

# **Oracle® Health Sciences Information Manager**

Policy Monitor Installation and Configuration Guide

Release 1.1

**E21367-01**

February 2011

Oracle® Health Sciences Information Manager replaces  
Oracle® Health Sciences Information Appliance.

Oracle Health Sciences Information Manager Policy Monitor Installation and Configuration Guide, Release 1.1

E21367-01

Copyright © 2010, 2011, Oracle and/or its affiliates. All rights reserved.

Primary Author: Louis J. Kraft

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

---

---

# Contents

<b>Preface</b> .....	v
Audience .....	v
Documentation Accessibility .....	v
Related Documents .....	vi
Conventions .....	vi
<b>1 Installing and Configuring HIM Policy Monitor</b>	
1.1 Understanding HIM Policy Monitor Components and Templates .....	1-2
1.1.1 HIM Policy Monitor Components .....	1-2
1.1.2 Policy Monitor VM Template .....	1-2
1.2 Importing the HIM Policy Monitor Template .....	1-3
1.3 Creating the HIM Policy Monitor VM .....	1-4
1.4 Configuring the HIM Policy Monitor VM .....	1-4
1.4.1 How to VNC into a VM .....	1-4
1.4.2 Configuring the VM Network Settings .....	1-5
1.4.3 Preparing the Policy Monitor Database .....	1-6
1.4.4 Configuring HIM Policy Monitor VM .....	1-6
1.4.5 Validating the Policy Monitor VM .....	1-8
<b>A References</b>	
A.1 Oracle Virtual Machine .....	A-1
<b>B Acronyms</b>	
B.1 Acronyms .....	B-1
<b>C Policy Monitor Script</b>	
C.1 Policy Monitor Script and Command Line Examples .....	C-1
C.1.1 Description of the Policy Monitor Script .....	C-1
C.1.1.1 Commands .....	C-1
C.1.2 Examples of Policy Monitor Commands .....	C-4
<b>D Policy Monitor Database Overview</b>	
D.1 Overview of Policy Monitor Database .....	D-1

## Glossary

---

---

# Preface

Oracle Health Sciences Information Manager (HIM) leverages the CONNECT open source, reference architecture and Oracle server virtualization to provide a broad range of international-standards-based web services to HIE applications in a management and performance-optimized solution, an ideal complement to the Oracle Exadata hardware appliance and pre-installed Oracle VM.

## Audience

This document is intended for users who plan to install and configure the HIM Policy Monitor components and templates.

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

### Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

### Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

### Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/support/contact.html> or visit <http://www.oracle.com/accessibility/support.html> if you are hearing impaired.

## Related Documents

For more information, see the following documents in the Oracle Health Sciences Information Manager Release 1.1 documentation set:

- *Oracle Health Sciences Information Manager Release Notes* (Part Number E21370-01)
- *Oracle Health Sciences Information Manager Record Locator Service Installation and Configuration Guide* (Part Number E21368-01)
- *Oracle Health Sciences Information Manager Policy Engine Installation and Configuration Guide* (Part Number E21366-01)
- *Oracle Health Sciences Information Manager OHMPI Installation and Configuration Guide* (Part Number E21369-01)

## Conventions

The following text conventions are used in this document:

<b>Convention</b>	<b>Meaning</b>
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

---

---

# Installing and Configuring HIM Policy Monitor

This chapter provides information about the HIM Policy Monitor components and templates. It then leads you through the steps to import the Policy Monitor template, create a Policy Monitor VM, and then configure a Policy Monitor VM.

The Policy Monitor implements an Audit Record Repository (ARR) as required by the ATNA profile. The following links provide some context as to what "ARR" represents in this guide. Before beginning to set up your HIM Policy Monitor VM, we recommend you review these links.

- Audit Trail and Node Authentication (ATNA) Integration Profile
  - <http://wiki.ihe.net/index.php?title=ATNA>  
which is built on top of the following:
- Security Audit and Access Accountability Message XML Data Definitions for Healthcare Applications
  - <http://tools.ietf.org/html/rfc3881>
- The Syslog Protocol
  - <http://tools.ietf.org/html/rfc5424>
- Transmission of Syslog Messages over Transport Layer Security (TLS)
  - <http://tools.ietf.org/search/rfc5425>
- Transmission of Syslog Messages over User Datagram Protocol (UDP)
  - <https://tools.ietf.org/html/rfc5426>

---

---

**Note:** The above links open documents that deal with the Internet Protocol Suite, specifically "Internet Official Protocol Standards" (STD1) as related to ARR. They provide critical technical information about secure transmission of data over the internet, including node authentication and an audit trail. It is recommended that you read them.

The Policy Monitor is called the Audit Record Repository Server in *Oracle Healthcare Master Person Index Working With IHE Profiles (Part Number E18591-01)*.

---

---

This chapter includes the following sections:

- ["Understanding HIM Policy Monitor Components and Templates"](#)

- ["Importing the HIM Policy Monitor Template"](#)
- ["Creating the HIM Policy Monitor VM"](#)
- ["Configuring the HIM Policy Monitor VM"](#)

## 1.1 Understanding HIM Policy Monitor Components and Templates

The HIM Policy Monitor template uses the "Paravirtualized" virtualization method. The template is distributed as a compressed tar file (\* .tgz). The compressed tar file contains two binary files and a text file. The binary files are the disk images taken from a fully configured and functional VM. The text file is a VM configuration file.

### 1.1.1 HIM Policy Monitor Components

The contents of the compressed tar file is listed below:

- Disk Image with Oracle Software  
`/appliance.img`
- Disk Image with Operating System  
`/System.img`
- VM Configuration File  
`/vm.cfg`

### 1.1.2 Policy Monitor VM Template

The VM consists of the following pre-installed software:

- Oracle Enterprise Linux 5 (as in `System.img`)  
<http://www.oracle.com/technetwork/topics/linux/whatsnew/index.html>
- HIM specific software (as in `appliance.img`)
  - Apache Ant 1.8.1  
Install directory: `/home/common/ant`
  - Java Development Kit 1.6.0\_21  
Install directory: `/home/common/java/latest` (*symbolic link to JDK 1.6.0\_21*)
  - For *hiauser only*:
    - \* HIM Policy Monitor 1.0  
Install directory: `/home/hiauser/arr`
- VM Memory Settings:
  - 2 GB (2048 MB) of RAM

---

---

**Note:** The RAM memory setting can be changed after installation in VM Manager.

---

---
- 16 GB of Disk Space

- Linux Users:
  - Root user
    - \* Username: root
    - \* Linux Group: root
    - \* Password: ovsroot
  - HIM specific user
    - \* Username: hiauser
    - \* Linux Group: hiauser
    - \* Password: hiapass

**Tip:** For security purposes, it is recommended that you change the default passwords after installation.

## 1.2 Importing the HIM Policy Monitor Template

To import the HIM Policy Monitor VM template:

1. Copy the HIM Policy Monitor VM template .tgz file to the /OVS/seed\_pool directory of your Oracle VM Server machine.

2. Uncompress the .tgz file:

```
> tar -zxvf <FILENAME>.tgz
```

This step creates a directory with the name of the template.

Example:

```
> cd /OVS/seed_pool
> tar -zxvf /OVS/seed_pool/OVM_HIAV1_X86_POLICYMONITOR_PVM.tgz
```

Creates the directory:

```
/OVS/seed_pool/OVM_HIAV1_X86_POLICYMONITOR_PVM
```

3. Log in to the Oracle VM Manager

---



---

**Note:** The default location for the Oracle VM Manager log in screen is [http://<VM\\_MANAGER\\_HOST\\_NAME>:8888/OVS](http://<VM_MANAGER_HOST_NAME>:8888/OVS).

---



---

4. From the Oracle VM Manager console:
  - a. Click the **Resources** tab. The Virtual Machine Templates screen is displayed.
  - b. Click the **Import** button. The Source screen is displayed.
  - c. Choose the **Select from Server Pool (Discover and register)** radio button.
  - d. Click **Next**. The General Information screen is displayed.

Enter or select the following general information:

- The server pool on which the virtual machine will be located.

Server Pool Name: <SERVER\_POOL\_NAME>

- The operating system of the Virtual Machine Operating System:

Oracle Enterprise Linux 5

- The Oracle VM template to be imported.

Virtual Machine Template Name: `<VM_TEMPLATE_NAME>`

- The username used to log in to the Virtual Machine.

Virtual Machine System Username: `root`

- The password used to log in to the Virtual Machine.

Virtual Machine System Password: `ovsroot`

- e. Click **Next**. The Confirm Information screen is displayed.
  - f. Click **Confirm**. The Virtual Machine Template screen is displayed with a message to confirm the VM template has been imported.
5. Click the **Resources** tab to see the list of available VM templates.
  6. To make the Virtual Machine template available for use, select the Virtual Machine template and click **Approve**, moving the VM template from the "Pending" state to the "Active" state.

The VM template is imported and ready for use in Oracle VM Manager.

## 1.3 Creating the HIM Policy Monitor VM

To create the HIM Policy Monitor VM from the VM template:

1. Create a new VM using the Policy Monitor VM template just installed by following the instructions in the *VM Manager 2.2 User's Guide* (refer to Section 6.3.1, "Creating Virtual Machine from a Template").
2. To power on the Virtual Machine select the **Virtual Machines** tab, select the **Virtual Machine Name**, and click **Power On**.
3. In the VM Manager Console ensure that the Policy Monitor VM is now in the running state (Status=Running).

## 1.4 Configuring the HIM Policy Monitor VM

This section provides instructions for configuring the HIM Policy Monitor VM.

- ["How to VNC into a VM"](#)
- ["Configuring the VM Network Settings"](#)
- ["Preparing the Policy Monitor Database"](#)
- ["Configuring HIM Policy Monitor VM"](#)
- ["Validating the Policy Monitor VM"](#)

### 1.4.1 How to VNC into a VM

To VNC into a VM:

---

---

**Note:** To enable the VNC Port link in the VM Manager follow the instructions in "Installing OVM Console" at <http://oss.oracle.com/oraclevm/manager/RPMS/README-console>.

---

---

Expand the details of the VM by clicking the **+** on **Show**. You can VNC into the box from the VM Manager by clicking on the VNC Port link under the VM details, or you can use a VNC client to log in using the address:

```
<VM_SERVER_HOST_NAME> : <VM_VNC_PORT>
```

## 1.4.2 Configuring the VM Network Settings

To configure the VM to use static IP:

---



---

**Note:** The VM is configured by default to use DHCP to assign an IP address.

---



---

If you are using DHCP addressing you can skip the following steps.

1. To configure the VM to use static IP, log in as the root user (default password: `ovsroot`) and set the IP using the following steps:
  - a. Select **System, Administration**, and then **Network**.
  - b. Choose **Devices**, click **Edit**, select the **Statically Set IP Address** radio button, and then enter the following values:
    - Address: `<VM_IP>`
    - Subnet mask: `<SUBNET_MASK>`
    - Default Gateway address: `<DEFAULT_GATEWAY_ADDRESS>`
  - c. Click **OK**.
  - d. Choose **File** and then click **Save**.
  - e. Click the **DNS** tab and then enter the following values:
    - Hostname: `<VM_HOST_NAME>`
    - Primary DNS: `<PRIMARY_DNS>`
    - Secondary DNS: `<SECONDARY_DNS>`
    - Tertiary DNS: `<TERTIARY_DNS>`
    - DNS search path: `<VM_NAME_SUFFIX>`
  - f. Choose **Next** and click **Save**.
  - g. Choose the **Hosts** tab, click **New**, and then enter the following values:
    - Address: `<VM_IP>`
    - Hostname: `<VM_HOST_NAME>`
    - Aliases: `<VM_NAME_PREFIX> hostname`
  - h. Click **Okay**.
  - i. Choose **File** and then click **Save**.
  - j. Restart Network Services from a terminal window.
 

```
> service network restart
```
  - k. Check the output for `<VM_IP>`.
 

```
> ifconfig
```

- i. Check the output for `<VM_HOST_NAME>`.
  - > hostname
- m. Check the success of:
  - > ping `<VM_IP>`
- n. Check the success of:
  - > ping `<VM_HOST_NAME>`

### 1.4.3 Preparing the Policy Monitor Database

To prepare the Policy Monitor database tables for Oracle:

1. Copy the files under `/home/hiauser/arr/database/oracle` to a machine with Oracle SQL\*Plus installed.
2. To create the Policy Monitor database user load the script `create-user-oracle.sql` into the database.

Example:

```
> sqlplus system@<SID>
SQL> @create-user-oracle.sql
```

3. To create the Policy Monitor database tables:
  - a. > `cd /home/hiauser/arr/bin`
  - b. Run the script `create-arr-properties-file.sh` to create the properties file used to configure the Policy Monitor application, selecting `[oracle]` as your target database.

Example:

```
> sh create-arr-properties-file.sh
- The dialect of your database installation:
Choose target database: oracle
- The hostname of your Oracle Database
Enter oracle_host: <ORACLE_HOST>
- The Oracle TNS Listener port of your Oracle Database
Enter oracle_port: <ORACLE_PORT>
- The Oracle System ID (SID) of your Oracle Database
Enter oracle_sid: <ORACLE_SID>
- The Oracle Database username
Enter oracle_username: <ORACLE_USERNAME>
- The Oracle Database password
Enter oracle_password: <ORACLE_PASSWORD>
- The port of the syslog server
Enter arr_port: <ARR_PORT>
- The output properties file name
Enter properties_file_name: <ARR_PROPERTIES>
```

- c. Run the script `arr.sh` using command `create-tables`.

Example:

```
> arr.sh -propertyfile <ARR_PROPERTIES> -command create-tables
```

### 1.4.4 Configuring HIM Policy Monitor VM

To configure the HIM Policy Monitor VM:

1. Log in to the VM as `hiauser` (default password: `hiapass`).
2. Navigate to the directory: `/home/hiauser/arr/bin`.
3. Edit the file `<ARR_PROPERTIES_FILE>`.
4. Enable remote syslog access by reconfiguring firewall.

---



---

**Note:** Opening ports below 1024 require root permissions.

---



---

To permit connections on a port from other systems:

\* Enable a TCP connection

- a. Select **System, Administration, Security Level, and Firewall**.
- b. Click **Other ports**, and **Add**.
- c. Enter `<ARR_PORT>` in the Port(s) field, and specify `tcp` as the Protocol.
- d. Click **OK**.

\* Enable a UDP connection

- a. Select **System, Administration, Security Level, and Firewall**.
- b. Click **Other ports**, and **Add**.
- c. Enter `<ARR_PORT>` in the Port(s) field, and specify `udp` as the Protocol.
- d. Click **OK**.

---



---

**Note:** Before proceeding to the next step, configure a fully-qualified-hostname for the Virtual Machine.

---



---

5. Run the script `create-and-import-selfsigned-certs.sh` to install the self-signed certificate. It does the following things:
  - Creates the keystore for the private internal key
  - Exports the certificate that will authenticate the internal key
  - Imports the trusted certificates into the truststore
  - Provides these certificates to the Policy Monitor to use for authentication purposes

```
> sh create-and-import-selfsigned-certs.sh
```

---



---

**Note:** Before proceeding to the next step, copy the certificate of the host computer `<HOSTNAME.cer>` to `/home/hiauser/arr/bin/keystore` folder.

---



---

6. To install a host machine's certificate, run the script `import-hostname-cert.sh`:
 

```
> sh import-hostname-cert.sh
```

Enter the hostname of the machine whose certificate is being imported into the truststore: `<HOSTNAME>`.
7. Start the server using the following commands:

- > cd /home/hiauser/arr/bin
  - To start in UDP mode:  
> arr.sh -propertyfile <ARR\_PROPERTIES\_FILE> -command start-udp-server
  - To start in TLS mode:  
> arr.sh -propertyfile <ARR\_PROPERTIES\_FILE> -command start-tls-server

### 1.4.5 Validating the Policy Monitor VM

To validate the Policy Monitor software on the VM after it is configured:

1. Ensure that the Policy Monitor Server is up and running.
2. Validate the configuration using the test client distributed with the VM:
  - a. > cd /home/hiauser/arr/bin
  - b. To send a message in UDP mode:  
> arr.sh -propertyfile <ARR\_PROPERTIES\_FILE> -command send-udp-msg -arr.input\_file ../docs/test\_syslog\_msg.txt  
To send a message in TLS mode:  
> arr.sh -propertyfile <ARR\_PROPERTIES\_FILE> -command send-tls-msg -arr.input\_file ../docs/test\_syslog\_msg.txt
  - c. Login to your database and confirm that the test record has been stored in the ARR\_SYS\_MSG table (for additional information, see "[Overview of Policy Monitor Database](#)" on page D-1).

This section provides links to supporting documentation and resources.

## A.1 Oracle Virtual Machine

### **Oracle Virtual Machine (VM) Documentation Index**

[http://download.oracle.com/docs/cd/E15458\\_01/index.htm](http://download.oracle.com/docs/cd/E15458_01/index.htm)

### **Oracle VM Manager Release Notes**

[http://download.oracle.com/docs/cd/E15458\\_01/doc.22/e15440/toc.htm](http://download.oracle.com/docs/cd/E15458_01/doc.22/e15440/toc.htm)

### **Oracle® VM Manager Installation Guide**

Release 2.2, Part Number E15439-01

[http://download.oracle.com/docs/cd/E15458\\_01/doc.22/e15439/toc.htm](http://download.oracle.com/docs/cd/E15458_01/doc.22/e15439/toc.htm)

### **Oracle VM Manager User Guide**

Release 2.2, Part Number E15441-02

[http://download.oracle.com/docs/cd/E15458\\_01/doc.22/e15441/toc.htm](http://download.oracle.com/docs/cd/E15458_01/doc.22/e15441/toc.htm)

### **Oracle VM Server Release Notes**

[http://download.oracle.com/docs/cd/E15458\\_01/doc.22/e15443/toc.htm](http://download.oracle.com/docs/cd/E15458_01/doc.22/e15443/toc.htm)

### **Oracle® VM Server Installation Guide**

Release 2.2, Part Number E15442-01

[http://download.oracle.com/docs/cd/E15458\\_01/doc.22/e15442/toc.htm](http://download.oracle.com/docs/cd/E15458_01/doc.22/e15442/toc.htm)

### **Oracle VM Server User Guide**

Release 2.2, Part Number E15444-03

[http://download.oracle.com/docs/cd/E15458\\_01/doc.22/e15444/toc.htm](http://download.oracle.com/docs/cd/E15458_01/doc.22/e15444/toc.htm)

### **Installation of Oracle 11g Database Release 1**

Oracle 11g is also available as a VM template

<http://www.oracle.com/pls/db111/homepage>

### **Oracle 11g VM Template**

<http://www.oracle.com/technetwork/server-storage/vm/database-092479.html>

This section provides a list of commonly used acronyms.

### B.1 Acronyms

**ARR**

Audit Record Repository

**HIE**

Health Information Exchange

**HIG**

Oracle Health Sciences Information Gateway

**HIO**

Health Information Organization

**HL7**

Health Level 7

**IHE**

Integrating the Healthcare Enterprise

**NHIE**

Nationwide Health Information Exchange

**NHIN**

Nationwide Health Information Network

**NHIO**

Nationwide Health Information Organization

**SAML**

Security Assertion Markup Language

**VM**

Oracle Virtual Machine

**Web-Service Definition Language**  
Web-Service Definition Language

---

---

# Policy Monitor Script

This appendix provides a description and examples of the Policy Monitor script.

- ["Policy Monitor Script and Command Line Examples"](#)

## C.1 Policy Monitor Script and Command Line Examples

This section provides a description of the Policy Monitor script, and then provides command line examples.

- ["Description of the Policy Monitor Script"](#)
- ["Examples of Policy Monitor Commands"](#)

### C.1.1 Description of the Policy Monitor Script

```
usage: arr -propertyfile <propertyfile> -command <command> <...args>
```

Use the above script to start and test an instance of Policy Monitor (use CTRL^C to stop the server).

#### C.1.1.1 Commands

- `create-tables`

Creates the required Policy Monitor database tables and sequences.

##### - Options

- \* `-arr.persistence_unit_name`

The name of the javax persistence unit defined in `persistence.xml`.

- \* `-arr.jdbc_driver`

The JDBC database driver type, for example:

- **Oracle:** `oracle.jdbc.OracleDriver`

- \* `-arr.jdbc_url`

The JDBC database url.

- \* `-arr.jdbc_username`

The JDBC database username.

- \* `-arr.jdbc_password`

The JDBC database password.

- `drop-and-create-tables`

Drops and recreates the Policy Monitor database tables and sequences.

– **Options**

- \* `-arr.persistence_unit_name`  
The name of the javax persistence unit defined in `persistence.xml`.
- \* `-arr.jdbc_driver`  
The JDBC database driver type, for example:  
– **Oracle:** `oracle.jdbc.OracleDriver`
- \* `-arr.jdbc_url`  
The JDBC database url.
- \* `-arr.jdbc_username`  
The JDBC database username.
- \* `-arr.jdbc_password`  
The JDBC database password.

- `parse-audit-msg`  
Tests the validity of an audit message.

– **Options**

- \* `-arr.input_file`  
A file containing an audit message.

- `parse-syslog-msg`  
Tests the validity of a syslog message.

– **Options**

- \* `-arr.input_file`  
A file containing a syslog message.

- `send-tls-msg`  
Sends a syslog message to a Policy Monitor supporting TLS.

– **Options**

- \* `-arr.input_file`  
A file containing a syslog message.
- \* `-arr.hostname`  
The hostname of the syslog server.
- \* `-arr.port`  
The port of the syslog server.
- \* `-arr.keystore`  
The client keystore.
- \* `-arr.keystore_password`  
The client keystore password.
- \* `-arr.truststore`

- The client truststore.
      - \* `-arr.truststore_password`
      - The client truststore password.
      - \* `-arr.keymanager_keystore_password`
      - The client keymanager keystore password.
- `send-udp-msg`
  - Sends a syslog message to Policy Monitor supporting UDP.
  - **Options**
    - \* `-arr.input_file`
    - A file containing a syslog message.
    - \* `-arr.hostname`
    - The hostname of the syslog server.
    - \* `-arr.port`
    - The port of the syslog server.
- `start-tls-server`
  - Starts a TLS Policy Monitor running on a given port.
  - **Options**
    - \* `-arr.port`
    - The port to listen on (6514 is the standard port for syslog over TLS).
    - \* `-arr.persistence_unit_name`
    - The name of the javax persistence unit defined in `persistence.xml`.
    - \* `-arr.jdbc_driver`
    - The JDBC database driver type, for example:
      - **Oracle:** `oracle.jdbc.OracleDriver`
    - \* `-arr.jdbc_url`
    - The JDBC database url.
    - \* `-arr.jdbc_username`
    - The JDBC database username.
    - \* `-arr.jdbc_password`
    - The JDBC database password.
    - \* `-arr.keystore`
    - The server keystore.
    - \* `-arr.keystore_password`
    - The server keystore password.
    - \* `-arr.truststore`
    - The server truststore.
    - \* `-arr.truststore_password`

The server truststore password.

\* `-arr.keymanager_keystore_password`

The server keymanager keystore password.

- `start-udp-server`

Starts an UDP Policy Monitor running on a given port.

– **Options**

\* `-arr.port`

The port to listen on (514 is the standard port for syslog over UDP).

\* `-arr.persistence_unit_name`

The name of the javax persistence unit defined in `persistence.xml`.

\* `-arr.jdbc_driver`

The JDBC database driver type, for example:

– **Oracle:** `oracle.jdbc.OracleDriver`

\* `-arr.jdbc_url`

The JDBC database url.

\* `-arr.jdbc_username`

The JDBC database username.

\* `-arr.jdbc_password`

The JDBC database password.

## C.1.2 Examples of Policy Monitor Commands

- `create-tables`

```
> arr -propertyfile arr.properties -command create-tables
```

- `drop-and-create-tables`

```
> arr -propertyfile arr.properties -command  
drop-and-create-tables
```

- `parse-audit-msg`

```
> arr -propertyfile arr.properties -command parse-audit-msg  
-arr.input_file test_audit_msg.txt
```

- `parse-syslog-msg`

```
> arr -propertyfile arr.properties -command parse-syslog-msg  
-arr.input_file test_syslog_msg.txt
```

- `send-tls-msg`

```
> arr -propertyfile arr.properties -command send-tls-msg  
-arr.hostname localhost -arr.input_file test_syslog_msg.txt
```

- `send-udp-msg`

```
> arr -propertyfile arr.properties -command send-udp-msg  
-arr.hostname localhost -arr.input_file test_syslog_msg.txt
```

- `start-tls-server`

```
> arr -propertyfile arr.properties -command start-tls-server
■ start-udp-server
> arr -propertyfile arr.properties -command start-udp-server
```



---



---

## Policy Monitor Database Overview

This section provides information about the following:

- ["Overview of Policy Monitor Database"](#)

---



---

**Note:** The Policy Monitor is called the Audit Record Repository Server in *Oracle Healthcare Master Person Index Working With IHE Profiles* (Part Number E18591-01).

---



---

### D.1 Overview of Policy Monitor Database

The Policy Monitor's audit syslog messages are inserted into the database table `ARR_SYS_MSG` (see the below table) whose columns parallel the structure of a rfc5424 syslog message (see <http://tools.ietf.org/html/rfc5424>). The remaining tables map the rfc3881 audit message structure (see <http://tools.ietf.org/html/rfc3881>) into database tables enabling Java Persistence Query Language (JPQL) features.

**Table D-1** *ARR\_SYS\_MSG*

Column	Type
ID	NUMBER
FACILITY	NUMBER
SEVERITY	NUMBER
PRIORITY	NUMBER
VERSION	NUMBER
TIMESTAMP	DATE
HOSTNAME	VARCHAR
APPLICATIONNAME	VARCHAR
PROCESSID	VARCHAR
MESSAGEID	VARCHAR
STRUCTUREDDATA	VARCHAR
MESSAGEENCODING	VARCHAR
MESSAGERAWBYTES	BLOB
ADT_MSG_ID	NUMBER



---

---

# Glossary

This section provides definitions of commonly used words.

## **CONNECT**

Is a software solution that supports health information exchange that implements Nationwide Health Information Network (NHIN) standards and governance to make sure that health information exchanges are compatible with other exchanges being set up throughout the country. It enables public and private organizations to participate in the NHIN by leveraging their existing health information systems.

## **CONNECT Adapter**

The portion of the CONNECT architecture that encapsulates the components most likely to be customized or replaced by an organization implementing CONNECT.

## **CONNECT Gateway**

The portion of the CONNECT architecture that encapsulates the components most likely to be use as-is by an organization without modification. These components are primarily responsible for orchestrating information exchange with the NHIN.

## **Health Information Exchange**

Health Information Exchange is an entity that enables the movement of health-related data among entities within a state, a region, or a non-jurisdictional participant group, which might include "classic" regional health information organizations at regional and state levels, Health Information Organization integrated delivery systems and health plans, or health data banks that support health information exchange.

## **Health Information Organization**

Health Information Organization is an organization that enables the movement of health-related data among entities, evolving as a replacement term for health information exchange or HIE. Healthcare Information Technology Standards Panel Or simply HITSP, a cooperative partnership between the public and private sectors formed and supported by ONC for the purpose of harmonizing and integrating standards that will meet clinical and business needs established by AHIC use cases for sharing information among organizations and systems.

## **Integrating the Healthcare Enterprise**

Integrating the Healthcare Enterprise is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information, promoting and coordinating the use of established standards such as DICOM and HL7 to address specific clinical need in support of optimal patient care. The Nationwide Health Information Network is being developed by ONC to provide a secure,

nationwide, interoperable health information infrastructure that will connect providers, consumers, and others involved in supporting health and healthcare.

### **Nationwide Health Information Network**

Nationwide Health Information Network is a set of standards, services and policies that enable secure health information exchange over the Internet. The network will provide a foundation for the exchange of health information across diverse entities, within communities and across the country, helping to achieve the goals of the HITECH Act. This critical part of the national health IT agenda will enable health information to follow the consumer, be available for clinical decision making, and support appropriate use of healthcare information beyond direct patient care so as to improve population health.

### **Nationwide Health Information Network Gateway**

Within the CONNECT solution, the implementation of the core NHIN services and service interface specifications, comprising the CONNECT gateway and CONNECT adapter. The NHIN health information exchange or NHIE, a health information exchange that implements the NHIN architecture, processes, and procedures, is accredited as a participant of the NHIN.

### **Oracle Virtual Machine**

Oracle Virtual Machine is a platform that provides a fully equipped environment for better leveraging the benefits of virtualization technology. Oracle VM enables you to deploy operating systems and application software within a supported virtualization environment.

### **Oracle Virtual Machine Manager**

Oracle Virtual Machine Manager provides the user interface, which is a standard ADF (Application Development Framework) web application, to manage Oracle VM Servers. It manages virtual machine lifecycle, including creating virtual machines from installation media or from a virtual machine template, deleting, powering off, uploading, deployment and live migration of virtual machines. It manages resources, including ISO files, virtual machine templates, and sharable hard disks.

### **Oracle Virtual Machine Server**

Oracle Virtual Machine Server allows a self-contained virtualization environment designed to provide a lightweight, secure, server-based platform for running virtual machines. Oracle VM Server is based upon an updated version of the underlying Xen hypervisor technology, and includes Oracle VM Agent.

### **Oracle Virtual Machine Template**

Oracle Virtual Machine Template provides an innovative approach to deploying a fully configured software stack by offering pre-installed and pre-configured software images. Use of Oracle VM templates eliminates the installation and configuration costs, and reduces the ongoing maintenance costs helping organizations achieve faster time to market and lower cost of operations.

### **Security Assertion Markup Language**

Security Assertion Markup Language is an XML-based standard for exchanging authentication and authorization data between security domains.

**Web Services Description Language**

Web Services Description Language is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information.

**XML Schema**

XML Schema is a means for defining the structure, content, and semantics of XML documents.

