

IBM Cognos TM1  
Version 10.2.2

*Operations Console Guide*



**Note**

Before using this information and the product it supports, read the information in "Notices" on page 35.

**Product Information**

This document applies to IBM Cognos TM1 Version 10.2.2 and may also apply to subsequent releases.

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# Introduction

This document is intended for use with IBM® Cognos® TM1®

It provides the information you need to install, configure, and use the Cognos TM1 Operations Console. The Cognos TM1 Operations Console is an optional software component used to monitor the activity of Cognos TM1 servers.

## Audience

To use this guide, you should be familiar with:

- Installation tasks
- Web-server software
- Java™ Runtime Environment (JRE)
- Cognos TM1 server operation

## Finding information

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

## Accessibility Features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. This product has accessibility features. For information on these features, see Chapter 5, “Accessibility features,” on page 33.

## Samples disclaimer

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## 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.



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## TM1 client differentiation

IBM Cognos TM1 provides multiple clients for both developers/administrators and end-users. Understanding these clients and differentiating between them can help you decide which client is most appropriate for your needs.

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

- The *Cognos TM1 Performance Modeler User Guide* describes the development and administrative capabilities of Cognos TM1 Performance Modeler.
- The *Cognos TM1 Developer Guide* describes the development and administrative capabilities of Cognos TM1 Architect and Cognos TM1 Perspectives.
- The *Cognos TM1 Operations Console Guide* describes how to monitor and administer servers with the Cognos TM1 Operations Console.
- The *Cognos TM1 User Guide* describes the end-user analysis capabilities of Cognos TM1 Architect and Cognos TM1 Perspectives.
- The *Cognos Insight User Guide* describes the end-user analysis capabilities of Cognos Insight.
- The *Cognos TM1 Web User Guide* describes the end-user analysis capabilities of Cognos TM1 Web.
- The *Cognos TM1 Applications Guide* describes the end-user analysis capabilities of Cognos TM1 Application Web.

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## End-user clients

Several end-user clients are available to interact with IBM Cognos TM1 data.

### IBM Cognos Insight

IBM Cognos Insight is both 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 there are two modes in which Cognos Insight can be used: Connected Mode and Disconnected Mode.

**Connected Mode** creates a live, bi-directional 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 ensures that the data on the Insight client is always current when performing analysis or contributing 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 upon the TM1 server as compared to Disconnected Mode. Connected Mode should be used by users who have as fast connection to the TM1 server and do not suffer from any network latency.

**Disconnected Mode** is currently 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 is beneficial in that it distributes the workload the TM1 server would have to 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 ur users who are geographically distant 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, greatly increasing the speed of response.

## **IBM Cognos TM1 Application Web**

IBM Cognos TM1 Application Web is a zero-footprint web client that allows you to open and work with Cognos TM1 Applications using 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 using an operating system other than Microsoft Windows, as all TM1 thick clients are Windows-based.

## **IBM Cognos TM1 Web**

IBM Cognos TM1 Web is a zero-footprint web client that allows you to analyze and modify Cognos TM1 data from any supported web browser. Cognos TM1 Web does not allow you to access the Cognos TM1 Application Web workflow page. Consequently, you cannot participate in Cognos TM1 Applications with TM1 Web.

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## **Administration clients**

These IBM Cognos TM1 clients can be used 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 lets you quickly create or generate dimension, cubes, rules, processes, and other objects. Performance Modeler simplifies the modeling process by automatically generating the rules and feeders 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 modelling 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 to transition to 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 is an older tool that can be used for both Cognos TM1 model development and for analyzing data via Microsoft Excel capabilities. Like Cognos TM1 Architect, Perspectives supports the creation and maintenance of all TM1 objects, but does not provide the advanced capabilities of Performance Modeler. End-users that require an Excel Add-In interface and the ability to use Microsoft Excel functionality, such as charting, while working with TM1 data can use Perspectives.



Otherwise, administrators are encouraged to transition to 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 allows you to dynamically monitor threads running on multiple TM1 servers at a given time. You can sort and filter thread activity, as well as schedule logging of server activity. The Operations Console also provides a health check feature which determines the current state of each TM1 server being monitored. The Operations Console should be the interface of choice for Cognos TM1 administrators who are managing an enterprise-scale TM1 environment.



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## Chapter 1. What's new

This section contains a list of new, changed, and removed features for this release.

For all currently available TM1 documentation, go to the TM1 welcome page (<http://www.ibm.com/support/knowledgecenter/SS9RXT/welcome>).

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### What's new for Cognos TM1 Operations Console version 10.2.2

The Cognos TM1 Operations Console version 10.2.2 has the following new features.

#### **New login**

You can specify a Namespace on the TM1 Operations Console login screen. See “Start and log into the Cognos TM1 Operations Console” on page 4.

#### **New Layout Manager**

You can put reports into tabs and manipulate the display more effectively. The user interface is now divided into Monitor and Configuration modes.

See “Monitoring in the Cognos TM1 Operations Console” on page 13.

#### **Additional server logs available**

You can now use the Cognos TM1 Operations Console to access the transaction, message and audit server logs.

See “Log files in the IBM Cognos TM1 Operations Console” on page 21.

#### **New visualization charts available**

Thread Summary and Memory Usage charts are now available in the TM1 Operations Console.

See “Memory Usage Graph” on page 16 and “Thread Details Graph” on page 17.

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### What's new for Cognos TM1 Operations Console version 10.2.0

The Cognos TM1 Operations Console version 10.2.0 has the following new features.

#### **New URL**

To run the Cognos TM1 Operations Console use `http://servername:port number/pmhub/pm/opsconsole`

#### **Default group added**

By default a group called **admin** is defined in the Cognos TM1 Operations Console configuration.

This group is used to create a default monitoring group for the SDATA sample database.

## Console window

The Cognos TM1 Operations Console now provides a console pane that displays actions taken and status messages.

## Persistent monitor state

The state of the monitor can be saved and loaded again.

For more information, see *Saving and reloading the Cognos TM1 Operations Console display*.

## Additional events logged

You can monitor multiple threads, object contention, chores, and processes. Monitoring the Cognos TM1 Application Server has been simplified.

For more information, see *“Monitoring Chores”* on page 16 and *“Monitoring the Cognos TM1 Application Server”* on page 17.

## Watchdog used to send email alerts based on the server state

The Watchdog feature can identify specific states in your Cognos TM1 servers and send alerts and trigger other actions.

You can monitor Cognos TM1 Server activity offline using the Watchdog feature. To use Watchdog, you configure a set of criteria to identify the server states along with corrective or notification action.

For more information, see *“Using Watchdog to monitor server activity”* on page 27.

## Automatic and scheduled logging for the Cognos TM1 Applications Server

In addition to Cognos TM1 Servers, you can configure the IBM Cognos TM1 Operations Console to generate automatic and scheduled logging for the Cognos TM1 Applications Server.

For more information, see *“Monitoring the Cognos TM1 Application Server”* on page 17.

## Starting Performance Statistics

You can now start the Performance Statistics directly from the Cognos TM1 Operations Console **Monitor** option.

See *“Performance Statistics reports”* on page 15.

## Simplified automatic logging with Log to Disk

A **Log to Disk** option is now available on the monitor view.

For more information, see *“Log files in the IBM Cognos TM1 Operations Console”* on page 21.

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## Chapter 2. Installing Cognos TM1 Operations Console using the provided Apache Tomcat webserver 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 Apache Tomcat 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 version 10.2.0. However, because not all the 10.2.0 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 within the 10.2.0 version, in particular shared log schedule files, it is not possible to use Cognos TM1 Operations Console configuration files from a previous version within version 10.2.0. 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 `issetup.exe` command and click **Run as Administrator**. For other operating systems, double-click the `issetup.exe` file on the IBM Cognos TM1 installation disk or from the location where the Cognos TM1 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.

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## Using Cognos Configuration to deploy Cognos TM1 Operations Console

Start the TM1 Applications Server in Cognos Configuration to deploy the Apache Tomcat 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 Tomcat 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**.

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## Configure 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 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/pmhub/pm/admin` to open the configuration screen.
2. To change the default adminhost, server, and group for monitoring, expand the **com.ibm.ba.pm.opsconsole.monitor.tm1.TM1OpsConsoleMonitor** node and select the **com.ibm.ba.pm.opsconsole.monitor.tm1.TM1OpsConsoleMonitor.dictionary** option. 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

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## Start and log into the Cognos TM1 Operations Console

To run 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 Apache Tomcat that is provided with the Cognos TM1 installation, the default port number is 9510. For a different version of 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 BI 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 Configuring the TM1 Operations Console to get started.





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## Chapter 3. Advanced Cognos TM1 Operations Console installation

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

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### 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.

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### Install 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.

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

See “Using SSL when monitoring the TM1 Applications Server” on page 18 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:

*location* \bin\jre\7.0\bin

where *location* is the file directory where Cognos TM1 is installed.

### 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.

```
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:

```
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.

```
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 Apache Tomcat to have the change take effect.

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

## Deploy the Cognos TM1 Operations Console

Before you can start using the IBM Cognos TM1 Operations Console, you must deploy it to Apache 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.

### 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. The typical location of this file is *install\_location/webapps/*
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**.

## Configure 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 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/pmhub/pm/admin` to open the configuration screen.
2. To change the default adminhost, server, and group for monitoring, expand the **com.ibm.ba.pm.opsconsole.monitor.tm1.TM1OpsConsoleMonitor** node and select the **com.ibm.ba.pm.opsconsole.monitor.tm1.TM1OpsConsoleMonitor.dictionary** option. 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

## Start and log into the Cognos TM1 Operations Console

To run 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 Apache Tomcat that is provided with the Cognos TM1 installation, the default port number is 9510. For a different version of 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 BI 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 Configuring the TM1 Operations Console to get started.

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## Chapter 4. Using the IBM Cognos TM1 Operations Console

This section describes how to use the TM1 Operations Console.

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### IBM Cognos TM1 Operations Console workflow

Use this list to identify the tasks you need to do in the TM1 Operations Console and where to find more information about them.

By default, the Cognos TM1 Operations Console is configured to monitor the **SData** TM1 server with a monitoring group called **Admin**. To change those defaults, use the pmhub configuration.



1. Create your logical operations group.
2. Verify admin access on that server.
3. For security purposes, you can `MaskUserNameInServerTools`.
4. The Health Status Check shows the current status of the server at a glance with icons. See *Monitoring server activity* for the list.
5. To use the default set of server configuration parameters, skip to the next step. If you want to change the basic parameters, see *Configure*.
6. To get a quick status report, double-click the server name to create a new Health Status tab as described in *Monitoring server activity*. The Health Status tab is populated with the Enhanced version of the status report. You can add tabs and populate those tabs with the other kinds of log files.
7. Click the **Configuration mode** icon so you can configure other log files.
8. Click the server selection check box. This action reveals the **Schedule new log** buttons. You can drag the bottom pane lower to reveal the full contents of the window. Click the **Schedule new log** button and define the parameters for this new log.
9. To see the log, switch to Monitor mode and right-click the server and select **View Log**. This action opens a new Monitors tab and populates it with the scheduled logs. Nothing displays if the current time is earlier than the start time. You can verify admin access as well. You can Filter the results to make it more readable.
10. After set up, you can save and reload a log file configuration.
11. You can change the layout to suit your needs. You can also repopulate the bottom pane with other log information.
12. Set a Watchdog.
13. The TM1 Applications server can also be monitored in the TM1 Operations Console as described in *Configuring the server and client environment for Cognos TM1 Applications*.

---

### Setting up the Cognos TM1 Operations Console

IBM Cognos TM1 TM1 Operations Console setup tasks.



Before you can use the TM1 Operations Console, add a production group and identify the servers you want to monitor.

The TM1 Operations Console opens in Monitor mode. You can click the Configuration  icon to switch to Configuration mode to configure the logs and watchdog reports. Use the Monitor  icon to switch back to monitor mode at any time.

## Adding an Operation Group, Adminhost, and servers

Once the IBM Cognos TM1 Operations Console is installed and running, add an Operation Group and identify the adminhost and servers.

For example, you might have a group of servers designated as "Development," "Production," or "Test."

1. Click **Add operation group**  from the toolbar or use the Action menu  to select **Add Operation Group**.
2. Enter a name for the group. You can use any name here.
3. Click **Create**.
4. Right-click the operation group and select **Add Adminhost**.
5. Enter the fully-qualified name of the AdminHost. The default setup uses localhost.
6. Click **OK**.
7. Right-click the AdminHost you just added and select **Add TM1 Server**.
8. Enter the name of the server you want to monitor. To use the default setup, enter **SData**.

See Monitoring the Cognos TM1 Applications Server for details on how to monitor a TM1 Application server in the TM1 Operations Console.

## Verify admin access

Before you can perform certain functions in the Cognos TM1 Operations Console, you must enter valid administrator credentials.

### Procedure

1. Right-click a TM1 Server.
2. Select **Verify admin access**.
3. Enter valid username and password credentials for an administrator ID.
4. Click **OK**.

## Display user names

The MaskUserNameInServerTools parameter determines whether user names are displayed or masked out in the IBM Cognos TM1 Operations Console.

When MaskUserNameInServerTools=TRUE is set in the Tm1s.cfg, user names are masked in the Cognos TM1 Operations Console for security purposes. To unmask the names, the administrator can right-click the server in the Cognos TM1 Operations Console and then click **Verify admin access** to verify the administrator status.








This parameter is set to FALSE by default. If you do not explicitly set this parameter to TRUE, the Cognos TM1 Operations Console displays user names even if administrator access was not verified.

## Server Health Status

The Server Health Status tab uses icons to provide almost instant feedback on the status of the servers monitored by the Cognos TM1 Operations Console.

**Note:** You must verify admin access before data can display.

Table 1. Cognos TM1 Operations Console Health Status icons

Icon	Status
	Online. Server is online. This server is running.
	Starting. The server is starting.
	Entering Bulk Load Mode. The Server is entering Bulk Load Mode.
	Bulk Load Mode. The server is in Bulk Load Mode.
	Offline. Server is offline/not able to contact. This server is not running or is unable to connect to the Cognos TM1 Operations Console.
	Stopping. The server is stopping.
	Unsupported. Heartbeat not supported.

The Health Status tab also displays the number of threads in the server and the number of threads that are waiting for a lock to be granted.

Since the Health Status is updated every 10 seconds, the information is current to within 10 seconds or less depending on when the server status changed since the last refresh

If the report contains a refresh rate, the data is updated at the refresh rate specified for that report.

---

## Monitoring in the Cognos TM1 Operations Console

The following reports and logs are available in the IBM Cognos TM1 Operations Console.

To see these reports, right-click the server you want to use, and select **Monitor** and the report you want. Before data can display, you may need to verify admin access or schedule a log if one is not being automatically scheduled.

You can also choose to save the log to disk or export it. See Filtering for details on how to reduce the displays.

For some of these reports, drag the lower pane down to reveal the full content of the window.

**Status** Basic or Enhanced

**CAUTION:**

Using the default Enhanced version of this report when the server is under heavy load can degrade system performance by up to 10%.

**Sandbox**

Shows the threads being used in sandboxes on the server.

**Sandbox Queue**

Shows the jobs in the sandbox queue.

**Performance Statistics**

Shows the server memory and performance statistics report. You must turn the gathering of performance statistics by right-clicking the server name and selecting **Start Performance Monitor** before this report can display information.

**Processes**

Shows the thread involved in any TurboIntegrator processes.

**Chores**

Shows server activity involved with Chores.

**Memory Usage Graph**

Provides a graphical display of memory usage on the server.

**Thread Details Graph**

Provides a graphical display of thread activity on the server.

You can use these logs:

**Transaction log file**

Displays the transactions recorded in Tm1s.log when a TM1 client changes a cube value.

**Message log**

Displays the TM1 server records status messages on the activity of the server in a log file. These messages contain details on activity such as executed processes, chores, loaded cubes and dimensions, and synchronized replication.

**Audit log**

Displays changes to metadata, such as modifications to dimensions, views and subsets.

## Basic and enhanced server status reports

Basic and enhanced versions of the typically requested status information for a server.

### Procedure

Double-click the server name or right-click the server and select **Monitor > Status > Enhanced** or choose **Basic**.

**CAUTION:** Using the default Enhanced version of this report when the server is under heavy load can degrade system performance by up to 10%.

### Results

The report displays in a new Monitor tab. To reduce the content, use the Filter. To export the log to a file, choose Log to Disk.



## Sandbox and sandbox queue reports

Sandbox activity

### Procedure

Double-click the server name or right-click the server and select **Monitor > Sandbox** or **Sandbox queue**.

### Results

The report displays the sandbox activity on the server in the Monitor tab. You will only see data here when sandboxes are turned on and being used.

## Performance Statistics reports

You can monitor the server memory and performance statistics for a server in the Cognos TM1 Operations Console.

### Procedure

1. To begin gathering server and performance statistics, right-click the server and select **Start Performance Monitor**.
2. To see the log, right-click the server and select **Monitor > Performance Statistics**.

The following statistics are available on the Performance Statistics report:

- Memory Used for Views
- Memory Used for Calculations
- Memory Used for Feeders
- Memory Used for Input Data
- Total Memory Used

In addition, the Status options for each server being monitor displays the following statistics:

- MemoryUsed
- GarbageMemory

## TurboIntegrator Processes reports

You can monitor the TurboIntegrator Processes for a server in the Cognos TM1 Operations Console.

### Procedure

1. If you have not started Performance Monitoring, right-click the server, verify admin access, then right-click the server and click **Start Performance Monitor**.  
If Performance Monitoring has not been turned on, default values or the values obtained from the last run display.
2. Right-click the server and select **Monitor > Processes** The following statistics are available on the Process pane: Process Name; Current<sup>®</sup> State; Completion Status; Client Name; Last Start Time; Last End Time; Last Duration. Client Name contains information about the threads associated with a particular process. Each entry in the client name field is in the format *Client ID Thread ID*. Multiple entries are separated by a semi-colon.  
If the thread originated by a client, the name includes the client name, such as Admin, 512 where admin is the client name and 512 is the corresponding thread ID.

If the thread is originated by a chore, the chore name appears in square brackets along with its corresponding thread ID.

When a large number of threads are associated with a process click on the node arrow to provide a list such as:

Completion Status :

NORMAL - Process executed normally

UNKNOWN - Process status could not be captured

REJECTED\_RECORD - User asked to skip this record and note an error into the log with the ItemReject() TI function

MINOR\_ERRORS - Execution finished but had less than the maximum number of minor errors

PROCESS\_BREAK - User executed a ProcessBreak() function

ABORTED\_BY\_PROCESSQUIT - Execution was aborted by a Process Quit() TI function

ABORTED\_WITH\_ERROR - Process was aborted because a serious error occurred

ABORTED\_ON\_INIT - Process was aborted because of a serious error during the process startup phase.

The Process Pane is refreshed based on the rate specified by the Memory Stats Refresh Rate in the Configure window.

## Monitoring Chores

You can monitor the Chores for a serving in the Cognos TM1 Operations Console

### Procedure

1. If you have not started Performance Monitoring, right-click the server, verify admin access, then right-click the server and click **Start Performance Monitor**.
2. To see the statistics for the Chores running on a server, right-click the server and click **Monitor > Chores** The following information is shown for chores: Chore Name, Completion Status, Current State, Client Name, Last Start Time, Last Duration in seconds, Next Activation Time, Current Process.

## Memory Usage Graph

Displays memory usage as a graphical chart.

Right-click the server you want to use and select **Monitors > Memory Usage Graph >** .

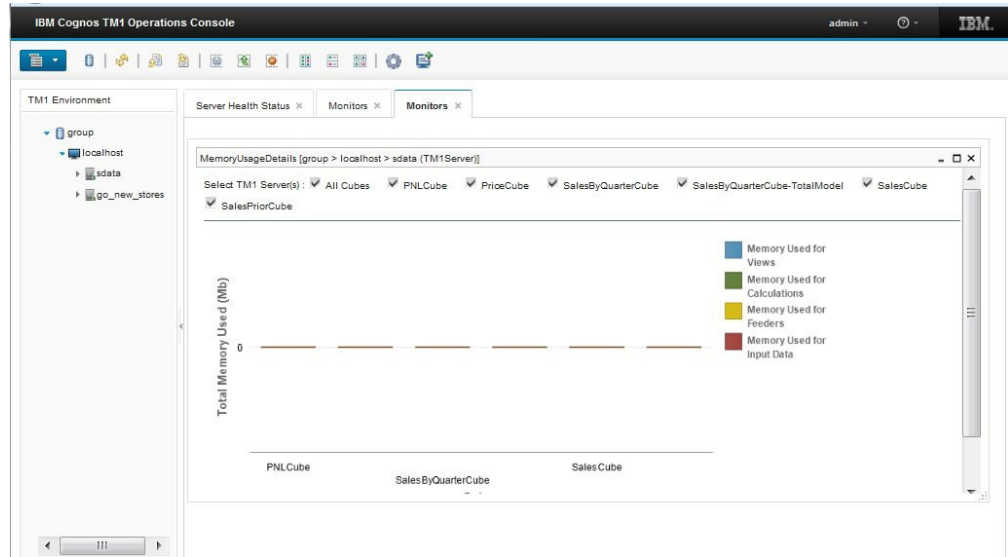


Figure 1. Memory Usage Graph

## Thread Details Graph

The Thread Details Graph displays thread information as a graphical chart.

Right-click the server you want to use and select **Monitors > Thread Details Graph**.

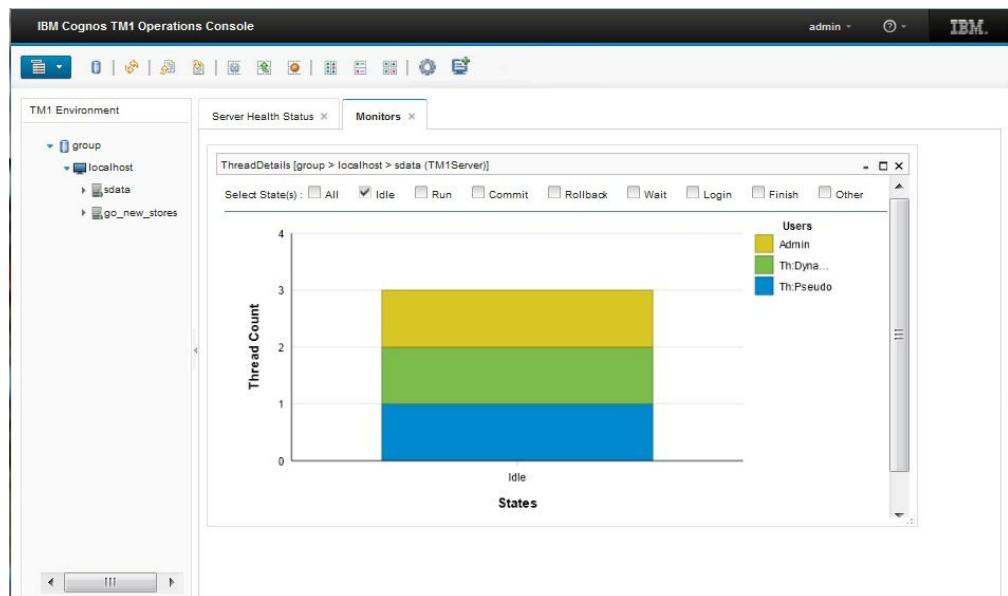


Figure 2. Thread Details Graph

## Monitoring the Cognos TM1 Application Server

You can monitor the server activity of a Cognos TM1 Application Server.

Double-clicking on a Cognos TM1 Application Server in the Health tab also provides a report of Tomcat statistics.

## Procedure

1. To add a Cognos TM1 Application server to the Cognos TM1 Operations Console, right-click the operation group where you want to list the Cognos TM1 Application Server.
2. Select **Add Application Server**.
3. Enter a name to use to identify this Application Server and click **Create**.
4. Right-click the name that you just added and select **Configure**.
5. Complete the fields on that dialog box:
  - IP** Enter the IP address for the Applications Server. The IP field can also be the fully-qualified domain name or the NetBIOS name.

### Context

Enter the name of the planning service, for example, pmpsvc

### Port number:

Enter the port number specified in the JVM for TM1. This port number is the jmx port number that you have specified in the applications server JRE options.

### Top Refresh period (sec)

A typical refresh period is 2.

### Top Tolerance Factor (sec)

Enter 0 unless you want to expand the tolerance.

### Top Time Out (sec)

A typical time out value is 1.

6. Click **OK**. If the Cognos TM1 Applications Server is running, the health status becomes green and the activity is being monitored. If the Cognos TM1 Application Server status is not green, ensure that the service is running using IBM Cognos Configuration.
7. Most users prefer to use SSL to securely monitor the TM1 Applications Server. However, you can also monitor it without using SSL. This is a less secure method but does not require the additional certificate steps described in “Using SSL when monitoring the TM1 Applications Server.” To monitor the TM1 Application Server without using SSL, modify the jvm parameter  
`-Dcom.sun.management.jmxremote.ssl=true`  
and change it to  
`-Dcom.sun.management.jmxremote.ssl=false`
8. Restart the TM1 Applications Server.

## Using SSL when monitoring the TM1 Applications Server

When using SSL take these additional steps to monitor the Applications Server.

In order to use SSL, you need to create a security certificate on the machine where the Cognos TM1 Application Server is running, then export that certificate to the Cognos TM1 Operations Console machine and configure the Cognos TM1 Operations Console machine so that it uses that new certificate store.

See “Configuring Cognos TM1 Applications to use SSL” in the “Security configurations” chapter of the *IBM Cognos TM1 Installation and Configuration Guide* for more information.

Depending on whether you are on a 32-bit or 64-bit system, the install location is either:

c:\Program Files\ibm\cognos\tm1\_64

or

c:\Program Files\ibm\cognos\tm1

The location where the jre store is located is either:

c:\Program Files\ibm\cognos\tm1\_64\bin64\jre\7.0\bin

or

c:\Program Files\ibm\cognos\tm1\bin\jre\7.0\bin

The Java certificate store location is either:

c:\Program Files\ibm\cognos\tm1\_64\bin64\jre\7.0\lib\security\cacerts

or

c:\Program Files\ibm\cognos\tm1\bin\jre\7.0\lib\security\cacerts

The certificate store has a default password of changeit. If you have secured your certificate store with another password, use that instead.

On a 64-bit machine there are two JREs shipped with IBM Cognos Cognos TM1

- install\_location\bin\jre\7.0\bin
- install\_locatio\bin64\jre\7.0\bin

This is why there are two cacert stores on 64-bit machines. The 64-bit installation by default runs Apache Tomcat using the jre in the bin64 directory (install\_location\bin64\jre\7.0\bin) and the instructions therefore add the certificate to the certificate store in the bin64 directory

installation\_location\bin64\jre\7.0\lib\security\cacerts.

You can create the certificate in a different location as long as the Cognos TM1 Application is configured to use that certificate store as described here.

### Creating the SSL certificates

1. Stop the TM1 Application Server if it is running.
2. Use the following command to create a self-signed certificate into your Java store (no line breaks and replace tm1\_64 with tm1 if you are on a 32-bit machine):
3. 

```
keytool -keystore "c:\Program Files\ibm\cognos\tm1_64\bin64\jre\7.0\lib\security\cacerts" -alias jmx -genkey -keyalg RSA -dname "CN=${pki-cn}, OU=${pki-ou}, O=${pki-o}, L=${pki-l}, S=${pki-s}, C=${pki-c}" -storepass changeit -keypass changeit
```
4. To configure your Cognos TM1 Application Service to use this certificate store add or modify the following Java Version Management (JVM) parameters as appropriate for your installation:
5. 

```
-Djavax.net.ssl.keyStore=jre\7.0\lib\security\cacerts
```

**Note:** The port number set here is used later in the process when you configure the Cognos TM1 Applications Server in the TM1 Operations Console: `-Dcom.sun.management.jmxremote.port=7999`  
To update or append these parameters to the JMX\_OPTIONS variable in the file, go to the batch file under the bin or bin64 directory called `service_pmpsvc.bat` .

6. Restart the TM1 Application Server from the IBM Cognos Configuration to pick up these changes.
7. Export the certificate from this server store to the machine running Cognos TM1 Operations Console (client) Replace tm1\_64 with tm1 if needed.:  

```
keytool -export -alias "jmx" -file jmx -keystore "c:\Program Files\ibm\cognos\tm1_64\bin64\jre\7.0\lib\security\cacerts"
```
8. Enter the keystore password: changeit to create a cert file called "jmx" in the current directory.
9. Copy the certificate from the server jvm to the client jvm.
10. Use the following command to import ssl to the client (machine running the Cognos TM1 Operations Console) cacert store (replace tm1\_64 with tm1 if needed).  

```
keytool -import -file "jmx" -alias jmx -keystore "c:\Program Files\ibm\cognos\tm1_64\bin64\jre\7.0\lib\security\cacerts"
```
11. To configure your Cognos TM1 Application Service to use this certificate store, add or modify the following jvm parameter as appropriate for your installation:  
 If you want to use full path (replace tm1\_64 as needed)  

```
-Djavax.net.ssl.keyStore=c:\Program Files\ibm\cognos\tm1_64\bin64\jre\7.0\lib\security\cacerts
```
12. Restart the TM1 Application Service from Cognos Configuration.

Follow the previous instructions to configure the Cognos TM1 Application Server in the Cognos TM1 Operations Console.

### Additional configuration information

If Cognos TM1 Application Server and Cognos TM1 Operations Console are on the same Tomcat, you do not need to export and import into the certificate store. The certificate just needs to be created. By default, the pathname of the keystore file where you have stored the server certificate to be loaded is the file ".keystore." It is located in the operating system home directory of the user that is running Tomcat. This is the default store if you run Cognos TM1 Operations Console from a "vanilla" Tomcat. Use the JVM parameter `-Djavax.net.ssl.keyStore=path` to set the certificate with the jmx certificate imported. Set this path for each Cognos TM1 Application Server you want to monitor. Use a different alias for the certificate each time, for example `jmx-frink`.

### Log files for the TM1 Applications server with the TM1 Operations Console

The IBM Cognos TM1 Operations Console can track and monitor activity in the TM1 Applications server..

When you select **Log To Disk** for automatic logging, the rate at which log messages are written is the same as the refresh rate of data in the monitoring window. With **Log to Disk** for Cognos TM1 Applications Server monitoring, the older monitoring data from the log file is overwritten with new log contents.

Unlike configuration of a Cognos TM1 server, you cannot use **Log Append** with the Cognos TM1 Application server.

Cognos TM1 Application Server logging can also be scheduled. Two types of Application Server data can be logged:

- Application Server Statistics

- Application Server Session Information

The **Log to Disk** option is available on all monitor windows. Click **Log to Disk** to create an automatic log. The data will continue to be logged until you turn off the logging by unchecking **Log to Disk**, closing the monitor window, or closing the Cognos TM1 Operations Console.

---

## Log files in the IBM Cognos TM1 Operations Console

You can schedule a log, use the log to disk option, or enable automatic logging

Before any data can display in a log, you must “Verify admin access” on page 12.

You can access these TM1 server logs using the TM1 Operations Console:

### Transaction log file

Displays the transactions recorded in Tm1s.log when a TM1 client changes a cube value.

### Message log

Displays the TM1 server records status messages on the activity of the server in a log file. These messages contain details on activity such as executed processes, chores, loaded cubes and dimensions, and synchronized replication.

### Audit log

Displays changes to metadata, such as modifications to dimensions, views and subsets.

Right-click the server and select **View Log**, **Message Log**, **Transaction Log**, or **Audit Log** to open these log files. See the “System and Performance Monitoring” chapter of the *IBM Cognos TM1 Operation Guide* for details on these logs and how to enable them.

## Working with logs

These topics describe how you can adjust the display of log files.

### Configuring the log file and server numeric parameters

Use the **Configure** option to set the numeric parameters that define how the log file numerics and other server parameters are gathered.

Complete the following parameters for each log file.

#### Log period

Specifies the time interval between updates being written to the log file.

For example, if the screen Refresh is set to 2 seconds, LogPeriod could be set to 10 seconds so that every fifth screen display will be output to decrease the amount of data written to the file. Default is 2 seconds.

#### Log Append

By default a new log file is not appended, it overwrites the existing log. Select True to append new logfiles to the existing log.

#### Refresh period

By default, the log waits 2 seconds before refreshing the data. You can enter a longer or shorter time for the refresh here in seconds.

**Tolerance factor**

By default, the data is new (0). To permit data in the log to be older, enter a number here in seconds for how old the data can be before requiring a new polling.

**Time Out**

By default, attempts to connect to the server end after 2 seconds. You can change this number to shorten or lengthen the time the log will keep trying before giving up.

If the IBM Cognos TM1 Operations Console server does not get the updated status in the seconds specified here, then the old data (if it exists) is sent with an indication that a timeout has occurred.

**Memory Stats refresh period**

By default, the log waits 2 minutes before refreshing the data. You can enter a longer or shorter time for the refresh here in minutes.

**Memory Stats tolerance factor**

By default, the data is new (0). To permit data in the memory statistics to be older, enter a number here in seconds for how old the data can be before requiring a new polling.

**Memory Stats timeout**

By default, attempts to connect to the server end after 2 minutes. You can change this number to shorten or lengthen the time the log will keep trying before giving up.

If the IBM Cognos TM1 Operations Console server does not get the updated status in the minutes specified here, then the old data (if it exists) is sent with an indication that a timeout has occurred.

**Scheduling logs**

You can schedule a log, use the log to disk option, or enable automatic logging.

**Procedure**

1. To schedule a log, click the **Configuration > Logging** tab.
2. Depending on the kind of server you want to monitor, click either the **TM1 Servers** tab or the **TM1 Applications** tab.
3. Check the server you want to create the log for. You may need to drag the pane to reveal the schedule log icons.



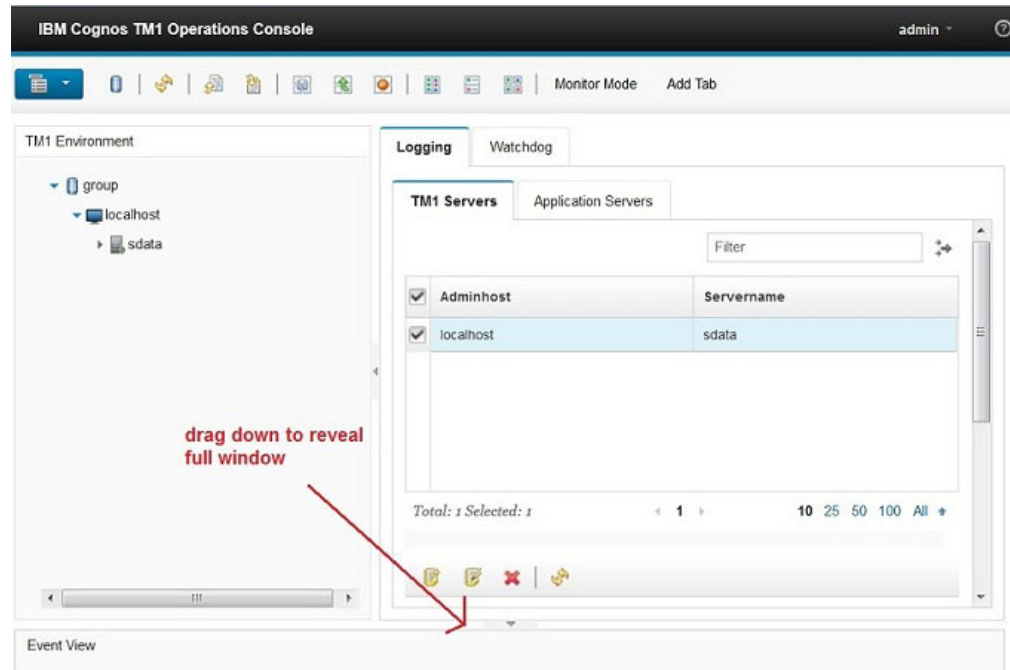



Figure 3. Revealing the bottom part of the TM1 Operations Console pane.

4. To create a new log, click **Schedule New Log** .
5. Define the parameters of the log:

**Log type**

Choose one or more kinds of logs: **Log Status**, **Log Enhanced Status** (includes object contention columns), **Log Sandbox**, **Log Sandbox Queue**

**Log Duration**

Enter the **Start Date**, **Start Time**, **Stop Date**, **Stop Time**, and **Log Frequency** in seconds. Click in the fields to open a calendar to set the dates.

**States** Check the states to log: **Idle**, **Run**, **Commit**, **Rollback**, **Wait**, **Login**, or **Finish**.

**Threads**

Check the type of threads to log: **System Threads**, **Chores**, or **User Threads**.

6. When the details are defined, click **Create**.
7. You can use the **Filter** button to reduce the number of logs shown on the screen.

8. Use  to change the parameters of the log file after it is saved.

**Using Log to Disk to save log files**

Log files can be stored using the Log to Disk checkbox that displays on most log screens.

## Procedure

1. Click the **Log to disk** option found on most logs. Log to disk generates a log of the current screen activity.
2. To see the log, you can right-click the server and select **View Log**. Check the log you want to see and click **OK**.
3. Or go to the log location for that server, for example **C:\Program Files\IBM\cognos\tm1\_64\bin64\opsconsoledata\localhost\sdata\admin\Logs** to find the .csv file of the log.

## Viewing logs

After you have generated a log, use the View Log option to display it.

A user monitoring a server can see all the schedules created by other users. The user can also perform all supported actions on those schedules. However, if the owner deletes the monitored server, that schedule is deleted and becomes unusable by others.

## Procedure

1. Right-click the server whose logs you want to view.
2. Select **View log**.


## Results

The View logs dialog box displays with the list of all logs. The Log Type indicates if the log is scheduled or automatic. You can use the **Filter** button to restrict the display to only results you are interested in.

## Filtering results in the Cognos TM1 Operations Console

You can reduce the number of entries found in a log or a report using Filtering.

You can filter log results in the IBM Cognos TM1 Operations Console using the Filter box or, on some logs, you can set the filter using specific columns.

When no filter is applied to the results, the **Filter Off** button  displays. Click this button to display the list of states you can use to filter the results: Idle, Run, Commit, Rollback, Wait, Login, Finish. You can choose to Select or Deselect All the states.

Threads: System Threads, Chores, User Threads.

Use the **Logging Filter** selection when you want to change a filter to apply the changes.

## Filtering servers or logs

Use the **Filter** field and **Apply Filter** buttons to filter the listing of servers. You can type ahead in this field to identify any aspect of the displayed logs or servers.

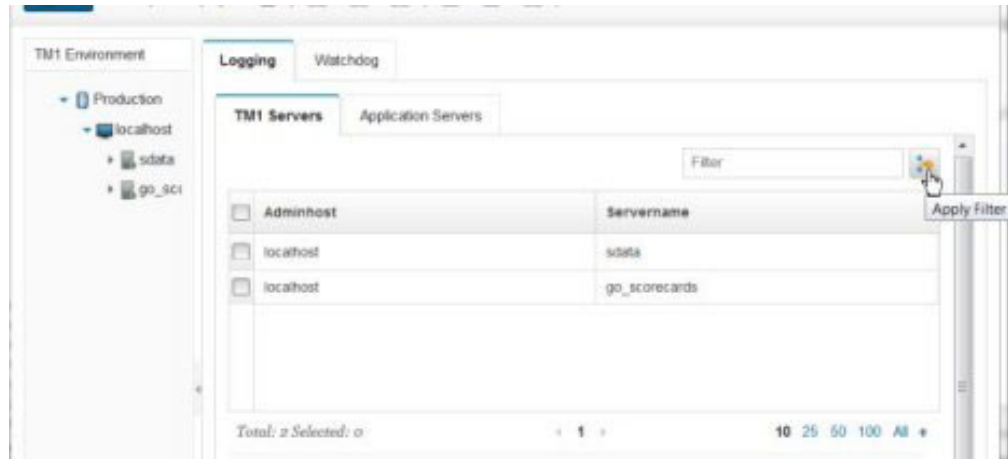


Figure 4. Applying filters

## Exporting logs

You can export a log file.

### Procedure

1. Click the **Export** option found on most logs.
2. Select the log content from the window that displays.
3. Paste the content into another file, such as a text file.

## Download a csv version of the log file

To download a csv version of the log, use the **Download Log File** option.

### Procedure

1. Right-click the server you want and select **Download Log File**.
2. Click the selection button for the log you want to download. Anytime you choose the **Log\_to\_Disk** option on a log it creates an entry here for the current version of the screen.
3. Confirm that you want to download the log and complete the Save or Open dialog box as needed.
4. Browse to the location to store this file and click **Save**.

## Downloading and Uploading the Cognos TM1 Operations Console configuration file

You can save the details of the Cognos TM1 Operations Console setup using the Upload and Download Configuration File options.


### Procedure

1. To save the current configuration for the Cognos TM1 Operations Console, click



**Download Configuration File** and save the file to the location of your choice.

2. To install the current tm1opsconsoleconfig.xml configuration, click **Upload**

**Configuration File**  , browse to the location where of the configuration file and click **OK**

## TM1 server Transaction log

The transaction log lists transaction occurring in the specified server over the specified time frame.

See the “System and Performance Monitoring” chapter of the *IBM Cognos TM1 Operation Guide* for details on this log and how to use it.

### Procedure

1. To get a log of transaction activity, right-click the server and select **Transaction log**.
2. Click the Start date; Start time; End Date; End time to define the time period over which transactions will be logged. If you set just Start time and End time, the time period defaults to all day.
3. You can also use the User, Cube, or Flag filter to identify specific values in each of these columns that you want to use as a filter.
4. To generate a txt file of the log, click **Export** and select the resulting window's contents. Then you can paste that information into a blank text file.
5. To restore any changed data, click **Back Out**.
6. When the parameters are set, click **OK** to retrieve data from the server to the TM1 Operations Console. Logging continues until you log out of the session ends or the end time period is met.

## TM1 server Message log

Displays the TM1 server records status messages on the activity of the server in a log file. These messages contain details on activity such as executed processes, chores, loaded cubes and dimensions, and synchronized replication.

See the “System and Performance Monitoring” chapter of the *IBM Cognos TM1 Operation Guide* for details on this log and how to use it.

### Procedure

1. To get a log of messages, right-click the server and select **Message log**.
2. Click the Start date; Start time; End Date; End time to define the time period over which transactions will be logged. If you set just Start time and End time, the time period defaults to all day.
3. You can also use the Thread, Level, or Logger filter to identify specific values in each of these columns that you want to use as a filter.
4. To generate a txt file of the log, click **Export** and select the resulting window's contents. Then you can paste that information into a blank text file.
5. You can also use **View Process log** to see the process log.
6. When the parameters are set, click **OK** to initiate logging. Logging continues until you log out of the session ends or the end time period is met.

## TM1 server Audit log

Displays the TM1 server audit log on the activity of the server in a log file.

See the “System and Performance Monitoring” chapter of the *IBM Cognos TM1 Operation Guide* for details on this log and how to use it.

### Procedure

1. To get a log of the audit activity, right-click the server and select **View Audit log**.
2. Click the Start Date; Start Time; End Date; End time to define the time period over which transactions will be logged. If you set just Start date and End date, the time period defaults to all day.
3. You can also use the Object Type; Object Name; Owner Type; Owner Name; Event Type; Event Code to identify specific values in each of these columns that you want to use as a filter.
4. To generate a txt file of the log, click **Export** and select the resulting window's contents. Then you can paste that information into a blank text file.
5. You can also use **View Detail** to see individual log entries.
6. When the parameters are set, click **OK** to initiate logging. Logging continues until you log out of the session ends or the end time period is met.

---


## Using Watchdog to monitor server activity

You use the Watchdog feature to establish a set of criteria that identifies specific states in the servers being monitored so that you can specify an action of “Kill” on the identified process or “log” the event to a trail file. You can also send an email alert using Watchdog and the logback utility.

### Procedure


1. Click the **Watchdog** tab. All servers being monitored by the user and states of the corresponding watchdogs that have been set up display.
2. Select the row in the Watchdog grid for the server you want to add the Watchdog rule to.
3. To edit the details of the Watchdog alerts, you must first verify your admin status. Click **Verify** and enter the username and password for the administrator user on this server.

**Remember:** You may need to drag the pane to expose the rules setup area.

4. To create a new rule, click **Add Rule** .
5. Click the **Field** to use for the criteria, such as state; the **Operator** to apply, such as Equals; and the value to identify the exact situation when you want a Watchdog event to take place. For example, you can set State equals Busy. You can use any appropriate value for the fields. The State field accepts these settings: Idle, Run, Commit, Rollback, Wait, Logon, and Finish.
6. By default the **Action** to take when that criteria is met is set to **Kill**. You can change the action to **Log** to write the message to the file. Logback can be configured to generate email notifications for these events.
7. After defining the criteria for the rule, click **Save**.
8. Use these icons to work with your rules:

- Click **Edit Rule**  to change the criteria of an existing rule.

- Click **Delete Rule**  to remove the rule.

- Click Refresh  to refresh the display.
9. Set the **Frequency** for the Watchdog process to run.
  10. After defining the Watchdog using these steps, click **Save** to save the Watchdog for this server.
  11. To put the Watchdog rule into effect, click **Start** on the first Watchdog pane. The Watchdog runs based on the Frequency entered here. If the server meets the criteria of the rule, the action is taken.
  12. To stop the Watchdog from running, click **Stop**.  
For a Cognos TM1 server, only one Watchdog can be configured by any user having server administrator credentials. It is then available for use by other users. If a user who set up a server deletes the monitored server, the Watchdog running on that server is deleted and the watchdog stops running.  
For more information about using the Watchdog settings to generate email alerts, see “Email alerts using Cognos TM1 Operations Console and Logback.”

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## Email alerts using Cognos TM1 Operations Console and Logback

You can send an email alert based on server activity using Logback and Watchdog.

To send an email alert, first create a Watchdog setting for the server. Then edit the sample logback .XML file found in *tm1\_installation\_location\bin64\opsconsoledata\logback-sample.xml* to identify the server, status to send the alert on, and email address to use. You also need to edit the Cognos TM1 Applications Server files as described here.

For more information about the logback utility, see the documentation found by searching the internet for logback.

### Editing the TM1 Applications .bat file to use logback

To begin using email alerts with the Watchdog feature, first edit the TM1 Applications Server *service\_pmpsvc.bat* files.

#### Procedure

1. Edit *tm1\_installation\_location/bin64 service\_pmpsvc.bat* to add the following lines:

```
rem Set Logback parameters
set LOGBACK_OPTIONS=-Dlogback.configurationFile=C:/logs/logback.xml
```

This sets the logback configuration file to be *c:/logs/logback.xml*.

2. Change the following line to add the LOGBACK\_OPTIONS to the end:

```
"%TOMCAT_EXE%" //IS//"%PLANNING_SERVICE_NAME%"
--StartParams start --StopParams stop --JvmOptions
"%BASE_JVM_OPTIONS%;%EXTRA_JVM_OPTIONS%;%JMX_OPTIONS%;%LOGBACK_OPTIONS%"
```

### Parameters of email alerts

You can send an email alert based on server activity using the Logback utility.

Edit the following information to customize your email alerts.

## Message

Alert messages contain the Message; the Marker with a value of ALERT; and an MDC value used to filter the output message

Each log message contains:

```
MDCKEY_TM1SERVER = "tm1server";
MDCKEY_ADMINHOST = "adminhost";
MDCKEY_CURRENT = "current";
MDCKEY_LAST = "last";
MDCKEY_ALERTTYPE = "alert_type";
```

## Filters

To limit the number of emails sent, use a filter.

**TM1ThresholdFilter** handles the threads, wait threads, and memory going greater than and less than levels that you set.

The **TM1StatusFilter** sets the status values to display or suppress.

You can chain filters together. Each filter can return one of 3 values:

- **ACCEPT**: a log is created and it does not pass to the next filter.
- **DENY**: a log is not created and it does not pass to the next filter. **The DenyFilter** always returns DENY. You can attach DENY to the end of the list to make sure that if all the other filters return NEUTRAL if there is any doubt you can get to the end of the list and decide not to log it.
- **NEUTRAL**: it keeps going down the chain. If all filters return **NEUTRAL** it will be logged.

Both the threshold and the status filter can take a list of TM1 servers as shown in these examples:

```
<tm1server>server name 1</tm1server>
<tm1server>server name 2</tm1server>
```

## Adminhost

Set the adminhost if you want to monitor all the servers on a particular adminhost. Or, when you have identically named servers on two different admin hosts but want to monitor only one of them:

```
<adminhost>adminhost 1</adminhost>
<adminhost>adminhost 2</adminhost>
```

## Threshold

Set values for threshold filters in a list. NB thresholds must be numeric:

```
<threshold>50</threshold>
<threshold>100</threshold>
```

You can set any of the ALERTTYPE values except STATUS in the threshold filter. Thresholds can be in a list so you can have more than one threshold in a filter.

## Direction

By default a message is created on both up and down Direction. You can have two different filters in a chain but only one direction per filter. For example, you

may have one for the up direction at 50 and one for the down direction at 40. This results sending an alert when the threshold goes above 50 and below 40.

```
<direction>up</direction>
```

This example logs all status changes for the server **Production Server** and no status changes for all other server.

```
<filter class="com.ibm.tml.logging.TM1StatusFilter">
  <tmlserver>Production Server</tmlserver>
  <OnMatch>ACCEPT</OnMatch>
  <OnMismatch>DENY</OnMismatch>
</filter>
```

This example prevents log status changes on running.

```
<filter class="com.ibm.tml.logging.TM1StatusFilter">
  <status>running</status>
  <OnMatch>DENY</OnMatch>
</filter>
```

## Status filter

The Status filter may be in a list:

```
<status>running</status>
<status>offline</status>
```

**OnMatch** and **OnMismatch** both take the values **ACCEPT**, **DENY** and **NEUTRAL**. There can be one of each status per filter.

## Examples

This example logs messages for the **test** and **product** servers when threads cross the 50 boundary going up and then again over 100 and 150.

```
<filter class="com.ibm.tml.logging.TM1ThresholdFilter">
  <tmlserver>Production Server</tmlserver>
  <tmlserver>Test Server</tmlserver>
  <alerttype>threads</alerttype>
  <threshold>50</threshold>
  <threshold>100</threshold>
  <threshold>150</threshold>
  <direction>up</direction>
</filter>
```

This example logs messages when the memory usage for any server crosses the 256 Mb boundary either up or down.

```
<filter class="com.ibm.tml.logging.TM1ThresholdFilter">
  <alerttype>memory_usage</alerttype>
  <threshold>256</threshold>
</filter>
```

## Logback sample file

The following sample file is found in *tml\_installation\_location\tml\_64\bin64\opsconsoledata*

You must edit this file to use email alerts. It will not work as shipped.

To edit the file, change:



```

<?xml version="1.0" encoding="UTF-8" ?>
<configuration>
  <!--
  Example logback configuration file.
  This is a sample only.
  -->

  <appender name="STDOUT"
    class="ch.qos.logback.core.ConsoleAppender">
    <encoder>
      <pattern>%date [%thread] %-5level %logger - %msg%n</pattern>
    </encoder>
  </appender>

  <!--Basic file appender-->
  <appender name="FILE"
    class="ch.qos.logback.core.FileAppender">
    <encoder>
      <pattern>%date [%thread] %-5level %logger - %msg%n</pattern>
    </encoder>
    <File>sample-log.txt</File>
  </appender>

    <!--Daily rolling file appender-->
  <appender name="DAILYFILE" class="ch.qos.logback.core.rolling.RollingFileAppender">
  <rollingPolicy class="ch.qos.logback.core.rolling.TimeBasedRollingPolicy">
    <FileNamePattern>logFile.%d{yyyy-MM-dd}.log</FileNamePattern>
  </rollingPolicy>

    <encoder>
      <pattern>%date [%thread] %-5level %class - %msg%n</pattern>
    </encoder>
  </appender>

  <!-- a sample email appender -->
  <appender name="EMAIL" class="ch.qos.logback.classic.net.SMTPAppender">
    <evaluator class="ch.qos.logback.classic.boolex.OnMarkerEvaluator">
      <marker>NOTIFY_ADMIN</marker>
    <!-- you specify add as many markers as you want -->
    </evaluator>
    <smtpHost>smtp.gmail.com</smtpHost>
    <smtpPort>587</smtpPort>
    <STARTTLS>true</STARTTLS>

    <username>YOUR_GMAIL@gmail.com</username>
    <password>YOUR_GMAIL_PASSWORD</password>
    <to>YOUR_GMAIL@gmail.com</to>
    <from>YOUR_GMAIL@gmail.com</from>
    <subject>Operations Console Alert</subject>

    <layout class="ch.qos.logback.classic.PatternLayout">
      <pattern>%date - %message%n</pattern>    </layout>

    <cyclicBufferTracker class="ch.qos.logback.core.spi.CyclicBufferTrackerImpl">
  <!-- send just one log entry per email -->
  <bufferSize>1</bufferSize>    </cyclicBufferTracker>
  </appender>

  <!-- ALERT appender which can be used to send alerts
  for example if a server starts or stops -->
  <appender name="ALERT"
    class="ch.qos.logback.core.ConsoleAppender">

    <!-- TM1 event filters -->
    <filter class="com.ibm.tm1.logback.filters.TM1ThresholdFilter">
    <tm1server>SERVER_NAME_HERE_IF_LIMITED_TO_A_SERVER</tm1server>

```

```

    <threshold>50</threshold>
    <alerttype>threads</alerttype>
  </filter>
  <filter class="com.ibm.tm1.logback.filters.TM1StatusFilter">
    <tm1server>SERVER_NAME_HERE_IF_LIMITED_TO_A_SERVER</tm1server>
    <OnMatch>ACCEPT</OnMatch>
  </filter>
  <!-- TM1 the deny filter comes at the end of the list -->
  <filter class="com.ibm.tm1.logback.filters.DenyFilter">
  </filter>
<encoder>
  <pattern>%date [%thread] %-5level %logger - %msg%n</pattern>
</encoder>
</appender>

<!-- Watchdog trail appender-->
  <appender name="WATCHDOGTRAIL" class="ch.qos.logback.core.FileAppender">
    <file>WatchdogActionTrail.log</file>
    <append>true</append>
    <encoder>
      <pattern>%date %-5level %logger - %msg%n</pattern>
    </encoder>
  </appender>

  <!-- additivity=false ensures watchdog data only goes to the watchdog log file-->
  <logger name="watchdog" level="DEBUG" additivity="false">
    <appender-ref ref="WATCHDOGTRAIL"/> <!-- Write watchdog events to a file -->
    <appender-ref ref="EMAIL"/>
  <!-- Send watchdog events to the specified email addresses -->
  </logger>

<root>
  <level value="debug" />
  <appender-ref ref="FILE" />
</root>
</configuration>

```

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## Chapter 5. Accessibility features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products.

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### Keyboard shortcuts

Standard Microsoft Windows navigation keys are used in addition to application-specific keys.

You can use keyboard shortcuts to navigate through the application and perform tasks. If you are using a screen reader, you might want to maximize your window so the keyboard shortcut table is completely expanded and accessible.

Note: The following keyboard shortcuts are based on US standard keyboards.

*Table 2. Keyboard shortcuts*

Action	Shortcut key
Perform the command for an active command button	Enter
Close an object or pane that is closable	Ctrl+W
Go to the first item or object; Go Home	Home
Go to the last item or object; Go to the End	End
Move forward through the panes of the application	F8
Move backward through the panes of the application	Shift+F8
Move the focus to the Application Bar (blue dot)	Alt+F10
Move to the next item in the tab index order at the same level; cycle to the first tab index when you are at the end	Tab
Move to the previous item in the tab index order at the same level; cycle to the last tab index when you are at the beginning	Shift+Tab
Toggle on or off	Space bar
Move to the next option button and select it	Right arrow, Down arrow
Move to the previous option button and select it	Up arrow, Left arrow
Open and display the contents of a drop-down list	Down arrow
Close an open drop-down list	Esc
Move to the next selectable node after the current node. If the node that you select has children nodes and is expanded, go to the first child node	Down arrow
Move to the previous selectable node	Up arrow

Table 2. Keyboard shortcuts (continued)

Action	Shortcut key
Expand the current selection if it is not expanded. If the node is expanded, go to the first child node	Right arrow and plus sign
Collapse the current selection if it is expanded. If the node is collapsed, go to the parent node before the current selection	Left arrow and minus sign
Expand the children menu items	Right arrow
Collapse the children menu items	Left arrow
Open a context menu	Right-click key (Mozilla Firefox); Shift+F10 (Microsoft Internet Explorer)
Close an open context menu	Esc
Scroll down	Down arrow or Page Down
Scroll up	Up arrow or Page Up
Move to the next widget in the tab index order at the same level in the canvas	Tab
Move to the previous widget in the tab index order at the same level in the canvas	Shift+Tab
Add a database instance	Alt+N
Upload a configuration file	Alt+U
Download a configuration file	Alt+I
Tile vertically	Alt+Q
Tile horizontally	Alt+W
Box tile	Alt+P
Refresh the tree	Alt+R

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## IBM and accessibility

See the IBM Accessibility Center for more information about the commitment that IBM has to accessibility.

IBM Accessibility Center([www.ibm.com/able](http://www.ibm.com/able))

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