

IBM Predictive Customer Intelligence
Version 1.0.0

*Installation Guide for Microsoft
Windows Operating Systems*



Note

Before using this information and the product it supports, read the information in "Notices" on page 91.

Product Information

This document applies to IBM Predictive Customer Intelligence Version 1.0.0 and may also apply to subsequent releases.

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Introduction

IBM® Predictive Customer Intelligence gives you the information and insight that you need to provide proactive service to your customers. The information can help you to develop a consistent customer contact strategy and improve your relationship with your customers.

Audience

This guide is intended to provide users with an understanding of how the IBM Predictive Customer Intelligence solution works. It is designed to help people who are planning to implement IBM Predictive Customer Intelligence know what tasks are involved.

Finding information

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

You can also access PDF versions of the documentation from the Predictive Customer Intelligence web page (www.ibm.com/support/docview.wss?uid=swg27041723).

Accessibility features

Accessibility features help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. Some of the components included in the IBM Predictive Customer Intelligence have accessibility features.

IBM Predictive Customer HTML documentation has accessibility features. PDF documents are supplemental and, as such, 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.

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Chapter 1. IBM Predictive Customer Intelligence

IBM Predictive Customer Intelligence brings together in a single solution the ability to do the following tasks:

- Determine the best offer for a customer.
- Retain customers that are likely to churn.
- Segment your customers, for example, by family status and salary.
- Identify the most appropriate channel to deliver an offer, for example, by email, telephone call, or application.

This solution ensures that all interactions with customers are coordinated and optimized. Predictive customer intelligence gives you the ability to sift quickly through millions of subscribers and know who to contact, when, and with what action.

The following steps define the process:

1. Understand the customer. Predictive modeling helps you to understand what market segments each customer falls into, what products they are interested in, and what offers they are most likely to respond to.
2. Define possible actions and the rules and models that determine which customers are eligible for which offers.
3. After the best action is identified, deliver the recommendation to the customer.

Integration with the IBM Enterprise Marketing Management (EMM) suite

IBM Predictive Customer Intelligence integrates with the following solutions:

- IBM Campaign, a web-based solution that enables users to design, run, and analyze direct marketing campaigns.
- IBM Interact, which provides personalized offers and customer profile information in real time.
- IBM Marketing Platform, which provides security, configuration, and dashboard features for IBM EMM products.

IBM Predictive Customer Intelligence provides two connectors between IBM Interact and IBM SPSS® Collaboration and Deployment Scoring Service:

- The External Callout connector calls an IBM SPSS model at run time, and is contained within the expression of an advanced rule for a marketer score, overriding the score that is supplied by the EMM campaign.
- The External Learning connector extends IBM Interact's native learning module to monitor visitor actions and propose optimal offers. It prioritizes IBM Campaign offers based on an IBM SPSS model's prediction of their final score. The connector passes specific configurable parameters as input to the IBM SPSS Scoring Service.

Integration with the IBM Next Best Action Optimizer

IBM Next Best Action Optimizer (NBAOPT) segregates customers by lifetime value, and then provides recommended actions to retain customers, which are based on their lifetime value segment.

You can integrate NBAOPT with the IBM Predictive Customer Intelligence solution. Install the NBAOPT connector to add an NBAOPT item to the IBM SPSS Modeler **Tools** menu. You can start the NBAOPT Studio from this menu, and you can generate a stream from PMML files.

Solution architecture

The IBM Predictive Customer Intelligence solution uses several different nodes, where each node provides a specific function for the solution. Each node represents a separate computer or a separate virtual machine image from the other nodes. A default environment installation of uses four nodes.

The following diagram shows the nodes in the architecture, with the software installed on each node.

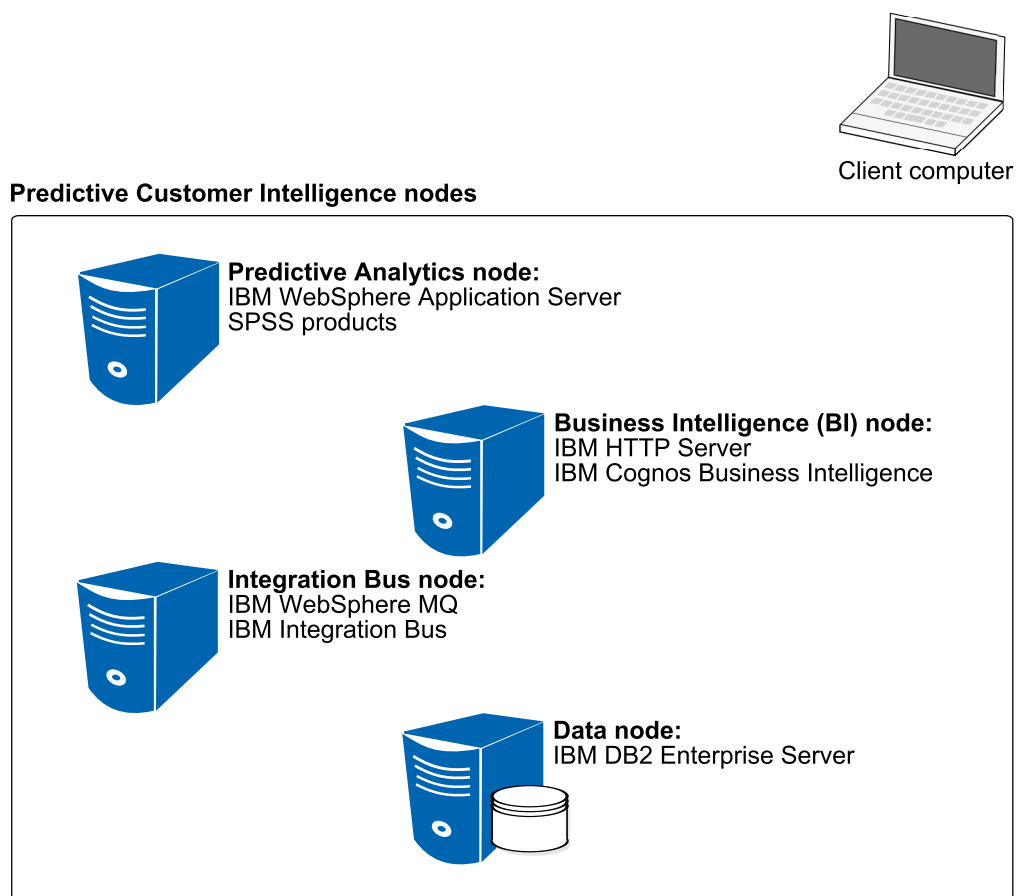


Figure 1. Predictive Customer Intelligence nodes

Predictive Analytics node

The Analytics node provides predictive scores and offers recommendations.

This node has the following software installed:

- IBM WebSphere® Application Server Network Deployment
- IBM SPSS Collaboration and Deployment Services
- IBM SPSS Modeler Server
- IBM SPSS Modeler Collaboration and Deployment Services Adapter

- IBM SPSS Modeler Server Social Network Analysis
- IBM SPSS Statistics Server
- IBM Analytic Decision Management
- IBM SPSS Text Analytics Server
- IBM SPSS Data Access Pack
- IBM DB2® Client

Optionally, you can distribute the Analytics node components onto additional computers in your environment. For example, you can add a node on which only IBM SPSS Collaboration and Deployment Services is installed. Distributing components can be done only after you complete a default environment installation.

Business Intelligence node

The BI node provides dashboards and reports.

This node has the following software installed:

- IBM HTTP Server
- IBM Cognos® Business Intelligence
- IBM DB2 Client

Optional components are also available, such as IBM Cognos Mobile and IBM Cognos Real-time Monitoring.

Integration Bus node

The Integration Bus node processes events, updates the content for IBM Cognos Business Intelligence, and triggers predictive scoring and decision management. It also loads master data into the solution.

This node has the following software installed:

- IBM WebSphere MQ
- IBM Integration Bus
- IBM Integration Bus Explorer
- IBM Integration Toolkit
- IBM DB2 Client

data node

The data node provides the database server that contains the databases that are used by other products in the solution. The database acts as an event store and holds calculated key performance indicators (KPIs) and profiles. It also contains supporting master data for the solution.

This node has the following software installed:

- IBM DB2 Enterprise Server Edition

Chapter 2. Installation prerequisites and preparation

Before you install IBM Predictive Customer Intelligence, ensure that the computers that you use meet the minimum requirements for operating systems, prerequisite software, processing, and disk space.

Supported operating systems and hardware requirements

Review the minimum hardware and operating system requirements before you install IBM Predictive Customer Intelligence. The requirements apply for all computers or virtual machines that you use for the installation.

Server computers

The Predictive Customer Intelligence server components must be installed on computers that run Microsoft Windows 2008 Server (x86_64) operating systems.

Hardware requirements

At a minimum, each computer or virtual machine that hosts a Predictive Customer Intelligence server component, or node, must have the following hardware requirements:

- 4 processors
- 32 GB of RAM
- 300 GB of hard disk space

If you are expecting to store large volumes of data, you might need to increase your disk size.

For best performance, each node should be installed on a separate computer or on a separate virtual machine image.

User requirements

You must have administrator access to all of the computers on which you install a Predictive Customer Intelligence node.

Client computers

The Predictive Customer Intelligence client components must be installed on computers that run Microsoft Windows 7 operating systems.

Clients can be installed on 32-bit or 64-bit computers. 64-bit is recommended.

At a minimum, each Predictive Customer Intelligence client computer and the computer where you run the Deployment Wizard for the client components, must have the following hardware requirements:

- 2 processors
- 8 GB of RAM
- 150 GB of hard disk space

Chapter 3. Installation of the server components

You install each IBM Predictive Customer Intelligence component using the installation program that is provided with that component.

Starting the Launchpad for the server components

Use the Launchpad to start the IBM Predictive Customer Intelligence installation.

Procedure

1. Go to the folder where you downloaded the installation files.
2. Decompress the installation files.
3. Go to the disk1 directory where you decompressed the files.
4. In the disk1 folder, double-click `Launchpad.exe` or `Launchpad64.exe`.
5. Review the information in the Launchpad panels.

Starting the Deployment Wizard for the server components

Use the Launchpad to start the IBM Predictive Customer Intelligence server **Deployment Wizard**.

Tip: You might need to adjust your Windows User Access Control (UAC) settings so that you can run the installation program for the client components.

Procedure

1. In the **Launchpad**, click **Deploy Server**.
2. Click **Start Deployment Wizard**.

Changing the temporary location for installation files

The Deployment Wizard uses a temporary folder for installation source files. You must ensure that you are using a location that has adequate disk space for the installation source files. If you do not have enough disk space in the default location, you can change the location.

For example, the default location is `C:\Program Files (x86)\Common Files\SL_####\SolutionEnabler`. If space is limited on your C drive, you can change the temporary location to another drive.

The temporary files include jar files that are used during the installation, which you might want to delete after you complete the installation.

Procedure

1. In the **Deployment Wizard**, click **Edit > Preferences**.
The **Deployment Preferences** window appears.
2. In the **Deployment Package Path** box, select an existing location.
3. Click **OK**.

Specifying the target computers to install the server components

You must specify a different target computer for each IBM Predictive Customer Intelligence node. A node can be installed on a computer or virtual machine, but each node must be installed on a separate computer or virtual machine.

To ensure that the server installers are successfully deployed to each node computer, temporarily turn off each node computer's firewall settings during the deployment.

Procedure

1. On the **Specify Target Computers** pages of the **Deployment Wizard**, enter the name or IP address of the computer on which you install a node in the **Target Computer** box.

The **Deployment Wizard** prompts you for each node computer.

If you install a node on the computer where you run the **Deployment Wizard**, you can enter localhost.

2. Click **Add**.

When you enter a computer other than localhost, in the **Target Computer Credentials** box, do the following steps:

- a. When you enter a computer other than localhost, in the **Target Computer Credentials** box, enter the **User ID** and **Password** for a user with permissions for that computer.
- b. Click **Test Login**.
- c. Click **Add**.

The computer that you entered appears in the **Selected target computers** box.

3. In the **Selected target computers** box, select the target computer, and click **Test Connections**.

Important: **Test Connections** tests the connection, tests the credentials, and locates or enables a deployment agent on the target computer. You must have an active deployment agent on each target computer.

4. Click **Next**.
5. Repeat the steps for each computer on which you install a node.

Configuring parameters for the server components installation

The **Deployment Wizard** displays some default values for each component of IBM Predictive Customer Intelligence. You can accept the default values or change them to suit your environment.

Important: The **Deployment Wizard** copies the installers to your computer. You must run each installer individually after they are copied to your computer.

Procedure

On the **Configure Parameters** pages, enter the location on the target computer for where you want to install the server installers. The default is C:\IBM\PCI. The same path is used on each target computer.

Starting the installation

After you enter all of the required fields in the **Deployment Wizard**, you can start the installation and configuration of the IBM Predictive Customer Intelligence components.

Procedure

On the **Summary Panel** of the **Deployment Wizard**, click **Deploy all**. If you choose to deploy the tasks individually, you must click **Deploy task** for each task in the order that the tasks appear on the **Summary** panel.

Note: The time to deploy the software is estimated by the **Deployment Wizard**. The actual time required depends on a variety of factors, such as network speed. In most cases, the deployments will take significantly less time than what is initially displayed by the **Deployment Wizard**.

Install IBM DB2 software on the data node computer

You must install IBM DB2 Enterprise Server Edition version 10.1 Fix Pack 3. IBM DB2 is used for product databases, such as the IBM Cognos Business Intelligence content store database, the IBM SPSS database, and for client application data.

After you install the database software, you must create a database for the IBM SPSS components.

Installing IBM DB2 Enterprise Server

You must install IBM DB2 Enterprise Server Edition version 10.1 Fix Pack 3.

Procedure

1. Go to the Server\Database folder where you installed the Predictive Customer Intelligence server installation files.
2. Double-click v10.1fp3_ntx64_server.exe to decompress the installation files.
3. Go to the SERVER folder where you decompressed the files, and double-click setup.exe.
4. In the **DB2 Setup Launchpad**, click **Install a Product**.
5. Under **DB2 Enterprise Server Edition Version 10.1 Fix Pack 3**, click **Install New**.
6. Select **Typical** for the installation type.
7. Select **Install DB2 Enterprise Server Edition on this computer**.
8. Follow the steps in the wizard to install and configure your database server. For more information about any of the settings, see the IBM DB2 documentation.

Adding the IBM DB2 license

You must add the DB2 license after you install IBM DB2 Enterprise Server for IBM Predictive Customer Intelligence.

Procedure

1. Go to the Server\Database folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the file that is named DB2_ESE_Restricted_QS_Activation_10.zip.

3. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
4. Type the following command and press Enter:
`db2licm -a decompressed_folder_location\ese_o\db2\license\db2ese_o.lic`
 For example, if you decompressed the file in the default location, the command would be: `db2licm -a C:\IBM\PCI\Server\Database\DB2_ESE_Restricted_QS_Activation_10\ese_o\db2\license\db2ese_o.lic`
5. Type the following command to validate that the license was added:
`db2licm -l`

Creating a database for the SPSS components

After you install the IBM DB2 database server for IBM Predictive Customer Intelligence, you must create a database for the SPSS components.

Procedure

1. Log on to the data node computer as a DB2 instance owner user.
2. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
3. Enter the following script to create a database:
`DB2 CREATE DATABASE SPSSDB ON path USING CODESET UTF-8
 TERRITORY US COLLATE USING SYSTEM`
path can be a file path or just a drive letter. For example,
`DB2 CREATE DATABASE SPSSDB ON C: USING CODESET UTF-8
 TERRITORY US COLLATE USING SYSTEM`
4. Connect to the database you created by using the following command:
`DB2 CONNECT TO SPSSDB`
5. Enter the following commands to create the bufferpools for the database. Enter each command individually.
`DB2 CREATE Bufferpool CDS8K IMMEDIATE SIZE 250 AUTOMATIC PAGESIZE 8 K`
`DB2 CREATE REGULAR TABLESPACE CDS8K PAGESIZE 8 K MANAGED BY AUTOMATIC
 STORAGE EXTENTSIZE 8 OVERHEAD 10.5 PREFETCHSIZE 8 TRANSFERRATE 0.14
 BUFFERPOOL CDS8K DROPPED TABLE RECOVERY ON`
`DB2 CREATE Bufferpool CDSTEMP IMMEDIATE SIZE 250 PAGESIZE 32 K`
`DB2 CREATE SYSTEM TEMPORARY TABLESPACE CDSTEMP PAGESIZE 32 K MANAGED BY AUTOMATIC
 STORAGE EXTENTSIZE 16 OVERHEAD 10.5 PREFETCHSIZE 16 TRANSFERRATE 0.14
 BUFFERPOOL "CDSTEMP"`

Install software on the Predictive Analytics node computer

For IBM Predictive Customer Intelligence, install SPSS software on the Predictive Analytics node computer.

Installing IBM DB2 client software on the Analytics node computer

You must install IBM DB2 client software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the `install_location\Server\Database` folder where you installed the Predictive Customer Intelligence server installation files.

- By default, the *install_location* is C:\IBM\PCI\.
2. Double-click v10.1fp3_ntx64_rtc1.exe to extract the installation files.
 3. Select a **Typical** installation, and follow the steps in the DB2 Setup wizard to install the product.

Installing IBM Installation Manager on the Predictive Analytics node computer

Install IBM Installation Manager before you install other IBM Predictive Customer Intelligence software.

Procedure

1. Go to the *install_location*\Server\InstallationManager folder where you installed the Predictive Customer Intelligence server installation files.
By default, the *install_location* is C:\IBM\PCI\.
2. Decompress the installation files.
3. Double-click install.exe.
4. Follow the steps to install IBM Installation Manager.

Installing WebSphere Application Server on the Predictive Analytics node computer

You install WebSphere Application Server by using IBM Installation Manager.

Procedure

1. Go to the *install_location*\Server\WebSphereApplicationServer folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
You must decompress all of the compressed files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the WAS_ND_V8.5.5_1_OF_3 folder, select repository.config, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **IBM WebSphere Application Server Network Deployment**, select **Version 8.5.5.0**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. When prompted for **Which program do you want to start?**, select **Profile Management Tool to create a profile**, and click **Finish**.
12. In the **WebSphere Customization Toolbox 8.5** window, click **Create**.
13. Select **Application Server**, and click **Next**.
14. Select **Typical profile creation**, and click **Next**.
15. Follow the steps in the wizard to configure your application server. For more information about any of the settings, see the WebSphere Application Server documentation.

Installing IBM SPSS Collaboration and Deployment Services Server

You install IBM SPSS Collaboration and Deployment Services Server on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\SPSS_CNDS folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the Server_Repository folder, select repository.config, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select the following components.
 - **IBM SPSS Collaboration and Deployment Services**
 - **IBM SPSS Collaboration and Deployment Services - Remote Process Server**
 - **IBM SPSS Collaboration and Deployment Services - Scoring Server**
 - **IBM SPSS PMML Scoring Adapter**
10. Click **Next**, and follow the steps in IBM Installation Manager to install the products.
11. On the **Common Configuration for IBM SPSS Collaboration and Deployment Services - Remote Process Server** pages, enter the following information:

Database Type

Select **IBM DB2**.

Database Machine Name or IP

The name or IP address of the computer where you installed IBM DB2 and created the SPSSDB database.

Database Name

Enter **SPSSDB**.

Port Number

Enter **50000**, the default port number for IBM DB2.

User name

Enter the user name of your IBM DB2 administrator user.

Password

Enter the password for your IBM DB2 administrator user.

Remote Process Service Name

Leave the default value **RemoteProcessServer**.

Port Number

Change the default only if the default value **2211** causes a port conflict.

12. Leave the **Configure Clustering** check box clear, and click **Next**.
13. Select **IBM WebSphere Application Server**, and click **Next**.

14. Click **Install**.
15. In the **Which programs do you want to start** box, select **IBM SPSS Collaboration and Deployment Services Configuration Tool 6.0**, and click **Finish**.
16. In the **IBM SPSS Collaboration and Deployment Services Configuration Tool**, click **Next**.
17. On the **Application Server** page, enter the information for IBM WebSphere Application Server, and click **Next**.
For the **WebSphere profile directory** value, the default location is C:\Program Files (x86)\IBM\WebSphere\AppServer\profiles\AppSrv01.
18. On the **Database** page, enter the information for the SPSSDB database, and click **Next**.
19. On the **Encryption** page, enter a password, and click **Next**.
20. On the **Repository Admin** page, enter a password for the SPSS admin user, and click **Next**.
21. On the **Deployment mode** page, select **Automatic**, and click **Next**.
22. Click **Configure**.
23. Click **Finish**.

Installing IBM SPSS Enterprise View Driver software

Install IBM SPSS Collaboration and Deployment Services Enterprise View Driver software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\EntViewDriver folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Go to the Enterprise_View_Driver_64 folder, and double-click setupWindows64-amd64.exe.
4. Follow the steps in the wizard to install the driver.

Installing IBM SPSS Modeler Server software

Install IBM SPSS Modeler Server software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\ModelerServer folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Double-click setup.exe.
4. On the **Server Mode** page, select **Production Mode**.
5. Follow the steps in the wizard to install the server.

Installing IBM SPSS Collaboration and Deployment Services Modeler Adapter

Install IBM SPSS Collaboration and Deployment Services Adapter software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\CNDSModelerAdapter folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the disk1 folder, select diskTag.inf, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select **IBM SPSS Modeler Adapters for Collaboration and Deployment Services**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. On the **Install Packages** page, select **Use the existing package group**, select **IBM SPSS Collaboration and Deployment Services 6.0**, and click **Next**.
12. On the **Common Configurations** page, enter the SPSS administrator user and password, and click **Next**.
13. Click **Install**, and click **Finish**.

Installing IBM Analytical Decision Management software

Install IBM Analytical Decision Management software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

A sample Analytical Decision Management application is provided with the installation files. The sample application is provided in a compressed file that is named ADM_80_Demo.zip. For more information about the sample file, see the Analytical Decision Management documentation (www.ibm.com/support/knowledgecenter/SS6A3P_8.0.0).

Procedure

1. Go to the *install_location*\Server\ADM folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation file that is named ADM_80_Repository_mp.zip.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the adm_repository folder, select repository.config, and click **Open** and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select **IBM Analytical Decision Management**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. On the **Install Packages** page, select **Use the existing package group**, select **IBM SPSS Collaboration and Deployment Services 6.0**, and click **Next**.
12. On the **Install Packages** page, select **Production** for the **Installation Type**. Ensure that all of the options under **IBM Analytical Decision Management Applications** are selected.

13. On the **Common Configurations** page, enter the SPSS administrator user and password, and click **Next**.
14. Click **Install**.
15. Click **Finish**.

Installing IBM SPSS Data Access Pack

Install the IBM SPSS Data Access Pack software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Before you begin

You must stop the IBM WebSphere Application Server profile where IBM SPSS products are installed and stop IBM SPSS Modeler Server before you install the Data Access Pack.

Procedure

1. Click **Start > All Programs > IBM WebSphere > Profiles > AppSrv01 > Stop the server** to stop the WebSphere Application Server where the SPSS components are running.
2. Stop IBM SPSS Modeler Server from the Microsoft Windows Services tool.
For more information, see the IBM SPSS Modeler documentation (www.ibm.com/support/knowledgecenter/SS3RA7_15.0.0/com.ibm.spss.modeler.help/admin_startstop_startstop_win.htm?lang=en).
3. Go to the *install_location*\Server\DataAccessPack folder where you installed the Predictive Customer Intelligence server installation files.
4. Decompress the installation files.
5. Go to the Win64 folder, and double-click SDAP_7.1_win64.exe.
6. Follow the steps in the wizard to install the Data Access Pack.
7. Click **Start > All Programs > IBM WebSphere > Profiles > AppSrv01 > Start the server** to start the WebSphere Application Server where the SPSS components are running.
8. Start IBM SPSS Modeler Server.

Installing IBM SPSS Text Analytics Server

Install IBM SPSS Text Analytics Server software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\TextAnalytics folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Double-click setup.exe.
4. Follow the steps in the wizard to install the server software.

Installing IBM SPSS Modeler Server Social Network Analysis software

Install IBM SPSS Modeler Server Social Network Analysis software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\SocialNetworkAnalytics folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Double-click *sna_server_installer_win64.exe*.
4. Follow the steps in the wizard to install the server software.

Installing IBM SPSS Modeler Solution Publisher

Install IBM SPSS Modeler Solution Publisher and IBM SPSS Modeler Premium Solution Publisher software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Note: You must install IBM SPSS Modeler Premium Solution Publisher to the same location where you installed IBM SPSS Modeler Solution Publisher.

Procedure

1. Install IBM SPSS Modeler Solution Publisher.
 - a. Go to the *install_location*\Server\ModelerSolnPublisher folder where you installed the Predictive Customer Intelligence server installation files.
 - b. Decompress the installation files.
 - c. Double-click *setup.exe*.
 - d. Follow the steps in the wizard to install the software.
2. Install IBM SPSS Modeler Premium Solution Publisher.
 - a. Go to the *Server*\ModelerPremiumSolnPub folder where you installed the Predictive Customer Intelligence server installation files.
 - b. Decompress the installation files.
 - c. Double-click *spss_mpsp_16.0_64b_win_ml.exe*.
 - d. Follow the steps in the wizard to install the software.

Installing IBM SPSS Statistics Server software

Install IBM SPSS Statistics Server software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\StatisticsServer folder where you installed the Predictive Customer Intelligence server installation files.
2. Double-click *SPSS_Statistics_Server_22_win64.exe*.
3. Follow the steps in the wizard to install the software.
4. On the **Server Mode** page, select **Production Mode**.
5. On the **IBM SPSS Statistics - Essentials for Python** page, click **Yes**, and then click **Next**.
6. On the **Server IP Address** page, enter the IP address of the computer where you are installing IBM SPSS Statistics Server, and set the **Port Number** to 3022.
7. Click **Next**.

Installing IBM SPSS Statistics Collaboration and Deployment Services Adapter

Install IBM SPSS Statistics Collaboration and Deployment Services Adapter software on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the *install_location*\Server\CNDSSStatAdapter folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the repository directory, select *repository.config*, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select **IBM SPSS Collaboration and Deployment Services - Server Adapter for Statistics**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. On the **Install Packages** page, select **Use the existing package group**, select **IBM SPSS Collaboration and Deployment Services 6.0**, and click **Next**.
12. On the **Common Configurations** page, enter the SPSS administrator user and password, and click **Next**.
13. Click **Install**.
14. Click **Finish**.

Install software on the Business Intelligence node computer

You must install an IBM DB2 client, IBM HTTP Server, and IBM Cognos Business Intelligence on the IBM Predictive Customer Intelligence Business Intelligence node computer.

Installing IBM DB2 client software on the BI node computer

You must install IBM DB2 client software on the Predictive Customer Intelligence Business Intelligence node computer by using the IBM DB2 Enterprise Server installer.

Procedure

1. Go to the *install_location*\Server\Database folder where you installed the Predictive Customer Intelligence server installation files.
By default, the *install_location* is C:\IBM\PCI\.
2. Double-click *v10.1fp3_ntx64_rtc1.exe* to extract the installation files.
3. Select a **Typical** installation, and follow the steps in the DB2 Setup wizard to install the product.

Installing IBM Installation Manager on the BI node computer

Install IBM Installation Manager before you install other IBM Predictive Customer Intelligence software.

Procedure

1. Go to the *install_location*\Server\InstallationManager folder where you installed the Predictive Customer Intelligence server installation files.
By default, the *install_location* is C:\IBM\PCI\.
2. Decompress the installation files.
3. Double-click install.exe.
4. Follow the steps to install IBM Installation Manager.

Installing IBM HTTP Server on the BI node computer

You install IBM HTTP Server by using IBM Installation Manager.

Procedure

1. Go to the *install_location*\Server\HTTPServer folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
You must decompress all of the compressed files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you extracted the installation files.
7. Select repository.config, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **IBM HTTP Server for WebSphere Application Server**, select **Version 8.5.5.0**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
 - a. On the **Configuration for IBM HTTP Server for WebSphere Application Server 8.5.5.0** page, change the **HTTP port** value only if you have another web server that is running on your computer and is already using port 80.

Note: If you use a port other than 80, you must change the port number in the **Gateway URI** in IBM Cognos Configuration.

Installing IBM Cognos Business Intelligence

Install IBM Cognos Business Intelligence software on the IBM Predictive Customer Intelligence Business Intelligence node computer.

For more information about IBM Cognos Business Intelligence, see the product documentation (www.ibm.com/support/knowledgecenter/SSEP7J_10.2.1).

Important: The IBM Cognos Business Intelligence installation files are provided in tar.gz compressed format. You may have to use a decompression utility other than the one provided by Microsoft Windows to decompress the files. For example, you can use a decompression utility such as 7-Zip or WinZip to decompress the files.

Procedure

1. Install IBM Cognos BI.
 - a. Go to the *install_location*\Server\CognosBIServer folder where you installed the Predictive Customer Intelligence server installation files.

- b. Decompress `bi_svr_64b_10.2.1_win_ml.tar.gz`.
Decompressing the IBM Cognos installation files is a two-step process. You must decompress the `tar.gz` file, and then decompress the `tar` file.
 - c. Go to the folder where you decompressed `bi_svr_64b_10.2.1_win_ml.tar.gz`.
 - d. Decompress `bi_svr_64b_10.2.1_win_ml.tar`.
 - e. Go to the `win64h` folder, and double-click `issetup.exe`.
 - f. Follow the steps in the wizard to install the server software.
 - g. On the **Component Selection** page, select the following components:
 - **Application Tier Components**
 - **Gateway**
 - **Content Manager**
- Note:** Do not install the **Cognos Content Database** component.
- h. Clear the **Start IBM Cognos Configuration** box, and click **Finish**.
2. Install the IBM Cognos BI fix pack.

Important: Ensure that you decompress the fix pack to a different location than the IBM Cognos BI installation files. Some directories will be overwritten if you use the same location.

- a. Go to the `install_location\Server\CognosBIServer` folder where you installed the Predictive Customer Intelligence server installation files.
 - b. Decompress `up_bisrvr_winx64h_10.2.5001.156_ml.tar.gz`, and then decompress `up_bisrvr_winx64h_10.2.5001.156_ml.tar`.
 - c. Go to the `win64h` folder, and double-click `issetup.exe`.
 - d. Follow the steps in the wizard to install the server software.
 - e. On the **Installation Location** page, browse to the location where you installed IBM Cognos BI. For example, `C:\Program Files\ibm\cognos\c10_64`.
 - f. Click **Finish**.
3. Optional: Install IBM Cognos Mobile and the IBM Cognos Mobile fix pack.
For more information about IBM Cognos Mobile, see the product documentation (www.ibm.com/support/knowledgecenter/SSEP7J_10.2.1).my
 - a. Go to the `install_location\Server\CognosMobile` folder where you installed the Predictive Customer Intelligence server installation files.
 - b. Decompress `up_bisrvr_winx64h_10.2.5001.1033_ml.tar.gz`, and then decompress `up_bisrvr_winx64h_10.2.5001.1033_ml.tar`.
 - c. Go to the `win64h` folder, and double-click `issetup.exe`.
 - d. Follow the steps in the wizard to install the server software.
 - e. Decompress `mobile_10.2.1_mp_ml.tar.gz`, and then decompress `mobile_10.2.1_mp_ml.tar`.
 - f. Go to the `win64h` folder, and double-click `issetup.exe`.
 - g. Follow the steps in the wizard to install the server software.

Note: You must install IBM Cognos Mobile to the same folder where you installed IBM Cognos BI.

- h. Decompress `up_cogmob_winx64h_10.2.5002.46_ml.tar.gz`, and then decompress `up_cogmob_winx64h_10.2.5002.46_ml.tar`.
- i. Go to the `win64h` folder, and double-click `issetup.exe`.

Configure and start IBM Cognos BI

After you install IBM Cognos Business Intelligence, you must create a content store database, save your configuration settings, and start the services.

Configuring IBM HTTP Server for IBM Cognos BI

You must configure the IBM Cognos Business Intelligence gateway on your web server.

Procedure

1. Go to the *HTTPServer_installation*\conf\ folder. For example, go to the C:\Program Files (x86)\IBM\HTTPServer\conf folder.
2. Open the *httpd.conf* file in a text editor.
3. Add the following lines to file:

```
ScriptAlias /ibmcognos/cgi-bin/ "Cognos_installation/cgi-bin/"
<Directory "Cognos_installation/cgi-bin/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

```
Alias /ibmcognos/ "Cognos_installation/webcontent/"
<Directory "Cognos_installation/webcontent/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

Note: Ensure that you add the */ibmcognos/cgi-bin/* *ScriptAlias* before the */ibmcognos/* *Alias*.

For example, if you use the default installation location, add the following lines:

```
ScriptAlias /ibmcognos/cgi-bin/ "C:/Program Files/IBM/cognos/c10_64/cgi-bin/"
<Directory "C:/Program Files/IBM/cognos/c10_64/cgi-bin/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

```
Alias /ibmcognos/ "C:/Program Files/IBM/cognos/c10_64/webcontent/"
<Directory "C:/Program Files/IBM/cognos/c10_64/webcontent/">
    Options Indexes MultiViews
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

4. Save and close the file.
5. Restart the web server.
 - a. Click **Start > All Programs > IBM HTTP Server V8.5 > Stop HTTP Server**.
 - b. Click **Start > All Programs > IBM HTTP Server V8.5 > Start HTTP Server**.

Copying the JAR files for IBM DB2

You must copy two jar files from your IBM DB2 installation to your IBM Cognos Business Intelligence installation location.

Procedure

Copy the following files from the *DB2_client_installation*\sql1lib\java folder to the *Cognos_installation*\webapps\p2pd\WEB-INF\lib folder:

- db2jcc.jar
- db2jcc_license_cu.jar

Configuring IBM Cognos BI

You configure IBM Cognos Business Intelligence using IBM Cognos Configuration.

For more information about configuring IBM Cognos BI, see the *Business Intelligence Installation and Configuration Guide* on IBM Knowledge Center (www.ibm.com/support/knowledgecenter/SSEP7J_10.2.1).

Procedure

1. Click **Start > All Programs > IBM Cognos 10_64 > IBM Cognos Configuration**.
2. In the **Explorer** pane, select **Environment**, and replace localhost with the name or IP address of your computer in the following fields:
 - **Gateway URI** (If you are using a port number other than 80 for the web server, ensure that you also change the port number value to the port number for IBM HTTP Server.)
 - **Dispatcher URIs for Gateway**
 - **External dispatcher URI**
 - **Internal dispatcher URI**
 - **Dispatcher URI for external applications**
 - **Content Manager URIs**
3. Leave IBM Cognos Configuration open.

Creating a content store database for IBM Cognos BI

You create a database script on your IBM Predictive Customer IntelligenceBusiness Intelligence node computer when you configure IBM Cognos BI. You use the script to create the content store database on your data node computer.

Procedure

1. In IBM Cognos Configuration, configure a content store database.

Note: The information you enter is used to generate a script that you use to create the content store database on the data node computer.

 - a. In the **Explorer** pane, under **Data Access > Content Manager**, click **Content Store**.
 - b. In the **Database server and port number** field, enter the name of the computer and the port number on which you installed IBM DB2 Enterprise Server. For example, enter *servername:50000*, where *servername* is the name of the data node computer and 50000 is the default port number that is used by IBM DB2.
 - c. Click the **Value** field next to the **User ID and password** property, click the edit icon, and enter the **User ID** and **Password** for your IBM DB2 user, and click **OK**.
 - d. In the **Properties** pane, for the **Database name** property, enter a name for your content store database.

The default name is cm.

Restriction: Do not use a name longer than 8 characters and use only letters, numbers, underscores, or hyphens in the name.

2. Right-click **Content Store**, and click **Generate DDL**.
The DDL file, `createDb.sql`, is created in the `Cognos_installation\configuration\schemas\content\db2` folder.
3. Copy `createDb.sql` from the BI node computer to the data node computer.
4. On your data node computer, create the content store database.
 - a. Log on to the data node computer as a DB2 user with privileges to create a database.
 - b. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
 - c. Type `db2 -tvf path\createDb.sql`, and press Enter.
5. Leave IBM Cognos Configuration open.

Starting the IBM Cognos BI services

You start the IBM Cognos BI services by using IBM Cognos Configuration.

Procedure

1. In IBM Cognos Configuration, click **File > Save**.
2. Test the connection to the content store database.
 - a. In IBM Cognos Configuration, in the **Explorer** pane, under **Data Access > Content Manager**, right-click **Content Store**, and click **Test**.

Note: If the connection does not succeed, you must correct any issues before you can start the IBM Cognos BI services.

3. In IBM Cognos Configuration, click **Actions > Start**.

Results

After the services start, you can access the IBM Cognos BI portal by going to `http://servername/ibmcognos/` in a web browser.

Note: It can take some time for the IBM Cognos BI services to start for the first time.

If you did not use port 80 when you installed IBM HTTP Server, you must add the port number. For example, `http://servername:port/ibmcognos/`, where *port* is the number you used for the web server.

Install software on the Integration Bus node computer

You must install WebSphere MQ and IBM Integration Bus on the IBM Predictive Customer Intelligence Integration Bus node computer.

Installing IBM DB2 client software on the Integration Bus node computer

You must install IBM DB2 client software on the IBM Predictive Customer Intelligence Integration Bus node computer.

Procedure

1. Go to the `install_location\Server\Database` folder where you installed the Predictive Customer Intelligence server installation files.

- By default, the *install_location* is C:\IBM\PCI\.
2. Double-click v10.1fp3_ntx64_rtc1.exe to extract the installation files.
 3. Select a **Typical** installation, and follow the steps in the DB2 Setup wizard to install the product.

Installing WebSphere MQ

Install WebSphere MQ on the IBM Predictive Customer Intelligence Integration Bus node computer.

Note: If you are installing the software as a domain user account instead of a local administrator, you must provide a domain user account with authority to query information about user accounts. For more information, see the WebSphere MQ documentation (www.ibm.com/support/knowledgecenter/SSFKSJ_7.5.0).

Procedure

1. Log on to the computer where you are installing WebSphere MQ as a local administrator.
2. Go to the Server\MessageQueue folder where you installed the Predictive Customer Intelligence server installation files.
3. Decompress the installation files.
4. Double-click Setup.exe.
5. Click **Software Requirements**, and ensure that you are using a supported operating system.
6. Click **Network Configuration**, and select **No** for **Configuring WebSphere MQ for Windows domain users**.
7. Click **WebSphere MQ Installation**, and click **Launch IBM Websphere MQ Installer**.
8. Follow the steps in the wizard to install the server software.
9. When the installation is complete, click **Finish**.
The **Prepare WebSphere MQ Wizard** appears.
10. Select a **Typical** installation, and follow the steps in the wizard.
When you are prompted to identify a domain controller, select **No** if you are installing as a local administrator account, and click **Next**.
11. Click **Finish**.

Installing IBM Integration Bus

Install IBM Integration Bus and IBM Integration Explorer on the IBM Predictive Customer Intelligence Integration Bus node computer.

Before you begin

Ensure that you install WebSphere Message Queue before you install IBM Integration Bus.

Procedure

1. Go to the Server\IntegrationBus folder where you installed the Predictive Customer Intelligence server installation files.
2. Decompress the installation files.
3. Go to the integrationbus_runtime1 folder, and double-click mqsilaunchpad.exe.

4. If a message appears stating that the installer is unable to find the correct version of WebSphere MQ, click **Next**. WebSphere MQ 7.5.0.2 is provided with Predictive Customer Intelligence, but the installer is looking for an earlier version. You can safely ignore this message.
5. Select the following components:
 - **IBM Integration Bus, V9.0.0.1**
 - **IBM Integration Explorer, V9.0.0.1**
 Each component is installed sequentially.
6. Click **Launch Installation for IBM Integration Bus**.
7. Follow the steps in the IBM Integration Bus installation wizard, and click **Done**.
8. Follow the steps in the IBM Integration Explorer installation wizard, and click **Done**.
9. Click **Exit Launchpad**.

Creating a broker and queue manager

You create a broker for IBM Predictive Customer Intelligence from the command line. A queue manager is automatically created when you create the broker.

You must assign a user for the broker and queue manager. The user must be a local administrator user.

Procedure

1. Log on to the Integration Bus node as a local administrator user.
2. In a command prompt, go to the *installation_location*\mqsi\9.0.0.1\bin folder. For example, if you installed to the default location, go to the C:\Program Files\IBM\mqsi\9.0.0.1\bin folder.
3. Enter the following command to start the command console:
mqsiCommandConsole.exe
4. Enter the following command to create and start the broker and queue manager:
mqsicreatebroker *broker_name* -i LocalSystem -q *queue_manager_name*
For example, to create a broker that is named pcibroker and a queue manager that is named pciqmgr, enter:
mqsicreatebroker pcibroker -i LocalSystem -q pciqmgr
5. Enter the following command to start the broker:
mqsisstart *broker_name*
For example, to start a broker that is named pcibroker, enter:
mqsisstart pcibroker
6. Enter the following command to create an execution group:
mqsicreateexecutiongroup *broker_name* -e *executiongroupname*
For example, to create an execution group that is named pciegroup, enter:
mqsicreateexecutiongroup pcibroker -e pciegroup

Enabling remote access for the queue manager

For IBM Predictive Customer Intelligence, you must start the queue manager command line processor to enable remote access to the queue manager.

Procedure

1. In the mqsiCommandConsole, enter the following command to start the queue manager:


```
runmqsc queue_manager_name
```

For example, if your queue manager is named `pciqmgr`, enter:

```
runmqsc pciqmgr
```

2. Enter the following lines, and press Enter after each line:

```
START LISTENER
```

```
ALTER QMGR CHLAUTH(ENABLED)
```

```
SET CHLAUTH(SYSTEM.BKR.CONFIG) TYPE(ADDRESSMAP) ADDRESS('*')
```

```
MCAUSER('mqm')
```

```
SET CHLAUTH(SYSTEM.BKR.CONFIG) TYPE(BLOCKUSER) USERLIST('*NOACCESS')
```

```
END
```

Important: The `ADDRESS('*')` value in the command allows connections from any IP address. Consider restricting the access to a single computer. For more information about these values, see the WebSphere MQ documentation.

3. If you want to use a specific port number for the listener, enter the following command:

```
runmq|sr -t tcp -m queue_manager_name -p port_number
```

Chapter 4. Distribute Analytics node components

After you complete a default environment installation, you can optionally add Analytics node components. Adding Analytics node components can improve the performance of the solution.

Distributing Analytics node components includes adding of SPSS Collaboration and Deployment Services Server instances on other computers in your environment.

Creating a database for an additional Collaboration and Deployment Services instance

You must create a database for each instance of SPSS Collaboration and Deployment Services Server you add to your environment.

Each instance of SPSS Collaboration and Deployment Services Server requires its own database. You cannot use the same database for multiple instances of SPSS Collaboration and Deployment Services Server.

Procedure

1. Log on to the data node computer as a DB2 instance owner user.
2. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
3. Enter the following script to create a database:

```
DB2 CREATE DATABASE SPSSDBxx ON path USING CODESET UTF-8  
TERRITORY US COLLATE USING SYSTEM
```

Important: Ensure that you use a different database name for each SPSS Collaboration and Deployment Services Server that you are adding to your environment. For example, change SPSSDBxx to a new name for each SPSS Collaboration and Deployment Services Server you add.

Do not use a database name that is longer than 8 characters.

path can be a file path or just a drive letter. For example,

```
DB2 CREATE DATABASE SPSSDB1 ON C: USING CODESET UTF-8  
TERRITORY US COLLATE USING SYSTEM
```

4. Connect to the database you created by using the following command:
DB2 CONNECT TO SPSSDBxx
5. Enter the following commands to create the bufferpools for the database. Enter each command individually.

```
DB2 CREATE Bufferpool CDS8K IMMEDIATE SIZE 250 AUTOMATIC PAGESIZE 8 K
```

```
DB2 CREATE REGULAR TABLESPACE CDS8K PAGESIZE 8 K MANAGED BY AUTOMATIC  
STORAGE EXTENTSIZE 8 OVERHEAD 10.5 PREFETCHSIZE 8 TRANSFERRATE 0.14  
BUFFERPOOL CDS8K DROPPED TABLE RECOVERY ON
```

```
DB2 CREATE Bufferpool CDSTEMP IMMEDIATE SIZE 250 PAGESIZE 32 K
```

```
DB2 CREATE SYSTEM TEMPORARY TABLESPACE CDSTEMP PAGESIZE 32 K MANAGED BY AUTOMATIC  
STORAGE EXTENTSIZE 16 OVERHEAD 10.5 PREFETCHSIZE 16 TRANSFERRATE 0.14  
BUFFERPOOL "CDSTEMP"
```

Copying the installers to the distributed Analytics node computer

Copy the required installers to each computer on which you want to install an additional SPSS Collaboration and Deployment Services Server.

You can use the installers that were copied to the Analytics node computer you already set up (Chapter 3, “Installation of the server components,” on page 7).

If you use the Launchpad to install the server components, you have to deploy all of the installers for all of the nodes.

Procedure

1. If you have access to the installers on your existing Analytics node computer, copy the following installation file folders to the computer you want to add as an additional Analytics node computer.
 - Database
 - InstallationManager
 - WebSphereApplicationServer
 - SPSS_CNDS
 - CNDSModelerAdapter
 - ADM
 - CNDSStatAdapter
2. If you no longer have the installers on your existing Analytics node computer, follow the steps in Chapter 3, “Installation of the server components,” on page 7 to deploy the installers to your computers.

Installing IBM DB2 client for SPSS Collaboration and Deployment Services

You must install IBM DB2 client software on the computer on which you install SPSS Collaboration and Deployment Services Server components for your IBM Predictive Customer Intelligence environment.

Procedure

1. Go to the Database folder where you copied the installation files.
2. Double-click `v10.1fp3_ntx64_rtc1.exe` to extract the installation files.
3. Select a **Typical** installation, and follow the steps in the DB2 Setup wizard to install the product.

Installing IBM Installation Manager for SPSS Collaboration and Deployment Services

You must install IBM Installation Manager on the computer on which you install SPSS Collaboration and Deployment Services Server components for your IBM Predictive Customer Intelligence environment.

About this task

Procedure

1. Go to the InstallationManager folder where you copied the installation files.
2. Decompress the installation files.

3. Double-click `install.exe`.
4. Follow the steps to install IBM Installation Manager.

Installing IBM WebSphere Application Server for SPSS Collaboration and Deployment Services

You must install IBM WebSphere Application Server on the computer on which you install SPSS Collaboration and Deployment Services Server components for your IBM Predictive Customer Intelligence environment.

About this task

Procedure

1. Go to the `WebSphereApplicationServer` folder where you copied the installation files.
2. Decompress the installation files.
You must decompress all of the compressed files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the `WAS_ND_V8.5.5_1_OF_3` folder, select `repository.config`, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **IBM WebSphere Application Server Network Deployment**, select **Version 8.5.5.0**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. When prompted for **Which program do you want to start?**, select **Profile Management Tool to create a profile**, and click **Finish**.
12. In the **WebSphere Customization Toolbox 8.5** window, click **Create**.
13. Select **Application Server**, and click **Next**.
14. Select **Typical profile creation**, and click **Next**.
15. Follow the steps in the wizard to configure your application server. For more information about any of the settings, see the WebSphere Application Server documentation.

Installing additional IBM SPSS Collaboration and Deployment Services Server instances

Each instance of IBM SPSS Collaboration and Deployment Services Server that you install requires a separate database. The databases can be on the same database server. The database must exist before you install the server components.

Procedure

1. Go to the `SPSS_CNDS` folder where you copied the installation files.
2. Decompress the installation files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.

5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the `Server_Repository` folder, select `repository.config`, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select the following components.
 - **IBM SPSS Collaboration and Deployment Services**
 - **IBM SPSS Collaboration and Deployment Services - Remote Process Server**
 - **IBM SPSS Collaboration and Deployment Services - Scoring Server**
 - **IBM SPSS PMML Scoring Adapter**
10. Click **Next**, and follow the steps in IBM Installation Manager to install the products.
11. On the **Common Configuration for IBM SPSS Collaboration and Deployment Services - Remote Process Server** pages, enter the following information:

Database Type

Select **IBM DB2**.

Database Machine Name or IP

The name or IP address of the computer where you installed IBM DB2 and created the `SPSSDBxx` database.

Database Name

Enter the name of the database you created. For example, enter `SPSSDBxx`. Each instance of SPSS Collaboration and Deployment Services must use its own database.

Port Number

Enter 50000, the default port number for IBM DB2.

User name

Enter the user name of your IBM DB2 administrator user.

Password

Enter the password for your IBM DB2 administrator user.

Remote Process Service Name

Leave the default value `RemoteProcessServer`.

Port Number

Change the default only if the default value 2211 causes a port conflict.

12. Leave the **Configure Clustering** check box clear, and click **Next**.
13. Select **IBM WebSphere Application Server**, and click **Next**.
14. Click **Install**.
15. In the **Which programs do you want to start** box, select **IBM SPSS Collaboration and Deployment Services Configuration Tool 6.0**, and click **Finish**.
16. In the **IBM SPSS Collaboration and Deployment Services Configuration Tool**, click **Next**.
17. On the **Application Server** page, enter the information for IBM WebSphere Application Server, and click **Next**.
For the **WebSphere profile directory** value, the default location is `C:\Program Files (x86)\IBM\WebSphere\AppServer\profiles\AppSrv01`.

18. On the **Database** page, enter the information for the SPSSDB database, and click **Next**.
19. On the **Encryption** page, enter a password, and click **Next**.
20. On the **Repository Admin** page, enter a password for the SPSS admin user, and click **Next**.
21. On the **Deployment mode** page, select **Automatic**, and click **Next**.
22. Click **Configure**.
23. Click **Finish**.

Installing additional IBM SPSS Collaboration and Deployment Services Modeler Adapter instances

Install IBM SPSS Collaboration and Deployment Services Adapter software on the computer where you installed an additional SPSS Collaboration and Deployment Services Server instance.

Procedure

1. Go to the CNDSModelerAdapter folder where you copied the installation files.
2. Decompress the installation files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the disk1 folder, select diskTag.inf, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select **IBM SPSS Modeler Adapters for Collaboration and Deployment Services**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. On the **Install Packages** page, select **Use the existing package group**, select **IBM SPSS Collaboration and Deployment Services 6.0**, and click **Next**.
12. On the **Common Configurations** page, enter the SPSS administrator user and password, and click **Next**.
13. Click **Install**, and click **Finish**.

Installing additional IBM Analytical Decision Management instances

Install IBM Analytical Decision Management software on the computer where you installed an additional SPSS Collaboration and Deployment Services Server instance.

A sample Analytical Decision Management application is provided with the installation files. The sample application is provided in a compressed file that is named ADM_80_Demo.zip. For more information about the sample file, see the Analytical Decision Management documentation (www.ibm.com/support/knowledgecenter/SS6A3P_8.0.0).

Procedure

1. Go to the ADM folder where you copied the installation files.
2. Decompress the installation file that is named ADM_80_Repository_mp.zip.

3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the adm_repository folder, select repository.config, and click **Open** and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select **IBM Analytical Decision Management**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. On the **Install Packages** page, select **Use the existing package group**, select **IBM SPSS Collaboration and Deployment Services 6.0**, and click **Next**.
12. On the **Install Packages** page, select **Production** for the **Installation Type**. Ensure that all of the options under **IBM Analytical Decision Management Applications** are selected.
13. On the **Common Configurations** page, enter the SPSS administrator user and password, and click **Next**.
14. Click **Install**.
15. Click **Finish**.

Installing additional IBM SPSS Statistics Collaboration and Deployment Services Adapter instances

Install IBM SPSS Statistics Collaboration and Deployment Services Adapter software on the computer where you installed an additional SPSS Collaboration and Deployment Services Server instance.

Procedure

1. Go to the CNDStatAdapter folder where you copied the installation files.
2. Decompress the installation files.
3. Click **Start > All Programs > IBM Installation Manager**.
4. Click **File > Preferences**.
5. Click **Add Repository**.
6. Browse to the location where you decompressed the installation files.
7. In the repository directory, select repository.config, and click **Open**, and **OK**.
8. In IBM Installation Manager, click **Install**.
9. Under **Installation Packages**, select **IBM SPSS Collaboration and Deployment Services - Server Adapter for Statistics**.
10. Click **Next**, and follow the steps in IBM Installation Manager to install the product.
11. On the **Install Packages** page, select **Use the existing package group**, select **IBM SPSS Collaboration and Deployment Services 6.0**, and click **Next**.
12. On the **Common Configurations** page, enter the SPSS administrator user and password, and click **Next**.
13. Click **Install**.
14. Click **Finish**.

Chapter 5. Installation of the client components

There are several client components that are included with IBM Predictive Customer Intelligence. You can install the components as you require.

Important: Install the client components only after you successfully install the server components.

Client components

Client components for IBM Predictive Customer Intelligence are available to be installed.

For more information about installing and using the client components, see the documentation provided with the component.

Important: After the client installation files are copied to your computer, some paths for the compressed files can be long. You might need to use a decompression utility other than the one provided by Microsoft Windows to decompress the files.

Database connectivity

IBM Data Server Runtime Client must be installed to enable connectivity to the databases.

Predictive modeling and decision management

Install the following components so that you can modify or create predictive models and so that you can perform decision management tasks:

- IBM SPSS Collaboration and Deployment Services Deployment Manager
- IBM SPSS Modeler Client Premium

Optionally, install the following components:

- IBM SPSS Statistics Client
- IBM SPSS Collaboration and Deployment Services Documentation
- IBM Analytical Decision Management Documentation
- IBM SPSS Modeler Premium Documentation

Business intelligence

Install IBM Cognos Framework Manager so that you can modify the reporting model metadata.

Note: You must install IBM Data Server Runtime Client before you can use IBM Cognos Framework Manager. Ensure that you restart the computer after you install the IBM Data Server Runtime Client, and that you catalog the databases before you use Framework Manager. Framework Manager is a 32-bit application, and requires the 32-bit IBM Data Server Runtime Client.

Optionally, install the following components:

- IBM Cognos Business Intelligence Samples

- IBM Cognos Dynamic Query Analyzer
- IBM Cognos for Microsoft Office
- IBM Cognos Lifecycle Manager
- IBM Cognos Software Development Kit
- IBM Cognos Supplementary Languages Documentation

Integration Bus

Install the following components:

- Integration Bus Toolkit
- WebSphere MQ for Windows

Use the Integration Bus Toolkit to create, manage, deploy, and delete message flows and associated resources in a development environment.

Starting the Launchpad for the client components

Use the IBM Predictive Customer Intelligence **Launchpad** to start the **Deployment Wizard**.

Procedure

1. Go to the folder where you downloaded the artifacts installation files.
2. Decompress the installation files.
3. Go to the disk1 directory where you decompressed the files.
4. Double-click Launchpad.exe or Launchpad64.exe.

Changing the temporary location for installation files

The Deployment Wizard uses a temporary folder for installation source files. You must ensure that you are using a location that has adequate disk space for the installation source files. If you do not have enough disk space in the default location, you can change the location.

For example, the default location is C:\Program Files (x86)\Common Files\SL_####\SolutionEnabler. If space is limited on your C drive, you can change the temporary location to another drive.

The temporary files include jar files that are used during the installation, which you might want to delete after you complete the installation.

Procedure

1. In the **Deployment Wizard**, click **Edit > Preferences**.
The **Deployment Preferences** window appears.
2. In the **Deployment Package Path** box, select an existing location.
3. Click **OK**.

Starting the Deployment Wizard and installing the client components

Use the IBM Predictive Customer Intelligence **Deployment Wizard** to copy the client installation files to your computer. You must run each installation program individually after the client installation files are copied to your computer.

Tip: You might need to adjust your Windows User Access Control (UAC) settings so that you can run the installation program for the client components.

Procedure

1. In the **Launchpad**, click **Deploy Client > Start the Predictive Customer Intelligence Client Deployment Wizard**.
2. On the **Select Tasks** panel, select whether you want 32- or 64-bit clients installed, and click **Next**.
3. Select the clients for which you want to deploy the installation files, and click **Next**.
4. Enter a location for each client component installer to be copied to. The default is C:\IBM\PCI\.
5. On the **Summary Panel**, click **Deploy all**.

Note: The time to deploy the software is estimated by the **Deployment Wizard**. The actual time required depends on a variety of factors, such as network speed. In most cases, the deployments will take significantly less time than what is initially displayed by the **Deployment Wizard**.

6. After the client installers are copied to your computer, you must install each client individually by using its installer.

Installing IBM SPSS Collaboration and Deployment Services Deployment Manager

You must install IBM SPSS Collaboration and Deployment Services Deployment Manager to complete the configuration of IBM Predictive Customer Intelligence.

Procedure

1. Go to the *install_location*\Client\Analytics\IBM SPSS Collaboration and Deployment Services Deployment Manager directory.
By default, the *install_location* is C:\IBM\PCI\.
2. Decompress the installation files.
3. In the decompressed folder, double-click `install.exe` to start the IBM SPSS Collaboration and Deployment Services Deployment Manager installation.
4. Follow the steps in the wizard to install the client component.

For more information about the installation of Deployment Manager, see the IBM SPSS documentation (www.ibm.com/support/knowledgcenter/SS69YH_6.0.0).

Adding server connections for IBM SPSS Collaboration and Deployment Services

You must add a connection to your IBM SPSS Collaboration and Deployment Services repository in the IBM SPSS Collaboration and Deployment Services Deployment Manager client.

After you add the connection, the server folder displays in the **Content Explorer**, and you can log in to the server.

Procedure

1. Click **Start > All Programs > IBM SPSS Collaboration and Deployment Services > Deployment Manager > Deployment Manager 6.0**.

2. Click **File > New > Content Server Connection**.
3. In the **Connection Name** box, enter a name for your Collaboration and Deployment Services repository. For example, enter SPSS.
4. In the **Server URL** box, enter the name or IP address of the Predictive Analytics node computer and the port number, and click **Finish**.
The default port number that is used by the WebSphere Application Server instance is 9080.
5. Double-click the connection name that you created.
6. In the **User ID** box, enter the SPSS admin user that you used when you installed IBM SPSS Collaboration and Deployment Services Server.
7. In the **Password** box, enter the SPSS admin user's password.
8. Click **OK**.
9. Click **File > New > Administered Server Connection**.
10. In the **Name** box, enter a name for the repository server, and click **Next**. For example, enter SPSS.
11. In the **Server URL** box, enter the name or IP address of the Predictive Analytics node computer and the port number, and click **Finish**.
The default port number that is used by the WebSphere Application Server instance is 9080.
12. Double-click the server connection name that you created.
13. In the **User ID** box, enter the SPSS admin user that you used when you installed IBM SPSS Collaboration and Deployment Services Server.
14. In the **Password** box, enter the SPSS admin user's password.
15. Click **OK**.

Adding users and groups and server definitions to IBM SPSS Collaboration and Deployment Services

You use IBM SPSS Collaboration and Deployment Services Deployment Manager to manage users and groups. You must add an administrator user and a modeler user for IBM Predictive Customer Intelligence. You must also add a server definition.

Procedure

1. In Deployment Manager, on the **Content Explorer** tab, expand **Resource Definiton**.
2. Add an admin user.
 - a. Right-click **Credentials**, and click **New > Credentials Definition**.
 - b. In the **Name** box, enter admin, and click **Next**.
 - c. In the **User ID** box, enter admin.
 - d. In the **Password** box, enter a password. For example, enter spss.
 - e. In the **Security Provider** box, select **Local User Repository**.
 - f. Click **Finish**.
3. Add a modeler user.
 - a. Right-click **Credentials**, and click **New > Credentials Definition**.
 - b. In the **Name** box, enter modeler, and click **Next**.
 - c. In the **User ID** box, enter a local user on the Predictive Analytics node computer.
 - d. In the **Password** box, enter a password for that user.

- e. In the **Security Provider** box, select **Local User Repository**.
 - f. Click **Finish**.
4. Add a localhost server definition.
 - a. Right-click **Servers**, and click **New > Server Definition**.
 - b. In the **Name** box, enter localhost.
 - c. In the **Type** box, select **Content Repository Server**.
 - d. Click **Next**.
 - e. In the **Server URL** box, enter the name or IP address of the Analytics node computer and the port number, and click **Finish**.
The default port number that is used by the WebSphere Application Server instance is 9080.
 5. Add a modeler server definition.
 - a. Right-click **Servers**, and click **New > Server Definition**.
 - b. In the **Name** box, enter modeler, and click **Next**.
 - c. In the **Type** box, select **Modeler Server**, and click **Next**.
 - d. In the **Host** box, enter the name or IP address of the Analytics node computer.
 - e. In the **Port** box, enter 28053.
 - f. In the **Default data path** box, enter the path to the data folder on Analytics node computer. For example, enter C:\Program Files\IBM\SPSS\ModelerServer\16.
 - g. Click **Finish**.

Installing IBM SPSS Modeler Client

You must install IBM SPSS Modeler Client to configure the Next Best Action Optimizer connectors for IBM Predictive Customer Intelligence.

Procedure

1. Go to the *install_location*\Client\Analytics\IBM SPSS Modeler Client directory.
By default, the *install_location* is C:\IBM\PCI\.
2. Decompress the installation files.
3. Double-click setup.exe to start the IBM SPSS Modeler Client installation.
4. Follow the steps in the wizard to install the client component.

Installation of the Integration Bus clients

For IBM Predictive Customer Intelligence, you must install MQ Explorer, Integration Toolkit, and Integration Explorer.

Installing MQ Explorer

IBM Integration Explorer client application requires that MQ Explorer is installed on the same computer.

Procedure

1. Go to the *install_location*\Client\Integration Bus\IBM Integration Bus folder.
By default, the *install_location* is C:\IBM\PCI\.

2. Decompress the installation file that is named IIB_IBToolkit_WS_MQ_WINDOWS_X86-64.zip.
3. In the decompressed folder, go to the integrationbus\WebSphere_MQ_V7.5.0.1 folder, and double-click MQLaunch.exe.
4. Click **Software Requirements**, and ensure that you are using a supported operating system.
5. Click **Network Configuration**, and select **No** for **Configuring WebSphere MQ for Windows domain users**.
6. Click **WebSphere MQ Installation**, and click **Launch IBM Websphere MQ Installer**.
7. On the **Setup Type** page, select **Custom**, and click **Next**.
8. On the **Features** page, select only **MQ Explorer** to be installed. Ensure that all other features are set to **Do not install this feature**.
9. Click **Next**.
10. Click **Install**, and click **Finish**.

Installing the Integration Bus client applications

Install the IBM Predictive Customer Intelligence Integration Bus client applications. The applications include IBM Integration Toolkit and IBM Integration Explorer.

Before you begin

Ensure that MQ Explorer is already installed.

Procedure

1. Go to the folder where you decompressed the Integration Bus client application installers.
2. In the decompressed folder, in the integrationbus folder, double-click mqsilaunchpad.exe.
3. Select the check boxes for **IBM Integration Toolkit**, and **IBM Integration Explorer**. Clear the check box for **IBM Integration Bus**.
If it is not already installed, IBM Installation Manager is installed with IBM Integration Toolkit.
4. Click **Launch Installation for IBM Integration Bus**.
IBM Installation Manager appears.
5. Follow the steps in IBM Installation Manager to install IBM Integration Toolkit.
6. When you are prompted to open a product, select **None**, and click **Finish**.
The installer for IBM Integration Explorer appears.
7. Follow the steps in the wizard to install IBM Integration Explorer.

Connecting to your WebSphere MQ broker

Connect to the queue manager you created on the IBM Predictive Customer Intelligence Integration Bus node computer.

Procedure

1. From the **Start** menu, click **All Programs > IBM WebSphere MQ > WebSphere MQ Explorer**.
The first time that you start WebSphere MQ Explorer, you are prompted for a workspace location.

2. In the **MQ Explorer - Navigator**, under **IBM WebSphere MQ**, right-click **Queue Managers**, and select **Add Remote Queue Manager**.
3. Enter the name of your queue manager, select **Connect directly**, and click **Next**. For example, enter `pciqmgr`.
4. In the **Connection details** section, enter the following information, and click **Next**.
 - a. In the **Host name or IP address** box, enter the information for your Integration Bus node computer.
 - b. In the **Port number** box, enter the listener port number. The default is 1414.
 - c. In the **Server-connection channel** box, enter `SYSTEM.BKR.CONFIG`
5. On the **Specify user identification details** page, select **Enable user identification**.
6. In the **Userid** box, enter the local administrator user that was used to create the broker.
7. The first time that you add a user, you must enable password saving. Click **Passwords Preferences Page**, and then select **Save passwords to file** to enable the feature, and click **OK**.
8. Click **Enter password**.
9. Enter the user's password, and click **OK**.
10. Click **Finish**. The queue manager appears in the list, and the status appears as running.

Installing Framework Manager for IBM Predictive Customer Intelligence

Install IBM Cognos Framework Manager to create or edit models and publish packages for IBM Cognos Business Intelligence.

If you install Framework Manager to the same computer as where you installed IBM Cognos Business Intelligence, you must install Framework Manager to a different location. Framework Manager is a 32-bit application and cannot be installed to the same location as the 64-bit IBM Cognos Business Intelligence server components.

Procedure

1. Go to the `install_location\Client\Business Intelligence\IBM Cognos Framework Manager` folder.
By default, the `install_location` is `C:\IBM\PCI\`.
2. Decompress `fm_10.2.1_win_ml.tar.gz`, and then decompress `fm_10.2.1_win_ml.tar`.

Important: Ensure that you decompress the installation files to a different location than any other IBM Cognos BI installation files. Some directories are overwritten if you use the same location.

3. Go to the `win32` folder, and double-click the `issetup.exe` file.
4. Follow the steps in the wizard to install the product.
5. When notified with an information message about installing the Supplementary Languages Documentation, click **OK**.
6. On the last page of the installation wizard, select **Start IBM Cognos Configuration** to configure Cognos Framework Manager.
7. Click **Finish**.

8. In IBM Cognos Configuration, in the **Explorer** panel, select **Environment**.
9. In the **Gateway URI** value, change localhost to the name or IP address of the Business Intelligence (BI) node computer.
10. In the **Dispatcher URI for external applications** value, change localhost to the name or IP address of the Business Intelligence (BI) node computer.
11. Click **File > Save**.

Chapter 6. Installation of the artifacts

The artifacts include report content and workflows for IBM Predictive Customer Intelligence.

The artifacts are installed on the computer where you are running the **Deployment Wizard**. After the installation, you must copy the artifacts to their respective node computers.

Starting the Deployment Wizard to install the artifacts

Use the Launchpad to start the IBM Predictive Customer Intelligence artifacts Deployment Wizard.

You must run the Deployment Wizard on a computer that is running a Microsoft Windows operating system.

Tip: You might need to adjust your Windows User Access Control (UAC) settings so that you can run the installation program for the client components.

Tip: You can change the temporary location that the **Deployment Wizard** uses for the installation files. For more information, see “Changing the temporary location for installation files” on page 7.

Procedure

1. Go to the folder where you downloaded the artifacts installation files.
2. Decompress the installation files.
3. Go to the disk1 directory where you decompressed the files.
4. Double-click Launchpad.exe or Launchpad64.exe.
5. Click **Deploy Artifacts > Start the Predictive Customer Intelligence Artifact Deployment Wizard**.

Important: In some cases, after you accept the license agreement, the **Deployment Wizard** might appear behind other open windows. If you do not see the **Deployment Wizard**, check for the icon in the taskbar.

Configuring parameters for the artifacts installation

You can select the installation location for the IBM Predictive Customer Intelligence artifacts.

Procedure

1. On the **Select Tasks** page, click **Next**.
2. On the **Configure Parameters** page, enter the location to install the artifacts on the computer from where you are running the installation.
The default is C:\IBM\PCI. All of the artifacts are installed to the same location.
3. Click **Next**.

Starting the installation of the artifacts

After you enter all of the required fields in the **Deployment Wizard**, you can start the installation of the artifacts.

Procedure

On the **Summary Panel** of the **Deployment Wizard**, click **Deploy all**. If you choose to deploy the tasks individually, you must click **Deploy task** for each task in the order that the tasks appear on the **Summary** panel.

Note: The time to deploy the software is estimated by the **Deployment Wizard**. The actual time required depends on a variety of factors, such as network speed. In most cases, the deployments will take significantly less time than what is initially displayed by the **Deployment Wizard**.

Configure IBM Predictive Customer Intelligence artifacts

To configure the Predictive Customer Intelligence artifacts, you must create a database, publish content to IBM Cognos Business Intelligence, and copy files to the Predictive Analytics node and to the computer running Enterprise Marketing Management.

Creating the IBM Predictive Customer Intelligence database

You must run a script to create the Predictive Customer Intelligence database, and then run another to populate the database.

The scripts create and populate a database that is named PCI on your IBM DB2 database server. The scripts are available in the folder where you installed the artifacts.

Procedure

1. Copy the artifacts from the computer where you installed them to the data node computer and decompress the artifact files. For example, decompress the artifacts to a directory on the data node computer that is named C:\IBM\PCI\Database.
2. Log on to the data node computer as the DB2 instance owner user.
3. Open a Command Prompt window, and go to the folder where you installed the artifacts. For example, go to the C:\IBM\PCI\Database folder.
4. Run Install_DB.bat to create the database.
5. Run Load_Data.bat to populate the database.

Configure the BI node artifacts

To configure the IBM Predictive Customer Intelligence artifacts for the Business Intelligence node, you must move some files to the IBM Cognos BI installation location, create a connection to the PCI database, and deploy IBM Cognos reports.

Moving content to the IBM Cognos BI installation location

After you install the IBM Predictive Customer Intelligence artifacts, you must move some files to the IBM Cognos Business Intelligence installation location.

Procedure

1. Log on to the BI node computer.

2. Go to the Exports folder where you installed the BI artifacts. For example, go to the C:\IBM\PCI\Business Intelligence\Exports folder.
3. Copy the IBM PCI Cognos Content.zip file to the IBM Cognos BI *installation_location*\deployment folder.
4. Go to the Report Images folder where you installed the artifacts. For example, go to the C:\IBM\PCI\Business Intelligence\Report Images folder.
5. Extract the Report Images.zip file to the IBM Cognos BI *installation_location*\webcontent folder.

You should have an *installation_location*\webcontent\ReportImages folder that contains the image files.

Important: The ReportImages folder must not have a space in the name after you copy it to the IBM Cognos BI *installation_location*\webcontent folder.

Creating a database connection to the PCI database

To connect to the PCI database on your Business Intelligence node computer, you must first catalog the database server, and then catalog the PCI database. Then, you must create a database connection in IBM Cognos Administration.

Procedure

1. Log on to the BI node computer.
2. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
3. Enter the following command to catalog the database node:

```
db2 catalog tcpip node NODE_NAME remote data_node_name server PORT_NUMBER
```

NODE_NAME can be any value. *PORT_NUMBER* is 50000 by default.
4. Enter the following command to catalog the PCI database:

```
db2 catalog database PCI at node NODE_NAME authentication server
```

Creating a data source connection to the PCI database in IBM Cognos BI

You must create a data source connection to the PCI database in IBM Cognos BI, and then you must deploy the reports.

Procedure

1. Open a web browser.
2. Go to the IBM Cognos BI portal URL. For example, go to http://bi_node_name/ibmcognos/.
3. On the **Welcome** page, click **Administer IBM Cognos Content**.
4. Create a data source connection to the PCI database.
 - a. Click the **Configuration** tab, and click **Data Source Connections**.
 - b. Click the **New Data Source** button.
 - c. In the **Name** box, type **PCI** and then click **Next**.
 - d. In the connection page, select **IBM DB2**, ensure that **Configure JDBC connection** is selected, and click **Next**.
The connection string page for the selected database appears.
 - e. In the **DB2 database name** field, enter **PCI**.
 - f. Leave **DB2 connect string** blank.
 - g. Under **Signons**, select both **Password** and **Create a signon that the Everyone group can use**, type the user ID and password for the DB2 instance owner user that you used to create the database, and click **Next**.

- h. In the **Server name** box, enter the name or IP address of your data node computer.
- i. In the **Port number** box, enter the DB2 port number. The default is 50000.
- j. In **Database name**, enter PCI.

Tip: To test whether the parameters are correct, click **Test the connection**. After you test the connection, click **OK** to return to the connection page.

- k. Click **Close**, **Close**, and then **Finish**.
5. Deploy the IBM Cognos BI reports.
- a. On the **Configuration** tab, click **Content Administration**.
 - b. On the toolbar, click the **New Import** button.
 - c. In the **Deployment Archive** pane, select **IBM PCI Cognos Content**, and click **Next**.
 - d. In the **Public Folders Content** pane, select **IBM Predictive Customer Intelligence**, leave the **Options** as default, and click **Next**.
 - e. In the **Specify the general options** pane, accept the defaults, and click **Next**.
 - f. On the **Review the summary** page, click **Next**.
 - g. On the **Select an action** page, select **Save and run once**, and click **Finish**.
 - h. On the **Run with options** page, accept the defaults, and click **Run**, and then click **OK**.
 - i. Click the **Home** button in IBM Cognos Administration.
The Predictive Customer Intelligence reports are available from the home page.

Configuring the Next Best Action Optimizer connectors

Use the Next Best Action Optimizer (NBAOPT) connectors with IBM SPSS Modeler for IBM Predictive Customer Intelligence. With the NBAOPT connectors installed, you can run NBAOPT Studio from IBM SPSS Modeler.

You must copy the NBAOPT connectors to the location where IBM SPSS Modeler Client is installed.

For more information about using the NBAOPT connectors, see the *IBM Predictive Customer Intelligence Solution Guide*.

Procedure

Copy the `pci.NBAOPT` folder where you installed the NBAOPT artifacts to the `ext\lib` folder where IBM SPSS Modeler Client is installed. For example, copy the `pci.NBAOPT` folder to the `C:\Program Files\IBM\SPSS\Modeler\16\ext\lib` folder. After you copy the folder, you should have the following path:
`C:\Program Files\IBM\SPSS\Modeler\16\ext\lib\pci.NBAOPT`

Configuring the Enterprise Marketing Management connectors

If you are using IBM Enterprise Marketing Management (EMM), IBM Predictive Customer Intelligence provides two connectors between IBM Interact and IBM SPSS Collaboration and Deployment Scoring Service. The connectors override the score that is supplied by the IBM EMM campaign and also extend IBM Interact's learning module to monitor visitor actions and propose optimal offers.

To configure the connectors, you must copy them to the EMM installation location.

Do not configure the connectors if you are not using IBM Enterprise Marketing Management.

Important: The EMM connectors can be used only with IBM Enterprise Marketing Management version 9.0 or 9.1.

Procedure

Copy the artifacts from the EMMConnectors folder where you installed the EMM artifacts to the Connectors folder where EMM is installed. For example, copy the files to the *IBM_EMM_Interact_install_location*\Connectors folder.

Chapter 7. Copying the license files to each component computer

After you install IBM Predictive Customer Intelligence, you must ensure that a `swidtag` file and `license` folder exists on each computer on which you installed a Predictive Customer Intelligence component.

The `swidtag` file and `license` folder must exist on each server node computer and each computer on which you install a client that is used with Predictive Customer Intelligence.

Important: Do not rename the folders or files.

Procedure

1. Copy the `swidtag` file from the `iso-swid` folder where you installed the artifacts to each computer where you installed a Predictive Customer Intelligence component.

For example, copy the file so that you have a `C:\IBM\PCI\iso-swid` folder that contains a `swidtag` file.

If a `iso-swid` folder exists on the computer, do not overwrite the folder. Add the `swidtag` file to the existing folder.

2. Copy the `license` folder from the folder where you installed the artifacts to each component computer.

For example, copy the folder and contents so that you have a `C:\IBM\PCI\license` folder that contains the license files.

If the `license` folder exists on the computer, you do not need to replace it.

Results

The following folders must exist on each computer on which you installed a Predictive Customer Intelligence component:

- On all computers:
 - `C:\IBM\PCI\license` (containing the product license files)
 - `C:\IBM\PCI\iso-swid` (containing the product `swidtag` file)

Chapter 8. Stop and start solution software services

IBM Predictive Customer Intelligence is an integrated solution that includes many products. If you must stop the services, you must do so in the correct order. The product services must also be started in the correct order.

Stop solution services

Stop the IBM Predictive Customer Intelligence node services in the following order:

1. Business Intelligence (BI) node
2. Integration Bus node
3. Predictive Analytics node
4. data node

Stopping services on the BI node computer

You must stop the IBM Cognos Business Intelligence services and IBM HTTP Server on the IBM Predictive Customer Intelligence Business Intelligence (BI) node computer.

Procedure

1. Click **Start** > **All Programs** > **IBM Cognos 10_64** > **IBM Cognos Configuration**.
2. Click **Actions** > **Stop**.
3. Click **Start** > **All Programs** > **IBM HTTP Server V8.5** > **Stop HTTP Server**.

Stopping services on the Integration Bus node computer

You must stop the IBM Integration Bus services on the IBM Predictive Customer Intelligence Integration Bus node computer.

Procedure

1. Go to the IBM Integration Bus bin folder. For example, go to C:\Program Files\IBM\MQSI\9.0.0.1\bin.
2. Enter the following command:
`mqsisstop pcibroker`
3. Enter the following command to verify that the services are stopped:
`mqsilist pcibroker`

Stopping services on the Analytics node computer

You must stop the IBM SPSS services on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the WebSphere Application Server SPSSProfile\bin folder. For example, go to C:\Program Files\IBM\WebSphere\AppServer\profiles\SPSSProfile\bin.
2. Enter the following command:
`stopserver.bat server1`

3. Click **Start > Control Panel > Administrative Tools > Services**.
4. Select **IBM SPSS Modeler Server 16.0**, and click **Stop Service**.

Stopping services on the data node computer

You must stop the IBM DB2 instance on the IBM Predictive Customer Intelligence data node computer.

Procedure

1. Log in to the data node computer as the IBM DB2 administrator user.
2. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
3. Enter the following command to stop the DB2 administration server:
`db2stop`

Start solution services

Start the IBM Predictive Customer Intelligence node services in the following order:

1. data node
2. Predictive Analytics node
3. Integration Bus node
4. Business Intelligence (BI) node

Starting services on the data node computer

You must start the IBM DB2 instance on the IBM Predictive Customer Intelligence data node computer.

Procedure

1. Log in to the data node computer as the IBM DB2 administrator user.
2. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
3. Enter the following command to stop the DB2 administration server:
`db2start`

Starting services on the Analytics node computer

You must start the IBM SPSS services on the IBM Predictive Customer Intelligence Predictive Analytics node computer.

Procedure

1. Go to the WebSphere Application Server SPSSProfile\bin folder. For example, go to `C:\Program Files\IBM\WebSphere\AppServer\profiles\SPSSProfile\bin`.
2. Enter the following command:
`startserver.bat server1`
3. Click **Start > Control Panel > Administrative Tools > Services**.
4. Select **IBM SPSS Modeler Server 16.0**, and click **Start Service**.

Starting services on the Integration Bus node computer

You must start the IBM Integration Bus services on the IBM Predictive Customer Intelligence Integration Bus node computer.

Procedure

1. Go to the IBM Integration Bus bin folder. For example, go to C:\Program Files\IBM\MQSI\9.0.0.1\bin.
2. Enter the following command:
`mqsisstart pcibroker`
3. Enter the following command to verify that the services are started:
`mqsilist pcibroker`

Starting services on the BI node computer

You must start the IBM Cognos Business Intelligence services and IBM HTTP Server on the IBM Predictive Customer Intelligence Business Intelligence (BI) node computer.

Procedure

1. Click **Start > All Programs > IBM Cognos 10_64 > IBM Cognos Configuration**.
2. Click **Actions > Start**.
3. Click **Start > All Programs > IBM HTTP Server V8.5 > Start HTTP Server**.

Chapter 9. Switch software tags for your installation

If you change your usage of IBM Predictive Customer Intelligence, such as to a non-production environment from a production environment, you must switch the software tags for your installation.

Starting the ILMT Utility to change software tags

Use the artifacts Launchpad to start the IBM Licence Metric Tool (ILMT) Utility to change IBM Predictive Customer Intelligence software tags.

Procedure

1. Go to the folder where you downloaded the artifacts installation files.
2. Decompress the installation files.
3. Go to the disk1 directory where you decompressed the files.
4. Double-click `Launchpad.exe` or `Launchpad64.exe`.
5. Click **Switch Software Tags > Start the IBM Predictive Customer Intelligence ILMT Utility**.

Important: If a message directs you to verify that the application was installed correctly or to reinstall it, you can safely ignore this message. The utility will function correctly.

Switching software tags

Switch your IBM Predictive Customer Intelligence software tags if your usage changes. For example, if you installed the solution initially as a non-production environment but want to move it to a production environment, you must switch the software tags.

Procedure

1. On the **Select Tasks** page of the **Deployment Wizard**, select the option to switch your tags:
 - Select **Switch from Production to Non-Production** if you initially installed Predictive Customer Intelligence to a production environment.
 - Select **Switch from Non-Production to Production** if you initially installed Predictive Customer Intelligence to a non-production environment.
2. Click **Next**.
3. On the **Configuration Parameters** page, enter the location to where you want to deploy the updated software tags, and click **Next**.
4. Click **Deploy all**.

After the software tag file is deployed, you must copy it to each computer on which a Predictive Customer Intelligence node or client is installed.

Updating your software tag file

After you use the ILMT utility to change your IBM Predictive Customer Intelligence software tag, you must copy the updated file to each computer on which a component is installed. You must replace the existing file with the updated file.

Copy the software tag file to each computer on which a Predictive Customer Intelligence server or client component is installed.

Procedure

1. Copy the iso-swid folder and contents from the folder where you updated the license files to each computer on which you install a Predictive Customer Intelligence component.

For example, copy the folder and contents so that you replace the C:\IBM\PCI\iso-swid folder. The iso-swid folder should contain a swidtag file.

2. Delete the existing swidtag file.

You should have only one swidtag file in the folder for the IBM Predictive Customer Intelligence components.

If you deployed the samples, you should also have a swidtag file for the samples in the folder.

Note: If you run the ILMT Utility on a computer where you installed a Predictive Customer Intelligence component, and you use the same directory, the .swidtag is overwritten with the updated file. You must, however, still copy the new .swidtag file to all of the other computers that have a Predictive Customer Intelligence component installed.

Chapter 10. Uninstallation of the server components

Follow the uninstall instructions for each of the IBM Predictive Customer Intelligence components to uninstall the product.

Uninstalling components from the Predictive Analytics node computer

Follow the uninstall instructions for each component on the IBM Predictive Customer Intelligence Analytics node computer.

Procedure

1. To uninstall the IBM DB2 client, see the IBM DB2 documentation (www.ibm.com/support/knowledgecenter/SSEPGG_10.1.0).
2. To uninstall IBM SPSS Collaboration and Deployment Services, see the IBM SPSS documentation (www.ibm.com/support/knowledgecenter/SS69YH_6.0.0).
 - a. From the Start menu, click **All Programs > IBM Installation Manager > IBM Installation Manager**.
 - b. Click **Uninstall**, and follow the steps to uninstall the product.
3. To uninstall WebSphere Application Server, see the WebSphere documentation (www.ibm.com/support/knowledgecenter/SSEQTP_8.5.5).
 - a. From the **Start** menu, click **All Programs > IBM Installation Manager > IBM Installation Manager**.
 - b. Click **Uninstall**, and follow the steps to uninstall the product.

Note: If WebSphere Application Server processes are running and prevent you from uninstalling the product, you must stop the server process. Go to the C:\Program Files (x86)\IBM\WebSphere\AppServer\profiles\profile_name\bin folder, and type stopServer.sh server1.

4. To uninstall IBM Installation Manager, see the IBM Installation Manager information center (pic.dhe.ibm.com/infocenter/install/v1r6).
 - a. From the Microsoft Windows Control Panel, click **Programs and Features**, select **IBM Installation Manager**, and click **Uninstall**.
 - b. Follow the steps to uninstall IBM Installation Manager.
5. Remove the licence and iso-swid folders. For example, if you used the default path, C:\IBM\PCI, remove the C:\IBM\PCI\license and C:\IBM\PCI\iso-swid folders.

Uninstalling components from the BI node computer

Follow the uninstall instructions for each component on the IBM Predictive Customer Intelligence Business Intelligence (BI) node computer.

Procedure

1. To uninstall the IBM DB2 client, see the IBM DB2 documentation (www.ibm.com/support/knowledgecenter/SSEPGG_10.1.0).
2. To uninstall IBM Cognos Business Intelligence, see the IBM Cognos BI documentation (www.ibm.com/support/knowledgecenter/SSEP7J_10.2.1).
 - a. From the **Start** menu, click **All Programs > IBM Cognos 10 - 64 > Uninstall IBM Cognos > Uninstall IBM Cognos**.

- b. Follow the steps to uninstall the product.
3. To uninstall IBM HTTP Server, see the IBM HTTP Server for WebSphere Application Server documentation (www.ibm.com/support/knowledgecenter/SSEQTJ_8.5.5).
 - a. From the **Start** menu, click **All Programs > IBM Installation Manager > IBM Installation Manager**.
 - b. Click **Uninstall**, and follow the steps to uninstall the product.
4. To uninstall IBM Installation Manager, see the IBM Installation Manager information center (pic.dhe.ibm.com/infocenter/install/v1r6).
 - a. From the Microsoft Windows Control Panel, click **Programs and Features**, select **IBM Installation Manager**, and click **Uninstall**.
 - b. Follow the steps to uninstall IBM Installation Manager.
5. Remove the licence and iso-swid folders. For example, if you used the default path, C:\IBM\PCI, remove the C:\IBM\PCI\license and C:\IBM\PCI\iso-swid folders.

Uninstalling components from the Integration Bus node computer

Follow the uninstall instructions for each component on the IBM Predictive Customer Intelligence Integration Bus node computer.

Procedure

1. To uninstall the IBM DB2 client, see the IBM DB2 documentation (www.ibm.com/support/knowledgecenter/SSEPGG_10.1.0).
2. To uninstall IBM Integration Bus, see the IBM Integration Bus documentation (www.ibm.com/support/knowledgecenter/SSMKHH_9.0.0).
3. To uninstall WebSphere MQ, see the WebSphere MQ documentation (www.ibm.com/support/knowledgecenter/SSFKSJ_7.5.0).
4. Remove the licence and iso-swid folders. For example, if you used the default path, C:\IBM\PCI, remove the C:\IBM\PCI\license and C:\IBM\PCI\iso-swid folders.

Uninstalling components from the data node computer

Follow the uninstall instructions for each component on the IBM Predictive Customer Intelligence data node computer.

Procedure

1. To uninstall IBM DB2, see the IBM DB2 documentation (www.ibm.com/support/knowledgecenter/SSEPGG_10.1.0).
2. Remove the licence and iso-swid folders. For example, if you used the default path, C:\IBM\PCI, remove the C:\IBM\PCI\license and C:\IBM\PCI\iso-swid folders.

Appendix A. Troubleshooting

This section contains troubleshooting information for the IBM Predictive Customer Intelligence installation.

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.

Review the following table to help you or customer support resolve a problem.

Table 1. Troubleshooting actions and descriptions

Actions	Description
A product fix might be available to resolve your problem.	Apply all known fix packs, or service levels, or program temporary fixes (PTF).
Look up error messages by selecting the product from the IBM Support Portal, and then typing the error message code into the Search support box (http://www.ibm.com/support/entry/portal/).	Error messages give important information to help you identify the component that is causing the problem.
Reproduce the problem to ensure that it is not just a simple error.	If samples are available with the product, you might try to reproduce the problem by using the sample data.
Ensure that the installation successfully finished.	The installation location must contain the appropriate file structure and the file permissions. For example, if the product requires write access to log files, ensure that the directory has the correct permission.
Review all relevant documentation, including release notes, technotes, and proven practices documentation.	Search the IBM Knowledge Center to determine whether your problem is known, has a workaround, or if it is already resolved and documented.
Review recent changes in your computing environment.	Sometimes installing new software might cause compatibility issues.

If the items in the table did not guide you to a resolution, 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. You can also collect diagnostic data and analyze it yourself.

Troubleshooting resources

Troubleshooting resources are sources of information that can help you resolve a problem that you are having with an IBM product.

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. Familiarize yourself with the IBM Support Portal by viewing the demo videos (https://www.ibm.com/blogs/SPNA/entry/the_ibm_support_portal_videos).

Find the content that you need by selecting your products from the IBM Support Portal (<http://www.ibm.com/support/entry/portal>).

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.

Service request

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 IBM Software Support Exchanging information with Technical Support page (<http://www.ibm.com/software/support/exchangeinfo.html>).

Fix Central

Fix Central provides fixes and updates for your system's software, hardware, and operating system.

Use the pull-down menu to navigate to your product fixes on Fix Central (<http://www.ibm.com/systems/support/fixes/en/fixcentral/help/getstarted.html>). You may also want to view Fix Central help.

IBM developerWorks

IBM developerWorks[®] provides verified technical information in specific technology environments.

As a troubleshooting resource, developerWorks provides easy access to the most popular practices, in addition to videos and other information: developerWorks (<http://www.ibm.com/developerworks>).

IBM Redbooks

IBM Redbooks[®] are developed and published by the IBM International Technical Support Organization, the ITSO.

IBM Redbooks (<http://www.redbooks.ibm.com>) provide in-depth guidance about such topics as installation and configuration and solution implementation.

Software support and 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 (<https://www.ibm.com/software/support/rss>).

Log files

Log files can help you troubleshoot problems by recording the activities that take place when you work with a product.

Error messages

The first indication of a problem is often an error message. Error messages contain information that can be helpful in determining the cause of a problem.

Cannot open output file messages when you decompress files

When you decompress installation files for some components, you might receive a message that the decompression utility cannot open some output files. You can safely ignore these messages.

Deployment Wizard does not save configurations

If you save your configurations in Deployment Wizard, use **Save As** instead of **Save**.

If you click **File > Save**, any values that you entered are not saved when you reopen the Deployment Wizard.

You can resolve this issue by clicking **File > Save As** to save your configuration. Ensure that you enter a new name for the saved configuration.

When you open the Deployment Wizard, and open your saved configuration, the settings you entered appear.

Viewing log files

Log files for the IBM Predictive Customer Intelligence installation can be displayed in the **Deployment Wizard**.

If you want to view log files directly, the log files are saved to the C:\Program Files (x86)\Common Files\SL_####\SolutionEnabler folder.

Procedure

1. To view log files in the **Deployment Wizard**, select the message, and click **Detailed messages** or **Master log**.
2. If you clicked **Detailed messages**, select a message, and click **View Details**.

Temporary file locations

Temporary files are created during the IBM Predictive Customer Intelligence installation. You can find the location for the temporary files from the **Deployment Wizard**.

The temporary files include jar files that are used during the installation, which you might want to delete after you complete the installation.

Procedure

In the **Deployment Wizard**, click **Edit > Preferences**.

The path to the location for the temporary files is shown in the **Path** box.

Modeler Server type not displaying in resource definitions

In IBM Predictive Customer Intelligence, if the **Modeler Server** type does not display in resource definitions in IBM SPSS Collaboration and Deployment Services Deployment Manager, try closing Deployment Manager and opening it again.

Appendix B. Integration with the IBM Enterprise Marketing Management suite

IBM Predictive Customer Intelligence integrates with the IBM Enterprise Marketing Management suite. The components that Predictive Customer Intelligence integrates with are IBM Campaign, IBM Interact and IBM Marketing Platform.

IBM Campaign

IBM Campaign is a web-based Enterprise Marketing Management (EMM) solution that enables users to design, run, and analyze direct marketing campaigns.

IBM Interact

With IBM Interact, users can retrieve personalized offers and customer profile information in real-time.

IBM Marketing Platform

The IBM Marketing Platform provides security, configuration, and dashboard features for IBM Enterprise Marketing Management products.

IBM Interact connectors

IBM Interact integrates with customer facing systems (touchpoints) such as web sites and call centers, and enables users to retrieve personalized offers and visitor profile information in real time.

IBM Predictive Customer Intelligence provides two connectors between IBM Interact and IBM SPSS Collaboration and Deployment Scoring Service:

- The External callout connector calls an SPSS model at runtime, and is contained within the expression of an advanced rule for a Marketer Score, overriding the score supplied by the IBM Enterprise Marketing Management campaign.
- The External learning connector extends IBM Interact's native learning module to monitor visitor actions and propose optimal offers. It prioritizes IBM Campaign offers based on an SPSS model's prediction of their final score. The connector passes specific configurable parameters as input to the SPSS Scoring Service.

The External Learning connector

The External Learning connector is used to override the marketer's score in IBM Interact with a customized score from IBM SPSS Collaboration and Deployment Services. The customized score is used to prioritize the offers for customers. When the customer facing touchpoint puts in an offer request to IBM Interact, it triggers the external learning connector. A touchpoint can be a call center web application, a mobile application, a batch command, and so on.

The following process is initiated:

1. The connector Java™ class calls the IBM SPSS Collaboration and Deployment Services scoring service that is based on the configuration setting of the current channel.
2. If, in the configuration file, the current channel is set to be monitored, the corresponding channel in the IBM SPSS Scoring Service is configured to update the channel offers' score number.

3. The External Learning connector uses IBM Interact runtime session profile data as SPSS Scoring Service input parameters.
4. The connector gets the scores from the SPSS scoring service and overwrites the Interact offers scores with the SPSS scores.
5. After the Interact offer's score is updated by the SPSS score, the offer list is sorted by the new final scoring number in descending order. The offer list is returned as the final offer list.

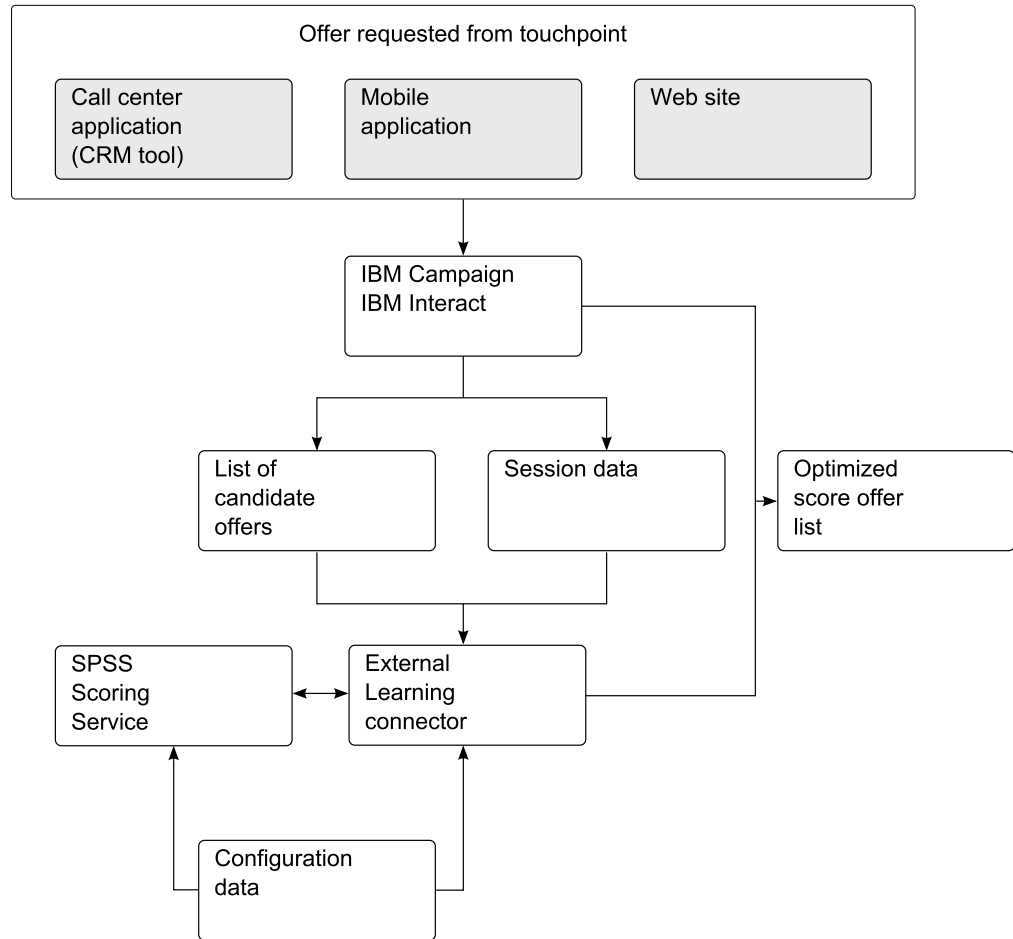


Figure 2. How the external learning connector works

Configuring the External Learning connector configuration file

An interactive channel is a touchpoint with your customer, such as a call center or a website. It is the communication channel with your customers. By using the IBM Interact API, you integrate IBM Interact with your touchpoints to present offers to customers based on their action in the touchpoint.

Procedure

1. Stop the IBM Enterprise Marketing Management (EMM) runtime server.
2. Create the following file structure on your IBM EMM server:

For Windows operating systems:

- *<EMM Interact Installation Folder>\connectors*
- *<EMM Interact Installation Folder>\logs*

By default, the installation folder is \IBM\EMM\Interact

For Linux operating systems:

- <EMM Interact Installation Folder>/connectors/
- <EMM Interact Installation Folder>/logs

By default, the installation folder is /opt/IBM/EMM/Interact

3. Copy the LearningConnector_config.properties file and UnicaSPSSLearningConnector.jar to the Connectors folder.
4. Edit the LearningConnector_config.properties file for your environment. For more information, see “Sample External Learning connector configuration file.”
5. In the runtime environment for the IBM Marketing Platform tool, select **Settings, Configuration**, and expand **IBM EMM, Interact**, and **offerserving**.
6. Set **optimizationType** to ExternalLearning.
7. Configure the External Learning class:
 - a. Under **offerserving**, select **External Learning Config**.
 - b. Set **class** to the Java class name. For example:
<com.ibm.unica.connector.>SPSSLearning
 - c. Set **classPath** to the Java JAR file location. For example, for Windows:
<Interact_Install_location>\UnicaSPSSLearningConnector.jar, and for Linux: <Interact_Install_location>/UnicaSPSSLearningConnector.jar
8. Restart the IBM EMM runtime server for these changes to take effect.

Sample External Learning connector configuration file

The following example is a sample External Learning connector configuration file. Modify this sample for your environment.

```
CADS_ADDRESS=<Collaboration_deployment_services_server_address>
CADS_PORT=9080
CADS_USER=admin
CADS_PASSWORD=spss
UNICA_INTERACTJSSERVICE_URL=http://<IBM_EMM_URL>:9080/
interact/servlet/InteractJSService
LEARNING_CHANNELS=Mobile,Mob;Telco,Telco Call Center;Insurance,Insurance

SERVICENAME_Telco=ExternalLearning
INPUTTABLE_Telco=db2admin@TELCO
PARAMETERS_Telco=CUSTOMERID,double,CUSTOMERID;CHURN_SCORE,double,CHURN_SCORE;
CUSTOMER_LIFE_TIME_VALUE_RATIO,double,CUSTOMER_LIFE_TIME_VALUE_RATIO;
SENTIMENT_SCORE,double,SENTIMENT_SCORE;NUMBER_OF_CLOSED_COMPLAINTS,integer,
NUMBER_OF_CLOSED_COMPLAINTS;NUMBER_OF_OPEN_COMPLAINTS,integer,
NUMBER_OF_OPEN_COMPLAINTS;GROUP_LEADER_TYPE2,double,GROUP_LEADER_TYPE2;
GROUP_LEADER_CONFIDENCE_TYPE2,DOUBLE,GROUP_LEADER_CONFIDENCE_TYPE2;
INFLUENCER_SCORE,double,INFLUENCER_SCORE;SEGMENT,string,SEGMENT;
RESPONSE,integer,#VALUE#null;OFFER_CATEGORY_NAME,string,#VALUE#null
OUTPUTNAME_Telco=FinalScore
INPUT_OFFERNAMECOL_Telco=OFFER

SERVICENAME_Insurance=INSU_CHURN
INPUTTABLE_Insurance=INSURNC.INSURANCE_VIEW
PARAMETERS_Insurance=POLICYHOLDER_ID,integer,#VALUE#1016091;GENDER,string,#VALUE#F;
EMPLOYMENT_STATUS,string,#VALUE#employed;INCOME,double,#VALUE#144541;
HOUSEHOLD_NUMBER_OF_CHILDREN,integer,#VALUE#2;HOUSEHOLD_NUMBER_OF_INSURED_CARS,integer,
#VALUE#0;NUMBER_OF_POLICIES_IN_HOUSEHOLD,integer,#VALUE#1;HOUSEHOLD_TENURE,double,
#VALUE#5.15;INSURANCE_LINES,integer,#VALUE#1;LATEST_NOTE_ATTITUDE,double,#VALUE#3;
AVERAGE_NOTE_ATTITUDE,double,#VALUE#2;NUMBER_OF_CLAIMS_FILED,double,#VALUE#2;
CUSTOMER_FINANCIAL_SEGMENT,string,#VALUE#Financially Sophisticated;
OUTPUTNAME_Insurance=CHURN_SCORE
INPUT_OFFERNAMECOL_Insurance=#NONE#
```

```
SERVICENAME_Mobile=SequenceAnalysis
INPUTTABLE_Mobile=NBA.CUSTOMER_RELATIONSHIP_HISTORY
PARAMETERS_Mobile=CUSTOMERID,integer,CUSTOMERID;SEQUENCE,integer,#VALUE#1;
PRODUCT,string,LASTOFFER;
OUTPUTNAME_Mobile=RECOMMENDATION
INPUT_OFFERNAMECOL_Mobile=#NONE#
```

For information on how to modify this file, see “Add a new learning channel,” and “Add an IBM SPSS Scoring Service to an offer (External Learning connector).” Also, see *IBM Interact Administrator’s Guide*.

Add a new learning channel

To add a new learning channel, add the learning name and channel name to the **LEARNING_CHANNELS** parameter.

For example:

```
LEARNING_CHANNELS=Mobile,Mob;Telco,Telco Call Center;Insurance,Insurance
```

Where:

- The first value is the learning channel name (Telco), the second value is the channel name (Telco Call Center).
- Values are separated by commas and parameters are separated by semi-colons.

Add an IBM SPSS Scoring Service to an offer (External Learning connector)

To add an IBM SPSS Scoring Service, add the following parameters to the LearningConnector_config.properties file.

- **SERVICENAME_%THE LEARNING NAME%**
- **INPUTTABLE_%THE LEARNING NAME%**
- **PARAMETERS_%THE LEARNING NAME%**
- **OUTPUTNAME_%THE LEARNING NAME%**
- **INPUT_OFFERNAMECOL_%THE LEARNING NAME%**

The parameter name has three elements that are separated by commas:

- The input parameter name.
- The data type and the source column name (profile table column name).
- The direct value that uses #VALUE# to identify it. You can also use the channel profile table column value as SPSS input parameter values.

You can set the input parameter to null, by using #VALUE# of null, for example:

```
RESPONSE,integer,#VALUE#null;OFFER_CATEGORY_NAME,string,#VALUE#null
```

Parameters are separated by semicolons.

The value for **OUTPUTNAME_%THE LEARNING NAME%** can be "DEFAULT". You do not need to provide the name of the output column name; the first output parameter is taken as the output score results.

For example, you can set the output columns with either method that is shown, and you get the same result:

- OUTPUTNAME_Mobile=RECOMMENDATION

- OUTPUTNAME_Mobile=DEFAULT

The value of **INPUT_OFFERNAMECOL_%THE LEARNING NAME%** can be an input parameter column name or "#NONE#". When the value is set to a specific input parameter column name, the External Learning connector passes the IBM Interact channel offer name to the corresponding column for the SPSS scoring service as an input parameter to get the specific offer name score to update the corresponding offer for Interact channel final score. When the input offer name column is set to "#NONE#", only the first IBM Interact channel offer final score is updated with the IBM SPSS Scoring Service score.

For example, when three offers are requested from a touchpoint, IBM Interact returns three offers, shown in the following table.

Table 2. Example showing the scores returned from IBM Interact and from the IBM SPSS Scoring Service

Offer name	IBM Interact final score	IBM SPSS score
Premium phone	90	85
Premium family plan	80	88
Add a second line free	70	65

The External Learning connector passes all of the configured parameters and the offer name to the SPSS Scoring Service. It returns three new scores: 85, 88 and 65 from IBM SPSS for these three offers.

The IBM SPSS score is used as the final score and is sorted in descending order, shown in the following table.

Table 3. Example showing the final score and sort order

Offer name	IBM Interact final score
Premium family plan	88
Premium phone	85
Add a second line free	65

The External Callout connector

By using the External Callout connector, you can override a single offer's score by calling an IBM SPSS Scoring Service. Also, using the External Callout connector, you can invoke the IBM SPSS score to present eligible offers.

To enable the External Callout connector, perform the following steps:

1. Register the External Callout connector in the IBM Enterprise Marketing Management (EMM) configuration.
2. Add the IBM SPSS Scoring Service information to the External Callout connector's configuration file.

Configuring the External Callout connector

IBM Interact helps customers get offers based on user characteristics and history. The offers are generated by algorithms. You can configure IBM Interact to override the offer's score by calling an SPSS Model.

Procedure

1. Stop the IBM Enterprise Marketing Management (EMM) runtime server.
2. Create the following file structure on your IBM EMM server:
 - <EMM Interact Installation Folder>\connectors
 - <EMM Interact Installation Folder>\logsBy default, the installation folder is \IBM\EMM\Interact
3. Copy the ExternalConnector_config.properties file and UnicaSPSSExternalConnector.jar to the Connectors folder.
4. Edit the ExternalConnector_config.properties file for your environment. For more information, see "Sample External Callout connector configuration file" on page 67.
5. In the runtime environment for the IBM Marketing Platform, select **Settings, Configuration**, and expand **IBM EMM, Interact, Flowchart**, and **External Callouts**.
6. To set the configuration properties, click **External Callout** and configure the parameters as follows:

Category name

GetSPSSScore

class com.ibm.unica.connector.GetSPSSScore

classpath

- <EMM Interact Installation Folder>\connectors\UnicaSPSSExternalConnector.jar

By default, the installation folder is \IBM\EMM\Interact

Save the changes.

7. Select the campaign settings, by clicking **Campaign, Campaigns**.
8. Select the link for the campaign that you are configuring, such as Insurance.
9. Click the <Campaign name> **Strategy** tab, for example, **Insurance Strategy**.
10. For each **Eligible Segment**, such as Insurance High Risk Customer, Insurance High Value Customer, click **Adv Opt**.
11. In the **Advanced Options** window, select **Use the following expression as the marketing score**.
12. In the Expression box, type an expression to be used for the marketing score. You can either use modified versions of the examples shown, or from the **Functions, Variables and Operators** list, select **Extension Functions, EXTERNALCALLOUT** and click **Use**. For more information, see "About the ExternalCallout API" topic in the *IBM Interact 9.1 Administrator's Guide*.

Example expression for an Insurance campaign:

```
NUMBER(EXTERNALCALLOUT('GetSPSSScore','GetChurnScore',db2admin.CUSTOMERID,db2admin.GENDER,db2admin.EMPLOYMENT_STATUS,db2admin.INCOME,1,db2admin.NUMBER_OF_INSURED_CARS,db2admin.NUMBER_OF_POLICIES_IN_HOUSEHOLD,db2admin.HOUSEHOLD_TENURE,db2admin.INSURANCE_LINES,db2admin.LATEST_NOTE_ATTITUDE,db2admin.AVERAGE_NOTE_ATTITUDE,db2admin.NUMBER_OF_CLAIMS_FILED,db2admin.CUSTOMER_SEGMENTS,0))*100
```

The External Callout API has a mandatory number of configurable arguments that must be provided. The mandatory number of arguments setting in the configuration file is as set in the value of the property **ExternalConnector_NumberOfArguments**. In the example shown, the value is 15.

When there are fewer SPSS scoring service input parameters than the configure setting of **ExternalConnector_NumberOfArguments**, add ",0" to the expression to ensure that there are the same number of arguments in the external callout expression.

13. Deploy the changes to the server.
14. Restart the IBM EMM runtime server.

Sample External Callout connector configuration file

The following example is a sample External Callout connector configuration file. Modify this sample for your environment.

```
CADS_ADDRESS=<Collaboration_deployment_services_server_address>
CADS_PORT=9080
CADS_USER=admin
CADS_PASSWORD=spss
ExternalConnector_NumberOfArguments=15

SERVICENAME_GetChurnScore=INSU_CHURN
INPUTTABLE_GetChurnScore=INSURNC.INSURANCE_VIEW
PARAMETERS_GetChurnScore=POLICYHOLDER_ID,double;GENDER,string;
EMPLOYMENT_STATUS,string;INCOME,double;HOUSEHOLD_NUMBER_OF_CHILDREN,integer;
HOUSEHOLD_NUMBER_OF_INSURED_CARS,integer;NUMBER_OF_POLICIES_IN_HOUSEHOLD,integer;
HOUSEHOLD_TENURE,double;INSURANCE_LINES,integer;LATEST_NOTE_ATTITUDE,double;
AVERAGE_NOTE_ATTITUDE,double;NUMBER_OF_CLAIMS_FILED,double;
CUSTOMER_FINANCIAL_SEGMENT,string;
OUTPUTNAME_GetChurnScore=CHURN_SCORE

SERVICENAME_GetCreditRating=dWStream
INPUTTABLE_GetCreditRating=trainingdata.csv
PARAMETERS_GetCreditRating=Age,double;Income_level,string;Education,string;
Car_loans,string;
OUTPUTNAME_GetCreditRating=DEFAULT

SERVICENAME_GetReco=SequenceAnalysis
INPUTTABLE_GetReco=NBA.CUSTOMER_RELATIONSHIP_HISTORY
PARAMETERS_GetReco=CUSTOMERID,integer;SEQUENCE,integer;PRODUCT,string;
OUTPUTNAME_GetReco=RECOMMENDATION

SERVICENAME_GetCreditScore=CreditCardDefault
INPUTTABLE_GetCreditScore=NBA.CUSTOMER
PARAMETERS_GetCreditScore=CUSTOMERID,integer;AGE,integer;EDUCATION,string;
YEARSEMPLOYED,integer;INCOME,integer;CARDDEBT,double;OTHERDEBT,double;
DEFAULTED,integer;ADDRESS,string;
OUTPUTNAME_GetCreditScore=DEFAULTPROPENSITY
```

For information about how to add an IBM SPSS Scoring Service to this file, see "Add an IBM SPSS Scoring Service to an offer (External Callout connector)." Also, see *IBM Interact Administrator's Guide*.

Add an IBM SPSS Scoring Service to an offer (External Callout connector)

To add an IBM SPSS Scoring Service, add the following parameters to the ExternalConnector_config.properties file.

- **SERVICENAME_%THE EXTERNAL CONFIG NAME%**
- **INPUTTABLE_%THE EXTERNAL CONFIG NAME%**
- **PARAMETERS_%THE EXTERNAL CONFIG NAME%**
- **OUTPUTNAME_%THE EXTERNAL CONFIG NAME%**

The parameter name has two elements that are separated by commas:

- The input parameter name
- The data type

The parameters are separated by a semicolon.

The value for **OUTPUTNAME_%THE SCORING SERVICE FUNCTION%** can be "DEFAULT". You do not need to provide the name of the output column name; the first output parameter is taken as the output scoring results. For example, the following methods of setting the output column get the same result:

- OUTPUTNAME_GetReco=RECOMMENDATION
- OUTPUTNAME_GetReco=DEFAULT

Troubleshooting EMM connector deployments

If you run IBM Enterprise Marketing Management version 9.0, there is an error in the deployment section for IBM Campaign and IBM Interact. The error applies to deploying WAR files.

About this task

Make the following configuration changes for IBM Campaign and IBM Interact WAR files.

Procedure

1. On the server where IBM EMM is installed, go to the WebSphere Integrated Solutions Console.
2. In the server's **Application > Enterprise Applications** section, select the WAR file that you deployed.
3. Select **Class loading and update detection** and set the following **General Properties** on the **Configuration** tab:
 - For **Class loader order**, select **Classes loaded with local class loader first (parent last)**.
 - For **WAR class loader policy**, select **Class loader for each WAR file in application**.

Appendix C. Use the Predictive Customer Intelligence samples

You can install samples for the following industries: Telecommunications, Retail, Insurance, Banking, and Energy and Utilities.

All samples except for the Banking sample contain the following components:

- IBM DB2 databases.
- IBM Analytical Decision Management templates and applications.
- IBM SPSS project streams, models, and rules.
- IBM Cognos reports and Framework Manager models and packages.

The Banking sample contains IBM DB2 databases and an IBM SPSS project stream. It does not contain IBM Analytical Decision Management templates and applications or IBM Cognos reports and Framework Manager packages. Therefore, you do not need to install the Analytical Decision Management templates and applications or the IBM Cognos Content if you are using this sample.

The Telecommunications, and Energy and Utilities samples contain report images that must be installed.

To install the samples, you must perform the following steps for each sample that you are using.

1. Run the Deployment wizard to deploy the samples on a computer with a Microsoft Windows operating system installed.
2. Create the sample databases on the Data node.
3. Install the Analytical Decision Management templates and applications on the Predictive Analytics node.
4. Import the SPSS project streams, models, and rules on the Predictive Analytics node.
5. Configure the data view for SPSS models on the Predictive Analytics node.
6. Install the IBM Cognos Content on the Business Intelligence node.

Important: There are no touchpoints included with the samples. For example, no call center applications or web sites are included.

Sample prerequisites

Before you install the samples, you must have a fully configured environment.

You must have administration rights and have the ability to copy files between servers and platforms.

The IBM Predictive Customer Intelligence Sample Deployment Wizard must be run on a computer that is running a Microsoft Windows operating system.

The steps to install each sample must be completed in the order shown.

Installing the samples

The IBM Predictive Customer Intelligence Sample Deployment Wizard copies the samples to your computer. You must configure each sample individually after it is copied to your computer.

Use the Predictive Customer Intelligence Sample Deployment Wizard on a computer that is running a Microsoft Windows operating system.

Procedure

1. Go to the folder where you downloaded the samples installation files.
2. Decompress the installation files.
3. Double-click `Launchpad.exe` or `Launchpad64.exe`.
4. Follow the steps in the wizard to copy the samples.

The Deployment wizard prompts you for the location to copy the samples. If you select the default, the samples are copied to `c:\IBM\PCIsamples\sample_name`.

5. Click **Deploy All**.

Creating the sample databases

The IBM Predictive Customer Intelligence samples include sample databases. You must run a script to create a database, and then run another to populate the databases for each sample that you are using.

Procedure

1. Create a folder on the data node computer to contain the samples. For example, `c:\IBM\PCI`.
2. Copy the samples files from the computer where you installed them to the data node computer:
 - The Telecommunications sample is in `Telco\Database\IBM_PCI_Telco_Data.zip`.
 - The Retail sample is in `Retail\Database\IBM_PCI_Retail_Data.zip`.
 - The Insurance sample is in `Insurance\Database\IBM_PCI_Insurance_Data.zip`.
 - The Banking sample is in `Banking\Database\IBM_PCI_Banking_Data.zip`.
 - The Energy and Utilities sample is in `Energy and Utilities\Database\IBM_EU_Data.zip`.
3. On the data node computer, decompress the files.
4. Log on to the data node computer as the DB2 instance owner user.
5. Open a Command Prompt window, and go to the folder where you decompressed the sample files.
6. In the uncompressed folder, run `Install_DB.bat` to create the database.

Note: For the Energy and Utilities sample, two databases are created: `EUTIL` and `PCI_UTIL`.

7. Run `Load_Data.bat` to populate the database.

What to do next

Verify that the tables are created and the data is successfully loaded into the input tables by checking the `out.log` file.

The log file is in the *sample_name* folder.

Search for “rows were rejected” in the log file. The value should be zero, if it is not, there are data load issues.

Installing Analytical Decision Management templates and applications

The following Predictive Customer Intelligence samples include IBM Analytical Decision Management templates and applications: Telecommunications, Retail, Insurance, and Energy and Utilities. The Banking sample does not include IBM Analytical Decision Management templates and applications.

Procedure

1. Log on to the Predictive Analytics node computer.
2. From the computer where you deployed the samples, copy the Analytical Decision Management applications and templates for the samples that you are using from the following locations:
 - Telecommunications
 - Application: Telco\Analytics\Applications\IBM_PCI_Telco_App.zip
 - Template: Telco\Analytics\Templates\TelcoCallCenter.xml
 - Retail
 - Application: Retail\Analytics\Applications\IBM_PCI_Retail_App.zip
 - Template: Retail\Analytics\Templates\Retail.xml
 - Insurance
 - Application: Insurance\Analytics\Applications\IBM_PCI_Insurance_App.zip
 - Template: Insurance\Analytics\Templates\Insurance.xml
 - Energy and Utilities
 - Application: Energy and Utilities\Analytics\Applications\IBM_PCI_Energy_and_Utilities_App.zip
 - Template: Energy and Utilities\Analytics\Templates\Energy and Utilities.xml

Copy files to the Applications or Templates folder as appropriate on the Predictive Analytics node computer.

The default location is C:\Program Files\IBM\SPSS\Collaboration and Deployment Services\6.0\Server\components\decision-management\Applications or \Templates.

3. Decompress the files to the Applications folder.
4. In a browser, go to the IBM Analytical Decision Management launch page: http://SPSS_server_name:port_number/DM
5. Click **Add Application**, and select the appropriate application. For example, **Telco Call Center**.

Importing project streams, models, and rules

Project streams, models, rules and other artifacts are contained in a repository export file for each sample. Copy the export file to the Predictive Analytic node where IBM SPSS Collaboration and Deployment Manager is installed.

Procedure

1. Log on to the Predictive Analytics node computer using an administrator account.
2. From the computer where you deployed the samples, copy the `IBM_PCI_sample_name.pes` file to the Predictive Analytics node computer. For example, copy the file to a `c:\IBM\PCI` folder.

The files are located in the following folders:

- Telecommunications: `\Telco\Analytics\IBM_PCI_Telco.pes`
 - Retail: `Retail\Analytics\IBM_PCI_Retail.pes`
 - Insurance: `Insurance\Analytics\IBM_PCI_Insurance.pes`
 - Banking: `Banking\Analytics\IBM_PCI_Banking.pes`
 - Energy and Utilities: `Energy and Utilities\Analytics\IBM_PCI_EU.pes`
3. In IBM SPSS Collaboration and Deployment Manager, import the `IBM_PCI_sample_name.pes` file with the following settings selected:
 - **Resolve conflicts globally**
 - **Add new version of target item or rename source item, Use labels from source.**
 - **Continue import even if some objects cannot be imported due to locking conflicts.**
 - **Resolve Invalid Version Conflicts, Import.**
 - **Resource Definitions, Recommended.** Import if there are no duplicate ID conflicts or duplicate name conflicts.

Results

Content folders and resource definitions are added to the repository alongside any existing content.

Configuring the data view for SPSS models

To configure the data view, IBM SPSS Modeler must be connected to the samples databases through an ODBC data source. You must perform extra steps for the Insurance and Retail samples.

About this task

If your IBM Predictive Customer Intelligence environment uses the IBM SPSS Modeler client logged in to a Modeler server, perform the steps on the Predictive Analytics node computer (where IBM SPSS Modeler Server is installed).

If your Predictive Customer Intelligence environment uses the IBM SPSS Modeler Client in a stand-alone environment, perform the steps on the client computer where IBM SPSS Modeler client is installed.

Procedure

1. Catalog the database on the client computer.
 - a. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator.**
 - b. Enter the following command to catalog the database node:
`db2 catalog tcpip node NODE_NAME remote data_node_name server PORT_NUMBER`
NODE_NAME can be any value. *PORT_NUMBER* is 50000 by default.

- c. Enter the following command to catalog the PCI database:
 db2 catalog database *DATABASE_NAME* at node *NODE_NAME* authentication server
 Where the *Database_names* are as shown in the following table:

Table 4. Sample DSN names and database names

Sample	DSN and database names
Telecommunications	TELCO
Retail	RETAIL
Insurance	INSURNC
Banking	BANKING

You must use the same *node_name* that you used in the **db2 catalog database** command.

2. Create an ODBC DSN to point to each sample database listed in the table. The database account that is provided in the ODBC connection must be the same user that was used for creating tables.

Tip: On a computer with Microsoft Windows installed, in the Windows Control Panel, select **Administrative Tools** and click **Data Sources**. Click the **System DSN** tab.

The following steps are for the Retail and Insurance samples only.

These samples use the Analytic Data View and JDBC source connections for accessing IBM Analytical Decision Manager. When the Retail or Insurance samples are imported through IBM SPSS Collaboration and Deployment Services Deployment Manager, a new version of the Enterprise View is created that contains only the tables that are related to the samples.

3. In the Deployment Manager client, under **Resource Definitions, Credentials**, open the **db2admin** credentials and update the user ID and password to the DB2 administrator account of the Data node.
4. In **Resource Definitions, Data Sources**, open the data source for the sample, either **RETAIL_JDBC**, or **INSURANCE_JDBC**, and update the IP address and port to point to the IBM Predictive Customer Intelligence Data node. The default DB2 port is 50000.
5. Open the data source, either **RETAIL_ODBC**, or **INSURANCE_ODBC**, and verify that the data source name corresponds to the ODBC name created for the sample database.
6. Verify that the Application View and the Data Provider Definition are working properly. Open the **RETAIL_CUSTOMER_ATTRIBUTES_DPD**, or **INSURANCE_DPD**, and click **Validate**. To retrieve a previous version of the Enterprise View, right-click **Enterprise View** in Deployment Manager and click **Open Version**.
7. To create a single view that combines the solution tables with any tables that existed previously, right-click **Enterprise View** in Deployment Manager and click **Merge Versions**.

Installing IBM Cognos content

The following IBM Predictive Customer Intelligence samples include IBM Cognos content: Telecommunications, Retail, Insurance, and Energy and Utilities.

Perform these tasks for each sample that you are using.

There is no IBM Cognos content for the Banking sample.

Procedure

1. Copy the IBM Cognos content from the computer where you installed it to the locations specified in the following table.

Table 5. IBM Cognos content

Cognos content	Copy to
Cognos deployment package:\<sample_name>\Business Intelligence\IBM PCI<sample_name> Cognos Content	Business Intelligence node, in the folder <Cognos_Install_location>\Deployment
Cognos report images: \<sample_name>\Business Intelligence\IBM PCI<sample_name> IBM PCI <sample_name> Report Images Note: This is for the Telecommunications and Energy and Utilities sample only. The Retail, Insurance, and Banking samples do not include report images.	Business Intelligence node, in the folder <Cognos_Install_location>\webcontent\samples Decompress the files to the following folders: For Telecommunications <Cognos_Install_location>\webcontent\samples\images\Telco For Energy and Utilities <Cognos_Install_location>\webcontent\samples\images\EU Tip: To decompress a file on a computer with a Linux operating system installed, type "unzip <"zip file name">". The zip file name must be enclosed by quotation marks because it contains spaces.
Cognos Framework Manager packages: \<sample_name>\Business Intelligence\IBM PCI<sample_name> IBM PCI <sample_name> Model	The Windows computer where Framework Manager is installed. Decompress the files.

2. Catalog the database on the client computer.
 - a. Click **Start > IBM DB2 > DB2COPY1 (Default) > DB2 Command Window - Administrator**.
 - b. Enter the following command to catalog the database node:
db2 catalog tcpip node *NODE_NAME* remote *data_node_name* server *PORT_NUMBER*
NODE_NAME can be any value. *PORT_NUMBER* is 50000 by default.
 - c. Enter the following command to catalog the PCI database:
db2 catalog database *DATABASE_NAME* at node *NODE_NAME* authentication server
Where the *Database_names* are as shown in the following table:

Table 6. Sample DSN names and database names

Sample	Database names
Telecommunications	TELCO


Table 6. Sample DSN names and database names (continued)

Sample	Database names
Retail	RETAIL
Insurance	INSURNC
Energy and Utilities	EUTIL PCI_UTIL

You must use the same *node_name* that you used in the **db2 catalog database** command.

Configure IBM Cognos to point to the new databases.

3. Open a web browser.
4. Go to the IBM Cognos BI portal URL. For example, go to http://bi_node_name/ibmcognos/.
5. On the **Welcome** page, click **Administer IBM Cognos Content**.
6. Create a data source connection to the samples database. This step must be done twice for Energy and Utilities, once for each database in the sample, and once for each of the other industry samples.
 - a. Click the **Configuration** tab, and click **Data Source Connections**.

- b. Click the **New Data Source**  button.
- c. In the **Name** box, type the sample database name, for example **TELCO** and then click **Next**.
- d. In the connection page, select **IBM DB2**, ensure that **Configure JDBC connection** is selected, and click **Next**.
The connection string page for the selected database appears.
- e. In the **DB2 database name** field, type the sample database name. For example **TELCO**.
- f. Leave **DB2 connect string** blank.
- g. Under **Signons**, select both **Password** and **Create a signon that the Everyone group can use**, type the user ID and password for the DB2 instance owner user that you used to create the database, and click **Next**.

Tip: To test whether the parameters are correct, click **Test the connection**. After you test the connection, click **OK** to return to the connection page.

- h. In the **Server name** box, enter the name or IP address of your data node computer.
- i. In the **Port number** box, enter the DB2 port number. The default is 50000.
- j. In **Database name**, type the sample database name. For example **TELCO**.

Tip: To test whether the parameters are correct, click **Test the connection**. After you test the connection, click **OK** to return to the connection page.


- k. Click **Finish**.

Import the Cognos content for the sample.

7. Deploy the IBM Cognos BI reports.
 - a. On the **Configuration** tab, click **Content Administration**.
 - b. On the toolbar, click the **New Import** button.
 - c. In the **Deployment Archive** pane, select **IBM PCI < Sample_name > Content**, and click **Next**.

- d. In the **Public Folders Content** pane, select **IBM PCI < Sample_name >**, leave the **Options** as default, and click **Next**.
- e. In the **Specify the general options** pane, accept the defaults, and click **Next**.
- f. On the **Review the summary** page, click **Next**.
- g. On the **Select an action** page, select **Save and run once**, and click **Finish**.
- h. On the **Run with options** page, accept the defaults, and click **Run**, and then click **OK**.
- i. Select **View the details of this import after closing this dialog** and click **OK**. The next screen displays the status of the import. After a few second, click **Refresh** and ensure that the status is "Succeeded".
- j. In IBM Cognos Administration, click the **Home** button.

For the Retail sample only, install the portal pages

8. In IBM Cognos Connections, click the Public Folders tab.
9. Click **IBM PCI Retail Portal Pages**.
10. For each of the reports, click .

What to do next

You can use the following test customer IDs for samples where a Customer ID is required. When you run some reports, you are prompted for a customer ID.

- For the Telecommunications, and Energy and Utilities sample, type 21.
- For the Insurance sample, use the following inputs for the specified report:
 - CaseReportInsurance, Churn and Sentiment Scores, Churn Propensity, ClaimsReport, and PolicyDetails: 1001920.
 - SMA Insight: AaronBBailey@trashymail.com
 - Social and Web Analytics: 1006598

Sample reports and portal pages

A number of Predictive Customer Intelligence reports and portal pages can be installed with the samples.

The following industry samples include reports: Telecommunications, Retail, Insurance, and Energy and Utilities. The Banking sample does not include reports.

You can customize the reports and portal pages using IBM Cognos Report Studio. Cognos Report Studio is a report design and authoring tool. Report authors can use Report Studio to create, edit, and distribute a wide range of professional reports. For more information see IBM Cognos Report Studio User Guide (http://www.ibm.com/support/knowledgecenter/SSEP7J_10.2.1/com.ibm.swg.ba.cognos.ug_cr_rptstd.10.2.1.doc/c_rs_introduction.html).

The metadata that the report displays comes from the package that is created in IBM Cognos Framework Manager. The example Framework Manager project folder contains the compiled project file (.cpf). When you open the .cpf file, Framework Manager displays the modeled relationships of the data and the package definitions, which are made available to the reporting studios when published. You can modify the metadata for the report by using Framework Manager. For more information, see IBM Cognos Framework Manager User Guide

(http://www-01.ibm.com/support/knowledgecenter/SSEP7J_10.2.1/com.ibm.swg.ba.cognos.ug_fm.10.2.1.doc/c_ug_fm_introduction.html%23ug_fm_Introduction).

Reports available in the Telecommunications, and Energy and Utilities samples

The following Predictive Customer Intelligence reports are available from the home page for the Telecommunications, and Energy and Utilities samples.

BillingReports

The **Billing** report displays the customer billing history, calculated bill amount, and potential savings.

CaseDetailReports

The **CaseReport** shows the open and closed case history of the customer: a bar chart that plots the case status per month, a list with detail case information and a list that shows social media posts.

NetworkReports

The **StoresMapReport** shows the location of nearest stores for a specified location, in a map report.

ProfileReports

The **Dials** report shows the analytics key performance indicators (KPIs) for a customer.

For the Telecommunications sample only, the **SocialNetworkChart** report shows the social network chart for a customer ID.

UsageReports

The **Usage** report shows the voice and data usage of the customer.

Portal pages available in the Retail sample

The following Predictive Customer Intelligence portal pages are available from the home page for the Retail sample.

Customer Online Activity Analysis

Shows detailed analysis of the customer's online activities with the following charts:

- Purchase Activity Analysis (Traditional) shows a distribution of purchase activities across different product lines.
- All Online Activity Analysis shows a relative comparison of all online activities for all product lines.
- Relative Activity Conversion Analysis shows a stacked chart to analyze the conversions between different online activities, such as Page Views, Products Browsed, Products Carted, Products Abandoned, Products Purchased, for all product lines.
- Analyzing Online Activities by Customer Segments allows you to analyze the online activities for different customer segments and combinations of customer segments.
- Analyzing Online Activities for Demographic Cluster shows a detailed analysis of online activities for a demographic cluster. For example, for a selected product line which cluster has highest products browsed activity.

Customer Response Analysis

Contains two charts that are based on the data available from a customer's

response to product satisfaction and various offers that were made through the IBM Analytical Decision Management application.

Contains a dial chart that shows how the customers rated a particular product line or a product. It also contains a column chart that shows the relative comparison of the probability of accepting different offers.

Market Basket Analysis

Shows the products that are likely to be bought together. This report can also be filtered for individual products.

Understanding the Customer

Shows a distribution of a customer's online activities across different product lines, and customer segmentation. Customer segments are shown by using a customer's demographic data, online activity data, and their purchasing behavior.

Reports available in the Insurance sample

The following Predictive Customer Intelligence reports are available from the home page for the Insurance sample.

CaseReportInsurance

Shows the cases by month for the selected client.

Churn and Sentiment Scores

The Dial report shows churn propensity and sentiment score.

Churn Propensity

Shows the churn propensity ratio (the willingness of the client to leave the provider) for the selected client.

ClaimsReport

The list report shows customer claims information.

Complaints

The bar chart and list report shows customer complaints information.

PolicyDetails

The list report shows customer policy information.

SMA Insight

Shows the social media activity for the selected client.

Social and Web Analytics

The pie chart and list report show customer social media post and insurance product browsing summary information.

Copying the samples license files to each computer

After you install the samples, you must copy the swidtag file and license folder to each computer on which you use an IBM Predictive Customer Intelligence sample.

Important: Do not rename the folders or files.

Procedure

1. Copy the swidtag file from the iso-swid folder where you installed the samples to each computer on which you install a Predictive Customer Intelligence component.

For example, copy the file so that you have a C:\IBM\PCI\iso-swid folder that contains a swidtag file on each node computer. And a C:\IBM\PCI\iso-swid folder that contains a swidtag file on each client computer.

If a iso-swid folder already exists on the computer, do not overwrite the folder. Add the swidtag file to the existing folder.

After you copy the IBM Predictive Customer Intelligence sample software tag file, your iso-swid folder should have two swidtag files. One swidtag file is for the product and the other swidtag file is for the samples.

2. Copy the license folder from the folder where you installed the samples to each computer on which a IBM Predictive Customer Intelligence component is installed.

For example, copy the folder and contents so that you have a C:\IBM\PCIsamples\license folder that contains the license files on each node computer. And a C:\IBM\PCIsamples\license folder that contains the license files on each client computer.

Results

After you install the samples, the following folders must exist on each computer on which you installed a Predictive Customer Intelligence component:

- On all computers:
 - C:\IBM\PCI\license (containing the product license files)
 - C:\IBM\PCIsamples\license (containing the samples license files)
 - C:\IBM\PCI\iso-swid (containing a product swidtag file and a samples swidtag file)

Appendix D. Products installed with IBM Predictive Customer Intelligence

The following products are installed with or available to be installed with Predictive Customer Intelligence.

Server components

- IBM DB2 Enterprise Server Edition 10.1 Fix Pack 3
- IBM Data Server Runtime Client 10.1 Fix Pack 3
- IBM WebSphere Application Server Network Deployment 8.5.5
- IBM Installation Manager 1.6.2
- IBM Cognos Business Intelligence Server 10.2.1 Fix Pack 1
- IBM Integration Bus 9.0 Fix Pack 1
- IBM WebSphere MQ 7.5 Fix Pack 2
- IBM SPSS Collaboration and Deployment Services Server 6.0
- IBM SPSS Collaboration and Deployment Services 6.0 Deployment Manager
- IBM SPSS Collaboration and Deployment Services Enterprise View Driver 6.0
- IBM SPSS Modeler Server 64-bit 16.0
- IBM SPSS Data Access Pack 7.1
- IBM SPSS Text Analytics Server 16.0
- IBM SPSS Modeler Collaboration and Deployment Services Adapter 16.0
- IBM SPSS Analytical Decision Management 8.0
- IBM SPSS Statistics Server 22.0
- IBM SPSS Statistics 22.0 Collaboration and Deployment Services Adapter 6.0
- IBM SPSS Modeler Solution Publisher 16.0
- IBM SPSS Modeler Premium Solution Publisher 16.0

Client and optional components

In the Predictive Customer Intelligence license, these components are referred as “Supporting Programs - Client Installation”.

- IBM Data Server Runtime Client 10.1 Fix Pack 3
- IBM Cognos Framework Manager 10.2.1
- IBM Cognos Business Intelligence Samples 10.2.1
- IBM Cognos Supplementary Languages Documentation 10.2.1
- IBM Cognos Dynamic Query Analyzer 10.2.1
- IBM Cognos for Microsoft Office 10.2.0
- IBM Cognos Lifecycle Manager 10.2.1
- IBM Cognos Mobile 10.2.1 Fix Pack 2
- IBM Cognos Real-time Monitoring 10.2.1 Fix Pack 1
- IBM Cognos Software Development Kit 10.2.1
- IBM SPSS Collaboration and Deployment Services Deployment Manager 6.0
- IBM SPSS Modeler Client 16.0
- IBM SPSS Text Analytics Client 16.0

- IBM SPSS Data Access Pack 7.1
- IBM SPSS Social Network Analysis 16.0
- IBM SPSS Statistics Client 22.0
- IBM Integration Bus Toolkit 9.0.0.1
- IBM Installation Manager 1.6.2
- IBM WebSphere MQ Client 7.5 Fix Pack 2
- IBM SPSS Concurrent Licensing Tools 9.5.0.1

Appendix E. Programs not authorized by the IBM Predictive Customer Intelligence license

The following programs are not installed with IBM Predictive Customer Intelligence, and the use of these programs is not authorized by the Predictive Customer Intelligence license.

- IBM Cognos Analysis for Microsoft Excel (IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Analysis Studio (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Business Intelligence Transformer (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Connection Installer for IBM Cognos Insight (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Cube Designer (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Data Manager Connector (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Insight (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Metric Designer (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Metric Studio (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Metrics Manager (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Migration Tools (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos PowerPlay[®] Client (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos PowerPlay Server (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos PowerPlay Studio (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos Query Studio (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Cognos TM1[®] Package Connector (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM Connections (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM DB2 Workgroup Server Edition (of IBM Cognos Business Intelligence Architect 10.2.1, IBM Cognos Real-time Monitoring 10.2.1)
- IBM Tivoli[®] Directory Integrator Identity Edition (of IBM Cognos Business Intelligence Architect 10.2.1)
- IBM SPSS Data Collection Survey Reporter Developer Kit 7.x (of IBM SPSS Modeler Premium 16.0, IBM SPSS Modeler Server Premium 16.0, IBM SPSS Statistics Standard 22.0, IBM SPSS Statistics Server Standard 22.0)
- IBM SPSS Modeler Client Entity Analytics (of IBM SPSS Modeler Premium 16.0)
- IBM SPSS Modeler Server Entity Analytics (of IBM SPSS Modeler Server Premium 16.0)

- BM SPSS Data Collection Developer Library 7.x (of IBM SPSS Statistics Standard 22.0, IBM SPSS Statistics Server Standard 22.0)
- IBM SPSS Statistics Data File Drivers 22.x (IBM SPSS Statistics Server Standard 22.0)
- IBM SPSS Statistics Diagnostic Utility 22.x (of IBM SPSS Statistics Standard 22.0)
- IBM SPSS Statistics-.Net Integration Plug-In 22.x (of IBM SPSS Statistics Standard 22.0, IBM SPSS Statistics Server Standard 22.0)
- IBM DB2 Workgroup Server Edition 10.5 (IBM DB2) (of IBM SPSS Modeler Premium 16.0, IBM SPSS Modeler Server Premium 16.0)
- IBM WebSphere Application Server Developer Tools for Eclipse (of IBM WebSphere Application Server Network Deployment 8.5.5)
- IBM WebSphere eXtreme Scale (of IBM WebSphere Application Server Network Deployment 8.5.5)
- IBM Rational® Application Developer for WebSphere Software (of WebSphere Application Server Network Deployment 8.5.5)
- J2SE Rule Execution Server (of IBM Integration Bus 9.0)
- IBM Data Studio 3.2 (of IBM DB2 Enterprise Server Edition 10.1)
- IBM WebSphere MQ 7.1 (of IBM DB2 Enterprise Server Edition 10.1)
- pureScale® Feature (of IBM DB2 Enterprise Server Edition 10.1)
- IBM General Parallel File System (GPFS™) for AIX® 3.5 (of IBM DB2 Enterprise Server Edition 10.1)
- IBM General Parallel File System (GPFS) for Linux Multiplatform 3.5 (of IBM DB2 Enterprise Server Edition 10.1)
- IBM Mobile Database 7.0.1 (of IBM DB2 Enterprise Server Edition 10.1)
- IBM Mobile Database Sync 1.0 (of IBM DB2 Enterprise Server Edition 10.1)
- IBM Tivoli Storage Flashcopy Manager 2.2 (of IBM DB2 Enterprise Server Edition 10.1)
- Embedded version of IBM WebSphere Application Server ("embedded WebSphere Application Server") 6.1 (of IBM Tivoli System Automation for Multiplatforms 3.2 (of IBM DB2 Enterprise Server Edition 10.1))
- IBM Cloudscape 10 (of IBM Tivoli System Automation for Multiplatforms 3.2 (of IBM DB2 Enterprise Server Edition 10.1))
- Embedded WebSphere Application Server 7.0 (of IBM Tivoli Directory Server 6.3 - Client Only (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM InfoSphere® Change Data Capture 6.2 (of IBM InfoSphere Data Replication 10.1 (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM InfoSphere Change Data Capture 6.5 (of IBM InfoSphere Data Replication 10.1 (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM InfoSphere Replication Server 9.7 (of IBM InfoSphere Data Replication 10.1 (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM Tivoli Directory Integrator 7.1 (of IBM Tivoli Directory Server 6.3 - Client Only (component) (of IBM DB2 Enterprise Server Edition 10.1))
- WebSphere Application Server 7.0 (of IBM Tivoli Directory Server 6.3 - Client Only (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM DB2 Workgroup Server Edition 9.7 (of IBM Tivoli Directory Server 6.3 - Client Only (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM DB2 Enterprise Server Edition 9.7 (of IBM Tivoli Directory Server 6.3 - Client Only (component) (of IBM DB2 Enterprise Server Edition 10.1))

- IBM InfoSphere Data Replication 10.1 (component) (of IBM InfoSphere Federation Server 10.1 (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM WebSphere MQ 7.1 (of IBM InfoSphere Federation Server 10.1 (component) (of IBM DB2 Enterprise Server Edition 10.1))
- IBM DB2 Connect™ 10.1, Application Server Edition (of IBM InfoSphere Federation Server 10.1 (component) (of IBM DB2 Enterprise Server Edition 10.1))

Appendix F. Performance tuning for IBM Predictive Customer Intelligence

The topics in this appendix provide examples of configuration changes that might help improve performance of your Predictive Customer Intelligence installation.

Tune WebSphere Application Server for Predictive Customer Intelligence

Performance tuning settings for WebSphere Application Server include JVM tuning, thread pools, connection pools, web container settings, logging, and web server monitoring.

JVM tuning

Setting an appropriate Java virtual machine (JVM) heap size can improve performance for IBM Predictive Customer Intelligence. Also, garbage collection is an integral Java runtime service. Increasing the JVM heap size can reduce the number of garbage collection occurrences and provide a 10 percent gain in performance.

Heap size

The heap size should be set to an optimal value. It should not exceed 80% of the physical memory available on the computer. Doing so would enable paging and increase processor usage, which affects the performance of WebSphere Application Server.

For Predictive Customer Intelligence, use 4096 MB.

The Max Heap Size is the maximum heap size that would be allocated to the server. It is important that the value is less than the available physical memory.

For Predictive Customer Intelligence, use 7128 MB.

Garbage collection

Parallel garbage collection is a technique that uses several dedicated threads for garbage collection. This method improves garbage collection pause time, which increases processor efficiency and improves performance.

This process can be activated by setting the `-Xgcthreads` value to the number of processors on the computer. For example, set `-Xgcthreads:number_of_processors`. However, this method is not entirely suited for concurrent users.

For concurrent users, use `-Xgcpolicy:optavgpause`.

Thread pools

Thread pools enable server components to reuse threads. Reusing threads eliminates the need to create new threads at run time, and creating new threads expends time and resources.

Web container thread pool

The web container thread pool is used for HTTP requests that come from the client. Set the number of threads to double the number of users that might be expected to access the application concurrently.

For example, for IBM Predictive Customer Intelligence, set the minimum value to 3000 and the maximum to 5000.

Connection pools

Connection pools are associated with data source configuration for web applications, and it is used to direct JDBC calls within the application.

When a user makes a request over the web to a resource, the resource accesses the data source. Because users connect and disconnect frequently with applications on the internet, the application requests for data access can surge to considerable volume. Consequently, the total data store overhead quickly becomes high for web-based applications, and performance deteriorates. However, when connection pooling capabilities are used, the web applications can realize performance improvements of up to 20 times the normal results.

With data sources, most user requests do not incur the overhead of creating a new connection because the data source can locate and use an existing connection from a pool of connections. When the request is satisfied and the response is returned to the user, the resource returns the connection to the connection pool for reuse.

For example, for IBM Predictive Customer Intelligence, set the minimum value to 1000 and the maximum to 3000.

Web container configuration

Web container configuration settings can improve IBM Predictive Customer Intelligence performance.

Enable servlet caching

The server caches servlet output during application execution. A cache entry contains not only the output, but also the side effects of the invocation. These side effects include calls to other servlets and metadata about the entry, such as timeout and entry priority information.

Web container custom properties

For the `HTTPQueueInboundDefault` property, there are two settings:

Maximum pool connections

The number of connections that are expected to be responded to by the application server. Ideally, this value should be equal to or more than the number of clients that are expected to use the system. The maximum number that can be set is 20000.

Maximum persistent requests per connection

Persistent connections specify that an outgoing HTTP response should use a persistent connection instead of a connection that closes after one request

or response exchange occurs. A performance boost can be achieved by increasing the number of persistent connections that are allowed on a single HTTP connection.

Logging and performance monitoring

For IBM Predictive Customer Intelligence, turning off logging and performance monitoring in a production environment can improve performance.

Tune IBM Unica for Predictive Customer Intelligence

You can improve performance of IBM Predictive Customer Intelligence by modifying settings for IBM Unica.

EHCache configuration settings

EHCache is the built-in cache manager for IBM Unica Interact that is used to improve performance. It is possible to configure the settings that are used by EHCache to optimize its value for the runtime server group.

The number of sessions in memory depends on the following factors:

- The expected number of sessions per second.
- The total amount of time each session is supposed to last.

For example, if you expect 50 sessions a second, and each session is expected to last 20 minutes, then modify the settings to support 60,000 sessions at a time.

Java Serialization API rather than SOAP API

For IBM Predictive Customer Intelligence, the Java Serialization API provides better throughput and a shorter response time than the SOAP API.

Threads for interactive flowcharts

Every interactive flowchart requires at least one thread to run.

IBM Predictive Customer Intelligence, set the `MaxNumberOfFlowchartThreads` value to be at least the maximum number of concurrent users that are expected on the IBM Interact client. And set the `MinNumberOfFlowchartThreads` value to be the same as the maximum value. Set the `MaxNumberOfProcessThreads` value to be at least the `MaxNumberOfFlowchartThreads`.

For example, set the `MaxNumberOfFlowchartThreads` and `MinNumberOfFlowchartThreads` to 500. And set `MaxNumberOfProcessThreads` to 550.

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