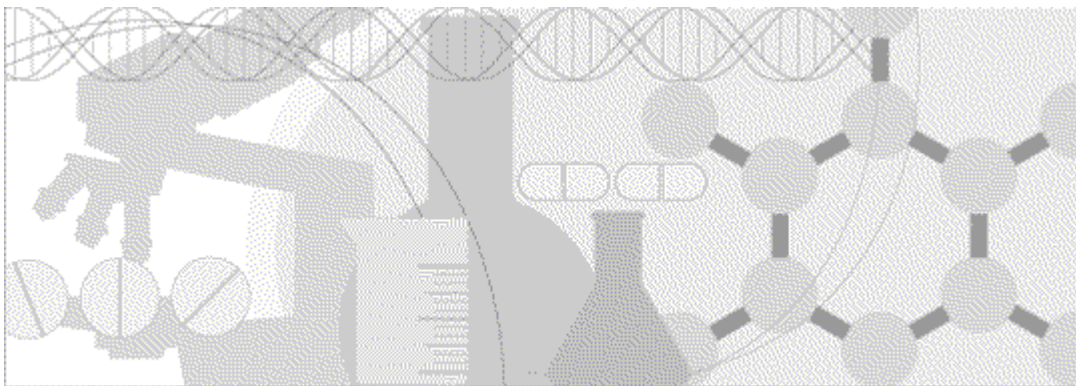


Secure Configuration Guide

Oracle[®] Health Sciences
InForm User Management Interface
Release 1.0.5



ORACLE[®]

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About this guide

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Overview of this guide

The *Secure Configuration Guide* provides an overview of the security features provided with the Oracle® Health Sciences InForm User Management Interface application, including details about the general principles of application security, and how to install, configure, and use the InForm User Management Interface application securely.

Audience

This guide is for users who install and configure the InForm User Management Interface application, and developers who develop and test custom study-specific code using the interfaces provided by the software.

InForm User Management Interface 1.0.5 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>)—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 User Management Interface release. Therefore, the version numbers for the documents in a release may differ.

Title	Description
<i>Release Notes</i>	The <i>Release Notes</i> document lists system requirements, describes enhancements introduced and problems fixed in the current release, upgrade considerations, release history, and other late-breaking information.
<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>User Guide</i>	The <i>User Guide</i> provides an overview of the InForm User Management Interface software including an overview of the software features; details on installation and deployment; and an API reference that describes the information needed to define InForm trial users, sites, authentication, and access privileges programmatically without requiring you to take an InForm trial offline.
<i>Secure Configuration Guide</i>	The <i>Secure Configuration Guide</i> provides an overview of the security features provided with the InForm User Management Interface application including details about the general principles of application security and how to install, configure, and use the 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 User Management Interface software.

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 User Management Interface information and patches on My Oracle Support

The latest information about the InForm User Management Interface application is on the Oracle Support self-service website, My Oracle Support. Before you install and use the InForm User Management Interface 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.

Finding prerequisite software for Oracle Health Sciences applications

Prerequisite software for Oracle Health Sciences applications is available from the following locations:

- Download the latest major or minor release from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com/>).

For information on the credentials that are required for authorized downloads, click **FAQ** on the main page of the Oracle Software Delivery Cloud portal.

- Download subsequent patch sets and patches from My Oracle Support (<https://support.oracle.com>).

To find patch sets or patches, select the **Patches & Updates** tab.

If a previous version of prerequisite software is no longer available on the Oracle Software Delivery Cloud, log a software media request Service Request (SR). Previous versions of prerequisite software are archived and can usually be downloaded. After you open an SR, you can check its status:

- US customers: Call 1-800-223-1711.
- Outside the US: Check www.oracle.com/us/support/contact/index.html for your local Oracle Support phone number.

For more information on logging a media request SR, go to My Oracle Support for Document 1071023.1: Requesting Physical Shipment or Download URL for Software Media (<https://support.oracle.com/epmos/faces/DocumentDisplay?id=1071023.1>).

CHAPTER 1

Security overview

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Application security overview

To ensure security in the InForm User Management Interface application, configure all system components, and the following third-party components:

- Internet Information Services (IIS) for Windows Server.
- Firewalls.
- Load balancers.
- Virtual Private Networks (VPNs).

General security principles

Use the latest versions of software and documentation

Before beginning the installation, check My Oracle Support (<http://support.oracle.com>) for the latest patches and *Release Notes* for the product.

Use the latest recommended versions of the InForm User Management Interface software, Windows server, .Net Framework, and Oracle database server.

Keep passwords private and secure

The InForm User Management Interface software requires the password for the InForm machine account during installation. Use standard security procedures to ensure that this password is known only to those who require the information.

Lock computers to protect data

Encourage users to lock computers that are left unattended.

Monitor system activity

Ensure system security with good security protocols, proper system configuration, and system monitoring. You can monitor the Windows event log for issues with the InForm User Management Interface software.

Protect sensitive data

Collect only the minimum amount of sensitive information needed for the study.

Tell users not to send sensitive information over email.

Provide access to sensitive data only to users who need it for their jobs.

CHAPTER 2

Secure installation and configuration

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Installation overview

Use the information in this chapter to ensure the InForm User Management Interface software is installed and configured securely. For information about installing and configuring the InForm User Management Interface software, see the *User Guide*.

Restrict network access to critical services

Set up a firewall between the internet and an isolated server, and between the isolated server and the intranet. This configuration creates a demilitarized zone (DMZ), which blocks any illegal traffic and contains intrusions.

Keep the InForm User Management Interface server behind a firewall to provide assurance that access is restricted to a known network route that can be monitored and restricted, if necessary. As an alternative, a firewall router can substitute for multiple, independent firewalls.

Encrypted Transport Layer Security

Configure your environment so that the InForm User Management Interface application server is hosted behind a firewall with an appliance such as an F5 load balancer for handling transport encryption and converting to HTTP.

The InForm User Management Interface web services allow for Secure Socket Layer (SSL) and Transport Layer Security (TLS) setup so data that is transported between the client and Web services is encrypted (if the InForm User Management Interface server is not behind an F5 and is accessed directly).

Due to known security vulnerabilities with SSL protocol versions, only TLS1.1 and above protocols should be enabled.

Follow the best practices for configuring IIS. For more information, see the documentation available on the Microsoft TechNet website.

Installation password

During installation of the InForm User Management Interface software, you are prompted for the InForm machine account and password. Make sure the username and password that you provide follow these guidelines:

- Contain a minimum of eight characters.
- Include at least one number.
- Contain a combination of upper and lowercase characters.
- Do not contain repeating words or characters.

Close all unused ports and open necessary ports

Keep open only the minimum number of ports needed. Close all ports not in use. Follow best practices for unused and necessary ports.

Disable all unused Windows services

Disable all unused Windows services.

Post-installation configuration

Restrict access to the server machines

Limit the number of users with access to the InForm User Management Interface servers. Disable or delete any unnecessary users.

Ensure restrictive access control

Limit the number of users who have access to the following items, which contain critical information:

- Configuration files.
- Application paths and directories.
- Assembly files (DLLs).
- The registry.

These items should have the most restrictive access control possible.

The InForm User Management Interface software installation does not write any temporary files. Therefore, after installation is complete the directories can be made read-only.

CHAPTER 3

Security features

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web.config settings that secure the Web services

Settings in the web.config file control various aspects of the use of InForm User Management Interface interfaces. These settings are determined by the behavior you want to control.

By default, these settings are off (disabled). When developing your client, you might want to enable certain settings for testing purposes. However, before deploying your client to production, be sure to disable the settings to ensure Web services are secure.

Settings in the web.config file affect the following:

- Access to metadata.

Metadata that is output by InForm User Management Interface interfaces can be used as input to client programs that you build. Settings in the web.config file control whether metadata is output by an interface, and whether client programs have access to this metadata.

For more information, see *Restrict access to service metadata* (on page 10).

- The amount of detail provided in exceptions.

For more information, see *WCF—Turn off includeExceptionsDetailsInFaults attribute* (on page 10) and *Turn off customErrors* (on page 11).

Restrict access to service metadata

WCF—Enabling and disabling metadata

By default, WCF services do not publish the metadata. If you want the configuration to allow access to the metadata through the use of import tools, such as **svcUtil.exe**, to generate the client code, you must explicitly set the following in the web.config file:

```
<serviceBehaviors>
  <behavior name="DiscrepancyServiceBehavior">
    <serviceMetadata httpGetEnabled="true" />
    <serviceDebug includeExceptionDetailInFaults="true" />
  </behavior>
```

After successfully developing and deploying the client, set the values to false, which prevents unwanted clients from generating proxy files or looking at potentially sensitive information.

```
<serviceBehaviors>
  <behavior name="DiscrepancyServiceBehavior">
    <serviceMetadata httpGetEnabled="false" />
    <serviceDebug includeExceptionDetailInFaults="false" />
  </behavior>
```

If you do not need to publish metadata, leave the setting turned off.

WCF—Turn off includeExceptionsDetailsInFaults attribute

Make sure that the includeExceptionsDetailsInFaults attribute is turned off (set to False) for all the behaviors. This attribute should be turned on (set to True) for debugging purposes only.

```
<serviceDebug includeExceptionDetailInFaults="False" />
```

Turn off customErrors

To prevent sensitive information from being released, customErrors in the web.config file must be turned off. This ensures that the stack trace of an error is not shown publicly.

```
<customErrors mode="Off" />
```

The setting is off by default. If you customize the file, verify that the value is set to "Off" before deploying to production.