GOSALES_SCHEMA</td>
<td>GOSALES</td>
<td>Used to enter the username and password for the GOSALES user. You will be prompted for a password if not entered.</td>
</tr>
<tr>
<td>GOSALES_SCHEMA_PW</td>
<td>GOSALESPW</td>
<td></td>
</tr>
<tr>
<td>GOSALESHR_SCHEMA</td>
<td>GOSALESHR</td>
<td>Used to enter the username and password for the GOSALESHR user. You will be prompted for a password if not entered.</td>
</tr>
<tr>
<td>GOSALESHR_SCHEMA_PW</td>
<td>GOSALESHRPW</td>
<td></td>
</tr>
<tr>
<td>GOSALESMR_SCHEMA</td>
<td>GOSALESMR</td>
<td>Used to enter the username and password for the GOSALESMR user. You will be prompted for a password if not entered.</td>
</tr>
<tr>
<td>GOSALESMR_SCHEMA_PW</td>
<td>GOSALESMRPW</td>
<td></td>
</tr>
</tbody>
</table>
### Table 26: Default configuration settings for GOSALES data (continued)

<table>
<thead>
<tr>
<th>Configuration Setting</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOSALESSRT_SCHEMA</td>
<td>GOSALESRT</td>
<td>Used to enter the username and password for the GOSALESRT user. You will be prompted for a password if not entered.</td>
</tr>
<tr>
<td>GOSALESSRT_SCHEMA_PW</td>
<td>GOSALESRTPW</td>
<td></td>
</tr>
<tr>
<td>GOSALESRT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOSALESRT_PW</td>
<td>GOSALESRTPW</td>
<td></td>
</tr>
<tr>
<td>GOSALESDW_SCHEMA</td>
<td>GOSALESDW</td>
<td>Used to enter the username and password for the GOSALESDW user. You will be prompted for a password if not entered.</td>
</tr>
<tr>
<td>GOSALESDW_SCHEMA_PW</td>
<td>GOSALESDWPW</td>
<td></td>
</tr>
<tr>
<td>GOSALESDW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOSALESDW_PW</td>
<td>GOSALESDWPW</td>
<td></td>
</tr>
<tr>
<td>GOSALES_GRANTEES</td>
<td>GOSALES</td>
<td>Used to enter the users that will have SELECT, INSERT, DELETE, UPDATE, and ALTER permissions for GOSALES, GOSALESHR, GOSALESMR and GOSALESRT schemas.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> The owner of the GOSALES_SCHEMA will always be granted SELECT, INSERT, DELETE, UPDATE and ALTER privilege on all schemas.</td>
</tr>
<tr>
<td>GOSALESDW_GRANTEES</td>
<td>GOSALESDW</td>
<td>Used to enter the users that will have SELECT, INSERT, DELETE, UPDATE and ALTER permissions for GOSALESDW schema.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. To run the setupGSDB script in interactive mode, run following command:
   - On Windows computers, in a DOS command window, change to the `GS_DB_ORA\win` directory and run the `setupGSDB.bat` script.
   - On UNIX computers, from a shell prompt, change to the `GS_DB_ORA/unix` directory, and run the `setupGSDB.sh` script.

   Press Enter to proceed. The script displays a summary of your choices before you commit to changes to your environment. If you approve the choices, press Enter and the script makes the changes.

7. To run the setupGSDB script from the command line, run the following command:
   - On Windows computers, run the `setupGSDB.bat` script.
   - On UNIX computers, run the `setupGSDB.sh` script.

   You can run the setupGSDB script with the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-createdb</td>
<td>Creates the database. This option drops any existing database with the same name. It creates the required buffer pool and table space.</td>
</tr>
<tr>
<td>-database database name</td>
<td>Specifies the name of the database. This value overrides the default value of GS_DB.</td>
</tr>
<tr>
<td>-userid administration_user_ID</td>
<td>Specifies the name of the DB2 administrator user ID that is used to create the database.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>-password administration_user_ID</td>
<td>Specifies the password for the DB2 administrator user ID.</td>
</tr>
<tr>
<td>-noprompt</td>
<td>Indicates that no prompt will display. This option runs the script in silent mode. Any missing information causes the script to fail. You will not be prompted for any confirmations.</td>
</tr>
</tbody>
</table>

For example, if you are an Oracle administrator and want to create the default sample database schemas, run the following command:

```
setupGSDB -createDB -noprompt
```

You want to create the tables in the existing schemas specified in the configuration file, and you want to use the administrator user ID sys. run the following command:

```
setupGSDB -YourOracleInstance-userid sys -sysdba
```

The script prompts you for the password when it connects to the Oracle instance. The script deletes any existing tables or views in the specified schemas and replaces them.

**Restoring backup files for Microsoft SQL Server**

Use the Microsoft SQL Server database management tool to quickly and conveniently restore backup files for sample databases.

**Procedure**

1. On the computer where you installed TM1 server, go to the following directory:
   
   `tm1_location/webcontent/samples/datasource/Source files/sqlserver`

2. If required, copy the backup files for the samples databases to your database backup directory.
3. Restore the database from a device, and ensure that the restore locations are correct for the `.ldf` and `.mdf` database files.
4. Create at least one user who has select permissions for all the tables in the restored databases.

**Setting up Great Outdoors Sales sample**

The Great Outdoors Sales sample uses data from the database you restored.

**Procedure**

1. Create an ODBC data source connection to the restored database.
   
   Use GOSALES0W as the data source name. On Windows operating systems, create the ODBC connection as a System DSN.

2. On the computer where you installed the TM1 server component, go to the `tm1_location/webcontent/samples/datasources/cubes/amdtool` folder.
   
   Be sure to do the extraction close to the root location such as `c:` so that the file path is not too long.

4. In the folder where you extracted the `GreatOutdoorsSales.zip` file, go to the `DataFiles` folder, and open the `tm1s.cfg` file in a text editor.
   
   a) Ensure that the `DatabaseDirectory` location and the `LoggingDirectory` location use the correct path for the location where you extracted the `GreatOutdoorsSales.zip` file.
   
   b) Save and close the file.

5. Open IBM Cognos Configuration.
6. In the **Explorer** panel, under **Data Access**, right click **TM1 Server**, and click **New Resource > TM1 Server Instances**.
a) In the Name box, enter GreatOutdoorsSales.
b) For the TM1 Server configuration path value, enter the path to the DataFiles folder where you extracted the GreatOutdoorsSales.zip file.
   For example, \tm1_location\webcontent\samples\datasources\cubes\amdtool \GreatOutdoorsSales\DataFiles
c) In the Explorer panel, right-click GreatOutdoorSales and click Start.

7. Test that the new GreatOutdoorsSales server is available to Architect.
   a) Open Architect.
   b) Double click the GreatOutdoorsSales server.
   c) In the Server Login box, enter admin in the UserName box and apple in the Password box.

8. Test that the new GreatOutdoorsSales server is available in the IBM Cognos Applications portal.
   a) Open the portal by typing the following: http://server_name:9510/pmpsvc.
   b) Click the Administer IBM Cognos Application icon on the far right hand side
   c) Under Server Names, click Add.
   d) Type the server name in Admin Host and then click the Refresh button.
   e) Select the GreatOutdoorsSales sample you just added, and click OK.

Upgrading the samples

If you installed and use the samples in IBM Planning Analytics Local 2.0.0 or higher and want to keep any updates made to them, then perform these steps as part of the upgrade to a new version of IBM Planning Analytics Local.

Procedure

1. Before you start the upgrade of IBM Planning Analytics Local, back up the following things:
   • \tm1_location\tm1\samples\tm1\PlanSamp\Tm1s.cfg file.
   • The sample databases that you use located in \tm1_location\tm1\samples\tm1.
2. After you finish the upgrade of IBM Planning Analytics Local, merge the Tm1s.cfg backup file with the newly installed Tm1s.cfg. When you merge the files, overwrite the values in the newly installed file with the values from the backup file.
3. Put the merged Tm1s.cfg file into the new installation location in \tm1_location\tm1\samples\tm1\PlanSamp\. 
4. Copy the samples files that you backed up to the samples installation location in \tm1_location\tm1\samples\tm1.
5. Start the services.
Chapter 17. Cognos TM1 tools installation

A set of Cognos tools and utilities are installed when the **TM1 Data Tier > TM1 Tools** component is selected during installation.

These tools are optional components that you can choose not to install by clearing the **TM1 Tools** component check box during installation. These tools are installed in `<TM1_location>/bin`.

The tools that are installed in this group include:

**TM1RunTI**
- TM1RunTI is a command line interface tool that can initiate a TM1 TurboIntegrator (TI) process from within any application capable of issuing operating system commands.
- Location: `<TM1_location>/bin`
- Filename: `tm1runti.exe`
- See the "Editing Advanced Procedures" chapter of *TM1 TurboIntegrator*.

**tm1xfer**
- The tm1xfer utility compresses and moves IBM Cognos TM1 server objects from one platform to another platform while preserving mixed case names for objects on both Microsoft Windows and UNIX platforms.
- Location: `<TM1_location>/bin`
- Filename: `tm1xfer.cmd` and `tm1xfer.jar`
- See the "Tools and Utilities" chapter of *TM1 Operations*.

Other tools that are available for Cognos TM1 include:

**Cognos TM1 Operations Console**
- The Cognos TM1 Operations Console can monitor multiple TM1 servers and provides extensive formatting capabilities for log files. The Cognos TM1 Operations Console has its own component that can be selected in the installation. See the "Using the IBM Cognos TM1 Operations Console" chapter of *TM1 Operations* for details.

**TM1 Top**
- TM1 Top monitors a single Cognos TM1 server. Installed by default. See the "System Performance and Monitoring" chapter of *TM1 Operations* for details.

**odbc_test**
- The odbc_test tool is used to diagnose and test an IBM Cognos TM1 ODBC connection on UNIX. See the "Tools and Utilities" chapter of *TM1 Operations* for details.
After you install IBM Cognos TM1, you can configure the specific authentication and security modes that you want to use.

This section describes authentication and data transmission security which are considered part of the overall installation and configuration process. The steps for user, group, and object security are typically done after the initial installation and configuration process and are described in separate documentation.

**Authentication security**

Authentication or login security configuration includes selecting the type of login security that will control user access to the different Cognos TM1 components.

**Data transmission security**

Security configuration includes optionally configuring Cognos TM1 to use SSL for secure data transmission.

**User and Group security**

Cognos TM1 manages security by organizing TM1 users into groups. TM1 includes a set of three predefined administrative groups and also allows you to create your own custom groups. Users can belong to one or multiple groups.

For information about configuring user and group security, see *IBM Cognos TM1 Operations*.

**Object security**

Another level of Cognos TM1 security is object security. This type of security allows you to control access to the specific TM1 objects in your data model, but it is not configured during the initial installation and configuration process.

For more information about the procedures required to set security for Cognos TM1 objects, see *IBM Cognos TM1 Developer*.

**Table 27: Cognos TM1 server authentication methods**

<table>
<thead>
<tr>
<th>Authentication Methods</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1 Authentication</td>
<td>Cognos TM1 server asks you for a user name and password, and validates the login information against the security cube login information.</td>
</tr>
<tr>
<td>Integrated Login</td>
<td>Microsoft Windows performs the Cognos TM1 authentication.</td>
</tr>
<tr>
<td>LDAP Authentication</td>
<td>Cognos TM1 server asks you for a user name and password, and validates the login information against an external LDAP server.</td>
</tr>
</tbody>
</table>
Table 27: Cognos TM1 server authentication methods (continued)

<table>
<thead>
<tr>
<th>Authentication Methods</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Cognos Security</td>
<td>The Cognos TM1 server authenticates users using IBM Cognos security.</td>
</tr>
</tbody>
</table>

**Standard Cognos TM1 authentication overview**
With IBM Cognos TM1 authentication, the Cognos TM1 server checks the user name and password against the user names and passwords in the Cognos TM1 database.

**Standard TM1 Security**

![Diagram showing the process of authenticating with the IBM Cognos TM1 server](image)

**Integrated Login overview**
With Integrated Login, IBM Cognos TM1 uses the Microsoft Windows network authentication to access your Cognos TM1 data. After you log in to your Microsoft Windows workstation, you can access Cognos TM1 without entering a user name and password again.

Integrated Login is supported on Microsoft Windows only. You cannot use Integrated Login to access a Cognos TM1 server that is running on a UNIX operating system.

![Diagram showing the process of authenticating by using Integrated Login](image)

**Figure 8: Process of authenticating with the IBM Cognos TM1 server**

**Figure 9: Process of authenticating by using Integrated Login**
LDAP Authentication overview
With LDAP authentication, an LDAP security service that is external to IBM Cognos TM1 authenticates a login (as of Cognos TM1 version 8.2.2). You can add, modify, and delete user security information from one location - the LDAP server or Microsoft Windows Active Directory.

Authentication using LDAP

![Diagram of authentication process using LDAP]

Figure 10: Process of authenticating by using LDAP

Cognos Security
The IBM Cognos TM1 server can authenticate users using IBM Cognos security.

Cognos security is a component of the IBM Cognos framework that manages user access to data. Cognos security manages authorization and authentication through third-party security providers, such as LDAP or Active Directory. When a user is authenticated through Cognos security, they are provided with a Cognos security “passport.” This passport is then used by Cognos TM1 applications to determine the user’s permissions (role and group membership) and identity.

Security considerations when using Cognos TM1 Applications
You can use either IBM Cognos TM1 standard security authentication or IBM Cognos security for the Cognos TM1 servers you use with Cognos TM1 Applications.

Do not use a combination of different security authentication modes for the same installation of Cognos TM1 Applications.

Determine the security mode before you configure Cognos TM1 Applications to use a Cognos TM1 server and use that same security mode with any additional servers you add.

For details about using Cognos security, see: “Using Cognos TM1 Applications with Cognos security” on page 218.

Using the IntegratedSecurityMode parameter with Cognos TM1 Applications
To set the Cognos TM1 security authentication mode use the IntegratedSecurityMode parameter in the Tm1s.cfg file of each Cognos TM1 server you want to use.

Important: The Cognos TM1 Applications component is compatible only with Cognos TM1 security authentication modes 1 and 5.

For example, to use Cognos TM1 standard security authentication, set the IntegratedSecurityMode parameter to 1 for each server.
IntegratedSecurityMode=1
To use IBM Cognos security, set the IntegratedSecurityMode parameter to 5.

IntegratedSecurityMode=5
For more details about the IntegratedSecurityMode parameter, see the "TM1 System Configuration" section in IBM Cognos TM1 Operations.

If IntegratedSecurityMode=5 is used for the IBM Cognos TM1 Server and IBM Cognos TM1 Applications, it is not possible to assign rights to native TM1 groups within the Manage rights dialog. Only Cognos Groups imported into the TM1 Server, are available. This means you cannot use native TM1 groups and Cognos groups in parallel because the SecMode is limiting which groups can be used.

Configuring Cognos TM1 Applications security for multiple Cognos TM1 Servers
If you want to use multiple Cognos TM1 servers with Cognos TM1 Applications, they must all be configured to use the same security authentication (either Cognos TM1 standard authentication or Cognos security) and include the same administrator user name and password.

For more details, see “Configuring Cognos TM1 Application Web to use Multiple Cognos TM1 Servers” on page 120.

ETLDAP utility
The ETLDAP utility enables you to move information from your LDAP (Lightweight Directory Access Protocol) directory to IBM Cognos TM1.

You can use ETLDAP to add LDAP users to Cognos TM1 when using Cognos TM1 with Integrated Login and LDAP authentication.

Note: You can only use the ETLDAP utility to add new LDAP users to Cognos TM1. ETLDAP does not modify, update or delete existing users in Cognos TM1.

ETLDAP, an LDAP load tool, provides the following functionality:

- Extracts user information from an LDAP or Active Directory server.
- Creates the element UniqueID in the }ClientProperties dimension.
- Adds users to the }ClientProperties cube.
- Populates the UniqueID field in the }ClientProperties cube with the domain-qualified user name of the user you add to IBM Cognos TM1 database. For example, ETLDAP writes the name robert@company.com to the }ClientProperties cube.

As the Cognos TM1 administrator, you can perform these tasks using ETLDAP:

- Add many user names from an LDAP server to the Cognos TM1 database quickly.
- Migrate information from a legacy LDAP database to Cognos TM1.
- Perform one or more queries to specify the users you want to create in Cognos TM1, and then export the users into the Cognos TM1 security cubes.
- Update Cognos TM1 with new users that have been added to the LDAP server since the initial load of user data into Cognos TM1.

Note: The ETLDAP utility is not available when the Cognos TM1 server is configured to use one of the following Integrated Security Modes:

- Integrated Security Mode 3 - Integrated Login
- Integrated Security Mode 5 - IBM Cognos Analytics authentication

For more information, see “IntegratedSecurityMode” on page 270.

Modifying LDAP attributes
The value of an attribute you retrieve from an LDAP directory may not precisely match what you want to enter in the IBM Cognos TM1 security cube.

If so, you must modify certain LDAP attributes before you can run ETLDAP.
For example, you could combine all users from the R&D, Quality Assurance, and Documentation LDAP groups into a single Cognos TM1 group named Engineering. To support these requirements, you can extend a Java class with a single method you need to override.

The `stringFilter` class contains one method with the following signature:

```java
String filterString(String attrName, String value)
```

At run time, this method is passed the name of each LDAP attribute that matches a mapping entry and its value. The String it returns is added to the Cognos TM1 database.

The following code demonstrates the implementation of the `stringFilter` class, combining all users from the R&D, Quality Assurance, and Documentation LDAP groups into a single Cognos TM1 group named Engineering.
The stringFilter class looks for instances of the LDAP `ou` attribute, which is the Cognos TM1 Group names field. If the value is **R&D**, **Quality Assurance**, or **Documentation**, it returns **Engineering**. The users from any of the 3 LDAP groups is added to a single Cognos TM1 **Engineering** group. Any other group value remains unchanged.

```java
public class myStringFilter extends stringFilter {
    public String filterString(String attrName, String value) {
        if (attrName.equals("ou")) {
            if ( (attrName.equals("R&D")) ||
                (attrName.equals("Quality Assurance")) ||
                (attrName.equals("Documentation")) )
                return "Engineering";
            else
                return value;
        }
    }
}
```
After you write and compile the Java code, put the class somewhere in your Classpath. Then click Edit > Options and enter its name in the Class Name field.

Running ETLDAP
You can run ETLDAP from the Microsoft Windows operating system or the DOS command window with command-line parameters.

Procedure
1. If you want to run ETLDAP from the Microsoft Windows operating system, complete the following actions:
   - Click Start > Programs > IBM Cognos > TM1 > Administration > ETLDAP.
   - Set the elements that you require.

   Table 28: Elements in the LDAP Load Tool dialog box.

<table>
<thead>
<tr>
<th>Field or Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search DN</td>
<td>Displays the LDAP node at which the search originates. ETLDAP does not search for entries above this level in the tree.</td>
</tr>
<tr>
<td>Filter</td>
<td>Displays the query string that filters the entries in the directory and generates the matching records.</td>
</tr>
<tr>
<td>Attributes</td>
<td>Displays the attribute values for LDAP entries that assist in validating the records returned by the search. When you export the LDAP information to TM1, ETLDAP retrieve the attributes required to create valid TM1 users. <strong>Note:</strong> The attributes are for display purposes only.</td>
</tr>
<tr>
<td>Search Scope</td>
<td>Specifies the starting point of the search, and the search level. Select One level to specify all entries one level below the base Search DN, but not the base DN itself. Select Sub-tree level to search all entries beneath the base DN, including the base DN.</td>
</tr>
<tr>
<td>Results Table</td>
<td>Displays the search results. Click the column headers to sort the data, or right-click in a row and click View Entry to examine all attributes for that entry.</td>
</tr>
<tr>
<td>Search Button</td>
<td>Performs the search using the parameters you select.</td>
</tr>
<tr>
<td>Export Button</td>
<td>Exports the displayed set of users to TM1 based on the settings in the Options dialog box.</td>
</tr>
</tbody>
</table>

2. If you want to run ETLDAP from the DOS command window, complete the following actions:
   - Click Start > Programs > Accessories > Command Prompt.
   - Enter the following command line:
     ```java
etldap options```
   - Add the parameters that you require.
Table 29: Supported command-line parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-f filename</td>
<td>Passes the name of a saved session file to load all configuration settings from a previous session. When you run ETLDAP in unattended (batch) mode, you must include a name for the session save file. If this file does not contain the passwords necessary to connect to the LDAP and Cognos TM1 server, an error message is written to the log file and the session is terminated.</td>
</tr>
<tr>
<td>-batch</td>
<td>Runs ETLDAP in command-line mode with no user interface. Requires the -f option.</td>
</tr>
<tr>
<td>-secure</td>
<td>When you run ETLDAP in batch mode, passing this flag removes all passwords from the session file referenced by the -f flag after they have been read. This parameter reads the save file at the beginning of the session, and then re-writes the file with the passwords removed. While in use, you would run ETLDAP and specify the passwords with the user interface. Then you would exit ETLDAP and run the command line version specifying the '-secure' option. This would insure that the passwords were only available for the short period of time it takes for the utility to initialize.</td>
</tr>
<tr>
<td>-help</td>
<td>Displays online Help for these command-line parameters.</td>
</tr>
</tbody>
</table>

Configuring the LDAP login parameters
You can configure the LDAP login parameters.

Procedure
1. In the LDAP Load Tool dialog box, click File > Connect.
2. Enter the following host and user information.

<table>
<thead>
<tr>
<th>Panel</th>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Info</td>
<td>Host</td>
<td>Enter the host name or IP address of the machine where the LDAP server is running.</td>
</tr>
<tr>
<td></td>
<td>Port</td>
<td>The port on which the LDAP server is running. If a port is not specified, 636 is used. Cognos TM1 attempts to bind to an LDAP server on the specified secure port. If you do not enter an LDAPPort value, Cognos TM1 uses the default value of port 636.</td>
</tr>
<tr>
<td></td>
<td>Version</td>
<td>ETLDAP will most likely ignore the version number. Most LDAP servers support version 2 or version 3 type connections, ETLDAP does not use any functionality specific to either version.</td>
</tr>
<tr>
<td></td>
<td>SSL option</td>
<td>Determines whether the communication between the LDAP server and ETLDAP happens over a secure encrypted channel. Unless you are viewing secure information over an insecure network, leave this option turned off.</td>
</tr>
</tbody>
</table>
### Anonymous option

Most LDAP servers have some layer of security configuration that requires you to authenticate as a known user. In some systems, anonymous users can browse the directory, but not retrieve the schema. In other systems, an anonymous user might have access to certain insecure areas of the directory, but not others.

### User Info

**User DSN**

In many cases, your LDAP directory prevents Anonymous users from accessing or modifying data. In this case, you may need a Distinguished Name (DN) and password to complete the extraction of your LDAP security information.

For example, the name Norm Lodin might refer to a person who works at Blodget, Inc. Inside LDAP, he has a Distinguished Name that uniquely distinguishes him from all other entities in the network.

Norm might enter the following information in the User Info field.

\texttt{uid=nlodin, ou=People, o=Blodget.com}

### Password

Enter a password that corresponds to the User DN.

---

3. To see if the connection is successful, click **Test**.
4. Click **OK**.

You have established a connection to your LDAP server with the parameters you specified.

#### Building an LDAP query

Use an LDAP query to add LDAP users and groups to IBM Cognos TM1.

### Before you begin

An LDAP query consists of the following major elements:

- **Search DN** - An LDAP directory is organized as a tree structure, with a root node and a number of branches off this root. The Search DN specifies at which node the search originates. Entries above this level in the tree are searched. You must specify the correct base DN to obtain the results you want.

- **Filter** - A query string that filters the entries in the LDAP directory and generates the matching records. You can create complex filters by using a combination of the following symbols:

  & (AND)

  | (OR)

  ! (NOT)

* wildcard character

( ) parentheses for nesting

For instructions on building LDAP filter strings, refer to LDAP books and online resources, including the LDAP standard, RFC 2254, *The String Representation of LDAP Search Filters*.

- **Scope** - While the Search DN specifies the starting point of the search, the Scope attribute indicate the level of depth to which the search occurs. There are two Scope levels:

  **One Level** - Specifies that LDAP search all entries one level below the base DN, but does not include the base DN itself.

  **Sub-Tree Level** - Indicates that LDAP search all records at all levels including the base DN.

The following diagram illustrates the effect that the Scope setting has on a search.
Figure 11: Effect that the Scope setting has on a search

- **Attributes** - Describe every LDAP entry and their values. Includes a comma-separated list of values to return for the records that match the filter string. There are two LDAP attributes:
  
  **User attribute** - You add this attribute to the LDAP directory. For example, cn or mail.

  **Operational attribute** - The LDAP server creates and maintains this attribute. For example, numSubordinates.

The attributes for an entry could include:

- Present with no value
- Present with one or more values
- Not present. If an attribute is optional, the attribute may not exist for an entry.

**Note:** Be sure to request only the attributes you need. If you request all attributes, a large result set can significantly increase processing time on the LDAP server and memory requirements on both the server and the client.

**Procedure**

1. Specify the Search DN, Filter String, Attributes, and Scope for your query.
2. Click **Search**.
   
   You see a list of entries in the table, unless there are syntax errors or if the filter string does not match any records in the directory.
3. Examine the result set.
   
   - Does it include names that you do not want to see?
   - Are important entries missing?
   - Do you need to build multiple queries to capture the list of records you are interested in?
4. Make your changes to the filter string.
5. Click **Search**.
6. Examine the result set.
7. Repeat steps 3 through 6 until you have a list of valuable records.
8. Click **File, Save As** to save your LDAP query as a text file.

**Note:** You can use the saved LDAP query at a later time. To do so, click **File > Open** in the LDAP Load Tool dialog box. ETLDAP fills in the DN, Filter String, Attributes, and Scope for your LDAP query.

**Connecting to the Cognos TM1 Server**

Follow these steps to connect to the IBM Cognos TM1 server.
Procedure

1. Click Edit > Login > TM1.
2. Enter the following server information:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The machine name of the server on which your TM1 Admin Server is running.</td>
</tr>
<tr>
<td>SSL port</td>
<td>Enter the port number configure which the admin server will use. The default is 5498</td>
</tr>
<tr>
<td>Server</td>
<td>The name of the TM1 server to which you want to connect.</td>
</tr>
<tr>
<td>Username</td>
<td>The name of a user with Admin privileges on the target TM1 server.</td>
</tr>
<tr>
<td>Password</td>
<td>The password of the admin user.</td>
</tr>
</tbody>
</table>

3. To see if the connection is successful, click Test.
4. Click OK.

Mapping LDAP attributes to Cognos TM1 fields
LDAP directories contain many attributes, some of which you standardize, and others which you add or customize for your environment. You must specify the relationship between the LDAP attributes and the required IBM Cognos TM1 fields manually.

Before you begin
You should be familiar with your LDAP schema.

Procedure

1. Click Edit > Mapping > TM1.
2. For each required (red) Cognos TM1 field, select an LDAP schema attribute.
   For each user, Cognos TM1 requires a unique name and group name. For example, you could map the name attribute in your LDAP schema to the Cognos TM1 user, and map the department attribute to the Cognos TM1 group.
3. Click OK.

Specifying the ETLDAP export options
You can specify the ETLDAP export options.

Procedure

1. Click Edit > Options.
2. Select Enable Integrated Login.
3. Enter the realm name that contains the users you want to transfer.
   When you clear Save Passwords, ETLDAP removes all passwords necessary to connect to the servers before the session save file is written. The next time you run ETLDAP, you would have to enter the passwords again.
5. Set Maximum Search Results and Search Time Limit to 0.
6. Click OK.

Exporting LDAP information to Cognos TM1
You can export LDAP information to IBM Cognos TM1.
Procedure

1. Click **Export**.

   ETLDAP moves the records you retrieved from the LDAP directory into TM1, and logs the data export activity in a log file.

   **Note:** You can open the log before you export records to track the export progress.

2. Click **View, Log** to open the Session Log.

   The Session Log shows a summary of the LDAP users that ETLDAP exported and created in Cognos TM1. ETLDAP randomly generates the Cognos TM1 user passwords and adds them to the Cognos TM1 database.

   **Note:** If you use Integrated Login, Cognos TM1 users do not use the Cognos TM1 passwords, and you do not have to coordinate passwords between Cognos TM1 and Microsoft Windows. If you do not use Integrated Login, Cognos TM1 users must change their password during their first login session. For details, see “Integrated Login” on page 197.

Running ETLDAP in Update mode to add new LDAP users

You can run ETLDAP in Update mode to update IBM Cognos TM1 with new LDAP users that do not already exist in Cognos TM1. To do this, you specify a date in the Filter section of your LDAP query.

About this task

When you run ETLDAP the first time, you must retrieve all records from the LDAP server that meet your organizational requirements. You define these requirements using the Filter parameter. After you retrieve all user and group records, you load them into the IBM Cognos TM1 database.

After using ETLDAP to initially load LDAP users into Cognos TM1, you can then only use the tool to retrieve and add new LDAP users that do not already exist in Cognos TM1. You cannot use the ETLDAP utility to update or delete existing users in Cognos TM1 based on changes in the LDAP directory.

As new users are added to your LDAP server, you can add them to Cognos TM1 by specifying a date in the Filter section of your LDAP query. Using a date in the Filter section runs ETLDAP in Update mode. You can edit your LDAP Filter to select only new user records that meet your original search requirements since the last time you ran ETLDAP.

**Note:** Running ETLDAP in Update mode only adds new LDAP users that do not already exist in Cognos TM1. ETLDAP does not update user attributes or delete existing Cognos TM1 users.

Procedure

1. Determine the last modified record attribute to specify a date in the Filter section of your LDAP query.

   All LDAP servers support a last modified record attribute, which includes these timestamp attributes:

   - **Standard LDAP** - modifytimestamp
   - **Microsoft Active Directory** - whenChanged

   During an export session, ETLDAP examines all records as it processes them and stores the date of the most recently changed record in the Session Log file, as shown in the following sample:

   ```
   newest record modified: Thu Jan 23 07:00:42 EST 2003(20030123070042.0Z)
   ```

2. Locate the newest record line in the LDAP Session Log.

3. Copy the timestamp portion of the string in parentheses from the LDAP Session Log into the Filter section of your LDAP query.

   **Note:** Be sure to adhere to the syntax supported by LDAP Filters. For more information, see the Internet standards protocol document, RFC 2254, "The String Representation of LDAP Search Filters".

   The following table shows a sample Filter string without any changes, and after modification for both LDAP and Active Directory servers.

   - A standard LDAP server uses the modifytimestamp attribute.
   - An LDAP server with Microsoft Active Directory uses the whenChanged attribute.
<table>
<thead>
<tr>
<th>Sample Filter String</th>
<th>Filter String After Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial string</td>
<td>((&amp;objectclass=person)((</td>
</tr>
<tr>
<td>Modified for standard LDAP</td>
<td>((&amp;objectclass=person)(modifytimestamp&gt;=20030515162433Z)((</td>
</tr>
<tr>
<td>Modified for Active Directory</td>
<td>((&amp;objectclass=person)(whenChanged&gt;=20030515162433.0Z)((</td>
</tr>
</tbody>
</table>

4. After you make the necessary changes to the Filter line, save the session data with a name that clearly identifies it as an incremental update query.
5. Run ETLDAP using the new session data.

**Integrated Login**

Integrated Login enables you to use Microsoft Windows network authentication to control access to IBM Cognos TM1 data.

In this security model, you can use the ETLDAP utility (see Running ETLDAP) or other steps to move user and group Microsoft Windows login information into the Cognos TM1 database. Users who want to access Cognos TM1 data through Cognos TM1 clients must log in to Microsoft Windows first. After they successfully log in to Microsoft Windows, Cognos TM1 does not ask for log in information.

Integrated Login matches the domain-qualified name you use to log in to Microsoft Windows with a name in the UniqueID field of the }ClientProperties cube. If there is a match, Cognos TM1 allows you to log in.

As an example, suppose you log in with the user name Robert into the domain company.com. When you double-click a server in Server Explorer, Cognos TM1 looks in the }ClientProperties cube and examines the UniqueID field of that cube. Robert has a domain-qualified name of robert@company. As long as Robert logs in to the COMPANY domain with the name Robert, Integrated Login should work for this user.

If Integrated Login cannot match the domain-qualified name you use to log in to Microsoft Windows with a name in the UniqueID field of the }ClientProperties cube, Cognos TM1 displays an error message saying that the client name does not exist on the server.

Integrated Login is supported on Microsoft Windows only. You cannot use Integrated Login to access a UNIX version of the Cognos TM1 server.

**Configuring Cognos TM1 to use Integrated Login**

Use the following checklist as guidelines for configuring IBM Cognos TM1 components to use Integrated Login as the login authentication method for all users.

1. Complete the installation of the Cognos TM1 server and make sure you are able to run and log in to it.
2. Run the ETLDAP Utility to extract the user and group login data from your LDAP directory and load that data into the TM1 security cube. ETLDAP creates Cognos TM1 users from the LDAP data that you specify. These users are members of the same group to which they were assigned in your LDAP directory.

For details, see “Running ETLDAP” on page 191.

3. Configure the Cognos TM1 server and client components to use Integrated Login.

<table>
<thead>
<tr>
<th>Table 30: Summary of Integrated Login configuration for Cognos TM1 components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component</strong></td>
</tr>
<tr>
<td>Cognos TM1 Server</td>
</tr>
<tr>
<td>Cognos TM1 Clients</td>
</tr>
<tr>
<td>Cognos TM1 Web</td>
</tr>
</tbody>
</table>

4. Set the access rights for Cognos TM1 users.

For details, see “Configuring access rights for Cognos TM1 users” on page 198.

**Configuring access rights for Cognos TM1 users**

For an IBM Cognos TM1 user to access any data, you might have to assign that user to other Cognos TM1 groups. This topic explains how to add a user to the Admin group.

For example, for a user to publish public objects to the Web through Cognos TM1 Web, the user must be a member of the Cognos TM1 Admin group.

**Procedure**

1. Start Cognos TM1 Architect.
2. Click **File > Options**.
3. Clear the **Use Integrated Login** option.
4. Click **OK**.
5. In the Tree pane of Server Explorer, double-click **TM1** to open the list of servers.
6. Double-click a server name.
7. Log in using your administrator login ID and password.
   - **Administrator name (default)** - admin
   - **Administrator password (default)** - apple
8. Right-click the server name, and click **Security > Clients and Groups**.
9. Select a user to add to the admin group. Use the scroll bar to scroll to the left, where the list of groups displays.
10. To add the user to the Admin group, select the check box in the **ADMIN** column for that user.
11. Click **OK**.
Configuring Integrated Login for the Cognos TM1 server
You can modify an IBM Cognos TM1 installation to use Integrated Login without re-installing Cognos TM1. To do so, run ETLDAP and modify several Cognos TM1 configuration files.

Procedure
1. Run ETLDAP and import the user and group information from your LDAP server, as described in “Running ETLDAP” on page 191.
2. Shut down the Cognos TM1 server.
3. Edit the following parameters in the Tm1s.cfg file located in your Cognos TM1 server data directory:
   • Set the IntegratedSecurityMode parameter to 2.
   • Set the SecurityPackageName parameter to the security protocol you use for Integrated Login, such as Kerberos (default).

   In the following example, the server is configured to use Kerberos.

   ```
   [TM1S]
   SecurityLogging=F
   SecurityPackagename=Kerberos
   IntegratedSecurityMode=2
   Servername=myserver
   DatabaseDirectory=C:\Program Files\n   ```
4. Save and exit Tm1s.cfg.
5. Restart the Cognos TM1 server.
6. Configure the different Cognos TM1 clients to use Integrated Login by setting the Use Integrated Login option in the associated user interface.
   • “Configuring Cognos TM1 Architect to use Integrated Login” on page 206.
   • “Configuring Cognos TM1 Perspectives to use Integrated Login” on page 206.

Results
You can now log in to your Cognos TM1 server using Integrated Login through Cognos TM1 Architect or Cognos TM1 Perspectives.

For information on configuring Integrated Login for Cognos TM1 Web, see “Configuring Integrated Login for Cognos TM1 Web using Kerberos and JAAS” on page 199.

Configuring Integrated Login for Cognos TM1 Web using Kerberos and JAAS
You can set up IBM Cognos TM1 Web to use Integrated Login with the Kerberos security protocol. This is the type of authentication works with TM1 IntegratedSecurityMode=3.

About this task
In Cognos TM1 Web version 10.2, you must enter your Microsoft Windows authentication in the Cognos TM1 Web login dialog box. The login dialog box allows you to choose either native TM1 or Microsoft Windows login.

In order to run Cognos TM1 Web in a Kerberos environment, you must properly configure that environment for Kerberos to work with the Java Runtime that is running the Cognos TM1 Web service.
Procedure

1. Specify a Kerberos Configuration File.

   On a Windows system, the Kerberos Configuration File is krb5.ini. On Linux, the file is krb5.conf.

   An example of the Windows Kerberos Configuration File (krb5.ini):

   ```
   [libdefaults]
   default_realm = <REALM_NAME>
   default_tkt_enctypes = rc4-hmac des-cbc-crc
   default_tgs_enctypes = rc4-hmac des-cbc-crc
   ticket_lifetime = 1200
   [realms]
   <REALM_NAME> = {
     kdc = 9.24.213.202
     admin_server = <server_name.domain_name>
     default_domain = <DOMAIN_NAME>
   }
   [domain_realm]
   .<domain_realm_name> = <DOMAIN_REALM_NAME>
   [appdefaults]
   autologin=true
   forward=true
   forwardable=true
   encrypt=true
   ```

2. Specify the JAAS login feature in the java.security file.

   Example of specifying the JAAS login feature in the java.security file:

   ```
   # Default login configuration file
   #login.config.url.1=file:${user.home}/.java.login.config
   login.config.url.1=file:${java.home}/lib/security/login.config
   ```

   Example of the contents of the login configuration file for the IBM Java Runtime:

   ```
   TM1SignedOnUserLoginContext {
     com.ibm.security.auth.module.Krb5LoginModule required
     useDefaultCcache=false
     credsType=initiator;
   };
   ```

   Example of the contents of the login configuration file for the SUN Java Runtime:

   ```
   TM1SignedOnUserLoginContext {
     com.sun.security.auth.module.Krb5LoginModule required
     useTicketCache="true"
     useKeyTab="true" keyTab="krb5.keytab" ;
   };
   ```

3. Specify the login configuration file.


   Ensure that the value associated with the IntegratedSecurityModuleName parameter is set to the name of the LoginModule that is associated with the Kerberos environment.

   <add key="IntegratedSecurityModuleName" value="name of the LoginModule"/>

5. Ensure that the Windows service for the Cognos TM1 Server is owned by an authorized domain account.

6. Ensure that the user that is logging in has the proper ticket set up via the kinit procedure.
Configuring Integrated Login for Cognos TM1 Web using Kerberos and SPNEGO

You can configure single sign-on for IBM Cognos TM1 Web by using Integrated Login (Kerberos) and the application server's security layer. Single sign-on enables users who are running HTTP-based clients to log in only once to TM1 Web.

Overview

The IBM WebSphere Application Server must be configured so that clients authenticate by using Kerberos. When a client successfully authenticates to the application server that uses Kerberos, TM1 Web can use the Kerberos credentials to sign the user in to TM1 servers that are configured for integrated login. The setup process requires the following configuration:

Single sign-on from the client to the application server

For WebSphere Liberty Profile, single sign-on can be implemented by using the Simple and Protected GSS-API Negotiation Mechanism (SPNEGO) web authentication provider. This provider allows Kerberos enabled clients to use single sign-on to WebSphere Liberty Profile. On Windows, this approach allows users to authenticate to a Windows Domain only once and achieve single sign-on to WebSphere Liberty.

Single sign-on from TM1 Web deployed in application server

Single sign-on from WebSphere Liberty to TM1 servers that are configured for Integrated Login uses the Java Generic Security Services API (JGSS) and Java Authentication and Authorization Services (JAAS) to delegate the received Kerberos credentials to TM1 Web.

After you implement this setup successfully, users can authenticate to TM1 Web configured against a TM1 server that is running security mode 2 or 3 (Integrated Login) with their Windows user credentials.

Before you begin

Make sure that the following prerequisites are configured:

- All computers participating in the setup are running Microsoft Windows and are joined to a Windows domain. Trust paths exist between the computers in the setup.
- All computers in the setup can resolve the fully qualified domain name of all other computers and Windows domain controllers that are used in the configuration.
- An instance of TM1 Server is configured for Integrated Login with the following settings configured:
  - A Service Principal Name (SPN) is registered to a Windows account that runs the Windows service for the TM1 Application server instance.
  - The SPN is configured with the ServicePrincipalName parameter in tm1s.cfg.
  - The IntegratedSecurityMode in the tm1s.cfg file is set to 2 or 3.
  - The SecurityPackageName is set to Kerberos.
  - For all users who access the TM1 server, the UniqueID property in the \{ClientProperties\} dimension is set to a string with the syntax <domain>/<sAMAccountName>.
- An instance of TM1 Application Server is installed on a computer in the setup.
- A domain user can log in to a client computer that is different from the computer that the TM1 Application Server components are installed on. The user must be able to run a supported browser to access TM1 Web. For more information, see “Configuring web browsers for Integrated Login” on page 205.

Conventions

The setup uses the following conventions:

- **TM1APP_DOMAIN**
  The name of the Microsoft Windows domain, for example, mydomain.sample.com.

- **TM1APP_REALM**
  The **TM1APP_DOMAIN** in uppercase, for example, MYDOMAIN.SAMPLE.COM.

- **TM1APP_HOST**
  The fully qualified host name of the computer where TM1 Application Server is installed, for example, appsrv1.mydomain.sample.com.

- **TM1APP_ACCOUNT**
  A user account from a Windows domain that is used to run TM1 Application Server.
Set up an account for the TM1 Application Server

1. As a domain administrator, create a domain user account or find an existing domain user account that is used to run the TM1 Application Server service. This user account is referred to as <TM1APP_ACCOUNT>. For example, mydomain/pa11.

2. Using the Microsoft setspn tool, register an HTTP service class SPN to the <TM1APP_ACCOUNT> account to allow WebSphere Liberty to become a Kerberos enabled web service. As a domain administrator, open a command window and type the following command:

```
setspn -U -F -S HTTP/<TM1APP_HOST> <TM1APP_ACCOUNT>
```

For example:

```
setspn -U -F -S HTTP/appsrv1.mydomain.sample.com mydomain/pa11
```

**Tip:** Use `setspn -l <TM1APP_ACCOUNT>` to verify that the SPN is successfully registered.

3. If you use NetBIOS names, for example, appsrv1 instead of a fully qualified names, repeat the setspn command to register another SPN using the server's NetBIOS name.

4. On <TM1APP_HOST>, make sure the Windows service that is running the TM1 Application Server is started by <TM1APP_ACCOUNT> (See “1” on page 202).
   a. Using the Windows Services control pane, right-click the IBM Cognos TM1 service and click Properties.
   b. On the Log On tab, add the <TM1APP_ACCOUNT> and password.
   c. Click OK.

5. On <TM1APP_HOST>, create a Kerberos keytab file by using the Microsoft ktpass tool.

   **Note:** WebSphere Liberty requires server credentials for supporting Kerberos authentication to it. These credentials are stored in a keytab file. To create this file, you must use the Microsoft ktpass tool.

   In a CMD window, type the following command:

   ```
ktpass -put <keytab_file> -princ <SPN>@<TM1APP_REALM> -mapuser <TM1APP_ACCOUNT> -pass <password> -mapOp set -ptype KRB5_NT_PRINCIPAL
```

   For example:

   ```
ktpass -out krb5.keytab -princ HTTP/appsrv1.mydomain.sample.com@MYDOMAIN.SAMPLE.COM -mapUser mydomain\pa11 -pass pssw0rd -mapOp set -ptype KRB5_NT_PRINCIPAL
```

   This command creates a krb5.keytab file in the current folder that contains the Kerberos server credentials.

   **Tip:**

   You can use the JRE klist tool to view the contents of the keytab file. For example:

   ```
<TM1_ROOT>/bin64/jre/7.0/bin/Klist -kt krb5.keytab
```

Configure SPNEGO/Kerberos web authentication for WebSphere Liberty

1. On <TM1APP_HOST>, create a Kerberos configuration file for WebSphere Liberty.

   Using a text editor, create a file and paste the following contents:

   ```
   [libdefaults]
   default_realm = <TM1APP_REALM>
   default_keytab_name = FILE:<keytab_file>
   default_tkt_enctypes = aes128-cts-hmac-sha1-96
   default_tgs_enctypes = aes128-cts-hmac-sha1-96
   forwardable = true
   renewable = true
   noaddresses = true
   clockskeew = 300
   ```

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udp_preference_limit = 1

[realms] <TM1APP_REALM> =
{
    kdc = <TM1APP_DOMAIN>:88
    default_domain = <TM1APP_DOMAIN>
}

[domain_realm] .<TM1APP_DOMAIN> = <TM1APP_REALM>

Replace the variables with actual values in your environment and save the file as krb5.ini.

**Note:**

- The entry for default_keytab_name must refer to the keytab file that is created in “5” on page 202.
- The entry for default_tkt_enctypes = aes128-cts-hmac-sha1-96 is an example. You must use the encryption types that are supported in your environment.
- Depending on the structure of the domain trees in the Active Directory forest, the Kerberos configuration file might require more entries in the [realms] and [domain_realm] sections. Contact your Active Directory Administrator to learn about your domain structure. For more information about the Kerberos configuration file, see The Kerberos configuration file in the WebSphere Application Server Network Deployment documentation.

2. Use the JRE kinit tool to request a Kerberos ticket for the SPN and verify the Kerberos configuration file:

```bash
<TM1_ROOT>/bin64/jre/7.0/bin/kinit/kinit -kt <keytab_file> HTTP/<TM1APP_HOST>
```

For example:

```bash
<TM1_ROOT>/bin64/jre/7.0/bin/kinit -k -t krb5.keytabHTTP/appsrv1.mydomain.sample.com
```

The tool confirms that a ticket has been stored to the default ticket cache.

3. Use the JRE klist tool to view the Kerberos ticket.

   ```bash
   <TM1_ROOT>/bin64/jre/7.0/bin/klist
   ```

**Modify WebSphere Liberty server configuration**

The following steps change the WebSphere Liberty server configuration file manually. These manual changes are reverted when you make any other changes that require regenerating the application server configuration file in Cognos Configuration. Therefore, you must back up the server.xml file when these manual configuration changes are complete.

1. Stop the TM1 Application Server.
2. In a text editor, open the `<TM1_ROOT>/wlp/usr/server/tm1/server.xml` file.
3. Add the following feature elements before the `</featureManager>` element:

   ```xml
   <feature>appSecurity-2.0</feature>
   <feature>ldapRegistry-3.0</feature>
   <feature>spnego-1.0</feature>
   ```

4. Before the `<application id="tm1"...>` tag, add the following element

   ```xml
   <ldapRegistry
    id="ldap"
    realm="<TM1APP_DOMAIN>"
    host="<TM1APP_DOMAIN>"
    port="389"
    ignoreCase="true"
    baseDN="<base_DN>"
    bindDN="<binduser_accountDN>"
    bindPassword="<binduser_password>"
    ldapType="Microsoft Active Directory"
   />
   ```
By using the domain name for host, the Microsoft DNS locator feature is used, which prevents a single point of failure in case the referenced Domain Controller becomes disabled. The baseDN is generally composed of the string cn=Users and a comma-separated list of elements that represent each part of the domain name.

For example:

```
Domain: mydomain.sample.com
BaseDN: cn=Users,dc=mydomain,dc=sample,dc=com
```

The binduser_accountDN must be the Distinguished Name of a user account from the referenced domain, which has browsing privileges to all user entries in that domain.

For example:

```
cn=admin1,cn=Users,dc=mydomain,dc=sample,dc=com
```

The LDAP registry element tells WebSphere Liberty where to look up information for the user who tries to authenticate by Kerberos. Therefore, the LDAP registry must reference the domain that the authenticating user is from. For users from multiple domains to be able to authenticate once, you must define one LDAP registry for each domain. Multiple LDAP registries will automatically become federated.

**Note:** For more information, see Configuring LDAP user registries in Liberty in the Knowledge Center.

5. To enable SPNEGO/Kerberos web authentication for the WebSphere Liberty, add the following element after the `<ldapRegistry>` element:

```
<spnego
   id="mySpnego"
   krb5Config="<krb5.ini>"
   krb5Keytab="<keytab_file>"
   servicePrincipalNames="HTTP/<TM1APP_HOST>@<TM1APP_REALM>"/>
```

**Tip:** You can use the IBM WebSphere securityUtility to encode passwords in the server.xml file.

6. Optionally, edit the logging settings to include tracing output for the SPNEGO/Kerberos web authentication.

For example:

```
<logging
   consoleLogLevel="WARNING"
   traceSpecification="*=warn:com.ibm.ws.security.spnego.*:all"
   logDirectory="${wlp.user.dir}/../../logs"
   messageFileName="tm1_messages.log"
   maxFiles="2"
   maxFileSize="20"/>
```

### Configure TM1 Web for WebSphere Liberty security

1. In the server.xml file, find the TM1 Web application entry and modify it as shown in the following example:

```
<application id="tm1web"
   location="${wlp.user.dir}/../../webapps/tm1web"
   name="tm1web"
   type="war" context-root="tm1web">
   <application-bnd>
     <security-role name="AllAuthenticated">
       <special-subject type="ALL_AUTHENTICATED_USERS" />
     </security-role>
   </application-bnd>
</application>
```

2. Save the server.xml file and back it up.
**Configure single sign-on with SPNEGO**

1. Add security constraints in the web.xml file of TM1 Web.

   On the `<TM1APP_HOST>`, use a text editor to edit the `<TM1_ROOT>/webapps/tm1web/WEB-INF/web.xml` file. Before the first `<filter>` element, add the following content:

   ```xml
   <login-config>
     <auth-method>BASIC</auth-method>
     <realm-name>MYTM1SERVER.EXAMPLE.COM</realm-name>
   </login-config>
   <security-role>
     <role-name>AllAuthenticated</role-name>
   </security-role>
   <security-constraint>
     <web-resource-collection>
       <web-resource-name>tm1web</web-resource-name>
       <url-pattern>/*</url-pattern>
       <url-pattern>/</url-pattern>
       <http-method>POST</http-method>
       <http-method>GET</http-method>
     </web-resource-collection>
     <auth-constraint>
       <role-name>AllAuthenticated</role-name>
     </auth-constraint>
   </security-constraint>
   
   2. Save the file.
   3. Start the TM1 Application server service.
   4. In a browser on a remote computer (not on `<TM1APP_HOST>`), open a Kerberos enabled browser and access the following address:

   HTTP://<TM1APP_HOST>:9510/tm1web

   When the TM1 server instance is selected, you are authenticated without being prompted.

**Troubleshoot**

- Make sure that your browser is correctly configured for SPNEGO/Kerberos. For more information, see “Configuring web browsers for Integrated Login” on page 205 and Configuring the client browser to use SPNEGO.
- Make sure that the Windows user that you are testing with is not a domain administrator. Domain administrators cannot be delegated through Kerberos.
- Make sure that testing is performed on a remote computer. If the browser is run on the same computer as TM1 Web, SPNEGO might fail.
- Make sure that the disableFailoverToAppAuthType attribute in the `<spnego>` configuration is set to false.

**Configuring web browsers for Integrated Login**

After configuring IBM Cognos TM1 Web with Integrated Login, you must then configure the Web browsers on the client systems that will access Cognos TM1 Web.

**Procedure**

1. If you are using Microsoft Internet Explorer, specify that the Cognos TM1 Web URL is a trusted site.
   - For example, enable the Automatic logon with current username and password option and the Enable Integrated Windows Authentication option in Internet Explorer.
   - For more information, see your Microsoft Internet Explorer documentation.
If you are using Mozilla Firefox, locate and edit the following preferences so they include a comma separated list of URL prefixes or domains for the location of your TM1 Web server.

<table>
<thead>
<tr>
<th>Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>network.automatic-ntlm-auth.trusted-uris</td>
</tr>
<tr>
<td>network.negotiate-auth.delegation-uris</td>
</tr>
<tr>
<td>network.negotiate-auth.trusted-uris</td>
</tr>
</tbody>
</table>

For example, enter localhost if you are running Cognos TM1 Web locally or enter the server name if you are running Cognos TM1 Web on a dedicated web server.

For more information, see your Mozilla Firefox documentation.

**Configuring Cognos TM1 Architect to use Integrated Login**

After you set up Integrated Login for the IBM Cognos TM1 server, you can use it to access your Cognos TM1 data through Cognos TM1 Architect.

**Procedure**

1. Run Cognos TM1 Architect.
2. Click **File > Options**.
3. Verify that the **Use Integrated Login** check box is selected.
4. Click **OK**.
5. In the Tree pane of the Server Explorer, double-click to open the list of servers.
6. Double-click the server into which you exported your LDAP user and group information.
   
   You should be logged in without being prompted to enter a user name or password.

**Configuring Cognos TM1 Perspectives to use Integrated Login**

After you set up Integrated Login for the IBM Cognos TM1 server, you can use it to access your Cognos TM1 data through Cognos TM1 Perspectives.

**Procedure**

1. Run Microsoft Excel.
2. Click **TM1, Server Explorer**.
   
   The TM1 Server Explorer displays.
3. Click **File > Options**.
4. Verify that the **Use Integrated Login** check box is selected.
5. Click **OK**.
6. In the Tree pane of the Server Explorer, double-click to open the list of servers.
7. Double-click the server into which you exported your LDAP user and group information.
   
   TM1 Perspectives should automatically log you in to Cognos TM1 without asking for a user name or password.

**Logging into Cognos TM1 Web with Integrated Login**

After you configure a IBM Cognos TM1 server and Cognos TM1 Web to use Integrated Login, you can use this authentication mode to log in and access your data through Cognos TM1 Web. Note that as of TM1 10.2, TM1 Web does not support single sign on; you must provide a username/password combination to log on to TM1 Web.

**Procedure**

1. Run Microsoft Internet Explorer.
2. Enter the following URL in the browser **Address** box:
   
   `http://web_server_name:port_number/tm1web/`
For example: http://localhost:9510/tm1web/

3. Enter the Cognos TM1 server Admin Server host name in the Admin Host field.
4. Click Server arrow.
5. Click Login.
6. Enter your user username and password.

LDAP Authentication
You can set up IBM Cognos TM1 authentication using an LDAP server.

Validating users with an LDAP server
LDAP validation allows you to centralize all of your user passwords in an external LDAP server.

When your IBM Cognos TM1 users log in, the user name and password they provide is validated against the information held in your LDAP server. You can specify a password and key to use before the server connects for LDAP authentication, or the server can directly connect without the use of a password.

As a prerequisite to setting up LDAP authentication, you must have significant knowledge of LDAP and its role in your network security structure. If you are not the LDAP administrator for your network, consult with your LDAP administrator to properly set up Cognos TM1 to use LDAP authentication.

Note: Your LDAP server must be configured to use SSL to successfully communicate with Cognos TM1.

LDAP authentication parameters
Use the following parameters in the tm1s.cfg file to configure and support LDAP authentication.

PasswordSource
Compares user-entered password to the stored password.

Parameter type: optional, static
Cognos TM1 (Default): Compares the user-entered password to the password in the Cognos TM1 database.
LDAP: Compares the user-entered password to the password stored in on the LDAP server.

LDAPHost
Specifies the domain name or dotted string representation of the IP address of the LDAP server host.
Parameter type: optional, static
If you do not enter a value for LDAPHost, IBM Cognos TM1 uses the default value, localhost.

LDAPPasswordFile
Defines the password file used when LDAPUseServerAccount is not used. This is the full path of the .dat file that contains the encrypted password for the IBM Cognos TM1 server Admin Server's private key.
Parameter type: optional unless “LDAPUseServerAccount” on page 208=F, static
This parameter uses the full path to a .dat file.

LDAPPasswordKeyFile
Defines the password key used when LDAPUseServerAccount is not used.
Parameter type: optional unless “LDAPUseServerAccount” on page 208=F, static
This parameter uses the full path of the .dat file that contains the key used to encrypt and decrypt the password for the private key.
This file must be generated using the tm1crypt utility, as described in “Running the TM1Crypt utility” on page 235.

LDAPPort
Specifies the port IBM Cognos TM1 uses to bind to an LDAP server.
Parameter type: optional, static
Specify a secure (SSL) port, for example, 636.
Default value: 389 (an unsecured port)
**LDAPSearchBase**
Specifies the node in the LDAP tree where IBM Cognos TM1 begins searching for valid users.

Parameter type: optional, static

A base distinguished name (DN) in the LDAP directory. For example:

```
ou=people,o=company.com
```

For example, if the distinguished names are of the form:

```
uid-bjensen, ou-people, o=company.com
```

then the search base would be:

```
ou-people, o=company.com
```

**LDAPSearchField**
The name of the LDAP attribute that is expected to contain the name of the IBM Cognos TM1 user being validated.

Parameter type: optional, static

If you do not enter an LDAPSearchField value, the default value is *cn*, which is also the default value for Microsoft Active Directory.

**LDAPSkipSSLCertVerification**
Skips the certificate trust verification step for the SSL certificate used to authenticate to an LDAP server. This parameter is applicable only when LDAPVerifyServerSSLCert=T.

Parameter type: optional, static

If trust verification does not work, you can skip the trust verification step by specifying LDAPSkipSSLCertVerification=T. In this case, TM1 does not verify the server certificate at all but simply accepts it.

**Note:** Before working with this parameter, you should be familiar with SSL and LDAP.

Default value: F

**LDAPSkipSSLCRLVerification**
Skips CRL checking for the SSL certificate used to authenticate to an LDAP server. This parameter is applicable only when LDAPVerifyServerSSLCert=T.

Parameter type: optional, static

This parameter is not required if LDAPVerifyServerSSLCert=F. The Microsoft Windows API can tolerate an empty or non-existent CRL certificate.

**Note:** Before working with this parameter, you should be familiar with SSL and LDAP.

Default value: F

**LDAPUseServerAccount**
Determines if a password is required to connect to the server when using LDAP authentication.

Parameter type: optional, static

- To connect directly to the LDAP server using integrated authentication, set this parameter to T. Set this parameter to T whenever the IBM Cognos TM1 server and LDAP server exist on the same domain.
- To use a password before connecting, set this parameter to F. When LDAPUseServerAccount is set to F, you must also set the “LDAPPasswordFile” on page 207 and “LDAPPasswordKeyFile” on page 207 to successfully connect to the LDAP server using SSL.

**LDAPVerifyCertServerName**
Specifies a server to use during the SSL certificate verification process for LDAP server authentication. This parameter is applicable only when LDAPVerifyServerSSLCert=T.

Parameter type: optional, static
Note: Before working with this parameter, you should be familiar with SSL and LDAP.

Use this parameter to specify the servers TM1 should use to verify the received SSL certificate.

All of the server names you want to use for certificate verification must be listed in separate LDAPVerifyCertServerName entries. The entries must exactly match the name (subject) of the certificate presented to TM1 in the SSL handshake by the server on the other end.

Specify LDAPVerifyCertServerName in the tm1s.cfg file of each TM1 server that is using LDAP.

```
LDAPVerifyCertServerName=<server_cert_subject>
```

Replace `server_cert_subject` with a server name or IP addresses. Create an entry for each server you want to use. For example:

```
LDAPVerifyCertServerName=abc99.mydomain.com
LDAPVerifyCertServerName=xyz99.mydomain.com
```

Default value: F

**LDAPVerifyServerSSLCert**

Delegates the verification of the SSL certificate to TM1. This parameter is useful, for example, when you are using LDAP with a proxy server.

Parameter type: optional, static

Note: Before working with this parameter, you should be familiar with SSL and LDAP.

Typically, TM1 leverages the Microsoft Windows API to verify SSL certificates. For this process to succeed, the certificate name and the LDAP server host name must match. If you are using a proxy, however, these names may not match, causing the verification to fail. In this case, you can set LDAPVerifyServerSSLCert=T to have TM1 perform the certificate verification.

When LDAPVerifyServerSSLCert=T, TM1 performs the two steps of verification (verifying the trust relationship to the certificate and checking the CRL) like the Windows API would have done, but with a slightly different approach.

1. Instead of verifying the received certificate against the configured host name, TM1 looks at the list of server names specified by LDAPVerifyCertServerName.
2. If the certificate name matches one of the servers specified by LDAPVerifyCertServerName, TM1 calls the Microsoft Windows API and requests it to verify this single certificate only.

   Note: The correct trusted root certificate authority (CA) must already have been imported to the Microsoft Windows Certificate Store.

   You can skip the trust verification step by specifying LDAPSkipSSLCertVerification=T. In this case, TM1 does not verify the server certificate at all but simply accepts it.
3. Once the trust verification is confirmed (or skipped), TM1 calls the Microsoft Windows API to check the CRL.

   Note: The CRL certificate for the trusted root must already have been imported to the Microsoft Windows Certificate Store.

   If the CRL certificate does not exist in the Microsoft Windows Certificate Store, the process will fail. You can skip the CRL step by specifying LDAPSkipSSLCRLVerification=T.
4. If all the previous steps finish successfully, the SSL handshake is complete. TM1 now attempts to authenticate to the LDAP server.

For troubleshooting information, see “Troubleshooting LDAP authentication” on page 211.

**LDAPWellKnownUserName**

Specifies the user name used by the IBM Cognos TM1 server to log in to LDAP and look up the name submitted by the user.

Parameter type: optional unless “LDAPUseServerAccount” on page 208=F, static

The value of this parameter can be any LDAP distinguished name.
Configuring LDAP validation

To configure LDAP validation, you will change the password in the TM1s.cfg file so that you can then import names from your LDAP directory and modify group assignments for new users. Then change the password back to the LDAP credentials.

Before you begin

To configure LDAP validation, you need the following information:

- A name that the Cognos TM1 server can use to log in to LDAP. You can test the validity of this name using ETLDAP.
- The SSL port on which your LDAP server is running. The default is 636.
- The name or IP address of the LDAP server you want to use for validation.

Procedure

1. To use your Cognos TM1 credentials to log in, change the password parameter in TM1s.cfg by completing these actions:
   a) Edit TM1s.cfg in your IBM Cognos TM1 server data directory.
   b) Modify PasswordSource=LDAP to read PasswordSource=TM1
   c) Save and exit TM1s.cfg.
   d) Recycle your Cognos TM1 server.

2. To import names from your LDAP directory into Cognos TM1, complete these actions:
   a) Use the procedure described in “ETLDAP utility” on page 188.
   b) Use the following Cognos TM1 login information:
      • Admin user (default) - Admin
      • Admin password (default) - apple
      Use the user that you specified during the installation to log in to LDAP.

3. To modify group assignments for new users, complete the following actions:
   a) Log in to Cognos TM1 as an administrator.
   b) Right-click the server name in Server Explorer and click Security, Clients and Groups.
   c) Modify the groups assignments for your new users as required.

   For each Cognos TM1 user ETLDAP added to your database, you must assign that user to the same group they belong to in the LDAP directory. For example, if NadiaC is a member of the group gymnasts in your LDAP directory, ETLDAP creates the user Nadiac, and creates the group gymnasts within Cognos TM1. Nadiac displays in the Clients/groups dialog box as a member of gymnasts.

4. To change the password back to the LDAP credentials, complete these actions:
   a) Edit TM1s.cfg in your IBM Cognos TM1 server data directory.
   b) Modify PasswordSource=TM1 to read PasswordSource=LDAP
   c) Define the connection status:
      • To directly connect to the server, add the following line:

            LDAPUseServerAccount=T

      • To use a password before connecting to the server, add the following lines:

            LDAPPasswordFile=file
            LDAPPasswordKey= key
   d) Save and exit TM1s.cfg file.
   e) Recycle your Cognos TM1 server.
You should now be able to log in to Cognos TM1 with a name that you added from your LDAP directory.

Troubleshooting LDAP authentication
This topic describes error log messages that can arise when LDAPVerifyServerSSLCert=T in the tm1s.cfg file.

The following message indicates that the certificate does not match any of the names that are listed in LDAPVerifyCertServerName. Verify the certificate name and ensure that it has a LDAPVerifyCertServerName entry in the tm1s.cfg file.

| LDAP ERROR: 0x800b0109 - Error verifying server certificate chain validity |
| LDAP ERROR: Error verifying server certificate no match for <server> |
| LDAP ERROR: 0x51 - ldap_connect failed. |

The following message indicates an issue with the trust of the LDAP server certificate by Microsoft Windows. Ensure that the certificate has been imported into the Microsoft Windows Certificate Store.

| LDAP ERROR: 0x800b010f - Error verifying server certificate chain validity |
| LDAP ERROR: Error verifying server certificate no match for <server> |
| LDAP ERROR: 0x51 - ldap_connect failed. |

The following message indicates that either the certificate is revoked or TM1 is looking for the CRL certificate but cannot find it in the Microsoft Windows Certificate Store. To correct the error, skip the CRL check (set LDAPSkipSSLCRLVerification=T) or import the CRL certificate from the CA into the Microsoft Windows Certificate Store.

| LDAP ERROR: 0x80092012 - Error verifying server certificate chain validity |
| LDAP ERROR: Error verifying server certificate no match for <server> |
| LDAP ERROR: 0x51 - ldap_connect failed. |

Using Cognos security with Cognos TM1
You can use IBM Cognos security with IBM Cognos TM1.

For complete details on Cognos security concepts, terminology, and implementation, see Cognos Administration and Security.

Overview to Cognos security
The IBM Cognos TM1 server can authenticate users using IBM Cognos security.

Cognos security is a component of the IBM Cognos framework that manages user access to data. Cognos security manages authorization and authentication through third-party security providers, such as LDAP or Active Directory. When a user is authenticated through Cognos security, they are provided with a Cognos security "passport." This passport is then used by Cognos TM1 applications to determine the user's permissions (role and group membership) and identity.

When using Cognos security, a Cognos passport is required to connect to Cognos TM1. A user is presented with a logon screen requiring a namespace, a user name, and a password when first logging in to Cognos TM1 or any other Cognos security-enabled components. Once authenticated by Cognos security, a passport is issued to the user. This passport automatically provides the user's credentials when accessing any other Cognos security-enabled application (including Cognos TM1). Once a user connects to the Cognos TM1 server via a specific Cognos server that has been configured for common logon, no direct user input is required to access additional Cognos TM1 servers (or other Cognos applications) that are configured to reference the same Cognos server.

When a user attempts to access the Cognos TM1 server, the server validates the passport to authenticate the user. This is done by querying a Cognos server for the identity of the passport. If the passport is valid, the query returns a collection of security and authentication information for the user. This information contains the roles and groups that the user has membership to, as well as the account (user name) associated with the passport. If the user name already exists in Cognos TM1, their existing membership will be validated against the existing Cognos TM1 groups. If the user does not exist, they are added and assigned to the appropriate user groups on the Cognos TM1 server.

If a user runs the client program as an administrator (by right-clicking on the program file name and selecting Run as administrator), two new folders are created after the client connects to CAM:

- installation_location\configuration
This folder contains the C8ITK.ini file.

*installation_location*\logs

This folder contains the file C8ITK.log, if applicable.

By default, the C8ITK.ini file specifies that no log files are created in the logs folder, unless an error occurs. You can edit the C8ITK.ini file if you want to have log files. You can also change the name of the log file by editing the LogFilePath section. Before your changes can take effect, you must restart your Cognos services.

**Configuring the TM1 Server to use Cognos security**

You can configure the IBM Cognos TM1 server to use IBM Cognos security for authentication instead of the default standard TM1 authentication.

**Before you begin**

To successfully complete these procedures, your IBM Cognos server must not be configured to allow anonymous access. If anonymous access is enabled on the IBM Cognos server, you cannot log on to a namespace from TM1 when importing Cognos groups into TM1.

**About this task**

To enable IBM Cognos security authentication on the IBM Cognos TM1 server, you must add or modify several configuration parameters in the server’s Tm1s.cfg configuration file.

**Note:** If you want to re-configure a TM1 server that is already using Cognos security to use a different instance of Cognos, you must remove any existing Cognos users and groups that were imported from the first Cognos instance and then import users and groups from the new Cognos instance.

**Procedure**

1. Open the Tm1s.cfg configuration file in a text editor.

   The Tm1s.cfg file is located in the TM1 server data directory. For more information, see Appendix A, “The tm1s.cfg Server Configuration File,” on page 255.

2. Edit or add the following parameters to the configuration file.

   ![Table 31: TM1 server configuration parameters for Cognos security](image)

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ServerCAMURI</td>
<td>The URI for the internal dispatcher that the TM1 server should use to connect to IBM Cognos security. The URI is specified in the form http[s]://host IP address:port/p2pd/servlet/dispatch. Examples: <a href="http://10.121.25.121:9300/p2pd/servlet/dispatch">http://10.121.25.121:9300/p2pd/servlet/dispatch</a>, <a href="https://10.121.25.121:9300/p2pd/servlet/dispatch">https://10.121.25.121:9300/p2pd/servlet/dispatch</a>. <strong>Note:</strong> To find the URI, ask your IBM Cognos administrator to perform the following steps: a. On the system hosting IBM Cognos, open IBM Cognos Configuration. b. Click to expand the Environment node. c. In the Properties pane, locate the Dispatcher Settings section and use the value from either the External dispatcher URI or the Internal dispatcher URI property.</td>
</tr>
</tbody>
</table>
Table 31: TM1 server configuration parameters for Cognos security (continued)

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ClientCAMURI</td>
<td>The URI for the IBM Cognos Server IBM Cognos Connection used to authenticate TM1 clients. The URI is specified in the form: &lt;http[s]://host/ibmcognos/cgi-bin/cognos.cgi&gt;</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The values for host, ibmcognos, and cognos.cgi are variables and depend on the exact settings that have been used. Contact your IBM Cognos administrator for more information about these settings.</td>
</tr>
<tr>
<td></td>
<td>For example: <a href="http://10.121.25.121/ibmcognos/cgi-bin/cognos.cgi">http://10.121.25.121/ibmcognos/cgi-bin/cognos.cgi</a></td>
</tr>
<tr>
<td>CAMSSLCertificate</td>
<td>The full path and name of the SSL certificate to be used when connecting to the internal dispatcher.</td>
</tr>
<tr>
<td></td>
<td>For example: C:\AxTM1\Install_Dir\ssl\CognosCert.cer</td>
</tr>
<tr>
<td></td>
<td>This parameter is required only if the IBM Cognos server is configured to use SSL.</td>
</tr>
<tr>
<td>SkipSSLCAMHostCheck</td>
<td>Indicates whether the SSL certificate ID confirmation process can be skipped. The default is FALSE.</td>
</tr>
<tr>
<td></td>
<td><strong>Important:</strong> This parameter should be set to TRUE only if using a generic certificate for demonstration purposes.</td>
</tr>
<tr>
<td>ClientPingCAMPassport</td>
<td>Indicates the interval, in seconds, that a client should ping the IBM Cognos server to keep their passport alive.</td>
</tr>
<tr>
<td></td>
<td>If an error occurs or the passport expires the user will be disconnected from the TM1 server.</td>
</tr>
<tr>
<td></td>
<td>Example: ClientPingCAMPassport=900</td>
</tr>
<tr>
<td>CAMPortalVariableFile</td>
<td>The path to the variables_TM1.xml file in your Cognos installation. In most cases, the path will be:</td>
</tr>
<tr>
<td></td>
<td>CAMPortalVariableFile = portal\variables_TM1.xml</td>
</tr>
<tr>
<td></td>
<td>The variables(TM1).xml file is included for TM1 iWidgets. For details on installing and configuring iWidgets, see “Cognos TM1 iWidgets and Cognos Workspace” on page 50.</td>
</tr>
<tr>
<td></td>
<td>The CAMPortalVariableFile parameter is required only when running TM1 Web.</td>
</tr>
</tbody>
</table>

The Tm1s.cfg file should contain parameters similar to the following:

```
ServerCAMURI=http://10.111.25.121:9300/p2pd/servlet/dispatch
ClientCAMURI=http://10.111.25.121/cognos_location/cgi-bin/cognos.cgi
ClientPingCAMPassport=900
CAMPortalVariableFile=templates\ps\portal\variables_TM1.xml
```

3. Set the IntegratedSecurityMode parameter to the default mode of 1.

   IntegratedSecurityMode=1

   **Note:** Setting the IntegratedSecurityMode parameter to 1 allows you to complete additional configuration steps in TM1 using standard TM1 security before switching to Cognos security. After you complete these additional steps you can then change this parameter to either 4 or 5 to use Cognos security.

4. Save and close the Tm1s.cfg file.
5. Restart the Cognos TM1 server.
6. Perform the required steps for your Cognos Analytics installation.
   • Define a Cognos user to function as a Planning Analytics administrator.
   • Import Cognos groups into Planning Analytics.
   For details, see “Managing TM1 users, groups, and objects when using Cognos security” on page 214.
7. Configure the Cognos TM1 server to start using Cognos authentication.
   a) Shut down the Cognos TM1 server.
   b) Open the Tm1s.cfg configuration file in a text editor.
   c) Set the IntegratedSecurityMode parameter to indicate that the server should use Cognos authentication.
      The exact parameter value depends on the specific Cognos TM1 components you are using:
      • If you are not using the Cognos TM1 Applications component, set the parameter to 4.
        IntegratedSecurityMode=4
      • If you are using Cognos TM1 Applications with Cognos security, set the parameter to 5 to support user groups
        from both Planning Analytics and Cognos.
        IntegratedSecurityMode=5
   d) Save and close the Tm1s.cfg file.
   e) Restart the Cognos TM1 server.

What to do next
See the following configuration topics to complete the configuration:
• “Configuring Cognos TM1 clients to use Cognos security” on page 216
• “Configuring Cognos TM1 Web to use Cognos security” on page 216
• “Using Cognos TM1 Applications with Cognos security” on page 218

Anonymous access with the Cognos TM1 server and Cognos security
To successfully set configuration settings and procedures to enable IBM Cognos security authentication on the IBM
Cognos TM1 server, your Cognos server must not be configured to allow anonymous access.

If anonymous access is enabled on the Cognos server, you cannot logon to a namespace from Cognos TM1 when
importing Cognos groups into Cognos TM1.

Managing TM1 users, groups, and objects when using Cognos security
Defining a Cognos user to function as a Cognos TM1 administrator
To successfully administer IBM Cognos TM1 while using IBM Cognos Analytics security for authentication, an existing
Cognos user must be added to the Cognos TM1 ADMIN group.

This Cognos user will be used to import Cognos groups into Cognos TM1.

Important: The initial steps for this configuration must be done with the Cognos TM1 IntegratedSecurityMode
parameter set to 1. You then change this parameter to use Cognos Analytics security at a later point in the steps.

Procedure
1. Log in to Cognos TM1 as an administrator.
2. From the Server Explorer, click Server > Security > Clients/Groups.
3. From the Clients/Groups dialog box, click Clients > Add New Client.
   The Cognos logon dialog box appears.
4. Enter your Cognos user ID and password, then click OK.
5. In the Name box, click the namespace to which you are currently logged in.
   Note: Only users from the namespace to which you are logged in can be imported into Cognos TM1. Other
   namespaces may appear in the Name box, but you cannot import users from them.
   The contents of the Name box update to display the directories available on the selected namespace.
6. Enable the **Show users in the list** option.

7. Navigate to the directory containing the Cognos user you want to define as a Cognos TM1 administrator. In most circumstances, you will define your own Cognos user as a Cognos TM1 administrator, as you must know the Cognos user's ID and password to complete administrative tasks.

8. Select the user.

9. Click the green arrow icon ➔ to move the selected user to the **Selected Entries** list.

10. Click **OK** to import the Cognos user into Cognos TM1.

   The user appears as a new client in the Client/Groups window, but is not assigned to any Cognos TM1 groups.

11. Assign the new user to the ADMIN group and click **OK**.

12. Shut down the Cognos TM1 server.

13. Open the Tm1s.cfg configuration file in a text editor.

14. Set the IntegratedSecurityMode parameter to indicate that the server should use IBM Cognos authentication. The exact parameter value depends on the specific Cognos TM1 components you are using:

   - If you are not using the Cognos TM1 Applications component, set the parameter to 4.
     
     \[
     \text{IntegratedSecurityMode}=4
     \]

   - If you are using Cognos TM1 Applications with Cognos security, set the parameter to 5 to support user groups from both Cognos TM1 and Cognos.
     
     \[
     \text{IntegratedSecurityMode}=5
     \]

15. Save and close Tm1s.cfg.

16. Restart the Cognos TM1 server.

**Importing Cognos groups into Cognos TM1**

After an IBM Cognos user is defined as the Cognos TM1 administrator, that user can import Cognos groups into Cognos TM1.

You should import only the Cognos groups that you want to allow to access the Cognos TM1 server.

**Procedure**

1. In the Server Explorer, double-click your Cognos TM1 server.

   The **Cognos logon** dialog box appears.

2. Log on as the Cognos user that you have defined as the Cognos TM1 administrator.

3. From the Server Explorer, click **Server**, then **Security**, then **Clients/Groups**.

4. From the **Clients/Groups** window, click **Groups**, then **Add New Groups**.

5. In the **Names** box, click the namespace to which you are currently connected.

   **Note:** Only groups from the namespace to which you are connected can be imported into Cognos TM1. Other namespaces may appear in the **Name** box, but you cannot import groups from them.

6. Navigate through the directory structure and select the Cognos groups you want to import into Cognos TM1.

7. Click the green arrow icon ➔ to move the selected user to the **Selected Entries** list.

8. Click **OK** to import the Cognos groups into Cognos TM1.

   If you review the User Group Assignment section of the Clients/Groups window, you should see the Cognos groups added to your server.

**Creating TM1 users when using Cognos security**

When the IBM Cognos TM1 server is configured to use Cognos authentication, you cannot create new clients directly on the Cognos TM1 server.

Instead, all client administration is performed in Cognos security.

When a Cognos user accesses Cognos TM1, the user is validated and automatically assigned to the appropriate Cognos TM1 groups. There is no need to manually assign users to groups in Cognos TM1.
Administering Cognos TM1 object security when using Cognos authentication security

While IBM Cognos authentication automatically manages users on the IBM Cognos TM1 server, the Cognos TM1 administrator must still manage object security to allow Cognos users to view and use Cognos TM1 objects.

For details on administering Cognos TM1 object security, see Cognos security in the TM1 Developer documentation.

Configuring Cognos TM1 clients to use Cognos security

You must add two parameters to your Tm1p.ini file to allow you to perform IBM Cognos security-related administrative tasks from your Cognos TM1 client.

Procedure

1. Open the Tm1p.ini configuration file in a text editor.

   For information on the location of the Tm1p.ini file, see “Location of the Tm1p.ini File” on page 303.

2. Add the following parameters to the Tm1p.ini file.

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CognosGatewayURI</td>
<td>The URI for the Cognos Analytics Gateway. The URI is specified in the form</td>
</tr>
<tr>
<td></td>
<td>http[s]://host/cognos_location/cgi-bin/cognos.cgi</td>
</tr>
<tr>
<td></td>
<td>For example: <a href="http://10.121.25.121/cognos_location/cgi-bin/cognos.cgi">http://10.121.25.121/cognos_location/cgi-bin/cognos.cgi</a></td>
</tr>
<tr>
<td>AllowImportCAMClients</td>
<td>Determines if Cognos clients can be imported into Cognos TM1. This parameter must be set to T when setting up Cognos security in Cognos TM1.</td>
</tr>
</tbody>
</table>

   Your Tm1p.ini file should include parameters similar to the following:

   AllowImportCAMClients = T

   CognosGatewayURI = http://10.111.25.121/cognos_location/cgi-bin/cognos.cgi

3. Save and close Tm1p.ini.

4. Restart your Cognos TM1 client.

Configuring Cognos TM1 Web to use Cognos security

Follow these steps to configure IBM Cognos TM1 Web to use IBM Cognos authentication security.

Before you begin

Note: If you applied a Cognos Analytics updater kit to your Analytics installation, you might need to make specific updates to the tm1web.html file.

The tm1web.html file supports Cognos TM1 Web to use IBM Cognos authentication security. However, it does not get updated when you apply a Cognos Analytics updater kit. Instead, an updated file that is called tm1web.html.new is placed in the same Cognos Analytics ...\webcontent\tm1\web directory as the original file. Use the newer version of tm1web.html and update it with any changes you made in the original tm1web.html file.

About this task

These steps include editing configuration files on your Cognos TM1 Web system and copying them over to your Cognos Analytics system.

Procedure

1. Locate and extract the following Cognos TM1 Web gateway files in your Cognos TM1 Web installation directory.

   variables_TM1.xml
   This file is located in templates\ps\portal.
tm1web.html
This file is located in webcontent\tm1\web.

These files are compressed into the bi_interop.zip file here:

\<TM1 installation loaction>\bi_interop\

For example:
C:\Program Files\IBM\cognos\tm1_64\bi_interop\

2. Copy the files to your IBM Cognos Analytics installation.

variables_TM1.xml
Copy this file to <Cognos location>\templates\ps\portal on every server where the TM1 Web Tier is running on your IBM Cognos Analytics system.

tm1web.html
Copy this file to <Cognos location>\webcontent\tm1\web on every server where the Cognos Analytics Gateway is running on your IBM Cognos Analytics system.

3. Edit the tm1web.html file to point to where Cognos TM1 Web is running.

    var tm1webServices = ["http://SystemName:PortNumber"];

    For example:
    var tm1webServices = ["http://mysystem:9510"];

Configuring Cognos TM1 Operations Console to use Cognos security
You can configure IBM Cognos TM1 Operations Console to use IBM Cognos Analytics security, also called Cognos Access Manager (CAM) authentication.

Before you begin
At least one TM1 server must be configured for IBM Cognos Analytics security. This is required in order to store the Operations Console user group information. You must know the name of this TM1 server to complete the steps in this topic. For complete details and configuration steps, see “Using Cognos security with Cognos TM1” on page 211 and “Configuring the TM1 Server to use Cognos security” on page 212

About this task
To configure Operations Console to use IBM Cognos Analytics security, you work with files on the computers hosting these two components.

Procedure
1. Open Performance Management Hub by going to http://<host>:9510/pmhub/pm/admin
2. Expand Configurations > Operations Console TM1 Monitors.
3. Verify the values in the DefaultAdminHost, DefaultGroup, and DefaultServer fields. See “Configuring the Cognos TM1 Operations Console” on page 80.
5. Set CAMBIURL to the Cognos Analytics Server dispatcher URL.

You can find this value in Cognos Configuration under Environment > External dispatcher URI. The value in the ServerCAMURI parameter of the tm1s.cfg file should be similar.

    For example: http://host.domain.com:9300/p2pd/servlet/dispatch

6. Set CAMGatewayURL to the Cognos Analytics Server gateway.

You can find this value in Cognos Configuration under Environment > Gateway URI. The value in the ClientCAMURI parameter of the tm1s.cfg file should be similar.

    For example: http://host.domain.com/ibmcognos/cgi-bin/cognos.cgi

7. Copy the ..\tm1_64\bi_interop\bi_interop.zip file from the TM1 installation location to the root of the Cognos Analytics Server installation directory (the ..\c10_64 directory).
If you are using a distributed Cognos Analytics server environment, copy the file to the computer that is running the TM1 Data Tier or TM1 Web tier.

8. Extract `bi_interop.zip` so the directory structure is maintained.

   The `pmhub.html` file should be in the `..\c10_64\webcontent` directory.

9. Edit line 51 in the `pmhub.html` file to include the fully qualified domain name and port number of the IBM Cognos TM1 Applications Service that runs the TM1 Operations Console.

   - If you are using the WebSphere Liberty Profile web server provided with TM1, this is the server where TM1 Application Server is running.
   - If you are using your own web server, this is the server where you deployed `pmhub.war`.

   For example:
   ```javascript
   var pmhubURLs = ["http://tm1appshost.domain.com:9510"];
   
   You can also include multiple URLs if the TM1 Operations Console is used on multiple systems. For example:
   ```javascript
   var pmhubURLs = ["http://tm1appshost1.domain.com:9510",
     "http://tm1appshost2.domain.com:9510"];
   ```

Using Cognos TM1 Applications with Cognos security

You can configure IBM Cognos TM1 Applications to use IBM Cognos Analytics security. This configuration requires users to log in to Cognos TM1 Applications as a valid user that exists in the Cognos Analytics server. This configuration also integrates Cognos TM1 Applications with Cognos Analytics by displaying links to Cognos TM1 Applications in the IBM Cognos Connection portal.

When you use Cognos TM1 Applications with Cognos Analytics Security, the Cognos TM1 Application Server can be hosted on a web application server in one of the following ways:

- On a different computer with the WebSphere Liberty server that was provided with the Cognos TM1 installation
- On a different computer with your own installation of Apache Tomcat or IBM Websphere.

In all cases, you must edit the `planning.html` file and copy this file to the Cognos Analytics server so that the Cognos Analytics server knows the location of the Cognos TM1 Application Server.

**Note:** You must have the `TM1_PATH` environment variable specified before connecting to Cognos TM1 under a UNIX environment.

Configuring Cognos TM1 Applications to use Cognos Analytics Security

To configure IBM Cognos TM1 Applications to use IBM Cognos Analytics security, you work with files on the computers hosting these two components, plus the computer where the Cognos TM1 Server is running. This configuration also enables the IBM Cognos Connection portal to show links to Cognos TM1 Applications so that users can open the applications that they rights to from within the Cognos Connection portal.

**Before you begin**

The Cognos TM1 server must be configured to use Cognos Analytics security.

To use Cognos TM1 Applications with Cognos Analytics security, the `IntegratedSecurityMode` parameter in the Cognos TM1 `Tm1s.cfg` configuration file must be set to 5 to support user groups from both Cognos TM1 and Cognos Analytics.

For complete details and configuration steps, see “Using Cognos security with Cognos TM1” on page 211 and “Configuring the TM1 Server to use Cognos security” on page 212.

**Note:** You must configure the `TM1_PATH` environment variable before you can connect to Cognos TM1 under a UNIX environment.

**Procedure**

1. Extract the content of the `bi_interop.zip` file into your existing Cognos Analytics installation.

   **Note:** As of Cognos TM1 version 10.2.2, the `bi_interop.zip` replaces the `planning_gateway.zip` file that was provided with previous versions of Cognos TM1.
a) Locate the bi_interop.zip file that is provided with the Cognos TM1 installation in the following location.

\textit{Cognos TM1 location}\bi_interop\ 

b) Extract and merge the content of the bi_interop.zip file into the root directory of your existing Cognos Analytics installation.

For example: C:\Program Files\IBM\cognos\c10_64\ 

\textbf{Note:} The bi_interop.zip file contains a directory structure that merges files into the \templates and \webcontent subdirectories.

c) To manually extract and copy the files to your Cognos Analytics installation, copy the files as follows:

If you are using a distributed Cognos Analytics server environment, copy these files to the computer that is running the TM1 Data Tier or TM1 Web Tier as follows.

\textit{planning.html}

Copy planning.html to \textit{C10 Install Dir}\\webcontent where the Cognos Analytics Gateway is installed.

\textit{icon_active_application.gif}

Copy icon_active_application.gif to \textit{C10 Install Dir}\\webcontent\\ps\\portal\\images where the Cognos Analytics Gateway is installed.

\textit{variables_plan.xml}

Copy variables_plan.xml to \textit{C10 Install Dir}\\templates\\ps\\portal wherever the presentation service (Application tier) is running in a Cognos Analytics server.

\textbf{Note:} These files are also installed with newer Cognos Analytics installations. If the files exist on your Cognos Analytics server, then you only need to edit them as explained in these steps.

2. Edit the planning.html file.

\textbf{Important:} The values for the planningServices parameter in this file are required to ensure that the Cognos Analytics server redirects users to only approved locations. The location of the Cognos TM1 Application Server from where the user logs in must be validated to be one of the approved locations in this file. Otherwise, the Cognos Analytics server will not redirect the user.

a) Open the planning.html file and locate the following lines:

\begin{verbatim}
// Update the following to point to the location of the planning service(s)
var planningServices = ["http://machine.company.com:9510"];
\end{verbatim}

b) Set the planningServices parameter to the location and port number for the Cognos TM1 Application Server.

\begin{verbatim}
var planningServices = ["http://\textit{web_server_address}:\textit{port_number}"];
\end{verbatim}

Replace \textit{web_server_address} with the fully qualified domain name (FQDN) for the computer where the Cognos TM1 Application Server is running. For example, myhost.example.com

• If you are running the Cognos TM1 Application Server with the WebSphere® Liberty server that is provided with the Cognos TM1 installation:

\begin{verbatim}
var planningServices = ["http://\textit{web_server_address}:9510"];
\end{verbatim}

• If you are running the Cognos TM1 Application Server with your own web application server, use the location and port number for that system.

\textbf{Tip:} If you are using the same Cognos Analytics server to authenticate different instances of Cognos TM1 Applications that are running on multiple computers, use a comma-separated list with the fully qualified domain name (FQDN) for each computer. For example:

\begin{verbatim}
var planningServices = ["http://machine1.example.com:port_number","http://machine2.example.com:port_number"];\end{verbatim}

\textbf{Tip:} If the Cognos TM1 Application Server is running on a web server that belongs to multiple domains, use a comma-separated list to enter the fully qualified domain name for each domain. For example:

\begin{verbatim}
var planningServices = ["http://\textit{computer_A.domain_1}:port_number","http://\textit{computer_A.domain_2}:port_number","http://\textit{computer_A.domain_3}:port_number"];\end{verbatim}
c) Save and close the planning.html file.

3. Configure the session timeout parameters for Cognos TM1 Applications and Cognos Analytics security to ensure the proper timeout detection.

   For details, see “Configuring session timeout values for Cognos TM1 Applications and Cognos Analytics Security” on page 220.

4. Restart the Cognos Analytics server.

5. Configure Cognos TM1 Applications with values for the IBM Cognos Gateway URI and IBM Cognos Dispatcher URI.

   a) Open Cognos TM1 Applications using the format of the following link:

      $$\text{http://web_server_name:port_number/pmpsvc}$$

      For example: http://localhost:9510/pmpsvc

   b) Log in and open the Cognos TM1 Applications Configuration page:

      • If you are running Cognos TM1 Applications for the first time, the Configuration page opens after you log in.
      • If you already configured Cognos TM1 Applications, open the Configuration page by clicking the **Administer IBM Cognos TM1 Applications** icon on the toolbar of the TM1 Applications portal page.

   c) On the **TM1 Applications Configuration** page, enter values for the following Cognos TM1 and Cognos Analytics parameters:

      • Enter values in the **TM1 Admin Host** and **Server Name** fields and configure the options for the data contribution clients that you want to use. For details, see “Configuring the server and client environment for Cognos TM1 Application Web” on page 107.
      • Set the **IBM Cognos Gateway URI** parameter. For example:

         $$\text{http://CognosServerName/ibmcognos/bi/v1/disp}$$

      • Set the **IBM Cognos Dispatcher URI** parameter. For example:

         $$\text{http://CognosServerName:9300/p2pd/servlet/dispatch}$$

         Replace **CognosServerName** with the name of the system where the Cognos Analytics web server is running.

6. To test the configuration, log in to Cognos TM1 Applications using a web browser on a remote computer.

   If you see the following error, review your settings for the planningServices parameter in the planning.html file on the Cognos Analytics server.

   The planning service parameter was not specified or is not one of the configured locations

   **Configuring session timeout values for Cognos TM1 Applications and Cognos Analytics Security**

   When using IBM Cognos TM1 Applications with IBM Cognos Business Intelligence security, set the pmpsvc session timeout to a value higher than the CAM session timeout to ensure the proper timeout detection. If the Cognos TM1 Applications (pmpsvc) session timeout is set to a value lower than the Cognos Analytics security (CAM) session timeout, then Cognos TM1 Applications will not properly detect a CAM session termination and will not timeout.

   **About this task**

   To ensure that Cognos TM1 Applications can properly detect a CAM session termination, set the pmpsvc session timeout to a value higher than the CAM session timeout.

   • The pmpsvc session timeout is the number of minutes of inactivity after which Cognos TM1 Applications terminates a user session. The default value is 60 minutes (1 hour).
   • The CAM session timeout is the number of seconds of inactivity after which Cognos security terminates a user session. The default value is 3600 seconds (1 hour).

   **Procedure**

   1. Configure the pmpsvc session timeout parameter.

      a) Locate the **fpmsvc_config.xml** file in the WEB-INF/configuration directory.

      • When Cognos TM1 Applications is deployed with the WebSphere Liberty server that is provided with the Cognos TM1 installation, the fpmsvc_config.xml file is here:
Cognos TM1 installation location
- When Cognos TM1 Applications is deployed with Apache Tomcat, the file is here:
  C:\Program Files\Apache Software Foundation\Tomcat version_number\webapps\pmpsvc\WEB-INF\configuration

b) Enter a value for the timeout attribute of the service/session element.

Use the format for the service/session/timeout attribute as defined in the XML schema definition file
fpmsvc_config.xsd located in the same directory.

For example:

```xml
<session timeout="60"/>
```

2. On your Cognos Analytics system, configure the CAM session timeout using IBM Cognos Configuration.

Enter a value in the **Inactivity timeout in seconds** field in the Security/Authentication section of Cognos Configuration.

Administrator considerations when using Cognos authentication

IBM Cognos TM1 administrators should be aware of the some issues when configuring the Cognos TM1 server to use IBM Cognos authentication.

The issues are as follows:

- Review the description of Cognos TM1 security modes 4 and 5 for the IntegratedSecurityMode parameter. You should understand how these different modes control whether or not Cognos users can belong to Cognos TM1 user groups. For details, see the description of the IntegratedSecurityMode parameter in **TM1 Operations**.
- You cannot use Cognos TM1 to permanently assign a Cognos user to another Cognos group. Any user assignment you make in Cognos TM1 to a Cognos group is not saved back to Cognos. When a Cognos user logs in to Cognos TM1, the group assignments in Cognos override any Cognos group assignments made in Cognos TM1.
- If you rename a Cognos user after importing that user to Cognos TM1, you must then delete the user in Cognos TM1 in order to update Cognos TM1 with the new user name. After deleting the user in Cognos TM1, the new name will appear the next time the user logs in.

User considerations when using Cognos authentication

IBM Cognos TM1 users should be aware of issues that may arise when accessing the Cognos TM1 server configured to use IBM Cognos authentication.

Authentication behavior

Rules govern authentication behavior when logging on to the IBM Cognos TM1 server that uses IBM Cognos authentication.

The rules are as follows:

- If common logon is enabled in IBM Cognos and you have previously logged in to an IBM Cognos application and maintain an active session, you are not prompted for credentials when logging on to the Cognos TM1 server.
- If common logon is enabled in IBM Cognos and you have not previously logged in to an IBM Cognos application, you are prompted for credentials when logging on to the Cognos TM1 server.
- If common logon is not enabled in IBM Cognos, you are prompted for credentials when logging on to the Cognos TM1 server, even if the server is configured to use IBM Cognos authentication.

Private Cognos Security sessions

When an IBM Cognos server is configured to use common logon, you will be challenged only once for credentials. Any subsequent connections to other IBM Cognos security-enabled applications (including Cognos TM1) which are configured to reference the same IBM Cognos server will automatically occur, provided your Cognos security passport is valid.

For example, if you have three available Cognos TM1 servers, all configured to use the same IBM Cognos server, once you connect to the first server as user X in namespace Y, all connections to the other Cognos TM1 servers will automatically occur using the passport of user X from namespace Y.

In some circumstances, you might want to log on to the Cognos TM1 server as a user other than the one identified by your Cognos security passport. To accommodate this, the **Logon As** option lets you override the automatic
authentication that usually occurs with a passport, while maintaining the validity of the passport for later use. When you log on to the Cognos TM1 server using the Logon As option, a private session is established. The credentials used to establish the private session are not stored in a passport and are not shared with any other application. Any existing passport remains valid and can be used to access other IBM Cognos security-enabled applications.

Procedure
1. From the Server Explorer, click Server, then Logon As.
2. In the Cognos Logon window, enter the User ID and Password you want to use to log on to the Cognos TM1 server.
3. Click OK.

Establishing a replication with Cognos security
When establishing a replication connection to the IBM Cognos TM1 server that uses IBM Cognos authentication, you must provide the IBM Cognos Namespace ID of the namespace.

Do not provide the descriptive name of the namespace.

Using SSL for data transmission security
You can configure IBM Cognos TM1 server to use SSL for secure data transmission.

Overview to using SSL for data transmission security
All IBM Cognos TM1 components communicate with the Cognos TM1 Admin Server using SSL.

The Admin Server supports older Cognos TM1 clients that cannot use SSL by listening on two ports; one secured, the other unsecured. Cognos TM1 clients that can use SSL connect to the Admin Server via the secured port, while older clients that are incapable of using SSL connect to the Admin Server via the unsecured port.

When the Cognos TM1 server registers with the Admin Server, the Cognos TM1 server specifies whether it is using SSL or not. When a Cognos TM1 client contacts the Admin Server, the list of available Cognos TM1 servers will vary according to which port the client uses to connect to the Admin Server. If the client uses the secured port, the Admin Server responds with a list of all Cognos TM1 servers available on the network. If the client uses the unsecured port, the Admin Server responds with a list of only those Cognos TM1 servers that do not use SSL.
Older TM1 client (Pre-9.1)  
Not configured to use SSL  
This client will contact the Admin Server on the 
unsecured port and receive a list of only the TM1 servers that are not configured to use SSL.  
These are the only servers with which the client will be able to establish insecure connections; any TM1 servers configured to use SSL will not be visible to this client.

TM1 Admin Server  
Configured to listen for client connections on both secured and unsecured ports

TM1 servers  
Not configured for SSL

TM1 (9.1 or later) client  
Configured to use SSL  
This client will contact the Admin Server on the secured port and receive a list of all TM1 servers available on the network.  
The client will establish secure connections with TM1 servers configured to use SSL, and will establish insecure connections with TM1 servers that are not configured to use SSL.

TM1 servers  
Configured for SSL

Figure 12: Using SSL for data transmission security

Generated certificates

When you install IBM Cognos TM1, all certificates and other files required to implement SSL are placed in the TM1_install_dir\bin\SSL directory.

The certificates contained in this directory are issued by the Applix, Inc. certificate authority, which was created using OpenSSL. The password used was “applix”.

When you install Cognos TM1, the Admin Server, Cognos TM1 server, and Cognos TM1 client are all configured to use SSL, relying on the certificates installed in the TM1_install_dir\bin\SSL directory. While the Cognos TM1 certificates allow an out-of-the-box SSL implementation, you should replace these certificates with your own certificates (as well as a certificate revocation list) if you want to maximize security. For Cognos TM1 Web, all root certificates must be installed in the certificate store on the machine that the servers are using to run Cognos TM1 Web.

The TM1_install_dir\bin\SSL directory contains the following certificates and files. Files with a .pem extension are Privacy Enhanced Mail format. Files with a .der extension are Distinguished Encoding Rules.

- Applixca.pem - the public root authority certificate
- Applixcacrl.pem - the certificate revocation list
- Applixca.der - the public root authority certificate in DER format used for Java certificate stores
- tm1admsvrcert.pem - the Admin Server certificate containing the public/private key pair
- tm1svrcert.pem - the Cognos TM1 server certificate containing the public/private key pair
- dh512.pem - the file that contains the pre-generated Diffie-Hellman 512 bit key
- dh1024.pem - the file that contains the pre-generated Diffie-Hellman 1024 bit key
- dh2048.pem - the file that contains the pre-generated Diffie-Hellman 2048 bit key
- tm1store - the Java certificate store containing the public root authority certificate
- tm1cipher.dat - the encrypted file containing the password used to access the server's private key
• tm1key.dat - the key used to encrypt and decrypt tm1cipher.dat

**Configuring the Cognos TM1 Admin Server to use SSL**

Use IBM Cognos Configuration to configure the IBM Cognos TM1 Admin Server to use SSL.

Open Cognos Configuration and edit the SSL-related parameters as described in the following table.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support non-SSL clients?</td>
<td>This parameter determines if the Admin Server supports non-SSL Cognos TM1 clients. Set this parameter to True to configure the Admin Server to support non-SSL clients and to listen for client connections on both secured (SSL) and unsecured ports. Set this parameter to False to configure the Admin Server to support only SSL client connections on a single secured port.</td>
</tr>
<tr>
<td>Support pre-TLS v1.2 clients?</td>
<td>As of TM1 10.2.2 Fix Pack 6 (10.2.2.6), all SSL-secured communication between clients and servers in TM1 uses Transport Layer Security (TLS) 1.2. This parameter determines whether TM1 clients and TM1 servers prior to 10.2.2 Fix Pack 6 can connect to the 10.2.2.6 or later Admin Server. Set this parameter to True to allow TM1 clients and TM1 servers prior to 10.2.2.6 to connect to the Admin Server. When such a connection is established, TLS 1.0 is used instead of TLS 1.2. Set this parameter to False to prevent TM1 clients and TM1 servers prior to 10.2.2.6 from connecting to the Admin Server.</td>
</tr>
<tr>
<td>TM1 Admin Server certificate authority file location</td>
<td>The full path and name of the Cognos TM1 Admin Server’s certificate authority file.</td>
</tr>
<tr>
<td>Certificate file location</td>
<td>The full path of the Cognos TM1 Admin Server's certificate file, which contains the public/private key pair.</td>
</tr>
<tr>
<td>Diffie-Hellman 512 bit key file location</td>
<td>The full path name of the file that contains a pre-generated Diffie-Hellman 512 bit key. The generation of Diffie-Hellman parameters can be computationally expensive. To minimize the consumption of resources and to reduce the amount of time required to load the Cognos TM1 server, the Diffie-Hellman 512 bit key should be pre-generated and stored in a file that is called when the Admin Server starts.</td>
</tr>
<tr>
<td>Diffie-Hellman 1024 bit key file location</td>
<td>The full path of the file that contains a pre-generated Diffie-Hellman 1024 bit key. The generation of Diffie-Hellman parameters can be computationally expensive. To minimize the consumption of resources and to reduce the amount of time required to load the Cognos TM1 server, the Diffie-Hellman 1024 bit key should be pre-generated and stored in a file that is called when the Admin Server starts.</td>
</tr>
<tr>
<td>TM1 Admin Server private key password file location</td>
<td>The full path of the file that contains the encrypted password for the Cognos TM1 Admin Server's private key.</td>
</tr>
<tr>
<td>TM1 Admin Server password key file location</td>
<td>The full path of the file that contains the key used to encrypt and decrypt the password for the private key.</td>
</tr>
</tbody>
</table>
### Export TM1 Admin Server certificate?
Specifies whether the Cognos TM1 Admin Server’s certificate should be exported from the Windows certificate store.
- If this parameter is set to True, the Admin Server’s certificate is exported from the Windows certificate store when the certificate is requested by the Admin Server.
- For details on using your own security certificates and exporting certificates from the Windows certificate store, see “Using independent certificates with SSL and Planning Analytics” on page 235.

### TM1 Admin Server certificate ID
Specifies the name of the principal to whom the Cognos TM1 Admin Server's certificate is issued to.

### Certificate revocation file location
The full path of the Cognos TM1 Admin Server's certificate revocation file.
- A certificate revocation file will only exist in the event that a certificate has been revoked.

### TM1 Admin Server export key ID
Specifies the identity key used to export the Admin Server’s certificate from the Microsoft Windows certificate store.
- This parameter is required only if you choose to use the certificate store.

### TM1 Admin Server Certificate Version
Specifies which version of the TM1 generated SSL certificates to use.
- By default, the 1024-bit encryption version of the TM1 generated certificates is used.
- Change this parameter only if you want to use the new 2048-bit encryption version of the default certificates. You can use the new version with old and new TM1 clients, but you must configure the clients to use the new certificate authority file.
  - **Note:** This parameter does not apply if you are using your own SSL certificates.

#### Valid values include:
- **1** - Enables certificate authority for 1024-bit encryption with sha-1 (default value)
- **2** - Enables certificate authority for 2048-bit encryption with sha-256

### Configuring the Cognos TM1 Server to use SSL
To configure an IBM Cognos TM1 server to use SSL, you must set several parameters in Tm1s.cfg, a Cognos TM1 server's configuration file.

The following table describes SSL-related parameters that can be set in the Tm1s.cfg configuration file. Note that this table describes only the Tm1s.cfg parameters that are related to SSL; all other Tm1s.cfg parameters are described in “Parameters in the tm1s.cfg File” on page 256.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UseSSL</td>
<td>Enables or disables SSL on the Cognos TM1 server.</td>
</tr>
<tr>
<td></td>
<td>This parameter is enabled by default.</td>
</tr>
<tr>
<td></td>
<td>Set UseSSL=F to disable SSL. With this setting, clients will be able to</td>
</tr>
<tr>
<td></td>
<td>connect to the server in insecure mode.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>AdminSvrSSLCertID</td>
<td>Specifies the name of the principal to whom the Cognos TM1 Admin Server's certificate is issued. The value of this parameter should be identical to the <strong>TM1 Admin Server Certificate ID</strong> parameter set in IBM Cognos Configuration. If AdminSvrSSLCertID is incorrectly configured, the server pull-down menu in Cognos TM1 Web displays as empty and an error is logged to the TM1web.log file.</td>
</tr>
<tr>
<td>AdminSvrSSLCertAuthority</td>
<td>The full path of the certificate authority file that issued the Cognos TM1 Admin Server's certificate.</td>
</tr>
<tr>
<td>AdminSvrSSLCertRevList</td>
<td>The full path of the certificate revocation file issued by the certificate authority that originally issued the Cognos TM1 Admin Server's certificate. A certificate revocation file will exist only in the event a certificate had been revoked.</td>
</tr>
<tr>
<td>ExportAdminSvrSSLCert</td>
<td>Specifies whether the Cognos TM1 Admin Server's certificate should be exported from the Microsoft Windows certificate store. If ExportAdminSvrSSLCert=T, the Admin Server's certificate is exported from the Microsoft Windows certificate store when the certificate is requested by the Cognos TM1 server. If ExportAdminSvrSSLCert=T, you must also set the following tm1s.cfg parameters:</td>
</tr>
<tr>
<td>AdminSvrSSLExportKeyID</td>
<td>Specifies the identity key used to export the Admin Server's certificate from the Microsoft Windows certificate store. This parameter is required only if you choose to use the certificate store by setting ExportAdminSvrSSLCert=T.</td>
</tr>
<tr>
<td>SSLCertificate</td>
<td>The full path of the certificate file that contains the public/private key pair.</td>
</tr>
<tr>
<td>SSLCertAuthority</td>
<td>The name of the Cognos TM1 server's certificate authority file. This file must reside on the computer where the Cognos TM1 server is installed.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SSLCertRevocationFile</td>
<td>The name of the Cognos TM1 server's certificate revocation file. A certificate revocation file will exist only in the event a certificate has been revoked. This file must reside on the computer where the Cognos TM1 server is installed.</td>
</tr>
<tr>
<td>SSLCertificateID</td>
<td>The name of the principal to whom the Cognos TM1 server's certificate is issued.</td>
</tr>
<tr>
<td>CertificateVersion</td>
<td>Specifies which version of the TM1 generated SSL certificates to use. Change this parameter only if you want to use the new 2048-bit encryption version of the default certificates. You can use the new version with old and new TM1 clients, but you must configure the clients to use the new certificate authority file. Valid values include 1 - Enables certificate authority for 1024-bit encryption with sha-1 (default value) 2 - Enables certificate authority for 2048-bit encryption with sha-256</td>
</tr>
<tr>
<td>ExportSvrSSLCert</td>
<td>Specifies whether the Cognos TM1 server's certificate should be exported from the Microsoft Windows certificate store. If ExportSvrSSLCert=T, the Cognos TM1 server's certificate is exported from the Windows certificate store when the certificate is requested by the Cognos TM1 server. If ExportSvrSSLCert=T, you must also set the following tm1s.cfg parameters: AdminSvrSSLCertID AdminSvrSSLExportKey SvrSSLExportKeyId SSLCertificateID SSLPwdKeyFile SSLPrivateKeyPwdFile SSLCertAuthority ClientExportSSLSvrCert For details on using your own security certificates and exporting certificates from the Microsoft Windows certificate store, see “Using independent certificates with SSL and Planning Analytics” on page 235.</td>
</tr>
<tr>
<td>SvrSSLExportKeyId</td>
<td>The identity key used to export the Cognos TM1 server's certificate from the Microsoft Windows certificate store. This parameter is required only if you choose to use the certificate store by setting ExportSvrSSLCert=T.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SSLPrivateKeyPwdFile</td>
<td>The full path of the .dat file that contains the encrypted password for the private key.</td>
</tr>
<tr>
<td>SSLpwdKeyFile</td>
<td>The full path of the .dat file that contains the key used to encrypt and decrypt the password for the private key.</td>
</tr>
<tr>
<td>ClientExportSSLSvrCert</td>
<td>Specifies whether the Cognos TM1 client should retrieve the certificate authority certificate, which was originally used to issue the Cognos TM1 server's certificate, from the Microsoft Windows certificate store. If ClientExportSSLSvrCert=T, the certificate authority certificate is exported from the certificate store on the client computer when requested by the Cognos TM1 client.</td>
</tr>
<tr>
<td>ClientExportSSLSvrKeyID</td>
<td>The identity key used by the TM1 client to export the certificate authority certificate, which was originally used to issue the Cognos TM1 server's certificate, from the Windows certificate store.</td>
</tr>
<tr>
<td>DHFile-512</td>
<td>The full path of the file that contains the pre-generated Diffie-Hellman 512 bit key.</td>
</tr>
<tr>
<td></td>
<td>The generation of Diffie-Hellman parameters can be computationally very expensive. To minimize this cost, the Diffie-Hellman 512 bit key can be pre-generated and stored in a file that is called when the Cognos TM1 server starts.</td>
</tr>
<tr>
<td>DHFile-1024</td>
<td>The full path name of the file that contains the pre-generated Diffie-Hellman 1024 bit key.</td>
</tr>
<tr>
<td></td>
<td>The generation of Diffie-Hellman parameters can be computationally very expensive. To minimize this cost, the Diffie-Hellman 1024 bit key can be pregenerated and stored in a file that is called when the Cognos TM1 server starts.</td>
</tr>
<tr>
<td>DHFile-2048</td>
<td>The full path name of the file that contains the pre-generated Diffie-Hellman 2048 bit key.</td>
</tr>
<tr>
<td></td>
<td>The generation of Diffie-Hellman parameters can be computationally very expensive. To minimize this cost, the Diffie-Hellman 2048 bit key can be pregenerated and stored in a file that is called when the Cognos TM1 server starts.</td>
</tr>
</tbody>
</table>

**Configuring Cognos TM1 clients to use SSL**

To configure IBM Cognos TM1 Architect or Perspectives clients to use SSL, you must set several options on the Cognos TM1 Options dialog box.

1. Open Cognos TM1 Architect or Cognos TM1 Perspectives, Server Explorer.
2. In Server Explorer, click **File > Options**.
3. Edit the SSL options in the Admin Server Secure Socket Layer (SSL) section.

The following table describes all SSL-related options that can be set in the TM1 Options dialog box and lists the corresponding Tm1p.ini parameters.
<table>
<thead>
<tr>
<th>Option Name</th>
<th>Corresponding Tm1p.ini Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate Authority</td>
<td>AdminSvrSSLCertAuthority</td>
<td>The full path of the certificate authority file that issued the Cognos TM1 Admin Server's certificate.</td>
</tr>
<tr>
<td>Certificate Revocation List</td>
<td>AdminSvrSSLCertRevList</td>
<td>The full path of the certificate revocation file issued by the certificate authority that originally issued the Cognos TM1 Admin Server's certificate. A certificate revocation file will only exist in the event a certificate had been revoked.</td>
</tr>
<tr>
<td>Certificate ID</td>
<td>AdminSvrSSLCertID</td>
<td><strong>Note:</strong> The name of the principal to whom the Cognos TM1 Admin Server's certificate is issued. The value of this parameter should be identical to the SSLCertificateID parameter for the IBM Cognos TM1 Admin Server as set in IBM Cognos Configuration.</td>
</tr>
<tr>
<td>Use Certificate Store</td>
<td>ExportAdminSvrSSLCert</td>
<td>Select this option if you want the certificate authority certificate which originally issued the Cognos TM1 Admin Server's certificate to be exported from the Microsoft Windows certificate store at runtime. Selecting this option in the Cognos TM1 Options dialog box is equivalent to setting ExportAdminSvrSSLCert=T in the Tm1p.ini file. When this option is selected, you must also set a value for Export Certificate ID in the Cognos TM1 Options dialog box.</td>
</tr>
<tr>
<td>Export Certificate ID</td>
<td>AdminSvrSSLSExportKeyID</td>
<td>The identity key used to export the certificate authority certificate, which originally issued the Cognos TM1 Admin Server's certificate, from the certificate store. This parameter is required only if you choose to use the certificate store by setting ExportAdminSvrSSLCert=T.</td>
</tr>
</tbody>
</table>

**Configuring Cognos TM1 Web to use SSL**

To enable SSL in IBM Cognos TM1 Web, you must add a certificate in the Java Runtime Environment (JRE) keystore.

**Before you begin**

By default, Cognos TM1 Web uses the standard, default SSL certificates that are included as part of your Cognos TM1 installation. To use your own custom SSL certificates, add your certificate in the Java Runtime Environment (JRE) keystore.

**Procedure**

1. Open IBM Cognos Configuration and enter the secure HTTPS URL for the following parameters:
   - **TM1 Application Server Gateway URI** - For example, http://system_name:9514/pmpsvc
   - **External server URI** - For example, http://system_name:9514
   Enter the system name and port numbers for your specific configuration.
2. For 32-bit installations:
a) Open a command prompt and change directory to the JRE location that was provided with the Cognos TM1 installation.

```
tm1_location\bin\jre\7.0\bin
```
For example:

```
C:\Program Files\IBM\cognos\tm1\bin\jre\7.0\bin>
```
b) Run the Java keytool command to import the certificate into the keystore.

**Note:** For formatting purposes the command is shown here with line breaks but you should enter the command all on one line.

```
keytool.exe -import -trustcacerts -file 
"c:\Program Files\ibm\cognos\tm1\bin\ssl\your_certificate.pem"
-alias your_certificate -keystore 
"c:\Program Files\ibm\cognos\tm1\bin\jre\7.0\lib\security\cacerts"
```
Replace `your_certificate.pem` and `your_certificate` with the file name and name of your own certificate.

c) Enter yes when prompted to trust or add the certificate.
The following message displays: **Certificate was added to keystore.**

3. For 64-bit installations:

**Attention:** On 64-bit computers, be sure to add the certificates to the bin64 folder.

a) Open a command prompt and change directory to the JRE location that was provided with the Cognos TM1 installation.

```
C:\Program Files\ibm\cognos\TM1_64\bin64\jre\7.0\bin
```
b) Run the Java keytool command to import the certificate into the keystore.

For 64-bit installations, target the 64-bit folder when dealing with the certificates. If you do not correctly target the 64-bit locations for certificates when running a 64-bit installation, you receive a warning message indicating that you cannot contact the servers.

**Note:** For formatting purposes this command is shown with line breaks but you should enter the command all on one line.

```
keytool.exe -import -trustcacerts -file 
"c:\Program Files\ibm\cognos\TM1_64\bin64\ssl\your_certificate.pem"
-alias your_certificate -keystore 
"c:\Program Files\ibm\cognos\TM1_64\bin64\jre\7.0\lib\security\cacerts"
```
Replace `your_certificate.pem` and `your_certificate` with the file name and name of your own certificate.

c) Enter yes when prompted to trust or add the certificate.
The following message displays: **Certificate was added to keystore.**

4. Use IBM Cognos Configuration to restart the TM1 Application Server and have the change take effect.

a) In Cognos Configuration, expand the Environment node, right-click **TM1 Application Server**, and select **Stop**.
b) Right-click **TM1 Application Server**, and select **Start**.

**Remember:** Re-add certificates any time you reinstall Cognos TM1.

**Results**
Log in to Cognos TM1 Web using the secure HTTPS URL to confirm that you can connect to Cognos TM1 using this configuration.

For this example, log in using https://system_name:9514/tm1web.
Configuring Cognos TM1 Applications to use SSL

To configure IBM Cognos TM1 Applications to use SSL, you configure SSL for the other Cognos TM1 components that interact with Cognos TM1 Applications, configure the web servers that support Cognos TM1 Applications, and edit the Cognos TM1 Applications configuration.

Before you begin
Install and configure Cognos TM1 Applications without SSL and ensure that you can run and log in to the program.

About this task
Some of the tasks to use a certificate from another certificate authority use a command-line tool named ThirdPartyCertificateTool. This tool is located in C:\Program Files\ibm\cognos\tm1_64\bin. For more information about this tool, see “ThirdPartyCertificateTool command-line reference” on page 241.

Procedure

1. Configure TM1 Admin Server to use SSL.
   See “Configuring the Cognos TM1 Admin Server to use SSL” on page 224.
2. Configure TM1 Server to use SSL.
   See “Configuring the Cognos TM1 Server to use SSL” on page 225.
3. Configure TM1 Web to use SSL.
   See “Configuring Cognos TM1 Web to use SSL” on page 229.
4. Copy your certificate files into the Cognos TM1 Applications SSL folder:
   Cognos TM1 install location\webapps\pmpsvc\WEB-INF\bin\ssl
5. If you are using your own certificates, import them as follows.
   a) On the computer running Cognos TM1 Admin Server, use IBM Cognos Configuration to update the SSL parameters for the Admin Server.
      See “Editing SSL parameters in Cognos Configuration to use independent certificates” on page 238.
   b) On the computer running Cognos TM1 Server, run the tm1crypt.exe tool
      See “Running the TM1Crypt utility” on page 235.
   c) For Cognos TM1 Applications, see “Importing third-party CA SSL certificates into TM1 Application Server” on page 232.
6. In the Cognos Configuration tool change the TM1 Application Server Gateway URI and External Server URI to use the https prefix.
7. Save the configuration and restart the TM1 Applications Server.
8. On the computer running the Cognos TM1 Application Server, edit the Cognos TM1 Applications configuration file, fpmsvc_config.xml.
   a) Open the fpmsvc_config.xml file:
      • If you deployed Cognos TM1 Applications with the provided Apache Tomcat, look for the file here:
         Cognos TM1 install location\webapps\pmpsvc\WEB-INF\configuration
      • If you deployed with a different web application server, look for the file here:
         program files for web application server\webapps\pmpsvc\WEB-INF\configuration
   b) Edit or add the following entry under the </tm1><servers> section:
      <certificate authority="authority_file_name" id="id_name" />
      where authority_file_name is the name of the certificate file and id_name is the certificate name. This file is expected to be found in the folder:
      Cognos TM1 install location\webapps\pmpsvc\WEB-INF\bin\ssl
      Remember: You must manually copy this file to this location.
c) To specify an SSL certificate revocation list, use the optional `revocationList` attribute. If specified, the file with the same name is expected to be in the \pmsvc\WEB-INF\bin\ssl folder.

d) To specify authority and certificate id for a Cognos TM1 Admin Server, add the same `<certificate authority />` section under the `admin_host` section. If a certificate is not specified, the default one is used.

9. Update the URL configuration for the Cognos TM1 Application Web client:
   a) Log in to Cognos TM1 Applications.
   b) Click the Administer IBM Cognos TM1 Applications icon on the toolbar of the Cognos TM1 Applications main page.
   c) Click the TM1 Application Web check box and then click Edit.
   d) Update the value in the URL field to the secure URL for your installation of Cognos TM1 Web. For example:

   ```
   https://web server name:9510/tm1web/Contributor.jsp
   ```
   e) Click OK.

10. Import TM1 Applications SSL certificate to the Java client keystore.
   a) Export the TM1 Applications root SSL certificate:

   ```
   cd <install>\tm1_64\bin
   ThirdPartyCertificateTool.bat -E -T -r c:\tmp\cacert.cer -k "<install>\tm1_64\configuration\signkeypair\jCAKeystore"
   -p NoPassWordSet
   ```
   
   b) Import the ssl certificate to the Java keystore.

   ```
   cd <install>\tm1_64\bin64\jre\7.0\bin
   keytool -import -file c:\tmp\cacert.cer -keystore "<install>\tm1_64\bin64\jre\7.0\lib\security\cacerts"
   -storepass changeit -alias TM1ApplicationsSSL
   ```

Importing third-party CA SSL certificates into TM1 Application Server

Use these general instructions as an example to import and use third-party certificate authority (CA) SSL certificates with the TM1 Application Server.

About this task

The exact steps depend on which third-party tools you use.

Some of the tasks to use a certificate from another certificate authority use a command-line tool named ThirdPartyCertificateTool. This tool is located in C:\Program Files\ibm\cognos\tm1_64\bin. For more information about this tool, see “ThirdPartyCertificateTool command-line reference” on page 241.

Procedure

1. Create a self-signed CA certificate.

   For example, the following sample uses OpenSSL to create a self-signed CA certificate named app_ca.pem.

   ```
   openssl req -new -x509 -extensions v3_ca -keyout app_ca/private/app_cakey.pem -out app_ca/app_ca.pem -days 3650 -config ./bi_ca_openssl.cnf
   ```

2. Create the certificate signing request for the signing key.

   For example, use the following line as a template.

   ```
   ThirdPartyCertificateTool.bat -java:local -c -s -d "CN=TM1_Signer,O=IBM_TM1,ST=MA,C=US" -r signRequest.csr -D "c:\Program Files\ibm\cognos\tm1_64\configuration\signkeypair" -p password ..\bin\jre\7.0\bin\java.exe com.cognos.accman.jcam.utilities.ThirdPartyCertificateTool -c -s -d "CN=TM1_Signer,O=IBM_TM1,ST=MA,C=US" -r signRequest.csr -D Program Files\ibm\cognos\tm1_64\configuration\signkeypair" -p password
   ```
3. Create the certificate signing request for the encryption key.

   `ThirdPartyCertificateTool.bat -java:l -c -e -d
   "CN=aplxprince.swg.usma.ibm.com,O=IBM_TM1,ST=MA,C=US" -r encryptRet.csr -D "c:\Program
   Files\ibm\cognos\tm1_64\configuration\encryptkeypair" -p password`

4. Copy the signRequest.csr and encryptRequest.csr files to a directory that is accessible by your certificate authority.

5. Input the signRequest.csr and encryptRequest.csr files into the certificate authority and generate the certificates.

   For example, the following sample uses OpenSSL for this step.

   `C:\openssl.exe ca -out signRequest.pem -config ./bi_ca_openssl.cnf -infiles signRequest.csr`
   `C:\openssl.exe ca -out encryptRequest.pem -config ./bi_ca_openssl.cnf -infiles encryptRequest.csr`

6. Rename signRequest.pem, encryptRequest.pem, and app_ca.pem.

   For this example, the files are renamed to signCertificate.cer, encryptRequest.cer, and ca.cer.

7. Input the three CA certificates into the IBM Cognos certificate store.

   `ThirdPartyCertificateTool.bat -java:local -i -s -r signCertificate.cer -D "c:\Program
   Files\ibm\cognos\tm1_64\configuration\signkeypair" -p password -t ca.cer`
   `ThirdPartyCertificateTool.bat -java:local -i -e -r signCertificate.cer -D "c:\Program
   Files\ibm\cognos\tm1_64\configuration\encryptkeypair" -p password -t ca.cer`
   `ThirdPartyCertificateTool.bat -java:local -i -T -r ca.cer -D "c:\Program Files\ibm
   \cognos\tm1_64\configuration\signkeypair" -p password`

8. Open Cognos Configuration and set the StandaloneCertificateAuthority advanced property to true.

   a) Select Local Configuration, click the click to edit button and then click Add.
   b) Type StandaloneCertificateAuthority in the Name box.
   c) Type True in the Value box.
   d) Click OK.

   **Attention:** If you do not set the StandaloneCertificateAuthority advanced property to true, when you try to save the configuration in Cognos Configuration, the following message appears:

   `[Cryptography] [ ERROR ] CAM-CRP-1132 An error occurred while attempting to request a
   certificate from the Certificate Authority service. The Certificate Authority service returned the following error: CAM-CRP-1039 Unable to generate a new certificate. An error occurred when the certificate authority Serial Number was updated. Reason: java.io.FileNotFoundException`

9. In Cognos Configuration, make sure the TM1 Application Server Gateway URI is set to localhost.

   a) Expand the Environment > TM1 Application Server node.
   b) Check the value of the TM1 Application Server Gateway URI property.

   `http://localhost:9510/pmpsvc`

10. In Cognos Configuration, enter the same password that you used in the other steps into the following locations:

    - Security > Cryptography > Cognos > Signing key settings > Signing key store password
    - Security > Cryptography > Cognos > Encryption key settings > Encryption key store password

11. Restart TM1 Application Server.

    a) In Cognos Configuration, expand the Environment > TM1 Application Server node.
    b) Right-click on TM1 Application Server and select Stop and then Start.

**Configuring the TM1 C API to Use SSL**

Several public routines are available as part of the TM1 C API. You can use these routines to configure a client to communicate with the Admin Server using SSL.
For further details, see "Configuring the TM1 C API to Use SSL" in IBM Cognos TM1 API.

**Configuring the Cognos TM1 Java API to use SSL**

The certificates used by a Java client to validate the server must reside in either the Java system cacerts truststore file or be specified on the application command line.

The Java system cacerts truststore resides in the Java \lib\security directory.

For example:

```
C:\Program Files\Java\JDK1.5.0_04\lib\security
```

The default password for cacerts is "changeit". Java provides an executable named keytool.exe for this very purpose. For example:

```
keytool -keystore ..\lib\security\cacerts -alias Company -import -file Companyca.der
```

Optionally, if access is restricted to the system cacerts truststore, a truststore can be created. For example:

```
keytool -keystore tm1store -alias Companyca -import -file C:\temp\certificate_name.cer
```

When starting the Java application this keystore must be specified. If a password is required it must be provided as well. For example:

```
java -Djavax.net.ssl.trustStore=bin\ssl\tm1store -Djavax.net.ssl.trustStorePassword=Company com.mycompany.MyApp
```

Further information is provided in the API specification for the Java 2 Platform Standard Edition. The minimum Java version supported is 1.4.2.

**Configuring the Cognos TM1 ETLDAP Utility to use SSL**

Before you can connect to the LDAP server using SSL, you must run the following command to add your certificate to the IBM Cognos TM1 store in the TM1_install_dir\axajre\bin directory:

Example:

```
C:\Program Files\Cognos\Tm1\axajre\bin >keytool -keystore "C:\Program Files\Cognos\Tm1\bin\ssl\tm1store" -alias ApplixLdapca -import -file c:\temp\certificate_name.cer
```

In the above command, substitute the name of your certificate file for certificate_name.cer.

When prompted for the keystore password, enter 'applix'.

You will receive confirmation that the certificate was added to the Cognos TM1 keystore.

When connecting to the LDAP server, you must select the SSL option.

If you do not select the SSL option, the LDAP server will not be able to authenticate your user information.

When running the ETLDAP utility from a command line, you must use the following two parameters to enable SSL.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| -Djavax.net.ssl.truststore                    | Use this parameter to specify the full path to the Java certificate store containing the public root authority certificate.  
For example, to use the Java certificate store installed with Cognos TM1, use the parameter -Djavax.net.ssl.truststore=C:\Program Files\Cognos\TM1\bin\ssl\tm1store |
| -Djavax.net.ssl.trustStorePassword            | Use this parameter to specify the password used to create the Java certificate store.  
For example, to specify the password used to create the Java certificate store installed with Cognos TM1, use the parameter -Djavax.net.ssl.trustStorePassword=applix |

**Using independent certificates with SSL and Planning Analytics**

Though a standard IBM Planning Analytics installation is configured to use SSL by relying on the certificates installed in the TM1_install_dir\bin\SSL directory, you should use your own certificates to maximize security.

The following sections describe how to use independent certificates to implement SSL.

**Adding your certificate to the Microsoft Windows certificate store**

You can add an independent certificate to the Microsoft Windows certificate store and configure IBM Cognos TM1 to use the certificate in the store.

**Procedure**

1. From the Windows Start menu, click **Start > Run** and enter `mmc` to open the Microsoft Management Console.
2. Click **File > Add/Remove Snap-in** from the Microsoft Management Console.
3. Click **Add**.
4. Select **Certificates** and click **Add**.
5. Select **My User Account** and click **Finish**. Click **OK**.
6. Right-click **Personal** under Certificates - Current User and select **All Tasks > Import**. Click **Next**.
7. Click **Browse** and select the .pfx file that contains your certificate information. Click **Next**.
8. Enter a password for the private key and select the **Mark this key as exportable** option. Click **Next**.
9. Configure the screen as required and click **Next**.
10. Click **Finish** on the final screen of the Certificate Import Wizard.

**Running the TM1Crypt utility**

The TM1Crypt utility (tm1crypt.exe) is a command prompt that encrypts the password that the IBM Cognos TM1 server needs to access the private key. The utility can be used to convert a model or a file.

The password is encrypted with Advanced Encryption Standard, 256 bit, Cipher Block Chaining (AES-256-CBC).

**Location**

The TM1Crypt utility, tm1crypt.exe, is installed in the directory:

`TM1_install_dir\bin`

**Syntax**

Run the TM1Crypt utility from a command prompt with the following syntax:

```
tm1crypt.exe [<cmd_parm> <connect_parm> <passwordParm>]
```

You can provide parameters with constant values in a configuration file when you run tm1crypt.
### Command parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>filespec</td>
<td>Filename of the file that contains default configuration parameters. Parameters specified in this file are used, unless overridden by parameters provided on the command prompt. If no path is specified, the TM1 server directory is assumed. If <code>-i</code> is not specified, then other parameters must be specified to provide the process name, TM1 server, and so on.</td>
</tr>
<tr>
<td>connect</td>
<td>string</td>
<td>This parameter can be used to specify a section in the configuration file that contains parameters used to make server connections, such as user, pwd, or CAMnamespace.</td>
</tr>
<tr>
<td>logpath</td>
<td>string</td>
<td>Enables logging and specifies location of log.</td>
</tr>
</tbody>
</table>
| action    | string  | 1 [default] - Generate encrypted password and key file  
          |         | 2 - Encrypt server model  
          |         | 3 - Decrypt server model  
          |         | 4 - Encrypt file using server key  
          |         | 5 - Decrypt file using server key  
          |         | 6 - Rotate server key |
| keyfile   | string  | Name of the file generated containing key. If no `keyfile` is specified the default is `tm1key.dat`. |
| outfile   | string  | Name of file generated encrypted password. If no `outfile` is specified the default is `tm1cipher.dat`. |
| filesrc   | string  | Source file to perform conversion. Source is replaced with converted data unless file destination is provided. |
| filedest  | string  | Source file to perform conversion. Source is replaced with converted data unless file destination is provided. |
| filetype  | string  | 1 [default] - TM1 object file  
          |         | 2 - Transaction log  
          |         | 3 - Audit log |
| minsbeforeshutdown | | Time before performing a shutdown when encrypting or decrypting a server model. |
| validate  | | Validate key file. |
| help      | | Display help documentation including parameters and descriptions. |
| ?         | | Display a synopsis of command line parameters. |

### Connect Parameters

Connect parameters are common across TM1 components and can be defined in their own section of a configuration file to reuse them.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-adminhost</td>
<td>string</td>
<td>TM1 admin host</td>
</tr>
<tr>
<td>Parameter</td>
<td>Value</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>-server</td>
<td>string</td>
<td>TM1 server name</td>
</tr>
<tr>
<td>-user</td>
<td>string</td>
<td>TM1 or Cognos Access Manager (CAM) username, depending on the type of authentication that is used by the TM1 server.</td>
</tr>
<tr>
<td>-securitymode</td>
<td></td>
<td>Security mode used to connect to the TM1 server. The mode must match the value in the TM1 server configuration file.</td>
</tr>
<tr>
<td>-retryattempts</td>
<td></td>
<td>Number of attempts to connect to the TM1 server.</td>
</tr>
<tr>
<td>-retryinterval</td>
<td></td>
<td>Time in seconds to retry connection to the TM1 server.</td>
</tr>
<tr>
<td>-keystorefile</td>
<td>filespec</td>
<td>The full path of the key database file that contains the trusted certificate authorities.</td>
</tr>
<tr>
<td>-keystashfile</td>
<td>filespec</td>
<td>The full path of the file that contains the password that is used to access the key database file.</td>
</tr>
<tr>
<td>-FIPSOperationMode</td>
<td>1/2/3</td>
<td>Indicates FIPS mode of operation.</td>
</tr>
<tr>
<td>CAMNamespace</td>
<td>id</td>
<td>The ID of the Cognos Access Manager (CAM) namespace. This parameter is the namespace ID, not the namespace name.</td>
</tr>
</tbody>
</table>

**Password Parameters**

Passwords are either prompted for on the command line or supplied by using an encrypted file provided by the passwordfile parameter.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pwd</td>
<td>string</td>
<td>Password for the username given in the -user parameter, in clear text. For greater security, the password can be specified in an encrypted file using the -passwordfile parameter. This parameter is ignored on the command line. You are prompted for the password.</td>
</tr>
<tr>
<td>passwordfile</td>
<td>filespec</td>
<td>Filename of the file containing the encrypted password for the user specified by -user. If no path is specified, the TM1 server directory will be assumed. When this option is used, you cannot use -pwd.</td>
</tr>
<tr>
<td>-passwordkeyfile</td>
<td>filespec</td>
<td>If the passwordfile parameter is given, a key file is also required to decrypt the password. The password file and key file can be created using the TM1Crypt tool.</td>
</tr>
</tbody>
</table>

**Example**

For example, the command
```

For example, the command
tm1crypt.exe -keyfile btkey.dat -outfile btprk.dat -validate
```

Generates two files:
- btkey.dat contains the key that is used to encrypt/decrypt the password for the private key.
- btprk.dat contains the encrypted password for the private key.
The generated files are written to the `TM1_install_dir\bin` directory.

**Note:** The use of the `pwd` parameter on the command line does not display an error but the `pwd` parameter is ignored. You are prompted for the password and must verify it.

**TM1Crypt configuration file**

```plaintext
[tm1crypt]
#connect=ConnectParams
#retryattempts=3
#retryinterval=3

### Actions ###
##1 – OPERATION_CRYPT_PWD //creating a key/pwd file to be used by another application like runti
##2 - OPERATION_ENCRYPT_MODEL
##3 - OPERATION_DECRYPT_MODEL
##4 - OPERATION_ENCRYPT_FILE
##5 - OPERATION_DECRYPT_FILE
##6 - OPERATION_ROTATE_KEY
###
#action=

### File Types
##1 - Object File //default
##2 - Transaction Log
##3 - Audit Log
###
#filetype=

### Valid path for logs files
#logpath=

### Path to file source and destination
#filesrc=
#filedest=
#adminhost=
#server=
#user=
#pwd=
#camnamespace=

[Connect - ConnectParams]
#adminhost=
#server=
#user=
#pwd=
#camnamespace=
#passwordfile=
#passwordkeyfile=
```

**Editing SSL parameters in Cognos Configuration to use independent certificates**

After adding your certificate to the Microsoft Windows Certificate Store, use IBM Cognos Configuration to update the SSL parameters for the Cognos TM1 Admin Server.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export TM1 Admin Server certificate?</td>
<td>This parameter must be set to True to enable the Admin Server to retrieve the certificate from the Certificate Store.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>TM1 Admin Server certificate authority file location</td>
<td>The full path and name of the certificate authority file that issued the TM1 Admin Server's certificate. You can determine this value by referring to the Microsoft Management Console and clicking Certificates &gt; Personal &gt; Certificates. The authority name displays in the Issued By column of the Properties pane.</td>
</tr>
<tr>
<td>TM1 Admin Server certificate ID</td>
<td>The name of the principal to whom the IBM Cognos TM1 Admin Server's certificate is issued. You can determine this value by referring to the Microsoft Management Console and clicking Certificates &gt; Personal &gt; Certificates. The principal name displays in the Issued To column of the Properties pane.</td>
</tr>
<tr>
<td>TM1 Admin Server private key password file location</td>
<td>The full path to the .dat file that contains the encrypted password for the private key. <strong>Note:</strong> The name of this file is specified by the -outfile parameter when you run the TM1Crypt utility. For example, if you run the TM1Crypt utility from the following command: <code>&lt;tm1crypt.exe -pwd abc123 -keyfile btkey.dat -outfile btprk.dat -validate&gt;</code>, the correct parameter value is: <code>C:\Program Files\Cognos\TM1\bin\btprk.dat</code>.</td>
</tr>
<tr>
<td>TM1 Admin Server password key file location</td>
<td>The full path to the .dat file that contains the key used to encrypt and decrypt the password for the private key. <strong>Note:</strong> The name of this file is specified by the -keyfile parameter when you run the TM1Crypt utility. For example, if you run the TM1Crypt utility from the following command: <code>&lt;tm1crypt.exe -pwd abc123 -keyfile btkey.dat -outfile btprk.dat -validate&gt;</code>, the correct parameter value is: <code>C:\Program Files\Cognos\TM1\bin\btkey.dat</code>.</td>
</tr>
<tr>
<td>TM1 Admin Server export key ID</td>
<td>Specifies the identity key used to export the Admin Server's certificate from the Windows certificate store. In most cases, the value for <strong>TM1 Admin Server export key ID</strong> will be identical to the value for <strong>TM1 Admin Server certificate ID</strong>.</td>
</tr>
</tbody>
</table>

**Editing SSL parameters in the Tm1s.cfg file to use independent certificates**

After adding your certificate to the Microsoft Windows Certificate Store, add the required SSL parameters to the Tm1s.cfg file.

<p>| Table 34: SSL Parameters for the Tm1s.cfg file |</p>
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdminSvrSSLCertID</td>
<td>Specifies the name of the principal to whom the IBM Cognos TM1 Admin Server's certificate is issued.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>AdminSvrSSLEntryptKeyID</td>
<td>Specifies the identity key used to export the Admin Server's certificate from the Microsoft Windows Certificate Store.</td>
</tr>
<tr>
<td>ClientExportSSLSvrCert</td>
<td>Specifies whether the Cognos TM1 client should retrieve the certificate authority certificate, which was originally used to issue the Cognos TM1 server's certificate, from the Microsoft Windows Certificate Store. If ClientExportSSLSvrCert=T, the certificate authority certificate is exported from the certificate store when requested by the TM1 client.</td>
</tr>
<tr>
<td>ClientExportSSLSvrKeyID</td>
<td>The identity key used by the Cognos TM1 client to export the certificate authority certificate, which was originally used to issue the Cognos TM1 server's certificate, from the Microsoft Windows Certificate Store.</td>
</tr>
<tr>
<td>ExportAdminSvrSSLCert</td>
<td>Specifies whether the Cognos TM1 Admin Server's certificate should be exported from the Microsoft Windows Certificate Store. If ExportAdminSvrSSLCert=T, the Admin Server's certificate is exported from the Microsoft Windows Certificate Store when the certificate is requested by the Cognos TM1 server.</td>
</tr>
<tr>
<td>ExportSvrSSLCert</td>
<td>This parameter must be set to T to enable the Cognos TM1 server to retrieve the certificate from the Microsoft Windows Certificate Store. ExportSvrSSLCert=T</td>
</tr>
<tr>
<td>SSLCertAuthority</td>
<td>The name of the authority that issued your certificate. You can determine this value by referring to the Microsoft Management Console and clicking Certificates &gt; Personal &gt; Certificates. The authority name is displayed in the Issued By column of the Properties pane.</td>
</tr>
<tr>
<td>SSLCertificateID</td>
<td>The name of the principal to whom the Cognos TM1 Server's certificate is issued. You can determine this value by referring to the Microsoft Management Console and clicking Certificates &gt; Personal &gt; Certificates. The principal name is displayed in the Issued To column of the Properties pane.</td>
</tr>
<tr>
<td>SSLPrivateKeyPwdFile</td>
<td>The full path to the .dat file that contains the encrypted password for the private key. <strong>Note:</strong> The name of this file is specified by the -outfile parameter when you run the TM1Crypt utility. For example, if you run the TM1Crypt utility from the following command: tm1crypt.exe -pwd abc123 -keyfile btkey.dat -outfile btpkr.dat -validate the correct parameter value is SSLPrivateKeyPwdFile=C:\Program Files \Cognos\TM1\bin\btpkr.dat</td>
</tr>
</tbody>
</table>
Table 34: SSL Parameters for the Tm1s.cfg file (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSLPwdKeyFile</td>
<td>The full path to the .dat file that contains the key used to encrypt and decrypt the password for the private key. Note: The name of this file is specified by the -keyfile parameter when you run the TM1Crypt utility. For example, if you run the TM1Crypt utility from the following command: tm1crypt.exe -pwd abc123 -keyfile btkey.dat -outfile btpkr.dat -validate the correct parameter value is SSLPwdKeyFile=C:\Program Files\Cognos\TM1\bin\btkey.dat</td>
</tr>
<tr>
<td>SvrSSLExportKeyID</td>
<td>Specifies the identity key used to export the Cognos TM1 server’s certificate from the Microsoft Windows certificate store. In most cases, the value for SvrSSLExportKeyID will be identical to the value for SSLCertificateID.</td>
</tr>
</tbody>
</table>

Using independent certificates on your file system
You can implement SSL using independent certificates stored on your file system.

Simply add your certificate, certificate authority, password files, etc. to the TM1_install_dir\bin\SSL directory and modify the appropriate IBM Cognos TM1 configuration parameters to point to your independent files.

ThirdPartyCertificateTool command-line reference
Some of the tasks to use a certificate from another certificate authority use a command-line tool named ThirdPartyCertificateTool.

This tool is located in the following Cognos TM1 installation \bin location.

For example: C:\Program Files\IBM\cognos\tm1_64\bin

On UNIX or Linux operating systems, use the following format:
ThirdPartyCertificateTool.sh parameters

On Microsoft Windows operating systems, use the following format:
ThirdPartyCertificateTool.bat parameters

The following tables lists the options for this command-line tool.

Table 35: Main operation mode

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-c</td>
<td>Create a new CSR</td>
</tr>
<tr>
<td>-i</td>
<td>Import a certificate</td>
</tr>
</tbody>
</table>

Table 36: Operation modifiers

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-s</td>
<td>Work with the signing identity</td>
</tr>
<tr>
<td>-e</td>
<td>Work with the encryption identity</td>
</tr>
<tr>
<td>-T</td>
<td>Work with the trust store (only with -i)</td>
</tr>
</tbody>
</table>
Table 37: Information flags

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-d</td>
<td>DN to use for certificate</td>
</tr>
<tr>
<td>-r</td>
<td>CSR or certificate file location (depends on mode)</td>
</tr>
<tr>
<td>-t</td>
<td>Certificate authority certificate file (only with -i)</td>
</tr>
<tr>
<td>-p</td>
<td>Key Store password</td>
</tr>
<tr>
<td>-a</td>
<td>Key pair algorithm: either RSA or DSA. RSA is the default value.</td>
</tr>
<tr>
<td>-D</td>
<td>Directory location</td>
</tr>
</tbody>
</table>

The sample values from the following table are used:

Table 38: Sample values

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signing certificate distinguished name (DN)</td>
<td>A unique value, formatted like the following:</td>
</tr>
<tr>
<td></td>
<td>CN=SignCert, O=MyCompany, C=CA</td>
</tr>
<tr>
<td>Encryption certificate DN</td>
<td>A unique value, formatted like the following:</td>
</tr>
<tr>
<td></td>
<td>CN=EncryptCert, O=MyCompany, C=CA</td>
</tr>
<tr>
<td>Key store password</td>
<td>password</td>
</tr>
</tbody>
</table>
Chapter 19. Maintenance of your Cognos TM1 installation

After successfully installing IBM Cognos TM1, you can perform maintenance tasks such as installing additional components, backing up and restoring your data and configuration files, and uninstalling the current version.

Installing additional components
You can return to the Cognos TM1 Installation Wizard to install additional components that are not installed.

Backing up data and configuration files
You should regularly back up your data and configuration files, especially before upgrading to a new version of Cognos TM1.

Uninstalling the current version
Depending on which Cognos TM1 components you installed, you might have to perform separate steps to remove them. For example, IBM Cognos Insight and IBM Cognos TM1 Performance Modeler are uninstalled differently than the other IBM Cognos TM1 components.

Backing up data and configuration files for Cognos TM1

This topic describes how to back up your data and configuration files for IBM Cognos TM1 version 10.2.x components.

About this task
Each Cognos TM1 component has its own set of related data and configuration files. Review and follow the steps below to backup the data and configuration information for the components you are using.

For example:
• For each IBM Cognos TM1 server you are running, backup your Cognos TM1 data directory and configuration files.
• If you are using Cognos TM1 Web, you should back up the related data and configuration files for that component.
• If you are using Cognos TM1 Applications, you should export your applications and backup any other related files.

Procedure
1. Export configuration settings from IBM Cognos Configuration:
   If you used the Cognos Configuration utility to run and manage your Cognos TM1 components, such as the Cognos TM1 Admin Server, Cognos TM1 servers, or the Cognos TM1 Application Server, you can save an XML file of your configuration information.
   a) Open Cognos Configuration.
   b) Click File > Export As.
   c) Select a location and enter a file name for the XML file.
   d) Click Save.
2. Back up Cognos TM1 Server databases:
   Save a copy of the contents of your IBM Cognos TM1 database data directories and subdirectories to a secure location. These directories contain both data and configuration files. For example, the Cognos TM1 sample database directories and subdirectories are located here:
   \samples\tm1
3. Back up additional Cognos TM1 configuration files:
   Save a copy of any Cognos TM1 configuration files you may want to retain, such as the Cognos TM1 Admin Server logging properties file, tm1admsrv-log.properties, located in the <TM1_Install>\bin\directory.
4. Back up Cognos TM1 Web:
   If you use Cognos TM1 Web, backup the tm1web_config.xml file and any custom Cognos TM1 Web server pages to a secure location. The default location for these files is:
   \webapps\tm1web\
5. Back up Cognos TM1 Architect and Cognos TM1 Perspectives:

If you are using Cognos TM1 Architect or Cognos TM1 Perspectives, save the Tm1p.ini client configuration file from:

- %ALLUSERSPROFILE%\Application Data\Applix\TM1\%
- %USERPROFILE%\Application Data\Applix\TM1\%

In most cases, the full paths to these files are:

- C:\Documents and Settings\All Users\Application Data\Applix\TM1\Tm1p.ini
- C:\Documents and Settings\<username>\Application Data\Applix\TM1\Tm1p.ini

6. Back up Cognos TM1 Applications:

If you use Cognos TM1 Applications, see the following steps to backup the related data and configuration files.

- “Backing up your Cognos TM1 Applications data” on page 246
- “Exporting applications from Cognos TM1 Applications” on page 246

---

**Modifying Cognos TM1 installed components**

You can modify your current installation by reinstalling components or adding components that are not already installed.

**About this task**

You can only install components using the install wizard, you cannot remove components using this method.

**Note:** Program maintenance does not include changing the location of the Cognos TM1 installation directory. To change the location of the installation directory, remove all Cognos TM1 files and reinstall Cognos TM1 in another location.

**Procedure**

1. To start the installation:
   - Go to the download location for the Cognos TM1 installation program.
   - Or, insert the IBM Cognos TM1 product disk.
     - If the installation wizard does not open automatically, go to the operating system directory to locate the isetup.exe file.

2. Depending on your operating system software, right-click or double-click the isetup.exe file:
   - On Microsoft Windows Vista, Windows 7, or Windows Server 2008 operating system software, right-click the isetup.exe command and click **Run as Administrator**.
   - For all other Windows operating system software, double-click isetup.exe.

3. Click **Next** to advance to the **Component Selection** screen.
   - If prompted, respond to the following questions:
     - Confirm that you want to install to the same location as a previous installation.
     - Confirm whether or not you want to create a backup of all files from the existing installation.

4. On the **Component Selection** screen, select the Cognos TM1 components you want to install and click **Next**.
   - The Component Selection screen shows the current state of your Cognos TM1 installation.
     - Items that are currently installed display with a red X icon next to the component name.
     - Items that are not currently installed display with a green check mark next to the name. These items are automatically selected for installation.

5. Click **Next** to start the modifications.

6. Click **Finish** when the modifications are completed.
Uninstalling IBM Planning Analytics

To remove and uninstall all components of IBM Planning Analytics, follow these steps.

**Note:** If you are uninstalling Cognos TM1 Applications, see the section “Uninstalling and undeploying Cognos TM1 Applications” on page 246 for additional required steps.

### Before you begin
Before you start to uninstall Planning Analytics, you must have completed the backup of all Planning Analytics data.

For details, see:

- “Backing up data and configuration files for Cognos TM1” on page 243.
- “Backing up your Cognos TM1 Applications data” on page 246.

### About this task
Depending on which components you installed, you might have to perform separate steps to remove them. For example, IBM Cognos Insight and IBM Cognos TM1 Performance Modeler are uninstalled differently than the other IBM Cognos TM1 components.

### Procedure

1. **Uninstall Cognos Insight:**
   a) From the Windows Control Panel, choose *Add or Remove Programs*.
   b) In the list of currently installed programs, select *IBM Cognos TM1 Insight*.
   c) Click *Remove* and follow the instructions to complete the process.
   d) Check program files directory to see if any files remain. If so delete them manually.

2. **Uninstall Cognos TM1 Performance Modeler:**
   a) From the Windows Control Panel, choose *Add or Remove Programs*.
   b) In the list of currently installed programs, select *IBM Cognos Performance Modeler*.
   c) Click *Remove* and follow the instructions to complete the process.
   d) Check program files directory to see if any files remain. If so delete them manually.

3. **Uninstall core TM1 components:**
   These steps uninstall all of the following components in a single procedure:
   - Cognos TM1 Admin Server
   - Cognos TM1 Server
   - Cognos Configuration
   - Cognos TM1 Web
   - Cognos TM1 Architect
   - Cognos TM1 Perspectives
   - Cognos TM1 Applications
   - Cognos TM1 Operations Console
   a) From the Microsoft Windows Start menu, click *Programs > IBM Planning Analytics > Uninstall IBM Planning Analytics > Uninstall IBM Planning Analytics*.
   b) Select the language for the uninstall wizard and click *Next*.
   c) On the *Select the packages you wish to uninstall* screen, click the check box for the *IBM Planning Analytics* option, then select *Next*.
      The uninstall program removes the components and may take some time. When completed, you will be prompted to restart your computer.
   d) Choose to restart now or later, then click *Finish*.
   e) Check the Cognos TM1 installation directory to see if any files or sub-directories remain. If so delete them manually.
      For example, check C:\Program Files\IBM\cognos\tm1.
Uninstalling and undeploying Cognos TM1 Applications

The IBM Cognos TM1 Applications needs several steps to do a complete backup and export of data if you want to keep your applications data.

The tasks described here enable you to:

- Backup your Cognos TM1 Applications data
- Export your Cognos TM1 Applications data
- Stop all related services
- Uninstall Cognos TM1 Applications
- Undeploy Cognos TM1 Application from Apache Tomcat if used.
- Undeploy Cognos TM1 Applications from WebSphere if used.

Backing up your Cognos TM1 Applications data

This topic describes how to manually backup your data and configuration files for Cognos TM1 Applications.

About this task

Manually backing up your application files allows you to preserve state data about the applications such as current node ownership and submitted status.

Note: If you only want to save a definition of your application structure without any state data, use the export feature. See “Exporting applications from Cognos TM1 Applications” on page 246.

Procedure

1. Back up your Cognos TM1 Server databases that are used by your applications.

   Save a copy of the contents of your IBM Cognos TM1 database data directories and subdirectories to a secure location. These directories contain both data and configuration files. For example, the Cognos TM1 sample database directories and subdirectories are located here:

   `<TM1_Install>\samples\tm1`

2. Save a backup copy of the Cognos TM1 Applications applications folder and the `pmpsvc_config.xml` and `fpmsvc_config.xml` configuration files.

   The typical locations for these items are:

   - `<TM1_Install>\webapps\pmpsvc\WEB-INF\applications`
   - `<TM1_Install>\webapps\pmpsvc\WEB-INF\configuration\pmpsvc_config.xml`
   - `<TM1_Install>\webapps\pmpsvc\WEB-INF\configuration\fpmsvc_config.xml`

   If you are using IBM Cognos Analytics security with Cognos TM1 Applications, these items are located in the following location:

   `<Your Program Files>\cognos\cx\webapps\pmpsvc`

   where `x` is the version of Cognos Analytics you are using.

Exporting applications from Cognos TM1 Applications

You can export the basic definition of an application from IBM Cognos TM1 Applications 10.x to save a backup copy or to move the application to another instance of Cognos TM1 Applications. Exporting allows you to save a template of an application without any of the current user activity or state data. Only the structure and security definition of the application is exported. After you export, you can then import and reuse the application at a later point for something like a new budget planning period.

About this task

An archive is created and contains the XML files that describe the structure and security of your application.
Important: The export process does not preserve state data about the application such as current node ownership and submitted status. If you use the export/import process, this information is not preserved.

If you want to preserve state data about your applications, manually backup the files as described in “Back up your Cognos TM1 Applications data” on page 246.

Procedure
1. Open the **TM1 Cognos Applications** portal.
2. Click the **Export Application** icon under the **Actions** column.
3. From the **File Download** dialog box, click **Save**.
4. Navigate to the directory to where you want to save the export file.
5. Click **Save**.

**Stopping related services in Cognos TM1**
This topic describes how to stop related services in version 10.2 of IBM Cognos TM1.

Procedure
1. Open Cognos Configuration.
2. Stop all of the following services:
   - TM1 Admin Server
   - all instances of the TM1 server service
   - TM1 Application Server
   Note: Stopping the TM1 Application Server also stops other TM1 components if they are installed on the same computer. This step stops all of the related web application components; Cognos TM1 Applications, Cognos TM1 Web, and Cognos TM1 Operations Console. This step also stops the support services that allow Cognos TM1 to communicate with IBM Planning Analytics for Microsoft Excel.
3. If you are using IBM Cognos Analytics security with Cognos TM1 Applications, stop the IBM Cognos Analytics service.
4. If you are running any Cognos TM1 services that were not initially configured and started through Cognos Configuration, stop those services in the Windows services console.

**Uninstalling Cognos TM1 Applications**
If you installed and deployed IBM Cognos TM1 Applications with the default WebSphere® Liberty server that was provided with the Cognos TM1 installation, use the following steps to uninstall Cognos TM1 Applications.

Before you begin
Ensure that you backed up your Cognos TM1 Applications data and stopped the related services in IBM Cognos Configuration.

About this task
These steps only apply if you are using IBM Cognos TM1 Applications with the default version of the WebSphere® Liberty web application server that was provided with the Cognos TM1 installation.

If you installed and deployed Cognos TM1 Applications to a web application server other than the default one provided, use those tools to undeploy. For details, see the following topics:
- “Undeploying Cognos TM1 Applications in Apache Tomcat” on page 248
- “Undeploying Cognos TM1 Applications in WebSphere ” on page 248

Attention: These steps will also remove the following Cognos TM1 components if they are installed on the same computer:
- Cognos TM1 Admin Server
- Cognos TM1 Server
• Cognos Configuration
• Cognos TM1 Web
• Cognos TM1 Architect
• Cognos TM1 Perspectives
• Cognos TM1 Operations Console

Procedure
1. From the Microsoft Windows Start menu, click **Programs > IBM Planning Analytics > Uninstall IBM Planning Analytics > Uninstall IBM Planning Analytics**.
2. Select the language for the uninstall wizard and click **Next**.
3. On the **Select the packages you wish to uninstall** screen, click the check box for the **IBM Planning Analytics** option, then select **Next**.
   - The uninstall program removes the components and may take some time. When completed, you will be prompted to restart your computer.
4. Choose to restart now or later, then click **Finish**.
5. Check the Cognos TM1 installation directory to see if any files or sub-directories remain. If so delete them manually.
   - For example, check `C:\Program Files\IBM\cognos\tm1\webapps\pmpsvc`.

Undeploying Cognos TM1 Applications in Apache Tomcat

Use these steps to undeploy IBM Cognos TM1 Applications if you used Apache Tomcat and did not use the WebSphere® Liberty server provided with the Cognos TM1 installation.

Procedure
1. Open the Tomcat Manager.
2. Click **Undeploy** for the `/pmpsvc` entry in the **Applications** list.
3. Click **OK** to confirm.
   - The application is undeployed and removed from the Tomcat Manager **Applications** list.
   - **Tip:** If the `/pmpsvc` entry is still shown in the **Applications** list after undeploying, stop and restart Tomcat and then click **Undeploy** for a second time.
4. Verify that the following Cognos TM1 Application Web application folders and files have been deleted. Stop Tomcat and delete these files if they still exist.

Folders
- `C:\Program Files\Apache Software Foundation\webapps\pmpsvc`
- `C:\Program Files\Apache Software Foundation\Tomcat 6.0\webapps\pmpsvc`
- `C:\Program Files\Apache Software Foundation\Tomcat 6.0\work\Catalina\localhost\pmpsvc`

Files
- `C:\Program Files\Apache Software Foundation\Tomcat 6.0\webapps\pmpsvc.war`
  - If you are using IBM Cognos Analytics security with Cognos TM1 Applications, these items are located in the following locations:
    - `C:\Program Files\cognos\cx\webapps\pmpsvc`
    - `C:\Program Files\cognos\cx\tomcat4.1.27\work\Standalone\localhost\pmpsvc`
      - where `x` is the version of Cognos Analytics you are using.

Undeploying Cognos TM1 Applications in WebSphere

Use these steps to undeploy IBM Cognos TM1 Applications if you used IBM WebSphere and did not use the default Apache Tomcat that was provided with the Cognos TM1 installation.
Procedure

1. Open the WebSphere Administrative Console.
2. In the **Console Navigation** pane, locate the **Applications** section and click **Web App WARs**.
   
The **Installed Web Applications** page opens.
3. Locate the entry for `/pmpsvc` in the **URL** column and click **Uninstall**.
4. Click **OK** to confirm the uninstall.

WebSphere displays the following message when complete:

Uninstalled application
default/pmpsvc

---

Restoring data and configuration files in IBM Planning Analytics version 2.0.0

After installing the newer version of IBM Planning Analytics, complete these steps to restore your previous Cognos TM1 configuration and data files.

**Before you begin**
Install the new version of the product.

**About this task**
These steps apply only to restoring data and configuration files for IBM Cognos TM1 version 10.x.x.

If you need to restore information from Cognos TM1 version 9.x into Planning Analytics version 2.0.0, see “Restoring data and configuration files from Cognos TM1 version 9.x into the current version” on page 42.

**Procedure**

1. **Restore Cognos TM1 Server data:**

   For each Cognos TM1 server that you want to restore, copy its data directory and subdirectories to the new location for data: `<TM1_Install>\samples\tm1`.

2. **Restore configuration information in IBM Cognos Configuration:**

   This includes configuration information for Cognos TM1 Admin Server, Cognos TM1 Application Server, and each Cognos TM1 server you want to run.

   a) Open IBM Cognos Configuration.
   b) In the Cognos Configuration **Explorer** pane, expand **Local Configuration > Environment**.
   c) Click **TM1 Admin Server** and update the parameters in the **Properties** pane.
   d) Click **TM1 Application Server** and update the parameters in the **Properties** pane.
   e) Click **Data Access > TM1 Server** and add an entry for each CognosTM1 server that you want to use.

      For details, see “Adding an existing Cognos TM1 server in Cognos Configuration” on page 70.
   f) Click **File > Save**.

3. **Restore Cognos TM1 Architect and Cognos TM1 Perspectives configuration files:**

   If you want to restore any settings from your previous installation of Cognos TM1 Architect or Cognos TM1 Perspectives, copy the values from your old `Tm1p.ini` file into the new `Tm1p.ini` file.

   **Attention:** If you leave your old `Tm1p.ini` files in place, you might need to update the directory path in the file for the `AdminSvrSSLCertAuthority` parameter. For example, if you are using the default Cognos TM1 SSL certificate, manually change the value for this parameter to the new install path `C:\Program Files\IBM\cognos\tm1\bin\ssl\applixca.pem`.

   a) Update the new system default `Tm1p.ini` file located here:

   `%ALLUSERSPROFILE%\Application Data\Applix\TM1\Tm1p.ini`
For example: C:\Documents and Settings\All Users\Application Data\Applix\TM1\Tm1p.ini

b) Update the new user-specific Tm1p.ini file located here:
   %APPDATA%\Applix\TM1\Tm1p.ini

   For example: C:\Documents and Settings\user name\Application Data\Applix\TM1\Tm1p.ini

4. Restore your Cognos TM1 Web files:

   **Note:** As of IBM Cognos TM1 version 10.2.0, the default installation directory for Cognos TM1 Web is <TM1_Install>\webapps\tm1web\.

   - Restoring files from Cognos TM1 Web version 10.2.0 or newer:

     Open your old tm1web_config.xml file and selectively merge the lines and parameters that you want to use into the new tm1web_config.xml file located in <TM1_Install>\webapps\tm1web\web-inf\configuration.

     - Restoring files from a pre-10.2.0 version of Cognos TM1 Web:

       **Note:** Cognos TM1 Web version 10.2.0 uses a new configuration file named tm1web_config.xml. This file replaces the web.config file from previous Cognos TM1 Web versions. For more information, see “Modifying Cognos TM1 Web Configuration Parameters” on page 88.

     Open your old Web.config file and selectively merge the lines and parameters that you want to use into the new tm1web_config.xml file located in <TM1_install>\webapps\tm1web\web-inf\configuration.

5. Restore your application and configuration files in Cognos TM1 Applications:

   For details, see:

   - “Restoring application and configuration files in Cognos TM1 Applications” on page 250
   - “Importing an application definition in Cognos TM1 Applications” on page 251

### Restoring application and configuration files in Cognos TM1 Applications

You can manually restore backup copies of your application and configuration files into an existing version of IBM Cognos TM1 Applications.

**Before you begin**

The Cognos TM1 server that your application depends on must be restored and running before you restore the application files for Cognos TM1 Applications.

**Procedure**

1. Restore your applications for Cognos TM1 Applications:

   Copy your application files here:
   <TM1_Install>\webapps\pmpsvc\WEB-INF\applications

2. Restore your configuration files for Cognos TM1 Applications:

   Copy your backup copies of the pmpsvc_config.xml and fpmsvc_config.xml configuration files to here:

   - <TM1_Install>\webapps\pmpsvc\WEB-INF\configuration\pmpsvc_config.xml
   - <TM1_Install>\webapps\pmpsvc\WEB-INF\configuration\fpmsvc_config.xml

3. In Cognos Configuration:

   a) Start the TM1 Application server.
   b) Start the TM1 servers that are related to your application.

4. Log in to the Cognos TM1 Applications portal and add the related TM1 server to the configuration page if it is not already listed.

   a) Click the **Administer IBM Cognos TM1 Applications** icon on the toolbar of the Cognos TM1 Applications main page.
   b) Under the **Server Names** section, click **Add** and enter the information for the related TM1 server.
c) Click **OK**.

The applications in the `webapps/pmpssvc/WEB-INF/application` folder will be upgraded and added to Cognos TM1 Applications.

**Note:** The upgrade process may take some time depending on the amount of rights that need to be applied in the application. For more information, see “Saving security rights when importing or restoring a Cognos TM1 Application” on page 44.

---

**Importing an application definition in Cognos TM1 Applications**

You can import an application definition that was exported from IBM Cognos TM1 Applications back into IBM Cognos TM1 Applications.

**Procedure**

1. Open the **Cognos TM1 Applications** portal.
2. Click the **Import Application** button.
3. Select the Cognos TM1 server onto which you want to import the application.
4. Next to the **Application file** field, click **Browse**.
5. Navigate to the application (.zip) file, then click **Open**.
6. Select the **Import application security** option if you want to import security settings with the application.

   **Note:** If you import security settings, the rights-saving operation may take longer to process depending on the amount of rights that need to be applied in the application. For more information, see “Saving security rights when importing or restoring a Cognos TM1 Application” on page 44.

7. Select the **Import application properties** option if you want to import property settings with the application.
8. Click **Import**.
Chapter 20. Accessibility features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products.

For more information about the commitment that IBM has to accessibility, see the IBM Accessibility Center at http://www.ibm.com/able.

Keyboard shortcuts for the installation wizard

Keyboard shortcuts, or shortcut keys, provide you with an easier and often faster method of navigating and using software.

The installation wizard uses standard Microsoft Windows operating system navigation keys in addition to application-specific keys.

Note: The following keyboard shortcuts are based on US standard keyboards.

The following table lists the keyboard shortcuts that you can use to perform some of the main tasks in the installation wizard on the Windows operating system.

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to the next field on a page</td>
<td>Tab</td>
</tr>
<tr>
<td>Return to the previous field on a page</td>
<td>Shift+Tab</td>
</tr>
<tr>
<td>Close the installation wizard</td>
<td>Alt+F4</td>
</tr>
<tr>
<td>Move to the next configuration step</td>
<td>Alt+N</td>
</tr>
<tr>
<td>Return to the previous configuration step</td>
<td>Alt+B</td>
</tr>
<tr>
<td>Move to the next selection in a list</td>
<td>Down arrow</td>
</tr>
<tr>
<td>Move to the previous selection in a list</td>
<td>Up arrow</td>
</tr>
</tbody>
</table>

The following table lists the keyboard shortcuts you can use to perform some of the main tasks in the installation wizard on the UNIX or Linux operating system.

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to the next field on a page</td>
<td>Tab</td>
</tr>
<tr>
<td>Return to the previous field on a page</td>
<td>Shift+Tab</td>
</tr>
<tr>
<td>Close the installation wizard</td>
<td>Alt+F4</td>
</tr>
<tr>
<td>Move to the next selection in a list</td>
<td>Down arrow</td>
</tr>
<tr>
<td>Move to the previous selection in a list</td>
<td>Up arrow</td>
</tr>
</tbody>
</table>

The following table lists the keyboard shortcuts you can use to perform some of the main tasks in the License Agreement page of the installation wizard.

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept the license agreement</td>
<td>Alt+A</td>
</tr>
<tr>
<td>Decline the license agreement</td>
<td>Alt+D</td>
</tr>
<tr>
<td>Quit the installation wizard</td>
<td>Alt+x</td>
</tr>
</tbody>
</table>
Keyboard shortcuts for Cognos Configuration

Keyboard shortcuts, or shortcut keys, provide you with an easier and often faster method of navigating and using software.

The following keyboard shortcuts are based on US standard keyboards.

The following table lists the keyboard shortcuts that you can use to perform some of the main tasks in IBM Cognos Configuration on the Windows operating system.

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save the current configuration</td>
<td>Ctrl+S</td>
</tr>
<tr>
<td>Close Cognos Configuration</td>
<td>Alt+F4</td>
</tr>
<tr>
<td>Rename the selected item</td>
<td>F2</td>
</tr>
<tr>
<td>Display the File menu</td>
<td>Alt+F</td>
</tr>
<tr>
<td>Display the Edit menu</td>
<td>Alt+E</td>
</tr>
<tr>
<td>Display the View menu</td>
<td>Alt+V</td>
</tr>
<tr>
<td>Display the Actions menu</td>
<td>Alt+A</td>
</tr>
<tr>
<td>Display the Help menu</td>
<td>Alt+H</td>
</tr>
</tbody>
</table>

The following table lists the keyboard shortcuts that you can use to perform some of the main tasks in Cognos Configuration on the UNIX or Linux operating system.

<table>
<thead>
<tr>
<th>Action</th>
<th>Shortcut key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save the current configuration</td>
<td>Tab</td>
</tr>
<tr>
<td>Close Cognos Configuration</td>
<td>Shift+Tab</td>
</tr>
<tr>
<td>Rename the selected item</td>
<td>Alt+F4</td>
</tr>
</tbody>
</table>
Appendix A. The tm1s.cfg Server Configuration File

The tm1s.cfg file is an ASCII file that specifies environment information for an IBM Cognos TM1 server. A default tm1s.cfg file is created in the Cognos TM1 server data directory when you install a copy of the Cognos TM1 server. Most of the available parameters are documented in the configuration file. If a parameter is not installed by default, the parameter is commented out in the configuration file. You can edit the tm1s.cfg file to reflect the environment of the associated remote server by un-commenting the parameter you wish to use and setting the correct value.

For an alphabetical listing of all the parameters in the server configuration file, see “Parameters in the tm1s.cfg File” on page 256.

Location of the tm1s.cfg File

The location of the tm1s.cfg file depends on the type of server you are using.

• If you are using the IBM Cognos Configuration tool to start and stop your IBM Cognos TM1 servers, you can view the configuration path for a Cognos TM1 server by clicking the server name in the Explorer tree of Cognos Configuration.
• If you are running the Cognos TM1 remote server as a Microsoft Windows service (Tm1sd.exe), and you used the Cognos TM1 installation program to install the server, the system uses the tm1s.cfg file that is located in the server data directory you specified during installation.
• If you are running the Cognos TM1 remote server as a Windows application (Tm1s.exe), you specify the location of the tm1s.cfg file by using the -z parameter in the command line when you start the server, either from a shortcut or from a command prompt.

For example, this command specifies that Cognos TM1 uses the tm1s.cfg file located in the c:\salesdata directory:

```
c:\Program Files\Cognos\TM1\bin\tm1s.exe
-z c:\salesdata
```

If the -z parameter points to a directory containing spaces, you must enclose the directory in double quotation marks. For example, `-z "c:\sales data"`.

• If you are running a Cognos TM1 server on UNIX, and you used the Cognos TM1 installation program to install the server, the system uses the tm1s.cfg file that is located in the server data directory you specified during installation.

Sample tm1s.cfg File

This is a sample tm1s.cfg file.

Your tm1s.cfg file might also include comments that describe the parameters.

```
#Security mode
#(there are typically some information comments here.)
[TM1S]
ServerLogging=F
SecurityPackageName=Kerberos
IntegratedSecurityMode=1
UseSSL=T
ServerName=Planning Sample
DataBaseDirectory=C:\Program Files\Cognos\TM1\Custom\TM1Data\PlanSamp
AdminHost=xxxxxxxx
PortNumber=12345
ClientMessagePortNumber=  5433
Language=ENG
Savetime=
Downtime=
```

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Parameters in the tm1s.cfg File

The parameters in the tm1s.cfg file are described here.

Dynamic parameter

Dynamic parameter values can be edited while the IBM Cognos TM1 server is running.

The Cognos TM1 server continuously polls the tm1s.cfg file at 60 second intervals to determine if any dynamic parameter values have changed. If the server detects a parameter value change, the new value is applied immediately. Dynamic parameters are identified with a statement describing them as "dynamic" in this list.

Static parameter

Static parameter values are read from the tm1s.cfg file only when the IBM Cognos TM1 server starts. If you want to change a static parameter value, you must shut down the Cognos TM1 server, edit the value in the tm1s.cfg file, and then restart the server.

Most parameters in the tm1s.cfg file are static.

Spaces in values

If a parameter value contains spaces, enclose the parameter values within double quotes.

AdminHost

Specifies the computer name or IP address of the Admin Host on which an Admin Server is running.

Parameter type: required, static

To specify multiple Admin Hosts, separate each host name with a semicolon when running on Microsoft Windows or with a colon when running on a UNIX. For example:

- Use the format `AdminHost=hostname1;hostname2` on a Windows Cognos TM1 server.
- Use the format `AdminHost=hostname1:hostname2` on a UNIX Cognos TM1 server.

Some other examples include:

- `AdminHost=boston;newyork`
- `AdminHost=192.168.1.17;192.168.1.22`
- `AdminHost=boston;192.168.1.17;192.168.1.22;myserver;192.168.1.40`

Note: The string specifying the admin host or hosts is limited to 1020 characters or bytes.

AllowReadOnlyChore Reschedule

Provides users with READ access to a chore, and the ability to activate, deactivate, and reschedule chores.

Parameter type: optional, static
When the line AllowReadOnlyChoreReschedule=T is added to the Tm1s.cfg file for a server, users with READ access to a chore can right-click a chore in Server Explorer, and toggle the Activate Schedule option or choose the Edit Chore option. The Edit Chore option is available only when a chore is not activated.

When a user with READ access to a chore selects the Edit Chore option, only the scheduling screen of the Chore Setup Wizard opens.

The scheduling screen lets the user set scheduling parameters for the chore, but does not allow the user to edit the list of processes that compose the chore.

AllowSeparateNandCRules

When enabled, this parameter lets you specify rule expressions for N: and C: levels on separate lines using identical AREA definitions.

Parameter type: optional, static

For example,

\[
\begin{align*}
\text{['Budget','Argentina']}&=\text{N:Expression;} \\
\text{['Budget','Argentina']}&=\text{C:Expression;}
\end{align*}
\]

are both valid rules statements when you include the AllowSeparateNandCRules parameter in the Tm1s.cfg file and set to T.

This parameter also effects how numeric and string rules are applied to cells. Without this parameter, the first rule statement that is encountered for a given AREA definition is applied to the cells within the scope of that definition. If any cell within the AREA definition is numeric and the rule is a string rule, then the cell is considered not rule-derived because there was a match that did not apply to the cell.

For example, consider the statements:

\[
\begin{align*}
\text{['1 Quarter']}&=\text{s:'str_value'; Not following.} \\
\text{['1 Quarter']}&=\text{n:77;}
\end{align*}
\]

If the AllowSeparateNandCRules parameter is not set (or is set to F), then the first rule statement will match any cell that uses '1 Quarter' as one of its elements. If the cell is a string cell, the value of the cell will be set to 'str_value'. If the cell is a numeric cell, the cell will not be considered rule derived, since a match was found (the first rule) but the rule itself did not apply.

If the AllowSeparateNandCRules parameter is set to T, then string cells which use '1 Quarter' will be set to 'str_value' and numeric cells which use '1 Quarter' will be set to 77.

To set the parameter to T, add the following line to Tm1s.cfg:

\[
\text{AllowSeparateNandCRules=T}
\]

AllRuleCalcStargateOptimization

The AllRuleCalcStargateOptimization parameter can improve performance in calculating views that contain only rule-calculated values.

Parameter type: optional, static

Typically, Cognos TM1 performs calculations for standard consolidations and then calculates values for rule-based consolidations, which may end up overriding values in the standard consolidations. The AllRuleCalcStargateOptimization parameter provides optimization that first checks if every value in the view is rule-calculated and then proceeds as follows:

- If every value in the view is rule-calculated, then Cognos TM1 skips the unnecessary calculations for standard consolidations and just performs the rule-calculated consolidations.
• If the view contains even a single value which is not rule-calculated, then this optimization parameter will have no effect.

When this parameter is set to True, some additional processing will take place for every view that is requested to first check if the view contains only rule-calculated values. For most views, this additional processing is minimal since the optimization is stopped after the first value in the view is found to be not rule-calculated.

To enable this parameter, set the parameter’s value to T in the Cognos TM1 server configuration file, Tm1s.cfg, as follows:

```
AllRuleCalcStargateOptimization=T
```

The default setting is disabled (F).

**ApplyMaximumViewSizeToEntireTransaction**

Applies MaximumViewSize to the entire transaction instead of to individual calculations.

Parameter type: optional, dynamic

By default MaximumViewSize checks individual view processing. For example, if 10 views are processed in a single transaction, the threshold is crossed only if the processing of any single view crosses the threshold. See “MaximumViewSize” on page 282.

With this parameter set to True, the cumulative memory usage of all views processed in a single transaction is compared against the threshold value. This allows the memory size threshold to catch more transactions that consume large amounts of memory.

**Note:** TI process execution counts as a single transaction, including all child TI processes.

```
ApplyMaximumViewSizeToEntireTransaction=T
```

Default value is F.

**AuditLogMaxFileSize**

Indicates the maximum file size that an audit log file can grow to before it is closed and a new file is created.

Parameter type: optional, dynamic

This value must include units of KB (kilobytes), MB (megabytes), or GB (gigabytes). For example, to limit the log file size to 100 MB, enter the following:

```
AuditLogMaxFileSize=100 MB
```

The range of values include:

• Default value: 100 MB
• Minimum value: 1 KB
• Maximum value: 2 GB

**AuditLogMaxQueryMemory**

Indicates the maximum amount of memory that IBM Cognos TM1 can use when running an audit log query and retrieving the set of results.

Parameter type: optional, dynamic

This value must include units of KB (kilobytes), MB (megabytes), or GB (gigabytes). For example:

```
AuditLogMaxQueryMemory=100 MB
```

The range of values include:

• Default value: 100 MB
• Minimum value: 1 KB
• Maximum value: 2 GB
**AuditLogOn**

Turns audit logging on (T) or off (F).

Parameter type: optional, dynamic

For example:

- To enable audit logging, set AuditLogOn=T
- To disable audit logging, set AuditLogOn=F

The default setting is F.

**AuditLogUpdateInterval**

Indicates the maximum amount of time, in minutes, that IBM Cognos TM1 waits before moving the events from the temporary audit file into the final audit log.

Parameter type: optional, dynamic

For example:

AuditLogUpdateInterval=60

The default value is 60 (sixty minutes).

The minimum value is 1 (one minute).

Note: You can manually update the audit log with the latest events anytime you want by using the Process Audit Log Events command in Server Explorer. For details, see "Updating the Audit Log with the Latest Events" in *IBM Cognos TM1 Operations*.

**AutomaticallyAddCubeDependencies**

Determines if cube dependencies are set automatically or if you must manually identify the cube dependencies for each cube.

Parameter type: optional, static

The IBM Cognos TM1 server establishes dependencies so it can properly invalidate cube calculation caches when data in cubes is changed. For more details, see "Understanding Cube Dependency" in *TM1 Operations*.

When set to true (the default), rule-based inter-cube DB(...) dependencies are detected and set automatically at server startup time. Further, after a rule edit, save, or recompile, the dependencies expressed in that rule, whether from DB(), ATTRS(), or ATTRN() functions, are automatically re-established.

When set to false, rule based inter-cube DB(...) dependencies are not detected and are set at server startup time. Dependencies are established when a query is run. This can cause a query to block others because of a new dependency.

AutomaticallyAddCubeDependencies=F

Default value: T

**CacheFriendlyMalloc**

Allows for memory alignment that is specific to the IBM Power Platform.

Parameter type: optional, static

Testing has shown that enabling this parameter provides the most benefit for high user count usage scenarios. Single or low user count usage scenarios may see little to no benefit. By default, CacheFriendlyMalloc=F.

To enable the option, add the following line to your tm1s.cfg file:

CacheFriendlyMalloc=T
**CalculationThresholdForStorage**
Defines a minimum number of rule calculations required for a single cell or Stargate view, beyond which the IBM Cognos TM1 server stores the calculations for use during the current server session.

Parameter type: optional, dynamic

For example, when a user requests rule-derived values from the Cognos TM1 server, either from a single cell or a Stargate view, the server usually has to perform multiple rule calculations to arrive at the requested rule-derived values.

CalculationThresholdForStorage has a direct effect on memory consumption and performance. A high parameter value results in decreased memory consumption and slower performance. A low parameter value results in increased memory consumption and faster performance.

If you do not include CalculationThresholdForStorage in Tm1s.cfg, the default calculation threshold is 50.

**CAMPortalVariableFile**
The path to the variables_TM1.xml file in your IBM Cognos installation.

Parameter type: Required for IBM Cognos interoperability, static.

The CAMPortalVariableField parameter is required only when using IBM Cognos Analytics with Cognos TM1 Web and the Cognos TM1 Server.

Set this parameter with a relative path as follows:

CAMPortalVariableFile=portal\variables_TM1.xml

**Note:** The exact file location on the IBM Cognos Analytics server is: Cognos_location\templates\ps\portal\variables_TM1.xml.

**CAMUseSSL**
Specifies that all communications between TM1 and the IBM Cognos Analytics server must use SSL.

Parameter type: optional, static

Default value: False

**CheckFeedersMaximumCells**
Limits the number of cells checked by the Check Feeders option in the Cube Viewer.

The CheckFeedersMaximumCells is an optional parameter that you can add to Tm1s.cfg. If you do not include this parameter in Tm1s.cfg, Check Feeders checks 3,000,000 cells, by default.

Parameter type: optional, dynamic

When Cognos TM1 checks feeders from a highly consolidated cell, it must check all intersections that apply to the cell. In large applications, the Cognos TM1 server will be unavailable for a significant amount of time while Cognos TM1 is checking all intersections.

To limit the number of cells checked when using Check Feeders (which in turn limits the amount of time the Cognos TM1 server is unavailable), add CheckFeedersMaximumCells to Tm1s.cfg and set the parameter to the number of cells you want to check.

For example, to limit Check Feeders to 1,000,000 cells, enter the following line:

CheckFeedersMaximumCells=1,000,000

**ClientCAMURI**
The URI for the IBM Cognos Server IBM Cognos Connection used to authenticate Cognos TM1 clients.

Parameter type: optional, dynamic

The URI is specified in the form http[s]://<host>/<cognos_location>/cgi-bin/cognos.cgi.

For example, http://10.121.25.121/ibmcognos/cgi-bin/cognos.cgi
ClientExportSSLSvrCert
Specifies whether an IBM Cognos TM1 client should retrieve the certificate authority certificate, which was originally used to issue the TM1 server’s certificate, from the Microsoft Windows certificate store.

Parameter type: optional (required for SSL), static

If ClientExportSSLSvrCert=T, the certificate authority certificate is exported from the certificate store on the client computer when requested by the TM1 client.

Default value: F

ClientExportSSLSvrKeyID
Specifies the identity key used by an IBM Cognos TM1 client to export the certificate authority certificate, which was originally used to issue the TM1 server’s certificate, from the Microsoft Windows certificate store.

Parameter type: optional (required for SSL), static

ClientPingCAMPassport
Indicates the interval, in seconds, that a client should ping the Cognos Authentication Management server to keep their passport alive.

Parameter type: optional, dynamic

If an error occurs or the passport expires the user will be disconnected from the Cognos TM1 server.

Default value: 900

ClientMessagePortNumber
Identifies a secondary port used to accept client messages concerning the progress and ultimate cancellation of a lengthy operation without tying up thread reserves.

Parameter type: optional, static for changes, dynamically set

If no port number is specified in the configuration file, the port number is dynamically chosen and set at server startup. However, it cannot be changed while the server is running.

This additional port ensures that other server requests can continue to process while waiting for a cancellation from the user.

By default, this port number is automatically and dynamically assigned when the Cognos TM1 server starts. You do not have to set ClientMessagePortNumber to a specific number unless firewalls or other network issues require the listener port to be a well-known number.

! CAUTION: If you choose to set a specific value for the ClientMessagePortNumber parameter, instead of having it dynamically assigned, be sure to assign unique port numbers for all the Cognos TM1 server and client message ports you are using. If you have two servers running on the same machine using the same port number, the message activity may cause a system conflict or hang.

See also, “PortNumber” on page 288 and “ProgressMessage” on page 289.

ClientPropertiesSyncInterval
Specifies the frequency (in seconds) at which client properties are updated in the ClientProperties control cube. Set to 1800 seconds to update cube every 30 minutes.

Frequent updating can cause unnecessary consumption of CPU time and may cause users from connecting/disconnecting until operation completes.

Parameter type: optional, dynamic

ClientVersionMaximum
Specifies the maximum client version that can connect to the IBM Cognos TM1 server.

Parameter type: optional, dynamic
The ClientVersionMaximum parameter value is expressed as a version string using the following format:

\[ m.n.tffhh \]

- \( m \) = major release number,
- \( n \) = minor release number
- \( t \) = maintenance release number
- \( ff \) = fix pack number
- \( hh \) = hot fix number

Using this format, setting \( \text{ClientVersionMaximum} = 9.4.10305 \) specifies that the maximum client version that can connect to the server is 9.4.1.

If your Tm1s.cfg file does not include a ClientVersionPrecision parameter value, only the major release number, minor release number, and maintenance release number are used to enforce compatibility between client and server. Using the above example,

If \( \text{ClientVersionMaximum} \) is not explicitly set, the default value is equal to the currently installed server version.

Valid parameter values fall within the range \( x00 \) up to the currently installed server version, where \( x \) is the major release number of the currently installed TM1 server. For example, valid parameter values for TM1 server 9.0 SP3 fall within the range 900 - 903.

You cannot set \( \text{ClientVersionMaximum} \) to a value greater than the currently installed server version. You cannot connect newer client versions to older server versions.

**ClientVersionMinimum**

specifies the minimum client version that can connect to the IBM Cognos TM1 server.

Parameter type: optional, dynamic

The ClientVersionMinimum parameter value is expressed as a version string using the following format:

\[ m.n.tffhh \]

- \( m \) = major release number,
- \( n \) = minor release number
- \( t \) = maintenance release number
- \( ff \) = fix pack number
- \( hh \) = hot fix number

Using this format, setting \( \text{ClientVersionMinimum} = 9.4.10305 \) specifies that the minimum client version that can connect to the server is 9.4.1.

If your Tm1s.cfg file does not include a ClientVersionPrecision parameter value, only the major release number, minor release number, and maintenance release number are used to enforce compatibility between client and server.

If the \( \text{ClientVersionMinimum} \) parameter is not explicitly set, the default value is 8.4.00000, which corresponds to version 8.4.

You should not set \( \text{ClientVersionMinimum} \) to a value lower than the major release number of the currently installed Cognos TM1 server. There is no upper limit for \( \text{ClientVersionMinimum} \). However, if \( \text{ClientVersionMinimum} \) is larger than \( \text{ClientVersionMaximum} \), only clients with a version number equal to \( \text{ClientVersionMaximum} \) can connect to the server.

**ClientVersionPrecision**

This parameter lets you more precisely identify the minimum and maximum versions of clients that can connect to the IBM Cognos TM1 server.

Parameter type: optional, dynamic

The ClientVersionMinimum and ClientVersionMaximum parameter values are expressed as a version string using the following format:
Using this format, the version string 9.4.10305 indicates major release 9, minor release 4, maintenance release 1, fix pack 3, and hot fix 5.

If ClientVersionPrecision is not set in Tm1s.cfg or if it is set to 0, only the major release number, minor release number, and maintenance release number are used to enforce compatibility between client and server. In this case, any client from major release 9, minor release 4, maintenance release 1 and more recent can connect to the server.

You can enforce more precise server and client version compatibility by adding ClientVersionPrecision to the Tm1s.cfg file and setting the parameter to one of the following values.

- 1 - Indicates that the fix pack number will be enforced, but not the hot fix number.
- 2 - Indicates that both the fix pack number and hot fix number will be enforced.

Examples

If ClientVersionMinimum = 9.4.10305 and ClientVersionPrecision = 1, only clients from major release 9, minor release 4, maintenance pack 1, fix pack 3 or later can connect to the server. In this case, the hot fix number is not enforced when determining server/client compatibility.

If ClientVersionMinimum = 9.4.10305 and ClientVersionPrecision = 2, only clients from major release 9, minor release 4, maintenance pack 1, fix pack 3, hot fix 5 or later can connect to the server. In this case, both the fix pack and hot fix numbers are enforced when determining server/client compatibility.

CognosMDX.AggregateByAncestorRef

When possible, replaces aggregation over a member set with a reference to an ancestor, if the aggregated member set comprises a complete set of descendants and all members have the weight 1.

For example, the aggregation aggregate(children(<Member>)) might be replaced with a reference to <Member>.

Parameter type: optional, static

This parameter is applicable only when using TM1 with IBM Cognos Analytics.

To enable CognosMDX.AggregateByAncestorRef, add the following line to the tm1s.cfg file:

```
CognosMDX.AggregateByAncestorRef=true
```

Default value: false

CognosMDX.CellCacheEnable

Allows the IBM Cognos MDX engine to modify TM1 consolidation and calculation cell cache strategies.

Parameter type: optional, static

This parameter is applicable only when using TM1 with Cognos Analytics.

Default value: true

CognosMDX.PrefilterWithPXJ

Expands the data source provider cross join approach to nested filtered sets.

Parameter type: optional, static

This parameter is applicable only when using TM1 with IBM Cognos Analytics.
This parameter is active only in the following cases:

- **CognosMDX.UseProviderCrossJoinThreshold** has a value greater than 0 in the `tm1s.cfg` file.
- **UseProviderCrossJoinThreshold** has a value greater than 0 in the Cognos Analytics `qfs_config.xml` configuration file.

To enable **CognosMDX.PrefilterWithPXJ**, add the following line to the `tm1s.cfg` file:

```
CognosMDX.PrefilterWithPXJ=true
```

Default value: false

**CognosMDX.SimpleCellsUseOPTSDK**

Applies IBM Cognos MDX engine consolidation and calculation cell cache strategies to all cells in query results.

Parameter type: optional, static

This parameter is applicable only when using TM1 with Cognos Analytics.

When **CognosMDX.SimpleCellsUseOPTSDK** is not enabled, consolidation and calculation cell cache strategies are applied only to query result cells associated with calculated members.

Default value: true

**CognosMDX.UseProviderCrossJoinThreshold**

Applies the data source provider cross join strategy, even if it is not explicitly enabled in IBM Cognos Analytics.

Parameter type: optional, static

This parameter is applicable only when using TM1 with Cognos Analytics.

When you enable **CognosMDX.UseProviderCrossJoinThreshold**, this has the same effect as enabling the **UseProviderCrossJoinThreshold** parameter in the `qfs_config.xml` file of Cognos Analytics.

**UseProviderCrossJoinThreshold** controls whether combinations of members on an edge, which have no measure values, are retrieved from the TM1 server. **UseProviderCrossJoinThreshold** is enabled when it has a value greater than 0.

**Note:** If **UseProviderCrossJoinThreshold** is enabled in the Cognos Analytics `qfs_config.xml`, it takes precedence over the **CognosMDX.UseProviderCrossJoinThreshold** parameter in the `tm1s.cfg` file.

To enable **CognosMDX.UseProviderCrossJoinThreshold**, add it to the `tm1s.cfg` file and specify a value greater than 0, for example:

```
CognosMDX.UseProviderCrossJoinThreshold=1000
```

Default value: 0

**CognosTM1InterfacePath**

Specifies the location of the IBM Cognos Business Intelligence server to use when importing data from a Cognos Package to TM1 using the IBM Cognos TM1 Package Connector.

See *IBM Cognos TM1 TurboIntegrator* for more information.

Parameter type: optional except when using the Cognos TM1 Package Connector, static

**CreateNewCAMClients**

The **CreateNewCAMClients** server configuration parameter determines how the TM1 server handles an attempt to log on to the server with CAM credentials in the absence of a corresponding TM1 client.

Parameter type: optional, dynamic
When `CreateNewCAMClients=T` and a logon is attempted with a valid set of CAM credentials, but a corresponding TM1 client does not exist, the TM1 client is created during the logon. This is the default behavior when `CreateNewCAMClients` is not set in the `Tm1s.cfg` file.

When `CreateNewCAMClients=F` and a logon is attempted with a valid set of CAM credentials, but a corresponding TM1 client does not exist, the TM1 client is not created and the logon is rejected.

Through the C API, the error code is `SystemServerClientNotFound`. Through the HTTP endpoint, a 401 Unauthorized error is returned, with authentication information dependent on server configuration settings. Additionally, when the logon is rejected a log message is printed to the `CAMSecurity.ClientCreation` logger at the WARN level, if this level of logging is enabled. The log message includes the text "CAM Client not found, and not created due to `CreateNewCAMClients` config setting."

**DataBaseDirectory**

Specifies the data directory from which the server loads cubes, dimensions, and other objects.

You can list multiple data directories by separating them with semicolons.

Parameter type: required, static

For details, see “Data directory overview” on page 20.

**DefaultMeasuresDimension**

Identifies if a measures dimension is created. IBM Cognos TM1 does not require that a measures dimension be defined for a cube. You can optionally define a measures dimension by modifying the cube properties.

For more information, see the topic, "CubeProperties", in IBM Cognos TM1 Operation.

Parameter type: optional but some OLAP applications may require this parameter (see description below for details), static

Some OLAP applications do require that a measures dimension be present in all cubes, and may fail if such a dimension is not present. To accommodate these applications, set `DefaultMeasureDimension=T` to instruct the Cognos TM1 server to automatically define the last dimension in a cube as the measures dimension when a new cube is created on the Cognos TM1 server.

If `DefaultMeasureDimension` is set to F or is omitted from `Tm1s.cfg`, a measures dimension is not defined for when a cube is created.

**DisableMemoryCache**

Disables the memory cache used by IBM Cognos TM1 memory manager.

Parameter type: optional, static

Enable this parameter only to debug memory leaks. When you enable this parameter, there might be a decrease in server performance.

For example, when `DisableMemoryCache=T` is set it disables the memory cache used by IBM Cognos TM1 memory manager. The default setting is `DisableMemoryCache=F`.

**DisableSandboxing**

Determines if users have the ability to use sandboxes across the server.

Parameter type: optional, dynamic

By default, this parameter is not present in the configuration file which enables the sandbox capability for all users.

```
DisableSandboxing=F
```

When sandboxing is turned on in this way, administrators can Deny or Grant the use of Personal Workspaces or multiple sandboxes on a per usergroup basis using Capability Assignments. For more details, see "Capability Assignments" in IBM Cognos TM1 Operations.
To put all usergroups into Direct Writeback mode, add the following line to Tm1s.cfg:

```
DisableSandboxing=T
```

When DisableSandboxing=T, the Capability Assignments are ignored.

**Important:** Do not use DisableSandboxing=T in the TM1 server configuration file for any TM1 Server that deploys and supports TM1 Applications. TM1 Servers that deploy and support TM1 Applications require that the sandbox feature is enabled in the TM1 server configuration file.

**Display_Info_DBType_R8**

Display_Info_DBType_R8 instructs the IBM Cognos TM1 server to store DISPLAY_INFO column data as DBTYPE_R8.

Parameter type: optional, static

Please contact customer support to determine if this parameter is applicable to your Cognos TM1 system.

By default, Cognos TM1 stores the DISPLAY_INFO as DBTYPE_UI4. When the Cognos TM1 OLE DB provider processes a request from ADO 2.7 for the DISPLAY_INFO column data, the provider has to convert Cognos TM1 column data from DBTYPE_UI4 to a DBTYPE_R8. The Cognos TM1 OLE DB provider then returns the converted column data to the OLE DB client (ADO in this case).

ADO 2.7 expects IRowset::GetData to return an integer, and uses only the first 4 bytes of the converted column data. However, the returned data is an 8-byte real number, and as a result, all information in the last 4 bytes is lost. This causes ADO 2.7 to return zeroes for all the items of the DISPLAY_INFO column.

When you include the Display_Info_DBType_R8 parameter in the Tm1s.cfg file and set the parameter to T, the Cognos TM1 server stores DISPLAY_INFO column data as DBTYPE_R8 with the relevant 4 bytes of information in the first 4 bytes. The Display_Info_DBType_R8 parameter ensures that the information is not lost when ADO converts the data back to an integer of 4 bytes. The parameter also ensures that ADO 2.7 returns the correct values for the properties of an axis rowset member. Additionally, the parameter ensures that any OLE DB client (such as ADO 2.6) requesting the DISPLAY_INFO property as a 4 byte value, gets the correct values.

**DistributedPlanningOutputDir**

DistributedPlanningOutputDir defines the directory to which TUnits are written when a Cognos Insight distributed application is deployed.

Parameter type: optional, static

Cognos Insight distributed clients need information called "tunits". This data is created when an application is deployed and is updated as the Cognos TM1 server runs. The location of the directory used for this purpose is set using this parameter.

In order to deploy Cognos Insight distributed client applications using this database, uncomment or add this parameter as `DistributedPlanningOutputDir=<location of the tunit directory>`.

The pathname specified can be absolute, or relative to the Cognos TM1 server data directory.

For example:

<table>
<thead>
<tr>
<th>Sample setting</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>DistributedPlanningOutputDir=tunit</td>
<td>Creates a directory tunit under the Cognos TM1 server data directory.</td>
</tr>
<tr>
<td>DistributedPlanningOutputDir=../tunit</td>
<td>Creates a directory tunit as a sibling to the Cognos TM1 server data directory.</td>
</tr>
<tr>
<td>DistributedPlanningOutputDir=C:\Program Files\IBM\cognos\tm1\samples\tm1\GO_New_Stores\tunit</td>
<td>Creates a directory tunit at the specified location.</td>
</tr>
</tbody>
</table>
**DownTime**

Specifies a time when the server will come down automatically.

Parameter type: optional, dynamic

The format of the DownTime parameter is `dd:hh:mm` where:

- `dd` is the number of days from today. (For example, 00 is today, and 01 is tomorrow.)
- `hh:mm` is the time of day in 24-hour format.

For example, `DownTime = 01:03:30` specifies that you want to bring the server down on the following day at 3:30 in the morning.

The DownTime parameter is not available when you run the Cognos TM1 server as a Windows service.

When you use the DownTime parameter on the UNIX Cognos TM1 server, you must set the RunningInBackground parameter to T. If RunningInBackground=F, the server prompts for confirmation before shutting down and cannot shut down without manual confirmation from an administrator.

---

**EnableNewHierarchyCreation**

Specifies whether multiple hierarchy creation is enabled or disabled.

Parameter type: optional (required for multiple hierarchies), dynamic

By default, the EnableNewHierarchyCreation parameter is set to F (false). If you are working with multiple hierarchies, change the parameter setting to T (true). *TM1 Reference* lists the TurboIntegrator functions to manage dimensions and equivalent functions to manage specific hierarchies within dimensions.

---

**EnableSandboxDimension**

Specifies whether the virtual sandbox dimension feature is enabled.

Parameter type: optional, dynamic

By default, the EnableSandboxDimension parameter is set to False.

A sandbox property (IncludeInSandboxDimension) was introduced to specify whether a sandbox is included in the virtual sandbox dimension. For older sandboxes, the value of the IncludeInSandboxDimension property is false. Including sandboxes in the virtual sandbox dimension allows users to compare multiple sandbox scenarios in a single view. For information on IncludeInSandboxDimension, refer to *TM1 REST API*.

---

**EnableTIDebugging**

Specifies whether TurboIntegrator debugging capabilities are enabled or disabled.

Parameter type: optional, dynamic

By default, the EnableTIDebugging parameter is set to F (false).

If you want to use any of the TurboIntegrator process debugging capabilities of the *TM1 REST API*, you must change the parameter setting to T (true). Similarly, you must set the parameter to T if you want to use the TurboIntegrator Debugger utility, which is currently available in preview release on IBM developerWorks.

**Important:** Debugging TurboIntegrator processes can consume significant system resources. It is recommended that you set EnableTIDebugging=T only while debugging processes in a development environment and that the parameter not be enabled in a production environment.

---

**ExcelWebPublishEnabled**

Enables the publication of Microsoft Excel files to IBM Cognos TM1 Web, as well as the export of Microsoft Excel files from Cognos TM1 Web, when Microsoft Excel is not installed on the web server. Enable the ExcelWebPublishEnabled parameter when you have TM1 10.1 clients that connect to TM1 10.2.2 servers.

Parameter type: optional, dynamic
If ExcelWebPublishEnabled=T, Microsoft Excel files in Cognos TM1 Applications can be published to Cognos TM1 Web without using Microsoft Excel on the web server. Similarly, Websheets and Cube View can be exported from Cognos TM1 Web without using Microsoft Excel on the web server.

When Microsoft Excel is not available on the web server, Microsoft Excel files in Cognos TM1 Applications must be explicitly published to Cognos TM1 Web.

For details about the procedure required to publish Microsoft Excel files, see IBM Cognos TM1 Developer.

For details about limitations exporting from Cognos TM1 Web without using Microsoft Excel on the web server, see IBM Cognos TM1 Perspectives, TM1 Architect, and TM1 Web.

**Restriction:** You cannot publish Microsoft Excel 2007 .xlsx files to Cognos TM1 Web when Microsoft Excel is not available on the web server. These files must be saved in Microsoft Excel 2003 .xls format if you want to publish them to Cognos TM1 Web.

Default value: F

**FileRetry.Count**

Specifies the number of retry attempts.

Parameter type: optional, dynamic

By default, TM1 server will shutdown when transaction log updates fail. Specifying FileRetry.FileSpec defers the server shutdown while the server attempts to reestablish a connection. FileRetry.Count defines the number of retry attempts as an integer value. If the network failure persists after the specified number of retries, TM1 server will self-terminate.

Default value: 5

**FileRetry.Delay**

Specifies the time delay between retry attempts.

Parameter type: optional, dynamic

By default, TM1 server will shutdown when transaction log updates fail. Specifying FileRetry.FileSpec defers the server shutdown while the server attempts to reestablish a connection. FileRetry.Delay defines the delay (in milliseconds) between retry attempts. If the network failure persists after the specified number of retries, TM1 server will self-terminate.

Default value: 2000

**FileRetry.FileSpec**

Network issues can cause transaction log updates to fail, which might force a TM1 server shutdown. This configuration parameter specifies the directory paths of the affected log files.

Parameter type: optional, dynamic

By default, TM1 server shuts down when transaction log updates fail. Specifying FileRetry.FileSpec defers the server shutdown while the server attempts to reestablish a connection.

The number of retry attempts and delay between attempts is determined by FileRetry.Count and FileRetry.Delay, respectively. If the network failure persists after the specified number of retries, TM1 server will self-terminate.

As of IBM Planning Analytics Local 2.0.3, if this setting is not specified in the tms1.cfg file (default), the retry logic is applied to all files in the logs directory only.

To turn off the retry logic, specify one of the following options in the tms1.cfg file:

- `FileRetry.FileSpec=""` (explicitly setting the value to the empty value)
- `FileRetry.Count=0`

Use a semi-colon delimiter to specify multiple paths. For example,

1. `FileRetry.FileSpec=c:\production\model\Logs`
   
   On a write failure, the retry logic is applied to all files in the "c:\production\model\Logs" directory and below.

2. `FileRetry.FileSpec=c:\production\model\Logs;\\network.ibm.com\production\Logs`
On a write failure, the retry logic is applied to all files in the "c:\production\model\Logs" directory and the network share of \network.ibm.com\production\Logs and below.

**Note:** Messages are written to the server log at the WARN level when this logic is enabled.

- "Error writing to <FILENAME>, retry in progress." is written when a write operation fails and a retry attempt is in progress.
- "Error writing to <FILENAME>, retry attempt failed." is written when the retry attempt fails.

**FIPSOperationMode**

Controls the level of support for Federal Information Processing Standards (FIPS).

Parameter type: optional, static

Allowed values:
- 1: FIPS 140-2 level 1 approved ciphers and operation
- 2: FIPS 140-2 level 1 approved ciphers
- 3: Disabled

Default value: 1

To change the level of support for FIPS to level 1 approved ciphers, for example, add the following line to the tm1s.cfg file:

```
FIPSOperationMode=2
```

**ForceReevaluationOfFeedersForFedCellsOnDataChange**

When this parameter is set, a feeder statement is forced to be re-evaluated when data changes.

Parameter type: optional, static

When the IBM Cognos TM1 server computes feeders, the process can be a "chain" of feeders, where cell A feeds cell B, and there is a feeder rule for cell B, so that rule runs and feeds cell C, etc. Feeders for numeric cells are evaluated only when a cell goes from empty to some non-zero value since any non-zero value in the cell would already have set any feeders.

There is no need to re-evaluate the feeders when a cell changes from one non-zero value to another.

Normally, when evaluating feeders, if a feeder rule is evaluated and the target cell is already fed, the feeding process stops.

Feeder rules are not processed any further since the presence of the feeder in the target cell indicates that the feeder rules for the target cell have already been run, and there is no need to run them again.

Consider the following feeder rules:

```
['A']=>'['B'];
```

The feeder rule for cell B depends on some cube data value:

```
[B]=>DB(cube-name,!'dim1, DB(cube2-name,...),!'dim2);['C']=>'['D'];['X']=>'['B'];
```

When the feeder rule for B is initially evaluated, the DB(cube2-name,...) is evaluated to produce an element name, such as C. Therefore B feeds C and then C feeds D. When that cell X goes from zero to non-zero, this change also feeds B. But B is already fed, so the feeding process stops, and the feeder rule for B never evaluates, so any "change" in the output of the rule, which may come about because of an underlying data change targeted by the DB(...) statement will not be evaluated. If the parameter `ForceReevaluationOfFeedersForFedCellsOnDataChange` is set, then the presence of a feeder in cell B will not terminate feeder processing. Rather, the feeder rule for B will run. Because the feeder rule for B is data dependent, the target for the feeder may be the former C, or may be some other cell, and that cell will be fed. Note that setting this parameter will force more feeder evaluations, which may have a performance impact.

To turn on this parameter set `ForceReevaluationOfFeedersForFedCellsOnDataChange=T`. 

The tm1s.cfg Server Configuration File 269
HTTPPortNumber
Sets the port number on which the TM1 Server listens for incoming HTTP(S) requests.
Parameter type: required, static
The IBM Planning Analytics(TM1 Server services the REST API using this HTTP(S) channel. The server accepts either standard HTTP or SSL secured HTTPS connections depending on the UseSSL parameter (see “UseSSL” on page 299). If UseSSL is set to T, switching the use of SSL on, then the server will accept only HTTPS connections. If UseSSL is set to F, the server will accept unsecured, HTTP connections.
If HTTPPortNumber is not defined in your tm1s.cfg file, then port number "5001" will be assigned automatically.
Note: Port numbers must be unique across all services running on a computer, not just across TM1 servers and not just across the HTTP ports of TM1 servers.

HTTPSessionTimeoutMinutes
Sets the timeout value for authentication sessions for the IBM Cognos TM1 REST API.
Parameter type: optional, dynamic
When you use the TM1 REST API, your application needs to authenticate with the TM1 Server. This parameter sets the timeout, in minutes, for this authentication. If a session times out, requests made with the old session ID return 401 Unauthorized.
The default value is 20.

IdleConnectionTimeOutSeconds
Specifies a timeout limit for idle client connections, in seconds.
Parameter type: optional, dynamic
For example, if you include the following line in Tm1s.cfg, the server disconnects idle client connections after 900 seconds.

| IdleConnectionTimeOutSeconds=900 |

IndexStoreDirectory
Designates a folder to store index files, including bookmark files.
Parameter type: optional, dynamic
By default, this parameter is undefined and bookmark (*.bm) files will appear in the same folder as its corresponding main file.

IntegratedSecurityMode
This parameter sets the user authentication mode to be used by the IBM Cognos TM1 server.
Parameter type: optional, dynamic
Although the parameter name focuses on Integrated Security Mode, the 2, 3 and 4 settings are used to set other kinds of security.
Note: If you change the security mode without restarting the IBM Cognos TM1 server, the change applies only to new client connections. If you want to ensure that all clients are authenticated with the new security mode, all clients must be logged off by the administrator.
Use the following format to set this parameter:

IntegratedSecurityMode=x
where x can be a value for one of the following security modes.
Cognos Analytics 11 is supported.
<table>
<thead>
<tr>
<th>Security Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The server uses secure mode (standard Cognos TM1 security). With this authentication, the Cognos TM1 server checks the user name and password against the user names and passwords in the Cognos TM1 database.</td>
</tr>
<tr>
<td>2</td>
<td>This mode allows you to switch back and forth between integrated login and native Cognos TM1 security.</td>
</tr>
<tr>
<td>3</td>
<td>The server uses Integrated Login. Integrated Login uses Microsoft Windows network authentication to control access to Cognos TM1 data. If you use this security mode, you must also set the “SecurityPackageName” on page 292 parameter. For more details, see “Integrated Login” on page 197.</td>
</tr>
<tr>
<td>4</td>
<td>The server uses IBM Cognos Analytics security authentication. Considerations when using this mode: In Cognos TM1, Cognos Analytics users can belong only to Cognos Analytics groups and any of the three internal Cognos TM1 administrator groups (ADMIN, DataAdmin and SecurityAdmin). Membership in Cognos TM1 user (non-administrator) groups is not supported for Cognos Analytics users when they log in to Cognos TM1. You can not use Cognos TM1 to permanently assign a Cognos Analytics user to another Cognos Analytics group. Any user assignment you make in Cognos TM1 to a Cognos Analytics group is not saved back to Cognos Analytics. When a Cognos Analytics user logs in to Cognos TM1, the group assignments in Cognos Analytics override any Cognos Analytics group assignments made in Cognos TM1.</td>
</tr>
<tr>
<td>5</td>
<td>The server uses IBM Cognos Analytics security authentication and supports user groups from both Cognos TM1 and Cognos Analytics. Use security mode 5 when you are running IBM Cognos TM1 Applications with IBM Cognos Analytics security. Considerations when using this mode: • In Cognos TM1, Cognos Analytics users can belong to both Cognos Analytics and Cognos TM1 groups. • You can not use Cognos TM1 to permanently assign a Cognos Analytics user to another Cognos Analytics group. Any user assignment you make in Cognos TM1 to a Cognos Analytics group is not saved back to Cognos Analytics. When a Cognos Analytics user logs in to Cognos TM1, the group assignments in Cognos Analytics override any Cognos Analytics group assignments made in Cognos TM1. • If IntegratedSecurityMode=5 is used for the IBM Cognos TM1 Server and IBM Cognos TM1 Applications, it is not possible to assign rights to native TM1 groups within the Manage rights dialog. Only Cognos Groups, imported into the TM1 Server, are available.</td>
</tr>
</tbody>
</table>

**IPAddressV4**

This parameter lets you specify the IPv4 address for an individual IBM Cognos TM1 server. Parameter type: optional, static

A server can include one internal IP address for clients within a firewall and a different external IP address for clients outside the firewall. By default, all TM1 client requests are routed through the external (public) adapter, which would
require updates to firewall profiles. By assigning the internal IP address to the IPAddressV4 parameter, traffic is routed through the private adapter and firewall profiles do not require updates.

For example:

`IPAddressV4=“10.109.241.121”`

**Note:** This parameter replaces the old IPAddress parameters, which is now obsolete.

**IPAddressV6**

This parameter lets you specify the IPv6 address for an individual IBM Cognos TM1 server.

Parameter type: optional, static

A server can include one internal IP address for clients within a firewall and a different external IP address for clients outside the firewall. By default, all TM1 client requests are routed through the external (public) adapter, which would require updates to firewall profiles. By assigning the internal IP address to the IPAddressV6 parameter, traffic is routed through the private adapter and firewall profiles do not require updates.

For example:

`IPAddressV6=“0ff1:aa00:4125:2:a05:f7b1:61c2:a341”`

**Note:** This parameter replaces the old IPAddress parameters, which is now obsolete.

**IPvVersion**

This parameter indicates the Internet protocol used by the IBM Cognos TM1 server to identify IP addresses on the network.

For example, to specify that your network uses the IPV6 protocol, add the parameter IPVersion=ipv6 to the tm1s.cfg file.

Parameter type: optional, static

Valid settings are:

- **ipv4**
  Default setting. Used for IPv4 networks.
- **dual**
  Used to transition from IPv4 to IPv6. Both protocols are supported.
- **ipv6**
  Used for IPv6 networks.

**Configuration notes**

If you set this parameter to ipv6 or dual, use the Cognos Configuration tool to change the **TM1 Admin Server IP support** option to reflect the change.

To allow clients to recognize this change, add and set the TM1_IPVersion environment variable in the operating system to ipv6 or dual.

Setting this parameter to dual or IPV6 without having the appropriate network running can result in performance degradation.

**Note:** In some cases, depending on your network environment and DNS configuration, you may need to also add the IPv6 address to the `/etc/hosts` operating system file on UNIX and Microsoft Windows to successfully run the Cognos TM1 Admin Server and Cognos TM1 Server in IPv6 mode.

For complete details on configuring all Cognos TM1 components to use IPv6, see “Configuring Cognos TM1 to use IPv6” on page 72.
**JavaClassPath**

Use this parameter to make third-party Java libraries available to the IBM Cognos TM1 Server.

Parameter type: optional, static

For example, to allow a Java extension to use classes inside a file called db2cc4.jar (a DB2 JDBC driver), use the following:

```
JavaClassPath=C:\Development\Java\DB2JDBC\db2jcc4.jar
```

You can specify multiple references by separating them with semicolons.

**JavaJVMArgs**

Specifies a list of arguments to pass to the Java Virtual Machine (JVM). Arguments are separated by a space and the dash character. For example, `JavaJVMArgs=-argument1=xxx -argument2=yyy`.

Parameter type: optional, static

If you want to debug a process, you might specify these arguments:

```
JavaJVMArgs=-Xrunjdwp:transport=dt_socket -server=y -suspend=n -address=1044
```

The arguments you can use depend on the specific JVM you are using.

**JavaJVMPath**

This parameter sets the path to the Java Virtual Machine .dll file (jvm.dll), which is required to run Java from IBM Cognos TM1 TurboIntegrator.

Parameter type: optional, dynamic

By default, this parameter is not present in the tm1s.cfg file.

To enable Java integration with TurboIntegrator, add the following line to your tm1s.cfg file:

```
JavaJVMPath=<full_path_to_jvm.dll>
```

Note: If you are using a 64-bit version of tm1s.exe you must use a 64-bit version of jvm.dll. A 32-bit version of tm1s.exe requires a 32-bit version of jvm.dll.

**JobQueuing**

Turns on queuing for Personal Workspace or Sandbox submissions.

Parameter type: optional, static

Set this parameter to `JobQueuing=T` to have all sandbox submissions to process using the Job Queue. When this parameter is set to `F` or not in the configuration file, sandbox submissions do not process in a queue.

When this parameter is turned on, the submission icon displays on the toolbar.

See the Job Queuing description in the Sandbox and Writeback section of IBM Cognos TM1 Perspectives, TM1 Architect, and TM1 Web for details.

**JobQueueMaxWaitTime**

When the queue thread runs, it blocks all incoming requests to ensure it can get the locks necessary to process a job on the queue. New requests are blocked for the amount of time set in the JobQueueMaxWaitTime parameter.

Parameter type: optional, dynamic

If the currently executing requests have not completed in this time, the queue thread goes back to sleep for JobQueueThreadSleepTime and incoming requests are allowed to proceed.

To give the queue thread higher priority, set the JobQueueMaxWaitTime to a larger number.

If the JobQueueMaxWaitTime parameter is set to zero in the configuration file and Job Queuing is turned on, the queue will keep trying until it can process, effectively locking out any other activity until it is complete.
See Job Queuing in *IBM Cognos TM1 Perspectives, TM1 Architect, and TM1 Web* for more details.

Default value: 100ms

**JobQueueThreadPoolSize**

The JobQueueThreadPoolSize parameter enables IBM Cognos TM1 to use multiple threads to process the Cognos TM1 Job Queue, providing greater thru-put and processing of sandbox requests.

Parameter type: optional, static

By default, if this parameter is not set, then Cognos TM1 uses a value of 1 and the Cognos TM1 server uses only a single thread to process requests in the Job Queue.

Configure this parameter in the `tm1s.cfg` file using the following format:

```
JobQueueThreadPoolSize=x
```

where x represents the number of threads you want to use for processing Cognos TM1 Job Queue requests.

For example:

```
JobQueueThreadPoolSize=3
```

Default value: 1

**JobQueueThreadSleepTime**

Determines the frequency with which the thread processing the queue runs when there are queued jobs.

Parameter type: optional, dynamic

Default value: 10 seconds

**keyfile**

Specifies the file path to the key database file. The key database file contains the server certificate and trusted certificate authorities. The server certificate is used by the TM1 server and the TM1 Admin server.

Parameter type: optional, static

The key database file that is provided with TM1 is `[installation_location]/ssl/ibmtm1.kdb`

To specify a different key database file, add the keyfile parameter to the `tm1s.cfg` file and specify the relative or absolute path to the `.kdb` file.

For example:

```
keyfile=./ssl/filename.kdb
```

**keylabel**

Specifies the label of the server certificate in the key database file.

Parameter type: optional, static

For example:

```
keylabel=TM1_Certificate
```

**keystashfile**

Specifies the file path to the key database password file. The key database password file is the key store that contains the password to the key database file.

Parameter type: optional, static

The key database password file that is provided with TM1 is `[installation_location]/ssl/ibmtm1.sth`
To specify a different key database password file, add the keystashfile parameter to the tm1s.cfg file and specify the relative or absolute path to the .sth file.

For example:

keystashfile=./ssl/filename.sth

**Language**

Sets the language used for the IBM Cognos TM1 server. This parameter applies to messages generated by the server and is also used in the user interface of the server dialog box when you run the server as an application instead of a Windows service.

Parameter type: optional, static

Valid values currently are:

<table>
<thead>
<tr>
<th>Language</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazilian Portuguese</td>
<td>bra</td>
</tr>
<tr>
<td>Croatian</td>
<td>hrv</td>
</tr>
<tr>
<td>Czech</td>
<td>csy</td>
</tr>
<tr>
<td>Chinese (Simplified)</td>
<td>sch</td>
</tr>
<tr>
<td>Chinese (Traditional)</td>
<td>tch</td>
</tr>
<tr>
<td>Danish</td>
<td>dan</td>
</tr>
<tr>
<td>Dutch</td>
<td>nld</td>
</tr>
<tr>
<td>German</td>
<td>deu</td>
</tr>
<tr>
<td>Finnish</td>
<td>fin</td>
</tr>
<tr>
<td>French</td>
<td>fra</td>
</tr>
<tr>
<td>Hungarian</td>
<td>hun</td>
</tr>
<tr>
<td>Italian</td>
<td>ita</td>
</tr>
<tr>
<td>Japanese</td>
<td>jpn</td>
</tr>
<tr>
<td>Kazakh</td>
<td>kaz</td>
</tr>
<tr>
<td>Korean</td>
<td>kor</td>
</tr>
<tr>
<td>Norwegian</td>
<td>nor</td>
</tr>
<tr>
<td>Polish</td>
<td>pol</td>
</tr>
<tr>
<td>Romanian</td>
<td>rom</td>
</tr>
<tr>
<td>Russian</td>
<td>rus</td>
</tr>
<tr>
<td>Spanish</td>
<td>esp</td>
</tr>
<tr>
<td>Slovenian</td>
<td>slv</td>
</tr>
<tr>
<td>Swedish</td>
<td>sve</td>
</tr>
<tr>
<td>Thai</td>
<td>tha</td>
</tr>
<tr>
<td>Turkish</td>
<td>trk</td>
</tr>
</tbody>
</table>

**LDAPHost**

Specifies the domain name or dotted string representation of the IP address of the LDAP server host.
Parameter type: optional, static
If you do not enter a value for LDAPHost, IBM Cognos TM1 uses the default value, localhost.

**LDAPPasswordFile**

Defines the password file used when LDAPUseServerAccount is not used. This is the full path of the .dat file that contains the encrypted password for the IBM Cognos TM1 server Admin Server's private key.

Parameter type: optional unless “LDAPUseServerAccount” on page 208=F, static
This parameter uses the full path to a .dat file.

**LDAPPasswordKeyFile**

Defines the password key used when LDAPUseServerAccount is not used.

Parameter type: optional unless “LDAPUseServerAccount” on page 208=F, static
This parameter uses the full path of the .dat file that contains the key used to encrypt and decrypt the password for the private key.

This file must be generated using the tm1crypt utility, as described in “Running the TM1Crypt utility” on page 235.

**LDAPPort**

Specifies the port IBM Cognos TM1 uses to bind to an LDAP server.

Parameter type: optional, static
Specify a secure (SSL) port, for example, 636.
Default value: 389 (an unsecured port)

**LDAPSearchBase**

Specifies the node in the LDAP tree where IBM Cognos TM1 begins searching for valid users.

Parameter type: optional, static
A base distinguished name (DN) in the LDAP directory. For example:

```
ou=people,o=company.com
```

For example, if the distinguished names are of the form:

```
uid-bjensen, ou-people, o=company.com
```

then the search base would be:

```
ou-people, o=company.com
```

**LDAPSearchField**

The name of the LDAP attribute that is expected to contain the name of the IBM Cognos TM1 user being validated.

Parameter type: optional, static
If you do not enter an LDAPSearchField value, the default value is cn, which is also the default value for Microsoft Active Directory.

**LDAPSkipSSLCertVerification**

Skips the certificate trust verification step for the SSL certificate used to authenticate to an LDAP server. This parameter is applicable only when LDAPVerifyServerSSLCert=T.

Parameter type: optional, static
If trust verification does not work, you can skip the trust verification step by specifying LDAPSkipSSLCertVerification=T. In this case, TM1 does not verify the server certificate at all but simply accepts it.

**Note:** Before working with this parameter, you should be familiar with SSL and LDAP.

Default value: F

**LDAPSkipSSL**

**LDAPSkipSSL**

**LDAPSkipSSL**

**Parameter type:** optional, static

This parameter is not required if LDAPVerifyServerSSLCert=F. The Microsoft Windows API can tolerate an empty or non-existent CRL certificate.

**Note:** Before working with this parameter, you should be familiar with SSL and LDAP.

Default value: F

**LDAPUseServer**

**LDAPUseServer**

**LDAPUseServer**

**Parameter type:** optional, static

- To connect directly to the LDAP server using integrated authentication, set this parameter to T. Set this parameter to T whenever the IBM Cognos TM1 server and LDAP server exist on the same domain.
- To use a password before connecting, set this parameter to F. When LDAPUseServerAccount is set to F, you must also set the “LDAPPasswordFile” on page 207 and “LDAPPasswordKeyFile” on page 207 to successfully connect to the LDAP server using SSL.

**LDAPVerifyCert**

**LDAPVerifyCert**

**Parameter type:** optional, static

Use this parameter to specify the servers TM1 should use to verify the received SSL certificate.

All of the server names you want to use for certificate verification must be listed in separate LDAPVerifyCertServerName entries. The entries must exactly match the name (subject) of the certificate presented to TM1 in the SSL handshake by the server on the other end.

Specify LDAPVerifyCertServerName in the tm1s.cfg file of each TM1 server that is using LDAP.

<table>
<thead>
<tr>
<th>LDAPVerifyCertServerName=&lt;server_cert_subject&gt;</th>
</tr>
</thead>
</table>

Replace server_cert_subject with a server name or IP addresses. Create an entry for each server you want to use.

For example:

<table>
<thead>
<tr>
<th>LDAPVerifyCertServerName=abc99.mydomain.com</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDAPVerifyCertServerName=xyz99.mydomain.com</td>
</tr>
</tbody>
</table>

Default value: F

**LDAPVerifyServerSSLCert**

**LDAPVerifyServerSSLCert**

**Parameter type:** optional, static
Note: Before working with this parameter, you should be familiar with SSL and LDAP.

Typically, TM1 leverages the Microsoft Windows API to verify SSL certificates. For this process to succeed, the certificate name and the LDAP server host name must match. If you are using a proxy, however, these names may not match, causing the verification to fail. In this case, you can set LDAPVerifyServerSSLCert=T to have TM1 perform the certificate verification.

When LDAPVerifyServerSSLCert=T, TM1 performs the two steps of verification (verifying the trust relationship to the certificate and checking the CRL) like the Windows API would have done, but with a slightly different approach.

1. Instead of verifying the received certificate against the configured host name, TM1 looks at the list of server names specified by LDAPVerifyCertServerName.
2. If the certificate name matches one of the servers specified by LDAPVerifyCertServerName, TM1 calls the Microsoft Windows API and requests it to verify this single certificate only.

   Note: The correct trusted root certificate authority (CA) must already have been imported to the Microsoft Windows Certificate Store.

   You can skip the trust verification step by specifying LDAPSkipSSLCertVerification=T. In this case, TM1 does not verify the server certificate at all but simply accepts it.
3. Once the trust verification is confirmed (or skipped), TM1 calls the Microsoft Windows API to check the CRL.

   Note: The CRL certificate for the trusted root must already have been imported to the Microsoft Windows Certificate Store.

   If the CRL certificate does not exist in the Microsoft Windows Certificate Store, the process will fail. You can skip the CRL step by specifying LDAPSkipSSLCRLVerification=T.
4. If all the previous steps finish successfully, the SSL handshake is complete. TM1 now attempts to authenticate to the LDAP server.

For troubleshooting information, see “Troubleshooting LDAP authentication” on page 211.

LDAPWellKnownUserName
Specifications:

Specifies the user name used by the IBM Cognos TM1 server to log in to LDAP and look up the name submitted by the user.

Parameter type: optional unless “LDAPUseServerAccount” on page 208=F,, static

The value of this parameter can be any LDAP distinguished name.

For example:

uid=bjensen,ou=people,o=company.com

LoadPrivateSubsetsOnStartup
This configuration parameter determines if private subsets are loaded when the TM1 server starts.

Parameter type: optional, static

Lock contention issues can occur when private subsets are loaded on-demand (when a user requests the subset). You can avoid lock contention by loading all private subsets from all users into memory upon server startup, by adding

LoadPrivateSubsetsOnStartup=T

to the Tm1s.cfg file for your server.

If LoadPrivateSubsetsOnStartup=F, or is not present in Tm1s.cfg, private subsets are loaded on-demand.

LockPagesInMemory
When this parameter is enabled, Windows trims pages from the IBM Cognos TM1 process space, but does not page them to disk.

Parameter type: optional, static
If a Cognos TM1 server running on a Windows 64-bit operating system is idle for a long period of time, physical memory taken up by the Cognos TM1 server will page out to disk. This is a function of the Windows 64-bit operating system and not Cognos TM1. This can cause performance degradation in large Cognos TM1 databases when trying to access data after an idle period.

To maximize performance when running a large Cognos TM1 database on 64-bit Windows, set `LockPagesInMemory=T` in the `Tm1s.cfg` file.

When this parameter is enabled, Windows still trims pages from the Cognos TM1 process space, but does not page them to disk. This benefits Cognos TM1 server performance because objects are no longer placed in virtual memory, but instead remain in physical RAM.

**LoggingDirectory**

Specifies the directory to which the server saves its log files.

If you do not supply this parameter, the log files are saved to the first data directory specified by the `DataBaseDirectory` parameter.

Parameter type: optional, static

**Note:** The value of parameter `LoggingDirectory` must be encapsulated by quotes if it uses spaces, for example `LoggingDirectory=C:/Data Files/Logfiles`. The Cognos TM1 Server startup will fail if quotes are not used in that case. Note also that other parameters, such as `DataBaseDirectory`, do not necessarily require quotes when a value contains spaces.

**LogReleaseLineCount**

Sets the number of lines that a search of the Transaction Log will accumulate in a locked state before releasing temporarily so that other Transaction Log activity can proceed.

Parameter type: optional, dynamic

Default value: 5000 lines

**MagnitudeDifferenceToBeZero**

Sets the order of magnitude of the numerator relative to the denominator, above which the denominator equals zero when using a safe division operator.

Parameter type: optional, static

In rules and TurboIntegrator, there is a safe division operator (the backslash). With this, if you try to divide by zero, the result is zero, not undefined. If the denominator to the division is a calculated quantity, the result can be very close to zero, but not exactly zero, for example, .0000000000000004. By setting the `MagnitudeDifferenceToBeZero` parameter, you can specify how close a number can be to zero, relative to the magnitude of the numerator, to be considered as zero for the safe division operator.

Consider this example:

- In the file `Tm1s.cfg`, set `MagnitudeDifferenceToBeZero=14`
- The operation is `A \ B`

  **Note:** Backslash (`\`) is the safe division operator in TurboIntegrator.

- `A = 1000`  
- `B = 1.5e-15`  
- `B` is 18 orders of magnitude less than `A`  
- `18 > 14`, therefore the safe division operator returns `B=0`

**MaskUserNameInServerTools**

Determines whether or not user names in server administration tools (Operations Console) are masked until a user is explicitly verified as having administrator access.

Parameter type: optional, static
When MaskUserNameInServerTools is set to TRUE, user names are masked in server administration tools until the user who is working in the administration tool is explicitly verified as an administrator. Refer to IBM Cognos TM1 Operations Console for details on verifying administrator access to the Operations Console.

When MaskUserNameInServerTools is set to FALSE, user names are displayed in server administration tools to all users regardless of administrator status.

Default value: true

MaximumCubeLoadThreads

Specifies whether the cube load and feeder calculation phases of server loading are multi-threaded, so multiple processor cores can be used in parallel.

This results in decreased server load times.

Parameter type: optional, static

To run in multi-threaded mode, you must set MaximumCubeLoadThreads to the number of processor cores on the Cognos TM1 server that you want to dedicate to cube loading and feeder processing.

Generally, the best performance is achieved when the parameter is set to a value equal to (number of available processor cores) - 1. For example, if the Cognos TM1 server is running on a computer with four processor cores, MaximumCubeLoadThreads must be set to 3. This ensures that one processor core is available to run other applications while the Cognos TM1 server is loading.

Note:
The maximum value for MaximumCubeLoadThreads is 32.

When MaximumCubeLoadThreads is set to 0, cube loading and feeder processing are not multi-threaded. This is the default behavior when MaximumCubeLoadThreads is not explicitly set in the Tm1s.cfg file.

Conditional feeders

When MaximumCubeLoadThreads is enabled, Cognos TM1 cannot manage the order in which feeders are calculated. There might be cases where processing order has an adverse effect on your application due to some order-of-evaluation dependencies in the multi-threaded environment.

If your Cognos TM1 model uses conditional feeders where the condition clause contains a fed value, you must disable the use of multiple threads at load time. Set MaximumCubeLoadThreads=0 or exclude the parameter from the Tm1s.cfg file.

MaximumLoginAttempts

Sets the maximum number of failed user login attempts permissible on the server.

If you do not include MaximumLoginAttempts in Tm1s.cfg, by default, the server allows three login attempts.

Parameter type: optional, dynamic

For example, if you add the line MaximumLoginAttempts=5 to Tm1s.cfg, the server enforces a limit of five failed login attempts per user. If a user does not successfully log in to the Cognos TM1 server within the specified number of attempts, the server issues an error.

After a user has exceeded the specified maximum number of failed login attempts, the Cognos TM1 server rejects any subsequent login attempts by the user.

The MaximumLoginAttempts parameter is enforced per server session. If a user exceeds the maximum number of attempts, he cannot log in to the current Cognos TM1 server session, unless the Cognos TM1 administrator changes his password. However, after the Cognos TM1 server recycles, the user can log in with his existing password.

MaximumMemoryForSubsetUndo

Sets the maximum amount of memory, in kilobytes, to be dedicated to storing the Undo/Redo stack for the Subset Editor.
For example, adding the line `MaximumMemoryForSubsetUndo=20480` to the configuration file instructs the server to allot 20480 kilobytes (20 MB) of memory for the Undo/Redo stack.

Parameter type: optional, dynamic

Generally, larger subsets require greater amounts of memory to store a usable Undo/Redo stack. If you find that the Cognos TM1 server is not storing a sufficient number of Undo/Redo steps for your subsets, increase the value of `MaximumMemoryForSubsetUndo`.

If this parameter is not explicitly set in the `Tm1s.cfg` file, the maximum amount of memory dedicated to the Undo/Redo feature of the Subset Editor is 10240 kilobytes (10 MB).

**MaximumSynchAttempts**

Sets the maximum number of times a synchronization process on a planet server will attempt to reconnect to a network before the process fails.

Parameter type: optional, static

You can use the `MaximumSynchAttempts` parameter to improve the stability of a synchronization process that is running over an unstable network connection such as a long distance wide area network (WAN) with high latency, poor bandwidth and poor transmission quality.

To specify the maximum number of times a synchronization process should attempt to make a network connection, add the following line to `Tm1s.cfg` for the planet server:

```
MaximumSynchAttempts=n
```

where `n` represents the number of network connection attempts that the synchronization process should make before the process fails.

The default value is 1 which means the synchronization process will only attempt to connect once and will not attempt to reconnect if the connection is lost. This default behavior is the same behavior as Cognos TM1 versions prior to 9.5.1 where a synchronization process would fail if the network connection was lost.

A value of 0 means unlimited network connection attempts.

You can configure this parameter to work with the `SyncUnitSize` parameter. For more information, see “`SyncUnitSize`” on page 296.

The following example shows how to use the `MaximumSynchAttempts` parameter with the `SyncUnitSize` parameter:

```
SyncUnitSize=2000
MaximumSynchAttempts=100
```

**MaximumTILockObjects**

A server configuration parameter that sets the maximum lock objects for a TurboIntegrator process. Used by the `synchronized()` TurboIntegrator function.

The server maintains a list of created TurboIntegrator lock objects. Every time the user calls the `synchronized()` function on a lock object, the server first checks to see if the lock object is already in the list. If not, the server creates a new lock object and inserts it into the list.

For more details, see the topic “Serializing TurboIntegrator processes using `synchronized()`” in *IBM Cognos TM1 TurboIntegrator*.

Even after all the TurboIntegrator processes that have referenced a lock object have exited, the lock object may not be removed from the list to free the memory immediately. This is because it is likely that sometime later, either the same process or some other process may call the `synchronized()` function on that same lock object.

The server configuration parameter `MaximumTILockObjects` in `Tm1s.cfg` controls the growth of the list of created TurboIntegrator lock objects. When the number of lock objects in the list has reached `MaximumTILockObjects`, the server starts a cleanup operation. It removes some lock objects from the list if they are not used by any TurboIntegrator process at that moment.
If the MaximumTILockObjects parameter is not explicitly set in tm1s.cfg, a default value of 2000 is assumed.

Parameter type: optional, static

**MaximumUserSandboxSize**

Sets the maximum amount of RAM memory (in MB) to be allocated per user for personal workspaces or sandboxes.

If you do not set the MaximumUserSandboxSize parameter, the default maximum size is 100 MB on a 32-bit system, and 500 MB on a 64-bit system.

Parameter type: optional, dynamic

To specify a maximum amount of memory allocation for personal workspaces or sandboxes, add the following line to Tm1s.cfg:

```
MaximumUserSandboxSize=n
```

where n represents the amount of memory in MB to be allocated.

**MaximumViewSize**

Sets the maximum amount of memory (in MB) to be allocated when a user accesses a view.

If you do not set the MaximumViewSize parameter, the default maximum view size is 100 MB on a 32-bit system, and 500 MB on a 64-bit system.

Parameter type: optional, dynamic

To specify a maximum amount of memory allocation for views, add the following line to tm1s.cfg:

```
MaximumViewSize=n
```

where n represents the amount of memory in MB to be allocated.

See also “ApplyMaximumViewSizeToEntireTransaction” on page 258.

**MDXSelectCalculatedMemberInputs**

Changes the way in which calculated members in MDX expressions are handled when zero suppression is enabled.

Parameter type: required, dynamic

MDXSelectCalculatedMemberInputs addresses an issue with calculated members in an MDX expression when zero suppression is enabled. When zero suppression is enabled on a query axis, calculated members might be dropped from the query or might cause zero suppression to be turned off.

The issue arises because zero suppression is based on the actual data in a cube. Calculated members do not have an actual member in the cube—calculated members are derived from other members.

For example, suppose a cube has a calculated member, C, that is a sum of the members A and B.

```
    C  (A+B)
  A       B
```

The members A and B are actual members in the cube, while C is derived. When you run a query with A, B, and C in the columns, {A,B,C}, you see A, B, and C in the columns and you see that C is the sum of A and B. When you turn on zero suppression, only non-null rows of data are displayed for A, B, and C, as expected.

Now, suppose you restrict the columns to C only, {C}. When zero suppression is turned off, C is displayed in the columns. But if you turn on zero suppression, C might be dropped from the columns because C does not reference any actual member in the cube.

MDXSelectCalculatedMemberInputs addresses this issue. When MDXSelectCalculatedMemberInputs is enabled, TM1 assumes that if the inputs to the calculated member have data (the A and B in the example), then the calculated member (C) also has data and must be retained when zero suppression is turned on.

The processing occurs as follows:
1. Do a fast check of the calculated member to detect what specific actual members it references.
2. Consider these actual members as inputs to the calculated member.
3. Make sure that these inputs are included in the stargate data underlying the view.

With the inputs included in the Stargate data, the suppression algorithm sees Stargate data at A and B, notices that A and B are inputs to C, and keeps C when zero suppression is enabled.

MDXSelectCalculatedMemberInputs works well for simple formulas, like C=A+B. If you use complex formulas, such as data-dependent formulas that contain conditional expression like IIF, enabling MDXSelectCalculatedMemberInputs might not resolve issues with zero suppression.

**Note:** Enabling MDXSelectCalculatedMemberInputs can increase the size of Stargate views. This can provide faster access times for cube data but can consume more system resources.

To enable MDXSelectCalculatedMemberInputs, add the following to the tm1s.cfg file.

```
MDXSelectCalculatedMemberInputs=True
```

To disable MDXSelectCalculatedMemberInputs, add the following to the tm1s.cfg file.

```
MDXSelectCalculatedMemberInputs=False
```

Default value: True

It is recommended to set the MaximumViewSize to be higher than the default 500MB.

**MessageCompression**

Enables message compression for large messages that significantly reduces network traffic.

The parameter is enabled by default.

Parameter type: optional, static

To disable message compression, add the following line to Tm1s.cfg:

```
MessageCompression=F
```

**MTFeeders**

Applies multi-threaded query parallelization techniques to the following processes: CubeProcessFeeders() TI function, cube rule updates, and construction of feeders at start-up.

Parameter type: optional, dynamic

The default setting is disabled (F). Enable this parameter to improve the processing of feeders. Set MTFeeders=T to obtain the following benefits:

- Process optimization when using the CubeProcessFeeders( <cube_name>) TI function.
- When a rule update involves updating feeder cubes, the process will be optimized by running in parallel. Rules are updated either manually or using the RuleLoadFromFile (Cube, TextFile) TI function.
- When used with MTFeeders.AtStartup=T, feeders are constructed at start-up. Alternatively, feeders can also be loaded at start-up with the RuleLoadFromFile (Cube, TextFile) TI function.

**CAUTION:** Setting MTFeeders=T increases memory usage significantly.

**Conditional feeders**

When MTFeeders is enabled, Cognos® TM1® cannot manage the order in which feeders are calculated. There might be cases where processing order has an adverse effect on your application due to some order-of-evaluation dependencies in the multi-threaded environment.
Enabling MTFeeders to apply multi-threaded query parallelization techniques for feeder construction is **not supported** when your Cognos TM1 model uses conditional feeders where the condition clause contains a fed value. Set MTFeeders=F or exclude the parameter from the Tm1s.cfg file.

**MTFeeders.AtStartup**

If the MTFeeders configuration option is enabled, enabling MTFeeders.AtStartup applies feeder construction during server start-up.

Parameter type: optional, static

The default setting is disabled (F).

When this configuration option is enabled, it prevents the load threads (set with the MaximumCubeLoadThreads option) to take over parallel feeder construction. However, MTFeeders.AtStartup will not disable MaximumCubeLoadThreads impact on other model load phases.

Alternatively, feeders can also be loaded at start-up with the RuleLoadFromFile(Cube, TextFile) TI function.

**Conditional feeders**

When MTFeeders.AtStartup is enabled, Cognos TM1 cannot manage the order in which feeders are calculated. There might be cases where processing order has an adverse effect on your application due to some order-of-evaluation dependencies in the multi-threaded environment.

Enabling MTFeeders.AtStartup to apply feeder construction during server start-up is **not supported** when your Cognos TM1 model uses conditional feeders where the condition clause contains a fed value. Set MTFeeders.AtStartup=F or exclude the parameter from the Tm1s.cfg file.

**MTFeeders.AtomicWeight**

Defines the number of required atomic operations to process feeders of a single cell.

Parameter type: optional, dynamic

The "atomic operation" is the unit used in the MTQ.OperationProgressCheckSkipLoopSize configuration option. Essentially, MTFeeders.AtomicWeight provides a relative heuristics of how much slower a feeder construction is when compared to visiting a cell during a read operation. The ratio MTQ.OperationProgressCheckSkipLoopSize/MTFeeders.AtomicWeight approximates the number of cells triggering parallel execution when processing feeder updates.

The default value is 10.

**MTQ**

Sets the maximum number of threads per single-user connection, when multi-threaded optimization is applied. Used when processing queries, as well as in batch feeder and cube load operations.

Parameter type: optional, dynamic

To specify a maximum number of threads for the multi-threaded optimization, add the following line to Tm1s.cfg:

```
MTQ=n
```

where n represents the number of threads to be used for a single operation.

By default, MTQ=All (case insensitive), which sets the value to the maximum number of cores available on a server. The result is a dynamic system setting that consumes all cores.

If you set MTQ equal to a negative number, that is, MTQ=-N, the number of threads that will be used is defined by the following equation: \( T=M-N+1 \), where \( T \)= the number of threads to be used by the system and \( M \)= the number of threads on the server.

For example, if your server has 64 cores and you set MTQ=-10, the system will use 55 cores.

\[
T=64-(10)+1
\]
If you set MTQ=1 or MTQ=0, multi-threaded optimization is turned off.
For more information, see "Improving processing performance with Multi-threaded Queries" in *IBM Cognos TM1 Operations*.

Default value: All

**Note:** Multi-threaded optimizations can improve performance on numeric cubes, where consolidation is optimized. As TM1 does not consolidate string values, the MTQ parameter has no impact on the performance of string cubes.

### MTQ.CTreeRedundancyReducer
Use this parameter to fine-tune multi-threaded query processing.

Parameter type: optional, static

When set to True, this parameter reduces the probability of recalculating the same rule-driven cells in MTQ worker threads.

Default value: T

### MTQ.OperationProgressCheckSkipLoopSize
Use this parameter to fine-tune multi-threaded query processing.

Parameter type: optional, dynamic

This parameter specifies the number of cells to be processed before checking whether multi-threaded splits are needed.

Default value is 10000.

### MTQ.SingleCellConsolidation
Use this parameter to fine-tune multi-threaded query processing.

Parameter type: optional, dynamic

Set this parameter to FALSE to disallow multi-threaded query processing for single cell consolidations. This is applicable, for example, if you model contains complex rules (rules that have cross-cube references with a recursive depth greater than two).

Single cell consolidation is often invoked for the computation of rules referencing consolidated values as arguments. Single cell consolidation is also used to compute title only views.

Default value is TRUE.

### NetRecvBlockingWaitLimitSeconds
Use this parameter to have the server perform the wait period for a client to send the next request as a series of shorter wait periods. This parameter changes the wait from one long wait period to shorter wait periods, so that a thread can be canceled if needed.

Parameter type: optional, static

The parameter is enabled by default.

By default the server can wait for a long time for input, which can result in long-held threads and other problems.

This parameter instructs the Cognos TM1 server to perform the wait as a series of repeated shorter waits and gives the server the opportunity to cancel or pause the thread. When set to zero (the default) the legacy behavior of one long wait is used.

Default value: 0

### NetRecvMaxClientIOWaitWithinAPIsSeconds
Specifies the maximum time for a client to do I/O within the time interval between the arrival of the first packet of data for a set of APIs through processing until a response has been sent.

Parameter type: optional, static
This parameter requires the client to handle I/O in a reasonably timely fashion after initiating API requests. This parameter is designed to protect against connections that go dead but do not raise a socket error or create other possibilities such as a hung client.

Default value is 0, which means no time limit.

**NIST_SP800_131A_MODE**

Indicates that the server must operate in compliance with the SP800-131A encryption standard.

Parameter type: optional, static

When SP800-131 encryption is enforced, the signed certificate must comply with the standard as defined by the National Institute of Standards and Technology (NIST) Special Publication SP800-131. This standard requires a minimum key size of 2048 bits and a signature algorithm of RSA with SHA-224 or higher.

To turn off SP800-131 compliance, add the following line to the tm1s.cfg file:

```
NIST_SP800_131A_MODE=False
```

Default value: True

**ODBC_LIBRARY_PATH**

Specifies the name and location of the ODBC interface library (.so file) on UNIX.

Parameter type: optional (required to support ODBC on UNIX), static

This parameter is applicable only to TM1 running on UNIX or Linux.

In the tm1s.cfg file, add the following line:

```
ODBC_LIBRARY_PATH= location/file
```

Replace location/file with the absolute path and filename of the library.

For example:

```
ODBC_LIBRARY_PATH=/usr/local/lib/unixODBC/lib/libodbc.so
```

**ODBCTimeoutInSeconds**

Specifies the timeout value that is sent to the ODBC driver using the SQL_ATTR_QUERY_TIMEOUT and SQL_ATTR_CONNECTION_TIMEOUT connection attributes.

Parameter type: optional, dynamic

**Note:** The ODBC driver must respect the request and implement the timeout.

This parameter defaults to zero. A zero value indicates legacy behavior of no timeout.

For example, in the tm1s.cfg file, add the following line:

```
ODBCTimeoutInSeconds= 10
```

**OracleErrorForceRowStatus**

Use this parameter to ensure the correct interaction between IBM Cognos TM1 TurboIntegrator processes and Oracle ODBC data sources.

Parameter type: optional, static

The format of the parameter is as follows:

```
OracleErrorForceRowStatus=x
```

Replace x with one of the following values:
Planning Analytics auto-detects the version of Oracle you are connecting to.

Planning Analytics handles the connection to Oracle the same way as other drivers.

Planning Analytics connects to Oracle and uses SQLULEN instead of SQLUSMALLINT. The default is 0.

**PasswordMinimumLength**

Specifies a minimum password length for clients accessing the server.

Parameter type: optional, dynamic

For example, set `PasswordMinimumLength=8` to enforce a minimum password length of 8 characters.

*Note:* This parameter only affects passwords set or changed after the parameter had been set. It has no effect on old, unchanged passwords having less characters as enforced by `PasswordMinimumLength`

**PasswordSource**

Comparss user-entered password to the stored password.

Parameter type: optional, static

Cognos TM1 (Default): Compares the user-entered password to the password in the Cognos TM1 database.

LDAP: Compares the user-entered password to the password stored in on the LDAP server.

**PerfMonIsActive**

Use this parameter to turn updates to TM1 performance counters on or off.

Parameter type: optional, dynamic

You can view performance counters using the TM1 PerfMon utility or the Microsoft Windows Performance Monitor. For more details, see "Using TM1 Performance Counters" in IBM Cognos TM1 Operations.

Capturing performance counters in TM1 can impact performance under a heavy multi-user workload (with 100 or more active users). Use this parameter to turn off updates to performance counters if performance is an issue.

```
PerfMonIsActive=F
```

Default value is T.

**PerformanceMonitorOn**

Automatically starts populating the Stats control cubes when a server starts.

The control cubes contain statistics that you can review to monitor the system performance. For details on control cubes, see "Control Cubes" in IBM Cognos TM1 Operations.

Parameter type: optional, dynamic

For example, to enable Performance Monitor set `PerformanceMonitorOn=T`. To disable the Performance Monitor set `PerformanceMonitorOn=F`

**PersistentFeeders**

To improve reload time of cubes with feeders, set the PersistentFeeders configuration parameter to true (T) to store the calculated feeders to a .feeders file.

Any installation with server load times of over 5 minutes can probably improve their performance using this parameter.

Parameter type: optional, static
When this parameter is set to T and the server encounters a persistent feeder file, it loads the saved feeders which reduces the time normally taken to recalculate those feeders. Feeders are saved when the data is saved or rules are edited. You do not explicitly save the feeders.

For installations with many complex feeder calculations persisting feeders and then re-loading them at server startup will improve performance. For simple feeders, the time taken to read feeders from disk may exceed the time to re-calculate the feeders but most installations will benefit.

Using the Persistent Feeders feature will increase your system size on disk only. Memory size is not affected by the use of this parameter.

| PersistentFeeders=T |

For more information, see “Using Persistent Feeders” in IBM Cognos TM1 Operations.

**PortNumber**

Sets the server port number used to distinguish between multiple servers running on the same computer.

When multiple IBM Cognos TM1 servers are installed on a single computer, each server must use a unique port number.

Parameter type: optional, static

When you install a Cognos TM1 server, the default port number is 12345. Valid port numbers are between 5001 and 49151.

If the Tm1s.cfg file does not contain the PortNumber parameter, the Cognos TM1 server uses port 5000. Local Cognos TM1 servers use port 5000. The port used for Client Messages must also be a unique port number and is set to 5001 by default when the ClientMessagePortNumber parameter is used.

**PreallocatedMemory.BeforeLoad**

Specifies whether the preallocation of memory occurs before server loading or in parallel.

Parameter type: optional, dynamic

Default value: F (disabled)

When PreallocatedMemory.BeforeLoad=T (enabled), preallocation of memory is performed before server loading. With this setting is disabled, preallocation occurs in parallel to a server loading process. Overall server load time improvements vary by operating system allocation speeds and the memory consumption speeds of the server loading logic. TM1 server administrators can modify the preallocation memory settings to obtain optimal results for their environment.

**PreallocatedMemory.Size**

Triggers the preallocation of pooled TM1 server memory.

Parameter type: optional, dynamic

Default value: 0

Allocated memory is specified in units of MB (megabytes).

**PreallocatedMemory.ThreadNumber**

Specifies the number of threads used for preallocation memory in multi-threaded cube loading.

Parameter type: optional, dynamic

Default value: 4

**PrivilegeGenerationOptimization**

When the TM1 server generates security privileges from a security control cube, it reads every cell from that cube.
If the security control cube is sparsely populated, this results in unnecessary processing and a longer loading time. An example of a sparsely populated security cube would be one that has a greater ratio of default security settings compared to defined security settings.

Parameter type: optional, static

To address this issue, the PrivilegeGenerationOptimization parameter can be added to the Tm1s.cfg file as follows:

```
PrivilegeGenerationOptimization=T
```

When this parameter is set to T, the Cognos TM1 server will read only the populated cells in security cubes. In the case of a sparsely populated security cube, this will dramatically shorten the Cognos TM1 server's load time.

**Note:** If you populate the security settings via rules and want to use this parameter, you must write feeders for the rules that populate your security cubes. Because security settings are stored as strings, the rules that populate your security cubes must include the FeedStrings function.

### ProgressMessage

This parameter determines whether users have the option to cancel lengthy view calculations.

When a user opens a view that takes a significant amount of time to calculate (usually a view with high levels of consolidation or complex rules), IBM Cognos TM1 monitors the progress of the process. When ProgressMessage=T a dialog box opens that allows the user to Stop Building View.

Parameter type: optional, static

If the user clicks Stop Building View, the view is discarded on the client, but view calculation continues on the server. In some instances, this can tie up the server.

- If ProgressMessage=F, the Stop Building View option is not offered and the user cannot cancel lengthy operations. This setting helps avoid potential server tie ups in versions 9.1 SP3 through 9.4.
- When ProgressMessage=T or is not present in the Tm1s.cfg file, the Stop Building View option opens during lengthy view calculations so the user can cancel the process if necessary. For versions 9.4 or later, the user can assign a unique Port Number using ClientMessagePortNumber. This additional port allows these progress messages to travel via a secondary port so that server processing can continue without tying up thread reserves.

**Note:** To avoid potentially tying up servers, Cognos TM1 9.1 SP3 through 9.4 have ProgressMessage=F inserted into the Tm1s.cfg file during server installation. As of Cognos TM1 9.4, progress messages can travel via the secondary port assigned by ClientMessagePortNumber so Cognos TM1 9.4 and later have ProgressMessage=T set by default.

### ProportionSpreadToZeroCells

Allows you to perform a proportional spread from a consolidation without generating an error when all the leaf cells contain zero values.

In this case, Cognos TM1 applies an equal spread to the empty cells when the ProportionSpreadToZeroCells parameter is enabled. This functionality is enabled by default.

Parameter type: optional, static

**Behavior when ProportionSpreadToZeroCells is enabled**

This parameter and functionality are enabled by default, allowing you to complete a spread operation without an error when you perform a proportional spread on a consolidation where all the leaf cells are zero. In this scenario, Cognos TM1 converts the typed entry of "P###" to "LS*###" and applies the spread as an equal spread.

When this parameter is enabled and data exists in any of the leaf cells, the behavior is the same as previous versions of Cognos TM1 when performing a proportional spread.

This parameter is on by default and it is not necessary to enable it. However, if you want to explicitly configure it, set the ProportionSpreadToZeroCells parameter to T (True) in the Tm1s.cfg configuration file as follows.

```
ProportionSpreadToZeroCells=T
```
Behavior when ProportionSpreadToZeroCells is disabled

Setting this parameter to F (False) disables this feature. An error displays when you try to perform one of the following proportional spreading operations:

- In TM1 Contributor - Enter a number in a consolidated cell where all of the leaf cells for that consolidation contain zeros.
- In TM1 Contributor and other TM1 clients - Perform a proportional spread operation by either entering a spreading code and number such as "P###" in a cell, or access a proportional spread from the right-click menu or TM1 menu (TM1 Perspectives only) when the leaf cells for that consolidation all contain zeros.

These operations make the TM1 server perform a proportional spread, but the operation fails because all of the leaf cells contain zeros.

To disable this functionality, set the ProportionSpreadToZeroCells parameter to F (False) in the Tm1s.cfg configuration file as follows.

ProportionSpreadToZeroCells=F

PullInvalidationSubsets

Reduces metadata locking by not requiring an R-lock (read lock) on the dimension during subset creation, deletion, or loading from disk.

Parameter type: optional, dynamic

Default value: T (enabled)

When a user logs in, the system loads the user's unregistered subsets from disk. At the same time, a TurboIntegrator process that edits a dimension will hold an IX (intent-to-write) lock on the dimension for the process duration. In previous releases, or when this parameter is set to F (disabled), logging in could be blocked for the entire duration of a long-running TurboIntegrator process. TM1 lock types are incompatible with each other.

RawStoreDirectory

Indicates the location of the temporary, unprocessed log file for audit logging if logging takes place in a directory other than the data directory.

Parameter type: optional, dynamic

If this parameter is not entered, by default the unprocessed audit log file is saved in the directory listed in the DataBaseDirectory parameter.

For details on other audit logging parameters, see “AuditLogMaxFileSize” on page 258, “AuditLogMaxQueryMemory” on page 258, “AuditLogOn” on page 259, and “AuditLogUpdateInterval” on page 259.

ReceiveProgressResponseTimeoutSecs

The ReceiveProgressResponseTimeoutSecs parameter configures the server to sever the client connection and release resources during a long wait for a Cancel action.

Parameter type: optional, dynamic

When the Cognos TM1 server is performing lengthy operations for a client, periodic "progress" messages are sent to the Cognos TM1 client application. The client responds to these messages with an indication of whether the user has pressed the Cancel button, in which case the lengthy operation is terminated. These responses are generated automatically by the network code in the client application; there is no user interaction involved. After sending the progress message the server waits for a response from the client application. As the server is waiting, the client's thread will continue to hold resource locks on the Cognos TM1 server, preventing other users from making other server requests which require the same resource locks.

In some particular situations, most notably running Cognos TM1 clients under a Citrix environment, the response from the client application never arrives back at the Cognos TM1 server, causing the server to wait for an infinite amount of time. This results in a system lockup, because the client's thread holds resource locks that are never released.

The ReceiveProgressResponseTimeoutSecs parameter lets you configure your server to detect this situation and to sever the client connection, releasing the resources. When the parameter is set to a valid interval (in seconds), the...
server process will terminate the client connection, releasing any resource locks, if the server does not detect the client application's response within the specified interval.

For example, if ReceiveProgressResponseTimeoutSecs=20 and the client application does not respond to the progress message sent from the server within 20 seconds, the client connection is terminated. Again, no user action is required to generate this response. The response is automatically generated by the client application, so that if the response does not arrive within 20 seconds, it is an indication that there is something seriously wrong with the client or the underlying network.

ReceiveProgressResponseTimeoutSecs is an optional Tm1s.cfg parameter. If the parameter is not present in the Tm1s.cfg file, processes are not terminated when a client does not respond to a progress message from the Cognos TM1 server.

For some Cognos TM1 installations (version 9.4 or later), the ClientMessagePortNumber defines a separate thread to use for cancellation messages without tying up reserves. When ClientMessagePortNumber is available, ReceiveProgressResponseTimeoutSecs is not used.

RulesOverwriteCellsOnLoad
Prevents cells from being overwritten on server load in rule-derived data.
Parameter type: optional, static

During the processing of feeders for a cube, a cube's value can be wiped out if there is a rule for that cell. Once the cube which had a cell wiped out is saved, the value is gone so the action has no effect on the cube. However, if the rule is edited but the cube is not subsequently modified, the cube is not saved to disk. In that case, real cell values may be wiped out when the rules run.

The RulesOverwriteCellsOnLoad parameter can be used to prevent the zeroing out action after a rule is edited.

If you are changing rules and the rules may, due to various edits, cause some cells which have data to become rule-derived, add RulesOverwriteCellsOnLoad=F to the configuration file.

If this parameter is set to True or is not present, whenever the server loads, rule-derived cells are wiped to zero. The data value in those cells is lost even if the rule is subsequently changed so that the cell is no longer rule-derived.

By default this parameter is not present in the configuration file or is set to True.

RulesOverwriteCellsOnLoad=F

RunningInBackground
When you add the line RunningInBackground=T to tm1s.cfg, the UNIX IBM Cognos TM1 server runs in background mode.
Parameter type: optional, static

If you use the startup_tm1s.sh and shutdown_tm1s.sh scripts to start and stop TM1 servers, set RunningInBackground=T.

SaveTime
Sets the time of day to execute an automatic save of server data; saves the cubes every succeeding day at the same time. As with a regular shutdown, SaveTime renames the log file, opens a new log file, and continues to run after the save.

Parameter type: optional, dynamic

The SaveTime parameter is not available when running the Cognos TM1 server as a Windows service.

The format of the SaveTime parameter is dd:hh:mm where:

- dd is the number of days from today that the system will start automatically saving data. For example, 00 is today, 01 is tomorrow.
- hh:mm is the time of day in 24-hour format.
SecurityPackageName

If you configure the IBM Cognos TM1 server to use Integrated Login, the SecurityPackageName parameter defines the security package that authenticates your user name and password in Microsoft Windows.

Parameter type: optional, static

Valid values are:
- Kerberos
- NTLM
- Negotiate

Use Kerberos unless you are running TM1 locally. If you are running locally, use Negotiate or NTLM. Negotiate selects Kerberos unless it cannot be used by one of the systems involved in the authentication.

For complete descriptions of all login security modes, including Integrated Login, see “Integrated Login” on page 197.

ServerCAMURI

Specifies the URI for the internal dispatcher that the IBM Cognos TM1 server should use to connect to Cognos Authentication Manager (CAM).

The URI is specified in the form

```
http[s]://fully-qualified host IP address:port/p2pd/servlet/dispatch
```

Parameter type: optional, dynamic

For example,

```
https://vottbies005.ent.ad.cognos.com:9443/p2pd/servlet/dispatch
```

For CAM authentication this setting must include the fully-qualified name for the server that the Cognos Analytics certificate was created for.

To determine the server that the certificate was issued for:

1. Enter the SSL URI to the Cognos Analytics dispatcher in a browser.
2. Update the ServerCAMURI setting in the tm1s.cfg with the fully-qualified name of that server.

For example:

```
ServerCAMURI=https://vottbies005.ent.ad.cognos.com:9443/p2pd/servlet/dispatch.
```

To configure the Cognos TM1 Applications Server to work with CAM SSL,

1. Ensure the following settings are made in Cognos Configuration:
   - **Force Qualified Paths** set to False.
   - **Use Mutual Authentication** set to True
2. Accept the certificate when saving.

ServerCAMURIRetryAttempts

Specifies the number of attempts made before moving on to the next ServerCAMURI entry in the tm1s.cfg file.

Parameter type: optional, dynamic

This parameter is applicable if you are using IBM Cognos TM1 with Cognos Analytics security and you have defined multiple dispatchers in the tm1s.cfg file. Dispatchers are defined using the ServerCAMURI parameter.

For example, suppose you have three ServerCAMURI parameters specified in the tm1s.cfg file and ServerCAMURIRetryAttempts=7.

```
ServerCAMURI=http://server1:9300/p2pd/servlet/dispatch
ServerCAMURI=http://server2:9300/p2pd/servlet/dispatch
```

ServerCAMURI=http://server3:9300/p2pd/servlet/dispatch
ServerCAMURIRetryAttempts=7

The first dispatcher (http://server1:9300/p2pd/servlet/dispatch) is used and tried seven times. If it does not respond, the second one is then used and tried seven times. If it does not respond, the third dispatcher is then tried seven times. If the third one does not respond, the login fails.

Default value: 3

ServerLogging
Generates a log with the security activity details on the IBM Cognos TM1 server that are associated with Integrated Login.

Parameter type: optional, dynamic

The log file, named Tm1server.log, is saved to the Cognos TM1 server data directory. The ServerLogging parameter is useful only if your Cognos TM1 server is configured to use Integrated Login.

Set ServerLogging to T in Tm1s.cfg. Note also that if ServerLogging=T is set, you must rename the Cognos TM1 server message logfile tm1server.log by editing the corresponding parameter in the logger configuration file tm1s-log.properties.

Note: If you change this parameter dynamically (without restarting the TM1 server), logging occurs only for new client sessions.

ServerName
Sets the name of the IBM Cognos TM1 server. If you do not supply this parameter, Cognos TM1 names the server Local and treats it as a local server.

Parameter type: optional, static

ServicePrincipalName
Specifies the service principal name (SPN) when using Integrated Login with TM1 Web and constrained delegation.

Parameter type: optional, static

Use the following format to add the parameter to the Tm1s.cfg file:

ServicePrincipalName=SPN

The value you set here must match the service name that has also been mapped to a domain account on the Active Directory domain controller using the Microsoft command-line tool, setspn.exe.

For example, if you use setspn.exe to add an SPN as follows:

setspn -a FPM/TM1 WbSvr_Account

then you need to set the ServicePrincipalName parameter like this:

ServicePrincipalName=FPM/TM1

For more information about constrained delegation and SPN configuration, search the Microsoft website for the topic "Kerberos Technical Supplement for Windows".

SkipLoadingAliases
Use SkipLoadingAliases to speed up the loading of the server and updating of views by skipping the loading of aliases.

Parameter type: optional, static

Please contact customer support to determine if this parameter is applicable to your Cognos TM1 system.

Valid values are:

- T - Aliases skipped
- F - Aliases loaded
**SkipSSLCAMHostCheck**

Indicates whether the SSL certificate ID confirmation process can be skipped.

The default is False.

Parameter type: optional, static

**Important:** This parameter should be set to True only if using a generic certificate for demonstration purposes.

**SpreadingPrecision**

Use the SpreadingPrecision parameter to increase or decrease the margin of error for spreading calculations.

Parameter type: optional, dynamic

Floating point arithmetic on computers is not 100% precise. When a computer calculates very small numbers, a margin of error is applied to the calculation. If the computer adds a set of numbers, and the resulting sum is close to the target value within the margin of error, the sum is considered accurate.

The margin of error for certain Cognos TM1 calculations is controlled through the SpreadingPrecision parameter. The default value is SpreadingPrecision=1e-8. This value is used in the following spreading scenarios:

- Spreading from a consolidated cell.
- Spreading in leaf cells whose consolidated value has a hold applied.

**Spreading from a Consolidation**

When you execute a proportional data spread from a consolidated cell, Cognos TM1 writes the numbers to each cell in the range, and rolls up the total to recalculate the consolidation. The total of all cells in the consolidation is then compared to the original value you provided for the spread function. The total might be different from the target value because of the rules applied to the n-level elements or the consolidated cell itself.

If the rules are such that the resultant value does not match the spread desired value, an error will be generated and the spread operation will not be done.

If SpreadingPrecision=1e-8, the total calculated by Cognos TM1 for the consolidation must be within 0.000001% of the target value (99.999999% accurate), or Cognos TM1 displays an error. An error of more than US$0.01 on a consolidated spread of US$1,000,000 results in an error.

You can increase or decrease the margin of error for these types of calculations using the SpreadingPrecision parameter.

The following examples include valid values for the SpreadingPrecision parameter:

- SpreadingPrecision=1e-4
- SpreadingPrecision=1e-8
- SpreadingPrecision=1e-10
- SpreadingPrecision=1e-12

**Spreading and Consolidation Holds**

The SpreadingPrecision parameter also has an effect under these conditions:

- When you spread values to some leaf cells that roll up into a consolidation
- A consolidation with a hold applied to it

For example, suppose you have the consolidation Q1 with values Jan, Feb, and Mar.

If Q1- has a consolidated hold applied, and you spread values to Jan and Feb, Cognos TM1 does the following:

- Applies the spreading to Jan and Feb.
- Adjusts Mar.
- Adds the three n-level elements together.
- Compares the sum of the n-level elements to the value of Q1.
If the sum is accurate to within the margin of error specified by the SpreadingPrecision parameter, the spread succeeds. If the sum falls outside the margin of error specified by the SpreadingPrecision parameter, Cognos TM1 generates an error.

**SpreadErrorInTIDiscardsAllChanges**

If SpreadErrorInTIDiscardsAllChanges is enabled and a spreading error occurs as part of a running TurboIntegrator script, all changes that were made by that TurboIntegrator script are discarded.

Parameter type: optional, static

To enable SpreadErrorInTIDiscardsAllChanges, add the following line to the tm1s.cfg file:

```
SpreadErrorInTIDiscardsAllChanges=T
```

Default value: F

**SSLCertAuthority**

Specifies the name of the IBM Cognos TM1 server's certificate authority file. This file must reside on the computer where the TM1 server is installed.

Parameter type: optional (required for SSL), static

If you are using your own SSL certificates with TM1, you can determine this value by referring to the Microsoft Management Console. Click **Certificates > Personal > Certificates**. The principal name is displayed in the Issued By column of the Properties pane.

**SSLCertificate**

Specifies the full path of the IBM Cognos TM1 server's certificate file, which contains the public/private key pair.

Parameter type: optional (required for SSL), static

**SSLCertificateID**

Specifies the name of the principal to whom the IBM Cognos TM1 server's certificate is issued.

Parameter type: optional (required for SSL), static

If you are using your own SSL certificates with TM1, you can determine this value by referring to the Microsoft Management Console. Click **Certificates > Personal > Certificates**. The principal name is displayed in the Issued To column of the Properties pane.

**StartupChores**

StartupChores is a configuration parameter that identifies a list of chores that run at server startup.

Parameter type: optional, static

To run a chore at startup before users login or other scheduled chores run, add this parameter with the names of the chores to run separated by a colon, for example:

```
StartupChores=ChoreName1:ChoreName2:ChoreName3:ChoreNameN
```

If this parameter is not specified, then no Chores will be run. If the name specified does not match an existing Chore then an error is written to the server log and execution continues to the next Chore.

The value of the configuration parameter can be retrieved by a client application as a Server property called StartupChores using the existing TM1ObjectPropertyGet call.

This is a read-only property and set operations are rejected. The value of the property can be changed only by editing the configuration file and restarting the server.

**SubsetElementBreatherCount**

This parameter manages the way IBM Cognos TM1 handles locking behavior for subsets.
Parameter type: optional, dynamic

When

\[ \text{SubsetElementBreatherCount} = -1 \]

The Cognos TM1 server never releases the lock on subsets when other requests for the subset are pending. This setting is the default. It can optimize view performance for a single user, but at the cost of multi-user concurrency.

When \( \text{SubsetElementBreatherCount} \) is set to any value greater than zero (0), the TM1 server releases the lock on subsets when other requests for the subset are pending, then reacquires the lock after pending requests are processed. This setting improves performance when multiple users attempt to access the same subset, particularly when the subset contain more than 100 elements.

**SupportPreTLSv12Clients**

As of TM1 10.2.2 Fix Pack 6 (10.2.2.6), all SSL-secured communication between clients and servers in TM1 uses Transport Layer Security (TLS) 1.2. This parameter determines whether clients prior to 10.2.2.6 can connect to the 10.2.2.6 or later TM1 server.

Parameter type: optional, static

To allow clients prior to 10.2.2.6 to connect to the 10.2.2.6 (or later) TM1 server, add the following line to Tm1s.cfg:

\[ \text{SupportPreTLSv12Clients} = T \]

When the TM1 server is configured to allow connections from pre-TLS v1.2 clients, the connection with such clients is established using TLS 1.0.

If SupportPreTLSv12Clients is not present in the Tm1s.cfg file, or if SupportPreTLSv12Clients=F, clients prior to 10.2.2.6 cannot connect to a 10.2.2.6 or later TM1 Server.

**SvrSSLExportKeyId**

Specifies the identity key used to export the IBM Cognos TM1 server's certificate from the Microsoft Windows certificate store.

Parameter type: optional, static

In most cases, the value for SvrSSLExportKeyId will be identical to the value for SSLCertificate.

**SyncUnitSize**

Sets the frequency of saving a check point during a synchronization process in case there is a network connection failure.

Parameter type: optional, static

*Note:* When you use SyncUnitSize, you must also configure the MaximumSynchAttempts parameter. For more information, see “MaximumSynchAttempts” on page 281.

If you configure both the SyncUnitSize and MaximumSynchAttempts parameters and a synchronization process is interrupted by a network connection failure, the process will attempt to reconnect and complete the synchronization starting from the last check point.

To set this parameter, add the following line to the Tm1s.cfg file for the planet server:

\[ \text{SyncUnitSize} = n \]

where \( n \) represents the number of synchronization records written to the transaction log file, Tm1s.log, after which a check point will be saved.

The default value is 1000.

The minimum recommended value is 500.
**tlsCipherList**

Specifies a comma-separated list of supported cipher suites in priority sequence.

Parameter type: optional, static

Use tlsCipherList to specify what cipher suites are acceptable for your TM1 system. The listed cipher suites are presented to the SSL negotiation in the order in which they are listed, for both the client and server sides of the negotiation. At least one of the listed cipher suites for the client and server must match.

The following cipher suites are supported:


For example:

```
tlsCipherList=TLS_RSA_WITH_AES_128_CBC_SHA, TLS_RSA_WITH_RC4_128_MD5, TLS_RSA_WITH_AES_128_CBC_SHA256
```

**TM1ConnectorforSAP**

Set this parameter to T to use the IBM Cognos TM1 Connector for SAP software.

Parameter type: optional, static

**Note:** This functionality is available only to customers who purchased the IBM Cognos TM1 Connector for SAP software. That software was previously available separately from the IBM Cognos TM1 software. This software is no longer available for sale.

If you have previously purchased this functionality, you must add TM1ConnectorforSAP=T and UseNewConnectorforSAP=T to the tm1s.cfg file to make the software available.

The default value is F.

**UnicodeUpperLowerCase**

This configuration parameter instructs the TM1 server to identify and handle Unicode object names, preventing the creation of identical Unicode object names that vary only in case.

Parameter type:

- Optional
- Static

If you change this parameter value, restart the TM1 server to apply the new value.

TM1 treats ASCII object names as case-insensitive; the element name SALES is equivalent to sales. A reference to either SALES, sales, or SaLeS is considered to be a reference to a single element. Similarly, the cube name Projections is equivalent to PROJECTIONS.

However, Unicode object names are **not** treated as case-insensitive. Consequently, a server can contain two identically named objects that varied only in case. For example, the elements NEMÈIJA and nemèija can exist in a single dimension, and each is considered a unique element.

Include the parameter UnicodeUpperLowerCase=T in your TM1s.cfg file to prevent the creation of identically named Unicode object names that vary only in case. When UnicodeUpperLowerCase=T, Unicode object names are handled just as ASCII object names, and are case-insensitive.

If you have developed applications that rely on Unicode object names that vary only in case, and want to maintain such functionality, you should not add the UnicodeUpperLowerCase configuration parameter to your Tm1s.cfg file. If this parameter is not present in Tm1s.cfg (or is set to F) TM1 will continue to treat Unicode object names as case-sensitive.
UseExcelSerialDate

Enables the use of Microsoft Excel serial dates instead of TM1 serial dates.

Parameter type: optional, static

When UseExcelSerialDate is enabled, TM1 rule functions and TurboIntegrator functions use Jan 1, 1900 as a base date for serial dates instead of Jan 1, 1960.

In the past, TM1 rule functions used serial dates that represent the number of days elapsed since Jan 1, 1960. This conflicts with Microsoft Excel serial dates, which represent the number of days elapsed since Jan 1, 1900. The number formatting features in TM1 expect cube data to use Microsoft Excel serial dates rather than TM1 serial dates.

To avoid the need to convert dates, enable UseExcelSerialDate to have rule functions use Microsoft Excel dates rather than legacy TM1 dates.

UseExcelSerialDate=T

Default value: F

Example

You can see the serial date issue in this example.

The following rule returns May 26, 2015 as a serial date.

\[ ] = N : ( \text{DAYNO('2015-05-26')})

The unformatted result is 20234, which indicates that 20234 days have elapsed since Jan 1, 1960. The rule function is using legacy TM1 serial dates.

When you set the display format in TM1 to a date format, such as mmmm dd, yyyy, the result is May 25, 1955, because May 25, 1955 is 20234 days away from Jan 1, 1900. The value is being interpreted as a Microsoft Excel serial date.

After you add UseExcelSerialDate=T to the tm1s.cfg file and restart the TM1 server, you see the expected result, May 26, 2015, in TM1. The rule function is now using Jan 1, 1900 as the base date for serial dates.

UseLocalCopiesforPublicDynamicSubsets

Allows public dynamic subsets to improve performance and reduce locking by using local copies of the subset when possible.

Parameter type: optional, dynamic

By default, or if the parameter is not present in the tm1s.cfg file, UseLocalCopiesforPublicDynamicSubsets is enabled. To restore the earlier method of saving dynamic subsets, set this parameter to F.

UseNewConnectorforSAP

Set this parameter to T to use the IBM Cognos TM1 Connector for SAP software.

Parameter type: optional, static

Note: This functionality is available only to customers who purchased the IBM Cognos TM1 Connector for SAP software. That software was previously available separately from the IBM Cognos TM1 software. This software is no longer available for sale.

If you have previously purchased this functionality, you must add UseNewConnectorforSAP=T and TM1ConnectorforSAP=T to the tm1s.cfg file to make the software available.

The default value is F.

UserDefinedCalculations

Enables the Rollup and Insert Subset options to create user-defined consolidations in the Subset Editor in IBM Cognos TM1(r) Perspectives and Architect, and enables the Create Custom Consolidation button in TM1(r)Web clients.
Parameter type: optional, dynamic
By default, UserDefinedCalculations is enabled.
To disable user-defined consolidations TM1 Perspectives, Architect, and TM1 Web clients, add the following line to tm1s.cfg:

UserDefinedCalculations=F

**Note:** When set to F, users will see the following:
- In Architect and Perspectives, when users click the **Rollup** or **Insert Subset** option, they will get an error message stating that user defined calculations are not enabled.
- In TM1 Web, the **Create Custom Consolidation** button will be grayed-out.

**UseSQLFetch UseSQLFetchScroll UseSQLExtendedFetch**

These parameters instruct IBM Cognos TM1 to use a particular fetch call.
Parameter type: optional, dynamic
When you run TurboIntegrator process that extracts information from an ODBC data source, Cognos TM1 tries to use the most efficient SQL fetch call possible. Cognos TM1 queries the ODBC driver to determine which of the following SQL Fetch calls to use to extract the data:

- SQLFetch(), an ODBC 1 function
- SQLExtendedFetch(), an ODBC 2 function
- SQLFetchScroll(), an ODBC 3 function

These parameters are all dynamic.

If Cognos TM1 receives no response when it queries the ODBC driver, your Cognos TM1 process will result in an error unless one of the following parameters is set to T in your Tm1s.cfg file:

- UseSQLFetch
- UseSQLFetchScroll
- UseSQLExtendedFetch

These parameters instruct Cognos TM1 to use a particular fetch call. You must ensure that the call specified in Tm1s.cfg is appropriate for the ODBC driver being accessed, and you can specify only one of these parameters in Tm1s.cfg.

For example, to instruct the Cognos TM1 server to use the SQLExtendedFetch() call to extract data from an ODBC source, add the following line to Tm1s.cfg:

UseSQLExtendedFetch=T

**UseSSL**

Enables or disables SSL on the IBM Cognos TM1 server.
Parameter type: optional (required for SSL), static
This parameter is enabled by default.
To disable SSL, set UseSSL=F.

When UseSSL=T, you must set several other tm1s.cfg parameters that manage SSL implementation. For details on these parameters, see “Using SSL for data transmission security ” on page 222.

Default value: T

**UseStargateForRules**

Indicates if a rule uses the Stargate view.
Parameter type: optional, static

By default, any time a rule references a calculated value, the value is retrieved from a Stargate view stored in memory (if available). Using the Stargate view for rules, in most cases, results in a significant improvement in performance. It is more efficient to retrieve a calculated value from memory than to request and retrieve a calculation from the server.

In some unique instances that are difficult, if not impossible, to determine in advance and can only be determined through trial and error, retrieving a calculated value from a Stargate view is actually slower than requesting and retrieving the value from the server. In these instances, add the following line to Tm1s.cfg to instruct the Cognos TM1 rules to always retrieve the calculated values from the server and improve performance.

UseStargateForRules=F

Contact customer support before adding the UseStargateForRules parameter.

**ViewConsolidationOptimization**

Enables or disables view consolidation optimization on the IBM Cognos TM1 server.

Parameter type: optional, static

Using this parameter improves the performance of calculating consolidated elements. By default, ViewConsolidationOptimization is enabled on the Cognos TM1 server.

View consolidation optimization stores the consolidated values that use leaf element components on either the row or column axis. For example, consider the dimension structure Year, 1Quarter with values Jan, Feb, and Mar.

When either a row or column subset uses the Jan element, both the 1 Quarter and Year consolidations are calculated and stored for future reference. This improves performance but increases the amount of memory required for a given view.

To disable view consolidation optimization, add the following line to Tm1s.cfg:

ViewConsolidationOptimization=F

**ViewConsolidationOptimizationMethod**

This parameter defines the method used to achieve view consolidation optimization when the ViewConsolidationOptimization parameter is enabled on the IBM Cognos TM1 server.

Parameter type: optional, static

There are two methods that ViewConsolidationOptimization can use to calculate and store consolidations: ARRAY or TREE. The ARRAY method stores consolidations in a temporary array. The TREE method stores consolidations in a tree.

ViewConsolidationOptimizationMethod should be set to TREE in most circumstances. This setting provides the best performance in normal operations.

In rare instances, using the TREE method can result in a degradation of performance. In such an instance, try setting the parameter to ARRAY. For example, in the uncommon circumstance when dimensions have just a few leaf elements rolling up to many consolidations, ViewConsolidationOptimizationMethod should be set to ARRAY.

To set this parameter, add the appropriate line to your configuration file:

ViewConsolidationOptimizationMethod=TREE

or

ViewConsolidationOptimizationMethod=ARRAY

If ViewConsolidationOptimizationMethod is not explicitly set in the Tm1s.cfg file, the ARRAY method is used by default, as this maintains consistency with previous version of TM1 before the ViewConsolidationOptimizationMethod parameter was introduced.
ZeroWeightOptimization

Determines whether consolidated members with a weight of 0 are factored into the computation of consolidated cell values or consolidation functions. Consolidation functions include ConsolidatedCount, ConsolidatedMax, ConsolidatedMin, ConsolidatedAvg, ConsolidatedCount, and ConsolidatedCountUnique.

Parameter type: optional, static

When set to true, members for which the weighting is zero are eliminated from the consolidation list, and are therefore not processed when calculating values for consolidated cells or consolidation functions. This is the default behavior.

When set to false, members for which the weighting is zero are included in the consolidation list, and are therefore factored into the calculations.

Default value: true
Appendix B. The Tm1p.ini Client Configuration File

The Tm1p.ini file specifies the environment information for the IBM Cognos TM1 clients (Cognos TM1 Perspectives, Cognos TM1 Architect, and Cognos TM1 Clients).

Location of the Tm1p.ini File

IBM Cognos TM1 installs a system default version of the Tm1p.ini file and also creates a user-specific version of the file.

The two versions of the Tm1p.ini file are stored in different locations.

System default Tm1p.ini file

The system default version of Tm1p.ini allows multiple users to use Cognos TM1 on a given computer. The Tm1p.ini file must be present the first time a user starts Cognos TM1 on the computer, as the parameters in the system default version govern the behavior of the initial startup of the Cognos TM1 client for each user.

The installation location of the system default version of the Tm1p.ini file depends on which version of Microsoft Windows you are using.

For Microsoft Windows XP or Windows Server 2003:

The location of the system default version of the Tm1p.ini file is:

%ALLUSERSPROFILE%\Application Data\Applix\TM1

For example:

C:\Documents and Settings\All Users\Application Data\Applix\TM1\Tm1p.ini

Tip: To determine the value of the %ALLUSERSPROFILE% environment variable, run echo %ALLUSERSPROFILE% from a command line.

For Microsoft Windows 7 and Windows Server 2008:

For newer versions of Microsoft Windows, the location of the system default Tm1p.ini file is determined by the %ProgramData% setting.

%ProgramData%\Applix\TM1

For example:

C:\ProgramData\Applix\TM1\Tm1p.ini

Tip: Run echo %ProgramData% from a command line to see the exact location.

User-specific Tm1p.ini file

After a user starts Cognos TM1 on the computer, a user-specific copy of the Tm1p.ini file is created in their %USERPROFILE% location.

The user-specific copy of Tm1p.ini accepts all parameters settings and changes for the user and governs the behavior of the Cognos TM1 client for all subsequent user sessions of the Cognos TM1 client.

The Cognos TM1 Options dialog box also stores many of these settings. You can change these settings using either the TM1 Options dialog box or by editing the Tm1p.ini file. The Tm1p.ini parameters and TM1 Options are described here.

The exact location for %USERPROFILE% depends on which version of Microsoft Windows you are using.

Tip: Run echo %USERPROFILE% from a command line to see the exact location.
For Microsoft Windows XP or Windows Server 2003:
The location of the user-specific version of the Tm1p.ini file is:
%USERPROFILE%\user name\Application Data\Applix\TM1\
For example:
C:\Documents and Settings\user name\Application Data\Applix\TM1\Tm1p.ini

For Microsoft Windows 7 and Windows Server 2008:
For newer versions of Microsoft Windows, the user-specific copy of the Tm1p.ini file is located here:
%USERPROFILE%\user name\AppData\Roaming\Applix\TM1\
For example:
C:\Users\ADMIN\AppData\Roaming\Applix\TM1\Tm1p.ini

Parameters in the Tm1p.ini file

The following parameters can be used in the Tm1p.ini file.

AdminHost
Displays the Admin Host name on which an Admin Server is running. On IBM Cognos TM1 Options, use Login Parameters Admin Host.

AdminSvrSSLCertAuthority
The full path of the certificate authority file that issued the IBM Cognos TM1 Admin Server's certificate.
On Cognos TM1 Options, use Certificate Authority.

AdminSvrSSLCertID
The name of the principal to whom the IBM Cognos TM1 Admin Server's certificate is issued.
Note: The value of this parameter should be identical to the SSLCertificateID parameter for the Cognos TM1 Admin Server as set in IBM Cognos Configuration.
This parameter can also be set for clients in the Cognos TM1 Options window > Certificate ID field.

AdminSvrSSLCertRevList
The full path of the certificate revocation file issued by the certificate authority that issued the IBM Cognos TM1 Admin Server's certificate.
A certificate revocation file will only exist in the event a certificate had been revoked. On Cognos TM1 Options, use Certificate Revocation List.

AdminSvrSSLExportKeyID
The identity key used to export the certificate authority certificate, which originally issued the IBM Cognos TM1 Admin Server's certificate, from the certificate store.
This parameter is required only if you choose to use the certificate store by setting ExportAdminSvrSSLCert=T.
On Cognos TM1 Options, use Export Certificate ID.

AdvancedRulesEditor
Indicates the type of Rules Editor used.
The Advanced Rules Editor has an enhanced interface.
• T - The Enhanced Rules Editor is used.
• F (Default) - The Basic Rules Editor is used.
**AllowImportCamClients**

This parameter is required only when configuring IBM Cognos TM1 to use CAM authentication. It must be set to T when importing an administrative user from CAM into Cognos TM1. If your Cognos TM1 server is not configured to use CAM authentication, this parameter should be set to F or omitted from the Tm1p.ini file.

For details, see “Configuring the TM1 Server to use Cognos security” on page 212.

**BrowseDisplayReadsRightToLeft**

Indicates how data is oriented in the Cube Viewer.

Data can display right to left or left to right.

- T - Data is oriented right to left.
- F (Default) - Data is oriented left to right.

**ClassicSliceMode**

Indicates whether the Slice option in the Cube Viewer generates classic slices or dynamic slices.

- T - Slice option generates classic slices.
- F - Slice option generates dynamic slices.

**CognosGatewayURI**

This parameter is required only when configuring IBM Cognos TM1 to use IBM Cognos security (CAM) authentication. It must be set to the URI of your IBM Cognos gateway. The URI is specified in the form http[s]:/<host>/cognosx/cgi-bin/cognos.cgi or http[s]:/<host>/ibmcognos/cgi-bin/cognos.cgi.

For example, http://win2003test/ibmcognos/cgi-bin/cognos.cgi.

If your Cognos TM1 server is not configured to use CAM authentication, this parameter should be omitted from the Tm1p.ini file.

For details, see “Configuring the TM1 Server to use Cognos security” on page 212.

**ConnectLocalAtStartup**

Indicates whether IBM Cognos TM1 Architect or IBM Cognos TM1 Perspectives automatically connects to the local server at startup.

- T (Default) - Cognos TM1 connects to the local server at startup.
- F - Cognos TM1 does not connect to the local server at startup.

**DataBaseDirectory**

Uses the full path to the local server data directory.

You can specify multiple data directories by separating the directory names with semicolons.

**DimensionDownloadMaxSize**

A threshold value of the number of elements in a dimension, beyond which the dimension is downloaded and cached on the IBM Cognos TM1 client.

The DimensionDownloadMaxSize parameter is applicable to older version of TM1. The parameter is not applicable to 10.2.2.

To improve performance when you work with large dimensions, add DimensionDownloadMaxSize so that large dimensions will cache on the client.
**DisableAdminHostEntry**

When enabled in the `Tm1p.ini` file, the `DisableAdminHostEntry` parameter prevents users from modifying the Admin Host setting on the **TM1 Options** dialog box.

When `DisableAdminHostEntry=T`, the **Admin Host** option on the **TM1 Options** dialog box is disabled. This prevents a user from modifying the Admin Host setting and seeing other TM1 servers in your environment. If `DisableAdminHostEntry=F`, or if the parameter is not present in the `Tm1p.ini` file, the Admin Host setting can be edited.

`DisableAdminHostEntry` must be present in the user-specific version of the `Tm1p.ini` file. When the `DisableAdminHostEntry` parameter is added in the system default `Tm1p.ini` file, the parameter and setting is copied to the user-specific version of `Tm1p.ini` the first time a user starts Architect or Perspectives.

If a user starts Architect or Perspectives and the `DisableAdminHostEntry` parameter is not present in the system default version of `Tm1p.ini`, `DisableAdminHostEntry=F` is added to the user-specific version of `Tm1p.ini`.

**DisableWritebackOnDisconnect**

When `DisableWritebackOnDisconnect` is enabled in the `Tm1p.ini` file, worksheet cells containing TM1 formulas that write to the TM1 server remain active and write to the server as long as an active server connection is available.

However, when this parameter is enabled and the TM1 Perspectives client is not connected to a TM1 server, cells containing TM1 formulas that write to the server are no longer protected. In this case, entering a value in any worksheet cell containing a TM1 formula that writes to the TM1 server results in the TM1 formula being overwritten.

TM1 formulas that write to the server include `DBR`, `DBRW`, `DBA`, `DBS`, `DBSA`, `DBSS`, and `DBSW`.

Setting `DisableWritebackOnDisconnect=T` also restores multiple level undo/redo and multiple copy/paste operations in a worksheet containing TM1 formulas when there is no active server connection.

`DisableWritebackOnDisconnect` has a similar effect as `DisableWritebackOnTM1Formulas`. The important distinction between these two parameters is that `DisableWritebackOnDisconnect` applies only when there is no active server connection, while `DisableWritebackOnTM1Formulas` applies at all times.

**DisableWritebackOnTM1Formulas**

When enabled in the `Tm1p.ini` file, the `DisableWritebackOnTM1Formula` parameter prevents writeback to the TM1 server when you enter a value in a cell containing a TM1 worksheet formula.

When you set `DisableWritebackOnTM1Formula=T` in the `Tm1p.ini` file, entering a value in any worksheet cell containing a TM1 formula that writes to the TM1 server results in the TM1 formula being overwritten.

TM1 formulas that write to the server include `DBR`, `DBRW`, `DBA`, `DBS`, `DBSA`, `DBSS`, and `DBSW`.

Setting `DisableWritebackOnTM1Formula=T` also restores multiple level undo/redo and multiple copy/paste operations in a worksheet containing TM1 formulas.

**DisplayApplications**

Indicates whether the Applications group is visible in Server Explorer on startup.

- **T** - Applications group is visible in Server Explorer.
- **F** - Applications group does not appear in Server Explorer.

**DisplayChores**

Indicates whether the Chores group is visible in Server Explorer on startup.

- **T** - Chores group is visible in Server Explorer.
- **F** - Chores group does not appear in Server Explorer.

**DisplayControlCubes**

Indicates whether the Control Cube group is visible in Server Explorer on startup.

- **T** - ControlCube group is visible in Server Explorer.
- **F** - ControlCube group does not appear in Server Explorer.
DisplayCubes
Indicates whether the Cubes group is visible in Server Explorer on startup.
- T - Cubes group is visible in Server Explorer.
- F - Cubes group does not appear in Server Explorer.

DisplayDimensions
Indicates whether the Dimensions group is visible in Server Explorer on startup.
- T - Dimensions group is visible in Server Explorer.
- F - Dimensions group does not appear in Server Explorer.

DisplayExplorerPropertiesWindow
Indicates whether the Properties pane is visible in Server Explorer on startup.
- T - Properties pane is visible.
- F (Default) - Properties pane does not appear.

DisplayProcesses
Indicates whether the Processes group is visible in Server Explorer at startup.
- T - Processes group is visible in Server Explorer.
- F - Processes group does not appear in Server Explorer.

DisplayReplications
Indicates whether the Replications group is visible in Server Explorer at startup.
- T - Replications group is visible in Server Explorer.
- F - Replications group does not appear in Server Explorer.

ExpandRowHeaderWidth
Indicates if the Row Headers will automatically expand to accommodate the width of the longest entry in the column.
- T (Default) - Row headers auto-expand.
- F - Row header must be manually expanded when necessary.

ExportAdminSvrSSLCert
Select this option if you want the certificate authority certificate which originally issued the IBM Cognos TM1 Admin Server's certificate to be exported from the Microsoft Windows certificate store at runtime.
- T (Default) - Original certificate is exported from the Windows certificate store.
- F - Original certificate is not exported.
In Cognos TM1 Options, select Use Certificate Store.
When this option is selected, you must also set a value for Export Certificate ID in the Cognos TM1 Options dialog box or AdminSvrSSLExportKeyID.

InSpreadsheetBrowser
Indicates if the In-Spreadsheet Browser or the Cube Viewer is the default browser.
- T - In-Spreadsheet Browser is the default browser. When you double-click a cube or view, it opens in an Excel document.
- F (Default) - Cube Viewer is the default browser. When you double-click a cube or view, it opens in the Cube Viewer.

IntegratedLogin
Indicates if your IBM Cognos TM1 client uses Integrated Login or the standard Cognos TM1 security to log in to the Cognos TM1 server and other Cognos TM1 components.
• T - Client uses Integrated login, where your Microsoft Windows login username and password are used to access the Cognos TM1 server and other components.
• F (Default) - Client uses standard Cognos TM1 security, where a username and password must be explicitly provided, when logging in to the Cognos TM1 server and other components.

Before you enable this parameter, consult with your Cognos TM1 administrator to determine if Integrated Login is implemented on your Cognos TM1 server.

On Cognos TM1 Options, use Integrated Login.

Language

Indicates the language used in the IBM Cognos TM1 client interface.

Clients will try to read from the locale and use that to set the language. That language will be used if it matches one of the supported languages. If the language entered does not match a supported language, English is used.

To override the default you can set the Language explicitly in the tm1p.ini using the following codes:

<table>
<thead>
<tr>
<th>Language</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazilian Portuguese</td>
<td>bra</td>
</tr>
<tr>
<td>Croatian</td>
<td>hrv</td>
</tr>
<tr>
<td>Czech</td>
<td>csy</td>
</tr>
<tr>
<td>Chinese (Simplified)</td>
<td>sch</td>
</tr>
<tr>
<td>Chinese (Traditional)</td>
<td>tch</td>
</tr>
<tr>
<td>Danish</td>
<td>dan</td>
</tr>
<tr>
<td>Dutch</td>
<td>nld</td>
</tr>
<tr>
<td>German</td>
<td>deu</td>
</tr>
<tr>
<td>Finnish</td>
<td>fin</td>
</tr>
<tr>
<td>French</td>
<td>fra</td>
</tr>
<tr>
<td>Hungarian</td>
<td>hun</td>
</tr>
<tr>
<td>Italian</td>
<td>ita</td>
</tr>
<tr>
<td>Japanese</td>
<td>jpn</td>
</tr>
<tr>
<td>Kazakh</td>
<td>kaz</td>
</tr>
<tr>
<td>Korean</td>
<td>kor</td>
</tr>
<tr>
<td>Norwegian</td>
<td>nor</td>
</tr>
<tr>
<td>Polish</td>
<td>pol</td>
</tr>
<tr>
<td>Romanian</td>
<td>rom</td>
</tr>
<tr>
<td>Russian</td>
<td>rus</td>
</tr>
<tr>
<td>Spanish</td>
<td>esp</td>
</tr>
<tr>
<td>Slovenian</td>
<td>slv</td>
</tr>
<tr>
<td>Swedish</td>
<td>sve</td>
</tr>
<tr>
<td>Thai</td>
<td>tha</td>
</tr>
<tr>
<td>Turkish</td>
<td>trk</td>
</tr>
</tbody>
</table>
LocalServerNetworkProtocol
Determines the protocol that the local IBM Cognos TM1 server uses to communicate with clients. Currently, the only valid setting is TCP.

MainWindowLayoutInfo
Generates dimension and position coordinates for the Server Explorer window; allows Server Explorer dimensions and position to be maintained between sessions.
The coordinates are automatically generated when you move or resize the Server Explorer window.

PreviousAdminHosts
Lists up to six of the most recently accessed Admin Hosts from the IBM Cognos TM1 Options Admin Host list.

PreviousDataDirectories
Lists up to six of the most recently accessed data directories in the Local Server Data Directory list from the IBM Cognos TM1 Options window.
The directories accessed within a single session are separated by semicolons. The directories accessed in different sessions are separated by commas.

SecurityAssignmentWindowLayoutInfo
Generates dimension and position coordinates for the Clients/Groups window; allows Clients/Groups dimensions and position to be maintained between sessions.
The coordinates are automatically generated when you move or resize the Clients/Groups window.

SentMsgsToServerCountWarning
The SentMsgsToServerCountWarning parameter is for development use only. The parameter is set to F by default. Be sure not to change the default setting.

ShowAdminHostChangeWarning
Between session storage of whether to display or suppress a warning when the AdminHost is changed.
• T (Default)- When an AdminHost is changed, a warning message displays.
• F - No message is displayed when the AdminHost is changed.

ShowAliasAttributeWarning
Between session storage of whether to display or suppress a warning when the Alias Attribute is changed.
• T (Default)- When an Alias Attribute is changed, a warning message displays.
• F - No message is displayed when the Alias Attribute is changed.

ShowChoresSchedulingWarning
Between session storage of whether to display or suppress a warning when a chore schedule is changed.
• T (Default)- When a chore schedule is changed, a warning message displays.
• F - No message is displayed when a chore schedule is changed.

ShowCubeReplicationWarning
Between session storage of whether to display or suppress a warning when a cube is replicated.
• T (Default)- When a cube is replicated, a warning message displays.
• F - No message is displayed when a cube is replicated.

ShowDimDeleteElementWarning
Between session storage of whether to display or suppress a warning when a dimension element is deleted.
• T (Default)- When a dimension element is deleted, a warning message displays.
• F - No message is displayed when a dimension element is deleted.

**ShowDimensionAccessWarning**
Between session storage of whether to display or suppress a warning when a dimension is accessed.
• T (Default)- When a dimension is accessed, a warning message displays.
• F - No message is displayed when a dimension is accessed.

**ShowDynamicSubsetWarning**
Between session storage of whether to display or suppress a warning when a Dynamic Subset is changed.
• T (Default)- When a Dynamic Subset is changed, a warning message displays.
• F - No message is displayed when a Dynamic Subset is changed.

**ShowPickOperationWarning**
Between session storage of whether to display or suppress a warning when data is copied using the Pick Elements option.
• T (Default)- A warning message displays any time data is copied using the Pick Elements option.
• F - No message displays when data is copied using the Pick Elements option.

**ShowProcessUNASCIIWarning**
Between session storage of whether to display or suppress a warning when an ASCII datasource is processed.
• T (Default)- When an ASCII datasource is processed, a warning message displays.
• F - No message is displayed when an ASCII datasource is processed.

**ShowProcessUNODBCWarning**
Between session storage of whether to display or suppress a warning when an ODBC datasource is processed.
• T (Default)- Any time an ODBC datasource is processed, a warning message displays.
• F - No message displays when an ODBC datasource is processed.

**SliceNewWorkbook**
Determines how slices are generated from the Cube Viewer.
• T - Inserts slices in a new workbook.
• F (Default) - Inserts slices in a new sheet of the current workbook.

**SubsetWindowLayoutInfo**
Generates dimension and position coordinates for the Subset Editor window; allows Subset Editor dimensions and position to be maintained between sessions.
The coordinates are automatically generated when you move or resize the Subset Editor window.

**TM1RebuildDefault**
Determines if worksheets recalculate on opening by default.
By default, when you slice a view into Microsoft Excel from IBM Cognos TM1, the workbook contains a workbook level named variable, TM1RebuildOption, that is set to 1 by default. This causes the worksheets in the book to be rebuilt on opening (which forces a recalculation to happen on each sheet in the book). This action is necessary if the sheets contain Active Forms. If you are not working with Active Forms, you may not want all workbooks to use this default behavior.

All worksheets recalculate when a Cognos TM1 workbook is opened. The workbook was created by slicing from Cognos TM1 Perspectives and contains the workbook level named variable TM1RebuildOption = 1.
By default, as of Cognos TM1 9.4.1 all new books created by slicing have a workbook level named variable TM1RebuildOption=1 in them. This makes the workbook rebuild on open, causing a recalculation of all sheets, which is important for Active Forms but may not be the desired behavior if you are primarily working with non-Active Form worksheets.

To prevent sheets from using the default to always rebuild when slicing, change TM1RebuildDefault from T to F (or add TM1RebuildDefault=F if it doesn't already exist) in your tm1p.ini file. When TM1RebuildDefault=F the books get the workbook level named variable set to TM1RebuildOption=0 on slicing. This is equivalent to how Cognos TM1 worked prior to the introduction of Active Forms.

If this option is set to T or doesn't exist, slicing from a view in Cognos TM1 Perspectives sets the TM1RebuildOption workbook level named variable to 1 which forces a rebuild on open. If this option is F, the name variable TM1RebuildOption is set to 0, which does not rebuild. For a particular report, for example, an Active Form, you can set the name variable to 1 instead of the default 0.

By default, a new install does not have the TM1RebuildDefault parameter at all which provides the default behavior of slicing with TM1RebuildOption=1.
Appendix C. Setting up unattended installations and configurations

Set up an unattended installation and configuration to install an identical configuration across several computers on your network, or automate the installation and configuration process by specifying options and settings for users.

Before you set up an unattended installation and configuration, ensure that all the system requirements and prerequisites are met and that all third-party products are installed and configured.

Procedure
1. Configure a transfer specification file (.ats) to specify installation options.
2. Run the installation tool in silent mode.
3. Use a pre-configured configuration file from another computer.
4. Run the configuration tool in silent mode.

Unattended installations

Use a transfer specification file (.ats) to copy IBM Cognos components to your computer without being prompted for information.

By default, each time you install IBM Cognos components using the installation wizard, the options you select are recorded in a transfer specification file. Therefore, if you already installed IBM Cognos components on a sample computer, you can use the generated transfer specification file as a template for unattended installations on different computers.

If you do not use the installation wizard to install components, you can use the default transfer specification file named response.ats that is available on the disk. You must modify the response.ats file for your environment before you can use it for an unattended installation.

You can check if the unattended installation was successful by checking the return status. A value of zero (0) indicates success and all other values indicate that an error occurred.

Setting up an unattended installation

Use the following TM1 product codes for an unattended installation.

Procedure
Follow the instructions described in Use a response file from an installation on another computer (http://www.ibm.com/support/knowledgecenter/SSEP7J_10.2.2/com.ibm.swg.ba.cognos.inst_cr_winux.10.2.2.doc/t_c8bi_setupunattendedinstallation.html) substituting the following TM1 product codes.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1APPTIER_APP=1</td>
<td>TM1 Data Tier</td>
</tr>
<tr>
<td>TM1SERVER_APP=1</td>
<td>TM1 Server</td>
</tr>
<tr>
<td>TM1ADMINSERVER_APP=1</td>
<td>TM1 Admin Server</td>
</tr>
<tr>
<td>TM1TOOLS_APP=1</td>
<td>TM1 Tools</td>
</tr>
<tr>
<td>TM1WEBAPPTIER_APP=1</td>
<td>TM1 Web Tier</td>
</tr>
<tr>
<td>TM1CONTRIBGATEWAY_APP=1</td>
<td>TM1 Applications Gateway</td>
</tr>
</tbody>
</table>

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Table 40: TM1 product codes for an unattended installation (continued)

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1CONTRIBSERVICE_APP=1</td>
<td>TM1 Application Server</td>
</tr>
<tr>
<td>TM1WEB_APP=1</td>
<td>TM1 Web</td>
</tr>
<tr>
<td>TM1OPERATIONSCONSOLE_APP=1</td>
<td>TM1 Operations Console</td>
</tr>
<tr>
<td>TM1CLIENTTIER_APP=1</td>
<td>TM1 Rich Tier</td>
</tr>
<tr>
<td>TM1PERSPECTIVES_APP=1</td>
<td>TM1 Perspectives</td>
</tr>
<tr>
<td>TM1COGNOSINSIGHT_APP=1</td>
<td>Cognos Insight</td>
</tr>
<tr>
<td>TM1APIS_APP=1</td>
<td>TM1 API</td>
</tr>
<tr>
<td>TM1DEVTIER_APP=1</td>
<td>TM1 Rich Tier</td>
</tr>
<tr>
<td>TM1ARCHITECT_APP=1</td>
<td>TM1 Architect</td>
</tr>
<tr>
<td>TM1PERFMOD_APP=1</td>
<td>TM1 Performance Modeler</td>
</tr>
<tr>
<td>TM1SAMPLETIER_APP=1</td>
<td>TM1 Samples</td>
</tr>
</tbody>
</table>

You can see the contents of this file in the `tm1_location/instlog` location in the .ats file.

Setting up an unattended configuration

Before you set up an unattended configuration, you must export a configuration from another computer that has the same IBM Cognos TM1 components installed. You can then run IBM Cognos Configuration in silent mode.

The exported configuration contains the properties of the Cognos TM1 components that you installed on the source computer. If you made changes to the global configuration, you must also copy the global configuration file from the source computer to the computer where you plan to run an unattended configuration.

Before you begin

Ensure that the configuration settings on the local computer are appropriate to use to configure another computer with the same installed components.

Procedure

1. In IBM Cognos Configuration, from the File menu, click Export as.
2. If you want to export the current configuration to a different folder, in the Look in box, locate and open the folder.
3. In the File name box, type a name for the configuration file.
4. Click Save.
5. Copy the exported configuration file from the source computer or network location to the `tm1_location/configuration` directory on the computer where you plan to do an unattended configuration.
6. Rename the file to cogstartup.xml.
7. If you changed the global configuration on the source computer, copy the coglocale.xml file from the source computer to the `tm1_location/configuration` directory on the computer where you plan to do an unattended configuration.
8. Go to `tm1_location/bin` directory.
9. Type the configuration command:
   ```
   cogconfig.bat -s
   ```
   To view log messages that were generated during an unattended configuration, see the cogconfig_response.csv file in the `tm1_location/logs` directory.
Results

You can check if the unattended configuration was successful by checking the return status. A value of zero (0) indicates success and all other values indicate that an error occurred.

Cognos Configuration applies the configuration settings specified in the local copy of cogstartup.xml, encrypts credentials, generates digital certificates, and if applicable, starts the IBM Cognos service or process.

Setting up an unattended uninstallation

Set up an unattended uninstallation to automate the removal of components on several computers that have the same components or to remove components on a UNIX or Linux environment that does not have Microsoft XWindows.

Procedure

1. Go to tm1_location/instlog.
2. Open the transfer specification .ats file for the product in a text editor.
   - The filename format of the transfer specification .ats file is ts-product_code-version-yyyyymmdd_hhmm.ats
   - See “Setting up an unattended installation” on page 313 for a list of the TM1 product codes.
   - You need to edit only one .ats file per product.
3. In the section named [Component List], specify the components to remove.
   - To remove the component, type 1
   - To leave the component installed, type 0
   - By default, all installed components are set to be removed.
4. Save and close the file.
5. Repeat steps 2 to 4 for each installed product.
6. From the operating system command line, change to the tm1_location/uninstall directory.
7. At the command prompt, type the following command:
   - On Windows,
     uninst -u -s
   - On UNIX or Linux,
     ./uninst -u -s
   - On UNIX or Linux without XWindows,
     ./uninstnx -u -s
Appendix D. Troubleshooting a problem

Troubleshooting is a systematic approach to solving a problem. The goal of troubleshooting is to determine why something does not work as expected and how to resolve the problem.

Answering the following questions can help you to identify the source of a problem that is occurring with a Planning Analytics product:

1. Is the configuration supported?
2. What are you doing when the problem occurs?
   - Installing the product
   - Upgrading or migrating the product
   - Doing system administration or configuration tasks
   - Developing applications
   - Launching or deploying the product
   - Running the product
   - Installing or making changes to related hardware or software products
   - Recovering or restarting the product or system
   - Diagnosing a problem or running diagnostic aids
3. Is the problem related to Planning Analytics software? If so, what, if any, error messages or error codes were issued?
4. Can you reproduce the problem to ensure that it is not just a simple error?
5. Did you check file locations, directories, paths, and access?
6. Have you reviewed all relevant documentation, including release notes and technotes?
7. Did you check to see if any recent changes in your computing environment might be responsible for the problem.
8. If these questions and answers do not guide you to a resolution, you might need additional information or you might need to collect diagnostic data. This data is necessary for an IBM technical-support representative to effectively troubleshoot and assist you in resolving the problem.

IBM Knowledge Center

IBM Knowledge Center includes documentation for each release. This documentation is also available through product help menus.

To find documentation on the web, including all translated documentation, access IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).

To find links to the latest known problems and authorized program analysis reports (APARs), access the release notes.

Support Portal

The IBM Support Portal is a unified, centralized view of all technical support tools and information for all IBM systems, software, and services.

The IBM Support Portal lets you access all the IBM support resources from one place. You can tailor the pages to focus on the information and resources that you need for problem prevention and faster problem resolution.

Find the Planning Analytics content that you need by selecting your products from the IBM Support Portal.
Gathering information

Before contacting IBM Support, you will need to collect diagnostic data (system information, symptoms, log files, traces, and so on) that is required to resolve a problem. Gathering this information will help to familiarize you with the troubleshooting process and save you time.

Information on what data to collect is available in the form of MustGather technotes.

Service requests

Service requests are also known as Problem Management Reports (PMRs). Several methods exist to submit diagnostic information to IBM® Software Technical Support.

To open a PMR or to exchange information with technical support, view the Enhanced Customer Data Repository. PMRs can also be submitted directly by using the Service requests (PMRs) tool, or one of the other supported methods detailed on the exchanging information page.

Support Assistant Lite

IBM Support Assistant is a complimentary software offering that provides you with a workbench to help you with problem determination.

IBM currently supports IBM Support Assistant Lite. This utility automates product-specific data collection. It identifies the data files that IBM Support analysts need to diagnose and recover from occasional operational problems with IBM products.

Fix Central

Fix Central provides fixes and updates for your software, hardware, and operating system.

Use the pull-down menu to navigate to your product fixes on Fix Central. You can also view Fix Central help..

IBM Planning Analytics community

The IBM Planning Analytics community offers a place to share ideas and solutions with your peers.

Visit the IBM Planning Analytics community at https://www.ibm.com/communities/analytics/planning-analytics/.

Software Support RSS feeds

IBM Software Support RSS feeds are a quick, easy, and lightweight format for monitoring new content added to websites.

After you download an RSS reader or browser plug-in, you can subscribe to IBM product feeds at IBM Software Support RSS feeds.

Searching and navigating IBM products

Access to IBM product information can now be configured in the IBM Support Portal, which provides the ability to see all of your links on a single page.
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