webMethods SOPERA Adapter

Installation and User's Guide

Version 7.1

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webMethods

This document applies to webMethods SOPERA Adapter Version 7.1 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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1 About This Guide

This guide describes how to install, configure, and use SOPERA Adapter. It contains information for administrators who manage a webMethods system, and for application developers who create services to communicate with the SOPERA infrastructure.

To use this guide effectively, you should:

- Understand the basic concepts of SOPERA Adapter and the SOPERA infrastructure.
- Be familiar with the set up and operation of the webMethods Integration Server.
- Have a general idea about how to perform basic tasks with webMethods Designer.
- Know how to create flow services and/or Java services.

1.1 Document Titles

Some Software AG document titles have changed during product releases. The following table will help you locate the correct document for a release on the Software AG Documentation Web site or the Empower Product Support Web site.

Documentation	Title
Installation guide	• For webMethods product suite 8.0 SP1 and later, use *Software AG Installation Guide*. • For webMethods product suite 8.0 and earlier, use *webMethods Installation Guide*.
Integration Server administration guide	• For Integration Server 8.0 SP1 and later, use *Administering webMethods Integration Server*. • For Integration Server 8.0 and earlier, use *webMethods Integration Server Administrator's Guide*.
Logging guide	• For Integration Server 8.0 SP1 and later, use *webMethods Audit Logging Guide*. • For Integration Server 8.0 and earlier, use *webMethods Logging Guide*.

1.2 Document Conventions

Convention	Description
Bold	Identifies elements on a user interface.
Narrow font	Identifies storage locations for services on webMethods Integration Server, using the convention *folder.subfolder:service*.
UPPERCASE	Identifies keyboard keys. Keys you must press simultaneously are joined with a plus sign (+).
Italic	Identifies variables for which you must supply values specific to your own situation or environment. Identifies new terms the first time they occur in the text.
`Monospace font`	Identifies text you must type or messages displayed by the system.
{}	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

1.3 Documentation Installation

You can download the product documentation using the Software AG Installer. Depending on the release of the webMethods product suite, the location of the downloaded documentation will be as shown in the table below.

For webMethods…	The documentation is downloaded to…
6.x	The installation directory of each product.
7.x	A central directory named _documentation in the main installation directory (webMethods by default).
8.x	A central directory named _documentation in the main installation directory (Software AG by default).

1.4 Online Information

You can find additional information about Software AG products at the locations listed below.

If you want to…	Go to…
Access the latest version of product documentation.	**Software AG Documentation Web site** http://documentation.softwareag.com
Find information about product releases and tools that you can use to resolve problems. See the Knowledge Center to: • Read technical articles and papers. • Download fixes and service packs. • Learn about critical alerts. See the Products area to:	Empower Product Support Web site https://empower.softwareag.com

If you want to…	Go to…
• Download products. • Get information about product availability. • Access older versions of product documentation. • Submit feature/enhancement requests.	
• Access additional articles, demos, and tutorials. • Obtain technical information, useful resources, and online discussion forums, moderated by Software AG professionals, to help you do more with Software AG technology. • Use the online discussion forums to exchange best practices and chat with other experts. • Expand your knowledge about product documentation, code samples, articles, online seminars, and tutorials. • Link to external Web sites that discuss open standards and many Web technology topics. • See how other customers are streamlining their operations with technology from Software AG.	Software AG Developer Community for webMethods http://communities.softwareag.com/webmethods

2 Overview of webMethods SOPERA Adapter

2.1 About the Adapter

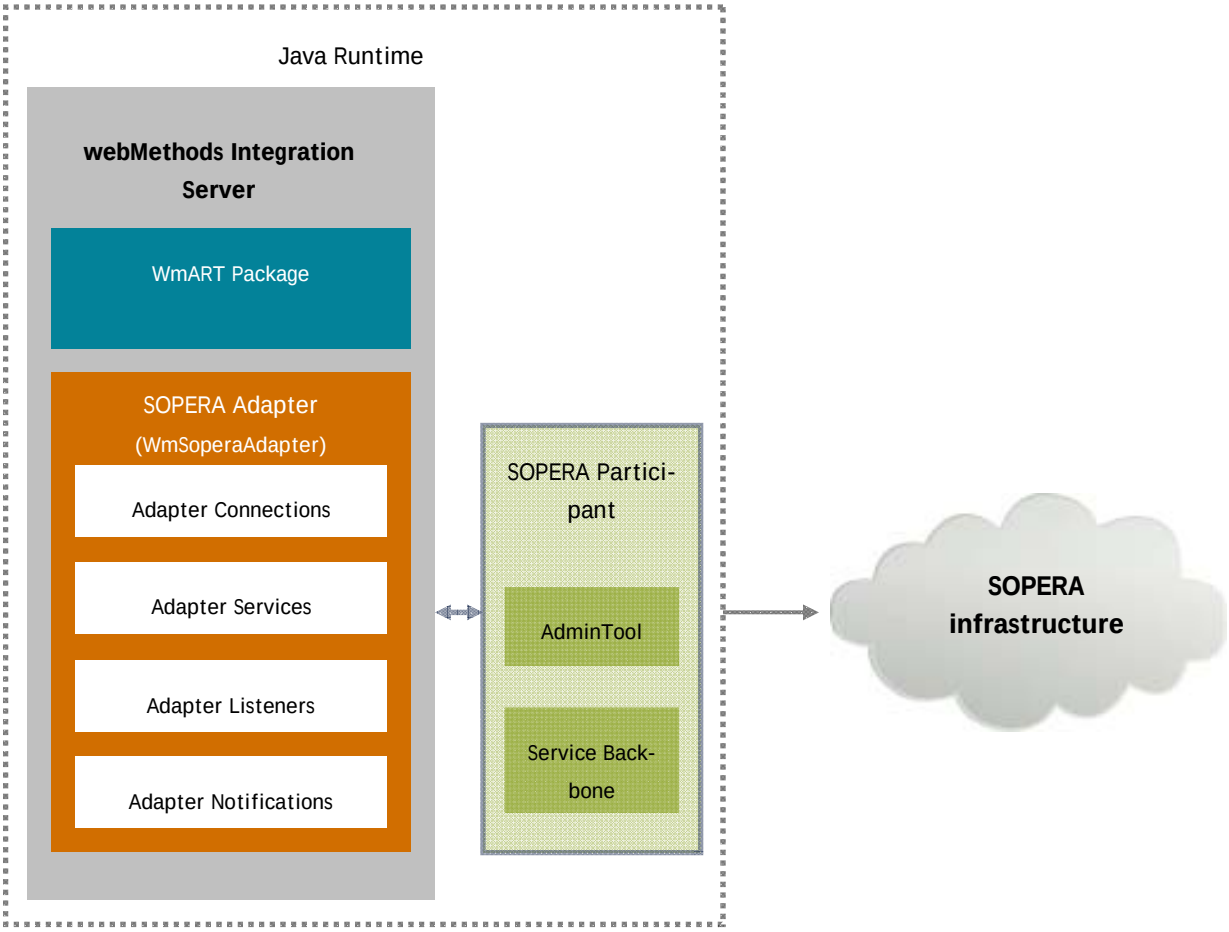
webMethods SOPERA Adapter is an Integration Server adapter that allows you to exchange data with the SOPERA infrastructure. The adapter provides seamless and real-time communications to and from the SOPERA ESB.

Using webMethods SOPERA Adapter, webMethods Integration Server clients can invoke SOPERA services and allow the SOPERA infrastructure to call the Integration Server services. For example, you can use SOPERA Adapter in a flow that receives data from the SOPERA infrastructure and then sends the processed data back to the SOPERA infrastructure.

2.2 Architecture and Components

webMethods SOPERA Adapter provides a set of user interfaces, services and templates that enable you to create integrations with the SOPERA infrastructure. The adapter is provided as a single package that must be installed on Integration Server. For detailed installation instructions, see Installing webMethods SOPERA Adapter.

The following diagram shows at a high level how the adapter components connect to the SOPERA infrastructure:



- **webMethods Integration Server**. webMethods SOPERA Adapter is installed and runs on webMethods Integration Server.
- **WmART Package**. The WmART package provides a common framework for webMethods version 7.1 and later adapters to use the Integration Server's functionality, making Integration Server the run-time environment for SOPERA Adapter. The WmART package is installed with Integration Server and provides logging, transaction management, and error handling for the adapter and its connections and services.
- **SOPERA Adapter**. webMethods SOPERA Adapter is delivered as a single package called WmSoperaAdapter. The adapter installation includes templates from which all adapter connections, adapter services, adapter listeners, and adapter notifications can be created.
- **SOPERA Participant**. A SOPERA Participant is a running business application that consumes or provides services. SOPERA Adapter enables the communication between the SOPERA infrastructure and the webMethods suite by processing requests from SOPERA participants and sending requests to those participants. SOPERA Adapter uses the following components to interact with the SOPERA infrastructure:

  - **AdminTool**. The SOPERA AdminTool is the utility used to accomplish the main administration tasks required for SOPERA Participants, such as looking up and registering services. You must specify the path to the SOPERA AdminTool in the SOPERA Adapter configuration file after you install the adapter.
  - **Service Backbone**. The SOPERA Service Backbone (SBB) library interfaces with the SOPERA infrastructure. To access the SOPERA infrastructure, you must specify the path to the SOPERA Participant SBB library when you configure SOPERA Adapter connections.
- **SOPERA Infrastructure**. The SOPERA infrastructure consists of SOPERA Technical Service Providers, the SOPERA Service Registry, a directory server, and a messaging system. webMethods SOPERA Adapter communicates with the SOPERA infrastructure to invoke SOPERA services or to handle requests from the SOPERA infrastructure to execute services on Integration Server.
- **Java Runtime**. The execution environment for Integration Server and the SOPERA Participant interacting with webMethods SOPERA Adapter.

2.3 Adapter Package Management

webMethods SOPERA Adapter is provided as a package called WmSoperaAdapter that you manage like any package on Integration Server.

There are several considerations regarding how you set up and effectively manage your packages on Integration Server, such as those described in the following list:

- Configure user-defined packages for your adapter connections and adapter services. For more information, see Managing the Adapter Package.
- Understand how package dependencies work so you make the best decisions regarding how you manage your adapter services and adapter notifications. For more information, see Package Dependency Requirements and Guidelines.
- Control which development groups have access to which adapter services and adapter notifications. For more information, see Controlling Group Access.
- Enable and disable packages. For more information, see Enabling and Disabling Packages.
- Load, reload, and unload packages. For more information, see Loading, Reloading, and Unloading Packages.

2.4 Adapter Connections

An adapter connection enables Integration Server to connect to the SOPERA infrastructure at run time. You must configure an adapter connection before you can create adapter services or notifications. You create one or more connections at design time to use in integrations. The number of connections you create depends on your integration needs. You configure connections using Integration Server Administrator. You must have webMethods administrator privileges to access the administrative screens of the adapter. For instructions on configuring, viewing, editing, enabling, and disabling SOPERA Adapter connections, see Adapter Connec-

tions. For information about setting user privileges, see the *Administering webMethods Integration Server* guide. For a list of tasks that you must do before you can create your connections, see Before Configuring or Managing Adapter Connections.

2.4.1 Connection Pools

Integration Server includes a connection management service that dynamically manages connections and connection pools based on configuration settings that you specify for the connection. By default, connection pooling is enabled for all adapter connections.

2.4.1.1 Run-Time Behavior of Connection Pools

In SOPERA Adapter no physical connections are created or managed, but each Connection Pool creates a new SBB instance and uses that instance for all operations involving interaction with the SOPERA infrastructure.

Each SBB instance created is identified uniquely with a common *AppID*, but a different *InstanceID* which maps to the connection pool name.

It is recommended to restrict the number of connection pools to preserve possibly scarce resources such as memory space or network connections.

For information about configuring connections, see Adapter Connections.

2.4.2 Built-in Services for Connections

Integration Server provides built-in services that enable you to programmatically control connections. You can use the services to enable and disable a connection, and to return usage statistics and the current state (Enabled or Disabled) and error status for a connection. These services are located in the WmART package, in the pub.art.connection folder.

For details, see the *webMethods Integration Server Built-In Services Reference*.

2.4.3 Changing the Connection Associated with an Adapter Service at Design Time

Integration Server provides a built-in service that you can use at design time to change the connection associated with an adapter service. This built-in service is named `pub.art.service:setAdapterServiceNodeConnection`. Using this service, you can change the specific connection associated with an adapter service at design time so that you do not need to recreate adapter services.

NOTE: This built-in service can be run at design time only; do not use it within an Integration Server flow or Java service. You must run this service directly from Designer by selecting the service in Designer and running it.

For details about the `setAdapterServiceNodeConnection` service, see the *webMethods Integration Server Built-In Services Reference*.

2.5 Adapter Services

Adapter services enable you to connect to the adapter's resource (that is the SOPERA infrastructure) and initiate an operation on the resource from the Integration Server. Every invocation of a SOPERA service by other Integration Server services or Integration Server clients goes through an adapter service.

You call adapter services from flow services or Java services to interact with the SOPERA infrastructure. Integration Server uses adapter connections that you defined earlier to execute the adapter services. The adapter services invoke SOPERA services on the SOPERA infrastructure. You can use one of the following communication styles of SOPERA services as part of calling the SOPERA services from the adapter:

- **Request-Response**. In this style, the service consumer sends a request message to the service provider. The provider processes the request and returns a response message to the consumer. The request-response operation can be:
  - **Blocking**. The service blocks the service invocation until a response message is sent to the consumer.
  - **Non-blocking**. The service invocation returns before the response has been received.
- **One-Way**. In this style, the service consumer sends a request message to the service provider, but does not expect any response.

Adapter services are based on templates provided with SOPERA Adapter. Each template represents a specific technique for doing work on a resource. An adapter service template contains all the code necessary for interacting with the resource but without the data specifications. You provide these specifications when you configure a new adapter service.

Configuring a new service from an adapter service template is straightforward. Using webMethods Designer, you assign the service a default adapter connection.

IMPORTANT! If you are using the adapter with Integration Server 8.0 SP1 or earlier, adapter services cannot use connections that are also used for adapter listeners and notifications.

After you select the connection for the adapter service, you select the adapter service template and supply the data specifications, including the mapping of data types from the adapter to or from your adapter resource. You use webMethods Designer to configure the adapter service. Some familiarity with using webMethods Designer is required. For more information, see the webMethods Designer Help.

SOPERA Adapter provides the following adapter service template:

Adapter Service Template	Description
SOPERA service consumer	Invokes SOPERA services.

2.6 Adapter Listeners and Listener Notifications

When the interaction is initiated by the adapter resource (for example, SOPERA calling an Integration Server service), SOPERA Adapter uses adapter *listeners* and *notifications*.

Listener notifications provide a mechanism by which any SOPERA participant can invoke services on the Integration Server. By creating a notification, an Integration Server service is registered as a provider in the SOPERA Service Registry. When a notification is enabled, the provider is active and can handle any requests by SOPERA participants.

After the Integration Server service is executed, the response is sent back to the participant using the SOPERA SBB infrastructure. Because there is no processing required at the Integration Server end after the request is processed in the SOPERA infrastructure, there is no need to create a trigger. When the notification is disabled, the IS service will no longer be accessible by the participants.

You use Integration Server Administrator to configure and manage adapter notifications. For detailed instructions on how to configure listener notifications, see Listener Notifications.

2.7 webMethods Infrastructure Data Collector Support for the Adapter

webMethods Infrastructure Data Collector monitors the system and operational data associated with webMethods run-time components such as Integration Servers, Broker Servers, Brokers, and adapters, and reports the status of these components on Optimize for Infrastructure or other external tools. When you start monitoring an Integration Server, Infrastructure Data Collector automatically starts monitoring all ART-based adapters that are installed on Integration Server.

For information about monitored key performance indicators (KPIs) collected for the monitored adapter components, see the *Administering webMethods Optimize Guide*.

2.8 Viewing the Adapter's Update Level

You can view the list of updates that have been applied to the adapter. The list of updates appears in the **Updates** field on the adapter's About page in Integration Server Administrator.

3 Installing webMethods SOPERA Adapter

This chapter explains how to install SOPERA Adapter.

3.1 Overview

This guide, in conjunction with the *Software AG Installation Guide*, explains how to install, upgrade, and uninstall webMethods SOPERA Adapter 7.1. If you are installing the adapter with webMethods Integration Server (prerequisite) or other webMethods products, see the *Software AG Installation Guide* for instructions on installing those products.

IMPORTANT! If you are installing the adapter with webMethods 8 products, refer to the *Software AG Installation Guide* for instructions. The default installation directory is named Software AG\.

If you are installing the adapter with previous versions of webMethods products, refer to the webMethods Installation Guide for instructions. The default installation directory is named webMethods*n*\.

This webMethods SOPERA Adapter Installation and User's Guide refers to the main installation directory as *installation_directory*.

3.2 Requirements

For a list of the operating systems and products supported by SOPERA Adapter, see the *webMethods Adapters System Requirements*, available in the webMethods area of the Software AG Documentation Web page.

3.3 Installing SOPERA Adapter

The instructions in this section are meant to be used with the more complete instructions in the *Software AG Installation Guide*. The instructions explain how to use the Software AG Installer wizard.

NOTE: You must install the SOPERA ESB infrastructure before you install SOPERA Adapter.

► *To install SOPERA Adapter 7.1*

1. Download the Installer from the Empower Product Support Web site.
2. If you are installing the adapter on an existing Integration Server, shut down Integration Server.
3. Start the Installer wizard.

   Choose the webMethods release that includes Integration Server on which to install the adapter. For example, if you want to install the adapter on Integration Server 7.1, choose the 7.1 release.

If you are installing on an existing Integration Server, specify the webMethods installation directory that contains the host Integration Server. If you are installing both the host Integration Server and the adapter, specify the installation directory to use. The Installer will install the adapter in the *Integration Server_directory*\packages directory.

4. In the product selection list, select **Adapters > webMethods SOPERA Adapter 7.1**.
5. To install documentation for the adapter, select **Documentation > Adapter Readmes and Documentation**.

   NOTE: This step will install the documentation for all adapters. The Installer will install the documentation files in the *installation_directory*_documentation directory.
6. Alternatively, you can download the adapter documentation at a later time from the Software AG Documentation Web page (http://documentation.softwareag.com/).
7. After the Installer completes the adapter installation, close the Installer.
8. Copy the following files from the *SBB_directory*\lib directory into the *Integration Server_directory*\packages\WmSoperaAdapter\code\jars directory:

   sbb-papi.jar

   jax-qname-namespace.jar

   sbb-factory-impl.jar
9. Copy the following files from the *AdminTool_directory*\lib directory into the *Integration Server_directory*\packages\WmSoperaAdapter\code\jars directory:

   jaxmeapi-0.5.1.jar

   jaxmexs-0.5.1.jar

   sbb-admin-tool.jar

   privilegemanagement-jaxb.jar

   privilegemanagement-proxy.jar

   sbb-configrepos-scopepath.jar

   sbb-instance-proxy-plugin.jar

   sbb-proxy-util.jar

   jaxme2-0.5.1.jar

   jaxme2-rt-0.5.1.jar

   userAccountManagement-proxy.jar

   userAccountManagement-jaxb.jar

   sbb-toolsuite-service-utilities.jar

   sbb-toolsuite-common.jar
10. Start the host Integration Server.

3.4 Completing the Installation

To complete the installation, you need to set a number of SOPERA specific properties in the SOPERA Adapter configuration file.

► *To set the properties in the sopera.config file*

1. Navigate to the *IntegrationServer_directory*\packages\WmSoperaAdapter\config directory.
2. Open the sopera.config file in a text editor.
3. Specify the following properties as described in the following table:

Property	Description/Action
org.sopware.sbb.home	Set to the home directory of the SBB Library installation on the local system. This parameter is required. For example, `C:\SOPERA\ServiceBackbone`
org.sopware.admintool.home	Set to the home directory of the Admin Tool location on the local system. This parameter is required. For example, `C:\SOPERA\AdminTool`
org.sopware.transport.http.enable	Optional. Set the HTTP inbound transport for the SBB Library. Valid values are: • `true` Enables HTTP. This is the default value. • `false` Disables HTTP.
org.sopware.transport.http.port	Optional. Set the HTTP inbound port for the SBB Library running on the Java VM. If you do not specify a value, the adapter will throw an error when you attempt to enable the adapter notification.
org.sopware.transport.https.enable	Optional. Set the HTTPS inbound transport for the SBB Library. Valid values are: • `true` Enables HTTPS. • `false` Disables HTTPS. This is the default value.

Property	Description/Action
org.sopware.transport.https.port	Optional. Set the HTTPS inbound port for the SBB Library running on the Java VM.
org.sopware.transport.https.keystore	Optional. Set the file name of the keystore used by the SBB Library for enabling the HTTPS transport.
org.sopware.transport.https.password	Optional. The password for accessing the keystore used by the SBB Library for enabling the HTTPS transport.
org.sopware.transport.https.clientauth	Optional. Set client authentication for the HTTP or HTTPS inbound transport. Valid values are: • `true` Enables client authentication. • `false` Disables client authentication. This is the default value.

NOTE: You can remove or comment the optional properties in the sopera.config file. For details about these system properties, see the *SOPERA Configuration Reference Guide*.

4. Save the sopera.config file.

3.5 Uninstalling SOPERA Adapter

The instructions in this section are meant to be used with the uninstallation instructions in the *Software AG Installation Guide*.

► *To uninstall SOPERA Adapter 7.1*

1. Shut down the host Integration Server. You do not need to shut down any other webMethods products or applications that are running on your machine.
2. Start the Software AG Uninstaller, selecting the webMethods installation directory that contains the host Integration Server. In the product selection list, select **Adapters > webMethods SOPERA Adapter 7.1**.
3. After the Uninstaller completes, restart the host Integration Server.
4. The Uninstaller removes all SOPERA Adapter 7.1-related files that were installed. However, it does not delete files created after you installed the adapter (for example, jar files copied into *Integration Server_directory*\packages\WmSoperaAdapter\code\jars\static\ or configuration files), nor does it delete the adapter directory struc-

ture. You can go to the *Integration Server_directory*\packages directory and delete the WmSoperaAdapter directory.

5. The Uninstaller does not delete any user-defined SOPERA Adapter 7.1 components such as connections, adapter services, or adapter notifications. Because these components will not work without the adapter, delete them manually, either at the file system level or using Designer. For instructions, see the *Designer Service Development Help*.

4 Package Management

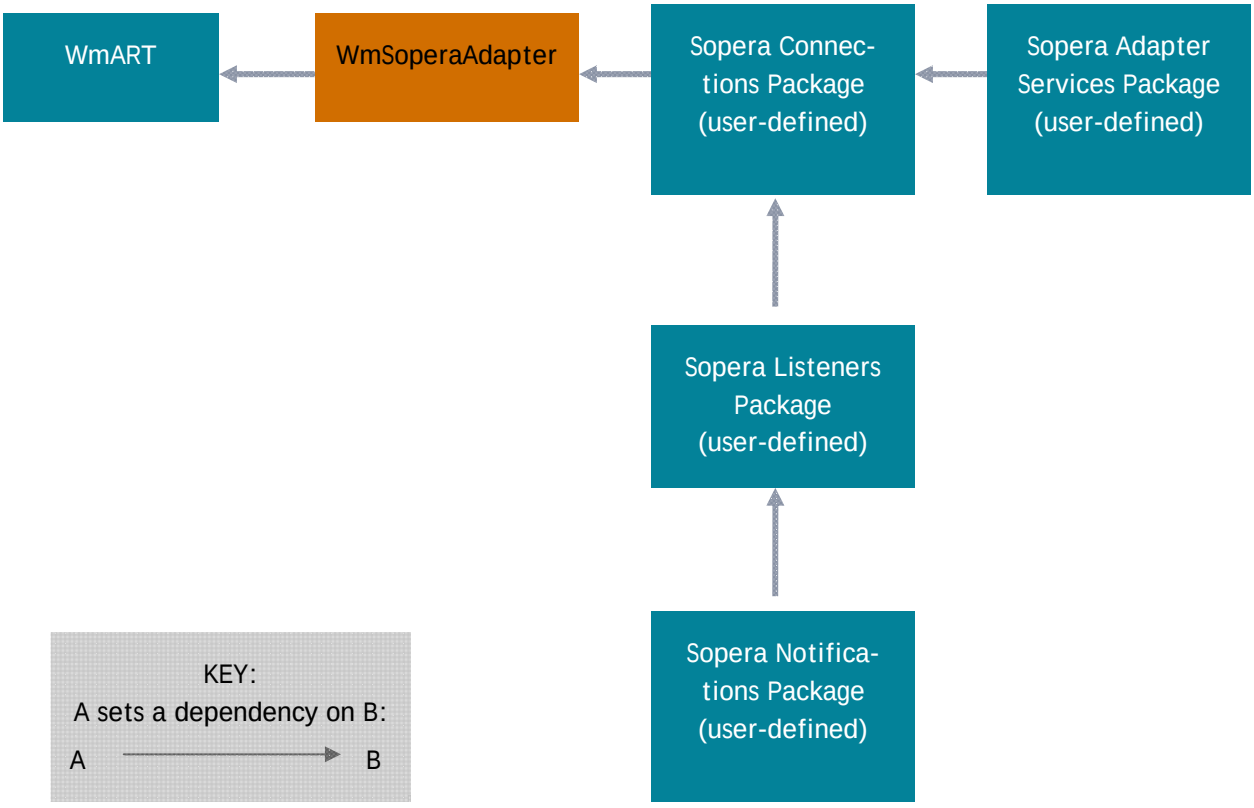
The following sections describe how to set up and manage your webMethods SOPERA Adapter packages, set up Access Control Lists (ACLs), and use the adapter in a clustered environment.

4.1 Managing the Adapter Package

SOPERA Adapter is provided as a package called WmSoperaAdapter. You manage the WmSoperaAdapter package as you would manage any package on Integration Server.

When you create connections, adapter services, and adapter notifications, define them in user-defined packages rather than in the WmSoperaAdapter package. Doing so will allow you to manage the package more easily.

As you create user-defined packages in which to store connections, adapter services, and adapter notifications, use the package management functionality provided in Designer and set the user-defined packages to have a dependency on the WmSoperaAdapter package. That way, when the WmSoperaAdapter package loads or reloads, the user-defined packages load automatically. See the following diagram:



Package management tasks include:

- Setting package dependencies (see Package Dependency Requirements and Guidelines).
- Enabling and Disabling Packages.
- Loading, Reloading, and Unloading Packages.
- Importing and Exporting Packages.
- Controlling Group Access.

4.1.1 Package Dependency Requirements and Guidelines

This section contains a list of dependency requirements and guidelines for user-defined packages. For instructions for setting package dependencies, see the webMethods Designer Help.

- By default, the WmSoperaAdapter package has a dependency on the WmART package. Do not change this dependency.
- A user-defined package must have a dependency on its associated adapter package, WmSoperaAdapter.
- Package dependencies ensure that at startup Integration Server automatically loads or reloads all packages in the proper order: the WmART package first, the adapter package next, and the user-defined package(s) last. The WmART package is automatically installed when you install Integration Server. You should not need to manually reload the WmART package.
- If the connections and adapter services of an adapter are defined in different packages, then:
  - A package that contains the connection(s) must have a dependency on the adapter package, WmSoperaAdapter.
  - Packages that contain adapter services must have a dependency on their associated connection package.
- Keep connections for different adapters in separate packages so that you do not create interdependencies between adapters. If a package contains connections for two different adapters, and you reload one of the adapter packages, the connections for both adapters will reload automatically.
- Integration Server *will* not allow you to enable a package if it has a dependency on another package that is disabled. That is, before you can enable your package, you must enable all packages on which your package depends. For information about enabling packages, see Enabling and Disabling Packages.
- Integration Server *will* allow you to disable a package even if another package that is enabled has a dependency on it. Therefore, you must manually disable any user-defined packages that have a dependency on the adapter package before you disable the adapter package.
- You can name connections, adapter services, and notifications the same name provided that they are in different folders and packages.

4.1.2 Enabling and Disabling Packages

All packages are automatically enabled by default. When you want to temporarily prohibit access to the elements in a package, disable the package. When you disable a package, the server unloads all of its elements from memory. Disabling a package prevents Integration Server from loading that package at startup. A disabled package will remain disabled until you explicitly enable it using Integration Server Administrator.

► *To enable a package*

1. In Integration Server Administrator: **Packages > Management**.
2. Click **No** in the **Enabled** column. The server displays **Yes** in the **Enabled** column.

NOTE: Enabling an adapter package will not cause its associated user-defined package(s) to be reloaded. For information about reloading packages, see Controlling Group Access.

IMPORTANT! Before you manually enable a user-defined package, you must first enable its associated adapter package (WmSoperaAdapter). Similarly, if your adapter has multiple user-defined packages, and you want to disable some of them, disable the adapter package first. Otherwise, errors will be issued when you try to access the remaining enabled user-defined packages.

► *To disable a package*

1. In Integration Server Administrator: **Packages > Management**.
2. Click **Yes** in the **Enabled** column for the package that you want to disable. The server issues a prompt to verify that you want to disable the package. Click **OK** to enable the package. When the package is disabled, the server displays **No** in the **Enabled** column.

A disabled adapter will:

- Remain disabled until you explicitly enable it using Integration Server Administrator.
- Not be listed in webMethods Designer.

4.1.3 Loading, Reloading, and Unloading Packages

As described above in Package Dependency Requirements and Guidelines, if user-defined packages are properly configured with a dependency on the adapter package, at startup Integration Server automatically loads or reloads all packages in the proper order: the WmART package first, the adapter package next, and the node package(s) last. You should not need to manually reload the WmART package.

4.1.3.1 Reloading Packages Manually

Reloading a user-defined package will not cause its associated adapter package to be reloaded. You can reload adapter packages and user-defined packages from either Integration Server Administrator (by clicking the Reload icon on the Management window) or from the

webMethods Developer (by right-clicking the package and selecting the Reload Package option from the menu).

4.1.3.2 Unloading Packages

At shutdown, Integration Server unloads packages in the reverse order in which it loaded them: it unloads the node package(s) first, the adapter package next, and the WmART package last (assuming the dependencies are correct).

4.1.4 Importing and Exporting Packages

You import and export packages using Designer. Exporting allows you to export the package to a .zip file and save it to your hard drive. The .zip file can then be imported for use by another package.

IMPORTANT! Do not rename packages you export; the rename function is comparable to moving a package, and when you import the renamed package, you lose any triggers, connections, and notifications associated with this package.

For details about importing and exporting packages, see the webMethods Designer Help.

4.1.5 Setting Package Dependencies

You set package dependencies if a given package needs services in another package to load before it can load. For example, any packages you create for the SOPERA Adapter services should identify webMethods SOPERA Adapter package (WmSoperaAdapter) as a package dependency because they require services in WmSoperaAdapter to load first. Use the following guidelines:

- Set package dependencies from the adapter service package to the package containing the connection if you configure a connection in one package and the adapter services in another package. That is, the package that contains the connection should load before the adapter service package.

  When you set this package dependency, it ensures that if someone disables the connection package and then re-enables it, the adapter services will reload correctly.
- If both the connection and adapter services are in the same package, set this package to have a dependency on the WmSoperaAdapter package.
- In general, packages containing connections should have a dependency set to the adapter package itself. That is, the adapter service package should depend on the adapter connection package, which should depend on the adapter package. Similarly, if the adapter services are in the same package as the connections, the only dependency that you need to set is between the adapter connection package and the adapter package.

For more information about setting package dependencies, see the webMethods Designer Help.

4.2 Controlling Group Access

To control which development group has access to which adapter services, use access control lists (ACLs). You can use ACLs to prevent one development group from inadvertently updating the work of another group, or to allow or deny access to services that are restricted to one group but not to others.

For general information about assigning and managing ACLs, see the webMethods Designer Help.

5 Adapter Connections

This chapter describes how to configure and manage SOPERA Adapter connections.

5.1.1 Before Configuring or Managing Adapter Connections

► *To prepare to configure or manage an adapter connection*

1. Install webMethods Integration Server and SOPERA Adapter on the same machine. For details, see Installing webMethods SOPERA Adapter.
2. Make sure you have webMethods administrator privileges so that you can access the SOPERA Adapter's administrative screens. For information about setting user privileges, see the *webMethods Integration Server Administrator's Guide*.
3. Start Integration Server and Integration Server Administrator, if they are not already running.
4. Using Integration Server Administrator, make sure the WmSoperaAdapter package is enabled. See Enabling and Disabling Packages for instructions.
5. Using webMethods Designer, create a user-defined package to contain connections, if you have not already done so. See Managing the Adapter Package for details.

5.1.2 Configuring Adapter Connections

SOPERA Adapter requires a connection to a SOPERA infrastructure whenever services from the SOPERA infrastructure are to be invoked; that is, whenever SOPERA Adapter acts as a client for a SOPERA infrastructure. A connection is also required when an Integration Server service is to be invoked through the adapter by any of the SOPERA participants.

When you configure SOPERA Adapter connections, you specify information that Integration Server uses to connect to a SOPERA participant. In most cases, you will need to configure at least two adapter connections: one for the adapter listener and one for all adapter services.

IMPORTANT! If you are using the adapter with Integration Server 8.0 SP1 or earlier, adapter services cannot use connections that are also used for adapter listeners and notifications.

You configure SOPERA Adapter connections using Integration Server Administrator as described in the following procedure:

► *To configure an adapter connection*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. On the Connections screen, click **Configure New Connection**.
3. On the Connection Type screen, click **SOPERA Connection** as the connection type.

4. For a basic connection, complete the following fields in the SOPERA Adapter section:

Field	Description/Action
Package	The package in which to create the connection. You must create the package using Designer before you can specify it using this parameter. For general information about creating packages, see the webMethods Designer Help. **NOTE:** Configure the connection in a user-defined package rather than in the adapter's package. See Package Management for other important considerations when creating packages for SOPERA Adapter.
Folder Name	The folder in which to create the connection.
Connection Name	The name of the new connection.

5. In the **Connection Properties** section, complete the following fields using the values from your configured SOPERA infrastructure:

Field	Description
SOPERA Location	The location of the SOPERA infrastructure. The default value is `generic_location`.
SOPERA User	The SOPERA default user name for this adapter connection. For example, `SOPAdministrator`.
SOPERA Password	The password for the SOPERA default user name. **NOTE**: You must retype the password in the **Retype SOPERA Password** field.

6. In the **Connection Management Properties** section, complete the following fields to configure connection pool sizes:

Field	Description/Action
Enable Connection Pooling	Enables the connection to use connection pooling.

Field	Description/Action
	Default: `true` For more information about connection pooling, see Connection Pools.
Minimum Pool Size	The minimum number of connection objects that remain in the connection pool at all times. When the adapter creates the pool, it creates this number of connections. Default: 1
Maximum Pool Size	The maximum number of connection objects that can exist in the connection pool. When the connection pool has reached its maximum number of connections, the adapter will reuse any inactive connections in the pool or, if all connections are active, it will wait for a connection to become available. Default: 10
Pool Increment Size	If connection pooling is enabled, this field specifies the number of connections by which the pool will be incremented if connections are needed, up to the maximum pool size. Default: 1
Block Timeout (msec)	If connection pooling is enabled, this field specifies the number of milliseconds that Integration Server will wait to obtain a connection with the SOPERA infrastructure before it times out and returns an error. Default: 1000
Expire Timeout (msec)	If connection pooling is enabled, this field specifies the number of milliseconds that an inactive connection can remain in the pool before it is closed and removed from the pool. For example, to specify 10 seconds, specify 10000. Enter 0 to specify no timeout. Default: 1000

Field	Description/Action
	NOTE: The adapter will never violate the **Minimum Connections** parameter. These connections remain in the pool regardless of how long they are inactive.
Startup Retry Count	The number of times that the system should attempt to initialize the connection pool at startup if the initial attempt fails. Default: 0
Startup Backoff Timeout (sec)	The minimum number of connection objects that remain in the connection pool at all times. When the adapter creates the pool, it creates this number of connections. Default: 10

7. Click **Save Connection**.

The connection that you configured appears on the adapter's Connections screen and in the Designer Package Navigator view.

By default, when you configure a connection, it is not enabled. For more information about enabling connections, see Enabling Adapter Connections.

5.1.3 Enabling Adapter Connections

A connection must be enabled before you can configure any adapter service using the connection, or before an adapter service can use the connection at run time. You enable adapter connections using Integration Server Administrator.

NOTE: When you reload a package that contains enabled connections, the connections will automatically be enabled when the package reloads. If the package contains connections that are disabled, they will remain disabled when the package reloads.

► *To enable a connection*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. On the Connections screen, click **No** in the **Enabled** column for the connection you want to enable.

   Integration Server Administrator enables the adapter connection and displays **Yes** in the **Enabled** column.

5.1.4 Viewing Adapter Connections

You can view adapter connections and each connection's parameters from Integration Server Administrator.

► *To view the adapter connections using Integration Server Administrator*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**. The Connections screen appears, listing all the current connections.
2. To view a connection's parameters:

a) On the Connections screen, click the **View** icon for the connection you want to see.

b) The View Connection screen displays the parameters for the connection. For descriptions of the connection parameters, see Configuring Adapter Connections.

3. Click **Return to SOPERA Adapter Connections** to return to the Connections screen.

5.1.5 Disabling Adapter Connections

SOPERA Adapter connections must be disabled before you can edit or delete them. You disable adapter connections using Integration Server Administrator.

► *To disable a connection*

4. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
5. On the Connections screen, click **Yes** in the **Enabled** column for the connection you want to disable.
6. The adapter connection becomes disabled and you see a **No** in the Enabled column.

5.1.6 Editing Adapter Connections

If a connection parameter changes, or if you want to redefine parameters that a connection uses when connecting to a SOPERA infrastructure, you can update a connection's parameters using Integration Server Administrator.

► *To edit a connection*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. Make sure that the connection is disabled before editing it. See Disabling Adapter Connections for instructions.
3. On the Connections screen, click the **Edit** icon for the connection you want to edit.

   The Edit Connection screen displays the current parameters for the connection. Update the connection's parameters by typing or selecting the values you want to specify.

   For descriptions of the connection parameters, see Configuring Adapter Connections.

4. Click **Save Changes** to save the connection and return to the Connections screen.

5.1.7 Copying Adapter Connections

You can copy an existing SOPERA Adapter connection to configure a new connection with the same or similar connection properties without having to re-type all of the properties for the connection. You copy adapter connections using Integration Server Administrator.

► *To copy a connection*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. On the Connections screen, click the **Copy** icon for the connection you want to copy.

   The Copy Connection screen displays the current parameters for the connection you want to copy. Name the new connection, specify a package name and folder name, and edit any connection parameters as needed by typing or selecting the values you want to specify.

   NOTE: When you copy a connection, the new connection does not save the password of the original connection. You must enter and then retype the password before you can save the new connection.

   For descriptions of the connection parameters, see Configuring Adapter Connections.
3. Click **Save Connection** to save the connection and return to the Connections screen.

5.1.8 Deleting Adapter Connections

If you no longer want to use a particular SOPERA Adapter connection, you can delete it by following the instructions in this section. You delete adapter connections using Integration Server Administrator.

If you delete a connection, the adapter services or notifications that are defined to use the connection will no longer work. However, you can change which connection an adapter service uses. Therefore, if you delete a connection, you can assign a different connection to an adapter service and re-use the service. To do this, you use the built-in webMethods function `setAdapterServiceNodeConnection`. For more information, see Changing the Connection Associated with an Adapter Service at Design Time.

► *To delete a connection*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. Make sure that the connection is disabled before deleting. To disable the connection, click **Yes** in the **Enabled** column and click **OK** to confirm. The **Enabled** column now shows **No** (disabled) for the connection.
3. On the Connections screen, click the **Delete** icon for the connection you want to delete.

   Integration Server deletes the adapter connection.

6 Adapter Services

This chapter describes how to configure adapter services to communicate with the SOPERA infrastructure.

6.1 Before Configuring or Managing Adapter Services

► *To prepare to configure or manage an adapter service*

1. Start your Integration Server and Integration Server Administrator, if they are not already running.
2. Make sure you have Integration Server administrator privileges so that you can access SOPERA Adapter administrative screens. For information about setting user privileges, see the *Administering webMethods Integration Server* guide.
3. Using Integration Server Administrator, make sure the WmSoperaAdapter package is enabled. For instructions, see Enabling and Disabling Packages.
4. Using Integration Server Administrator, configure an adapter connection to use with the adapter service. For instructions, see Configuring Adapter Connections.
5. Start Designer if it is not already running.
6. Using Designer, create a package to contain adapter services, if you have not already done so.

   When you configure adapter services, define them in user-defined packages instead of in the WmSoperaAdapter package. For more information about managing packages for the adapter, see Package Management.

6.2 Using Adapter Services

The following table lists the task required to use adapter services.

Task	Use this tool
1. Configure an adapter connection. For details, see Configuring Adapter Connections.	Integration Server Administrator
2. Select the appropriate adapter service template and configure the adapter service. For instructions for configuring notifications, see Configuring Adapter Services.	Designer
3. If you plan to use an Integration Server flow or Java service to invoke the adapter service, design the flow or Java service to use this adapter service.	Designer

Task	Use this tool
For information about flow and Java services, see the webMethods Designer Help.	
4. Manage the adapter service.	Integration Server Administrator and Designer

6.3 Configuring Adapter Services

Every invocation of a SOPERA service by other Integration Server services or Integration Server clients goes through an adapter service. The SOPERA Adapter provides the **SOPERA service consumer** template that performs the actual invocation of a SOPERA service.

You configure adapter services in Designer. In general, you can use the **SOPERA service consumer** template to configure two kinds of service invocation adapter services:

- Adapter service tailored to a specific SOPERA service and operation.
- Adapter service that generically invokes any SOPERA service and operation.

6.3.1 Adapter Service Tailored to a Specific SOPERA Service and Operation

This configuration is accomplished by selecting a specific SOPERA service and one of its operations that the adapter service will provide. In this case, one adapter service is required for every used SOPERA service operation. In most cases, it is better to use one adapter service per SOPERA service. The SOPERA registry ensures that a valid SOPERA service with a valid operation is used. Additionally, these adapter services are more easily reused in flow services and business processes.

For this configuration, use the **SOPERA Invocation tab** in the adapter template to configure the parameters for the new service as described in the following procedure.

► *To configure a service invocation adapter service:*

1. Start Designer.
2. Right-click the package in which the service should be contained and select **New > Adapter Service**.
3. Select the parent namespace and type a name for the adapter service.
4. Click **Next**.
5. Select **SOPERA Adapter** as the adapter type and click **Next**.

6. Select the appropriate **Adapter Connection Name** and click **Next**.

   IMPORTANT! If you are using the adapter with Integration Server 8.0 SP1 or earlier, adapter services cannot use connections that are also used for adapter listeners and notifications.

7. Select the **SOPERA service consumer** adapter template and click **Finish**.

   The adapter service editor for the invocation service appears.

8. In the service editor, select the **Adapter Settings** tab at any time to confirm adapter service properties such as **Adapter Name**, **Adapter Connection Name**, and **Adapter Service Template**, as necessary.
9. In the service editor, select the **SOPERA Invocation** tab and specify the following fields:

Field	Description
Service name	The name and the path to the SOPERA service to invoke. For example, `{http://services.sopware.org/ExampleURI}ExampleService`
Operation name	The name of the operation the adapter service must perform. For example, `RequestResponseOperation`.
Interaction style	The way in which the adapter service interacts with the SOPERA infrastructure. The value for this field is based on the value you specify in the **Operation name** field. For example, if you select `RequestResponseOperation` in the **Operation name** field, the value in the **Interaction style** field automatically changes to `REQUEST_RESPONSE`.
Input document type	The fully-qualified document type name for the input IS document. For example, `doc.myservice.input:inDoc` **IMPORTANT!** Specify a unique name for the input document type. If you specify an existing document type name, the IS document type will not be generated correctly.
Output document type	The fully-qualified document type name for the output IS document. For example, `doc.myservice.output:inDoc` **IMPORTANT!** Specify a unique name for the output document type. If you specify an existing document type name, the IS

Field	Description
	document type will not be generated correctly. **NOTE:** When the **Interaction style** is ONEWAY, no output document type is required or generated.
Policy	The conditions under which the adapter service invokes a SOPERA service. Policies are retrieved from the SOPERA Service Registry based on the location configured in the Connection Settings. For information about configuring the adapter connection settings, see Configuring Adapter Connections.
Blocking	Determines the invocation style of the adapter service: • When selected, the adapter service is configured as blocking and it waits for the actual service result. By default, blocking is selected. • When not selected, the adapter service is configured as non-blocking and returns a response message handler. This message handler can be passed to the `pub.wmsopera.service:getNonBlockingServiceResponse` utility service, using a flow service that gets the actual result. This allows a complex service to start as soon as all of its input parameters are available and to only block when the output of the service is needed.
Return the actual message object	Determines how the service provider returns the response message to the service consumer. • When not selected, the response message is transformed into Integration Server data structures. This is the default. • When selected, the response message returns as an actual message object. This is useful when a response message contains attachments or is very large, because an actual message object enables you to retrieve the attachments or the message content in a stream-based manner. **NOTE:** If the response contains attachments, then the response is returned as an object whether you select this option or not. Ensure that the adapter services are configured appropriately.

10. From the File menu, click **Save**.

Using the XML schema of the SOPERA operations retrieved from the registry, the SOPERA Adapter automatically creates Integration Server input and output document types adhering to the operation's schema.

When the adapter service is invoked, the data is automatically transformed into XML and passed to the SOPERA service. When the service returns the result, the XML is then transformed back into structured data elements that business processes, services, and clients can easily use inside the Integration Server.

6.3.2 Generic Service Invocation Adapter Services

In this configuration the SOPERA service and operation are parameters of the adapter service. The benefits of this approach are increased flexibility (run-time selection of SOPERA service is possible) and less configuration overhead (only one adapter service can be used for multiple SOPERA service invocation).

To configure a generic invocation adapter service, use the same procedure as described in the Adapter Service Tailored to a Specific SOPERA Service and Operation section, but leave the fields on the **SOPERA Invocation** tab blank. Specify configuration values as input values for the adapter service parameters that you can view on the **Input/Output** tab of the adapter service template:

Input Parameters	Description
serviceName	The name of the SOPERA service.
operationName	The name of the operation to perform for the adapter service.
policyId	The policy identifier for the SOPERA service.
requestMessageString	The request that the adapter service sends as an XML String.

Output Parameters	Description
responseMessageString	The response message as an XML String, when the **Return the actual message object** field on the **SOPERA Invocation** tab is set to `false`.
responseMessageObject	The response message as an Object, when the **Return the actual message object** field on the **SOPERA Invocation** tab is set to `true`.

	When the response contains attachments, the response always returns as a `responseMessageObject`.
responseMessageHandler	The message handler passed to the `pub.wmsopera.service:getNonBlockingServiceResponse` utility service when the communication style is request-response non-blocking.

6.4 Testing Adapter Services

You use Designer to test adapter services.

For more information about testing and debugging services, see the webMethods Designer Help.

► *To test adapter services*

1. In Designer, expand the package and folder that contain the service you want to test.
2. Double-click the service you want to test.

   Designer displays the configured service in the service template's adapter service editor.
3. Select **Run > Run As > Run Service**.
4. For every service input field, you will be prompted to enter an input value. Enter a value for each input field and then click **OK**.
5. Click the **Service Result** tab to view the output from this service.

6.5 Viewing Adapter Services

You use Designer to view adapter services.

► *To view adapter services*

1. In Designer, expand the package and folder that contain the service you want to view.
2. Double-click the service you want to view.

   Designer displays the configured service in the service template's adapter service editor.

6.6 Editing Adapter Services

You use Designer to edit adapter services. Before you edit adapter services, make sure that you enable the connection. For instructions on enabling connections, see Enabling Adapter Connections.

► *To edit adapter services*

1. In Designer, expand the package and folder that contain the service you want to edit.
2. Double-click the service you want to edit.

   Designer displays the configured service in the service template's adapter service editor.
3. Right-click the service and select **Lock for Edit**.
4. Modify the values for the service's parameters as needed. For detailed descriptions of the service's parameters, see Configuring Adapter Services.
5. After you have completed your modifications, save the service.
6. Right-click the service and select **Unlock**.
7. Save the service.

6.7 Deleting Adapter Services

You use Designer to delete adapter services.

► *To delete adapter services*

1. In Designer, expand the package and folder that contain the service you want to delete.
2. Right-click the service you want to delete and then select **Delete**.

6.8 Automatic Data Validation and Reloading Adapter Values

You can enable SOPERA Adapter to reload and validate user-defined data for adapter services at design time in Designer.

The automatic data validation for adapter services is enabled by default in Designer. When the option is selected, Designer always validates values for adapter services for all webMethods WmART-based adapters installed on Integration Server.

► *To disable automatic data validation for all adapter services*

1. Start Designer.
2. Select **Window > Preferences > Software AG > Service Development > Adapter Service/Notification Editor**.
3. Disable the **Automatic data validation** option.
4. Click **OK**.

The option to always reload values for adapter services is not enabled by default in Designer. If you enable that option, Designer will always reload values for all webMethods WmART-based adapters installed on Integration Server.

► *To reload the adapter values for all adapter services*

1. Start Designer.
2. Select **Window > Preferences > Software AG > Service Development > Adapter Service/Notification Editor**.
3. Enable the **Automatic polling of adapter metadata** option.
4. Click **OK**.

For more information about the adapter service/notification editor and other Designer menu options and toolbar icons, see the webMethods Designer Help.

7 Adapter Notifications

This chapter describes how to configure and manage listeners and notifications.

7.1 Listeners

This section describes how to create, modify, and delete listeners.

7.1.1 Before You Configure New Listeners

► *To prepare to configure a new listener*

1. Make sure that you have webMethods administrator privileges so that you can access SOPERA Adapter's administrative screens. For information about setting user privileges, see the *Administering webMethods Integration Server* guide.
2. Start Integration Server and Integration Server Administrator, if they are not already running.
3. Using Integration Server Administrator, make sure that the WmSoperaAdapter package is enabled. To verify the status of the WmSoperaAdapter package, see Enabling and Disabling Packages.
4. Using Designer, create a user-defined package to contain the listener, if you have not already done so. For more information about managing packages, see Package Management for details.

7.1.2 Configuring Listeners

SOPERA Adapter requires a listener to listen for inbound requests from a SOPERA infrastructure. Use the following procedure to create a listener on SOPERA Adapter to respond to requests issued by the SOPERA infrastructure.

► *To create a listener on SOPERA Adapter*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. Select **Configure new listener** and then select **SOPERA invocation listener** from the list of available listener types.
4. Complete the following fields on the Configure Listener Type screen:

Field	Description/Action
Package	The package in which to create the listener. You must create the package using Designer before you can specify it using this parameter. For general information about

Field	Description/Action
	creating packages, see the webMethods Designer Help. **NOTE:** Configure the listener in a user-defined package rather than in the adapter's package. See Package Management for other important considerations when creating packages for SOPERA Adapter.
Folder Name	The folder in which to create the listener.
Listener Name	The name of the new listener.
Connection Name	The name of the connection to associate with the new listener. From the list of connections, select an appropriate connection that you created on the Configure Connections Type screen. IMPORTANT! If you are using the adapter with Integration Server 8.0 SP1 or earlier, listeners and listener notifications cannot share connections with adapter services. However, listeners can share connections with other listeners.
Retry Limit	The number of times the adapter tries to reconnect if the adapter fails to connect, or loses connection with the SOPERA infrastructure. Default: 5
Retry Backoff Timeout	The number of seconds that elapse between each of the retries specified in the retry limit. Default: 10

5. Click **Save Listener**.

The adapter listener is created. The listener name is prefixed by the folder name and is separated by a colon. For example: If the folder name is "Folder1" and the listener name is "Listener1", then the listener name in the Listeners screen will be "Folder1:Listener1".

7.1.3 Enabling Listeners

After you have configured notifications, you must enable the listener so that the associated notifications will communicate appropriately with the listener at run time. You enable the listeners using Integration Server Administrator.

The **Status** column indicates the readiness of the listener. If the status is **Succeeded**, the listener is ready to be enabled. If the status is **Failed**, an error occurred during startup. If an error occurs during startup, the state will not change to **Enabled** when refreshing the page. Errors at this stage typically indicate a problem with either the listener configuration or the network. Review the listener settings and check the network.

NOTE: When you reload a package that contains enabled listeners, the listeners will be enabled automatically when the package reloads. If the package contains disabled listeners, they will remain disabled when the package reloads.

► *To enable a listener*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. On the Listeners screen, select **Enabled** from the list in the **State** field. Integration Server Administrator enables the listener.
4. The state changes to **Pending enabled**. After refreshing the Listeners page, you should see the state changed to **Enabled**.

   After a listener is enabled, a connection exists between SOPERA Adapter and the SOPERA infrastructure.

TIP! The **Enable all suspended** link helps you change the state quickly for multiple listeners.

7.1.4 Viewing Listeners

You can view listeners and each listener's parameters from Integration Server Administrator. You can also view the notification order of a listener.

► *To view listeners*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**. The Listeners screen appears, listing all of the current listeners.
3. To view a listener's parameters:

   a) On the Listeners screen, click the **View** icon for the listener that you want to see.

   b) The View Listener screen displays the parameters for the listener.
4. Click **View Notification Order** to view the notification order of a listener.

The View Listener screen displays the order of the notifications for the listener. To change the notification order for the listener, refer to the procedure in Editing Listeners for detailed instructions.

5. Click **Return to SOPERA Adapter Listeners** to return to the Listeners screen.

7.1.5 Editing Listeners

You use Integration Server Administrator to edit the listener in the following situations:

- If you need to select a newly configured connection, or if you need to change any listener properties you can update the listener parameters.
- If you need to change the order of the notifications that are associated with the listener.

► *To edit a listener*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. On the Listeners screen, make sure that the listener is disabled before editing. To disable the listener, see Disabling Listeners.
4. On the Listeners screen, click the **Edit** icon for the listener that you want to edit.

   The Edit Listener screen displays the current parameters for the listener. Update the listener's parameters by typing or selecting the values you want to specify.

   For descriptions of the listener parameters, see Configuring Listener.
5. Click **Save Changes** to save the listener and return to the Listeners screen.

► *To edit the notification order of a listener*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. On the Listeners screen, make sure that the listener is disabled before editing. To disable the listener, see Disabling Listeners for details.
4. On the Listeners screen, click the **Edit** icon for the listener that you want to edit.
5. On the Edit Listener screen, click **Edit Notification Order**.
6. On the Edit Notification Order screen, use the **Up** and **Down** buttons to determine the processing order in which SOPERA Adapter invokes the notifications.

   NOTE: For better processing results, arrange your notifications from ascending to descending order, starting with the most detailed notifications to the least detailed notifications.
7. Click **Save Changes**.
8. Click **Return to Edit Listeners** to return to the Edit Listener screen.

7.1.6 Copying Listeners

You can copy an existing listener to create a new listener with the same or similar properties without having to type or specify all properties for the listener. You copy adapter listeners using Integration Server Administrator.

► *To copy a listener*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. On the Listeners screen, click the **Copy** icon for the listener that you want to copy.

   The Copy Listener screen displays the current parameters for the listener that you want to copy. Name the new listener and edit any listener parameters as needed by typing or selecting the values you want to specify.

   For descriptions of the listener parameters, see Configuring Listener.
4. Click **Save Changes** to save the listener and return to the Listeners screen.

7.1.7 Deleting Listeners

If you no longer want to use a listener, use the following instructions to delete the listener. You use Integration Server Administrator to delete listeners.

IMPORTANT! Ensure that there are no notifications attached to the listener that you delete. You cannot change which listener a notification uses after the notification is configured. However, you can change the parameters for an existing listener. For instructions, see Editing Listeners.

► *To delete a listener*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. On the Listeners screen, make sure that the listener is disabled before deleting it. To disable the listener, see Disabling Listeners for details.
4. On the Listeners screen, click the **Delete** icon for the listener you want to delete.

   Integration Server deletes the listener.

7.1.8 Suspending Listeners

You can suspend listeners for an indefinite period of time. Suspended listeners cannot be edited or deleted.

IMPORTANT! Suspending listeners for SOPERA Adapter has the same effect as disabling them. For more information about disabling listeners, see Disabling Listeners.

► *To suspend listeners*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. Click **Suspend all enabled** to change the state to suspended for multiple listeners.

When you suspend a listener, the action may not take effect right away. You may have to wait as long as the time specified in the Timeout parameter for the listener. If one or more messages appear on the queue within that time interval, the adapter may receive and process the first message.

7.1.9 Disabling Listeners

Listeners must be disabled before you can edit or delete them. You disable listeners using Integration Server Administrator.

► *To disable a listener*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, click **Listeners**.
3. On the Listeners screen, select **Disabled** from the list in the **State** field. Integration Server Administrator disables the listener.

When you disable a listener, the action may not take effect right away. You may have to wait as long as the time specified in the Timeout parameter for the listener. If one or more messages appear on the queue within that time interval, the adapter may receive and process the first message.

7.2 Listener Notifications

This section describes how to create, modify, and delete listeners notifications.

► *To prepare to configure a new listener notification*

1. Make sure that you have webMethods administrator privileges so that you can access SOPERA Adapter's administrative screens. For information about setting user privileges, see the *Administering webMethods Integration Server* guide.
2. Start Integration Server and Integration Server Administrator, if they are not already running.
3. Using Integration Server Administrator, make sure that the WmSoperaAdapter package is enabled. To verify the status of the WmSoperaAdapter package, see Enabling and Disabling Packages.
4. Configure a listener using Integration Server Administrator. For more information on how to configure a new listener, see Configuring Listeners.

5. Using Designer, create a user-defined package to contain the listener, if you have not already done so. For more information about managing packages, see Package Management for details.

7.2.1 Dependencies for Listener Notifications

The following table lists other objects you must configure or tasks you must complete to use listener notifications:

Task	Use this tool
1. Configure an adapter connection. For details, see Configuring Adapter Connections.	Integration Server Administrator
2. Configure an adapter listener. For details, see Configuring Listeners.	Integration Server Administrator
3. Configure the notification. For instructions on how to configure notifications, see Configuring Listener Notifications.	Designer
4. Enable the notifications. For instructions on how to enable notifications, see Enabling Listener Notifications.	Integration Server Administrator

7.2.2 Configuring Listener Notifications

You configure listener notifications using Designer.

► *To configure a listener notification*

1. Start Designer.
2. Right-click the package in which the notification should be contained and select **New > Adapter Notification**.
3. Select the parent namespace and type a name for the adapter notification.
4. Click **Next**.
5. Select SOPERA Adapter as the adapter type and click **Next**.
6. Select **SOPERA provider invoking an IS service** as the adapter notification template and click **Next**.
7. Select the appropriate **Notification Listener Name** and click **Next**.
8. Click **Finish**.

   Designer creates a listener notification and a publishable document type, and the editor for the adapter notification appears.

9. In the editor for adapter notifications, select the **Adapter Settings** tab to confirm notification properties such as the **Adapter Name**, **Adapter Listener Name**, and **Adapter Notification Template** as necessary.
10. In the editor for adapter notifications, select the **SOPERA provider invoking an IS service** tab and specify the following fields:

Field	Description
SOPERA Service Name	The name of the service under which the specified Integration Server service will be registered. For example: `{http://service.sopware.org/ExampleURI}ExampleService`
SOPERA Operation Name	The name of the operation in the specified SOPERA service. For example: `NotificationFS`
Integration Server Service Name	The qualified name of the Integration Server service that will be exposed through the SOPERA infrastructure. For example: `pub.math:addInts` **NOTE:** The input and output parameters of the specified Integration Server service must be document references. The input parameter is required, but the output parameter is optional. If no output parameter is found, the adapter creates a ONEWAY operation. Otherwise, the adapter creates a REQUEST-RESPONSE operation in the SOPERA infrastructure.
Use Existing SOPERA Service	Select this check box if you want to use an existing SOPERA service specification. When selected, the SOPERA service and operation will be loaded from the SOPERA Service Registry. You can then select the service and operation you require in the **SOPERA Service Name** and **SOPERA Operation Name** fields. **IMPORTANT**! When this option is selected, the Integration Server service will overwrite the current provider definition stored in the registry.
Use HTTPS	Select this check box if you want to offer Integration Server services via HTTPS. The HTTP and HTTPS ports are configured in the SOPERA Adapter configuration file. See Completing the Installation for details.

Field	Description
Use Plain XML	When selected, the service description will not contain any of the data structure given in the signature. **NOTE:** Selecting this option works for services with one **requestMessage** input parameter and one **responseMessage** output parameter, and is recommended when conversion to IData is not necessary or should be avoided for performance reasons.

11. From the File menu, select **Save**.

7.2.3 Enabling Listener Notifications

After you configure a listener notification, you need to enable it using Integration Server Administrator.

► *To enable a listener notification*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, select **Listener Notifications**.
3. On the Listener Notifications screen, click **No** in the **Enabled** column for the listener notification you want to enable.

   The Integration Server Administrator enables the listener notification and displays a **Yes** in the **Enabled** column.

7.2.4 Testing Listener Notifications

You can test listener notifications to ensure that you have configured them correctly.

► *To test listener notifications*

1. Configure a listener using Integration Server Administrator. For instructions to configure a listener, see Configuring Listeners.
2. Configure a listener notification using Designer. For instructions to configure a notification, see Configuring Listener Notifications.
3. Enable the listener notification using Integration Server Administrator. For instructions to enable a listener notification, see Enabling Listener Notifications.
4. Enable the listener using Integration Server Administrator. For instructions to enable a listener, see Enabling Listeners.
5. On your SOPERA infrastructure, invoke the service registered when creating the listener notification.

7.2.5 Viewing Listener Notifications

You use Integration Server Administrator or Designer to view listener notifications.

► *To view listener notifications using Integration Server Administrator*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, select **Listener Notifications**.

   The Listener Notifications screen appears, listing all the listener notifications.

► *To view a listener notification using Designer*

1. In Designer, expand the package and folder that contain the listener notification you want to view.
2. Click the listener notification that you want to view.

   Designer displays the configured listener notification in the adapter's adapter notification editor.

7.2.6 Editing Listener Notifications

You use Designer to edit listener notifications. When editing the listener notification, you can also edit the publishable document type associated with the asynchronous listener notifications.

Listener notifications must be disabled before you can edit or delete them.

► *To edit a listener notification*

1. In Designer, expand the package and folder that contain the listener notification you want to edit.
2. Select the listener notification you want to edit.
3. The adapter's adapter notification editor displays details about the configured listener notification.
4. Modify the values for the listener notification's parameters as needed. For detailed descriptions of the listener notification's parameters, see Configuring Listener Notifications.

   NOTE: Because listener notifications inherently depend on listeners, you cannot change a listener for a listener notification after you configure it.

7.2.7 Deleting Listener Notifications

If you no longer want to use a particular SOPERA Adapter listener notification, you can delete it by following the instructions in this section. You delete listener notifications using Designer. Listener notifications must be disabled before you can edit or delete them.

► *To delete a listener notification*

1. In Designer, expand the package and folder that contains the listener notification you want to delete.
2. Right-click the listener notification and click **Delete**.

7.2.8 Disabling Listener Notifications

You disable listener notifications using Integration Server Administrator.

► *To disable a listener notification*

1. In the Integration Server Administrator navigation area, click **Adapters > SOPERA Adapter**.
2. In the SOPERA Adapter menu, select **Listener Notifications**.

   The Listener Notifications screen appears, listing all the listener notifications.
3. On the Listener Notifications screen, click **Yes** in the **Enabled** column for the listener notification you want to disable.
4. The listener notification becomes disabled and **No** displays in the **Enabled** column.

8 Integration Scenarios

8.1 Calling Request-Response and One-Way SOPERA Services

Calling request-response and one-way SOPERA services means that a request message is sent out using an instance of the SOPERA Service Backbone (SBB). For request-response, additionally, a response message is expected.

Request-response and one-way SOPERA services can be integrated quite similarly. An adapter service template is configured to call a specific SOPERA service. The resulting adapter service can then be used in Integration Server flows.

8.2 Calling Integration Server Services from the SOPERA Infrastructure

You call Integration Server Services from SOPERA when you want to:

- Offer custom Integration Server services (implemented, for example, as flow or Java services)
- Offer Integration Server adapter functionality
- Implement existing SOPERA service specification
- Offer built-in Integration Server services

NOTE: Offering built-in Integration Server services is not recommended because built-in Integration Server services are rather low-level, technical services.

When you want to call Integration Server Services from the SOPERA infrastructure, make sure that you:

- **Configure the HTTPS Transport**. To offer the Integration Server services via HTTPS, select the **Use HTTPS** check box when you configure the adapter notification and configure an HTTPS port. For information about configuring adapter notifications, see Configuring Listener Notifications. For information about configuring an HTTPS port, see Completing the Installation.
- **Export and Import the Security Certificate.** To export the certificate from the WmSoperaAdapter keystore, use this command:

  ```
  C:\temp>keytool -export -alias wmsopera -keystore keystore_wmsopera.jks
   -rfc -file wmsopera.cer
  ```

  To import the certificate into the client keystore, use this command:

  ```
  C:\temp>keytool -import -alias WmSoperaAdapter -file wmsopera.cer
   -keystore
  C:\SOPERA\ServiceBackbone\work\components\org.sopware.SOPEngine\install\
  conf\transport\certs.jks
  ```

9 Adapter Logging

The following section describes logging information for SOPERA Adapter.

9.1 Adapter Logging Levels

SOPERA Adapter uses Integration Server logging mechanism to log messages. You can configure and view Integration Server logs to monitor and troubleshoot SOPERA Adapter. For detailed information about logging in Integration Server, including instructions for configuring and viewing the different kinds of logs supported by the server, see the *webMethods Logging Guide*.

9.1.1 Configuring Adapter Logging Levels

Beginning with Integration Server 7.1, you can configure different logging levels for SOPERA Adapter.

► *To access the adapter's logging information*

1. From the Integration Server Administrator screen, select **Settings > Logging**.

   The Logging Settings screen appears. The Loggers section has **Adapters** included in the Facility section.

2. Expand the **Adapters** tree to see a list of all installed adapters with their code number and adapter description, along with the logging level.

► *To change logging settings for the adapter*

1. From the Integration Server Administrator screen, select **Settings > Logging**.

   The Logging Settings screen appears. From the Logging Settings screen, select **Edit Logging Settings**. Select the required **Level of logging** for SOPERA Adapter.

2. Click **Save Changes**.

For complete information about specifying the amount and type of information to include in the log, see the *webMethods Audit Logging Guide*.

9.2 SOPERA Message Logging

You can also configure how the SBB Library generates logging output. The SOPERA Adapter SBB Library uses the standard Java logging mechanism provided by the java.util.logging package.

To enable logging for the Service Backbone, you must set the java.util.logging.config.file JVM system property to point to a properties file that specifies the logging configuration for the SBB library. For example:

```
-Djava.util.logging.config.file=mylogging.properties
```

If the java.util.logging.config.file system property is not defined, the Log Manager reads its initial configuration from a properties file located in the *$<JAVA_DIR>*/lib/logging.properties JRE directory, where *$<JAVA_DIR>* is the JAVA directory used by the Integration Server.

A sample configuration file can be located in your local SOPERA ServiceBackbone installation at:

SOPWare_directory/ServiceBackbone/work/components/org.sopware.SOPEngine/install/conf/logging.properties

For more information about how to configure Java logging, see the SOPERA Installation and Operations Guide and the Sun documentation.

9.3 Adapter Message Logging

Integration Server maintains several types of logs; however, SOPERA Adapter only logs messages to the audit, error, and server logs. Because SOPERA Adapter works in conjunction with the WmART package, the adapter's messages and exceptions typically appear within log messages for the WmART package. The following table describes the type of messages SOPERA Adapter logs into each type of Integration Server log:

Log	Description
Audit	You can monitor individual adapter services using the audit log as you would audit any service in the Integration Server. The audit properties for an adapter service are available in the SOPERA Adapter service template on the **Audit** tab.
Error	SOPERA Adapter automatically posts fatal-level and error-level log messages to the error log. These log messages appear as adapter run-time messages.
Server	SOPERA Adapter posts messages to the server log, depending on how the server log is configured. Fatal-level through debug-level log messages appear as adapter run-time log messages. Trace-level log messages appear as SOPERA Adapter log messages.

The SOPERA Adapter's log messages appear in the following format, ADA.0510.*nnnnc*, where:

- ADA is the facility code that indicates that the message is from an adapter.
- 0510 is the SOPERA Adapter major code, which indicates that the error is generated by SOPERA Adapter.
- *nnnn* represents the error's minor code. For detailed descriptions of the SOPERA Adapter's minor codes, see SOPERA Adapter Error Codes.
- *c* represents the message's severity level (optional).

To monitor SOPERA Adapter's log messages in the Server log, ensure that your server log's logging settings are configured to monitor the following facilities:

- 0113 Adapter Runtime (Managed Object)
- 0114 Adapter Runtime
- 0115 Adapter Runtime (Listener)
- 0116 Adapter Runtime (Notification)
- 0117 Adapter Runtime (Adapter Service)
- 0118 Adapter Runtime (Connection)
- 0121 Adapter Runtime (SCC Transaction Manager)
- 0126 Adapter Runtime (SCC Connection Manager)

9.4 SOPERA Adapter Exception Handling

If a SOPERA Adapter object (for example, a connection or service) encounters an error with the SOPERA Infrastructure, it will throw an adapter error coupled with the SOPERA error, exactly as it was thrown by the SOPERA infrastructure. For example, if an adapter service fails on the SOPERA infrastructure at run time because the adapter failed to invoke a SOPERA service, you will receive an adapter error. This error indicates that the adapter service failed, and the adapter error will contain the specific error generated on the SOPERA infrastructure indicating why the service failed.

9.5 SOPERA Adapter Error Codes

The following section lists the SOPERA Adapter's error codes and provides information on the error message, reason, and possible action for each error.

5502 Unable to create the node *document_name* **under package** *package_name***. Ensure that you have sufficient permission.**

Cause: Error. Occurs when the adapter fails to create folders for document generation.

Response: Make sure that you have webMethods administrator privileges and sufficient credentials. For information about setting user privileges, see the *Administering webMethods Integration Server* guide.

5555 Exception interfacing the Service Backbone.

Cause: Error. Generic error that occurs during the handling of the SOPERA Service Backbone library.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5556 Failed to release message handler for service *IS_service_name***.**

Cause: Error. Occurs when the adapter fails to release the message handler for the specified Integration Server service.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5557 Failed to create service skeleton for service *IS_service_name***.**

Cause: Error. Occurs when the adapter fails to create the specified Integration Server service as a SOPERA service.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5558 Unable to retrieve XML string from SOPERA incoming message.

Cause: Error. Occurs when receiving an XML message from the SOPERA infrastructure.

Response: Verify the input message to the adapter service or notification.

5559 Unable to invoke IS service to satisfy SOPERA request. It might be that the service does not adhere to the predefined signature (one input parameter incomingMessage and one output parameter outgoing message).

Cause: Error. Occurs when the adapter fails to invoke an Integration Server service in response to a request from the SOPERA infrastructure.

Response: Check the Integration Server error logs for the Integration Server service invoked and verify the implementation of the Integration Server service.

5561 Unable to produce outgoing message for SOPERA.

Cause: Error. Occurs when the adapter fails to create a response message from the Integration Server service invoked by the SOPERA infrastructure.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5562 Unable to send service response via SOPERA.

Cause: Error. Occurs when the adapter fails to send an Integration Server service response message to SOPERA.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5563 SBB error while invoking SOPERA service *SOPERA_service_name* **operation** *operation_name* **with request message** *request_message_sent***.**

Cause: Error. Generic error that occurs when invoking an adapter service.

Response: Verify the values of the input parameters for the service. Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5564 Error identifying how many attachments the response message contains.

Cause: Error. Occurs when attempting to get the attachment count in the response message in a RequestResponse Call or the pub.wmsopera.service:getNonBlockingServiceResponse service.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5567 No message handler delivered.

Cause: Error. No responseMessageHandler passed to the `pub.wmsopera.service:getNonBlockingServiceResponse` service.

Response: Ensure that the message handler object is passed as input to the `pub.wmsopera.service:getNonBlockingServiceResponse` service.

5568 Error generating IS document *document_name* **in package** *package_name***. Errors:** *error_text*

Cause: Error. Occurs when the adapter fails to generate a document from a SOPERA service. The value of *error_text* is null when no document is generated.

Response: Ensure that the correct folder name is appended to both the Input document type and the Output document type.

5569 Invalid value of document type. Either folder name or document type name is missing in *document_type_value*

Cause: Error. Occurs when either the folder name or document type name is missing from the value of the timeout parameter.

Response: Ensure that the document type value has folder name and document name separated by ':'.

5570 Unable to read and transform SOPERA request message into readable format for the Integration Server service.

Cause: Error. Occurs when the adapter fails to read or transform a SOPERA request message into an Integration Server service.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5571 Unable to instantiate Admin Facade at *Admin_Facade_location***.**

Cause: Error. Occurs when there is an error during the AdminFacade creation when enabling an adapter connection or starting Integration Server.

Response: Verify the connection parameters in the SOPERA Adapter sopera.config file, located in the *IntegrationServer_directory*\packages\WmSoperaAdapter\config directory. For information about the SOPERA Adapter configuration file, see Completing the Installation.

5572 Unable to instantiate ServiceBackbone.

Cause: Error. Occurs when there is an error during the ServiceBackbone creation when enabling an adapter connection or starting Integration Server.

Response: Verify the connection parameters in the SOPERA Adapter sopera.config file, located in the *IntegrationServer_directory*\packages\WmSoperaAdapter\config directory. For information about the SOPERA Adapter configuration file, see Completing the Installation.

5601 Unable to create/register the one-way service *IS_service_name* **in the SOPERA registry.**

Cause: Error. Occurs when there is an issue during the creation or registration of an Integration Server service as a one-way service in the SOPERA service registry.

Response: Check the AdminFacade error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5602 Unable to create/register the request-response service *IS_service_name* **in the SOPERA registry.**

Cause: Error. Occurs when there is an issue during the creation or registration of an Integration Server service as a request-response service in the SOPERA service registry.

Response: Check the AdminFacade error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5603 Transport not enabled or port not configured.

Cause: Error. Occurs when the transport port property is not configured properly in the SOPERA Adapter configuration file.

Response: Configure the transport port property as required. For information about the SOPERA Adapter configuration file, see Completing the Installation.

5604 Unable to create/register provider for service: *IS_service_name*

Cause: Error. Occurs for any error occur during the registration of a new SOPERA service provider for the specified Integration Server service.

Response: Check the AdminFacade error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5605 Required parameters not provided for the notification.

Cause: Error. Validation error for a notification in which required message parameters are missing.

Response: Check all required parameters in the notification and set them as required. For information about configuring adapter notifications, see Configuring Listener Notifications.

5606 Invalid SOPERA service name *service_name* **found. The service name should be of the format {<namespace_uri>}<service_name>.**

Cause: Error. Occurs when an incorrect SOPERA service name is specified while configuring the notification to invoke an Integration Server service via SOPERA.

Response: Check if the service name is specified in the following format and correct it if it is not:
`{<namespace_uri}<service_name>`
Example:
`{http://myservice.com/example} TestService`

5573 Error while retrieving the SOPERA service *service_name* **from the registry.**

Cause: Error. Occurs when attempting to retrieve the specified adapter service name instance from the registry name.

Response: Ensure that the service name is correct and the service is registered. See the AdminFacade logs for the exact reason for the error.

5574 Error while processing input parameters while invoking SOPERA service *service_name*

Cause: Error. Occurs when the adapter is unable to convert the input message into XML or the request message is missing.

Response: Recreate the input document type for the specified service.

5575 Fault message received - error encountered in service provider while invoking SOPERA service.

Cause: Error. The exception occurs during the invocation of the SOPERA provider service.

Response: Check the error logs at the SOPERA provider end.

5576 SBB Error encountered when receiving non-blocking response from provider.

Cause: Error. Occurs when the adapter is unable to get non-blocking response from the `pub.wmsopera.service:getNonBlockingServiceResponse` service.

Response: Check the SOPERA infrastructure error in the logs to see the cause of the exception and take appropriate action. If the problem persists, contact Software AG Global Support.

5577 Invalid value of timeout parameter.

Cause: Error. Occurs when the value of the timeout parameter is not numeric.

Response: Verify the value of the timeout parameter passed in the `pub.wmsopera.service:getNonBlockingServiceResponse` service.

10 Adapter Built-in Services

10.1 Overview

This appendix describes the built-in services provided with the WmSoperaAdapter package of webMethods SOPERA Adapter.

10.1.1 WmSoperaAdapter Package

The WmSoperaAdapter package contains the public services used to manage the SOPERA services.

pub.wmsopera.admin.adminService

Contains the package startup and shutdown services.

pub.wmsopera.service

Contains the utility services to manage the SOPERA services.

pub:wmsopera.service:getNonBlockingServiceResponse

Processes the returned request message handler, when the **SOPERA service consumer** adapter service template is configured as a non-blocking request-response service.

Input Parameters

timeout	**String** Optional. The timeout, in milliseconds, specifies how long to wait for a response message. Valid values are: • A negative value means wait forever. • `0` means return immediately regardless of whether the message has arrived. This is the default value.
messageAsObject	**String** Optional. Valid values are: • `true` The response is returned as an Object. • `false` The response is returned as a String. This is the default value.
responseMessageHandler	**Object** The message handler returned from the **SOPERA service consumer** adapter service template. Typically, you should use a flow service to map the `responseMessageHandler` output value returned from the adapter service to this parameter.

Output Parameters

responseMessageObject	**Object** The response message as an Object, when the `messageAsObject` input parameter is set to `true`.
responseMessageString	**String** The response message as a String, when the `messsageAsObject` input parameter is set to `false`.