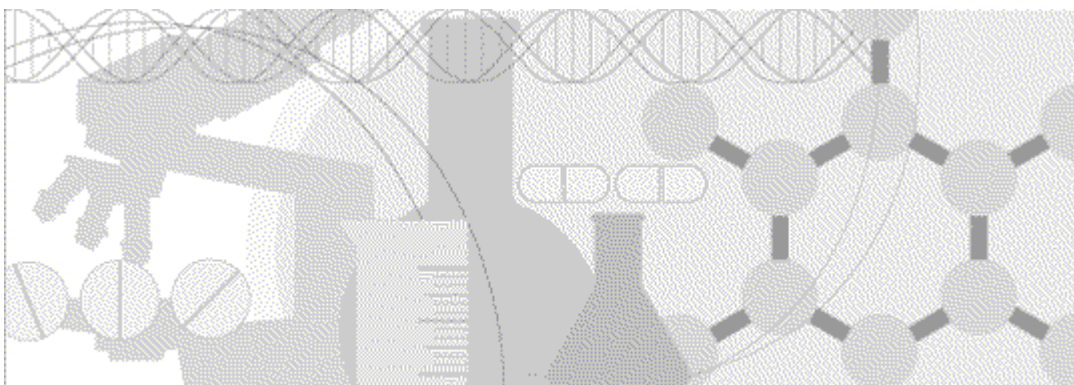


Installation Guide

Oracle[®] Health Sciences InForm Adapter
Release 1.3.8



ORACLE[®]

Part Number: E64437-01

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Overview of this guide

This guide provides a brief overview of the InForm Adapter software and step-by-step instructions for installing and uninstalling the software, and setting security options, as well as troubleshooting information.

Audience

This guide is for IT administrators and others who are responsible for integrating the InForm software with other applications, including Oracle-provided products, third-party products, and custom client processes.

Documentation

The product documentation is available from the following locations:

- **My Oracle Support** (<https://support.oracle.com>)—*Release Notes* and *Known Issues*.
- **Oracle Technology Network** (<http://www.oracle.com/technetwork/documentation/hsgbu-154445.html>)—The most current documentation set, excluding the *Release Notes* and *Known Issues*.

If the software is available for download, the complete documentation set is available from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com>).

All documents may not be updated for every InForm Adapter release. Therefore, the version numbers for the documents in a release may differ.

Document	Description
<i>Release Notes</i>	The <i>Release Notes</i> document describes hardware and software requirements and describes the new features, enhancements, and fixed issues in this release.
<i>Known Issues</i>	The <i>Known Issues</i> document provides detailed information about the known issues in this release, along with workarounds, if available.
<i>Installation Guide</i>	The <i>Installation Guide</i> provides a brief overview of the InForm Adapter software, step-by-step instructions for installing and uninstalling the software, setting security options, and troubleshooting information.
<i>Interfaces Guide</i>	The <i>Interfaces Guide</i> provides information on using the interfaces that are included with the InForm Adapter software.
<i>Secure Configuration Guide</i>	The <i>Secure Configuration Guide</i> provides an overview of the security features provided with the InForm Adapter application including details about the general principles of application security and how to install, configure, and use the InForm Adapter application securely.
<i>Third Party Licenses and Notices</i>	The <i>Third Party Licenses and Notices</i> document includes licenses and notices for third party technology that may be included with the InForm Adapter software.
<i>Secure Development Guide</i>	The <i>Secure Development Guide</i> provides an overview of common security risks for developers using Application Programming Interfaces (APIs) with the InForm Adapter application, and information on how to address those risks.

Documentation accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

If you need assistance

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Finding InForm Adapter information and patches on My Oracle Support

The latest information about the InForm Adapter application is on the Oracle Support self-service website, My Oracle Support. Before you install and use the InForm Adapter application, check My Oracle Support for the latest information, including *Release Notes* and *Known Issues*, alerts, white papers, bulletins, and patches.

Creating a My Oracle Support account

You must register at My Oracle Support to obtain a user name and password before you can enter the site.

- 1 Open a browser to <https://support.oracle.com>.
- 2 Click the **Register** link.
- 3 Follow the instructions on the registration page.

Finding information and articles

- 1 Sign in to My Oracle Support at <https://support.oracle.com>.
- 2 If you know the ID number of the article you need, enter the number in the text box at the top right of any page, and then click the magnifying glass icon or press **Enter**.
- 3 To search the knowledge base, click the **Knowledge** tab, and then use the options on the page to search by:
 - Product name or family.
 - Keywords or exact terms.

Finding patches

You can search for patches by patch ID or number, product, or family.

- 1 Sign in to My Oracle Support at <https://support.oracle.com>.
- 2 Click the **Patches & Updates** tab.
- 3 Enter your search criteria and click **Search**.
- 4 Click the patch ID number.

The system displays details about the patch. You can view the Read Me file before downloading the patch.

- 5 Click **Download**, and then follow the instructions on the screen to download, save, and install the patch files.

Finding Oracle documentation

The Oracle website contains links to Oracle user and reference documentation. You can view or download a single document or an entire product library.

Finding Oracle Health Sciences documentation

For Oracle Health Sciences applications, go to the Oracle Health Sciences Documentation page at <http://www.oracle.com/technetwork/documentation/hsgbu-clinical-407519.html>.

Note: Always check the Oracle Health Sciences Documentation page to ensure you have the most up-to-date documentation.

Finding other Oracle documentation

- 1 Do one of the following:
 - Go to <http://www.oracle.com/technology/documentation/index.html>.
 - Go to <http://www.oracle.com>, point to the **Support** tab, and then click **Product Documentation**.
- 2 Scroll to the product you need, and click the link.

CHAPTER 1

Overview of the InForm Adapter software

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What is the InForm Adapter software?

The InForm Adapter software provides interfaces to web services that support the secure transfer of data between InForm studies and either Oracle products (such as the Clintrial Integration Solution (CIS) and Central Coding applications) or third-party products and custom applications. Each application that can accept queries or updates to its data and metadata from InForm studies requires a specific set of interfaces.

Like application programming interfaces (APIs), the InForm Adapter interfaces use published web services interfaces to allow programmatic access to applications. This allows Oracle products to be tightly integrated with third-party products and each other.

InForm Adapter components

The InForm Adapter application components include:

- **InForm Server Adapter (ISA)**—Provides a secure web service interface for all interactions between the InForm Adapter interfaces and the InForm server. This interface is not open for external integration. Interfaces that are not open for external integration cannot interact with custom client processes and third party applications.
- **InForm Adapter interfaces**—Contains the following interfaces:

Interface	Description
Admin	<p>Provides access to information about the location of InForm servers and InForm studies.</p> <p>Two versions are available. You can install only one of them.</p> <ul style="list-style-type: none">• Adapter Administration (WCF). For Central Coding 3.0.2 or later, you must select this interface.• Adapter Administration. <p>Note: Oracle recommends installing the Adapter Administration (WCF) interface. InForm Adapter 1.3.8 is the last release to support the WSE version of the Adapter Administration interface.</p>

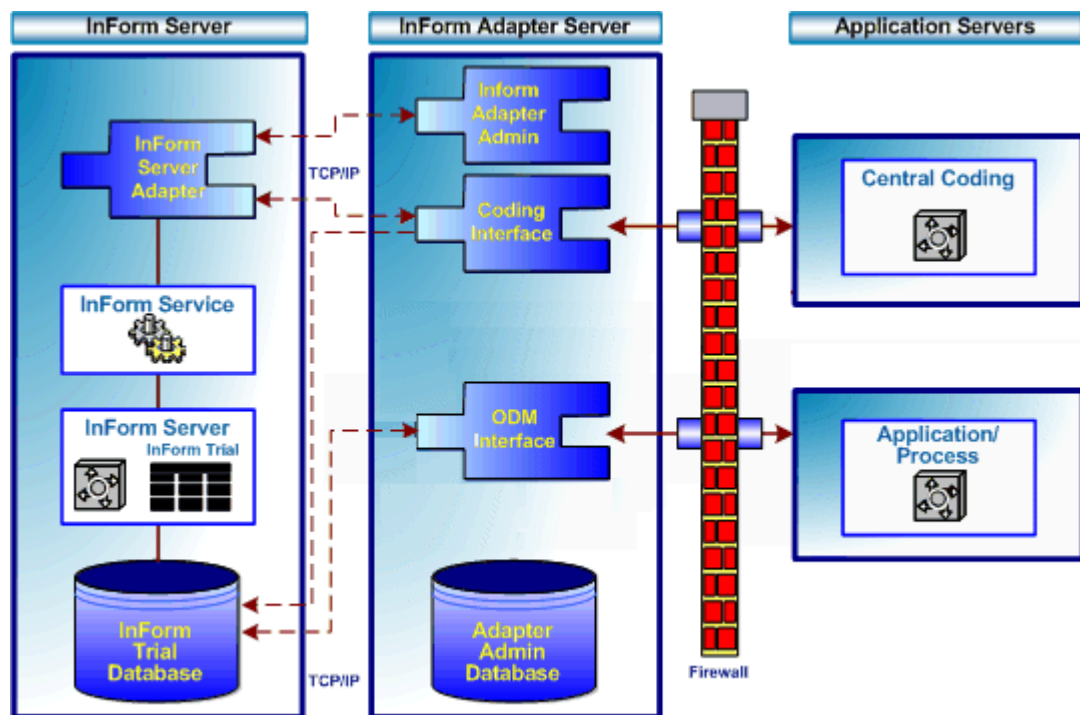
Interface	Description
Central Administration	<p>Provides an integration point for the central administration of Oracle applications.</p> <p>Two versions are available. You can install only one of them.</p> <ul style="list-style-type: none"> • Central Administration (WCF). For Clintrial Integration Solution (CIS) 4.6.2 or later, you must select this interface. • Central Administration. For Clintrial Integration Solution (CIS) releases prior to 4.6.2 , you must select this interface. <p>For more information, see <i>Installing InForm Adapter interfaces</i> (on page 27).</p> <p>Note: This interface is not open for external integration.</p>
Coding	<p>Provides support for the Central Coding application.</p> <p>Two versions are available. You can install only one of them.</p> <ul style="list-style-type: none"> • Coding (WCF). For Central Coding 3.0.2 or later, you must select this interface. • Coding. For Central Coding releases prior to 3.0.2, you must select this interface. <p>Note: This interface is not open for external integration.</p>
Discrepancy	<p>Transmits InForm queries (discrepancies) to and from other systems or modules.</p> <p>Two versions are available. You can install only one of them.</p> <ul style="list-style-type: none"> • Discrepancy Enhanced interface (default selection). For Central Coding 3.0.2 or later, you must select this interface. • Discrepancy Original interface. <p>Note: InForm Adapter 1.3.8 is the last release to support the Discrepancy Original interface.</p>
ODM Export	<p>Provides access to receive InForm clinical data and metadata in CDISC ODM standard format.</p>
Safety	<p>Provides support for safety integration.</p> <p>Note: This interface is not open for external integration.</p>

Interface	Description
Transaction	<p data-bbox="756 212 1446 275">Sends and receives synchronization transactions between the InForm software and an external application.</p> <p data-bbox="756 296 1446 327">Two versions are available. You can install only one of them.</p> <ul data-bbox="756 348 1446 600" style="list-style-type: none"><li data-bbox="756 348 1446 464">• Transaction (WCF). For Clintrial Integration Solution (CIS) 4.6.2 or later, you must select this interface.<li data-bbox="756 485 1446 600">• Transaction. For Clintrial Integration Solution (CIS) releases prior to 4.6.2, you must select this interface. <p data-bbox="756 621 1446 684">For more information, see <i>Installing InForm Adapter interfaces</i> (on page 27).</p> <p data-bbox="756 705 1446 737">Note: This interface is not open for external integration.</p>

How does the InForm Adapter software work?

The InForm Adapter software is a collection of interfaces for Oracle applications, other client processes, or third-party products, that require data exchange with, or updates from, InForm studies.

- Each integrated application or process sends requests to the appropriate InForm Adapter interface.
- The interface interacts with the InForm Server Adapter (ISA) interface on the InForm server.
- The InForm Adapter interface communicates with the InForm application server to perform the requested task through a COM interface.
- Certain interfaces interact directly with the InForm study database, as necessary, when retrieving information.



InForm Adapter deployment

Oracle recommends the following deployment scenario:

- The InForm Server Adapter (ISA) must be installed on the InForm application server.
- The InForm Adapter interfaces (referred in this guide as the InForm Adapter server) can be installed on the InForm application server or on a separate application server.
- The InForm Adapter database can reside on the InForm database server.

About InForm Adapter security

Security depends on the InForm Adapter interfaces and the Oracle applications used.

Security	Used with this application or interface
username/password security	<ul style="list-style-type: none"> • InForm Adapter Discrepancy Enhanced interface. • InForm Adapter Discrepancy Original interface. • InForm Adapter ODM Export interface. • Central Coding (3.0.2 or later). • InForm Adapter Safety interface
X.509 Digital Certificate security	<ul style="list-style-type: none"> • Central Coding. • Clintrial Integration Solution (CIS).

Username/password security

Username/password authentication provides security between the interface and the InForm server. In the request for each method or operation, the SOAP header contains elements for the InForm user name and password, and the SOAP body contains an attribute for the InForm study name.

The ODM Export interface, Safety interface, Discrepancy Original interface, and Discrepancy Enhanced interface use username/password authentication.

By default, the Discrepancy Enhanced interface is installed with username/password authentication enabled.

For more information about ODM Export interface methods and Discrepancy Original interface operations, see the chapters for each interface in the *Interfaces Guide*.

Security using X.509 certificates

Oracle provides message-level security using:

- WS-Security.
- WS-Policy.
- Security Assertion Markup Language (SAML) security tokens.

Oracle also provides X.509 digital certificates to sign SAML tokens and messages.

Message-level security

To use message-level security, you must install and configure X.509 digital certificates for the InForm Adapter server and the associated application (for example, the Oracle Central Coding application). For more information about X.509 digital certificates configuration for Oracle applications, see *Configuring X.509 digital certificates* (on page 55) and the documentation for the associated applications.

For information about message-level security and integrating third-party applications and client processes with InForm Adapter interfaces that are hosted by Oracle, contact Oracle.

X.509 digital certificates

For integrations with CIS releases prior to 4.6.2, when InForm studies, InForm Adapter interfaces, and related Oracle applications are all hosted at a company site, you must obtain, install, and configure X.509 digital certificates on all machines that need to be secured. Oracle provides a certificate configuration tool to help you install and configure X.509 digital certificates. For more information, see *Configuring X.509 digital certificates* (on page 55).

Web Services Security (WS-Security)

The WS-Security model uses WS-Policy and SAML tokens that can be signed with X.509 digital certificates, and messages that can be encrypted and signed with X.509 digital certificates. The policy sets users and their rights.

By default, WS-Security is enabled. This guide includes recommendations on integrating InForm Adapter interfaces with Oracle applications. For more information, see *After completing the InForm Adapter installation* (see "*Performing InForm Adapter post-installation tasks*" on page 67).

To integrate custom applications and client processes with InForm Adapter interfaces that are hosted by Oracle, contact Oracle.

CHAPTER 2

Planning your implementation

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Supported configurations

Oracle maintains the following software compatibility matrices:

- *Product Compatibility Matrix*—Identifies InForm Adapter compatibility with other Oracle Health Sciences products.
- *Product Technology Compatibility Matrix*—Identifies InForm Adapter compatibility with other Oracle and external software products.

Both matrixes can be downloaded from My Oracle Support in Article ID 180430.1: Oracle Health Sciences Applications Supported Technology Stack (<https://support.oracle.com/epmos/faces/DocumentDisplay?id=180430.1>).

InForm Adapter interfaces to install

You must install the following components:

- The InForm Server Adapter (ISA) on the InForm server. The ISA is comprised of two services:
 - The InForm Server Adapter Web Service.
 - The InForm Server Adapter Windows Service.

For information about which applications or interfaces require one or both of these services, see *InForm Server Adapter services* (on page 21).

- The InForm Adapter interfaces on the InForm Adapter server. Install the interfaces that are required by either:
 - The Oracle application you are installing.
 - The application or API you are developing.

For the list of interfaces you need to install, see *InForm Adapter public interfaces* (on page 22).

Installing the InForm Server Adapter with existing InForm study databases

The InForm Server Adapter Windows service must be run only when using the ODM Export interface or the integration to Clintrial Integration Solution (CIS).

When the InForm Server Adapter software is installed on an InForm server and the InForm Server Adapter Windows service is run, it populates a database table with transaction XML for all studies on that server. This process can take several hours depending on the number of studies, their size, and the available resources on the machine where the InForm Server Adapter is installed.

While the transaction XML is being created, errors can occur as the InForm Server Adapter software is communicating with another application (for example, the Central Coding application or Clintrial Integration Solution (CIS) application). This process can also impact communication with other applications that use the InForm Adapter software.

To prevent errors from occurring while the transaction XML is being created, Oracle recommends you perform one of the following procedures:

- Allow the transaction XML to be created before running jobs from an application that communicates with the InForm server.

The InForm Server Adapter must populate a new database table in the InForm study schema with transaction XML. To do this, the study must be running. To verify that the transaction XML is created, execute the following queries against every study database:

- **Select count(*) from pf_transactionhistory**—Indicates the number of transactions in the study.
- **Select count(*) from pfex_transactionxml**—Indicates the number of transactions for which XML has been created.

When you first install the InForm Server Adapter, no XML will have been created and the table **pfex_transactionxml** will not exist, because it is created by the InForm Server Adapter.

These two queries should return the same count when all transaction XML has been created.

This can take several hours. To verify that progress is being made, check that the second query count continues to increase. Processing should stop when the count in the second query reaches the count of the first query.

- Add the InForm Server Adapter offline:
 - 1 Install the InForm software and the InForm Server Adapter on a machine that is not being used for production.
 - 2 When all of the transaction XML files have been created, export the study and load it into a production database.

Note: These issues do not apply when you are adding a new study (a study that contains no data) to the InForm Server Adapter instance.

CHAPTER 3

Installing the InForm Adapter software

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Installation overview

Install the InForm Adapter software from the InForm Adapter ISO image available on the Oracle Software Delivery Cloud or My Oracle Support (MOS).

After you download the InForm Adapter ISO image, make it available to all the servers where you plan to install the InForm Adapter software.

Follow these steps to install the InForm Adapter software.

Note: If you are upgrading a previous release of the InForm Adapter software, follow the instructions in *Upgrading a previous release* (on page 39) before you perform any of the steps that are listed in the table.

No.	Step	Where to get more information
1	Verify that all hardware and software requirements are met.	<i>Release Notes.</i>
2	Perform prerequisite tasks.	<i>Before installing the InForm Adapter software.</i> (on page 16)
3	On the InForm application server: Install the InForm Server Adapter (ISA).	<i>Installing the InForm Server Adapter (ISA).</i> (on page 24)
4	On the InForm Adapter server: Install the InForm Adapter interface(s) for your specific products.	<i>Installing InForm Adapter interfaces.</i> (on page 27)
5	Determine whether you need to configure the services that comprise the ISA.	<i>InForm Server Adapter services.</i> (on page 21)
6	Configure security for: <ul style="list-style-type: none"> • InForm Adapter ODM Interface. • InForm Adapter Discrepancy Enhanced interface. • InForm Adapter Discrepancy Original interface. • Central Coding 3.0.2 or later. • InForm Adapter Safety interface. 	<i>Configuring Username/Password security.</i> (on page 48)
7	For the Discrepancy Enhanced interface, verify the installation.	<i>Verifying the Discrepancy Enhanced interface installation</i> (on page 65).

No.	Step	Where to get more information
8	Configure digital certificates for: <ul style="list-style-type: none"> • Central Coding. • Clintrial Integration Solution (CIS). • InForm Adapter Discrepancy Original interface, if necessary. • InForm Adapter ODM Interface, if necessary. 	<i>Configuring X.509 Digital Certificates</i> (on page 55).
9	Perform setup tasks as needed for your environment.	<i>Overview of post-installation tasks</i> (on page 68).

After installing the InForm Adapter software, you can install any Oracle application that communicates with the InForm Adapter software.

Before installing the InForm Adapter software

Perform the following tasks before you install the InForm Adapter software:

- Create an Oracle tablespace for the InForm Adapter server.
For more information, see the Oracle database documentation.
- Enable XA transactions.
For more information, see *Enabling XA transactions* (on page 16).
- Schedule an Oracle database job to flush the InForm database shared pool.
For more information, see *End-of-file on communication channel database error* (on page 84).
- Make sure that all clocks are synchronized on the machines on which you are installing the InForm Adapter interfaces, the InForm server, and the database server.
- Ensure the InForm database locale and the InForm Adapter Server locale are set to the same value.
- If you have any studies that have been decommissioned in the InForm software, run the Register Trial Tool to decommission the studies in the InForm Adapter software.
For more information, see *Register Trial Tool* (on page 16).

Enabling XA transactions

To use the InForm Adapter software, XA transactions must be enabled.

- 1 Select **Start > Run**.
- 2 Type `dcomcnfg` and click **OK** to open Component Services.
- 3 In the console tree, expand **Component Services > Computers > My Computer > Distributed Transaction Coordinator**.
- 4 Right-click **Local DTC**, and select **Properties**.
The Local DTC Properties dialog box appears.
- 5 Click the **Security** tab.
- 6 In the **Security Settings** section, select **Enable XA Transactions**.
- 7 Click **OK**.

Register Trial Tool

The Register Trial Tool is a command line tool that you use to register a study, register a server adapter, decommission a study in the InForm Adapter software, and view lists of existing studies, server adapters, and decommissioned studies.

Decommissioned studies in the InForm software and the InForm Adapter software

A study that has been decommissioned in the InForm software is removed from the InForm database, but connection information remains in the InForm Adapter database. If you install or upgrade the InForm Adapter software, the installation program attempts to upgrade the study database, but fails because it cannot locate information about the decommissioned study in the InForm database.

To prevent this situation, use the Register Trial Tool to decommission the study in the InForm Adapter database. You can use the Register Trial Tool before or after you install the InForm Adapter software.

Using the Register Trial Tool

The Register Trial Tool is always installed with the InForm Adapter software. When installation is complete, the tool can be found in:

Program Files\Phase Forward\InForm Adapter\RegisterTrialTool\bin

Note: You must be an administrator (part of the administrator group for the InForm Adapter software) to run the Register Trial Tool. You cannot run the Register Trial Tool with User Access Control turned on. You must either log in as an administrator or open a command window as an administrator.

To use the Register Trial Tool:

- 1 Open a Command Prompt window and change to the **RegisterTrialTool\bin** directory
- 2 Issue the command **RegisterTrialTool**.

The command displays the usage of each option. With the Register Trial Tool you can do the following tasks.

Task	For more information, see
Register a study in the InForm Adapter database, or update information on a study that is already registered.	<i>Register a study.</i> (on page 19)
Register a server adapter and its corresponding URL in the InForm Adapter database.	<i>Register a server adapter.</i> (on page 19)
Decommission (remove) a study from the InForm Adapter database.	<i>Decommission a study</i> (on page 20).
View a list of studies, a list of decommissioned studies, and a list of server adapters that are registered.	<i>View a list of studies</i> (on page 20).

Register Trial Tool passwords

The RegisterTrialTool command takes an optional /passwordfile parameter that passes the path to an XML file that contains the password for the InForm Adapter database and, if required, the trial database. Each of the following is a valid example of a file path:

- /password:pwd.xml
- /password:D:\adapter_info\register\pwd.xml
- /password:"D:\adapter info\register\pwd.xml"

Note: File paths that contain spaces must be enclosed in quotes.

If you do not provide the /password parameter, you are prompted for it when you run the RegisterTrialTool command.

Note: Oracle recommends that you avoid using the /password parameter.

Password file format

The password file you use with the RegisterTrialTool command is an XML file that contains the following information.

- If you are using a command that requires an InForm Adapter password and an InForm trial password, use the following file contents:


```
<?xml version="1.0" encoding="utf-8"?>
<SecurityValue InformAdapterPassword="informadapter" TrialPassword="trialPid" />
```

 where
 - *informadapter*—The password for the InForm Adapter database.
 - *trialPID*—The password to the InForm trial.
- If the Register Trial Tool required an InForm Adapter password, use the following information in the password file:

```
<?xml version="1.0" encoding="utf-8"?>
<SecurityValue InformAdapterPassword="informadapter" />
```

Note: A RegisterTrialTool command does not accept empty attributes. An error occurs if the password file contains syntaxes such as <SecurityValue InformAdapterPassword="informadapter" TrialPassword="" />

Note: Remove the password file after running the RegisterTrialTool command.

Register a study

SetTrial

Registers a study in the InForm Adapter database.

Note: If you are using InForm 6.1 or above, SetTrial also registers the InForm Adapter software in the Integration Manager.

If the study name and study alias exist, SetTrial updates the other information you specify.

Syntax

```
RegisterTrialTool SetTrial <informadapter-user> <adapterDBConnectionStr>
<trial-alias> <trial-name> <trialConnectionStr> <trial-userID>
[/serveradapter:<server-adapter-name>] /virtualdirectory:virtual-directory-
name [/passwordfile:<password-file>]
```

Considerations

serveradapter:<server-adapter-name>

For more information, see *Interfaces to Install* (on page 21).

Example

```
RegisterTrialTool.exe SetTrial informadapteruser dev1 testtrial testtrial
rdinform_dev1 testuser /serveradapter:rdinformq
/virtualdirectory:http://<hostname>:<port>/InFormAdapter
/passwordfile:setreg.xml
```

Register a server adapter

SetServer

Registers a server adapter and its corresponding URL in the InForm Adapter database. Adds the server adapter information to the PFIA_SERVERINFORMATION table. Optionally, tests the validity of the URL you provide.

If the server adapter name you specify already exists, the command updates the other information you specify.

Syntax

```
RegisterTrialTool SetServer <informadapter-user> <adapterDBConnectionStr>
<server-adapter-name> <server-adapter-url> [/virtualdirectory:Virtual-
directory-name] [testURL] [/passwordfile:<password-file>]
```

Considerations

- `serveradapter:<server-adapter-name>`
For more information, see *Interfaces to Install* (on page 21).
- `virtualdirectory:virtual-directory-name`
This parameter is required if the virtual directory name was changed during the InForm Adapter installation. If the default name is used, this parameter is optional.

Example

```
RegisterTrialTool.exe SetServer informadapteruser dev1 rdinform
http://rdinform/informadapter/serveradapter/serveradapter.asmx
/virtualdirectory:InformAdapterVD /passwordfile:reg.xml
```

Decommission a study

decommission

Removes the study from the InForm Adapter database. The command also marks the study as decommissioned in the PFIA_TRIALINFORMATION table in the InForm Adapter database.

Syntax

```
RegisterTrialTool decommission <informadapter-user> <adapterDBConnectionStr>
<trial-alias> <trial-name> [/passwordfile:<password-file>]
```

Example

```
RegisterTrialTool.exe Decommission informadapteruser dev1 testtrial testtrial
/passwordfile:decomreg.xml
```

View a list of studies

list

Generates the following lists:

- Studies that are currently registered in the InForm Adapter database.
- InForm Server Adapters that are registered in the InForm Adapter database.
- Studies that have been decommissioned in the InForm Adapter database.

Syntax

```
RegisterTrialTool list <informadapter-user> <adapterDBConnectionStr>
[/passwordfile:<password-file>]
```

Example

```
RegisterTrialTool.exe List informadapteruser dev1 /passwordfile:studylist.xml
```

Interfaces to install

Run the InForm Server Adapter installation to install the InForm Server Adapter on the InForm server. For more information, see *InForm Server Adapter services* (on page 21).

Run the InForm Adapter installation to install the InForm Adapter interfaces on the InForm Adapter server. For more information, see *InForm Adapter public interfaces* (on page 22).

InForm Server Adapter services

Install the InForm Server Adapter (ISA) on the InForm server. The ISA allows the InForm Adapter software to communicate with the InForm software.

The ISA is required by most of the applications that use the InForm Adapter software. The ISA consists of two services:

- InForm Server Adapter Web Service.
- InForm Server Adapter Windows Service.

In the table, a check mark indicates the service or services you require, depending on the InForm Adapter interfaces and Oracle applications you want to use.

- If the application or interface you want to use requires only one of the services, install the ISA and then turn off the service you do not need.
- If some of your applications or interfaces require a particular service and others do not, you must leave the service running. For example, if you are using both the Central Coding application and the InForm Adapter ODM Export interface, you must have both the ISA Web Service and the ISA Windows Service running, with the ISA Windows Service set to automatic.

Application or Interface	ISA Web Service	ISA Windows Service
Central Coding	X	
Clintrial Integration Solution (CIS)	X	X
InForm Adapter Discrepancy Original interface	X	
InForm Adapter Discrepancy Enhanced interface	X	
InForm Adapter ODM Export interface	X	X
		This service must be running and set to Automatic.
		Note: This service is not needed if only administrative data and metadata is transferred.
InForm Adapter Safety interface	X	

InForm Adapter public interfaces

You must install the InForm Adapter interfaces required by either:

- The Oracle application you are installing.
- The application or API you are developing.

The interfaces specified in the following table must be installed on the InForm Adapter server.

Note: Some interfaces, such as the InForm Adapter Administration interface, include both a version that uses Windows Communication Foundation (WCF) web services and a version that uses Web Service Enhancements (WSE) web services. Interfaces that use WCF are appended by "WCF Service" in the Select Features page of the installation wizard. For more information, see *Installing InForm Adapter Interfaces* (on page 27). Unless otherwise noted in the following table, you should select the version applicable to your development environment.

To use this product or InForm Adapter public interface	Select these interfaces when you install the software on the InForm Adapter server
Central Coding 3.0.2 and later	<ul style="list-style-type: none"> • InForm Adapter Administration interface (WCF). • InForm Adapter Coding interface (WCF). • InForm Adapter Discrepancy Enhanced interface.
Central Coding releases prior to 3.0.2	<ul style="list-style-type: none"> • InForm Adapter Administration interface. • InForm Adapter Coding interface.
Clintrial Integration Solution (CIS)	<ul style="list-style-type: none"> • InForm Adapter Administration interface. • InForm Adapter Central Administration. • InForm Adapter Transaction interface. <p>Note: CIS 4.6.2 or later requires the WCF versions of the Administration, Central Administration and Transaction interfaces. Earlier releases require the WSE versions of the above interfaces.</p>
InForm Adapter Discrepancy Original interface	<ul style="list-style-type: none"> • InForm Adapter Administration interface. • InForm Adapter Discrepancy Original interface. <p>Note: The Discrepancy Original interface uses Web Service Enhancements (WSE) web services. You must explicitly select this interface during installation. It is not the default.</p> <p>InForm Adapter 1.3.8 is the last release to support the Discrepancy Original interface.</p> <p>You cannot install both the Discrepancy Original interface and Discrepancy Enhanced interfaces.</p>

To use this product or InForm Adapter public interface	Select these interfaces when you install the software on the InForm Adapter server
InForm Adapter Discrepancy Enhanced interface	<ul style="list-style-type: none"> • InForm Adapter Administration interface. • InForm Adapter Discrepancy Enhanced interface. <p>Note: The Discrepancy Enhanced interface is the default selection. It uses Windows Communication Foundation (WCF) web services.</p> <p>This interface is used by the Oracle Health Sciences Data Management Workbench (Oracle DMW).</p> <p>You cannot install both the Discrepancy Original interface and Discrepancy Enhanced interfaces.</p>
InForm Adapter ODM interface	<ul style="list-style-type: none"> • InForm Adapter Administration interface. • InForm Adapter ODM interface.
InForm Adapter Safety interface	<ul style="list-style-type: none"> • InForm Adapter Administration interface. • InForm Adapter Safety interface. <p>Note: Not open for external integration.</p>

Installing the InForm Server Adapter (ISA)

Perform this procedure on each InForm server that needs to communicate with an InForm Adapter interface.

- 1 Navigate to the InForm Server Adapter ISO image.
- 2 In the InFormServerAdapter folder, double-click **setup.exe**.

The Choose Setup Language page appears.

- 3 Select the language for the installation, then click **Next**.

The Welcome page appears.

- 4 Click **Next**.

The Oracle Home Selection page appears. Select the Oracle home where the Oracle client is installed.

- 5 Click **Next**.

The Required System Components page appears.

The installation wizard verifies that the server has all the necessary software components, including the operating system, IIS, and the Oracle client.

If required components are missing or are the wrong version, installation stops. The names of missing and invalid components appear on the Required System Components page. You must install them before continuing the installation.

The Choose Destination Location page appears.

- 6 Verify the location where you want to install the product. To change the location, click **Change** and select another location.

Note: The instructions, paths, and Start Menu navigation in this guide assume that you are installing to the default location.

The Windows Service Name Suffix page appears.

The screenshot shows a dialog box titled "InForm Server Adapter - InstallShield Wizard". The main heading is "Windows Service Name Suffix". Below the heading, there is a light blue bar with the text: "Enter a suffix for the Windows Service name so the name will be unique". The main area of the dialog is grey and contains a text input field labeled "Windows Service Name Suffix". At the bottom of the dialog, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel". The "InstallShield" logo is visible in the bottom left corner.

- 7 Enter a suffix for this instance of the InForm Server Adapter installation, and click **Next**. The InForm Server Adapter Virtual Directory page appears.

The screenshot shows a dialog box titled "InForm Server Adapter - InstallShield Wizard". The main heading is "InForm Server Adapter Virtual Directory". Below the heading, there is a light blue bar with the text: "Enter a root Virtual Directory name for the InForm Server Adapter." The main area of the dialog is grey and contains a text input field labeled "InForm Server Adapter Virtual Directory" with the text "InFormServerAdapter_2" entered. Below the input field, there are two radio button options: "use Default Web Site" (which is unselected) and "InFormAdapter web site with port" (which is selected). Under the selected option, there are two text input fields: "Http Port" with the value "14103" and "Https Port" with the value "14104". At the bottom of the dialog, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel". The "InstallShield" logo is visible in the bottom left corner.

- 8 Enter the virtual directory for this InForm Server Adapter instance.

Note: Virtual directories are used to uniquely identify a specific instance of the InForm Server Adapter software.

Select if you want to use the default web site, or the InForm Adapter web site. If the InForm Adapter web site doesn't exist yet, you must specify the HTTP and HTTPS port numbers. If you are running InForm 6.1 or above, Oracle recommends to use the InForm Adapter web site.

Click **Next**.

The Ready to Install the Program page appears.

- 9 Click **Install**.
- 10 When the installation is complete, click **Finish**.

For further steps, see *Installation Overview* (on page 14).

Installing InForm Adapter interfaces

After the InForm Server Adapter (ISA) installation is completed on the InForm machine, you must install the interfaces used to support specific products or features. For more information, see *Interfaces to install* (on page 21).

During the installation, you will need to provide the credentials for an InForm Adapter user account. You will have the options to either create a new user or select an existing InForm Adapter user. To create a new user, you will need credentials for an Oracle account with user creation privileges. Alternatively, the database administrator can run the `CreateInFormAdapterUser.sql` script, located in the `dbasql` subfolder of the InForm Adapter installation folder, to create an InForm Adapter user account that you can use for the installation.

This is an example of running `CreateInFormAdapterUser.sql` in SQL*Plus:

```
C:\work\IA1.3.8\dbasql>sqlplus system/oracle@dev1 @CreateInFormAdapterUser.sql
SQL*Plus: Release 12.1.0.2.0 Production on Fri Oct 2 14:04:47 2015
Copyright (c) 1982, 2014, Oracle. All rights reserved.
```

```
Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
Enter value for InFormAdapterDBUser:
Enter value for Password:
Enter value for Tablespace:
```

```
User created.
```

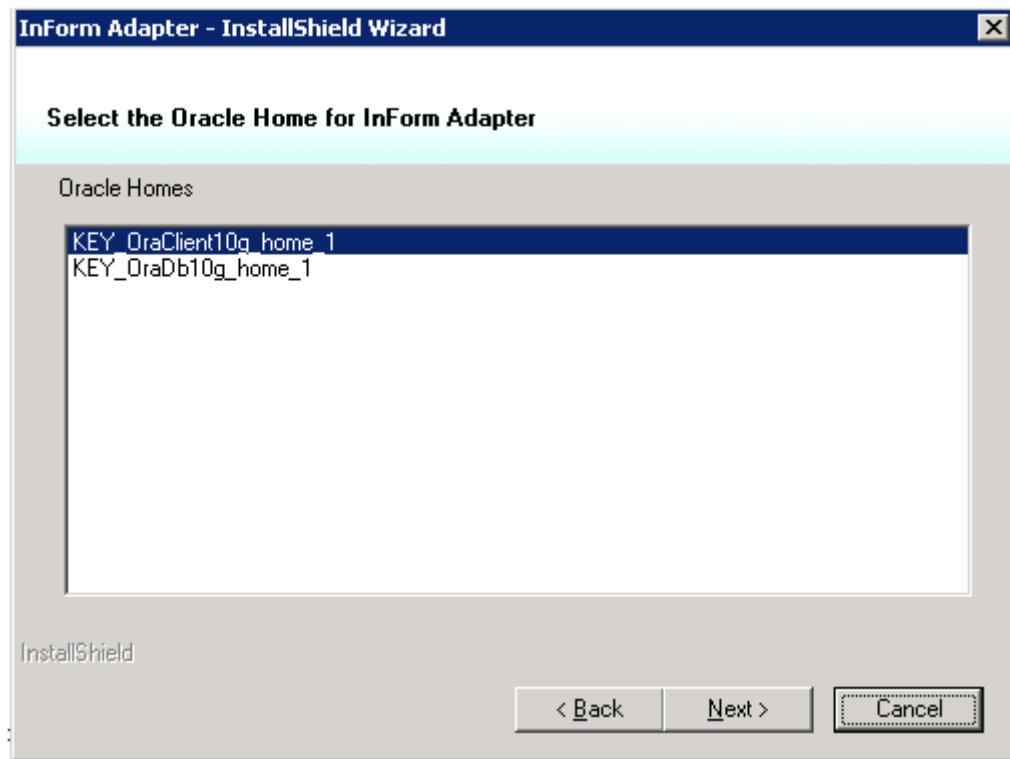
```
...
```

To install the InForm Adapter interfaces:

- 1 Navigate to the InForm Adapter ISO image.
- 2 In the `InformAdapter` folder, double-click **setup.exe**.
The Choose Setup Language page appears.
- 3 Select the language for the installation, then click **Next**.
The Welcome page appears.

- 4 Click **Next**.

The Oracle Home Selection page appears.



Select the Oracle home where the Oracle client is installed.

- 5 Click **Next**.

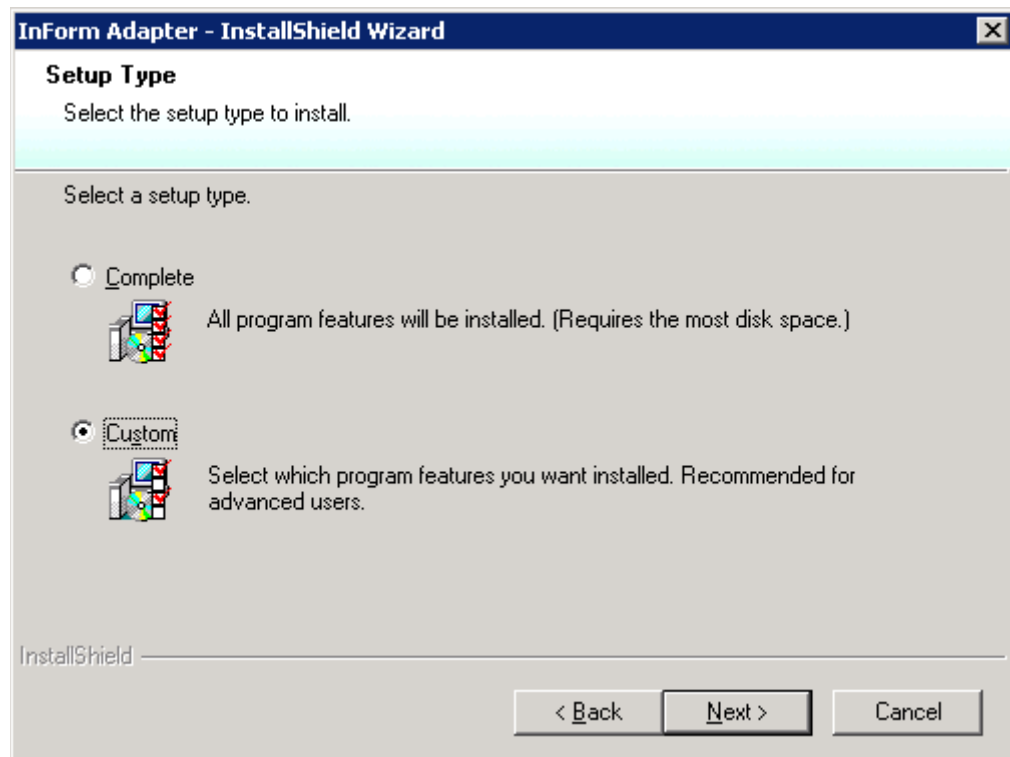
The Required System Components page appears.

The installation wizard verifies that the server has all the necessary software components, including the operating system, IIS, and the Oracle client.

If required components are missing or are the wrong version, installation stops. The names of missing and invalid components appear on the Required System Components page. You must install them before continuing the installation.

- 6 Click **Next**.

The Setup Type page appears.



- 7 Select **Custom**, and click **Next**. This allows you to select which interfaces to install. If you select **Complete**, all the WCF based web interfaces and the ODM Export interface will be installed.

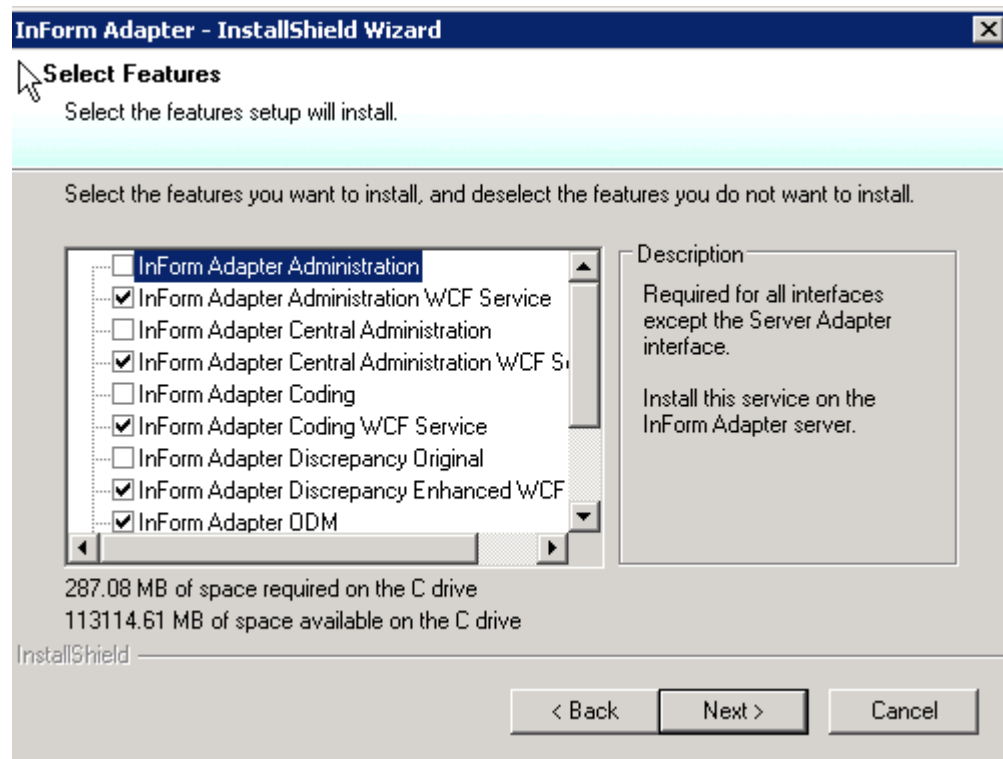
The Destination Folder page appears.

Verify the location where you want to install the product. To change the location, click **Change** and select another location.

Note: The instructions, paths, and Start Menu navigation in this guide assume that you are installing to the default location.

- 8 Click **Next**.

The Select Features page appears. For more information, see *Interfaces to install* (on page 21).



- 9 Select the interface(s) that you want to install. Click **Next**.

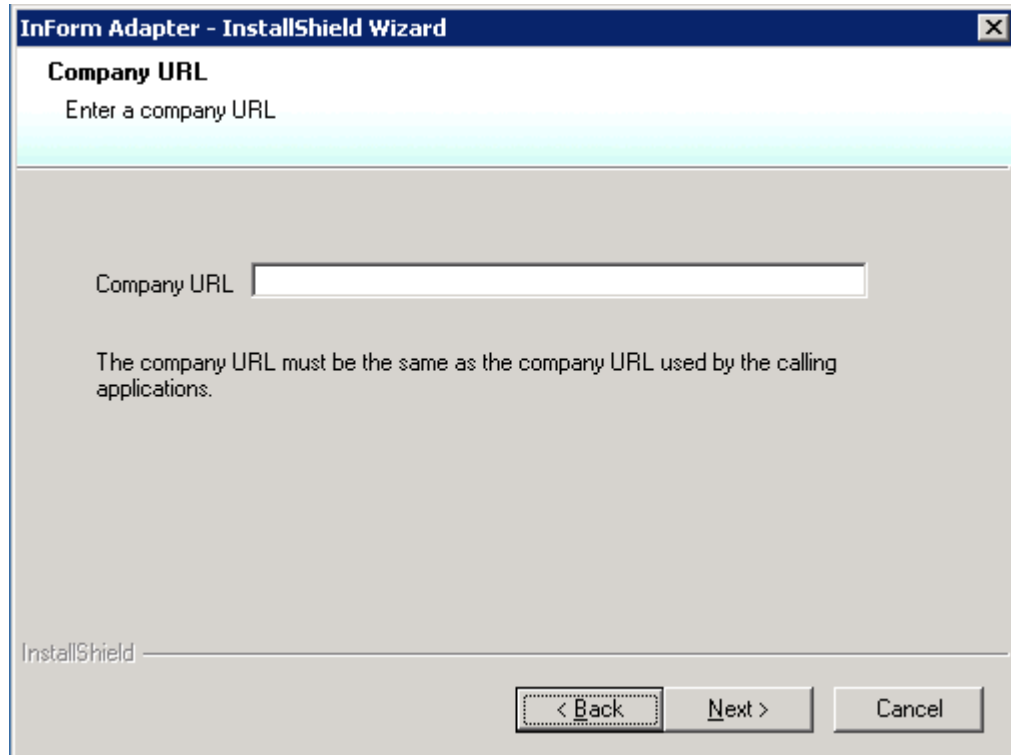
The InForm Adapter Virtual Directory page appears.

The screenshot shows the 'InstallShield Wizard' dialog box. At the top, there is a header bar with the text 'InstallShield Wizard' and a close button. Below the header, there is a text box with the prompt 'Enter a root Virtual Directory name for the InForm Adapter.' Below this, there is a section titled 'InForm Adapter Virtual Directory' containing a text box with the value 'InFormAdapter'. Underneath, there is a section labeled 'Existing InForm Adapter:' with an empty text box. Below that, there are two radio button options: 'Default Web Site' (unselected) and 'InForm Adapter Web Site' (selected). Below the radio buttons, there are two text boxes: 'HTTP Port:' with the value '14103' and 'HTTPS Port:' with the value '14104'. At the bottom left, the text 'InstallShield' is visible. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- 10 Enter the virtual directory for this InForm Adapter instance, and click **Next**.

Note: Virtual directories are used to uniquely identify a specific instance of the InForm Adapter software.

The Company URL page appears.



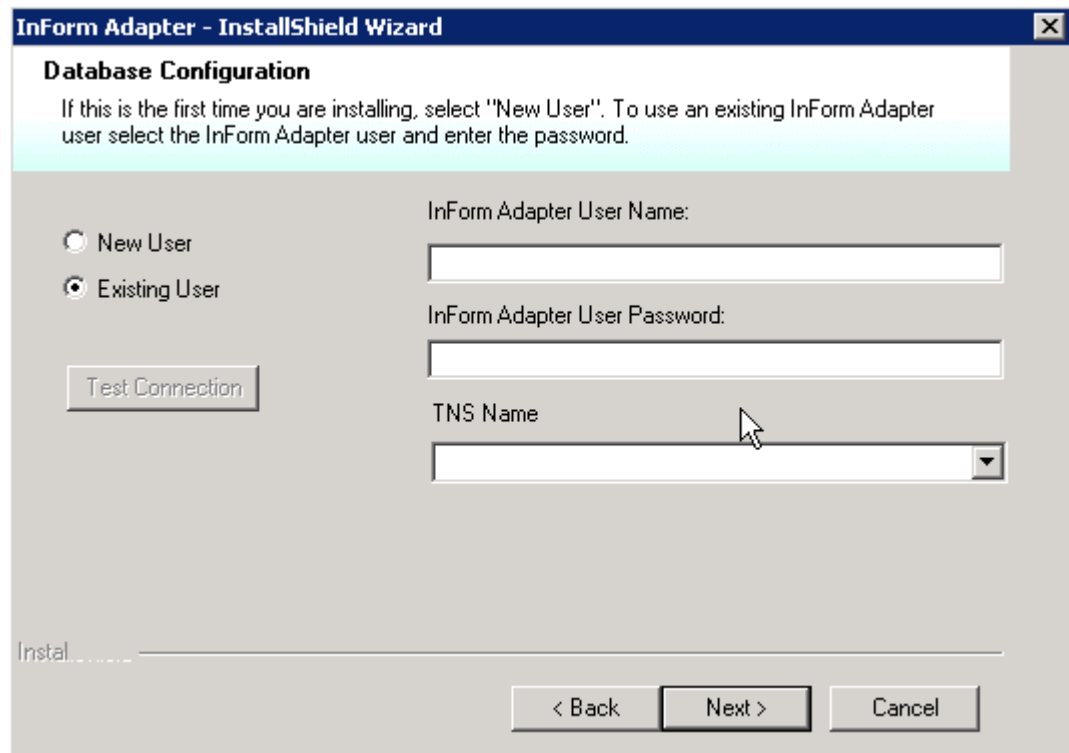
The screenshot shows a window titled "InForm Adapter - InstallShield Wizard". The main heading is "Company URL" with the instruction "Enter a company URL". Below this is a text input field labeled "Company URL". A note states: "The company URL must be the same as the company URL used by the calling applications." At the bottom, there are three buttons: "< Back", "Next >", and "Cancel". The "InstallShield" logo is visible in the bottom left corner.

- 11 Enter a unique identifier for your company data, typically your company URL (for example, www.mycompany.com).

Note: If your company uses other Oracle products that require a company URL, the value you provide in this field must be identical to the URL you provided elsewhere.

- 12 Click **Next**.

The Database Configuration page appears.



The screenshot shows a dialog box titled "InForm Adapter - InstallShield Wizard" with a "Database Configuration" section. The section contains the following text: "If this is the first time you are installing, select 'New User'. To use an existing InForm Adapter user select the InForm Adapter user and enter the password." Below this text are two radio buttons: "New User" (unselected) and "Existing User" (selected). To the right of the radio buttons are three input fields: "InForm Adapter User Name:" (text box), "InForm Adapter User Password:" (text box), and "TNS Name" (dropdown menu). A "Test Connection" button is located below the radio buttons. At the bottom of the dialog box are three buttons: "< Back", "Next >", and "Cancel".

This step requires that you provide an InForm Adapter user account. You can use an existing user or create a new one.

- 13 To use an existing InForm Adapter user, select Existing User and provide:
 - The account user name.
 - The password for the account you specified.
 - The TNS alias name to connect to the database.

Click **Next**.

If you use this method, skip the next step and go to step 17.

- 14 To create a new InForm Adapter user, select New User and click **Next**.

The next Database Configuration page appears, on which you must specify credentials for an Oracle account that can be used to create an InForm Adapter user and schema.

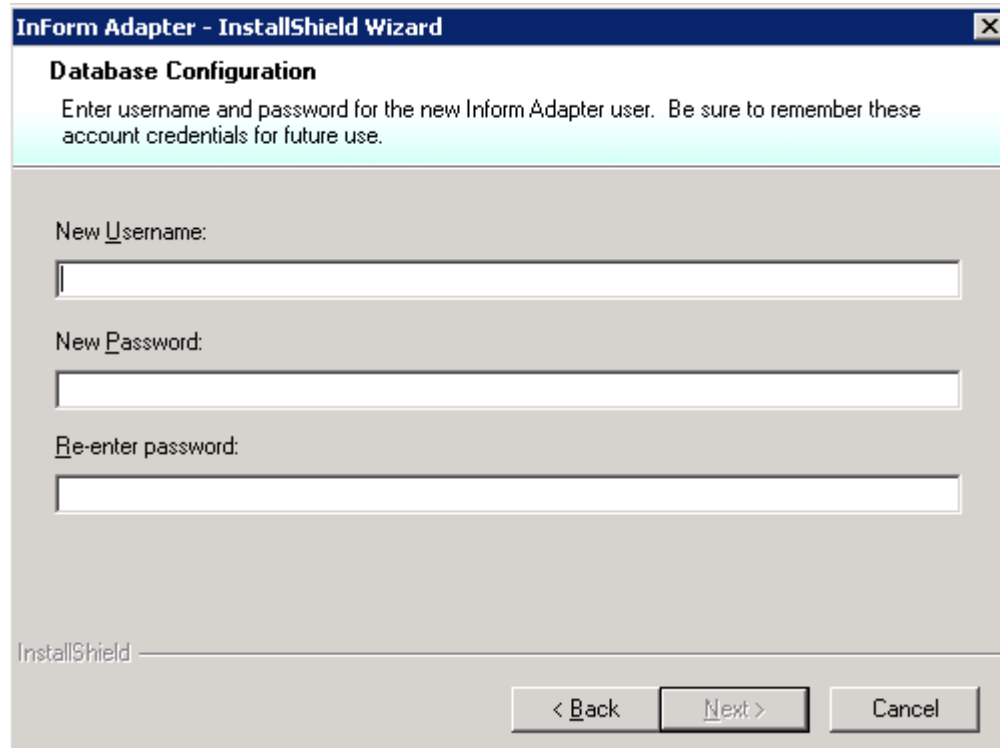
The screenshot shows a dialog box titled "InForm Adapter - InstallShield Wizard" with a close button (X) in the top right corner. The main heading is "Database Configuration" in bold. Below the heading is a light blue instruction box that reads: "Select a TNS name and provide credentials for an account that can be used to create the InForm Adapter user and schema." The dialog contains three input fields: a dropdown menu for "TNS Alias Name:", a text box for "Oracle account with creation privileges:", and a text box for "Password:". Below the password field is a "Test Connection" button. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

Enter the following:

- A TNS alias name.
- An Oracle account with user creation privileges.
- A password for the Oracle account you specified.

Click **Next**.

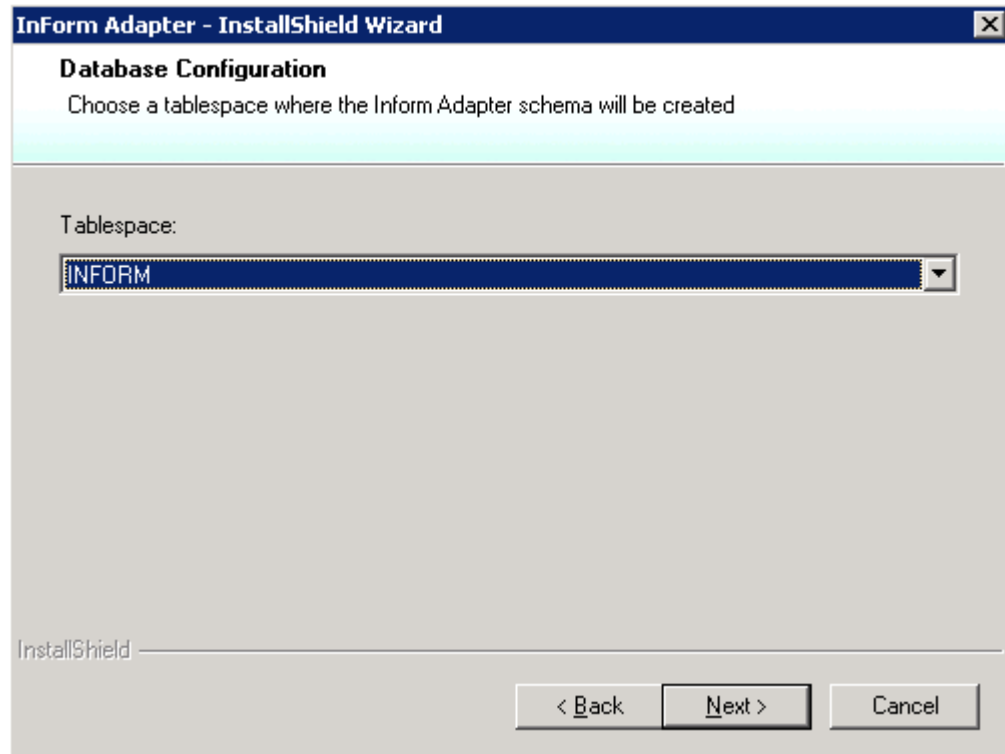
The next Database Configuration page appears, on which you must specify the new InForm Adapter username and password.



The screenshot shows a dialog box titled "InForm Adapter - InstallShield Wizard" with a close button (X) in the top right corner. The main heading is "Database Configuration". Below the heading is a light blue instruction box that reads: "Enter username and password for the new InForm Adapter user. Be sure to remember these account credentials for future use." The dialog contains three text input fields: "New Username:", "New Password:", and "Re-enter password:". At the bottom left, the text "InstallShield" is visible. At the bottom right, there are three buttons: "< Back", "Next >", and "Cancel".

Provide the information and click **Next**.

The next Database Configuration page appears, on which you must specify a tablespace where the InForm Adapter schema for the new user will be created.



Choose a tablespace and click **Next**.

- 15 The Ready to Install the Program page appears.
- 16 Click **Install**.
- 17 When the installation is complete, click **Finish**.

For further steps, see *Installation Overview* (on page 14).

Uninstalling the InForm Adapter software

- 1 Select **Start > Settings > Control Panel**, and click **Add or Remove Programs**.
- 2 Select the current version of the InForm Adapter, and click **Remove**.
- 3 In Windows Explorer, delete the InForm Adapter installation folder and all of its contents, located at:

`<installation_directory>\Program Files\Oracle HS\Inform Adapter`

Note: The InForm Adapter database is not removed when you uninstall the InForm Adapter software. You can use the same database when you install the new version of the InForm Adapter software. The config and log files are also kept.

CHAPTER 4

Upgrading a previous release of the InForm Adapter software

In this chapter

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Upgrading from InForm Adapter 1.3 SP0 or later.....	42
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Upgrade scenarios

Note: In releases prior to 1.3.5, the InForm Adapter and InForm Server Adapter software used the same installer. Starting with release 1.3.5, the installers were separated. The InForm Server Adapter software cannot be upgraded from a release prior to 1.3.4.4. You must uninstall and install it again.

Note: By default, the silent upgrade automatically installs the WCF versions for the Admin, Coding, Discrepancy Enhanced, Transaction Adapter and Central Admin interfaces.

To maintain the original WSE versions of these interfaces, you can edit the following fields in the upgrade.iss response file:

keepAdapterAdminOriginal=0

keepCodingOriginal=0

keepDiscrepancyOriginal=0

keepTransactionAdapterOriginal = 0

keepCentralAdminOriginal=0

For each WSE interface you wish to preserve, set the corresponding field value to 1. To update an interface to WCF, leave the field value set to 0.

The InForm Adapter 1.3.8 software can be used with InForm 4.6.5 or above.

Note: You cannot install this release on a Windows 2003 server or an Oracle 10g database.

Note: If your current InForm Adapter version runs on a Windows 2003 server or an Oracle 10g database, you cannot perform an in-place upgrade.

Existing InForm Adapter version	Use these upgrade instructions
InForm Adapter 1.3 SP0 or later.	<i>Upgrading from InForm Adapter 1.3 SP0 or later.</i> (on page 42)
A version of the InForm Adapter software earlier than InForm Adapter 1.3 with InForm 4.5 or 4.6.	<i>Scenario for upgrading from InForm Adapter 1.2 SP2 or 1.2 SP3</i> (on page 44).

Note: If you are upgrading the InForm Adapter software in configurations in which InForm studies have been decommissioned on the InForm server, you must decommission the studies in the InForm Adapter software before you upgrade. For more information, see *Register Trial Tool* (on page 16).

In releases prior to 1.3.5, the InForm Adapter and InForm Server Adapter software used the same installer. Starting with release 1.3.5, the installers were separated. When upgrading the InForm Adapter software from a release prior to 1.3.5, an InForm Server Adapter related error is logged in the IAConfigurationConsole.log file. This error does not affect any InForm Adapter functionality and should be disregarded. After the upgrade, you must install the InForm Server Adapter software again.

If your current configuration uses the same database to support InForm Adapter 1.2 SP2 or InForm Adapter 1.2 SP3 and InForm 4.6, and you want to upgrade the InForm Adapter software to version 1.3.8, you must establish a separate database for the InForm Adapter software.

Upgrading from InForm Adapter 1.3 SP0 or later

To upgrade InForm Adapter 1.3 to InForm Adapter 1.3.8, run the InForm Adapter and InForm Server Adapter upgrade wizards.

The InForm Adapter upgrade wizard:

- Backs up your configuration files.

For interfaces that are upgraded, the upgrade wizard creates three copies of the config files:

- **InFormAdapter.<interfacename>config.NEW**—The config file that is installed during the upgrade. For example InFormAdapter.coding.config.NEW.
- **InFormAdapter.<interfacename>config.OLD**—The original config file, for example InFormAdapter.coding.config.OLD.
- **InFormAdapter.<interfacename>.config**—The active config file that consists of the original content from the original file merged with the new config file.

Note: You should always review the contents of the config files after upgrading the InForm Adapter software to make sure your settings were updated correctly.

- Removes installed services and interfaces that are obsolete:
 - CRF Submit interface.
 - InForm Adapter Service.
 - Eventing interface.
 - InForm Server Adapter interface.
- Upgrades the InForm Adapter interfaces in-place, without affecting any settings in the current installation.

Note: In releases prior to 1.3.5, the InForm Adapter and InForm Server Adapter software used the same installer. Starting with release 1.3.5, the installers were separated. When upgrading the InForm Adapter software from a release prior to 1.3.5, an InForm Server Adapter related error is logged in the IAConfigurationConsole.log file. This error does not affect any InForm Adapter functionality and should be disregarded. After the upgrade, you must install the InForm Server Adapter software again.

Running the InForm Adapter upgrade wizard

- 1 Navigate to the InForm Adapter ISO image.
- 2 In the InformAdapter folder, double-click **setup.exe**.
The Existing Installed Instances Detected page appears.
- 3 Select **Maintain or update the instance of this application selected below**, and click **Next**.
The Welcome page appears.
- 4 Click **Next**.
The Required System Components page appears.
The installation wizard verifies that the server has all the necessary software components, including the operating system, IIS, and the Oracle client.
If required components are missing or are the wrong version, installation stops. The names of missing and invalid components appear on the Required System Components page. You must install them before continuing the installation.
If you have WSE interfaces installed, you will be prompted to either keep them, or upgrade them to their WCF versions.
- 5 Click **Next**.
The Setup Status page appears and tracks the status of the upgrade.

Running the InForm Server Adapter upgrade wizard

- 1 Navigate to the InForm Server Adapter ISO image.
- 2 In the InForm Server Adapter folder, double-click **setup.exe**.
The Existing Installed Instances Detected page appears. You have to select if you want to install a new instance or maintain and update existing instances.
- 3 Select **Maintain or update the instance of this application selected below** and select the instance you want to upgrade from the list.
- 4 Click **Next**.
The Required System Components page appears.
The installation wizard verifies that the server has all the necessary software components, including the operating system, IIS, and the Oracle client.
If required components are missing or are the wrong version, installation stops. The names of missing and invalid components appear on the Required System Components page. You must install them before continuing the installation.
- 5 Click **Next**.
The Setup Status page appears and tracks the status of the upgrade.

Scenario for upgrading from InForm Adapter 1.2 SP2 or 1.2 SP3

Component	Current configuration	Upgrade to
InForm Adapter database	Oracle 10g AL32UTF8	Oracle 11g or 12g AL32UTF8
InForm Adapter server	InForm Adapter 1.2 SP2 or 1.2 SP3	InForm Adapter 1.3.8
InForm software	InForm 4.5	InForm 4.6.5
InForm database	Oracle 10g WE8MSWIN1252	Oracle 10g WE8MSWIN1252

Upgrading from InForm Adapter 1.2 SP2 or 1.2 SP3

To upgrade from the InForm Adapter 1.2 SP2 software or the InForm Adapter 1.2 SP3 software, you must run a new InForm Adapter installation using the existing InForm Adapter database user. For more information, see *Installing the InForm Adapter software* (on page 13).

- If you use the installer, in the Database Configuration page of the wizard, select Existing User and enter the credentials for the existing InForm Adapter database user.
- If you use the silent install, edit the setup.iss file so that the UserName and UserPwd fields include the credentials for the InForm Adapter database user, and the NewUser field is set to 0.

Editing the setup.iss file

In the setup directory, edit the **setup.iss** file as follows.

Section	Field	Description
SdAskDestPath	szDir	Directory of the existing installation.
EnterSuffix	Suffix	Suffix value of the existing installation.
EnterVirtualDirectory	VirtualDirectoryName	Virtual Directory name of the existing installation.
CompanyURL	CompanyURL	Company URL of the existing installation.
IA_TNS_Name_Admin_Login	TNS_Names	TNS alias name of the Oracle account with creation privileges.
	SystemUserName	Oracle account with creation privileges.
	SystemPassword	Password of the Oracle account with creation privileges.
Sd_ExistingIA_User	UserName	User name of the existing InForm Adapter database user.
	UserPwd	Password of the existing InForm Adapter database user.

CHAPTER 5

Configuring Security

In this chapter

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Configuring username/password security

The SOAP header contains elements for the user name and password for ODM Export interface methods, Safety interface, Discrepancy Original interface methods, and Discrepancy Enhanced interface operations requests. The SOAP body contains an attribute for the study name. The user name must represent an active account in the InForm software and the password must be valid.

For more information about the SOAP header and body, the ODM Export interface, the Discrepancy Original interface, and the Discrepancy Enhanced interface, see the *Interfaces Guide*.

ODM Export interface—configuring username/password security

In addition to including the correct SOAP header and body information in the ODM method call, you must also perform this procedure to configure username/password security for the ODM Export interface.

The web.config file for the ODM Export interface is located on the InForm Adapter server in the same directory as the InFormODM.asmx file:

- /InFormAdapter/ODM/InFormODM.asmx
- /InFormAdapter/ODM/web.config

To configure the ODM web.config file for username/password security:

- 1 Open the web.config file.
- 2 In the INFORM AUTHENTICATION section, set the AuthenticateRequests value to "true".

For example:

```
<!--INFORM AUTHENTICATION
  The following setting is used to authenticate users against InForm 4.6
  SP2a or greater.
  This setting is used in conjunction with the InFormUsernameTokenManager
  which should be
  enabled in the 'microsoft.web.services2.security' settings of this same
  file. -->
<appSettings>
  <add key="InFormUsernameTokenManager.AuthenticateRequests" value="true" />
</appSettings>
```

- 3 Set the securityTokenmanager to the InFormUsernameTokenManager.

For example:

```
<microsoft.web.services2>
  <security>
    <securityTokenManager qname="wsse:UsernameToken"
      type="PhaseForward.InFormAdapter.Framework.Security.InFormUsernameTokenM
      anager, PhaseForward.InFormAdapter.Framework.Security"
      xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
      wssecurity-secext-1.0.xsd" />
  </security>
</microsoft.web.services2>
```

Discrepancy Original interface—configuring username/password security

In addition to including the correct SOAP header and body information in the Discrepancy Original interface method call, you must also perform this procedure to configure username/password security for the Discrepancy Original interface.

The web.config file for the Discrepancy Original interface is located on the InForm Adapter server in the same directory as the InFormDiscrepancy.asmx file:

- /InFormAdapter/Discrepancy/InFormDiscrepancy.asmx
- /InFormAdapter/Discrepancy/web.config

To configure the Discrepancy Original interface web.config file for username/password security:

- 1 Open the web.config file.
- 2 In the INFORM AUTHENTICATION section, set the AuthenticateRequests value to "true".

For example:

```
<!--INFORM AUTHENTICATION
  The following setting is used to authenticate users against InForm 4.6
  SP2a or greater.
  This setting is used in conjunction with the InFormUsernameTokenManager
  which should be
  enabled in the 'microsoft.web.services2.security' settings of this same
  file. -->
<appSettings>
  <add key="InFormUsernameTokenManager.AuthenticateRequests" value="true" />
</appSettings>
```

- 3 Set the securityTokenmanager to the InFormUsernameTokenManager.

For example:

```
<microsoft.web.services2>
  <security>
    <securityTokenManager qname="wsse:UsernameToken"
      type="PhaseForward.InFormAdapter.Framework.Security.InFormUsernameTokenM
anager, PhaseForward.InFormAdapter.Framework.Security"
      xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-secext-1.0.xsd" />
    </security>
  </microsoft.web.services2>
```

Discrepancy Enhanced interface—configuring username/password security

In addition to correct configuration of the SOAP header and body in the requests of Discrepancy Enhanced interface operations, you must select the type of deployment to use.

For information about the SOAP header and body, see the *Interfaces Guide*.

Deployment types

The InForm Adapter Discrepancy Enhanced interface supports network access directly to the server, network access through a load balancer, and local access. After you run the installation, you run a script at the command line, in which you state the type of deployment you want to use. For more information, see *Choosing the deployment type* (on page 51).

Deployment name	HTTP / HTTPS	Authentication?	URL / SOAP study matching?
Default	HTTPS	Yes	No
Load balanced	HTTP *	Yes	Yes
LAN access	HTTP	No	No

* Represents the data sent by the load balancer to the API.

Default deployment

Default deployment is configured automatically by the product installer and allows clients to securely access the server through the top-level virtual directory. An SSL certificate must be installed for the discrepancy virtual directory and the request must include a valid user name/password used to authenticate the requests.

Example client URL:

```
https://myserver/InFormAdapter/Discrepancy/DiscrepancyService.svc
```

Load balanced deployment

Load balanced deployment is configured through modifications to the web.config file and is intended for use when exposing the API through the use of a network load balancer. When deployed in this manner, the load balancer is responsible for SSL decryption (no certificate is installed for the adapter virtual directory) as well as altering the request URL to remove the study name from the request. Requests must include a valid user name/password. For more information, see *Choosing the deployment type* (on page 51).

Example client URL:

```
https://myserver/InFormAdapter/Discrepancy/DiscrepancyService.svc
```

LAN access deployment

LAN access deployment allows clients on the same network-secured LAN to access the API without security. As with default security, when deployed in this manner, the API is not exposed beneath the study URL and, therefore, no study name matching is performed.

Example client URL:

```
http://myserver/InFormAdapter/Discrepancy/DiscrepancyService.svc
```

Choosing the deployment type

The InForm Adapter Discrepancy Enhanced interface comes with:

- Three variations of the web.config file to support the different configurations that are used to deploy provisioning.
- The utility WebConfigFileSelector.cmd, which you use to set the appropriate config file for your configuration type.

To select the deployment type:

- 1 Open a Command Prompt window and change to the <InForm_Adapter_installation_directory>\Discrepancy\ directory.
- 2 Issue the following command:

```
WebConfigFileSelector.cmd CONFIGURATION
where CONFIGURATION specifies the deployment type.
```

For example:

```
WebConfigFileSelector.cmd F5
```

The utility replaces the InFormAdapter\Discrepancy\web.config file with one of the following files.

Deployment type	Deployment type configuration option	Config file	Details
Default	SECURE	Web_secure.config	<ul style="list-style-type: none"> • Secure configuration for client requests sent over the Internet. • Supports HTTPS transport using SOAP 1.2. • Requires a Username Token in the SOAP Security header for providing the user name and password credentials to authenticate a request.
Load balanced	F5	Web_secure_F5.config	<ul style="list-style-type: none"> • Secure configuration for client requests sent over the Internet using a network load balancer. • Supports HTTPS into the network load balancer and HTTP out of it using SOAP 1.2. • Requires a Username Token in the SOAP Security header for providing the user name and password credentials to authenticate a request.

Deployment type	Deployment type configuration option	Config file	Details
Default	SECURE	Web_secure.config	<ul style="list-style-type: none"> Secure configuration for client requests sent over the Internet. Supports HTTPS transport using SOAP 1.2. Requires a Username Token in the SOAP Security header for providing the user name and password credentials to authenticate a request.
LAN access	UNSECURE	Web_nosecurity.config	<ul style="list-style-type: none"> Unsecure configuration for client requests sent over a LAN from behind a firewall. Supports HTTP transport and SOAP 1.2. Does not perform request authentication.

Safety interface—configuring username/password security

In addition to correct configuration of the SOAP header and body in the requests of Safety interface operations, you must select the type of deployment to use.

For information about the SOAP header and body, see the *Interfaces Guide*.

Deployment types - Safety

The InForm Adapter Safety interface supports network access directly to the server, network access through a load balancer, and local access. After you run the installation, you run a script at the command line, in which you state the type of deployment you want to use. For more information, see *Choosing the deployment type*.

Deployment name	HTTP / HTTPS	Authentication?	URL / SOAP study matching?
Default	HTTPS	Yes	No
Load balanced	HTTP *	Yes	Yes
LAN access	HTTP	No	No

* Represents the data sent by the load balancer to the API.

Default deployment

Default deployment is configured automatically by the product installer and allows clients to securely access the server through the top-level virtual directory. An SSL certificate must be installed for the safety virtual directory and the request must include a valid user name/password used to authenticate the requests.

Example client URL:

```
https://myserver/InFormAdapter/Safety/SafetyService.svc
```

Load balanced deployment

Load balanced deployment is configured through modifications to the web.config file and is intended for use when exposing the API through the use of a network load balancer. When deployed in this manner, the load balancer is responsible for SSL decryption (no certificate is installed for the adapter virtual directory) as well as altering the request URL to remove the study name from the request. Requests must include a valid user name/password. For more information, see [Choosing the deployment type](#).

Example client URL:

```
https://myserver/InFormAdapter/Safety/SafetyService.svc
```

LAN access deployment

LAN access deployment allows clients on the same network-secured LAN to access the API without security. As with default security, when deployed in this manner, the API is not exposed beneath the study URL and, therefore, no study name matching is performed.

Example client URL:

```
http://myserver/InFormAdapter/Safety/SafetyService.svc
```

Choosing the deployment type

The InForm Adapter Safety interface comes with:

- Three variations of the web.config file to support the different configurations that are used to deploy provisioning.
- The utility WebConfigFileSelector.cmd, which you use to set the appropriate config file for your configuration type.

To select the deployment type:

- 1 Open a Command Prompt window and change to the <InForm_Adapter_installation_directory>\Safety\ directory.
- 2 Issue the following command:

```
WebConfigFileSelector.cmd CONFIGURATION
where CONFIGURATION specifies the deployment type.
```

For example:

```
WebConfigFileSelector.cmd F5
```

The utility replaces the InFormAdapter\Safety\web.config file with one of the following files.

Deployment type	Deployment type configuration option	Config file	Details
Default	SECURE	Web_secure.config	<ul style="list-style-type: none"> Secure configuration for client requests sent over the Internet. Supports HTTPS transport using SOAP 1.2. Requires a Username Token in the SOAP Security header for providing the user name and password credentials to authenticate a request.
Load balanced	F5	Web_secure_F5.config	<ul style="list-style-type: none"> Secure configuration for client requests sent over the Internet using a network load balancer. Supports HTTPS into the network load balancer and HTTP out of it using SOAP 1.2. Requires a Username Token in the SOAP Security header for providing the user name and password credentials to authenticate a request.
LAN access	UNSECURE	Web_nosecurity.config	<ul style="list-style-type: none"> Unsecure configuration for client requests sent over a LAN from behind a firewall. Supports HTTP transport and SOAP 1.2. Does not perform request authentication.

Configuring X.509 digital certificates

Before you apply certificates to Central Admin and Transaction Adapter WSE interfaces

During the installation of the InForm Adapter software, you either accepted the default virtual directory name, **InformAdapter**, or provided a different virtual directory name.

If you provided a different virtual directory name, you must edit the SampleCertConfig.xml file to specify the name before you apply any security certificates.

To edit the SampleCertConfig.xml file:

- 1 Using an XML editor of your choice, open the SampleCertConfig.xml file, located in
Installation_directory\InstallScript\CertPicker\SampleCertConfig.xml
- 2 Search for all ServiceInstance XML elements with a baseUrl that contains the pattern **http://serverName/InformAdapter**.
- 3 Replace the **InformAdapter** part of the URL with the name that you gave the virtual directory when you installed the InForm Adapter software. If the InForm Adapter software is behind an F5 load balancer, you must specify the URL that will be registered in CIS. This is the URL that will go through the F5 load balancer to access the web service.
- 4 Save and close the SampleCertConfig.xml file.

For example, if you specify **MyInformAdapter** as the virtual directory name during the installation of the InForm Adapter software on server DPF003046, then in the SampleCertConfig.xml file, you locate the first instance of http://DPF003046/InformAdapter

```
<ServiceInstance . . .
  baseUrl=http://DPF003046/InformAdapter/TransactionAdapter/" . . />
```

and replace it with

```
<ServiceInstance . . .
  baseUrl=http://DPF003046/MyInformAdapter/TransactionAdapter/" . . />
```

Replace all instances of the pattern that is found in the file, then save and close the file.

Note: If your client application is calling the InForm Adapter software through an F5 load balancer, when the certificate on the F5 load balancer changes, you must load the certificate on the client application server again. If you are using Clintrial Integration Solution (CIS) or Central Coding with certificate authentication enabled for InForm Adapter, you must load the certificate on the InForm Adapter application server. The root certificate store can be updated by Windows updates. If certificate authentication fails, check that the certificate authority in the root certificate store matches the certificate in the personal store on the application server. If not, you may need to run a Windows update to get the most recent root certificates.

Configuring X.509 digital certificates for Central Admin and Transaction Adapter WSE interfaces

Oracle provides a Certificate Configuration tool that you can use to install and configure X.509 digital certificates, and to secure communications for your product environment. For more information about the different types of security, see *Supported web service policies for Central Admin and Adapter Admin WSE interfaces* (on page 57).

When you use X.509 digital certificates to secure communication between an application or API and the InForm Adapter software, you must configure the certificates after installing the InForm Adapter software.

- When an application and the InForm Adapter software are hosted at the same location behind a firewall, you can configure one X.509 digital certificate.

For more information, see *Applying one certificate to all services on the InForm Adapter server* (on page 59).

- Certificates must be installed in the Local Computer location in the Personal store on the servers.

The security policy for an application and the InForm Adapter software being used by that application must be the same. For example, if the InForm Adapter software is using the TokenOnlyPolicy web service policy, the application must also use the TokenOnlyPolicy web service policy. Security is applied by running the Certificate Configuration tool and loading the default configuration file for the Oracle product.

Note: To configure X.509 digital certificates, you do not have to use the Certificate Configuration tool from Oracle. You can use other tools, such as the Microsoft Management Console.

For more information about applying security for the Central Coding application, see the Central Coding *Installation Guide*.

Configuring X.509 digital certificates for WCF interfaces

By default, certificates for WCF interfaces that use certificate authentication are installed in the Local Computer location in the Personal store on the server. If your certificate is not installed under the Personal store, you must edit the `CertificationStoreName` value in `web.config` file to point to the certificate location:

- 1 Navigate to:

```
<InForm_Adapter_installation_directory>\<interface_name>\web.config
```

- 2 Open the `web.config` file in a text editor.
- 3 Set the `CertificationStoreName` value to the certificate location.
- 4 Save `web.config` file and exit the editor.

Coding and Discrepancy Enhanced interfaces support multiple types of authentication. To enable certificate authentication for these interfaces:

- 1 Open a Command Prompt window and change to:

```
<InForm_Adapter_installation_directory>\<interface_name>
```

- 2 Issue the following command:

```
WebConfigSelector.cmd F5CERT
```

Supported web service policies for Central Admin and Adapter Admin WSE interfaces

Oracle provides the following web service policies:

- **NoPolicy**—No tokens and no signature or encryption of messages.
- **TokenOnlyPolicy**—Signed tokens but no message encryption.
- **FullPolicy**—Signed tokens and encrypted messages.

Note: Oracle strongly recommends **TokenOnlyPolicy** using HTTPS for all deployments.

The security policy for an application and the InForm Adapter software being used by that application must be the same. For example, if the InForm Adapter software is using the **TokenOnlyPolicy** web service policy, the application must also use the **TokenOnlyPolicy** web service policy.

Note: In Clintrial Integration Solution (CIS) releases prior to 4.6.2, the certificate configuration tool refers to **TokenOnlyPolicy** as **AuthenticationOnlyPolicy**. To use **TokenOnlyPolicy**, choose **TokenOnlyPolicy** in InForm Adapter and **AuthenticationOnlyPolicy** in Clintrial Integration Solution (CIS).

To change the web service policy for the InForm Adapter software and an application, run the Certificate Configuration tool and load the CONFIG file that supports the security policy you want to use. Before you run the Certificate Configuration tool, verify that the `policyTemplateFilePath` in the `SampleCertConfig.xml` file points to the directory that contains the policy file for the specific Service interface(s) that your application uses.

For this policy	Point to this directory
No security	NoPolicy
Token security	TokenOnlyPolicy
Full security	FullPolicy
PF security (CIS 4.5 SP0 only)	PFPolicy

For example, if a Clintrial Integration Solution (CIS) 4.6.5.1 application is using **AuthenticationOnlyPolicy** for the Central Admin interface service:

- The Central Admin interface service for the InForm Adapter software must also use **TokenOnlyPolicy**.
- The `policyTemplateFilePath` for the Central Admin interface service would be **.TokenOnlyPolicy\policyCache-CentralAdmin.config**.

Similarly, for the Transaction Adapter interface:

- The Transaction Adapter interface service for the InForm Adapter software must also use **TokenOnlyPolicy**.
- The `policyTemplateFilePath` for the Transaction Adapter interface service would be **.TokenOnlyPolicy\policyCache-CentralAdmin.config**.

If you are using the Clintrial Integration Solution (CIS) application with Full Security and the Central Admin and Adapter Admin WSE interfaces

If you are using the Clintrial Integration Solution (CIS) application with Full Security and the Central Admin and Adapter Admin WSE interfaces, you must do the following:

- 1 Perform the procedures in this chapter, Applying one certificate to all services on the InForm Adapter server, as appropriate for your configuration.
- 2 Perform one of the procedures in the appendix, *Configuring the Clintrial Integration Solution (CIS) Central Administration interface* (on page 77), as appropriate for your configuration.

Applying one certificate to all services on the InForm Adapter server

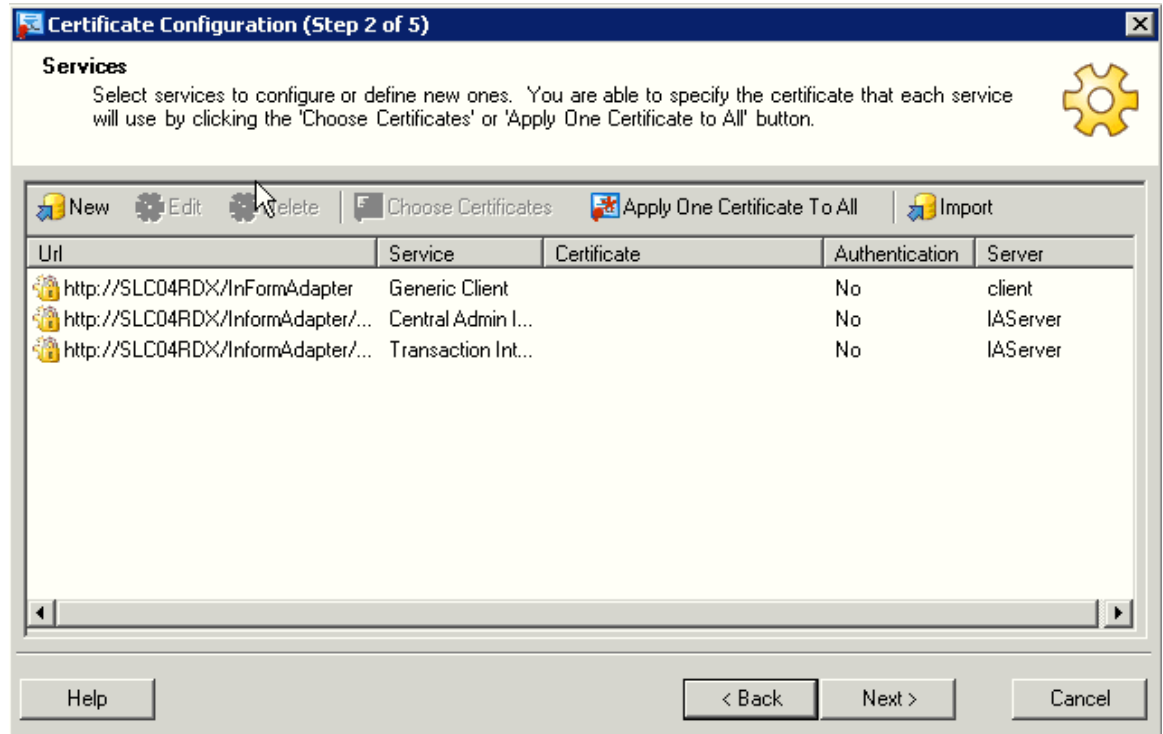
When all servers and services are on the same side of a firewall, you can use one certificate for all services and apply the certificate to all servers in your product environment.

- 1 Select **Start > Programs > Oracle > InForm Adapter > Certificate Configuration Tool**.

The Introduction page appears.

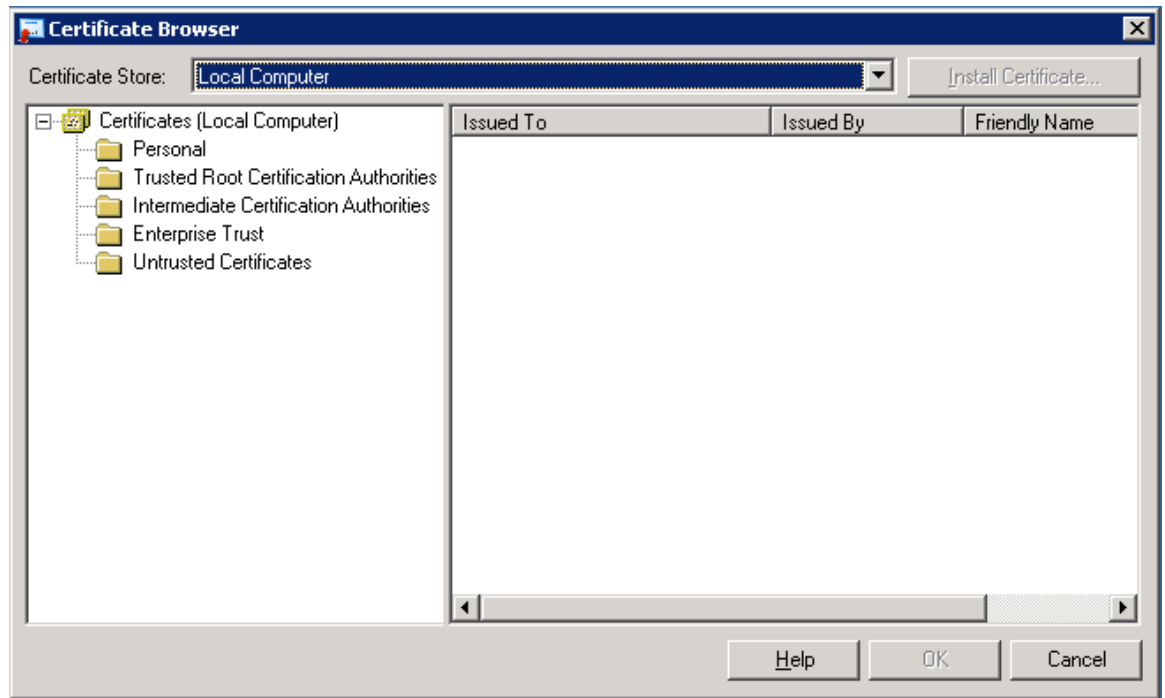
- 2 Click **Next**.

The Services page appears.



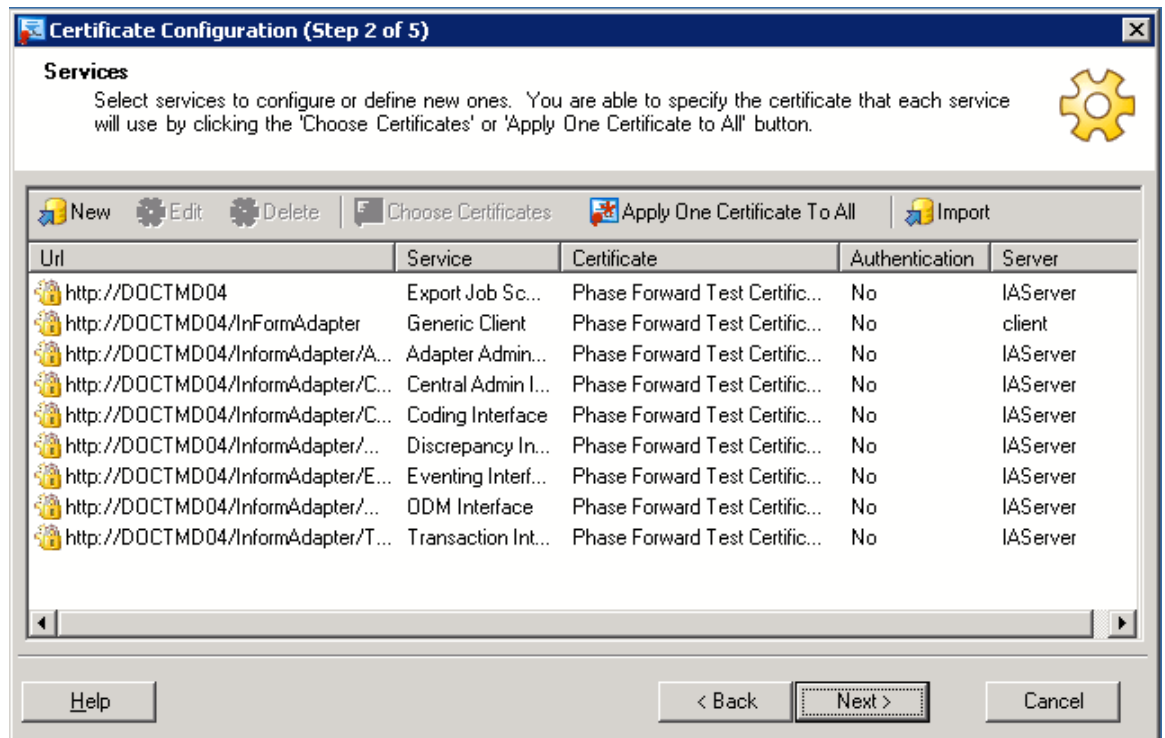
- 3 Click **Apply One Certificate to All**.

The Certificate Browser page appears.



- 4 Navigate to your **Personal** certificate store, select the certificate to apply, and click **OK**.

The Services page appears, with the certificate you applied listed next to every service.



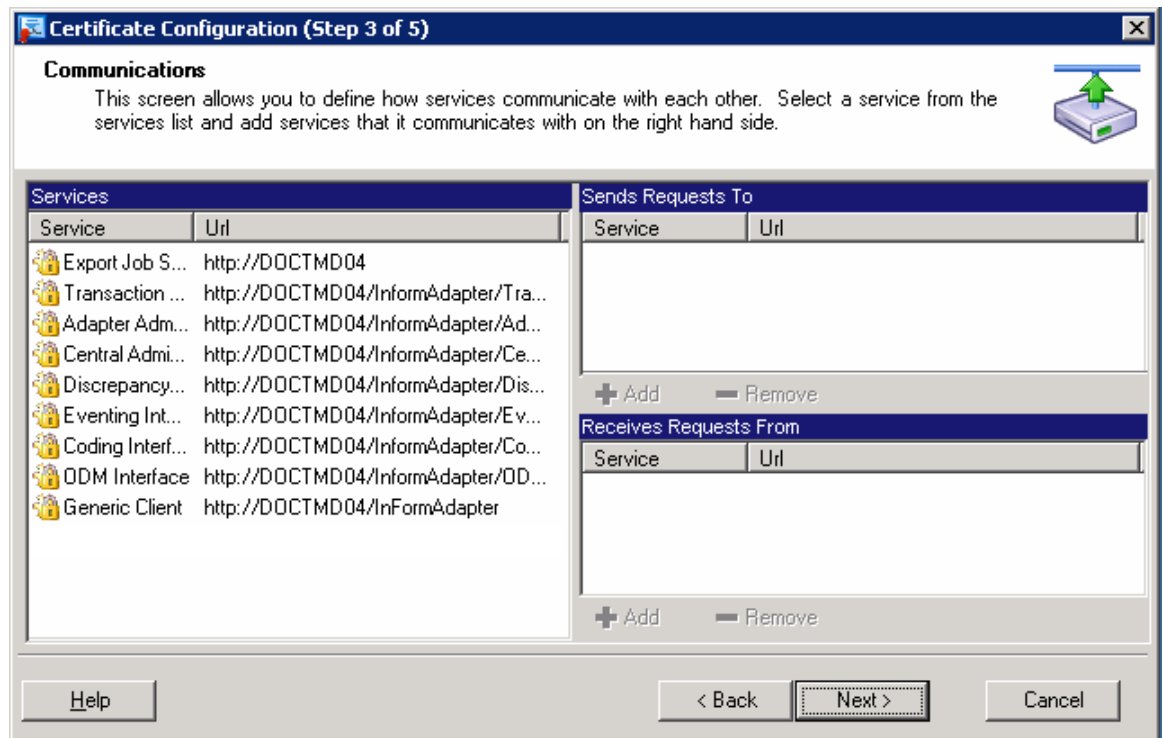
Caution: If you are using a hardware switch to direct web service requests, the URL for each service must be the external URL that is used to access that InForm Adapter interface.

If you install the InForm Adapter software to a virtual directory that does not use the default name, you must edit the services URL so that it includes the correct virtual directory name.

To specify a different URL for a service, select **Edit** to open the Service Definition page. Then specify the correct URL for each service listed in the Services page.

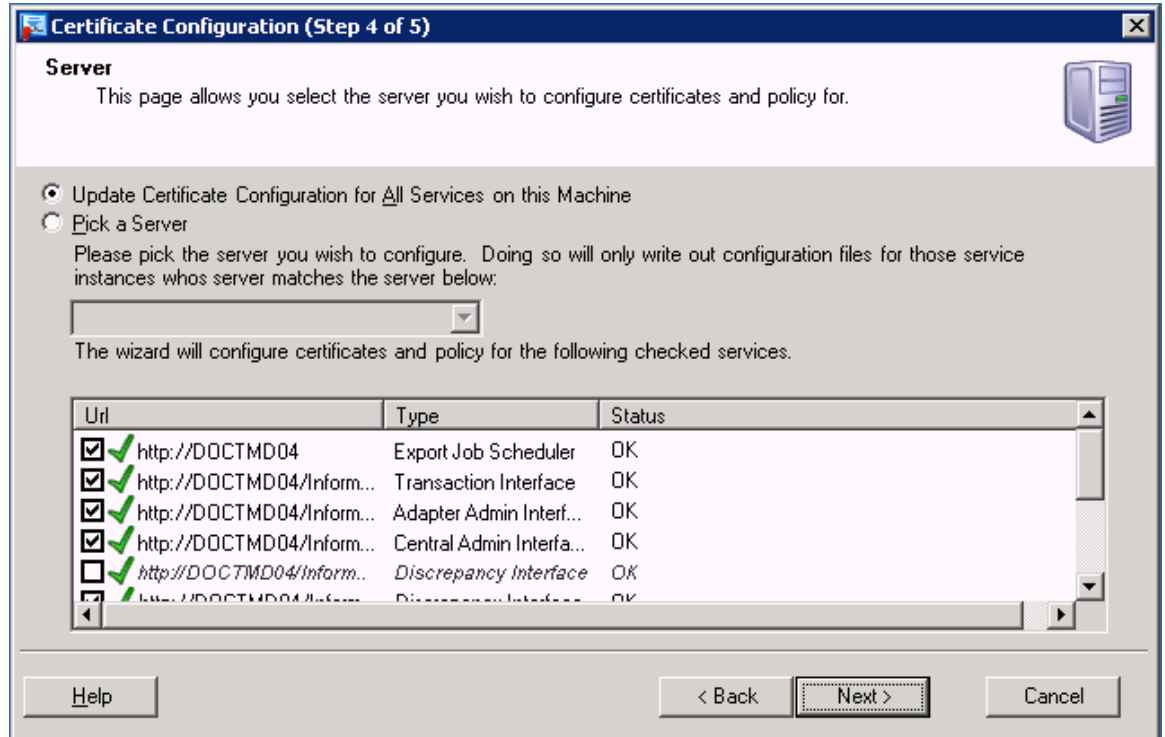
- 5 Click **Next**.

The Communications page appears.

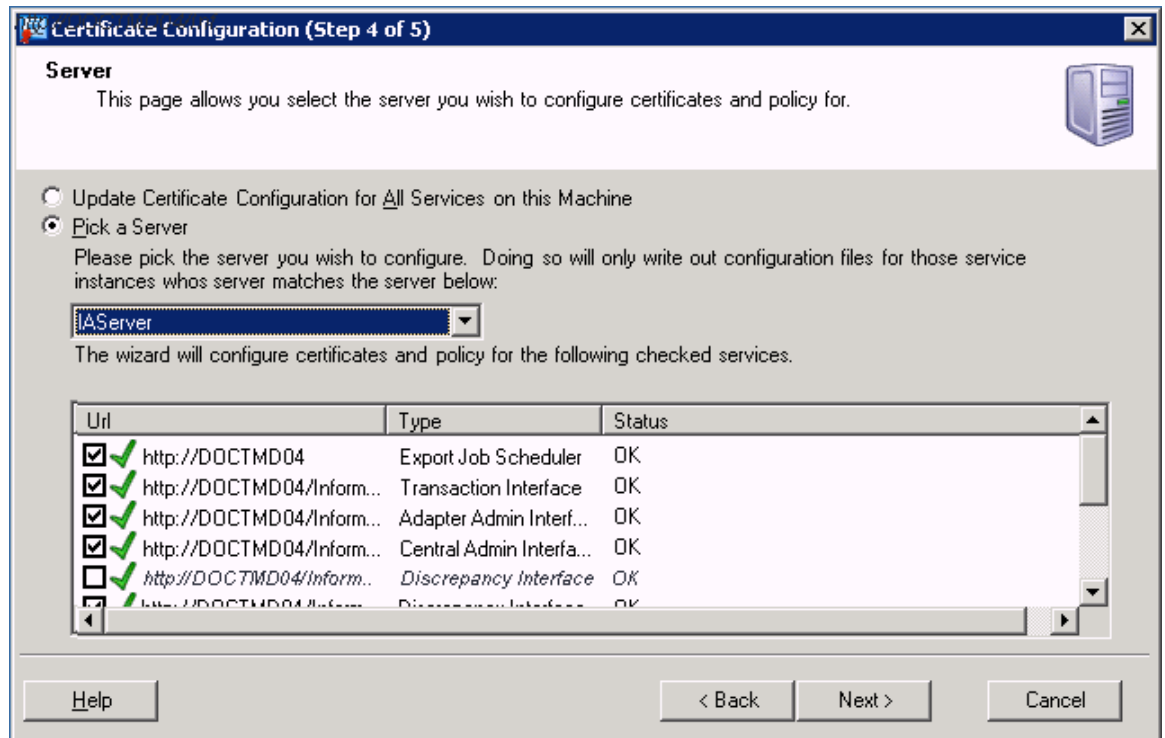


- Accept the default communications, and click **Next**.

The Server page appears.



- Select **Pick a Server**, and select **IAServer** from the drop-down list.



- 8 For CIS releases prior to 4.6.2, you must select the WSE versions of the Transaction Interface and Central Admin Interface, instead of the default WCF versions.
- 9 Click **Next**.
The Summary page appears.
- 10 Click **Finish**.

CHAPTER 6

Verifying the Discrepancy Enhanced interface installation

In this chapter

Verifying the Discrepancy Enhanced interface installation and retrieving the WSDL66

Verifying the Discrepancy Enhanced interface installation and retrieving the WSDL

Note: Before you verify the installation you must choose the deployment type. For more information, see *Deployment types* (on page 50).

To verify the installation:

- Check IIS to make sure that the discrepancy virtual directory has been successfully created.
- If you are using the Default deployment, ensure that you have configured the SSL certificate for the discrepancy virtual directory. For more information, see *Default deployment* (on page 50).
- Retrieve the WSDLs and XSDs for the Discrepancy Enhanced interface. This procedure can be used to determine connectivity, especially when the discrepancy service is hosted behind an F5 load balancer.

To enable and disable the service metadata:

To display the WSDL and XSD, you must enable the service metadata.

Note: Only set this option to True (enable the service metadata) for debugging or testing purposes. To implement best security practices, set this option to False (disable the service metadata).

- 1 To enable the service metadata, set the value of serviceMetadata httpGetEnabled in the web.config file to true:

```
<serviceMetadata httpGetEnabled="true" httpsGetEnabled="true" />
```

- 2 After you retrieve the WSDL and XSD, disable the service metadata:

For more information about using this option securely, see the *Secure Configuration Guide*.

To retrieve the WSDL:

Use any Internet browser, such as MS Internet Explorer, to browse to the discrepancy address.

For example, to retrieve the WSDL, browse to

```
https://webexpress.domain.com/InFormAdapter/Discrepancy/DiscrepancyService.svc?wsdl
```

The browser displays the WSDL.

To retrieve the XSD:

Use the same base address you used to retrieve the WSDL, with the following substitutions:

For the Discrepancy namespace, use the suffix **?xsd=xsd0**

For example:

```
https://webexpress.domain.com/InFormAdapter/Discrepancy/DiscrepancyService.svc?xsd=xsd0
```

This address is found in the retrieved WSDL in import nodes with the schemaLocation attribute.

The URLs in the returned WSDL will match the external URLs sent by the client.

CHAPTER 7

Performing InForm Adapter post-installation tasks

In this chapter

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Overview of post-installation tasks

Perform the following tasks as needed for your environment:

- *Configuring the InForm Server Adapter* (on page 70).
- *Configuring the InForm Adapter interfaces* (on page 72).
- *Increasing the timeout period for ASP.NET* (on page 75).

The web.config file

The InForm Adapter software uses web.config files for configuring the web services for each interface, including the InForm Server Adapter (ISA) interface on the InForm application server.

The web.config file is part of the Microsoft configuration architecture. For more information, see the MSDN documentation.

The web.config file should be used to configure security for each InForm Adapter interface.

Note: Whether you configure security through policy files and certificates, or username/password security, depends on the InForm Adapter interface or interfaces you use and the version of the InForm software used by the InForm studies to which you are connected. For more information, see *About InForm Adapter security* (on page 6).

Configuring the InForm Server Adapter

Start services required by the Clintrial Integration Solution (CIS) software

By default, the Server Adapter and Export services are set to manual. To use the Clintrial Integration Solution (CIS) software, the Server Adapter service must be running. Start the service manually after you install the InForm Adapter software.

For more information, see *InForm Server Adapter services* (on page 21).

Transaction detection settings for the Inform Server Adapter Service

You can set the amount of time (in seconds) that the InFormServerAdapterService will allow between transaction detection processing by editing the **InFormServerAdapterService.config** file.

To specify a transaction detection interval:

- Edit the UpdateInterval entry:

```
<UpdateInterval>300</UpdateInterval>
```

The default setting is 300, indicating that the InFormServerAdapterService will wait for five minutes between transaction detection processing.

Including or excluding studies from processing

You can configure the InForm Server Adapter (ISA) so that only specific studies on the InForm server are processed. This behavior might improve performance if the InForm server contains large studies or multiple studies.

You can specify:

- The maximum number of studies to be processed at one time, by specifying the number of threads that can be running at one time.
- A list of studies to include or exclude from processing, based on the study prefix, suffix, or full name.

To configure the InForm Server Adapter service:

- 1 On the InForm server, use the Windows Administrative Tools to stop the InForm Server Adapter service.
- 2 In a text editor, open the **InFormServerAdapterService.config** file.
- 3 Use TrialThreadPool to specify the number of threads to process the studies on the InForm server. For more information, see the TrialThreadPool comments in the config file.
- 4 To include or exclude studies from processing, uncomment the appropriate InclusionCondition or ExclusionCondition line and specify a value. For more information, see the InclusionList comments in the InFormServerAdapterService.config file.

Adding users to the InForm Adapter security groups

The following Windows security groups are created when additional InForm Adapter interfaces are installed:

- InFormAdapterAdmin.
- InFormAdapterCentralAdmin.
- InFormAdapterCode.
- InFormAdapterCoding.
- InFormAdapterConfig.
- InFormAdapterDiscrepancy.
- InFormAdapterODM.
- InFormAdapterSafety.
- InFormAdapterSrv.
- InFormAdapterTran.

The Windows administrator must modify these user groups to include any users who will need access to the InForm Server Adapter and the InForm Adapter interfaces.

Configuring the InForm Adapter interfaces

Each InForm Adapter web service has two configuration files:

- An application configuration file for the web service.
- web.config

The application configuration file

Each web service and InForm Adapter Windows service has an application configuration file. This file contains product-specific Oracle application configuration settings.

The application configuration files are in the \bin\config directories for the interfaces. They are named as follows:

Service type	File name / Example
Web service	InFormAdapter.<interfacename>.config Example: InFormAdapter.coding.config Location: <installation_directory>\coding\bin\config
Windows service	<servicename>Service.config InFormServerAdapterService.config

In the application configuration files, you can configure any of the following settings:

Configuration	Use these instructions
Adapter settings.	<i>Adapter settings</i> (on page 73).
Error log settings.	<i>Error logging settings</i> (on page 73).
ChunkSize parameter for the Coding interface.	<i>Setting the ChunkSize parameter in the InFormAdapter.Coding.config file</i> (on page 74).
Enable or disable ODM data reduction.	<i>Enabling or disabling ODM data reduction</i> (on page 74).

Adapter settings

InForm Adapter settings are used with certificate security to define some base attributes of the interface. If these settings are not found in the application configuration file the first time the application tries to access them, they are created with the following default settings:

```
<AdapterSettings>
  <ApplicationName>CentralServices</ApplicationName>
  <ApplicationId>[A new Guid is generated when these settings are created]
</ApplicationId>
  <CustomerURI>www.phaseforward.com</CustomerURI>
</AdapterSettings>
```

These settings are important because the roles coming in on a SAML token are filtered by the customer URI. The InForm Adapter software recognizes only those SAML token security attributes that are members of the same customer URI.

Note: The InForm Adapter settings are set during the installation and should not be changed.

Error logging settings

The InForm Adapter software uses the open source log4net component (<http://logging.apache.org/log4net/>) to perform error logging to a configurable location.

- By default, all InForm Adapter web services and Windows services are configured to log all errors that occur to the event viewer.

However, they can be configured to log additional information to a log file or some other location.

- Some requests that return errors deliver the errors to the calling application or client process.

In some situations (for example, when the debugging level of error logging is enabled), only the errors related to the request are relayed to the calling application. Debugging errors can be routed to another location.

For more information, see <http://logging.apache.org/log4net/release/config-examples.html>.

Setting the ChunkSize parameter in the InFormAdapter.Coding.config file

The ChunkSize parameter is the number of transactions that the InForm Adapter software looks at in a single coding get request call, and determines whether the PFEX_VERBATIMCACHE table needs to be updated based on new data, deleted data, or changed data in the InForm software. The ChunkSize parameter is set to 2000 by default.

In very large studies in which the PFEX_VERBATIMCACHE table is rebuilt (for example, when a new mapping is implemented) you might need to increase the value of the ChunkSize parameter. Increasing the value can improve performance of the PFEX_VERBATIMCACHE table rebuild if the verbatim density across the transactions in the study is not too high.

For example, in a very large study, transactions that contain verbatim information could be spread out over several thousand transactions. If the ChunkSize is set to 2000, each call made to the Adapter might update/insert only a few records. If the ChunkSize is set to 20000, each call will bring back many more verbatims. The disadvantage to this higher setting would occur in studies that have a high density of verbatims (such as if all 20000 transactions are from verbatim data). The call to the adapter could take a long time and potentially time out.

The value of the ChunkSize parameter is global to the InForm Adapter server and will affect all studies registered on that server.

To set the ChunkSize parameter:

- Edit the InFormAdapter.Coding.config file entry (this shows the default):

```
<ChunkSize size="2000" />
```

For example, in a very large study (greater than one million transactions) change the size to 20000:

```
<ChunkSize size="20000" />
```

Enabling or disabling ODM data reduction

ODM data reduction reduces redundancies in ODM output. Items are identified as unique based on their identifying key (OID, repeat key, etc). Contents of items that have the same key are reduced to a single item, in chronological order. The output remains ODM compliant, but is more compact.

ODM data reduction is enabled by default.

You can disable ODM data reduction for the output of the GetTransactions method or the DownloadPatientDataODM method by including the parameter skipODMReduction=TRUE in input request to the method.

You can disable reduction for all studies on the server by uncommenting the element **<SkipODMReduction />** in the InFormAdapter.ODM.config file. The request parameter value, if specified in the method call, takes precedence over the server-wide element value in the configuration file.

For example, if you uncomment **<SkipODMReduction />** in the configuration file, and include **skipODMReduction=False** in the call to the GetTransactions method for study pfst45odm, only the GetTransactions response for that particular request to trial pfst45odm will apply ODM data reduction to the response.

For more information, see the *Interfaces Guide*.

Increasing the timeout period for ASP.NET

If a web service request runs longer than the default timeout period for ASP.NET, the following message might appear:

```
Attempted to access an unloaded AppDomain
```

Such a timeout could occur during synchronization.

To resolve this issue, increase the value for **responseDeadlockInterval** in the **machine.config** file on the servers. The default value is three minutes. This is a global value that applies to all ASP.NET applications. For more information about setting the value, see the Microsoft documentation (<http://www.asp.net/>).

Note: Oracle recommends that you do **not** change the **responseDeadlockInterval** value unless you receive the error as described.

APPENDIX A

Configuring the CIS application and interface

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When to use the instructions in this appendix

Use the instructions in this appendix if all of the following apply to your configuration:

- You are using the Clintrial Integration Solution (CIS) application with full security (called *Authentication, Signing and Encryption* in the Clintrial Integration Solution (CIS) application).
- You have already installed the Clintrial Integration Solution (CIS) application and enabled security, following instructions in the Clintrial Integration Solution (CIS) *Installation Guide*.
- You have already installed the InForm Adapter software, and configured security as described in *Configuring x.509 digital certificates* (on page 55).

Configuring the Clintrial Integration Solution (CIS) Central Administration interface

When configuring the Clintrial Integration Solution (CIS) Central Administration interface, consider the following.

- If your web server requires that the root virtual directory for a URL be all lowercase, edit the **RootInstallDirectory** entry in the **InFormAdapter.CentralAdmin.config** file so that the value of the **VirtualDirectoryName** attribute is all lowercase.

For example:

```
<CAAdapterSettings>
  <RootInstallDirectory DirectoryName="InForm Adapter"
    VirtualDirectoryName="informadapter" />
</CAAdapterSettings>
```

- If your environment uses a firewall that takes requests received as SSL and relays them as normal HTTP requests behind the firewall, the InForm Adapter software needs to know that the URLs it generates must use the HTTPS protocol.

To set this, add the **HttpPrefix** attribute to the **CAAdapterSettings** entry in the **InFormAdapter.CentralAdmin.config** file, as follows:

```
<CAAdapterSettings HttpPrefix="https">
  <RootInstallDirectory DirectoryName="InForm Adapter"
    VirtualDirectoryName="informadapter" />
</CAAdapterSettings>
```

URLs must be identical on both sides of the firewall

If your environment uses a firewall or load balancer that relays requests to the application server, you must ensure that URL specified in the HTTP GET that is sent by the client to the firewall is passed without modification to the application server. This means that the URL must correspond to the directory structure of the application server behind the firewall.

For example, if the firewall receives the following request and forwards it to the application server, the application server must have a virtual directory named `appinst1` that contains the resource `foo.asmx` in the `app` directory:

```
GET /appinst1/app/foo.asmx
Host www.example.com
```

If the firewall were to rewrite the request for a different virtual directory name, when the InForm Adapter server builds a response messages containing URLs, it will build it using the `/app/foo.asmx` structure, which is not the response structure the client is expecting.

For example:

Client to Firewall:

```
GET /appinst1/app/foo.asmx
Host www.example.com
```

Firewall to Adapter Server:

```
GET /app/foo.asmx
Host www.example.com
```


APPENDIX B

Troubleshooting

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Update to PFIA_SINGLETONS fails

Occurs

When you are installing the InForm Adapter software.

Error message

ERROR PhaseForward.InFormAdapter.IAConfigurationConsole.IAConfigurationConsole Update to data table informadapter.PFIA_SINGLETONS failed.

Possible causes

- XA transactions not enabled.
- Oracle patches not installed.
- PATH environment variable contains multiple Oracle Home entries.

Solution

- *Enable XA transactions* (on page 16).
- Make sure that the correct versions of Oracle are installed.
For more information, see the Oracle 10g patch requirements in the InForm Adapter *Release Notes*.
- Make sure that the PATH environment variable lists the path for the client Oracle Home.
If there is more than one Oracle Home path listed, the client Oracle Home path *must* occur first.

Maximum open cursors exceeded

Occurs

When the InForm Adapter Export Service is running.

Error message

ORA-01000: maximum open cursors exceeded.

Possible cause

Failure of the Export Service to release database resources during Eventing interface processing.

Solution

Increase the Oracle OPEN_CURSORS parameter to 1000, which is the recommended setting for web service applications.

End-of-file on communication channel database error

Occurs

When the Coding interface is running a heavy volume of the GetCodingData web method calls to the InForm database.

Note: This error is limited to implementations that run the InForm Adapter software in conjunction with the Central Coding application.

Error message

ORA-03113: end-of-file on communication channel.

Possible cause

This is an Oracle issue that was discovered in the 10.2.0.3 patch set. This issue occurs when the database is performing a high volume of resource-intensive tasks.

For more information, refer to the Oracle MetaLink article 418531.

Solution

- If you encounter this error, immediately run the following SQL*Plus command on the InForm database:
alter system flush shared_pool
- If you are running the Central Coding application, schedule an Oracle job to flush the shared pool on the InForm database every four hours.

Cannot view ASMX pages

Occurs

When you are navigating to a web service ASMX page.

Error message

HTTP 404 Page not found.

Possible cause

The following web service extensions are not allowed for IIS:

- ASP.NET 1.1 (for all InForm Adapter releases).
- ASP.NET 2.0.50727 (for InForm Adapter 1.3 and later releases).

Solution

- 1 Launch Internet Information Services (IIS) Manager.
- 2 Expand the local computer.
- 3 Expand Web service extensions.
- 4 Right-click **ASP.NET 1.1.4322**, and select **Allow**.
- 5 If you use InForm Adapter 1.3 or later, right-click **ASP.NET 2.0.50727**, and select **Allow**.

Date and time parsing error

Occurs

When you initiate a get job in Central Coding.

Error message

To prevent out-of-sync verbatim and query data, the ExchangeQueryUpdates job will not be run. Please resolve the following error first: Source:Central Coding. Job failed with the following error: An exception has been thrown calling the web method GetCodingData...

Possible cause

The date format of the locale specified in the trial database and the date format of the locale specified on the InForm Adapter application server are not set to the same value.

Solution

Set the locale in the database and the locale of the InForm Adapter application server to the same value.

APPENDIX C

Using the silent install

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Using the silent install

The InForm Adapter 1.3.8 software includes a silent install option that you can use to install, upgrade, and uninstall the current version of the InForm Adapter software.

There is also a silent upgrade program which you can use to upgrade the InForm Adapter 1.2 SP2 software and InForm Adapter 1.2 SP3 software release streams. For more information, see *Upgrading from the InForm Adapter 1.2 SP2 software or the InForm Adapter 1.2 SP3 software* (on page 44).

By default, the silent install and upgrade programs install the following interfaces:

- InForm Adapter Administration (WCF version).
- InForm Adapter Central Administration (WCF version).
- InForm Adapter Coding (WCF version).
- InForm Adapter Discrepancy Enhanced interface.
- InForm Adapter ODM.
- InForm Adapter Transaction interface (WCF version).
- Register Trial Tool.
- InForm Adapter Safety interface.

Note: If you have the InForm Adapter Discrepancy Enhanced interface installed, the upgrade program keeps your existing Discrepancy Enhanced interface and security setting.

If you have the InForm Adapter Discrepancy Original interface installed and do not want to upgrade, you must run the upgrade wizard. For more information, see *Upgrading from InForm Adapter 1.3 SP0 or later* (on page 42).

Some of the silent install options require installation parameters that you specify by editing the setup.iss file, located in the installation folder. For more information, see *Silent install parameters* (on page 89).

Silent install parameters

The InForm Adapter 1.3.8 silent install uses the parameters settings you specify in the **setup.iss** and the **upgrade.iss** files, located in the InForm Adapter folder of the install image.

In the setup directory, edit the **setup.iss** file as follows.

Field	Description
OracleHome	Name of the Oracle home.
szDir	Directory where the InForm Adapter software will be installed.
Component-count	Number of components to be installed. At a minimum, when the components list is customized, it must include: RegisterTrialTool, IntegrationManager, InstallScript and an Adapter Administration component.
Component-<no.>	Each component to be installed. Each <no.> must correspond to a component and must be in sequence. The total number of components in the sequence must match the Component-count parameter. The following values are possible: <ul style="list-style-type: none"> • InForm Adapter Administration WCF Service or InForm Adapter Administration (required) • InForm Adapter Central Administration WCF Service or InForm Adapter Central Administration • InForm Adapter Coding Service or InForm Adapter Coding • InForm Adapter Discrepancy Service or InForm Adapter Discrepancy Interface • InForm Adapter ODM • InForm Adapter Transaction Interface WCF Service or InForm Adapter Transaction Interface • InForm Adapter Safety • RegisterTrialTool (required) • IntegrationManager (required) • InstallScript (required) For example, to install the ODM and Adapter Administration interface, you will have to enter the following values, in addition to the other required components: Component-0=InForm Adapter Administration WCF Service Component-1=InForm Adapter ODM
Suffix	Unique positive number used as the instance suffix.
VirtualDirectoryName	Virtual directory used by the InForm Adapter software.

Field	Description
WebSiteOption	<ul style="list-style-type: none"> • 0 for Default Web Site • 1 for InForm Adapter Web Site
HttpPort	HTTP port number for the InForm Adapter site. This value is used if the InForm Adapter site does not have an HTTP port. When WebSiteOption is set to 0, this value is not applicable.
HttpsPort	HTTPS port number for the InForm Adapter site. This value is used if the InForm Adapter site does not have an HTTPS port. When WebSiteOption is set to 0, this value is not applicable.
CompanyURL	Company URL for the installation.
UserName	Name for the existing InForm Adapter database schema user.
UserPwd	Password for the existing InForm Adapter database schema user.
TnsName	TNS name used to connect to the InForm Adapter database.
NewUser	<ul style="list-style-type: none"> • 0 to use the existing InForm Adapter schema user • 1 to create a new InForm Adapter schema
TNS_Names	TNS name used to connect to the database to create a new InForm Adapter schema.
SystemUserName	Oracle system user name.
SystemUserPassword	Oracle system user password.
userName	Name for the new InForm Adapter schema user.
userPwd	Password for the new InForm Adapter schema user.
ComboBox1	Tablespace name for the new InForm Adapter schema user.

In the setup directory, edit the **upgrade.iss** file as follows.

Field	Description
OracleHome	Name of the Oracle home.
keepAdapterAdminOriginal keepDiscrepancyOriginal keepCodingOriginal keepCentralAdminOriginal keepTransactionAdapterOriginal	<ul style="list-style-type: none"> • 0 to upgrade the corresponding interface from the WSE to the WCF version • 1 to keep the corresponding WSE interface
WebSiteOption	<ul style="list-style-type: none"> • 0 for Default Web Site • 1 for InForm Adapter Web Site
HttpPort	HTTP port number for the InForm Adapter site. This value is used if the InForm Adapter site does not have an HTTP port. When WebSiteOption is set to 0, this value is not applicable.
HttpsPort	HTTPS port number for the InForm Adapter site. This value is used if the InForm Adapter site does not have an HTTPS port. When WebSiteOption is set to 0, this value is not applicable.

Running the silent install

To install, uninstall, or upgrade the InForm Adapter software, run one of these commands:

- **Silent_Install_InformAdapter.bat**—Installs the InForm Adapter 1.3.8 software.
The Silent_Install_InformAdapter.bat command uses the parameters entered in the **setup.iss** file.
- **Silent_Upgrade_InformAdapter.bat**—Upgrades the InForm Adapter 1.3 software stream to the InForm Adapter 1.3.8 software.
- **Silent_Uninstall_InformAdapter.bat**—Removes the InForm Adapter 1.3.8 software installation.