Oracle9*i*AS InterConnect Adapter for HTTP

Installation and User's Guide

Release 2 (9.0.2)

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Oracle9*i*AS InterConnect Adapter for HTTP Installation and User's Guide, Release 2 (9.0.2)

Part No. A95445-01

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Oracle9*i*AS InterConnect Adapter for HTTP Installation and User's Guide, Release 2 (9.0.2)

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Preface

This guide is the primary source of introduction, installation, configuration, and usage information for the Hypertext Transfer Protocol (HTTP) adapter.

This preface contains these topics:

- Audience
- Documentation Accessibility
- Organization
- Related Documentation
- Conventions

Audience

Oracle9iAS InterConnect Adapter for HTTP Installation and User's Guide is intended for developers who want to integrate an HTTP application with other applications using Oracle9*i*AS InterConnect.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle Corporation is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at

```
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Accessibility of Code Examples in Documentation   JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

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Organization

This document contains:

Chapter 1, "Introduction"

This chapter describes the HTTP adapter and the hardware and software requirements.

Chapter 2, "Installation and Configuration"

This chapter describes installation and configuration of the HTTP adapter.

Chapter 3, "Design Time and Runtime Concepts"

This chapter describes the design time and runtime concepts for the HTTP adapter.

Chapter 4, "Frequently Asked Questions"

This chapter provides answers to frequently asked questions about the HTTP adapter.

Appendix A, "adapter.ini Example File"

This appendix shows an adapter.ini example file.

Related Documentation

For more information, see these Oracle resources:

- *Oracle9iAS InterConnect User's Guide* in the Oracle9*i* Application Server Documentation Library

- *Oracle9i InterConnect Adapter Configuration Editor User's Guide* on the Oracle9*i* Application Server Integration CD-ROM

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```

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```
http://otn.oracle.com/admin/account/membership.html
```

If you already have a username and password for OTN, then you can go directly to the documentation section of the OTN Web site at

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```

Conventions

This section describes the conventions used in the text and code examples of this documentation set. It describes:

- Conventions in Text
- Conventions in Code Examples
- Conventions for Microsoft Windows Operating Systems

Conventions in Text

We use various conventions in text to help you more quickly identify special terms. The following table describes those conventions and provides examples of their use.

Convention	Meaning	Example
Bold	Bold typeface indicates terms that are defined in the text or terms that appear in a glossary, or both.	When you specify this clause, you create an **index-organized table**.
Italics	Italic typeface indicates book titles or emphasis.	*Oracle9i Database Concepts*
		Ensure that the recovery catalog and target database do *not* reside on the same disk.
`UPPERCASE monospace (fixed-width) font`	Uppercase monospace typeface indicates elements supplied by the system. Such elements include parameters, privileges, datatypes, RMAN keywords, SQL keywords, SQL*Plus or utility commands, packages and methods, as well as system-supplied column names, database objects and structures, usernames, and roles.	You can specify this clause only for a `NUMBER` column.
		You can back up the database by using the `BACKUP` command.
		Query the `TABLE_NAME` column in the `USER_TABLES` data dictionary view.
		Use the `DBMS_STATS.GENERATE_STATS` procedure.

Convention	Meaning	Example
`lowercase monospace (fixed-width) font`	Lowercase monospace typeface indicates executables, filenames, directory names, and sample user-supplied elements. Such elements include computer and database names, net service names, and connect identifiers, as well as user-supplied database objects and structures, column names, packages and classes, usernames and roles, program units, and parameter values. **Note:** Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.	Enter `sqlplus` to open SQL*Plus. The password is specified in the `orapwd` file. Back up the datafiles and control files in the `/disk1/oracle/dbs` directory. The `department_id`, `department_name`, and `location_id` columns are in the `hr.departments` table. Set the `QUERY_REWRITE_ENABLED` initialization parameter to `true`. Connect as `oe` user. The `JRepUtil` class implements these methods.
`lowercase italic monospace (fixed-width) font`	Lowercase italic monospace font represents placeholders or variables.	You can specify the `parallel_clause`. Run `Uold_release.SQL` where `old_release` refers to the release you installed prior to upgrading.

Conventions in Code Examples

Code examples illustrate SQL, PL/SQL, SQL*Plus, or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT username FROM dba_users WHERE username = 'MIGRATE';
```

The following table describes typographic conventions used in code examples and provides examples of their use.

Convention	Meaning	Example
[ ]	Brackets enclose one or more optional items. Do not enter the brackets.	`DECIMAL (digits [ , precision ])`
{ }	Braces enclose two or more items, one of which is required. Do not enter the braces.	`{ENABLE	DISABLE}`
|	A vertical bar represents a choice of two or more options within brackets or braces. Enter one of the options. Do not enter the vertical bar.	`{ENABLE	DISABLE}` `[COMPRESS	NOCOMPRESS]`

Convention	Meaning	Example
`...`	Horizontal ellipsis points indicate either:	
	■ That we have omitted parts of the code that are not directly related to the example	`CREATE TABLE ... AS` *`subquery`*`;`
	■ That you can repeat a portion of the code	`SELECT` *`col1`*`,` *`col2`*`, ... ,` *`coln`* `FROM employees;`
`.` `.` `.`	Vertical ellipsis points indicate that we have omitted several lines of code not directly related to the example.	

Other notation	You must enter symbols other than brackets, braces, vertical bars, and ellipsis points as shown.	`acctbal NUMBER(11,2);`
		
		`acct    CONSTANT NUMBER(4) := 3;`

Italics	Italicized text indicates placeholders or variables for which you must supply particular values.	`CONNECT SYSTEM/`*`system_password`* `DB_NAME =` *`database_name`*

UPPERCASE	Uppercase typeface indicates elements supplied by the system. We show these terms in uppercase in order to distinguish them from terms you define. Unless terms appear in brackets, enter them in the order and with the spelling shown. However, because these terms are not case sensitive, you can enter them in lowercase.	`SELECT last_name, employee_id FROM employees;`
		
		`SELECT * FROM USER_TABLES;`
		
		`DROP TABLE hr.employees;`

lowercase	Lowercase typeface indicates programmatic elements that you supply. For example, lowercase indicates names of tables, columns, or files.
	
	Note: Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.
		`SELECT last_name, employee_id FROM employees;`
		
		`sqlplus hr/hr`
		
		`CREATE USER mjones IDENTIFIED BY ty3MU9;`

Conventions for Microsoft Windows Operating Systems

The following table describes conventions for Microsoft Windows operating systems and provides examples of their use.

Convention	Meaning	Example
Choose Start >	How to start a program.	To start the Oracle Database Configuration Assistant, choose Start > Programs > Oracle - *HOME_NAME* > Configuration and Migration Tools > Database Configuration Assistant.
File and directory names	File and directory names are not case sensitive. The following special characters are not allowed: left angle bracket (<), right angle bracket (>), colon (:), double quotation marks ("), slash (/), pipe (|), and dash (-). The special character backslash (\) is treated as an element separator, even when it appears in quotes. If the file name begins with \\, then Windows assumes it uses the Universal Naming Convention.	`c:\winnt"\"system32` is the same as `C:\WINNT\SYSTEM32`
C:\>	Represents the Windows command prompt of the current hard disk drive. The escape character in a command prompt is the caret (^). Your prompt reflects the subdirectory in which you are working. Referred to as the *command prompt* in this manual.	`C:\oracle\oradata>`

	The backslash (\) special character is sometimes required as an escape character for the double quotation mark (") special character at the Windows command prompt. Parentheses and the single quotation mark (') do not require an escape character. Refer to your Windows operating system documentation for more information on escape and special characters.	`C:\>exp scott/tiger TABLES=emp QUERY=\"WHERE job='SALESMAN' and sal<1600\"`
		
		`C:\>imp SYSTEM/password FROMUSER=scott TABLES=(emp, dept)`

HOME_NAME	Represents the Oracle home name. The home name can be up to 16 alphanumeric characters. The only special character allowed in the home name is the underscore.	`C:\> net start OracleHOME_NAMETNSListener`

1

Introduction

This chapter describes the Hypertext Transfer Protocol (HTTP) adapter and the hardware and software requirements.

This chapter contains these topics:

- HTTP Adapter Overview

- HTTP Adapter System Requirements

- HTTP Adapter Known Limitations

> **Note:** This guide provides information about installing and configuring the HTTP adapter to use either Secure Socket Layer (SSL) functionality (HTTPS) or non-SSL functionality (HTTP).

HTTP Adapter Overview

The HTTP adapter enables an HTTP application to be integrated with other applications using Oracle9*i*AS InterConnect. This adapter is useful in all enterprise application integration (EAI) environments that use the HTTP transport protocol. EAI is the integration of applications and business processes within the same company (known as an enterprise).

The HTTP adapter performs the following tasks:

- Monitors incoming messages received in the form of HTTP requests to the HTTP adapter servlet

- Sends messages to remote Web servers through a proxy host

The payload type (the data being delivered to a destination) for the HTTP adapter is one of the following:

- Extensible Markup Language (XML) data

- Data definition description language (D3L) data

The HTTP adapter supports HTTP versions 1.0 and 1.1. The HTTP adapter also provides SSL functionality (known as HTTPS) with Oracle JavaSSL, which uses a wallet generated from Oracle Wallet Manager. You can also select cipher suites suitable for an SSL connection. Cipher suites control the combination of encryption and data integrity used by SSL. The HTTP adapter also supports sending HTTP requests and receiving HTTP replies through a proxy server.

Figure 1–1 depicts the data flow of incoming messages (from an HTTP client to Oracle9*i*AS InterConnect). Incoming messages are sent to a Web server⁄servlet container that relays the message to an HTTP receiver in the adapter through a remote method invocation (RMI).

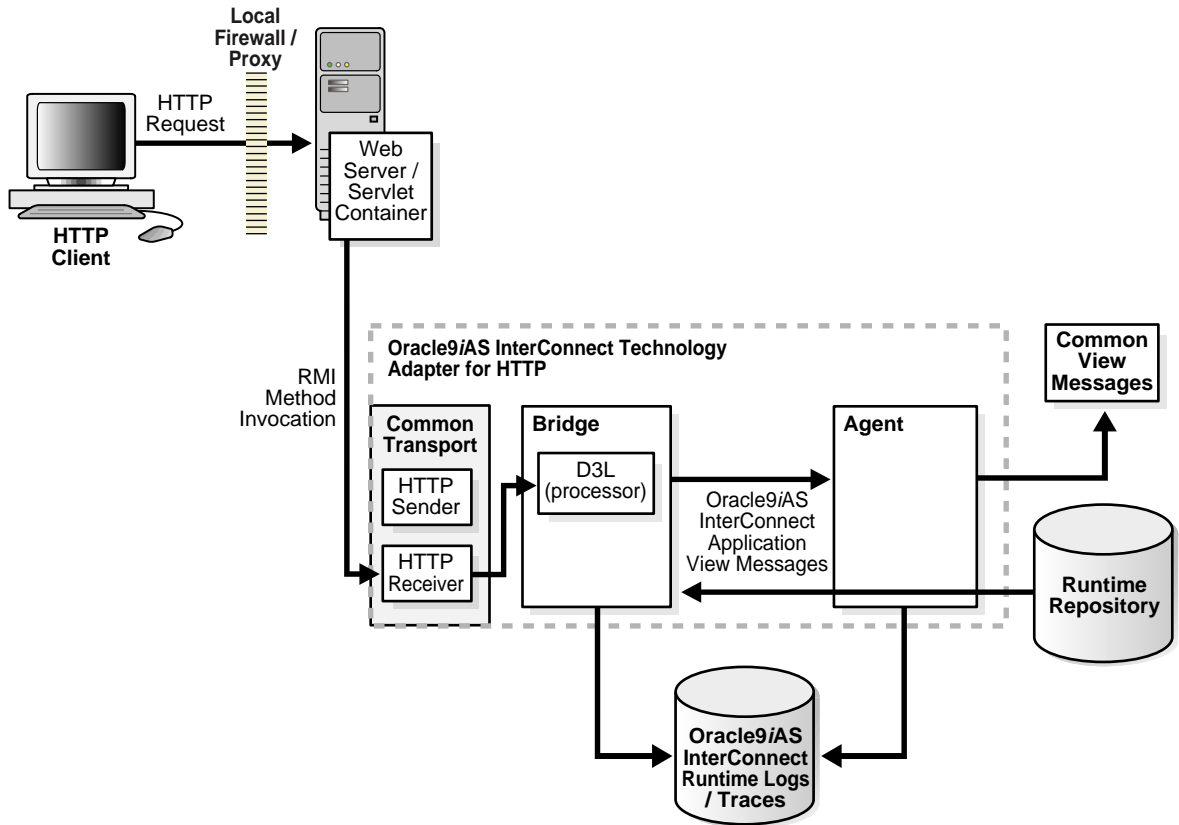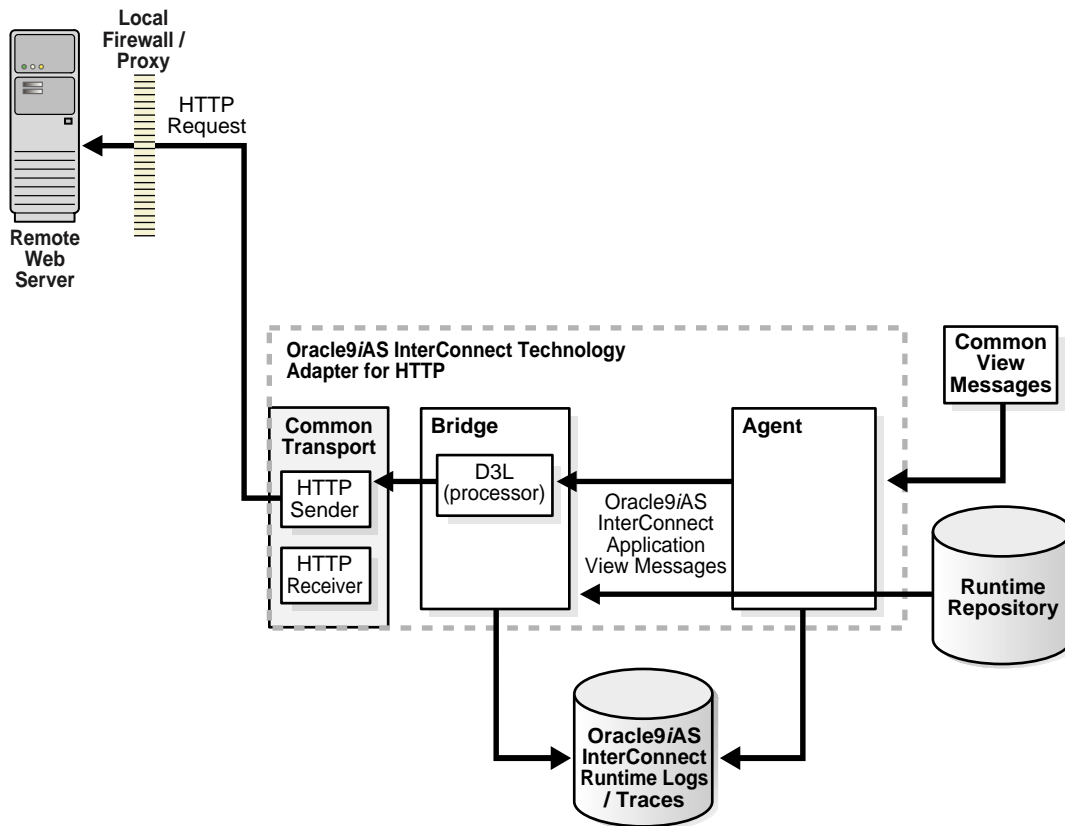*Figure 1–1   Incoming Messages*

Figure 1–2 depicts the data flow of outgoing messages (from Oracle9*i*AS InterConnect to a remote Web server). Outgoing messages are sent from an HTTP sender object in the adapter to a remote Web server.

Figure 1–2   Outgoing Messages

See Also: *Oracle9i Application Server Security Guide* for additional information about SSL and Oracle Wallet Manager

HTTP Adapter System Requirements

The following sections describe HTTP adapter system requirements:

- Hardware Requirements
- Software Requirements

Hardware Requirements

Table 1–1 lists the hardware requirements for the computer on which the Oracle HTTP adapter is to be installed.

Table 1–1   Hardware Requirements

Hardware	Windows NT/2000	UNIX
Memory	128 MB	128 MB
Service Pack	Windows NT 4.0 Service Pack 6 or later	Not applicable
	Windows 2000 Service Pack 1 or later	
Disk Space	500 MB	500 MB

Software Requirements

The following sections describe HTTP adapter software requirements:

- Operating System Requirements
- JRE Requirements
- Servlet Requirements

Operating System Requirements

Table 1–2 lists the software requirements for the computer on which the Oracle HTTP adapter is to be installed.

Table 1–2   Operating System Requirements

Operating System	Platform	Version
Windows NT/2000	Any	Version that supports at least 400 MHz
UNIX	IBM AIX-Based Systems	Version 4.3.3
	Compaq Tru64 UNIX	Version 5.0a/5.1
	HP 9000 Series HP-UX	Version 11.0/11i
	SUSE LINUX	Version 7.2
	Sun SPARC Solaris	Version 2.6

JRE Requirements

Oracle9*i*AS InterConnect uses Java Runtime Environment (JRE) 1.3, which is installed with its components.

Servlet Requirements

The HTTP adapter requires Oracle9*i*AS Containers for J2EE (OC4J), which is provided by Oracle9*i*AS. OC4J is not required to be installed on the computer on which the Oracle HTTP adapter is installed.

> **See Also:**   *Oracle9iAS Containers for J2EE User's Guide* for additional information on OC4J

HTTP Adapter Known Limitations

The HTTP adapter has the following limitations:

- Only the publish/subscribe model is supported.

- Only messages from a single endpoint (destination) are received.

- The sending endpoint and receiving endpoint are restricted to HTTP endpoints.

- Only the HTTP POST access method is supported by the HTTP adapter servlet for receiving incoming messages.

2

Installation and Configuration

This chapter describes Hypertext Transfer Protocol (HTTP) adapter installation and configuration.

This chapter contains these topics:

- Installing HTTP Adapter
- HTTP Adapter Configuration Parameters

Installing HTTP Adapter

This section contains these topics:

- Preinstallation Tasks
- Installation Tasks
- Postinstallation Tasks

Preinstallation Tasks

The HTTP adapter must be installed in one of the following Oracle homes:

- An existing Oracle9*i* Application Server home
- An existing Oracle9*i*AS Infrastructure database home
- An existing Oracle9*i*AS InterConnect home
- A new Oracle home (Oracle Universal Installer creates this Oracle home for you)

Consult the *Oracle9i Application Server Installation Guide* before proceeding with HTTP adapter installation. This guide includes the following information:

- CD-ROM mounting
- Oracle Universal Installer startup
- Oracle9*i*AS InterConnect software, hardware, and system requirements
- Oracle9*i*AS InterConnect installation

> **Note:** Oracle9*i*AS InterConnect is installable through the Oracle9*i*AS InterConnect Hub installation type. You must install the Oracle9*i*AS InterConnect Hub before proceeding with HTTP adapter installation.

Installation Tasks

To install the HTTP adapter:

1. Click Next on the Welcome screen.

The File Locations screen appears.

2. Enter the following information in the Destination fields:

- Name—The Oracle home name

- Path—The full path to the Oracle home in which to install the HTTP adapter

   Note: Do not change the path specified in the Source field. This is the location on the CD-ROM from which to install the HTTP adapter.

3. Click Next.

The Installation Types screen appears.

4. Select Oracle9*i*AS InterConnect Adapters and click Next.

The Available Product Components screen appears.

5. Select Oracle9*i*AS InterConnect HTTP Adapter and click Next.

6. If the HTTP adapter is not being installed on the same computer as Oracle9*i*AS InterConnect and another adapter is not installed in the current Oracle home, the Oracle9*i*AS InterConnect Hub Database screen appears. Enter the following information about Oracle9*i*AS InterConnect:

- Host Name—The hostname of the computer on which Oracle9*i*AS InterConnect is installed

- Port Number—The port number of the computer

- Database SID—The system identifier (SID) of the Oracle9*i*AS InterConnect Oracle9*i*AS Metadata Repository

- Password—The password for the Oracle9*i*AS Metadata Repository schema

The Oracle9*i*AS Metadata Repository stores metadata used by Oracle9*i*AS InterConnect to coordinate communication between components.

7. Click Next.

The Oracle9*i*AS InterConnect HTTP Adapter Configuration screen appears.

8. Enter the name of the application associated with the HTTP adapter. White spaces or blanks are not allowed. This is the same application name created or to be created in iStudio.

9. Click Next.

The Oracle9*i*AS InterConnect HTTP Adapter usage screen appears.

10. Select one of the following options and go to the step specified to enable the sending and receiving of messages, the sending of messages only, or the receiving of messages only from an external data source, such as an HTTP server. You can change the values for these selections later by editing parameter settings in the `adapter.ini` file.

If You Select...	Then Click Next and Go to Step...
Configure for both sending and receiving messages	11
Configure for sending messages ONLY	11
Configure for receiving messages ONLY	13

11. Enter the following information in the Oracle9*i*AS InterConnect HTTP Adapter Configuration - Configure sending endpoint information screen:

- URL—The URL of the outgoing HTTP server to which Oracle9*i*AS InterConnect sends messages. Enter the URL as follows:

  `http://hostname:port/path`

12. Click Next.

The installation screen that appears next is based on the selection you made in Step 10:

If You Selected...	Then Go to Step...
Configure for both sending and receiving messages	13
Configure for sending messages ONLY	15

13. Enter the following information in the Oracle9*i*AS InterConnect HTTP Adapter Configuration - Configure receiving endpoint information screen:

- Hostname—The hostname of the HTTP server from which Oracle9*i*AS InterConnect receives messages.

- Port Number—The port number of the HTTP server.

14. Click Next.

15. Complete any other fields for other components selected for installation, such as other adapters.

When finished, the Summary screen appears.

16. Select Install to install the HTTP adapter. The adapter is installed in the following directory:

Platform	Directory
Windows	`%ORACLE_HOME%\oai\9.0.2\adapters\`*Application*
UNIX	`$ORACLE_HOME/oai/9.0.2/adapters/`*Application*

Application is the value you specified in Step 8 on page 2-4. A `webapps` subdirectory is created in the *Application* directory identified in Step 16. `webapps` includes the following files created for the HTTP application:

- An EAR file (`oai.ear`)

- A `web.xml` file located in the `WEB-INF` directory

- An `application.xml` file located in the `META-INF` directory

Postinstallation Tasks

HTTP adapter installation creates an `adapter.ini` file that consists of configuration parameters read by the HTTP adapter at startup. The configuration parameter settings are appropriate for most HTTP application environments. If you want to customize some `adapter.ini` file parameter settings for the HTTP application, see the following sections:

- Customizing the Payload Datatype

- Customizing the Sending Endpoints

- Customizing the Authentication Scheme

- Customizing a Proxy Host

- Customizing a Secure Socket Layer Environment

- Customizing the Receiving Endpoints

- Manually Deploying an EAR File

See Also:

- Table 2–1 on page 2-11 for the location of the adapter.ini file
- Table 2–6 on page 2-18 for adapter.ini file parameter setting information specific to the HTTP adapter

Customizing the Payload Datatype

Payload data is the data sent between applications. If you want to change the payload datatype from the default of XML to the data definition description language (D3L), edit the following parameters in the adapter.ini file.

To customize the payload datatype:

1. Set the ota.type parameter to the payload type D3L. For example:

```
ota.type=D3L
```

2. Copy the D3L XML files associated with the HTTP application to the directory in which the adapter.ini file is located.

3. Set the ota.d3ls parameter to specify the D3L files associated with the HTTP application. For example:

```
ota.d3ls=person1.xml,person2.xml
```

> **See Also:** The following parameter descriptions for additional information:
>
> - ota.type on page 2-18
> - ota.d3ls on page 2-20

Customizing the Sending Endpoints

If you want to customize the behavior of the sending endpoints (destinations) for messages, edit the following parameter in the adapter.ini file.

To customize the sending endpoints:

1. Set the http.sender.timeout parameter to the timeout interval in milliseconds for HTTP connections. This parameter automatically defaults to a value of 60000 during installation. For example:

```
http.sender.timeout=10000
```

> **See Also:** http.sender.timeout parameter description on page 2-18 for additional information

Customizing the Authentication Scheme

If you want to use an authentication scheme, edit the following parameters in the
`adapter.ini` file. These parameters are not automatically set to default values
during installation.

To customize the authentication scheme:

1. Set the `http.sender.authtype` parameter to the authentication type to use.
   For example:

   ```
   http.sender.authtype=basic
   ```

2. Set the `http.sender.realm` parameter to the realm for the authentication
   scheme. For example:

   ```
   http.sender.realm=ipt
   ```

3. Set the `http.sender.username` parameter to the authentication username.
   For example:

   ```
   http.sender.username=joe
   ```

4. Set the `http.sender.password` parameter to the authentication password.
   For example:

   ```
   http.sender.password=100100101
   ```

   See Also: The following parameter descriptions for additional
   information:

   - `http.sender.authtype` on page 2-18
   - `http.sender.realm` on page 2-18
   - `http.sender.username` on page 2-18
   - `http.sender.password` on page 2-18
   - "How do I make the adapter.ini file password parameters
     secure?" on page 4-4 for instructions on encrypting the
     `http.sender.password` parameter password

Customizing a Proxy Host

If you want to use a proxy host, edit the following parameters in the `adapter.ini` file. These parameters are not automatically set to default values during installation.

To customize a proxy host:

1. Set the `http.sender.proxy_host` parameter to the hostname of the proxy server. For example:

```
http.sender.proxy_host=www-proxy.foo.com
```

2. Set the `http.sender.proxy_port` parameter to the port number of the proxy server. For example:

```
http.sender.proxy_port=80
```

> **See Also:** The following parameter descriptions for additional information:
>
> - `http.sender.proxy_host` on page 2-19
> - `http.sender.proxy_port` on page 2-19

Customizing a Secure Socket Layer Environment

If you want to use the secure socket layer (SSL) environment for sending messages, edit the following parameters in the `adapter.ini` file. These parameters are not automatically set to default values during installation.

To customize a secure socket layer environment:

1. Set the `http.sender.wallet_location` parameter to the directory path and name of the wallet file. For example:

```
http.sender.wallet_location=/private/foo/certdb.txt
```

2. Set the `http.sender.wallet_password` parameter to the Oracle Wallet Manager password. For example:

```
http.sender.wallet_password=4341193845566
```

3. Set the `http.sender.cipher_suites` parameter to the cipher suites used in the secure connection. For example:

```
http.sender.cipher_suites=SSL_RSA_WITH_NULL_SHA,SSL_RSA_WITH_3DES_EDE_CBC_
SHA
```

> **See Also:** The following parameter descriptions for additional information:
>
> - http.sender.wallet_location on page 2-19
> - http.sender.wallet_password on page 2-19
> - http.sender.cipher_suites on page 2-19
> - "How do I make the adapter.ini file password parameters secure?" on page 4-4 for instructions on encrypting the http.sender.wallet_password parameter password

Customizing the Receiving Endpoints

If you want to customize the behavior of receiving endpoint messages, edit the following parameter in the adapter.ini file.

To customize the receiving endpoints:

1. Set the http.receiver.registry_port parameter to the remote method invocation (RMI) registry port for communicating with the servlet. This parameter automatically defaults to a value of 9901 during installation. For example:

```
http.receiver.registry_port=3500
```

> **See Also:** http.receiver.registry_port parameter description on page 2-19 for additional information

Manually Deploying an EAR File

If the Oracle9*i*AS Containers for J2EE (OC4J) is installed on a separate computer from the HTTP adapter, you must manually:

- Edit the web.xml file
- Deploy the EAR file (oai.ear) located in the directory of the HTTP adapter

To manually deploy an EAR file:

1. Go to the following directory:

```
cd myHTTPapphome
```

where *myHTTPapphome* is the directory in which the HTTP application is installed and the value you defined in Step 8 on page 2-4.

2. Extract all files from the oai.ear file:

```
jar xvf oai.ear
```

3. Extract all files from the `oai.war` file:

```
jar xvf oai.war
```

4. Go to the following directory:

```
cd WEB-INF
```

5. Use a text editor to open the `web.xml` file:

`web.xml` specifies the RMI information that must match with the setting in the `adapter.ini` file. For example, `rmiHost` must match the hostname of the computer on which the HTTP adapter is installed. The HTTP adapter serves as the RMI server. The transport servlet makes an RMI call to submit the requests sent by the external application. You can also edit the logging options that are turned off by default.

The following `web.xml` file shows the `rmiHost` parameter with a computer hostname setting of `prodserver10`:

```
<init-param>
  <param-name>rmiHost</param-name>
  <param-value>prodserver10</param-value>
</init-param>
<init-param>
  <param-name>rmiPort</param-name>
  <param-value>9901</param-value>
</init-param>
<init-param>
  <param-name>instanceName</param-name>
  <param-value>oai</param-value>
</init-param>
<!-- set the following parameters if logging is needed. -->
<init-param>
  <param-name>isLogOn</param-name>
  <!-- enter true/false -->
  <param-value>false</param-value>
</init-param>
<init-param>
  <param-name>logDir</param-name>
  <!-- directory where log file is placed. -->
  <param-value></param-value>
</init-param>
<init-param>
  <param-name>logLevel</param-name>
  <!-- choose one of the levels: debug, status, or  error -->
  <param-value></param-value>
 </init-param>
```

6. Save the changes and exit the file.

7. Return to the following directory:

   ```
   cd myHttpApphome
   ```

8. Restore the `oai.war` and `oai.ear` files:

   ```
   jar cvf oai.war WEB-INF
   jar cvf oai.ear META-INF/ oai.war
   ```

9. See the *Oracle9i Application Server Administrator's Guide* for instructions on using the Distributed Configuration Management (DCM) command line utility to deploy the EAR file.

HTTP Adapter Configuration Parameters

Table 2–2, Table 2–3, and Table 2–4 describe executable files, configuration files, and directories. These files and directories are accessible from the directory shown in Table 2–1:

Table 2–1   HTTP Adapter Directory

On...	Go to...
UNIX	`$ORACLE_HOME/oai/9.0.2/adapters/Application`
Windows	`%ORACLE_HOME%\oai\9.0.2\adapters\Application`

Table 2–2   HTTP Executable Files

File	Description
`start.bat` (Windows) `start` (UNIX)	Takes no parameters, starts the adapter
`stop.bat` (Windows) `stop` (UNIX)	Takes no parameters; stops the adapter
`ignoreerrors.bat` (Windows) `ignoreErrors` (UNIX)	If an argument is specified, then the given error code is ignored: `ignoreerrors errorCodeToBeIgnored` If no argument is specified, then all error codes specified in the `ErrorCodes.ini` file are ignored: `ignoreerrors`

See Also: "HTTP Error Codes" on page 3-12

Table 2–3 HTTP Configuration Files

File	Description
ErrorCodes.ini (Windows and UNIX)	Should contain one error code for each line
adapter.ini (Windows and UNIX)	Consists of all the initialization parameters that the adapter reads at startup

See Also: Appendix A, "adapter.ini Example File"

Table 2–4 HTTP Directories

Directory	Description
persistence	The messages are persisted (made available) in this directory. Do not edit this directory or its contents.
logs	The logging of adapter activity is done in subdirectories of the logs directory. Subdirectory names take the following form: *timestamp_in_milliseconds* Each time the adapter is run, a new subdirectory is created in which logging is done in an oailog.txt file.

adapter.ini Initialization Parameter File

This section contains these topics:

- Agent Connection Parameters
- HTTP Adapter-Specific Parameters

Agent Connection Parameters

The agent component of the HTTP adapter reads the `adapter.ini` file at runtime to access HTTP adapter parameter configuration information. Table 2–5 lists the parameter name, a description for each parameter, the possible and default values, and an example.

Table 2–5   Agent Connection Parameters

Parameter	Description	Example
application	Specifies the name of the application to which this adapter connects. This must match with the name specified in iStudio during creation of metadata. Use any alphanumeric string. There is no default value.	application=aqapp
partition	Specifies the partition this adapter handles as specified in iStudio. Any alphanumeric string is a possible value. There is no default value.	partition=germany
instance_number	Specifies the instance number to which this adapter corresponds. Specify a value only if you want to have multiple adapter instances for the given application with the given partition. Possible values are any integer greater than or equal to 1. There is no default value.	instance_number=1
agent_log_level	Specifies the amount of logging necessary. Possible values are: 0=errors only 1=status and errors 2=trace, status, and errors The default value is 1.	agent_log_level=2
agent_subscriber_name	Specifies the subscriber name used when this adapter registers its subscription. The possible value is a valid Oracle Advanced Queue subscriber name. There is no default value.	agent_subscriber_name=httpapp
agent_message_selector	Specifies conditions for message selection when registering its subscription with the hub. The possible value is a valid Oracle Advanced Queue message selector string. There is no default value.	agent_message_selector=recipient_list, like '%,aqapp,%'

Table 2–5 Agent Connection Parameters

Parameter	Description	Example
agent_reply_ subscriber_name	Specifies the subscriber name used when multiple adapter instances for the given application with the given partition are used. This parameter is optional if only one instance is running. The possible value is the application name (*parameter*:*application*) concatenated with the instance number (*parameter*:*instance_number*). There is no default value.	If application=httpapp and instance_number=2, then agent_reply_subscriber_ name=httpapp2
agent_reply_ message_selector	Used only if multiple adapter instances exist for the given application with the given partition. The possible value is a string built using the concatenated application name (*parameter*: *application*) with the instance number (*parameter*: *instance_number*). There is no default value.	If application=httpapp and instance_number=2, then agent_reply_message_ selector=recipient_list, like '%,httpapp2,%'
agent_tracking_ enabled	Specifies if message tracking is enabled. Set this parameter to false to turn off all tracking of messages. Set this parameter to true to track messages with tracking fields set in iStudio. Possible values are true or false. The default value is true.	agent_tracking_ enabled=true
agent_ throughput_ measurement_ enabled	Specifies if the throughput measurement is enabled. Set this parameter to true to turn on all throughput measurements. Possible values are true or false. The default value is true.	agent_throughput_ measurement_enabled=true
agent_use_ custom_hub_dtd	Specifies whether to use a custom document type definition (DTD) for the common view message when handing it to the hub (the repository in which metadata is stored). By default, adapters use an Oracle9*i*AS InterConnect-specific DTD for all messages sent to the hub, as other Oracle9*i*AS InterConnect adapters retrieve the messages from the hub and know how to interpret them. Set this parameter to true if for every message, the DTD imported for the message of the common view is used instead of the Oracle9*i*AS InterConnect DTD. Only set this parameter to true if an Oracle9*i*AS InterConnect adapter is not receiving the messages from the hub. Possible values are true or false. There is no default value.	agent_use_custom_hub_ dtd=false

Table 2–5   Agent Connection Parameters

Parameter	Description	Example
`agent_metadata_ caching`	Specifies the metadata caching algorithm. Possible values are: ■ `startup`—Cache everything at startup. This may take a while if a lot of metadata is in the repository. ■ `demand`—Cache metadata as it is used. ■ `none`—No caching. This slows down performance. The default value is `demand`.	`agent_metadata_ caching=demand`
`agent_dvm_table_ caching`	Specifies the domain value mapping (DVM) table caching algorithm. Possible values are: ■ `startup`—Cache all DVM tables at startup. This may take a while if many tables are in the repository. ■ `demand`—Cache tables as they are used. ■ `none`—No caching. This slows down performance. The default value is `demand`.	`agent_dvm_table_ caching=demand`
`agent_lookup_ table_caching`	Specifies the lookup table caching algorithm. Possible values are: ■ `startup`—Cache all lookup tables at startup. This may take a while if many tables are in the repository. ■ `demand`—Cache tables as they are used. ■ `none`—No caching. This slows down performance. The default value is `demand`.	`agent_lookup_table_ caching=demand`
`agent_delete_ file_cache_at_ startup`	With any of the agent caching methods enabled, metadata from the repository is cached locally on the file system. Set this parameter to `true` to delete all cached metadata on startup. Possible values are `true` or `false`. The default value is `false`. **Note:** After changing metadata or DVM tables for this adapter in iStudio, you must delete the cache to guarantee access to new metadata or table information.	`agent_delete_file_cache_ at_startup=false`

Table 2–5   Agent Connection Parameters

Parameter	Description	Example
agent_max_ao_ cache_size	Specifies the maximum number of application objects' metadata to cache. Possible values are any integer greater than or equal to 1. The default value is 200.	agent_max_ao_cache_ size=200
agent_max_co_ cache_size	Specifies the maximum number of common objects' metadata to cache. Possible values are any integer greater than or equal to 1. The default value is 100.	agent_max_co_cache_ size=100
agent_max_ message_ metadata_cache_ size	Specifies the maximum number of messages' metadata (publish/subscribe and invoke/implement) to cache. Possible values are any integer greater than or equal to 1. The default value is 200.	agent_max_message_ metadata_cache_size=200
agent_max_dvm_ table_cache_size	Specifies the maximum number of DVM tables to cache. Possible values are any integer greater than or equal to 1. The default value is 200.	agent_max_dvm_table_ cache_size=200
agent_max_ lookup_table_ cache_size	Specifies the maximum number of lookup tables to cache. Possible values are any integer greater than or equal to 1. The default value is 200.	agent_max_lookup_table_ cache_size=200
agent_max_queue_ size	Specifies the maximum size to which internal Oracle9*i*AS InterConnect message queues can grow. Possible values are any integer greater than or equal to 1. The default value is 1000.	agent_max_queue_size=1000
agent_ persistence_ queue_size	Specifies the maximum size to which internal Oracle9*i*AS InterConnect persistence queues can grow. Possible values are any integer greater than or equal to 1. The default value is 1000.	agent_persistence_queue_ size=1000
agent_ persistence_ cleanup_interval	Specifies how often to run the persistence cleaner thread (in milliseconds). Possible values are any integer greater than or equal to 30000. The default value is 60000.	agent_persistence_ cleanup_interval=60000
agent_ persistence_ retry_interval	Specifies how often the persistence thread retries when it fails to send an Oracle9*i*AS InterConnect message. Possible values are any integer greater than or equal to 5000. The default value is 60000.	agent_persistence_retry_ interval=60000
service_path	Windows only. Specifies the value to which to set the environment variable PATH. The PATH variable is set to the specified value before forking the Java VM. Typically, list all directories here that contain all necessary DLLs. Possible values are the valid PATH environment variable setting. There is no default value.	service_ path=%JREHOME%\bin;D:\ora cle\ora902\bin

Table 2–5   Agent Connection Parameters

Parameter	Description	Example
service_ classpath	Windows only. Specifies the class path used by the adapter Java VM. If a custom adapter is developed and, as a result, the adapter is to pick up any additional jars, add the jars to the existing set of jars being picked up. Possible values are the valid class path. There is no default value.	service_ classpath=D:\oracle\ ora902\oai\902\lib\ oai.jar;%JREHOME%\lib\rt. jar;D:\oracle\ora902\jdbc \classes12.zip
service_class	The entry class for the Windows NT service. A possible value is oracle/oai/agent/service/AgentService. There is no default value.	service_ class=oracle/oai/agent/ service/AgentService
service_max_ java_stack_size	Windows only. Specifies the maximum size to which the Java VM's stack can grow. Possible values are the valid Java VM maximum native stack size. The default value is the default for the Java VM.	service_max_java_stack_ size=409600
service_max_ native_stack_ size	Windows only. Specifies the maximum size to which the Java VM's native stack can grow. Possible values are the valid Java VM maximum native stack size. The default value is the default for the Java VM.	service_max_native_stack_ size=131072
service_min_ heap_size	Windows only. Specifies the minimum heap size for the adapter Java VM. Possible values are the valid Java VM heap sizes. The default value is 536870912.	service_min_heap_ size=536870912
service_max_ heap_size	Windows only. Specifies the maximum heap size for the adapter Java VM. Possible values are any valid Java VM heap sizes. The default value is 536870912.	service_max_heap_ size=536870912
service_num_vm_ args	Windows only. Specifies the number of service_vm_arg*number* parameters specified. Possible values are the number of service_vm_arg*number* parameters. There is no default value.	service_num_vm_args=1
service_vm_ arg*number*	Windows only. Specifies any additional arguments to the Java VM. For example, to retrieve line numbers in any of the stack traces, set service_vm_arg1=java.compiler=NONE. If a list of arguments to specify exists, use multiple parameters as shown in the example by incrementing the last digit starting with 1. Be sure to set service_num_vm_args correctly. Possible values are any valid Java VM arguments. There is no default value.	service_vm_ arg1=java.compiler=NONE service_vm_ arg2=oai.adapter=database

HTTP Adapter-Specific Parameters

Table 2–6 lists the parameters specific to the HTTP adapter.

Table 2–6   HTTP Adapter-Specific Values

Parameter	Description	Example
bridge_class	Specifies the entry class for the HTTP adapter. A value must be specified and cannot be modified later. A possible value is `oracle.oai.agent.adapter.technology.Tech Bridge`. There is no default value.	`bridge_ class=oracle.oai.agent. adapter.technology.Tech Bridge`
ota.send.endpoint	Defines the sending endpoint URL for the HTTP adapter. There is no default value. The URL is of the form: `http(s)://`*hostname*`:`*port*`/`*path*	`ota.send.endpoint=http: //site.com:8888/servlet /inbound`
ota.receive. endpoint	Defines the receiving endpoint URL for the HTTP adapter. There is no default value. The URL is of the form: `http(s)://`*hostname*`:`*port*`/`*path*	`ota.receive.endpoint= http://site.com:8888/ servlet/inbound`
ota.type	Defines the message payload type the HTTP adapter handles for both incoming and outgoing messages. The options are `XML`, `XML_NVP`, or `D3L`. The default value is `XML`.	`ota.type=XML`
http.sender.timeo ut	Times out an HTTP connection. The unit is in milliseconds. The default is set to `60000` milliseconds (60 seconds).	`http.sender.timeout= 10000` (Sets timeout to 10 seconds)
http.sender.autht ype	Set if authentication is needed. The valid options are `basic` or `digest`. There is no default value.	`http.sender.authtype= basic`
http.sender.realm	Specifies the realm for the authentication scheme. There is no default value.	`http.sender.realm=ipt`
http.sender.usern ame	Specifies the authentication username. There is no default value.	`http.sender.username= joe`
http.sender.passw ord	Specifies the password used in the `sender.password` authentication. There is no default value. This password can also be encrypted by running the encrypt tool and renaming this parameter to `encrypted_http.sender.password`. **See Also:** "How do I make the adapter.ini file password parameters secure?" on page 4-4 for instructions on encrypting the user password	`http.sender.password= httpuser`

Table 2–6 HTTP Adapter-Specific Values

Parameter	Description	Example
http.sender.proxy_host	Specifies the proxy hostname. There is no default value.	http.sender.proxy_host=www-proxy.foo.com
http.sender.proxy_port	Specifies the port number for the proxy host. This is needed if the proxy host is set. There is no default value.	http.sender.proxy_port=80
http.sender.wallet_location	Needed if SSL is used. This specifies the path and name of the wallet file. There is no default value.	http.sender.wallet_location=/private/foo/certdb.txt
http.sender.wallet_password	Needed if SSL is used. This specifies the password for the Oracle Wallet Manager. There is no default value. This password can also be encrypted by running the encrypt tool and renaming this parameter to encrypted_http.sender.wallet_password. **See Also:** "How do I make the adapter.ini file password parameters secure?" on page 4-4 for instructions on encrypting the wallet password	http.sender.wallet_password=walletuser
http.sender.cipher_suites	Optional parameter for choosing the cipher suites. The selections are: SSL_RSA_WITH_3DES_EDE_CBC_SHA SSL_RSA_WITH_RC4_128_SHA SSL_RSA_WITH_RC4_128_MD5 SSL_DH_anon_WITH_3DES_EDE_CBC_SHA SSL_DH_anon_WITH_RC4_128_MD5 SSL_DH_anon_WITH_DES_CBC_SHA SSL_RSA_WITH_DES_CBC_SHA SSL_RSA_EXPORT_WITH_RC4_40_MD5 SSL_RSA_EXPORT_WITH_DES40_CBC_SHA SSL_DH_anon_EXPORT_WITH_RC4_40_MD5 SSL_DH_anon_EXPORT_WITH_DES40_CBC_SHA SSL_RSA_WITH_NULL_SHA SSL_RSA_WITH_NULL_MD5	http.sender.cipher_suites=SSL_RSA_WITH_NULL_SHA,SSL_RSA_WITH_3DES_EDE_CBC_SHA
http.receiver.registry_port	Specifies the RMI port used by the HTTP receiver. The default is 9901.	http.receiver.registry_port=9901

Table 2–6   HTTP Adapter-Specific Values

Parameter	Description	Example
`http.receiver.instance_name`	Specifies the instance name of the HTTP receiver. The default is `oai`. If the default value is not used, the `instanceName` of the initial parameter of the transport servlet must be modified to match this instance name.	`http.receiver.instance_name=oai`
`http.receiver.customized_class`	Specifies the class name for customizing the HTTP response.	`http.receiver.customized_class=MyBanner`
`ota.d3ls`	Specifies the list of D3L XML files used by this bridge. Each business event handled by the bridge must have its own D3L XML file. When a new D3L XML file is imported in iStudio for use by an application using the HTTP adapter, the parameter must be updated and the HTTP adapter restarted.	`ota.d3ls=person.xml,person1.xml`

3

Design Time and Runtime Concepts

This chapter describes the design time and runtime concepts for the Hypertext Transfer Protocol (HTTP) adapter.

This chapter contains these topics:

- HTTP Adapter Design Time Concepts
- HTTP Adapter Runtime Concepts

HTTP Adapter Design Time Concepts

 The HTTP adapter can handle XML and data definition description language (D3L) structured payload. For example:

- Pure XML data—string beginning with `<?xml . . .`

- Fixed layout, typically binary data described by a D3L XML file

> **See Also:** *Oracle9iAS InterConnect User's Guide* for additional information on D3L

XML Payload Type

You can import a document type definition (DTD) in iStudio that determines how the HTTP adapter parses a received XML document into an Oracle9*i*AS InterConnect application view event. In addition, the DTD describes how an inbound application view message is converted into an XML document. Use the message type option XML when defining a new integration point in any of the Event Wizards.

You must also ensure that the parameter `ota.type` in the `adapter.ini` file is set to `XML` or `XML_NVP`, instead of `D3L`. Both the `XML` and `XML_NVP` settings operate with XML messages.

`XML` and `XML_NVP` differ in that `XML_NVP` supports legacy applications where the body of the HTTP message is prepended with the string `message=`.

When the HTTP adapter operates in XML payload mode, no translations are performed on the messages (between native view and application view) sent or received through the HTTP adapter. This is apart from the implied straight ASCII to Java object conversion (parsing). Any Extensible Stylesheet Language transformations (XSLT) are performed before sending or receiving an XML document to or from Oracle9*i*AS InterConnect.

D3L Payload Type

The HTTP adapter supports both XML and D3L datatypes. The HTTP adapter converts and translates application view messages to native format and vice versa.

An application based on the HTTP adapter can use the iStudio Message Type D3L and the iStudio D3L Data Type Import option when importing a datatype. In doing so, messages received or sent by the HTTP adapter must adhere to the fixed byte level layout defined in a D3L XML file.

The D3L Data Type Import option can also define common view datatypes.

> **See Also:** *Oracle9iAS InterConnect User's Guide* for additional information on D3L and common view datatypes

HTTP Adapter Runtime Concepts

This section describes the key runtime components of the HTTP adapter.

This section contains these topics:

- HTTP Receiver (Incoming Messages from HTTP Client to Oracle9iAS InterConnect)

- HTTP Sender (Outgoing Messages from Oracle9iAS InterConnect to HTTP Web Server)

- HTTP Adapter Message Format

- HTTP Message Headers

- HTTP Receiver Diagnostics

- Customizable Messages

- Starting the HTTP Adapter

- Stopping the HTTP Adapter

- HTTP Error Codes

> **See Also:** *Oracle9iAS InterConnect User's Guide* for an example use case involving an Oracle adapter, the Advanced Queuing adapter, and D3L

HTTP Receiver (Incoming Messages from HTTP Client to Oracle9*i*AS InterConnect)

The HTTP adapter receives incoming messages from a single receiving endpoint, which is a servlet serving the POST requests from HTTP clients.

In a typical deployment, the servlet runs in Oracle9*i*AS Containers for J2EE (OC4J). The servlet processes the HTTP client requests and relays them to the HTTP receiver through remote method invocation (RMI). Upon receiving the message, the HTTP receiver passes the message to the HTTP bridge.

The HTTP bridge uses the D3L XML file based on name/value pair or magic value message header attributes (a sequence of bytes in the native format message header). The HTTP bridge uses this information to parse from native format message into an Oracle9*i*AS InterConnect message object and translate to an application view event. The agent converts the application view event into a common view event and sends it to Oracle9*i*AS InterConnect for further routing and processing.

Once the message is successfully sent to Oracle9*i*AS InterConnect, the HTTP adapter returns a 200 message acknowledgment.

The properties for the HTTP receiver are defined in the adapter.ini file and take the form of http.receiver.*.

> **See Also:**
>
> - *Oracle9iAS InterConnect User's Guide* for additional information on D3L name/value pair and magic value message header attributes
> - "Customizable Messages" on page 3-9
> - Figure 1–1, "Incoming Messages" on page 1-3
> - "HTTP Adapter-Specific Parameters" on page 2-18

HTTP Sender (Outgoing Messages from Oracle9*i*AS InterConnect to HTTP Web Server)

The HTTP adapter supports sending outgoing messages to multiple HTTP endpoints. The multiple endpoints feature provides flexibility for sending messages to different remote Web servers.

An endpoint is associated with a subscribing event in iStudio by adding the transport properties such as the HTTP endpoint as metadata for the event. This is done through the Modify Fields button of the Subscribe Wizard - Define Application View dialog. Once the association of endpoint and event is established, the message from the subscribing event is sent out to the HTTP endpoint.

For example, the metadata in Table 3–1 is associated with an event called sendOrder that sends an order to an HTTP server at foo.com with a path of /servlet/test.

Table 3–1   SendOrder Event Metadata

Parameter	Description
ota.endpoint=sendOrderAppEP	Specifies a unique endpoint name set in iStudio
ota.send.endpoint=http://foo.com/servlet/test	Specifies the HTTP adapter's sending endpoint set in the adapter.ini file

If no metadata is associated with an event, the endpoint specified by the parameter ota.send.endpoint in the adapter.ini file is used as the default endpoint.

The HTTP adapter consists of the HTTP bridge and runtime agent. When the agent has a message to send to an endpoint, the bridge is notified. The bridge then uses D3L XML to perform the translation of common view object to native format message. The native format message is then sent through the HTTP transport layer to an HTTP endpoint. The properties for the HTTP sender are defined in the adapter.ini file and take the form of http.sender.*.

See Also:

- Figure 1–2, "Outgoing Messages" on page 1-4
- "HTTP Adapter-Specific Parameters" on page 2-18
- Chapter 4 of the *Oracle9iAS InterConnect User's Guide* for information on adding transport properties as metadata in iStudio

HTTP Adapter Message Format

This section describes how to extract or send messages to the HTTP adapter using different payload types. The HTTP adapter expects all payload types to be sent using the POST method, which does not have the GET method's data length limitations.

D3L Payload Type

You must ensure that the ota.type parameter in the adapter.ini file is set to D3L to use this payload type. The HTTP adapter expects to receive a message from an HTTP client using the POST method. The data received with the POST method is interpreted as the payload. The HTTP adapter sends the payload with the POST method to either of the following:

- The endpoint associated with the event (if one is given)

- The default endpoint specified by the ota.send.endpoint parameter in the adapter.ini file

XML Payload Type

You must ensure that the ota.type parameter in the adapter.ini file is set to XML to use this payload type. The sending and receiving operation for the XML payload type is similar to D3L. With XML, the D3L transformation is not performed.

XML_NVP (XML Name-Value Pair) You must ensure that the ota.type parameter in the adapter.ini file is set to XML_NVP to use this payload type. The HTTP adapter expects the payload to be packaged in the following manner:

```
application= ..&...&message=<?xml . . . >
```

The value of the message name-value pair contains the payload. During the receiving operation, the HTTP adapter extracts the message name-value pair from the POST data and converts it to an Oracle9*i*AS InterConnect object. During the sending operation, the adapter packages the name-value pair and sends it through the POST method.

> **See Also:**   The ota.type parameter description on page 2-18 for information on setting the payload message type in the adapter.ini file

HTTP Message Headers

Example 3–1 shows the HTTP message header types and data sent by the HTTP adapter:

Example 3–1   HTTP Header Types and Data

```
OAI-MV = QA/V1 (Message Version)
CONNECTION = Keep-Alive, TE
CONTENT-TYPE = application/octet-stream
USER-AGENT = RPT-HTTPClient/0.3-2S
OAI-T = 0
OAI-BO = Persona
OAI-EV = QA/V1
TE = trailers, deflate, gzip, compress
ACCEPT-ENCODING = deflate, gzip, x-gzip, compress, x-compress
OAI-EN = newPerson1a (Event name)
CONTENT-LENGTH = 76
HOST = cc-sun.us.oracle.com:8888
OAI-APPLICATION = HTTP1A
```

The OAI-* headers are associated with a specific HTTP adapter. This information is useful in debugging and tracking. Table 3–2 lists and describes key OAI-* headers.

Table 3–2   OAI- Headers*

Header	Description
OAI-MV	Message version to which this message corresponds, as created in iStudio
OAI-T	Possible values are:
	0 (publish)
	1 (request)
	2 (reply)
	Only publish is supported in this release.
OAI-BO	Business object name to which this message corresponds
OAI-EV	Event version to which this message corresponds, as created in iStudio
OAI-EN	Oracle9*i*AS InterConnect event name
OAI-APPLICATION	HTTP adapter application name

HTTP Receiver Diagnostics

This section describes how to determine if the HTTP receiver is functioning properly.

1. Open a Web browser.

2. Enter the URL specified for the `ota.receive.endpoint` parameter in the `adapter.ini` file.

    If the servlet is deployed properly, the Web browser displays information similar to the following:

Please use HTTP POST to send request.

HOST	cchung-sun:8889
CONNECTION	keep-alive
USER-AGENT	Mozilla/4.7 [en] (WinNT; I)
ACCEPT	image/gif, image/x-xbitmap, image/jpeg, image/pjpeg, image/png, */*
ACCEPT-ENCODING	gzip
ACCEPT-LANGUAGE	en
ACCEPT-CHARSET	iso-8859-1,*,utf-8
VIA	1.0 inet-netcache2 (NetCache NetApp/5.1R2D10)
X-FORWARDED-FOR	144.25.140.180

rmiHost	localhost
rmiPort	9901
instanceName	ip
logging	on
log level	debug
log file	/private1/cchung/oc4j/j2ee/home/ts_ip_1010801927749.log

certs=

This page is useful for identifying information that the servlet reads from the `web.xml` file.

Customizable Messages

The HTTP adapter enables you to customize the message to send to the HTTP client. For a status 200 message reply, for example, you can provide a more useful message informing the user that the message has been accepted by a company.

To customize the HTTP response message:

1. Implement the following interface:

    ```
    oracle.oai.agent.adapter.transport.basic.HTTPCustomizedResponse.
    ```

    HTTPCustomizedResponse. has one method called createReplyMessage() to customize reply messages to an HTTP client.

    ```
    public interface HTTPCustomizedResponse {
      public String createReplyMessage(int status);
    }
    ```

2. Add the following parameter to the adapter.ini file:

    ```
    http.receiver.customized_class=class_name
    ```

3. Compile and create a jar file containing the class.

4. Add the jar file in the CLASSPATH of the HTTP adapter.

    The following example shows how to customize the 200 and 500 HTTP responses to better inform the user of their requests:

    ```
    import oracle.oai.adapter.agent.transport.TransportResponse;
    public class MyBanner implements HTTPCustomizedResponse {
        public String createReplyMessage(int status) {
            switch(status) {
                // OAI indicates to the transport layer that the message
                // has been processed successfully.
                case TransportResponse.TRANSPORT_ACK:
                      return "Request has been processed succuessfully.";
                break;
                // OAI indicates to the transport layer that the message cannot
                // be processed successfully.
                case TransportResponse.TRANSPORT_ERROR:
                      return "Please try again. The server cannot process your
    request.";
                break;
            }
            return "Message has unknown status.";
        }
    }
    ```

Starting the HTTP Adapter

Start the adapter using the start script located in the directory named after the Oracle HTTP application. On Windows NT or Windows 2000, you can also start it from the Services window available from the Start menu.

1. Access the Services window from the Start menu:

On...	Choose...
Windows NT	Start > Settings > Control Panel > Services
Windows 2000	Start > Settings > Control Panel > Administrative Tools > Services

The Services window appears.

2. Select the *OracleHome*9iASInterConnectAdapter-*Application* service.

3. Start the service based on the operating system:

On...	Choose...
Windows NT	Choose Start.
Windows 2000	Right-click the service and choose Start from the menu that appears.

See Also: "HTTP Adapter Configuration Parameters" on page 2-11 for the location of the start script

Log File Example of Successfully Started HTTP Adapter

Verify startup status by viewing the `oailog.txt` files. These files are located in the appropriate timestamped subdirectory of the `logs` directory of the HTTP adapter directory. Subdirectory names take the following form:

timestamp_in_milliseconds

The following file displays information about an HTTP adapter that started successfully:

```
D:\oracle\ora902\oai\9.0.2\adapters\httpapp>D:\oracle\ora902\oai\9.0.2\bin\JavaS
ervice.exe -debug "Oracle OAI Adapter 9.0.2
-httpapp" D:\oracle\ora9021\oai\9.0.2\adapters\httpapp adapter.ini
The Adapter service is starting..
Registering your application (HTTPAPP)..
Initializing the Bridge oracle.oai.agent.adapter.technology.TechBridge..
Starting the Bridge oracle.oai.agent.adapter.technology.TechBridge..
Service started successfully.
```

Stopping the HTTP Adapter

Stop the HTTP adapter using the `stop` script located in the directory named after the Oracle HTTP application. On Windows NT or Windows 2000, you can also stop it from the Services window available from the Start menu.

1. Access the Services window from the Start menu:

On...	Choose...
Windows NT	Start > Settings > Control Panel > Services
Windows 2000	Start > Settings > Control Panel > Administrative Tools > Services

The Services window appears.

2. Select the *OracleHome*`9iASInterConnectAdapter-`*Application* service.

3. Stop the service based on the operating system:

On...	Choose...
Windows NT	Choose Stop.
Windows 2000	Right-click the service and choose Stop from the menu that appears.

Verify stop status by viewing the `oailog.txt` files. These files are located in the appropriate timestamped subdirectory of the `logs` directory of the HTTP adapter directory.

> **See Also:** "HTTP Adapter Configuration Parameters" on page 2-11 for the location of the `stop` script

HTTP Error Codes

The HTTP adapter returns the standard HTTP status codes as outlined in Request For Comments (RFC) 2068. See Section 6.1.1 "Status Code and Reason Phrase" of this document.

> **See Also:** The following URL for access to RFC 2068:
>
> `http://www.w3.org/Protocols/`

4

Frequently Asked Questions

This chapter provides answers to frequently asked questions about the Hypertext Transfer Protocol (HTTP) adapter.

This chapter contains this topic:

- Troubleshooting Questions

Troubleshooting Questions

The following questions address troubleshooting issues for the HTTP adapter.

How do I know the HTTP adapter started properly?

View the `oailog.txt` file located in the appropriate timestamped subdirectory of the HTTP adapter `logs` directory.

On...	Go to...
UNIX	`$ORACLE_HOME/oai/9.0.2/adapters/`*`Application`*`/logs/`*`timestamp_in_ milliseconds`*
Windows	`%ORACLE_HOME%\oai\9.0.2\adapters\`*`Application`*`\logs\`*`timestamp_in_ milliseconds`*

where *`Application`* is the value you defined in Step 8 on page 2-4 and *`timestamp_in_milliseconds`* is the directory. If no exceptions are listed, the adapter started properly.

The HTTP adapter did not start properly - what is wrong?

View the exceptions in the adapter log file (`oailog.txt`). The exceptions provide information about inconsistencies. One possible reason is that the HTTP adapter did not connect to the repository. Ensure that the repository is started properly and the HTTP adapter connects to the repository once it is started properly. You do not need to restart the adapter.

> **See Also:** *Oracle9iAS InterConnect User's Guide* for instructions on starting the repository on UNIX and Windows

I changed an element in iStudio, but the HTTP adapter uses old information - what is happening?

The HTTP adapter caches the information from iStudio (the information that is stored in the repository) locally for better performance in a production environment. If you change something in iStudio and want to see the change in the runtime environment, you need to perform the following procedures:

To see iStudio changes in the runtime environment:

1. Stop the affected adapters.

2. Delete the adapter cache files.

3. Restart the adapter.

Each adapter has a `persistence` directory located in the directory named after the HTTP application. Deleting this directory when the adapter has been stopped makes the adapter obtain the new metadata from the repository when started.

If I cannot answer some HTTP configuration questions or I make a mistake during installation, can I edit these settings later?

Yes, edit the parameters in the following file:

On...	Go to...
UNIX	`$ORACLE_HOME/oai/9.0.2/adapters/`*Application*`/adapter.ini`
Windows	`%ORACLE_HOME%\oai\9.0.2\adapters\`*Application*`\adapter.ini`

> **Note:** All configuration parameters with the exception of `bridge_class` can be edited more than once.

> **See Also:** "adapter.ini Initialization Parameter File" on page 2-12 for parameter information

Can I install multiple HTTP adapters on the same computer?

The installer overwrites previous installations of the HTTP adapter if you try to install it a second time in the same Oracle home. However, you can have multiple Oracle homes on a computer and have one HTTP adapter in each Oracle home. When you install the HTTP adapter a second time, choose a different Oracle home from the first HTTP adapter.

How do I make the adapter.ini file password parameters secure?

In order to encrypt password values specified in the `adapter.ini` file, perform the following steps:

To encrypt password values:

1. Locate the password value to encrypt.

2. Run the encrypt utility to encrypt the password value. The encrypt utility is located in the `$ORACLE_HOME/oai/9.0.2/bin` directory for UNIX and the `%ORACLE_HOME%\oai\9.0.2\bin` directory for Windows. For example, to encrypt the `http.sender.password` parameter, enter the following:

   `encrypt password`

3. Prefix the name of the parameter in the `adapter.ini` file with `encrypted_:`

   `encrypted_http.sender.password`

4. Replace the value with the new encrypted value created in Step 2. For example, if you want to encrypt the password for the parameter `http.sender.password`, replace the line:

   `http.sender.password=HTTPuser`

   with the value you received from running the encrypt tool in Step 2:

   `encrypted_http.sender.password=11241107107110651080109410841073107010711081069`

   > **Note:** You can also encrypt the `http.sender.wallet_password` parameter by performing these instructions.

A

adapter.ini Example File

This appendix shows an `adapter.ini` example file.

This appendix contains this topic:

- adapter.ini Example File

    See Also: "HTTP Adapter Configuration Parameters" on page 2-11 for additional information on `adapter.ini` configuration parameters

adapter.ini Example File

This section shows an `adapter.ini` example file for the HTTP adapter.

```
#include <../../hub/hub.ini>
// *************
// ** Adapter **
// *************
// Application (as created in iStudio) that this Adapter corresponds to.
application=HTTPapp1
// Partition (as created in iStudio) that this Adapter corresponds to.
partition=
// If you want to have multiple Adapter instances for the given application with
the given partition, each Adapter should have an instance number.
//instance_number=2
// Bridge class
bridge_class=oracle.oai.agent.adapter.technology.TechBridge


//-----------------------------------------
// HTTP Adapter Endpoint information
//-----------------------------------------
// time out in milli seconds (default should be set to 60000 milli seconds)
// This is used to time-out a http connection. Use default.
//http.sender.timeout=

// set the following if authentication is needed.
// authentication type (Valid options: basic or digest)
http.sender.authtype= basic
http.sender.realm=ipt
http.sender.username=scott
encrypt_http.sender.password=1124110710711065108010941084107310701071107108110

// set the proxy parameters if proxy is needed.
http.sender.proxy_host=www-proxy.test.com
http.sender.proxy_port=80


// set the security parameters if SSL is used.
http.sender.wallet_location=certdb.txt
encrpyt_http.sender.wallet_
password=1124110710711065108010941084107310701071107108110701070
//
//    If this is not set, we will use the
//    default ciphers suites provided by
//    SSLSocketFactory.
```

```
//   The selections are:
//                      SSL_RSA_WITH_3DES_EDE_CBC_SHA
//                      SSL_RSA_WITH_RC4_128_SHA
//                      SSL_RSA_WITH_RC4_128_MD5
//                      SSL_DH_anon_WITH_3DES_EDE_CBC_SHA
//                      SSL_DH_anon_WITH_RC4_128_MD5
//                      SSL_DH_anon_WITH_DES_CBC_SHA
//                      SSL_RSA_WITH_DES_CBC_SHA
//                      SSL_RSA_EXPORT_WITH_RC4_40_MD5
//                      SSL_RSA_EXPORT_WITH_DES40_CBC_SHA
//                      SSL_DH_anon_EXPORT_WITH_RC4_40_MD5
//                      SSL_DH_anon_EXPORT_WITH_DES40_CBC_SHA
//                      SSL_RSA_WITH_NULL_SHA
//                      SSL_RSA_WITH_NULL_MD5
// Use "," as delimiter. An example cipher suites  is:
//   SSL_RSA_WITH_3DES_EDE_CBC_SHA,SSL_RSA_WITH_NULL_SHA
//
//http.sender.cipher_suites=



//----------------------------------------
// HTTP Receiver initialization variables
//----------------------------------------

// rmi port used by http receiver (default is 1099)
http.receiver.registry_port = 1099

// instance name to distinguish other instances
// of receiver
http.receiver.instance_name =oai


// A list of the D3L XML files used by this Bridge. Each business event handled
// by the Bridge must have it's own D3L XML file.
// Whenever a new D3L XML file has been imported in iStudio to be used by
// an application using the HTTP adapter, the following parameter must
// be updated and the adapter restarted.
ota.d3ls=person.xml, person1.xml


// ************
// ** Agent  ***
// ************
```

```
// Log level (0 = errors only, 1 = status and errors, 2 = trace, status and
errors).
agent_log_level=2

// Hub message selection information
agent_subscriber_name=HTTPapp1
agent_message_selector=recipient_list like '%,HTTPapp1,%'
// Only provide values for the next two parameters if you have multiple Adapter
instances for the given application with
the given partition.
//agent_reply_subscriber_name=
//agent_reply_message_selector=

// Set this to false if you want to turn off all tracking of messages (if true,
messages which have tracking fields set in
iStudio will be tracked)
agent_tracking_enabled=true

// Set this to false if you want to turn off all throughput measurements
agent_throughput_measurement_enabled=true

// By default, Adapters use an OAI specific DTD for all messages sent to the Hub
since other OAI Adapters will be
picking up the messages from the Hub and know how to interpret them. This should
be set to true if for every message,
you would like to use the DTD imported for that message's Common View instead of
the OAI DTD.  This should only be
set to true if an OAI Adapter is *NOT* receiving the messages from the Hub.
agent_use_custom_hub_dtd=false

// Sets the metadata caching algorithm.  The possible choices are startup (cache
everything at startup - this may take a
while if there is a lot of metadata in your Repository), demand (cache metadata
as it is used) or none (no caching - this
will slow down performance.)
agent_metadata_caching=demand

// Sets the DVM table caching algorithm.  The possible choices are startup
(cache all DVM tables at startup - this may
take a while if there are a lot of tables in your Repository), demand (cache
tables as they are used) or none (no caching
- this will slow down performance.)
agent_dvm_table_caching=demand
```

```
// Sets the lookup table caching algorithm.  The possible choices are startup
(cache all lookup tables at startup - this
may take a while if there are a lot of tables in your Repository), demand (cache
tables as they are used) or none (no
caching - this will slow down performance.)
agent_lookup_table_caching=demand

// If metadata caching, DVM table caching, or lookup table caching are turned on
(startup or demand) then the Adapter
caches metadata or DVM tables it retrieves from the Repository in a file cache.
When you restart the Adapter, it will not
have to get that metadata or DVM table from the Repository again because it is
in the cache files.  However, if you
change some metadata or DVM table using iStudio and you want the Adapter to use
those changes the next time it is
started, you can either delete the cache files or set this parameter to true
before restarting.
agent_delete_file_cache_at_startup=false

// Max number of application data type information to cache
agent_max_ao_cache_size=200

// Max number of common data type information to cache
agent_max_co_cache_size=100

// Max number of message metadata to cache
agent_max_message_metadata_cache_size=200

// Max number of DVM tables to cache
agent_max_dvm_table_cache_size=200

// Max number of lookup tables to cache
agent_max_lookup_table_cache_size=200

// Internal Agent queue sizes
agent_max_queue_size=1000
agent_Persistence_queue_size=1000

// Persistence
agent_persistence_cleanup_interval=60000
agent_persistence_retry_interval=60000
```

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