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Nortel Networks Symposium Call Center Server

Symposium Database Integration User's Guide

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Nortel Networks Symposium Call Center Server

Symposium Database Integration User's Guide

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The Standard 1.0 issue of the *Nortel Networks Symposium Call Center Server Symposium Database Integration User's Guide, Release 5.0,* is released.

Contents

Chapter 1

Getting started

In this chapter

Overview

Introduction

Nortel Networks introduces Symposium Database Integration. This service enables the exchange of call data between Symposium Call Center Server scripts and any Open Database Connectivity (ODBC) compliant database, and the attachment of script data to a call using Nortel Networks TAPI Server.

Symposium Database Integration service is configured using the Database Integration Wizard.

Purpose of this guide

The *Symposium Database Integration User's Guide* provides information on the configuration of the Symposium Database Integration service for Symposium Call Center Server.

The guide includes details on

- Symposium Database Integration service
- using the Database Integration Wizard to configure the Symposium Database Integration service
- troubleshooting Symposium Database Integration
- an example of the general process used to connect the Symposium Database Integration service to a sample database

Skills you need

Introduction

This section describes the skills and knowledge you need to use this guide effectively.

Nortel Networks product knowledge

Knowledge of, or experience with, the following Nortel Networks products can be of assistance when administering Symposium Database Integration:

- Symposium Call Center Server
- Symposium Call Center Server scripting
- Host Data Exchange (HDX) server

PC experience or knowledge

Knowledge of, or experience with, the following PC products and concepts is helpful when administering Symposium Database Integration:

- client/server architecture
- Microsoft Windows 2000 Server, Advanced Server, Microsoft Windows 95, Windows 98, Windows NT Workstation 4.0, Windows 2000 Professional, or Windows XP

Other experience or knowledge

Other types of experience or knowledge that might be useful include

- database management
- Symposium Call Center Server scripting
- TAPI programming
- Open Database connectivity
- troubleshooting

Related documents

This section lists the documents in which you can find additional information related to Symposium Database Integration.

If you need information about	Refer to
■ the exchange of data between Symposium Call Center Server and a third-party host application	*Nortel Networks Symposium Call Center Server Host Data Exchange API Programmer's Guide*
■ creating and administering call center scripts	*Nortel Networks Symposium Call Center Server Scripting Guide*
■ TAPI programming	*Nortel Networks Symposium TAPI Service Providers Programmer's Guide*

Chapter 2

Understanding the Symposium Database Integration service

In this chapter

Overview

The Symposium Database Integration service is a Symposium Call Center Server service that performs three major functions. It allows you to

- perform database lookups and place the information in a Symposium Call Center Server script
- perform database modifications
- attach data to a call using a Symposium Call Center Server script

The Symposium Database Integration service allows you to do this without custom interface programming.

Symposium Database Integration functionality

Introduction

The Symposium Database Integration service is installed automatically as part of the Symposium Call Center Server installation. It runs as a Symposium Call Center Server service once it is enabled by a keycode. When the Symposium Database Integration service is started, it

- registers as a provider to Host Data Exchange (HDX)
- registers with the Telephony Application Programming Interface **(**TAPI) server if TAPI is enabled in the Database Integration Wizard

You can use the Database Integration Wizard to configure the Symposium Database Integration service.

The Database Integration Service and Wizard use the Common Object Request Broker Architecture (CORBA) version of the HDX interface to communicate generically with existing external databases, TAPI servers, or both.

Interaction with HDX

The Symposium Database Integration service registers with HDX using a configured identifier, generally referred to as a provider ID. The Symposium Call Center Server script requires the provider ID to identify a provider.

HDX overview

This section includes an overview of HDX functionality.

HDX maintains connections between registered third-party applications and Symposium Database Integration call processing. The following is an example of the call processing script functionality between HDX and a registered third-party application:

When the call processing script encounters an HDX script command (for example SEND INFO, SEND REQUEST, or GET RESPONSE), it packages the parameters into a message.

1. The HDX service receives and queues the message. A registered third-party provider can then use the HDX interface to retrieve the message.
2. The service provider receives the message, unpacks the data it contains, and runs the specified service.
3. If the specified service is a request, the request is run, and the results are packaged into a message that is then sent back to HDX.
4. When HDX receives the message, it routes the data to call processing.
5. Call processing receives the message, unpacks the data, and maps the values to the call variable parameters of the response script function.

For more information about scripting, refer to the *Symposium Call Center Server Scripting Guide.*

Interaction of Symposium Database Integration with HDX

The Symposium Database Integration service registers with HDX as a third-party application, and then (if configured using the Wizard) registers with the TAPI server. Once registered, the Symposium Database Integration service enables the exchange of data between the Symposium Call Center Server script and any Open Database Connectivity (ODBC) 3.51 compliant database, and enables the use of the TAPI server to attach script data to a call. This functionality is made available by using the Database Integration Wizard to configure the Symposium Database Integration service.

Note: Symposium Database Integration uses one of the ten available HDX connections.

You can use the Database Integration Wizard to configure the Symposium Database Integration service to set and test

- the provider ID to be used to connect to HDX
- the TAPI server Host Name or IP Address, and Interactive Voice Response (IVR) Port connections
- the UserName and Password pair (if configured) for each System Data Source Name (DSN) configured on the server to be used by the Symposium Database Integration service

- the Structured Query Language (SQL) Statements configured for the DSNs

  You can also use the Wizard to configure the Symposium Database Integration to enable or disable the support for TAPI connection.

After you have used the Database Integration Wizard to configure the Symposium Database Integration service, script commands are handled as described in the following section.

When a message is retrieved from HDX, its type is checked. The possible types are as follows:

1 SEND REQUEST

For request messages, the first data parameter, <data1>, is checked for correspondence to a previously configured SQL Statement. If it is found, the statement is selected for execution on a Data Source Name (DSN). When statements are stored, they are associated with particular DSNs. If a connection does not already exist for the particular DSN, a connection is enabled. Connections are maintained while the service is running. The rest of the data parameters passed, if any, are used to replace question marks in the statement. The statement is executed. A GET RESPONSE message is constructed. The first parameter of the message indicates the status of the SQL statement execution. Returned data from the statement execution is populated into the remaining message parameters. The first parameter of the GET RESPONSE is reserved as a string variable for storing the status of the SQL execution. The returned value is one of the following:

SUCCESS	The SQL statement was successfully executed.
FAILED	The SQL statement failed to execute.
NODATA	The SQL statement is of type SELECT; however, no data was returned.

The returned data is packaged in a service completion message that is passed back to HDX.

2 SEND INFO

SEND INFO is available to access data in a database and to attach data to a call using TAPI. The first parameter of the SEND INFO request is used to identify whether the target is database access or TAPI. If the first parameter is %TAPI%, then the remaining parameters are attached to the call using the IVR/CallData interface provided by TAPI. If the first parameters is not

%TAPI%, then the SEND INFO is assumed to be for database access. In this case the first parameter is the numeric identifier of the SQL statement to run. The numeric identifier should identify a SQL statement (such as SELECT) which does not return data to the Symposium Call Center Server. The data parameters are separated by semicolons when passed as follows

<data1>;<data2>;...;<data10>;

Sample script

The following sample Symposium Call Center Server scripts illustrates both usages of SEND INFO

```
/* Execute SQL statement number 5 passing the current
callid as parameter */
ASSIGN 5 TO HAI_SQLNO_cv
ASSIGN "%CALLID%" TO HAI_CALLID_cv
SEND INFO provId HAI_SQLNO_cv, HAI_CALLID_cv

/* Attach the text 'abandoned' to the call */
ASSIGN "%TAPI%" TO HAI_STRING_cv
ASSIGN "ABANDONED" TO HAI_DATA_cv
SEND INFO provId HAI_STRING_cv, HAI_DATA_cv
```

When Symposium Database Integration is shut down, all the existing registrations are freed, and the open connections to the DSNs are closed.

Note: There can be a maximum of ten data parameters. The HDX limit for data parameters is a maximum of 40 bytes.

Chapter 3

Using the Database Integration Wizard

In this chapter

Overview

This chapter describes

- the procedures you must perform before you use the Database Integration Wizard to configure the Symposium Database Integration service
- how to start the Wizard
- what you should do after completing the Symposium Database Integration configuration

Before you begin

Introduction

Before you use the Database Integration Wizard to configure the Symposium Database Integration service, you must you must configure the connection to the target database by completing the following tasks

- install and configure the client drivers (if applicable)
- configure the system DSNs

Installing the client driver

You must install and configure the software and drivers to enable connection to the external database that you want to access. You can test the database connectivity and the data access capability using the tools and techniques provided by the database vendor.

To configure the system DSNs

The system DSNs that you want the Database Integration Wizard to use must be configured in Symposium Call Center Server before you run the Wizard. You can use the ODBC Data Source Administrator to configure the system DSNs.

1 On the Windows start menu, click Settings → Control Panel → Administrative Tools.

Result: The Administrative Tools window opens.

2 Click Data Source (ODBC).

Result: The ODBC Data Source Administrator window appears, containing all information pertaining to ODBC configuration for the server.

3 Click the System DSN tab.

Result: All the System DSNs configured on the server appear.

4 Click Add.

Result: The Create New Data Source window appears, listing all the ODBC drivers present on the server.

5 Select the appropriate driver, and then click Finish.

Note: If the driver you need is not present, install it using the driver's setup program.

Result: A driver-specific setup box appears.

6 Set the Data Source Name and a description for the DSN.

Result: The chosen DSN appears in the Symposium Database Integration Wizard for user details configuration.

7 Configure the remaining fields to allow successful connection to the database.

8 Click OK.

Starting the Database Integration Wizard

Introduction

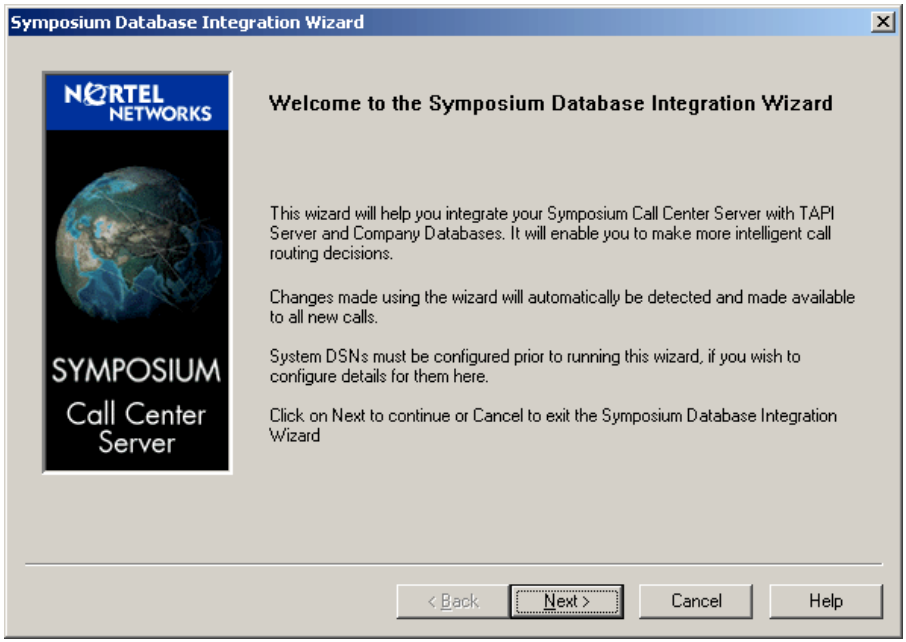
You can use the Database Integration Wizard to configure the Symposium Database Integration service.

To start the Database Integration Wizard

1. On the Windows Start menu, click Programs.
2. Click Symposium Call Center Server.
3. Double-click Database Integration Wizard.

   Result: The Symposium Database Integration Wizard introductory window appears.

   Note: The Symposium Database Wizard warns you that DSNs must be configured before you run the Wizard.



Note: The Symposium Database Integration service does not have to be running to use the Database Integration Wizard. Any changes you make using the Wizard are saved when you click Finish in the Wizard's closing window. When you use the Wizard to make changes while the Symposium Database Integration service is running, you should restart the service once you have made the changes.

You can navigate through the Wizard windows using the Next and Back buttons.

After you finish

Introduction

When you finish using the Database Integration Wizard to configure the Symposium Database Integration service, you must

- close the Database Integration Wizard using the Finish button on the Wizard's closing screen
- edit the Symposium Call Center Server script

Closing the Wizard

You can shut down the Database Integration Wizard by clicking Finish in the final window of the Wizard. The Symposium Database Integration service automatically detects the changes you made using the Wizard.

Note: Any changes you make using the Wizard are saved when you click Finish in the Wizard’s closing window. When you use the Wizard to make changes while the Symposium Database Integration service is running, you should restart the service once you have made the changes.

Editing the Symposium Call Center Server script

When you complete the Symposium Database Integration configuration, you must edit the Symposium Call Center Server script to use the newly enabled functionality.

For more information about scripting, refer to the *Symposium Call Center Server Scripting Guide.*

Chapter 4

Symposium Database Integration

In this chapter

Overview

This chapter provides an overview of the Symposium Database Integration process. It also describes how you can configure database connections, and how you can configure and test SQL statements. Additionally, it describes how you can accept or discard the changes you make using the Wizard.

For detailed information on starting the Database Integration Wizard, refer to “Starting the Database Integration Wizard” on page 23.

Symposium Database Integration process overview

The list below provides an overview of the steps you follow in the Symposium Database Integration process. It includes the procedures you can perform using the Database Integration Wizard, and the procedures you must perform before and after you use the Wizard:

1. Start the Database Integration Wizard.
2. Configure and test the provider ID for use.
3. Configure and test the UserName and Password pairs for the DSNs.

   Note: This is necessary only when UserName and Password pairs are configured on the database for the DSN.
4. Configure and test the SQL Statements for execution on each DSN, and note the parameters required and the SQL numerical identifier for the statements.
5. Accept or discard the changes, and then close the Wizard. Click Finish to accept the changes. Click Cancel to discard the changes.
6. Use a Symposium Call Center Server client to edit the Symposium Call Center Server scripts. The HDX scripting commands are added, using the provider ID, the numerical identifier, and the parameters you noted in step 4.

Note: The sections that follow provide detailed information about the Wizard procedures used in the Symposium Database Integration procedure.

Configuring database connections

Introduction

You can use the Configure Database Connections window to configure and test the database connection details.

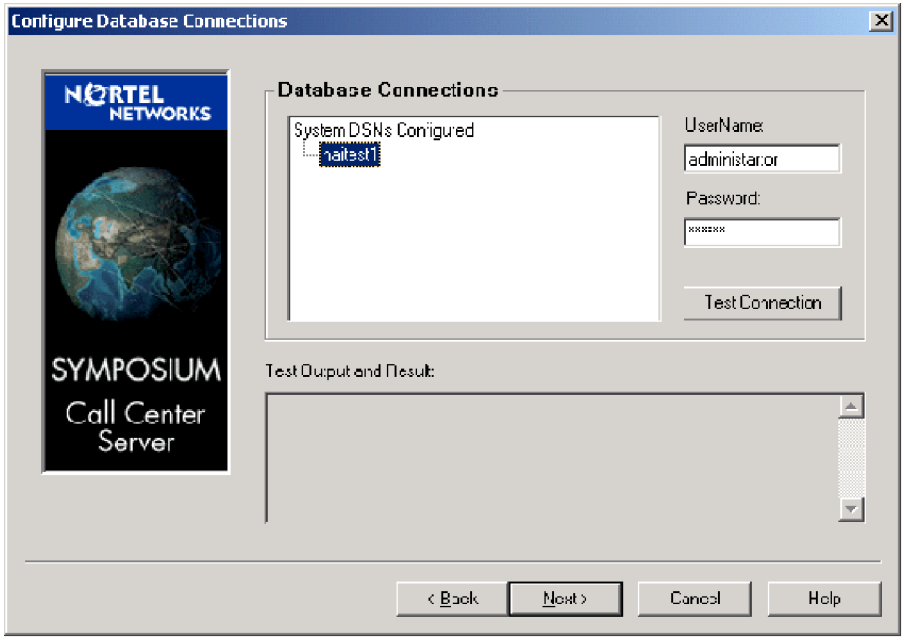
Note: You can navigate through the Wizard windows using Next and Back.

The Configure Database Connections window displays, in a tree view, the Symposium Call Center Server system DSNs that are currently configured on the server. You can configure the UserName and Password pair for each DSN connection. This configuration is required only if implemented in the database and the DSN.

Note: The password is not visible in the window when you type it. The settings are encrypted and stored in the Windows' registry.

You can test the connections individually using the test connection control. The results appear in the Test Output and Result box.

To configure database connections



In the Configure Database Connections window:

1. Select the DSN from the tree view.
2. In the UserName box, type the UserName for the selected DSN.
3. In the Password box, type the Password for the selected DSN.
4. Click Test Connection.

   Result: The connection test results appear in the Test Output and Result box.

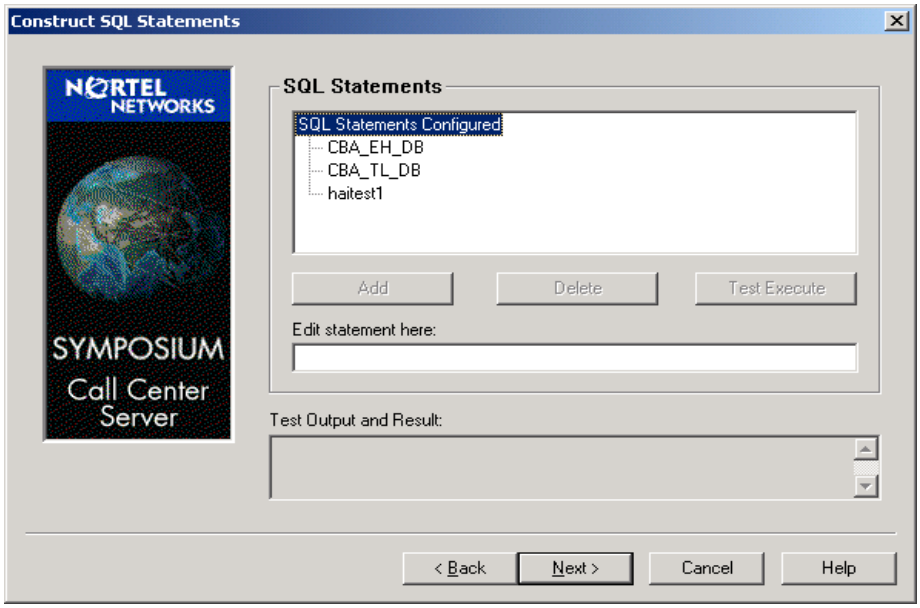
   Note: If a failed condition is flagged in the output text box, check the test data and correct it as required. If that does not resolve the problem, refer to Appendix B, “Troubleshooting.”

Configuring and testing SQL statements

Introduction

You can use the Construct SQL Statements window to configure and test SQL statements.

Note: You can navigate through the Wizard windows using Next and Back.



Note: In the SQL Statements section of the window, the system DSNs configured on the server appear in a tree view. You can configure the SQL Statements for execution on each DSN. The configured statements are stored in the registry and can be tested individually using the Test Execute control. The test results appear in the Test Output and Result box.

Getting access to CALLIDs and NODEID

The Symposium Database Integration service interrogates the value of each parameter passed in the SEND REQUEST message, and translates the specific text strings to their numeric value available in the call processing script.

The CALLIDs and NODEID are also available to SEND INFO when SEND INFO is available for database access.

The supported translations are

%CALLID%	The Call ID of the call being processed by the script.
%HELDCALLID%	The Held Call ID of the call being processed by the script.
%NETWORKCALLID%	The Network Call ID of the call being processed by the script.
%NODEID%	The Node ID of the call being processed by the script (only supported with DMS). The Node ID is the ID of the DMS switch system.
%TIME%	The time when the message was created and sent. The time is represented in UNIX format (the number of seconds elapsed since midnight (00:00:00), January 1, 1970.

The call processing script populates a string variable with the translation text string. The variable is passed as a parameter in the SEND REQUEST / SEND INFO message. The actual value of the data is inserted as a replaceable parameter in the SQL statement for execution.

The following sample illustrates the passing of the actual Call ID to an SQL statement:

```
ASSIGN "%CALLID%" TO HAI_CALLID_cv
SEND REQUEST provId HAI_SQLNO_cv, HAI_CALLID_cv
GET RESPONSE provId HAI_STATUS_cv, HAI_DATA_cv
```

The SQL statement takes the following form:

```
SELECT data FROM table WHERE field = ?
```

To test an SQL statement

In the SQL Statements section of the window, you can test an SQL statement as follows:

1. In the Edit statement here box, type the SQL statement.

   Note: The statement should contain valid sample data for variable parameters.

2. From the tree view, select the DSN.

3. Click Test Execute.

   Result: The results of the execution appear in the Test Output and Result box. If the result is not successful, check the statement for errors, correct it as required, and then test it again.

To add a statement

In the SQL Statements section of the window, you can add a statement as follows:

1. Test the statement using the previous procedure.
2. If the test was successful, replace the variable parameters of the statement with question marks (?), and then click Add to add the statement to the DSN for later selection by the Symposium Database Integration service.

   Result: The statement appears in the tree as a child of the DSN.

   Note: In the SQL Statements tree view, SQL statements with a total length greater than 260 characters are truncated. The truncation is a visual limitation of the tree view only, and does not impact the usage and storage of long SQL statements. Specifically, a truncated SQL statement, when retrieved, contains the full statement. When you make and accept changes before closing the Wizard, the full statement is stored, rather than the truncated format.

To test an existing statement

In the SQL Statements section of the window, you can text an existing statement as follows:

1. From the tree, select the statement.

   Result: The statement appears in the Edit statement here box.
2. Edit the statement by replacing the question marks (?) with valid sample data.
3. Click Test Execute.

   Result: The results of the execution appear in the Test Output and Result box. If the result is not successful, check the statement for errors, correct it as required, and then test it again.

To update a statement

In the SQL Statements section of the window, you can update a statement as follows:

1 Select the statement from the tree.

Result: The Add button is changed to the Update button, and the statement appears in the Edit statement here box.

2 Edit the statement.

3 Test the statement using the test procedure.

4 If the test is successful, replace the variable parameters of the statement with question marks (?), and then click Update.

Result: The statement is amended in the tree view.

To delete a statement

In the SQL Statements section of the window, you can delete a statement as follows:

1 From the tree, select the statement.

2 Click Delete.

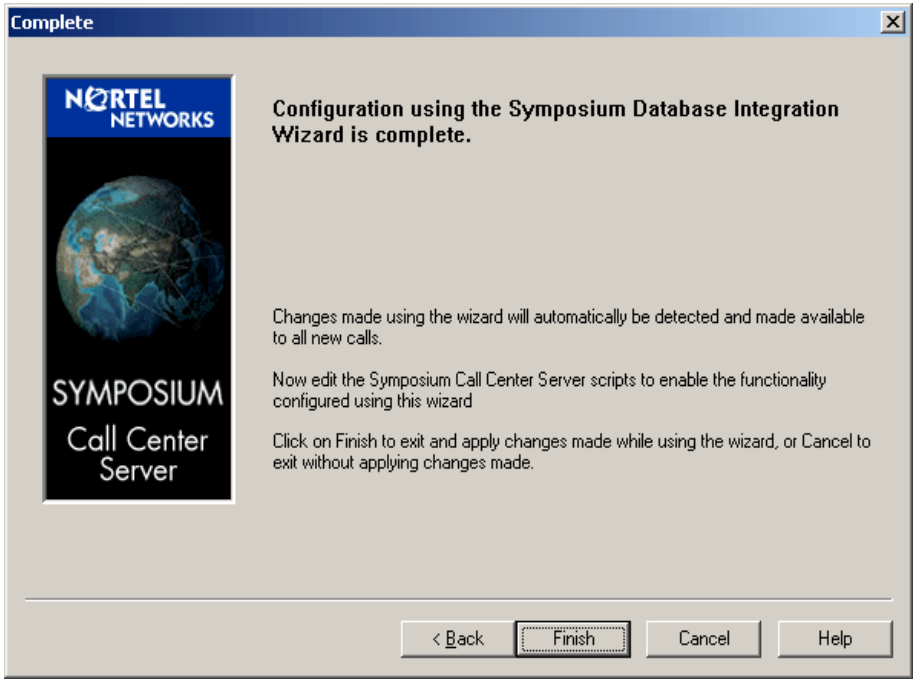
Result: The statement is removed from the tree.

Accepting or discarding changes made using the Wizard

Introduction

You can use the Complete window to accept or discard the changes you make using the Wizard.

Note: You can navigate through the Wizard windows using Next and Back.



Note: This window notifies you that the changes made using the Database Integration Wizard can now be saved or discarded. It also prompts you to edit the Symposium Call Center Server scripts to make the functionality that was configured in the previous windows available to HDX.

To accept the changes made and close the Wizard

Click Finish.

Result: All data configured by the Wizard is accepted, and the changes made are stored in the Window's registry. The Symposium Database Integration service then queries the data from the registry.

Note: After completing the Symposium Database Integration configuration, edit the Symposium Call Center Server scripts to use the newly enabled functionality.

To discard the changes made and close the Wizard

Click Cancel.

Result: The changes you made are discarded.

Chapter 5

TAPI integration

In this chapter

Overview

This chapter provides an overview of the TAPI integration process. It also describes how you can set and test the HDX connections, and set and test the TAPI connections. Additionally, it describes how you can accept or discard the changes you have made using the Wizard.

For detailed information on starting the Database Integration Wizard, see “Starting the Database Integration Wizard” on page 23.

TAPI integration process overview

The list below provides an overview of the steps you will follow in the TAPI integration process. It includes the procedures that you can do using the Database Integration Wizard, and the procedures that you must do before and after you use the Wizard.

1. Start the Database Integration Wizard.
2. Configure the provider ID for use.
3. Check the Configure TAPI connection checkbox to allow you to use the SEND INFO command to attach TAPI data to a call.
4. Configure the Hostname or IP Address for the TAPI server.
5. Configure the Port for the IVR/CallData interface to TAPI.
6. Test the connection.
7. Accept or discard the changes, and then close the Wizard.
8. A TAPI server must be operational on the network.

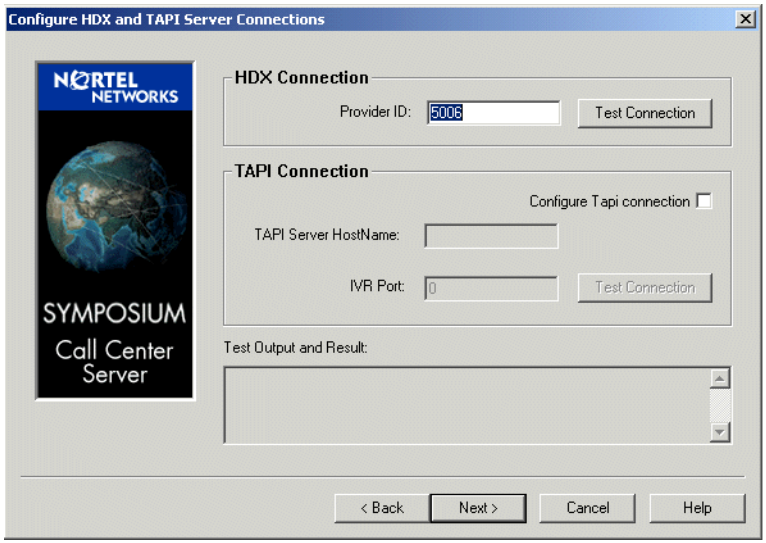
Note: The following section provides detailed information about the Wizard procedures used in the TAPI integration procedure.

Setting and testing the HDX connection

Introduction

You can use the Configure HDX and TAPI Server Connections window to configure and test the provider ID that is used to register the Symposium Database Integration service with HDX. A single provider ID is used for both database access and TAPI connectivity.

Note: You can navigate through the Wizard windows using Next and Back.



In the HDX Connection section, you can set and test the connection as follows:

1 In the Provider ID box, type the provider ID that is used to register the Symposium Database Integration service with HDX.

Note: The provider ID is required in the Symposium Call Center Server script to identify the appropriate provider to send information to. Each HDX application must have a unique ID that identifies it to Symposium Call Center Server. No two applications at the same site can have the same provider ID. This is the ID that the HDX application passes to the server in an attempt to register with the server software. The developer of the HDX application chooses the provider ID for the application.

2 Click Test Connection.

Result: The connection to HDX is tested, and the test results appear in the Test Output and Result box.

Note: If you receive an error, refer to Appendix B, “Troubleshooting.”

Setting and testing the TAPI connection

Introduction

You can use the Configure HDX and TAPI Server Connections window to set and test the TAPI Server Hostname or IP Address, and to set the port number to be used for connection to the TAPI server. By default, the TAPI configuration section of the window is disabled until you click the Configure TAPI connection checkbox.

You can also use this window to test the connection to the TAPI server by using the test connection control. The test results appear in the greyed output text box.

To set and test the TAPI connection

In the TAPI Connection section, you can set and test the connection as follows:

1. Ensure that the ConfigureTapi connection checkbox is checked.

   Result: The TAPI Server HostName box and the IVR Port box are enabled.

2. In the TAPI Server HostName box, type the TAPI Server HostName or IP Address.

3. In the IVR Port box, type the port number of the IVR/CallData interface (usually port 5000).

4. Click Test Connection.

   Result: The connection to the TAPI Server is tested, and the test results appear in the Test Output and Result box.

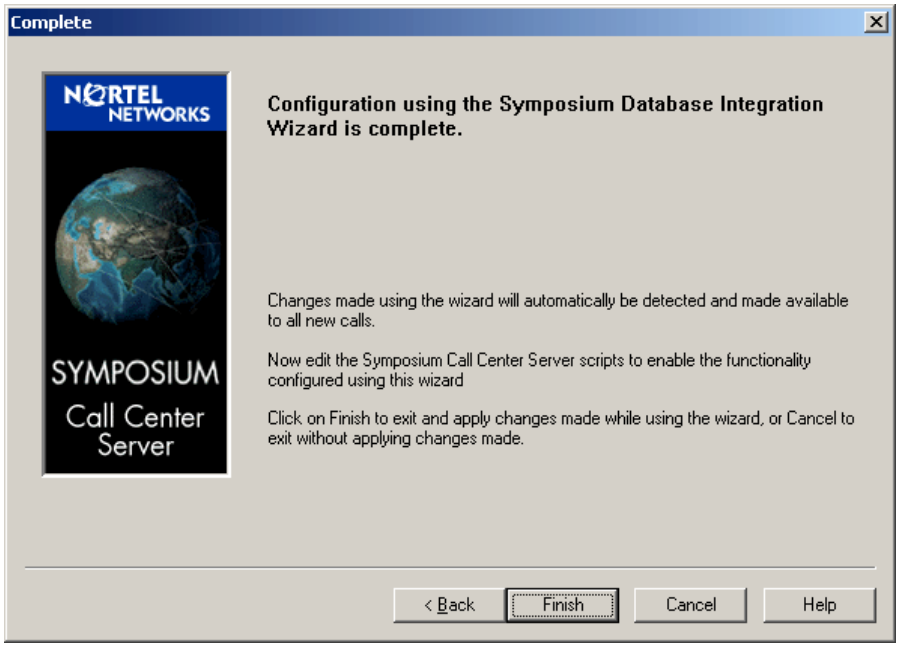
Note: If a failed condition is flagged in the box, check the test data, correct it as required, and then test it again. If this does not resolve the problem, refer to Appendix B, “Troubleshooting.”

Accepting or discarding changes made using the Wizard

Introduction

You can use the Complete window to accept or discard the changes you make using the Wizard.

Note: You can navigate through the Wizard windows using Next and Back.



Note: This window notifies you that the changes you made using the Wizard can now be saved or discarded. It also prompts you to edit the Symposium Call Center Server scripts to make the functionality that was configured in the previous windows available to HDX.

To accept the changes made and close the Wizard

Click Finish.

Result: All the data configured in the Wizard is accepted, and the changes you made are stored in the Window's registry. The Symposium Database Integration service then queries the data from the registry.

Note: After completing the Symposium Database Integration configuration, edit the Symposium Call Center Server script to use the newly enabled functionality.

To discard the changes made and close the Wizard

Click Cancel.

Result: The changes made using the Wizard are discarded.

Appendix A

Database Integration backup and restore

In this appendix

Overview

The Database Integration Wizard backup and restore is not included in the Symposium Call Center Server backup and restore process. Nortel Networks recommends that you perform manual backups on the current configuration, and that you refresh the backups after making changes using the Database Integration Wizard.

Database Integration backup

To back up the configuration

1. Start Regedit.
2. Open the key HKEY_LOCAL_MACHINE\SOFTWARE\Nortel\ICCM\HAI.
3. From the Registry Menu, select Export Registry File.
4. In the Export Registry File dialog box, type a suitable name and location for storing the configuration file.
5. Save the file.
6. Open the key HKEY_LOCAL_MACHINE\SOFTWARE\ODBC.
7. From the Registry Menu, select Export Registry File.
8. In the Export Registry File dialog box, type a suitable name and location for storing the ODBC configuration file.
9. Save the file.

Database Integration restore

To restore the configuration

1. Start Regedit.
2. From the Registry Menu, select Import Registry File.
3. In the Import Registry File dialog box, select a previously saved HAI configuration file.
4. In the Import Registry File dialog box, select a previously saved ODBC configuration file.
5. Examine the data stored in HKEY_LOCAL_MACHINE\SOFTWARE\Nortel\ICCM\HAI.
6. Examine the data stored in HKEY_LOCAL_MACHINE\SOFTWARE\ODBC.

Appendix B

Troubleshooting

In this appendix

Overview

This appendix contains a list of errors that you may receive when you are running the Database Integration Wizard. It lists the text of the error message and gives a brief explanation of each error.

Error messages

Error message	Description
Already Connected (when setting and testing HDX connection)	Symposium Database Integration is already connected to HDX.
Already Connected (when configuring database)	The selected DSN is already connected.
Authorization Failed	The user details supplied are incorrect. This indicates that the version of Symposium Database Integration is different than the version of HDX. Contact Nortel Networks Support.
Error	The connection cannot be performed. Contact Nortel Networks support.
Incompatible Version	The version information supplied is incorrect. This indicates that the version of Symposium Database Integration is different than the version of HDX. Contact Nortel Networks support.
Invalid Object	HDX Server object cannot be found. This indicates that the HDX Server service is not running.
Invalid Provider ID	The provider ID entered is invalid. The valid range for a provider ID is 0 to 1999999999.
The Host could not be found.	A server with the host name or IP address given cannot be found on the network.
Too Many Connections	HDX connections are all used up. Deregister some other HDX provider to free a connection.

Accessing a database over a network

The Database Integration Service runs as a Windows 2000 service using the Local System account. The Local System account is a predefined local account on the server. This account has extensive privileges on the local computer and acts as the computer on the network.

A service that runs in the context of the Local System account inherits the security context of the Windows Service Control Manager. This account has limited access to network resources (such as shares) because it has no credentials and must connect to the network using a null security session. For example, the account may not have sufficient security credentials to access a Microsoft Access database owned by an authenticated user over a network share, which was created in the context of the user.

If you require access to a database over a network share, contact your Network Administrator. For a description on making a remote share available using a null session share, refer to the Microsoft Web site.

Appendix C

Sample — using the Wizard to connect to a database

In this appendix

Overview

Introduction

You can use the Database Integration Wizard to connect any ODBC 3.51 compliant database to the Symposium Database Integration service.

This appendix provides an example of the general process used to connect the Symposium Database Integration service to a database, and uses the MySQL database as an example of a compliant database. You can use a process similar to the guidelines provided in this example to connect your own database.

Connecting the Symposium Database Integration service to a MySQL database

To use the Database Integration Wizard to connect the Symposium Database Integration service to a database (for example, to the MySQL database), you must perform the following tasks:

- Download, install, and configure the MySQL server, MySQL Connector/ODBC driver, and MySQL administration software.
- Use the Database Integration Wizard to configure the database connection.
- Configure and test the Symposium Call Center Server script.

Note: In this MySQL example, each call to the contact center consults the MySQL (www.mysql.com/products/index.html) database to find the preferred agent to whom the system routes the call, based on the Calling Line Identification (CLID) of the call.

Downloading the sample software

You can download the software used in this example from the MySQL web site as follows:

Software to download	Download location
■ MySQL 4.0 Database Server Installer for Windows 95/98/2000/ XP/2003	www.mysql.com/downloads/mysql-4.0.htm.
■ MySQL Connector/ ODBC 3.51 Driver Installer for Windows	www.mysql.com/downloads/api-myodbc-3.51.html
■ MySQL Control Center Installer for Windows 95/98/NT/ 2000/XP	www.mysql.com/downloads/mysqlcc.html

Installing and configuring the MySQL database server

On the database server, install, configure, and test the database:

1. Install MySQL 4.0 Database Server.
2. Configure the database to run as a service.
3. Test the operation of the database using the MySQL tools.

Installing and configuring the MySQL administration software

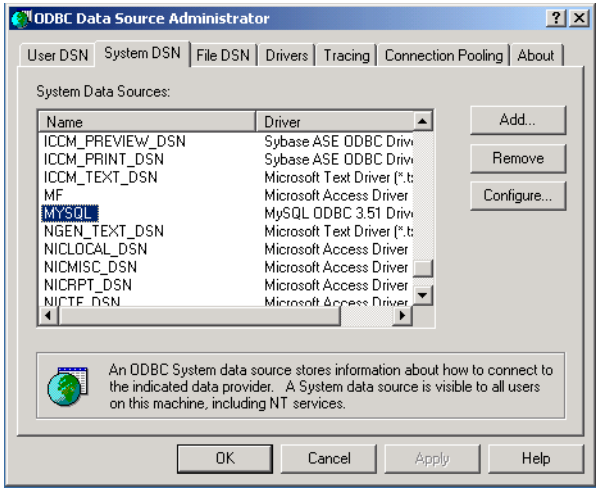
On the database server, install, configure, and test the administration software as follows:

1. Install MySQL Control Center.
2. Create a test table for testing the Database Integration Wizard. For example, create a table called Agent with the varchar fields: CLID (index), AgentId, and AgentName.
3. Populate the table with sample records.

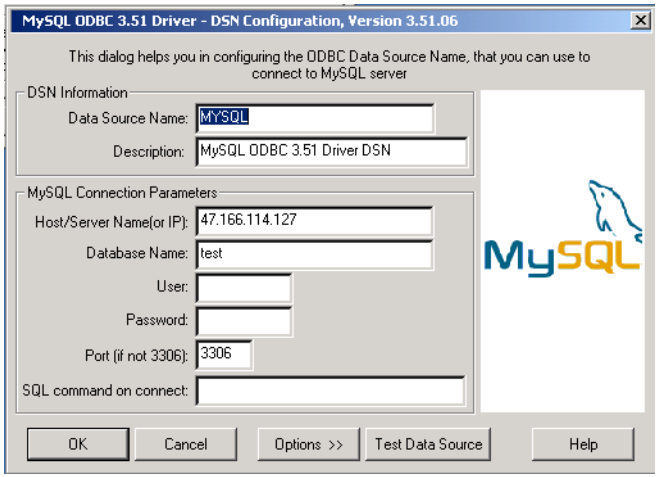
To configure the database connection

On the server in Symposium Call Center Server, perform the database connection configuration as follows:

1 Install the MySQL Connector/ODBC 3.51 Driver on the server in Symposium Call Center Server Release 5.0.



2 Configure a system DNS to point to the database server and to the database on that server, as shown in the following graphic:



Installing the Database Integration Wizard

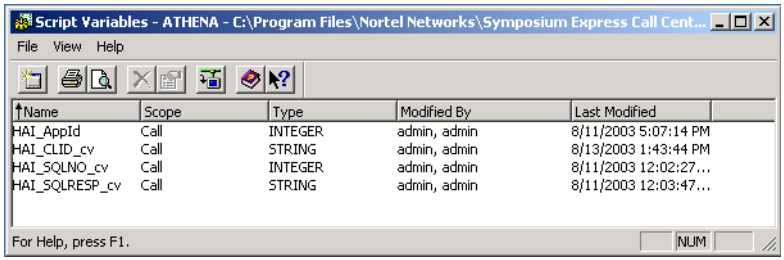
On the server in Symposium Call Center Server, use the Database Integration Wizard to do the following:

- Assign and test a provider ID.
- Test the database connection.
- Write and test the SQL statement against the test table. You can use a sample statement of the form *select AgentName from agent where CLID = [number]*.

To configure the Symposium Call Center Server script

On the server in Symposium Call Center Server, configure and test the Symposium Call Center Server script as follows:

1 Create the call variables for passing data to, and for retrieving data from the database.



2 Write and activate the script.

```
GIVE RINGBACK
WAIT 2


ASSIGN 5006 TO HAI_AppId
ASSIGN 3 TO HAI_SQLNO_cv
ASSIGN "1001" TO HAI_CLID_cv
ASSIGN "FAILED" TO HAI_SQLRESP_cv


SEND REQUEST HAI_AppId HAI_SQLNO_cv, HAI_CLID_cv
GET RESPONSE HAI_AppId HAI_SQLRESP_cv, HAI_AGENTID_cv

WHERE HAI_SQLRESP_cv EQUALS
```

```
    VALUE "SUCCESS" :
        QUEUE TO AGENT HAI_AGENTID_cv
        WAIT 2


DEFAULT:
    IF OUT OF SERVICE Sales THEN
    DISCONNECT

    ELSE
        QUEUE TO SKILLSET sales
        WAIT 2

    END IF

END WHERE
```

3 Test the script using physical calls. Ensure that the full required behavior is observed. If you do not see the required behavior, examine the trace files for the Database Integration Wizard.

Glossary

A

API

See application program interface.

application program interface

A set of routines, protocols, and tools that programmers use to develop software applications. APIs simplify the development process by providing commonly used programming procedures.

C

Calling Line Identification

An optional service that identifies the telephone number of the caller. This information can then be used to route the call to the appropriate agent or skillset. The CLID can also be displayed on an agent's phoneset.

CLID

See Calling Line Identification.

Common Object Request Broker Architecture

An architecture that enables pieces of programs, called objects, to communicate with one another regardless of what programming language they were written in, or what operating system they are running on.

CORBA

See Common Object Request Broker Architecture.

D

Data Source Name

A Data Source Name provides connectivity to a database through an ODBC driver.

Database Integration service

A Symposium service that provides integration of the Symposium Call Center Server scripts with an ODBC-compliant database, and with a TAPI server.

DSN
See Data Source Name.

H

HDX
See Host Data Exchange.

host
A computer that is connected to a TCP/IP network.

Host Data Exchange
A rich scripting language provided with Symposium Call Center Server to control treatment of calls.

I

Interactive voice response
An application that allows telephone callers to interact with a host computer using prerecorded messages and prompts.

IVR
See Interactive voice response.

IVR port
See voice port.

O

ODBC
See Open Database Connectivity.

Open Database Connectivity
A Microsoft-defined database application program interface (API) standard.

P

provider
The customer written application that uses the HDX interface.

provider ID
The identifier used to connect to HDX. This identifier is also used in the Symposium HDX scripting commands to identify a provider.

S

SQL
See Open Database Connectivity

SQL Statement
A Structured Query Language Statement.

Structured Query Language
A standardized query language for requesting information from a database.

Symposium Call Center Server Script
A set of instructions that relates to a particular type of call, caller, or set of conditions, such as time of day or day of week

T

TAPI
See Telephony Application Program Interface

TAPI Server
A server with Nortel Networks' TAPI installed.

TAPI Server Host Name
The network host name of the TAPI server.

Task Flow Access

Also known as Host Data Exchange.

Telephony Application Program Interface
An interface between the switch and an application that allows the application to control the telephone on a user's desktop.

TFA
See Task Flow Access.

U

UserName and Password pair

The user name and associated password that are used in establishing a connection with a particular DSN.

V

variable

A placeholder for values calculated within a script, such as CLID. Variables are defined in the Script Variable Properties property sheet, and can be used in multiple scripts to determine treatment and routing of calls entering Symposium Call Center Server.

variable parameter

A parameter within an SQL Statement that will take different values.

voice port

A connection from a telephony port on the switch to a port on the IVR system.

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W

Reader Response Form

Nortel Networks Symposium Call Center Server
Product release 5.0
Symposium Database Integration User's Guide

Tell us about yourself:

Name: _____

Company: _____

Address: _____

_____

Occupation: _____ **Phone:** _____

1. What is your level of experience with this product?

   ☐ New user ☐ Intermediate ☐ Experienced ☐ Programmer

2. How do you use this book?

   ☐ Learning ☐ Procedural ☐ Reference ☐ Problem solving

3. Did this book meet your needs?

   ☐ Yes ☐ No

   If you answered No to this question, please answer the following questions.

4. What chapters, sections, or procedures did you find hard to understand?

   _____

   _____

   _____

5. What information (if any) was missing from this book?

   _____

   _____

   _____

6. How could we improve this book?

   _____

   _____

   _____

Please return your comments by fax to 353-91-756050, or mail your comments to Contact Center Documentation Research and Development prime, Nortel Networks, Mervue Business Park, Galway, Ireland.

Reader Response Form

Reader Response Form

Nortel Networks Symposium Call Center Server

Symposium Database Integration User's Guide

Nortel Networks
Mervue Business Park
Galway, Ireland

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