Infor EAM Installation Guide

Release 11.7

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Contents

About this guide

This guide contains procedures for installing the Infor EAM application which offers several different installation scenarios. If you are using an Oracle database, you have the option to install Infor EAM (Oracle). If you are using a Microsoft SQL Server database, you can install Infor EAM (SQL Server).

Infor products require the installation and configuration of third-party products, such as Oracle RDBMS or Microsoft SQL Server. The information included in this guide is intended to provide instructions for installing Infor products. Wherever possible, recommendations for installing and configuring third-party components are included. However, the recommendations for installing and configuring third-party products described in this guide may not be ideal for all customer sites, due to the unique requirements for each customer.

Intended audience

This guide is intended for database administrators, implementation consultants, product architects, and support specialists.

Note: If you are installing Infor EAM (Oracle), the intended audience for this guide is an Oracle Certified Professional Database Administrator or equivalent.

If you are installing Infor EAM (SQL Server), the intended audience for this guide is a Microsoft SQL Server Database Administrator or equivalent.

Organization of this guide

See the appropriate chapters of this guide that are applicable to the installation that you wish to complete. See the *Infor EAM Oracle Forms Installation & Upgrade Guide* for information on installing the Oracle database components required for running Infor EAM (Oracle).

This table describes the sections of this guide:

Section	Description
Installing Infor EAM (Oracle)	Instructions on software requirements and procedures for configuring database, installing Infor EAM Installation (Oracle), tuning memory usage after installation, and configuring environments
Installing the SQL Server Database for Infor EAM	Instructions on how to install the SQL Server database for Infor EAM

Section	Description
Installing Infor EAM (SQL Server)	Instructions on software requirements and procedures for configuring database, installing Infor EAM Installation (SQL Server), tuning memory usage after installation, and configuring environments
Installing Advanced Reporting (Oracle and SQL)	Instructions on how to install, configure, and set up Infor EAM Advanced Reporting
Upgrading Infor EAM (Oracle and SQL)	Instructions on upgrading from previous versions of Infor EAM for Oracle and SQL Server environments, as well as how to upgrade and configure existing SQL Server databases
Configuring Data Warehouse	Instructions on how to configure the Infor EAM data warehouse and access data warehouse administration features
Configuring your web browser	This chapter specifies the procedures necessary to configure your web browser to work with the application.
Uninstalling the application	Instructions on uninstalling Infor EAM Oracle and SQL versions, uninstalling the Advanced Reporting tool, including how to stop the applications

Related documents

This guide references other documents. See these documents for more information about how to work within Infor EAM and how to install Infor EAM (Oracle).

- *Infor EAM Oracle Database Installation and Upgrade Guide*
- *Infor EAM User Guide*
- *Infor EAM System Administrator Guide*
- *Infor EAM Reports User Guide*

Contacting Infor

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Chapter 1: Installing EAM (Oracle)

This chapter outlines software requirements and provides procedures for configuring your database, installing and uninstalling EAM, tuning memory usage after installation, configuring environments, and upgrading from the previous version of EAM.

Software requirements and pre-installation checklist

See *Infor EAM™ Product Family Version Software Requirements*, which can be obtained from the documentation ISO, for the hardware and software requirements for Infor EAM.

Also, perform the following pre-installation checks on your system:

- Verify that the machine on which this installation will be performed has a windowing framework. In the case of a "headless" UNIX server, the Installation Display must be redirected to a workstation with a windowing framework.
- Ensure that your Internet Explorer version is configured to check for newer versions of stored pages automatically. To check this setting in Internet Explorer, choose **Tools > Internet Options**. Click Settings in the Temporary Internet files section. Select Automatically in the Check for newer versions of stored pages section.
- Adjust your Internet Explorer version Security settings. Choose **Tools > Internet Options**. Click the Security Tab, and then click Custom Level. Enable "Run ActiveX controls and plug-ins," "Script ActiveX controls marked safe for scripting," and "Active scripting," and then click **OK**.
- Verify that the Oracle RDBMS has been installed.
- Verify that the Infor EAM Oracle Database has been installed and configured.

  See the *Infor EAM Oracle Database Installation and Upgrade Guide*.
- Select the JVM option when creating a d7i Oracle database; without the JVM option selected Databridge does not work.

  See the *Infor EAM Oracle Database Installation and Upgrade Guide*.
- If you are installing on a Windows server, verify that you have installed the necessary redistributables.
- If you are installing on a Linux server, verify that you have freetype and fontconfig packages installed.

Changes to configuration beginning with 11.4

Beginning with 11.4, all configuration to the Infor EAM application server after the initial installation is handled through YAML files. To get more information on what YAML is and specific syntax considerations, please reference https://yaml.org/spec/1.2/spec.html. Any necessary updates must be made to the `<APP_HOME>/depconfig/properties/external/config.yml` file.

To see all configurable options, please reference `<APP_HOME>/depconfig/properties/internal/default.yml`. However, please be aware that no changes should be made to the default.yml file at any time. All updates should be made to the config.yml file only.

Installing Infor EAM for JBoss

Install the Infor EAM application server for JBoss. The Infor EAM installation enables you to set up Infor EAM to connect to the Infor EAM Advanced Reporting Server.

Installing Infor EAM and configuring the Infor EAM Advanced Reporting Server for JBoss

Note: If you have previously installed Infor EAM on your machine and wish to install an additional component, such as the Application Server or the Infor EAM Report Server, you must first uninstall the current component.

If you are installing on a machine that has Windows Server 2019, you must add the `setupwin32.exe` as an exception to the Data Execution Prevention List. This exception can be removed once installation is complete

1. Insert the Infor EAM CD, and then choose one of the following options:
   - Installing on Windows

     Locate and right-click the Setupwin32.exe file, and run as an administrator.
   - Installing on UNIX

     If automount is not in use, mount the CD. Then, in a shell session, change directory to the root of the mount point and launch the system by executing the following command: `"./setuplinux.bin"`. Ensure that you run the installation as a non-root user.

   Note: Xserver must be running prior to installing Infor EAM on UNIX. Also, ensure that the 32bit packages and their dependencies for the following are installed prior to installing Infor EAM on UNIX: libXp, libXrender, libXt-devel, libXtst.
2. Select the language to use, and then click **OK**.
3. Click **Next**.
4. Select the language to use, and then click **OK**.
5. Specify the EAM CD key, and then click **Next**.

6 Select **I accept the terms of the license agreement** if you agree to the terms, and then click **Next**.

7 Select I accept the terms of the license agreement if you agree to the terms, and then click **Next**.

8 Specify the directory in which to install Infor EAM application, and then click **Next**.

Note: The directory in which you install Infor EAM cannot have a name that contains spaces. For example, C:\My Files is not a valid directory; however, C:\MyFiles is valid.

9 Specify this information:

Host Name
Specify the name of the machine on which the database server resides.

Port
Specify the listener port number associated with the database server.

Instance Name
Specify the service name of the database instance.
Note: This is changed from previous versions where the instance name was entered.

Schema Name
Specify the Oracle schema under which the EAM application will run.

User Password
Specify the password for the schema specified above.

10 Click **Next**.

11 Specify this information:

JVM Min Size (MB)
Specify the minimum amount of memory to allocate to the Java Virtual Machine when running EAM.

JVM Max Size (MB)
Enter the maximum amount of memory to allocate to the Java Virtual Machine when running EAM.

See Tuning memory usage after installation on page 42.

12 Click **Next**

13 Do you want to install Infor EAM Advanced Reporting Server? Choose one of these options:

Option	Description
Yes	Select to connect the application server to the Infor EAM Advanced Reporting Server.
No	Select if you do not want to connect the application server to the Infor EAM Advanced Reporting Server.

Note: The Infor EAM Advanced Reporting Server is not installed. The application server is configured to connect to a report server.

The next dialog box is displayed only if you selected **Yes** to install the Infor EAM Advanced Reporting Server.

14 Click **Next**.

15 Specify this information:

Server Name
Enter the name for the Infor EAM Advanced Reporting Server.

Server Port
Enter the port number for the Infor EAM Advanced Reporting Server.

16 Click **Next**.

17 For the **Do you want to install messaging services?** prompt select **No** to not install messaging services.

Note: If you select **Yes**, see Installing messaging services on page 16.

Note: This scenario is documented with Messaging Services not installed.

18 Click **Next**.

19 Click **Next**. The Infor EAM application files are installed.

20 Click **Finish**.

21 To start the application, choose one of the following options:

Option	Description
Run the application on Windows	Reboot your machine. The EAM application automatically starts when Windows starts.

Run the application on Linux	To control the Application Server, navigate to the application home installation directory selected during the installation.
	Start the server by executing:
	`./app.sh start`
	To stop the server, execute:
	`./app.sh stop`
	To stop and then restart the server, execute:
	`./app.sh restart`
	To check the status of the server, execute:
	`./app.sh status`

Starting and stopping the application (Linux/JBoss) at start-up and shutdown

After installation, to start and stop the application at start-up and shutdown on Linux/JBoss, you must do the following:

1 Create a file under <*app-home*>*/init.d* called infoream.

In this file specify the following text, replacing <*app-home*> with the location of your EAM installation, and setting the user value to the Linux user that is running the EAM application.

[Unit]

Description=Infor EAM

After=network.target

[Service]

Type=forking

User=<Linux user that is running the EAM app>

ExecStart=<app-home>/app.sh start

ExecStop=<app-home>/app.sh stop

[Install]

WantedBy=multi-user.target

2 As root, copy the infoream script to `/etc/systemd/system/infoream.service`.

3 As root, run systemctl daemon-reload.

4 As root, run systemctl enable infoream.service.

The Infor EAM application and HTTP server then begins at start-up and stops and shutdown.

Note: Although the processes are running you will want to verify that a similar line as the following appears in the boot.log before attempting to login to the application:

WildFly Full 14.0.1.Final (WildFly Core 6.0.2.Final) started in 122313ms

Setting non-standard ports

After installing Infor EAM, if start-up problems exist due to conflicts with ports already in use by other applications, then perform the following:

1 The apache ports can be changed in depconfig/properties/external/config.yml

core:

ports:

http: 2443

https: 4443

2 Several additional ports can be changed in the <APP_HOME>/depconfig/properties/external/config.yml file. Edit the file with a text editor and change any port definition to a new value:

jboss:

ports:

ajp: <some port>

cli: <some port>

3 Change to directory <APP_HOME>/depconfig:

- For JBoss on Windows run deploy.bat.
- For JBoss on Linux run deploy.sh.

Configuring Infor EAM application server for Oracle RAC

Connect the Infor EAM application server to the Oracle RAC configured database server.

Verify the following prerequisite has been met before configuring Infor EAM application server for Oracle RAC.

- Oracle 11.3 or greater is in RAC configuration has been installed, setup, and is working.

To configure Infor EAM application server for Oracle RAC:

1. Stop the Application Server Service.
2. Go to Application Server install directory. From here you should see a directory named depconfig.
3. From the depconfig directory you will need to navigate to properties/external and open the file config.yml in a text editor.
4. Search for the url tag in the file.
5. Alter the last : to / like the example below.

```
 Before:
url: jdbc:oracle:thin:@dbservername:PORT:INSTANCE
 After:
url: jdbc:oracle:thin:@dbservername:PORT/INSTANCE
```

6. After updating all the URL tag values for each tenant save and close the config.yml file.
7. Open a command window and go to the <application serverhome>\depconfig and run deploy.
8. Verify that the Application Server Service has been started.

Configuring Infor EAM Advanced Reporting Server for Oracle RAC

Connect the Infor EAM Advanced Reporting Server to the Oracle RAC configured database server. As a prerequisite you must first configure the Infor EAM application and ensure it is working for Oracle RAC.

Note: Prior to starting this process if you have any custom reports, export those reports, and then import them back in after this configuration is complete. If you are unfamiliar with the steps for exporting custom reports please see the *Infor EAM Advanced Reports Author Guide*.

To configure Infor EAM Advanced Reporting Server for Oracle RAC:

1. Open your Report Server.
2. Browse to the `Oracle install\network\admin` directory.
3. Open tnsnames.ora with a text editor.

4 In this file you will need two entries one needs to be in the format of **Instance Name** and the other needs to be in the format of **Instance Name_Host** see the example below:

```
 instance.domain.com =
          (DESCRIPTION =
                (ADDRESS = (PROTOCOL = TCP)(HOST = hostname)(PORT =
####)
                 )
                (CONNECT_DATA =
                      (SERVER = DEDICATED)
                      (SERVICE_NAME = instance.domain.com)
                )
       )
 instance.domain.com_hostname =
          (DESCRIPTION =
                 (ADDRESS = (PROTOCOL = TCP)(HOST = hostname)(PORT =
####)
                 )
                (CONNECT_DATA =
                     (SERVER = DEDICATED)
                     (SERVICE_NAME = instance.domain.com)
                     )
)
```

5 Save your changes and close this file.
6 Stop the Infor EAM Advanced Reporting Server Services.
7 Empty the Cognos Content Store database.
8 Copy the ewsconfig.xml from the application server.
9 Open the <report server>\depconfig\advrep_properties.xml in a text editor.
10 Search for `</instance>` in the text editor.
11 After the `</instance>` tag add the text `<rac>true</rac>` and save the file.
12 Open a command window and go to the `<report server>\depconfig` directory and run the deploy command.
13 Once the deploy finishes you will see a successful message.

Installing messaging services

During the Infor EAM installation you have the option to install messaging services. Messaging services are used to support Databridge and Infor EAM Mobile. There are two types of installation scenarios for messaging services: single server and multiple servers.

See the following descriptions for more information.

- Single server installation scenario involves the use of one application server to host all messages service transactions.
- Multiple server messaging service installation scenario involves setting up multiple application servers to host message service transactions for enhanced performance.

Note: Although messaging services and Infor EAM can be installed on the same application server, Infor strongly recommends installing messaging services on different application server(s) than the Infor EAM application server.

Before installing messaging services, you must formulate an installation plan, which involves evaluating the system load, determining the number of machines/servers, determining the number of message queues, etc., by which you will determine the type of messaging services installation that is appropriate for your organization.

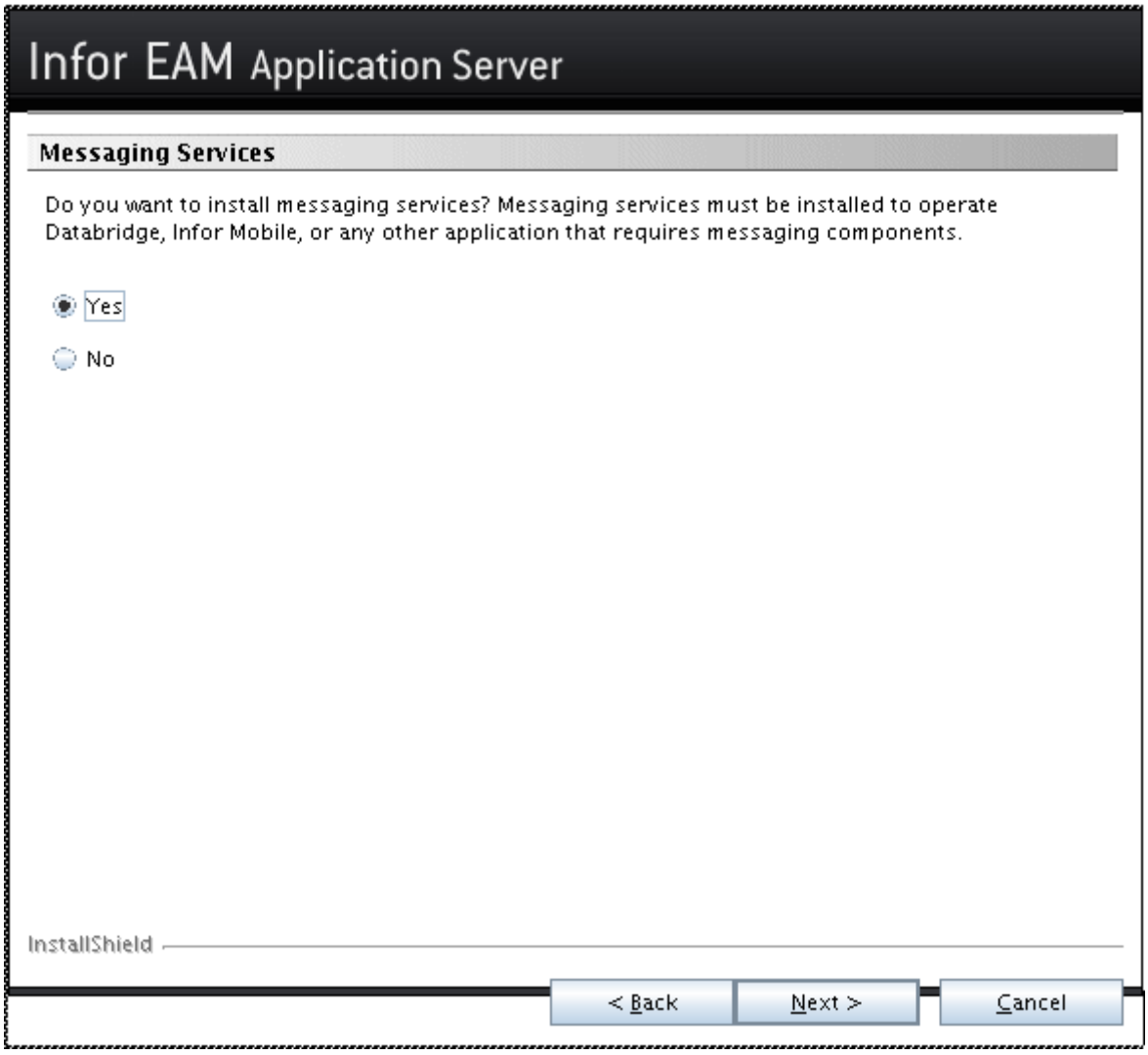
Note: You must identify the machines on which you will be installing the message queue(s), because the manner in which you enter the address for the message queue(s) is platform dependent.

Installing messaging services on a single server

Install Messaging Services for JBoss to run message services with one application server.

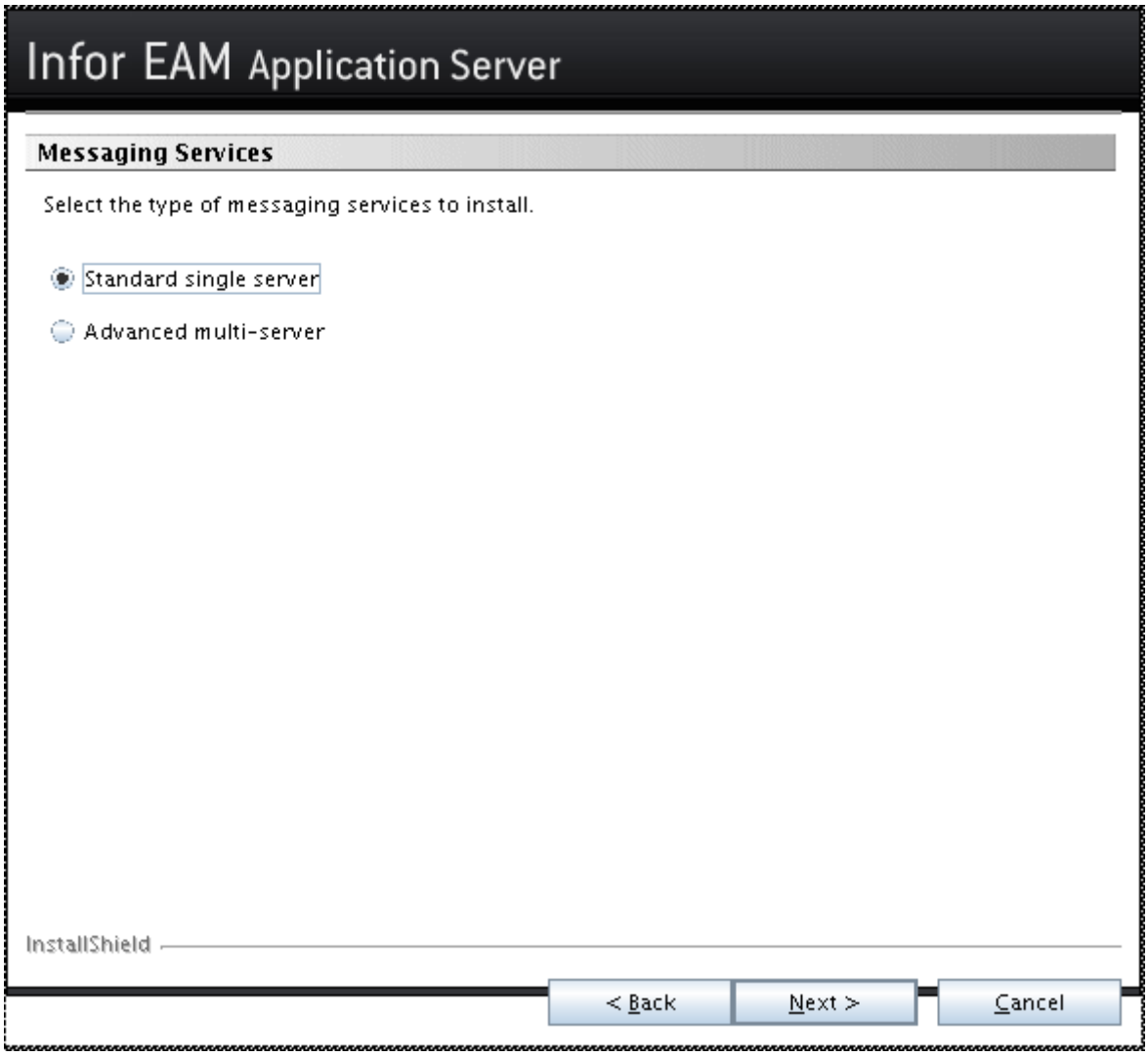
1 Insert the Infor EAM CD, and run the installation. See the appropriate section earlier in this chapter for more information on the type of installation you are running.

At the point during the installation when you must choose whether to install messaging services, the system displays the following dialog box.



2 Select **Yes** to install messaging services.

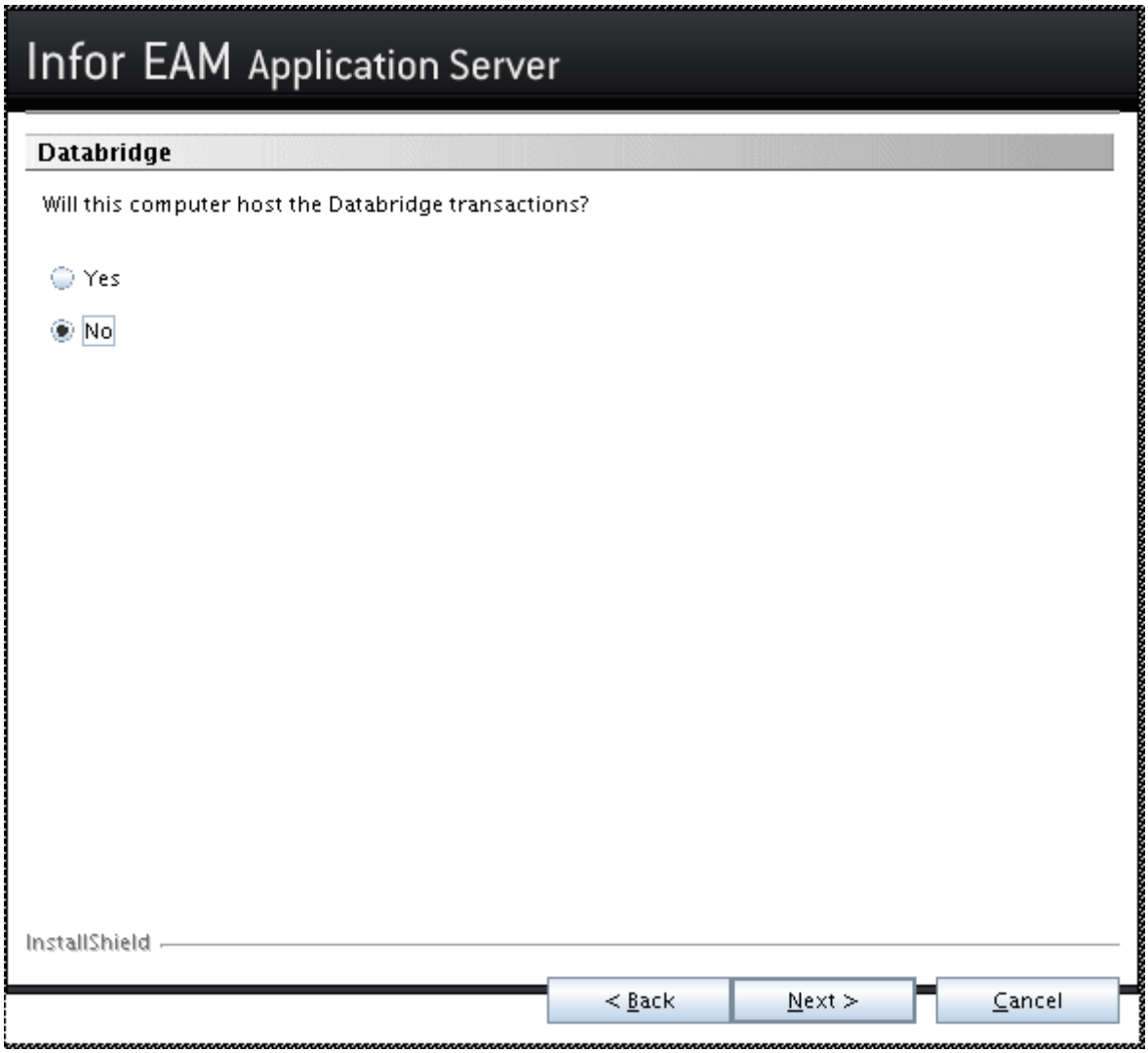
3 Click **Next**.



4 **Select the type of messaging services to install**. Select Standard single server to install the messaging services using one application server.

5 Click **Next**.

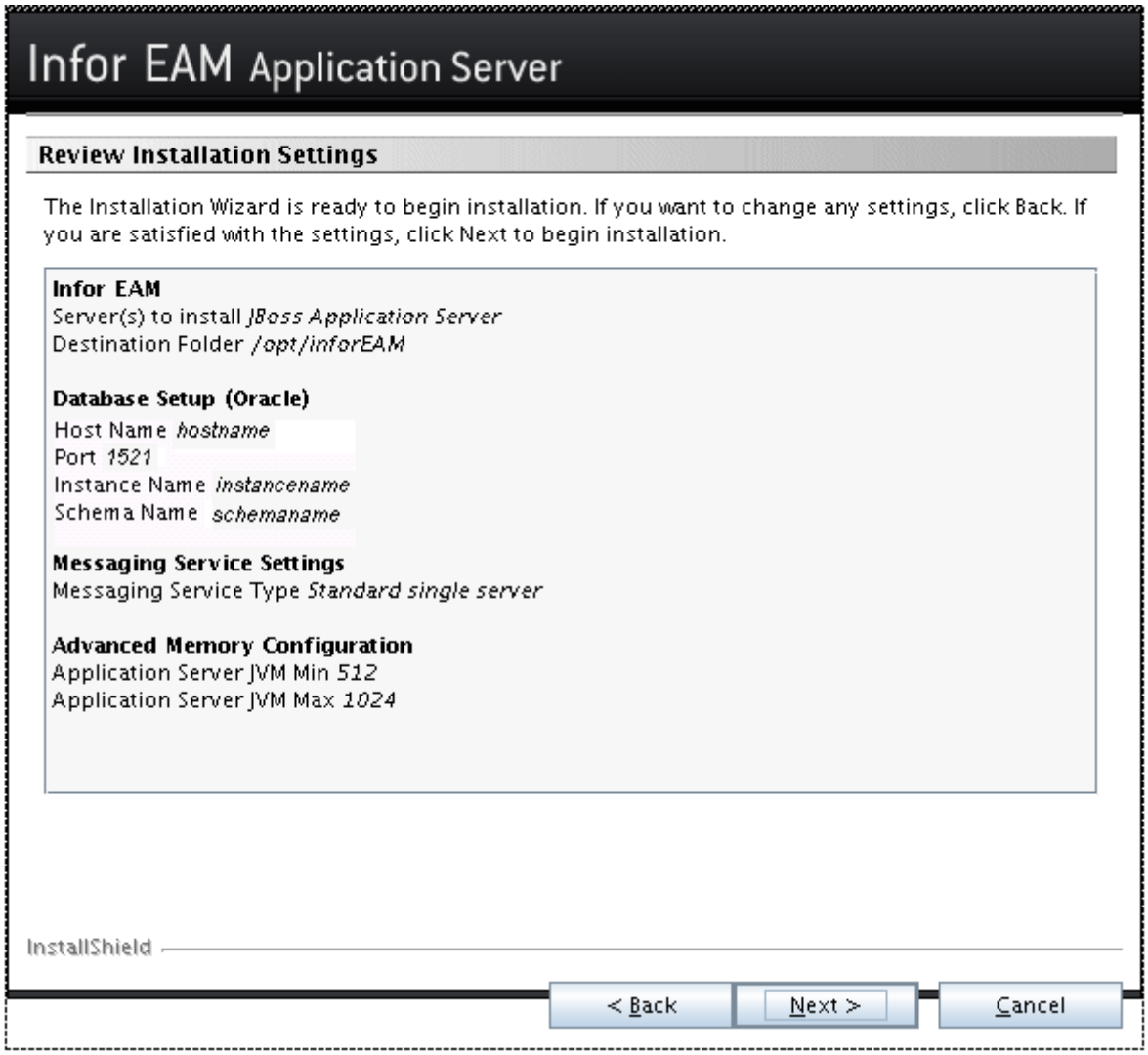
6 For the **Will this computer host the Databridge transactions?** prompt select **No**, and then click **Next**.



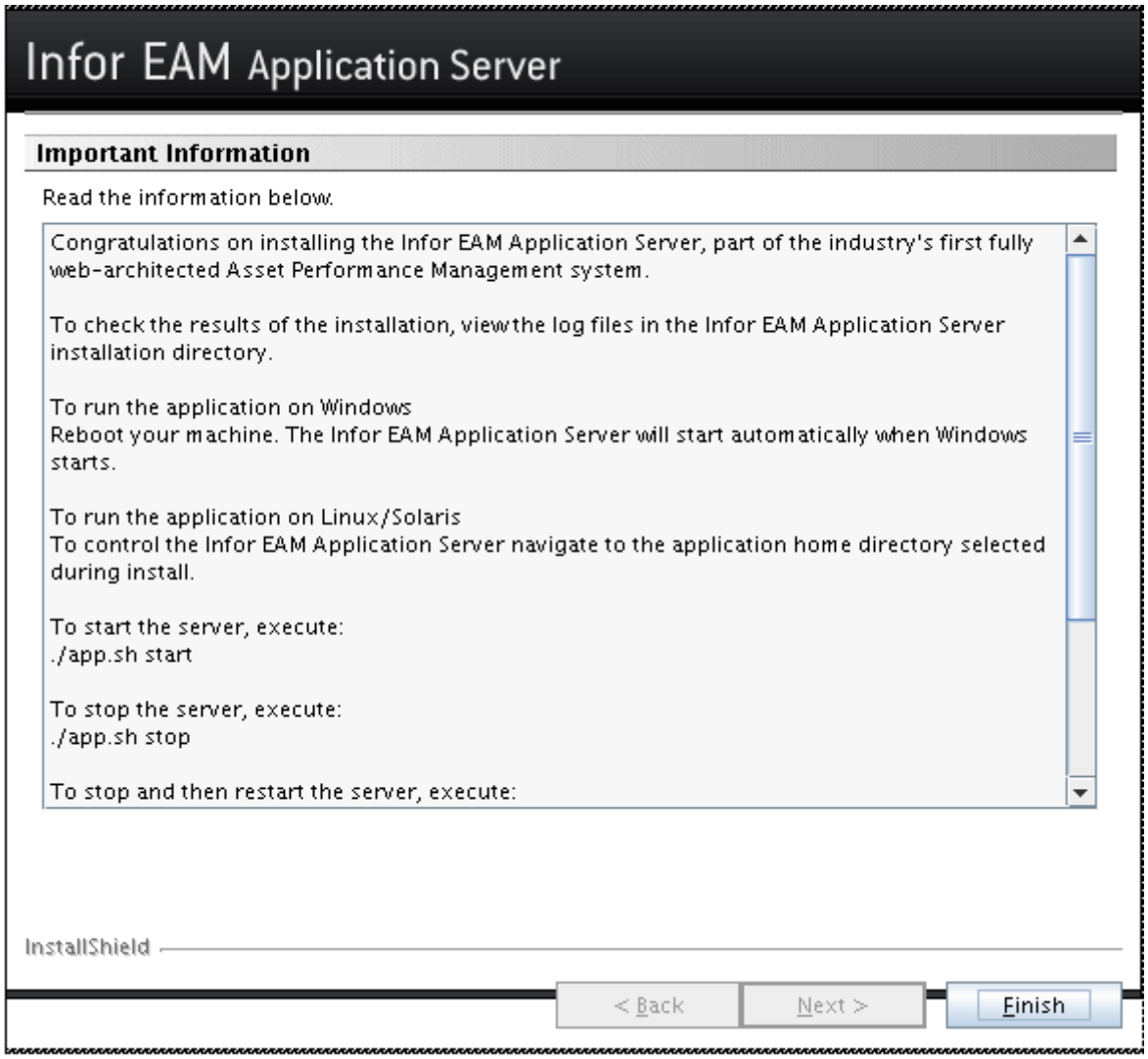
Note: Select **Yes** only if the computer on which you are installing the application server will also host the Databridge transactions.

See the *Infor EAM Databridge System Administrator Guide*.

7 Click **Next**.



8 Click **Finish**.



Installing messaging services on multiple servers for JBoss

Installing messaging services on multiple servers requires careful analysis and planning of system usage and resources. Infor strongly recommends using the Single Server option for most cases, and only using the Multiple Servers option if you have specific needs requiring you to do so, and you have a detailed deployment plan in place.

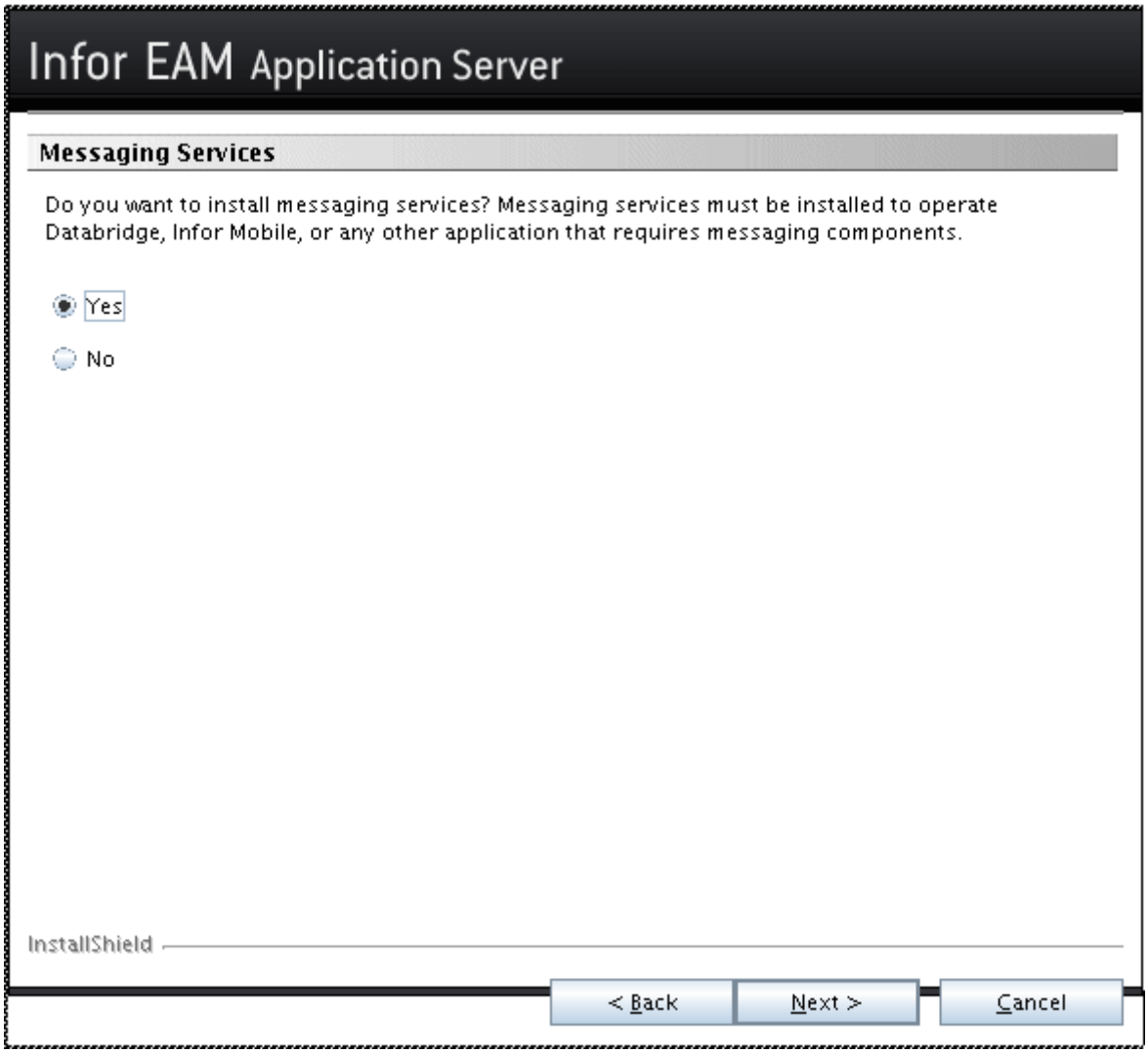
Note: Not using Multiple Servers does not exclude you from installing messaging services on multiple computers for load sharing and fail-over. Messaging services can be installed on multiple servers using the Single Server option.

The information in this section is for users with special needs that require the implementation of messaging services using multiple JMS providers in a JBoss environment.

1 Insert the Infor EAM CD, and run the installation.

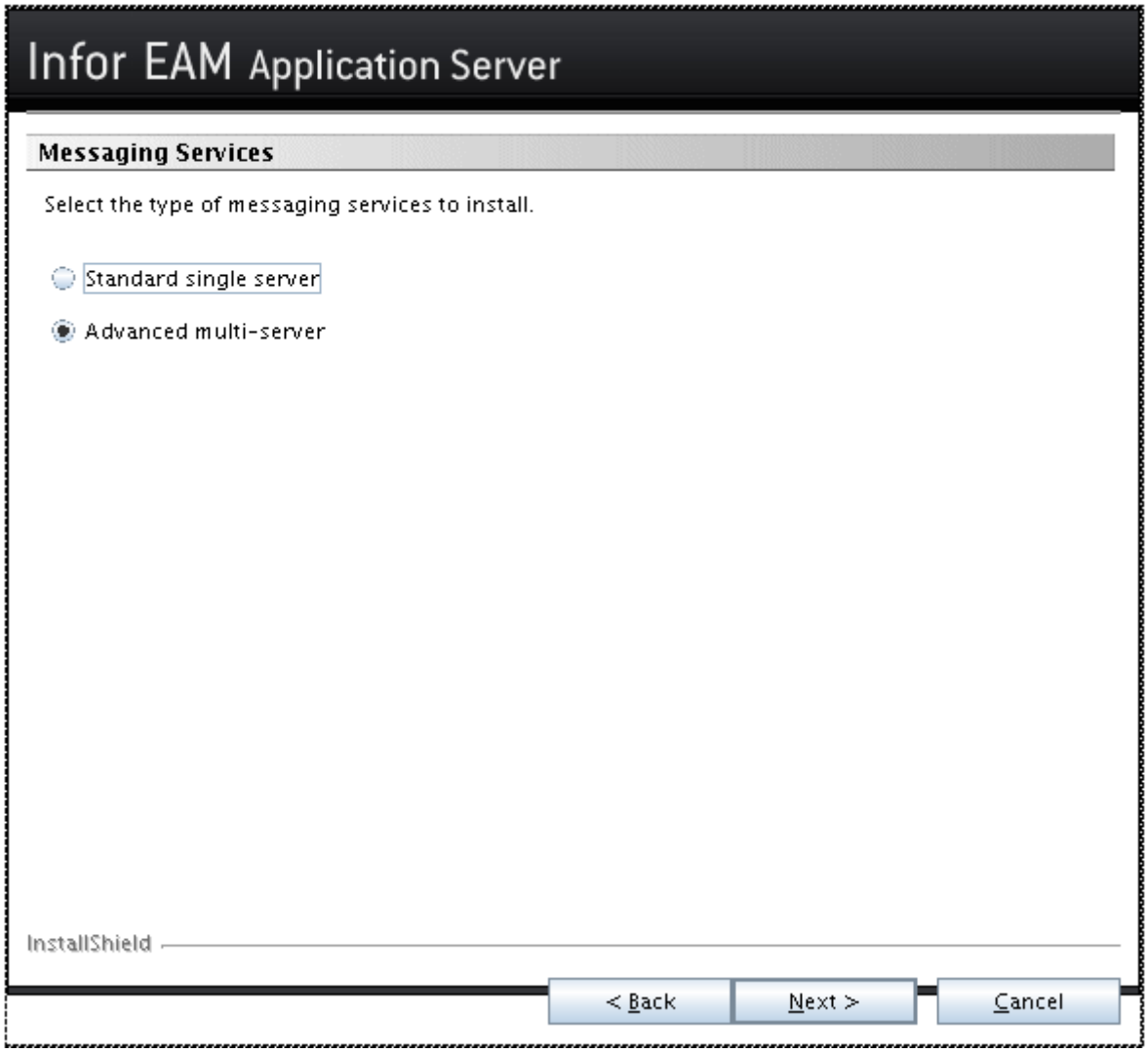
See Installing Infor EAM for JBoss on page 11.

At the point during the installation when you must choose whether to install messaging services, the system displays the following dialog box.



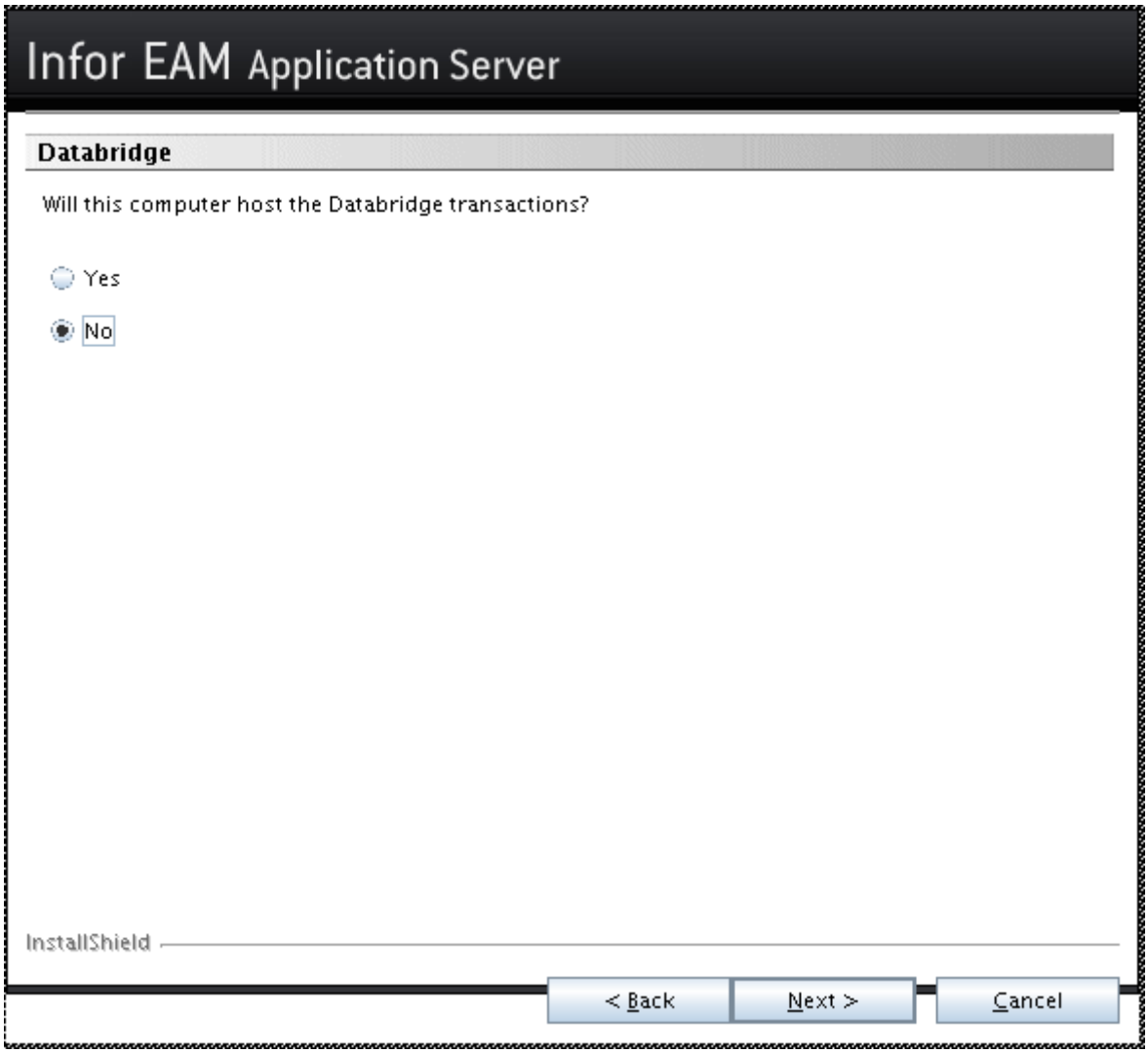
2 Select **Yes** to install messaging services, and then click **Next**.

3 Select the type of messaging services to install. Select **Advanced multi-server** to install the messaging services for multiple servers.



4 Click **Next**.

5 For the **Will this computer host the Databridge transactions?** prompt select **No**, and then click **Next**.

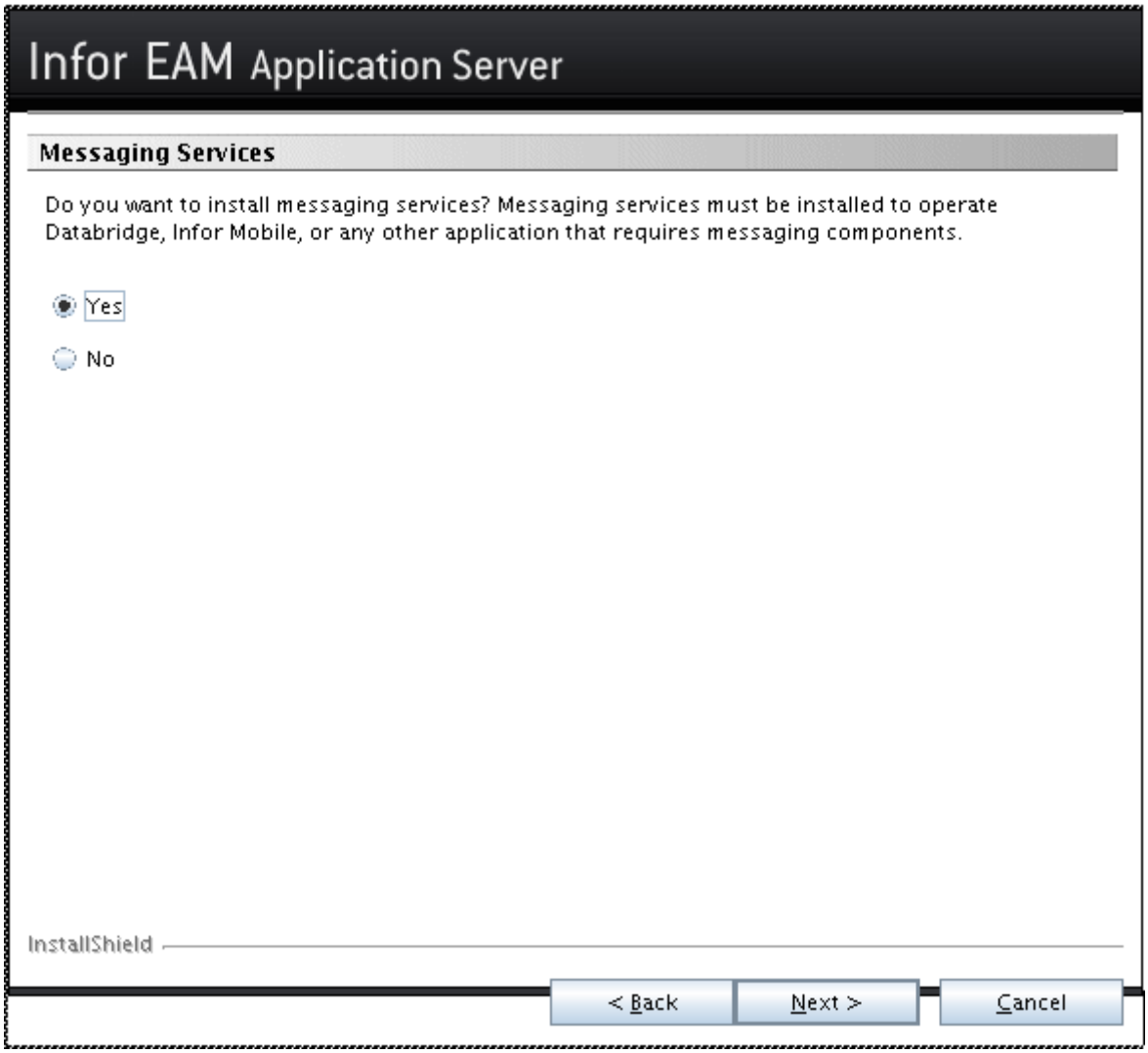


Note: Select **Yes** only if the computer on which you are installing the application server will also host the Databridge transactions.

See the *Infor EAM Databridge System Administrator Guide*.

6 For the **Will this computer host a message queue?** prompt choose one of these options:

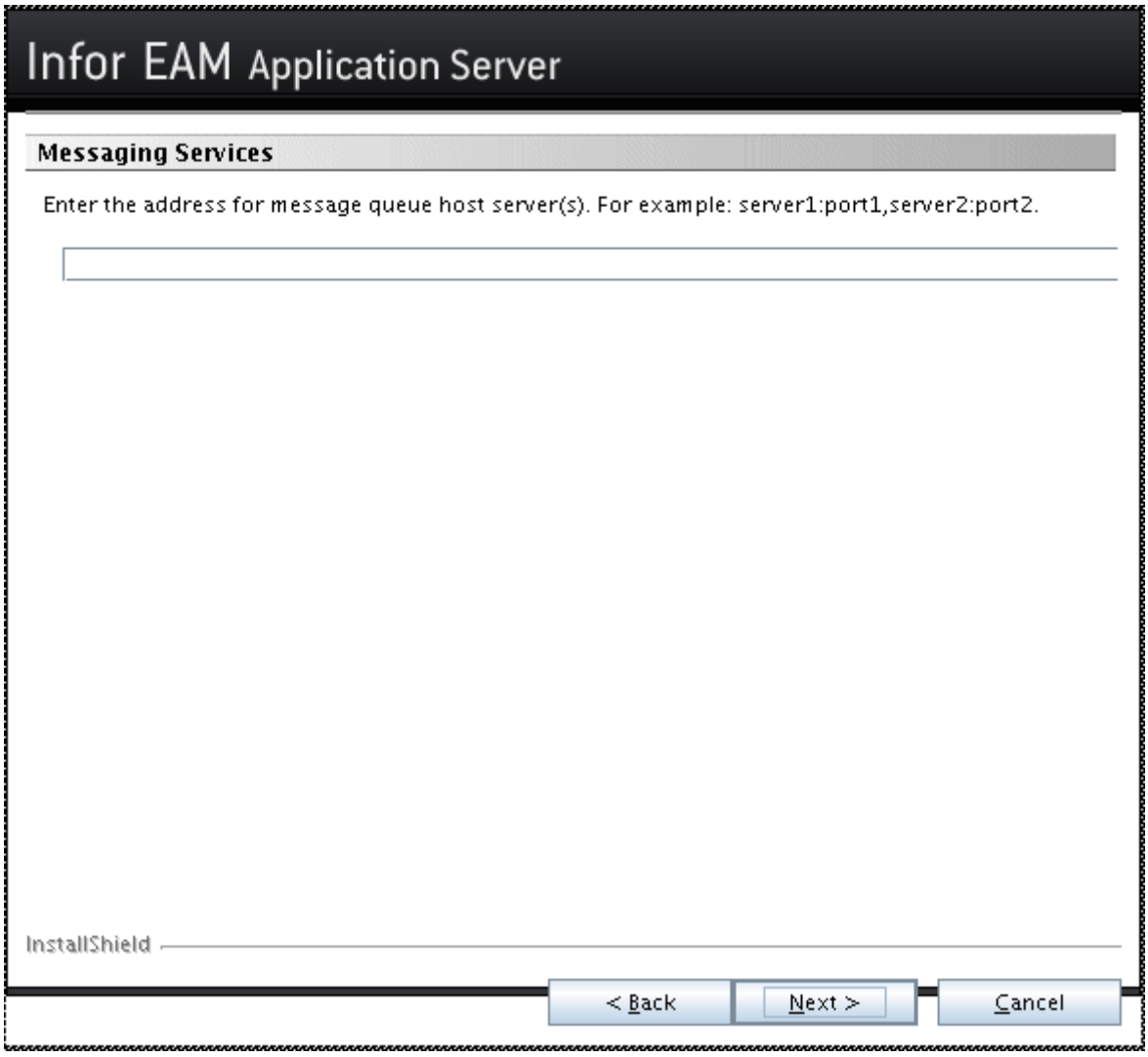
Option	Description
Yes	Select if the computer on which you are installing the application server will also host a message queue.
No	Select if you do not want to host a message queue on the computer on which you are installing the application server.



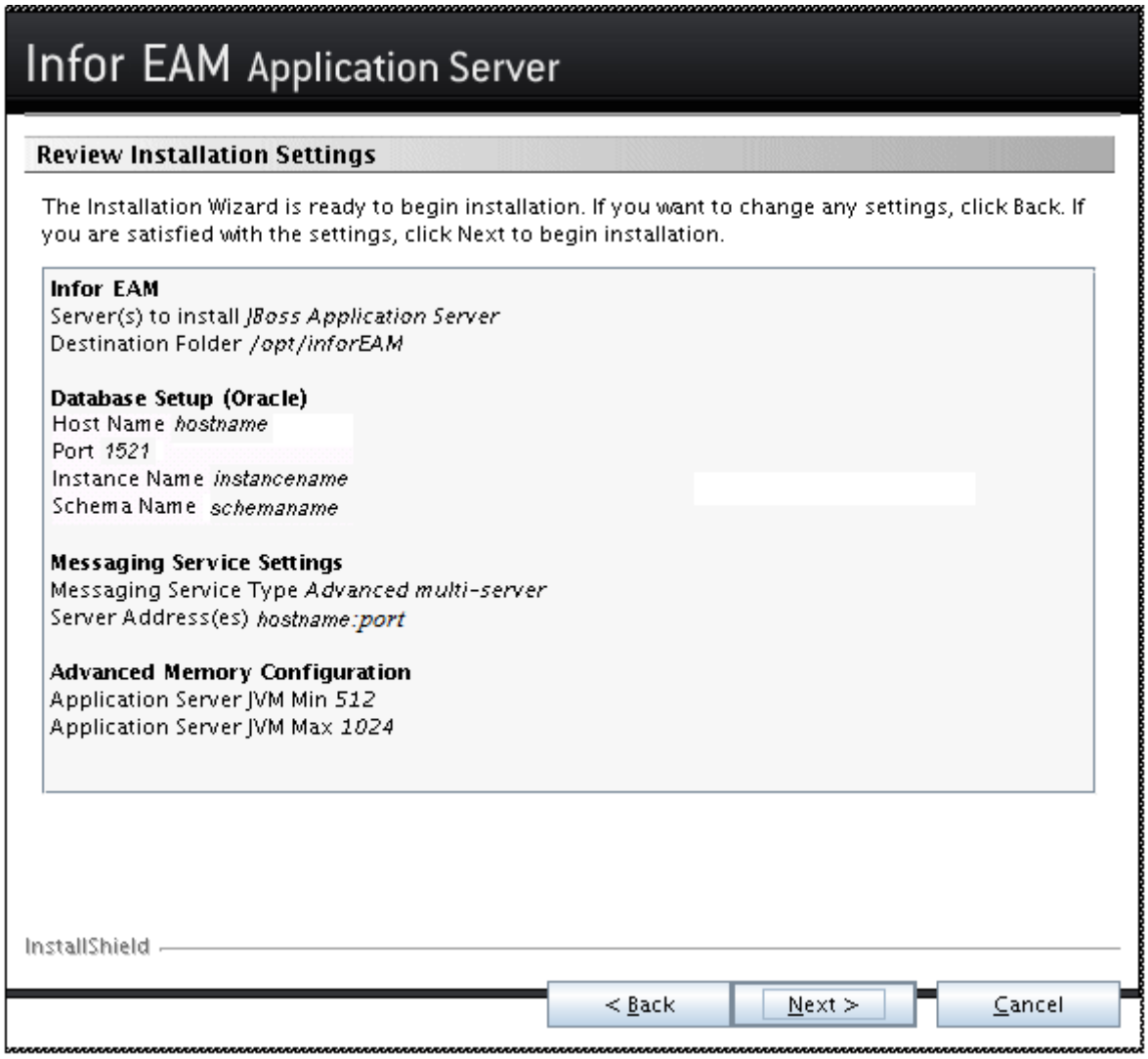
Note: For most installations, you will select **Yes**. However, you may want to select **No** for installation situations in which you are installing a large number of application servers for which you will only want to install JMS queues on a limited number of those application servers.

7 Click **Next**.

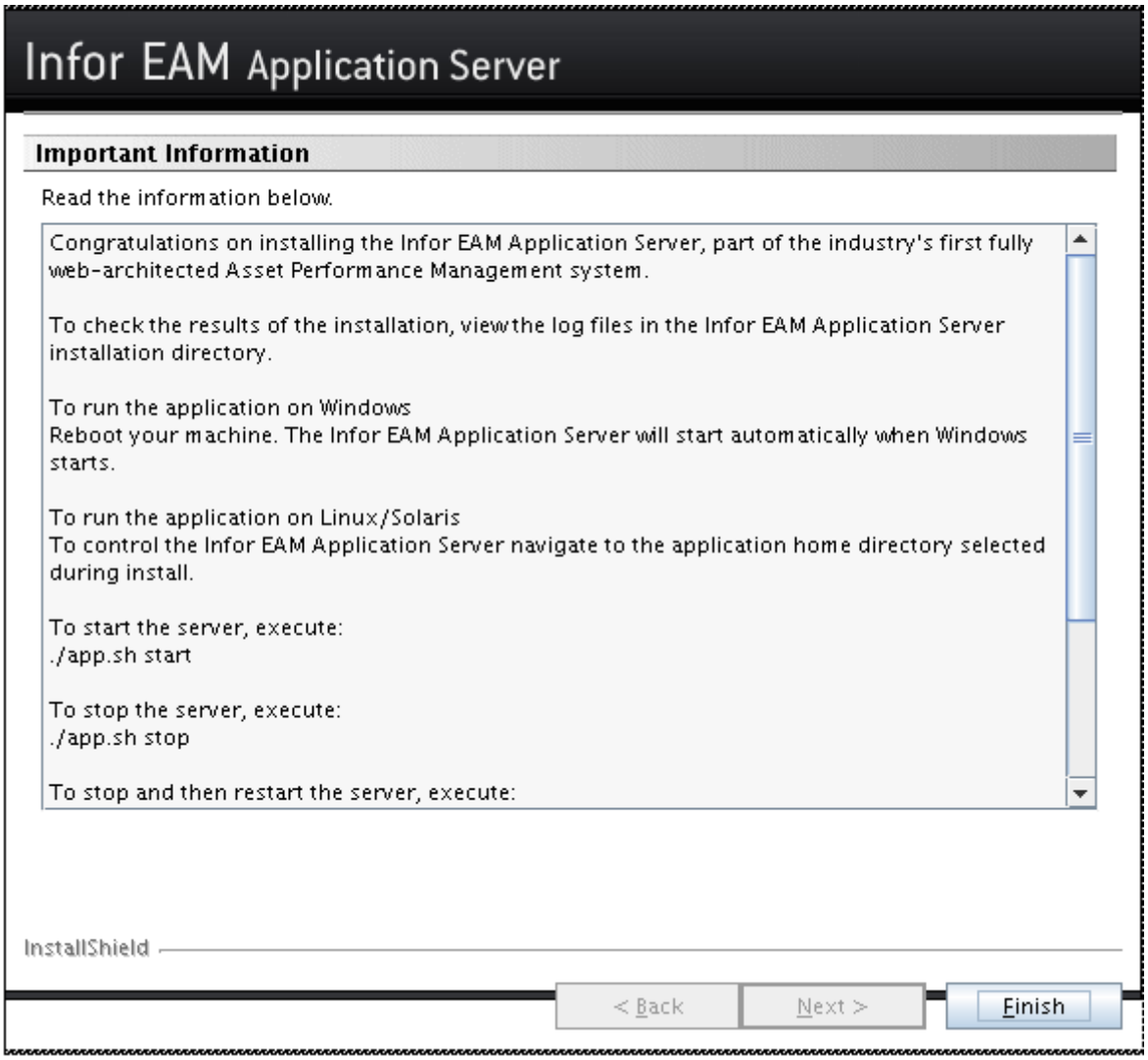
8 Enter the address of the application server(s) that are hosting the message queue(s). Use a comma (,) to separate multiple addresses, e.g., usgvl002-machine:1099, usgvl003-machine2:1099, etc. For a JBoss installation, the address is in the form of <server name>:<JBoss JNDI port number>.


Infor EAM Application Server
Messaging Services
Enter the address for message queue host server(s). For example: server1:port1,server2:port2.
InstallShield
< Back
Next >
Cancel

9 Click **Next**.



10 Click **Next**.



11 Click **Finish**.

Deploying Infor EAM using vertical scaling

Infor EAM can be deployed on a local machine using vertical scaling. Vertical scaling involves configuring multiple JVM instances to run simultaneously in order to achieve maximum efficiency by optimizing system resource usage.

When planning a vertically scaled deployment of Infor EAM using a multi-JVM configuration, you must consider the availability of physical RAM on the application server, as well as the memory requirements of any other applications that are running on the same system. Infor recommends that you allow an extra 384MB per JVM beyond what is normally available as the maximum JVM size.

1. Navigate to the <APP_HOME>/depconfig/properties/external directory located in the Infor EAM application home directory.
2. Open config.yml and set the jboss.domain.cluster. Set the cluster_size element to reflect the desired number of JVMs.

   The following sample extract from config.yml enables domain mode and sets the cluster size to two:

   Jboss:

   domain:

   enabled: true

   cluster: 2
3. Choose one of the following options to redeploy the Infor EAM application:
   - On Linux, execute the deploy shell script: ./deploy.sh
   - On Windows, execute the deploy batch script: deploy.bat

Configuring Infor EAM to use a different EAM Advanced Reports Server

1. Navigate to the depconfig/properties/external directory located in the Infor EAM application home directory.
2. Open config.yml, and then change the following properties to reflect the updated Infor EAM Advanced Reporting Server information:

   reports:

   advrep:

   server: <servername>

   port: <port>
   - <servername>

     Change to the name for the Infor EAM Advanced Reporting Server (FQDN, WINS, or other resolvable hostname)
   - <port>

     Change to the gateway port on which the Infor EAM Advanced Reporting Server is configured to listen. This value is located in the advrep_properties.xml on the app server.
3. Choose one of the following options to redeploy the Infor EAM application:
   - On Linux, execute the deploy shell script: ./deploy.sh
   - On Windows, execute the deploy batch script: deploy.bat

Understanding changes to JBoss behavior

Beginning with Infor EAM release 11.2, EAM uses a newer version of JBoss which results in some changes to startup behavior:

1. The EAM server process is automatically stopped and restarted during the deployment process (when running depconfig/deploy.bat). So it is not necessary to stop the server before redeploying or to start it afterwards.
2. On Windows, the deployment process recreates the Windows service. For this reason it may be necessary to run the deployment process as an administrator (from a command shell opened using "Run as administrator").

Installing the LDAP server component for Infor EAM

This section documents the procedures for installing and configuring the database server to enable the LDAP server component for Infor EAM. Infor supports two types of LDAP servers: Sun ONE Directory Servers and Microsoft Active Directory Servers (ADS).

The LDAP server component enables you to centrally maintain user and password information for each application that you may use on the LDAP server. If you are using LDAP, when a user logs in to Infor EAM, Infor EAM authenticates the user ID and password on the LDAP server rather than performing the authentication within Infor EAM.

See the *Infor EAM System Administrator Guide*.

The system searches for the tenant-specific LDAP configuration file when the `LGNEAM` installation parameter is set to ‘LDAP’. For other Infor EAM products such as Infor EAM Mobile, Infor EAM Databridge, and Infor EAM Connector, the system searches for the tenant-specific LDAP configuration file when the corresponding installation parameters are set to ’LDAP’. The installation parameters and corresponding Infor EAM products are:

- `LGNCON` (Infor EAM Connector)
- `LGNDBR` (Infor EAM Databridge)
- `LGNMOB` (Infor EAM Mobile)

See the *Infor EAM System Administrator Guide*.

If the system does not locate the tenant-specific LDAP configuration file, the system locates the `ldap-conf.xml` file.

Modifying the ldap-conf.xml configuration file (Sun ONE Directory Server)

Modify the ldap-conf.xml configuration file to define parameters for the LDAP server.

See the sample ldap-conf.xml below for more information.

```
<?xml version="1.0" encoding="UTF-8"?>

<!--Sample XML file generated by XMLSPY v5 rel. 4 U (http://www.xmlspy.com)-
->

<ldap-conf xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNames
paceSchemaLocation="ldap-conf.xsd">

<server>

<host>myserver.datastream.net</host>

<open-port enabled="true">389</open-port>

<secure-port enabled="false">0</secure-port>

<search-base>dc=datastream,dc=net</search-base>

<server-type>sun1</server-type>

</server>

<search type="full">

<dir-list>

<dir>cn=G1,ou=Org1,dc=ulberg,dc=deu</dir>

<dir>cn=G2,ou=Org1,dc=ulberg,dc=deu</dir>

</dir-list>

</search>

<role type="by-directory">

<attribute-name>attrole</attribute-name>

<translations>

<translation name="cn=G1,ou=O1,dc=datastream,dc=net">Role1</translation>

<translation name="cn=G2,ou=O1,dc=datastream,dc=net">Role2</translation>

</translations>

</role>

</ldap-conf>
```

1. Copy the `ldap-conf.xml` file from the `<APP_HOME>\depconfig\templates\mp_subsystem.ear\conf` directory to the `<APP_HOME>/overrides/ldap/` directory, and then open the `ldap-conf.xml` file in a text editor.

   Note: Your `ldap-conf.xml` file may have already been re-located to this location:`<APP_HOME>/overrides/ldap/ldap-conf.xml`.

2. Locate the `<server>` node section of the XML document, and then modify the following elements:

<host>
Specify the name of the host on which the LDAP server is running.

<open-port>
Specify the number of the port used for open (not encrypted) communication. Only use this port if the "enabled" attribute is set to "true". Set this value to 389.

<secure-port>
Specify the number of the port used for secure (SSL-enabled port) communication. Disable this port and set it to 0.

<search-base>
Specify the root element of the LDAP tree. You can find the name using Sun One Server Console. See the configuration file above.

3 Locate the `<search>` node section of the XML document. The `<search>` node defines the strategy used by the LDAP client to locate user in the LDAP tree.

Modify the `<search>` tag by entering one of the following elements:

Option	Description
Full search	To configure the LDAP client for this type of search, the tag should be specified in the following form: `<search type="full">` Full search presumes that the client has read access to the whole LDAP tree. In this case, the search starts from the top node of the tree and continues as long as the first user is found. This is the most widely used case.
By directory	The search tag should be configured in the following way: `<search type="by-directory">` Use this feature if the client's LDAP installation will be configured for tighter security and only certain predefined directories are available for search. The list of the available directories for search directives should follow embedded into the `<dir-list>` tags.
Role discovery	A default user role defines for Infor EAM the default setup for a new user when logging in through LDAP the first time. You must provide this role in the LDAP response for this feature to work. Discover the default user role by mapping the LDAP properties to the predefined role. Current implementation supports two role mapping mechanisms: • by attribute • by directory **a** Role discovery by attribute In this case, the user defined in the LDAP has a special attribute associated with the role. To perform role discovery: **1** Define the following tag `<role type="by-attribute">` in the configuration file.

Option	Description
	2 Define the name of the dedicated LDAP attribute using the following tag: `<attribute-name>attrole</attribute-name>`. **b** Role discovery by directory The association is based on the assumption that all LDAP users from the same LDAP directory will share the same role. Define only the mapping between the LDAP directory and Infor EAM role. To use this mechanism of the role discovery: 1 Define the following tag `<role type="by-directory">` in the configuration file. 2 Define the translation list that will map the name of the LDAP directory to the Infor EAM role (see example above).

4 Save and exit the file.

5 Run command

deploy.bat (Windows)

or

deploy.sh (Unix)

Modifying the ldap-conf.xml configuration file (Microsoft Active Directory Server)

Modify the `ldap-conf.xml` configuration file to define parameters for the LDAP server.

See the sample `ldap-conf.xml` below for more information.

```
<?xml version="1.0" encoding="UTF-8"?>

<!--Sample XML file generated by XMLSPY v5 rel. 4 U (http://www.xmlspy.com)-
->

<ldap-conf xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNames
paceSchemaLocation="ldap-conf.xsd">

<server>

<host>myserver1.datastream.net</host>

<open-port enabled="true">389</open-port>

<secure-port enabled="false">0</secure-port>

<search-base>dc=datastream,dc=net</search-base>

<server-type>microsoft</server-type>

<access-user>

<user>user@mydomain.com</user>
```

```
<password>123</password>
</access-user>
<uid-attribute>cn</uid-attribute>
</server>
<search type="full">
<dir-list>
<dir>cn=G1,ou=Org1,dc=ulberg,dc=deu</dir>
<dir>cn=G2,ou=Org1,dc=ulberg,dc=deu</dir>
</dir-list>
</search>
<role type="by-directory">
<attribute-name>attrole</attribute-name>
<translations>
<translation name="cn=G1,ou=O1,dc=datastream,dc=net">Role1</translation>
<translation name="cn=G2,ou=O1,dc=datastream,dc=net">Role2</translation>
</translations>
</role>
</ldap-conf>
```

1. Copy the `ldap-conf.xml` file from the `<APP_HOME>\depconfig\templates\mp_subsystem.ear\conf` directory to the `<APP_HOME>/overrides/ldap/` directory, and then open the `ldap-conf.xml` file in a text editor.

   Note: Your `ldap-conf.xml` file may have already been re-located to this location:`<APP_HOME>/overrides/ldap/ldap-conf.xml`.

2. Locate the `<server>` node section of the XML document, and then modify each of the following elements:

   <host>
   Specify the name of the host on which the LDAP server is running.

   <open-port>
   Specify the number of the port used for open (not encrypted) communication. Only use this port if the "enabled" attribute is set to "true". Set this value to 389.

   <secure-port>
   Specify the number of the port used for secure (SSL-enabled port) communication. Disable this port and set it to 0.

<search-base>
Specify the root element of the LDAP tree. You can find the name using Sun One Server Console. See the configuration file above.

<access-user>
Specify the access user to connect to the Microsoft Active Directory Server (ADS) for search.

<uid-attribute>
Specify the search criteria for the user. The default value is "uid." Set the value to "cn" for ADS. The value may vary with specific ADS implementations.

3 Locate the `<search>` node section of the XML document. The `<search>` node defines the strategy used by the LDAP client to locate user in the LDAP tree. Modify the <search> tag by entering one of the following elements:

Option	Description
Full search	To configure the LDAP client for this type of search, the tag should be specified in the following form: `<search type="full">` Full search presumes that the client has read access to the whole LDAP tree. In this case, the search starts from the top node of the tree and continues as long as the first user is found. This is the most widely used case.
By directory	The search tag should be configured in the following way: `<search type="by-directory">` Use this feature if the client's LDAP installation will be configured for tighter security and only certain predefined directories are available for search. The list of the available directories for search directives should follow embedded into the `<dir-list>` tags.
Role discovery	A default user role defines for Infor EAM the default setup for a new user when logging in through LDAP the first time. You must provide this role in the LDAP response for this feature to work. Discover the default user role by mapping the LDAP properties to the predefined role. Current implementation supports two role mapping mechanisms: • by attribute • by directory **a** Role discovery by attribute In this case, the user defined in the LDAP has a special attribute associated with the role. To perform role discovery: **1** Define the following tag `<role type="by-attribute">` in the configuration file. **2** Define the name of the dedicated LDAP attribute using the following tag: `<attribute-name>attrole</attribute-name>`. **b** Role discovery by directory

Option	Description
	The association is based on the assumption that all LDAP users from the same LDAP directory will share the same role. Define only the mapping between the LDAP directory and Infor EAM role. To use this mechanism of the role discovery: **1** Define the following tag `<role type="by-directory">` in the configuration file. **2** Define the translation list that will map the name of the LDAP directory to the Infor EAM role (see example above).

4 Save and exit the file.

5 Run command

deploy.bat (Windows)

or

deploy.sh (Unix)

Naming the LDAP configuration files

Create LDAP configuration files for each tenant and product combination.

Product-specific configuration files must use the following file name suffixes:

Name Suffix	Product
databridge	A Databridge-specific configuration file
mobile	A Mobile-specific configuration file
connector	A Connector-specific configuration file
eam	All other products, such as EAM, GIS, Analytics, Barcoding and Esign

The general naming convention for the LDAP configuration files are as follows:

File Name	Description
ldap-config.xml	The default file name to use if one LDAP server will be used for all tenants and products
ldap-config-tenantid.xml	Use this to designate a specific LDAP server by tenant, e.g. ldap-config-abc83_prd.xml
ldap-config-tenantid-product.xml	Use this to designate a specific LDAP server by both tenant and product, e.g. ldap-config-abc83_prd-mobile.xml
ldap-config-product.xml	Use this to designate a specific LDAP server by product, e.g. ldap-config-mobile.xml

Restricting server access based on client IP address

Restrict access to the server based on the IP address of the client machine. When this feature is enabled, the system checks the IP address of the client against a list of IP addresses from which access to the server is allowed. Clients will be able to log on only if their IP address is on the list of allowed addresses. This feature is controlled by two sets of install parameters.

Enabling client IP address validation

IP address validation may be enabled for one or more products. The install parameters and corresponding products are:

- IPEAM: browser logons, plus the following connector logons: analytics, barcode, gis, msproject, crystal
- IPCONN: connector and advanced wireless logons
- IPMOB: mobile logons
- IPDBR: databridge logons

By default IP address validation is disabled and the values of these parameters are empty.

To enable IP validation set the value of the appropriate install parameter to one of the following values:

- IP:RAW
- HTTP:<httpheadername>

When the install parameter value is set to ‘IP:RAW’, the server reads the client’s actual IP address.

If a proxy server resides between the clients and the EAM server, reading the actual IP address from the request may not be appropriate. In such cases the install parameter may be set to “HTTP:” followed by the name of an http header containing the IP address to use when validating the client’s location. The proxy server must be configured to insert the client’s IP address in to the appropriate http header. This must be done for every request to the server. For example: HTTP:clientaddr

Defining IP address access lists

Four install parameters are used to define lists of IP addresses from which the server may be accessed:

- IPLEAM
- IPLCON
- IPLMOB
- IPLDBR

Format of an access list

- An access list is a comma separated list of IP addresses.
- Each item in the list is either a specific IP address, or a range of addresses
- An individual address must be in the format: x.x.x.x, where ‘x’ is an integer from 0 to 255.

- An IP address range must consist of two IP addresses separated by a dash: x.x.x.x-x.x.x.x
- Example of an access list: 13.33.250.107-13.122.179.151, 16.92.101.88-16.193.94.152, 20.111.175.114-20.234.224.34, 22.197.127.66-23.11.0.192, 25.230.184.115-26.64.94.61, 28.22.242.168, 28.121.77.101, 32.156.138.7-32.218.139.233

Using a Default Access List

- The IPLEAM access list serves both as the access list for web logons and as the default access list for all other logon types.
- For example, if IP address validation is enabled for browser and mobile logons and both products use the same access list, the IPLMOB parameter may be left blank; in this case the IPLEAM list will be used for both products.

Special considerations

IP address validation is ignored for Caller logons.

If an Infor EAM Advanced Reporting Server is installed the address of the report server should be added to the Connector access list if:

- The Author screens on the report server are used, and
- EAM is configured to authenticate users by LDAP or by a Single Sign-On server.

Modifying the MPConfig file

Modify the MPConfig file to specify which pre-defined file types the system allows you to upload.

To modify the MPconfig file:

1. Navigate to the depconfig/properties/external directory located in the Infor EAM application home directory.
2. Open config.yml and then add/update the following properties to reflect the updated file type information.

   documents:

   maxsize: 5

   acceptablefiletypes: pdf,bmp,gif,doc
3. Choose one of the following options to redeploy the Infor EAM application:
   - On Linux, execute the deploy shell script: ./deploy.sh
   - On Windows, execute the deploy batch script: deploy.bat

Implementing reverse proxy

Modify the base URI used by both the Application Server and the Advanced Reporting Server to deliver content, in order to make use of the reverse proxy functionality.

Application server

In order to facilitate this change on the JBoss Application server, the baseuri property will need to be added to the config.yml after the installation. If the gateway for the Advanced Report server is to use a modified base URI, then the advrep baseuri property should be added. Please see the example excerpt below for placement of these additional tokens:

core:

baseuri: "" # base uri of the EAM app server

reports:

advrep:

baseuri: "" # base uri for report server

Once the change to config.yml has been completed, executing a redeploy will configure the server to properly use the new base URI when serving the application.

Advanced Reporting Server

For the Advanced Reporting server, add the webserver_base_URI token under the <reportserver> section AND the <webserver> sections in the advrep_properties.xml file, as shown in the example excerpt below...please note that the same base URI should be used for both values and should match what was defined for the <gatewaybaseuri> on the application server:

...

<reportserver>

<enabled>true</enabled>

<webservername>someadvrep.infor.com:80</webservername>

<webserver_base_URI>/InforEAM</webserver_base_URI> -->

<contentmanagernames>someadvrep.infor.com:9300</contentmanagernames>

</reportserver>

...

<webserver>

<enabled>true</enabled>

<primaryreportservername>someadvrep.infor.com:9300</primaryreportservername>

<webserver_base_URI>/InforEAM</webserver_base_URI> -->

<deployreportcontent>true</deployreportcontent>

</webserver>

...

Once the change to advrep_properties.xml has been completed, executing a redeploy will configure the reports server to properly use the new base URI when serving reports, as well as report attachments.

The base URI desired should always begin with a forward slash (/) and should contain the full base URI path desired. Do not include a forward slash (/) at the end of the base URI variable. This applies to both the base URI for the reportserver webserver_base_URI, as well as for the variable that specifies the webserver webserver_base_URI.

Under all scenarios, if it is desired to revert the application to use the default configuration in use prior to employing custom base URIs, either remove or comment out the base URI related token that controls the base URI behavior for the specific component with which the change is desired and execute a system redeploy.

Configuring ServerName

In order to ensure proper operation of the Infor EAM HTTP server, it is important for the ServerName parameter in the httpd.conf file to be set to the Fully Qualified Domain Name (FQDN) by which the application will be accessed. The system sets the ServerName to be the same as the hostname of the system on which the installer ran. For example, if the server's hostname is "extended" and you want to serve the application through the FQDN of "extended.yourdomain.com," then you must perform one of the following options:

- Open the file <APP_HOME>/depconfig/properties/external/config.yml in a text editor.
- Locate the server property under core, and change it to your FQDN like the example below:

  core:

  ...

  server: <fqdn servername>
- Save the file.
- Change to directory <APP_HOME>/depconfig.
- For JBoss on Windows run deploy.bat.
- For JBoss on Linux run deploy.sh.

Note: Regardless of what FQDN is used, it is important that the http server is able to resolve each FQDN to a local IP address in its local hosts file.

Tuning memory usage after installation

This section outlines procedures for tuning JBoss memory usage after installation in either Windows or UNIX platforms.

Note: Make sure to consider overall physical memory capacity of the server when making these changes. Reserve memory for other applications if present. Also, make sure to reserve some system memory for the operating system itself.

Tuning memory usage after installation

1. Open the file <APP_HOME>/depconfig/properties/external/config.yml in a text editor.
2. Locate the heap-min and heap-max properties under jboss/jvm and change the upper and lower bounds like the example below.

   jboss:

   jvm:

   heap-min: 512

   heap-max: 1024
3. Save the file.
4. Change to directory <APP_HOME>/depconfig.
5. For JBoss on Windows run deploy.bat. For JBoss on Linux run deploy.sh.

Configuring environments

This section outlines procedures for modifying existing environments or configuring for multiple environments.

Configuring environments

1. Open the file <APP_HOME>/depconfig/properties/external/config.yml in a text editor.
2. Add/modify DB connections definition like the example below.

   datasources:

   tenant: <db-connection name>

   url: jdbc:oracle:thin:@SERVER1:PORT1:INSTANCE1

   driver: oracle.jdbc.OracleDriver

   user: <user>

   password: '<password>'

min-size: <min-size>

max-size: <max-size>

idle-timeout-minutes: 1

tenant: <db-connection2 name>

url: jdbc:oracle:thin:@SERVER2:PORT2:INSTANCE2

driver: oracle.jdbc.OracleDriver

user: <user2>

password: '<password2>'

min-size: <min-size>

max-size: <max-size>

idle-timeout-minutes: 1

- <db-connection name>

  Specify the name of the connection, which you must match with the tenant name that users provide on the login URL.

- <url>

  Specify the host name of the database server, the port number for the database server, and the SID or service name of the database.

  Note: <database name> is the name of the SQL Server construct that contains the EAM tables, not the database server name.

- <user>

  Specify the user name.

- <password>

  Specify the user access password.

- <min-size>

  Specify the number of connections created during the Application Server startup.

- <max-size>

  Specify the maximum number of connections allowed per data source.

3. Save the file.
4. Change to directory <APP_HOME>/depconfig.
5. For JBoss on Windows run deploy.bat. For JBoss on Linux run deploy.sh.

   When the modifications are complete and the server is restarted, the URL that identifies which environment is running is http://ServerName/web/base/logindisp?tenant=XXX, where XXX would be what was set as <db-connection name> in our example above.

Configuring the server trace log

If there is a need to see additional error and trace information during the execution of Infor EAM, you may turn on/off additional trace for the server log file while the server is running. If you are running in

a single JVM environment, the server log will be located at <APP_HOME>/jboss/standalone/log/server.log. If you are running in a multiple JVM environment, the server log will be located at <APP_HOME>/jboss/domain/servers/eam-<JVM #>/log.

Note: The server automatically creates a backup of each day's log at midnight with the name in the following pattern: server.log.YYYY-MM-DD. The server.log is cleared for further trace logs. The server trace log is only available in JBoss.

Turning on the server trace log (Windows)

To turn on the server trace log:

1. Open the file <APP_HOME>/jboss/conf/log4j-eam.xml.
2. Locate the following text/xml:

   <appender name="CONSOLE" class="org.apache.log4j.ConsoleAppender">

   <errorHandler class="org.jboss.logging.util.OnlyOnceErrorHandler"/>

   <param name="Target" value="System.out"/>

   <param name="Threshold" value="FATAL"/>
3. Change the threshold value to "INFO."
4. Save the file.

   Note: There is no need to restart the server. Five seconds after the change has been made, the server log will start outputting the desired log.

   If you want this setting to remain after restart, you must also edit the %SystemRoot%\EXTSvc.ini or RPTSvc.ini file and change the following line:

   RunTimeLoggingLevel=INFO

Turning off the server trace log (Windows)

To turn off the server trace log:

1. Open the file <APP_HOME>/jboss/conf/log4j-eam.xml.
2. Locate the following text/xml:

   <appender name="CONSOLE" class="org.apache.log4j.ConsoleAppender">

   <errorHandler class="org.jboss.logging.util.OnlyOnceErrorHandler"/>

   <param name="Target" value="System.out"/>

   <param name="Threshold" value="INFO"/>
3. Change the threshold parameter value to "FATAL."
4. Save the file.

   Note: There is no need to restart the server. Five seconds after the change has been made, the server automatically clears.

If you want this setting to remain after restart, you must also edit the %SystemRoot%\EXTSvc.ini or RPTSvc.ini file and change the following line:

RunTimeLoggingLevel=FATAL

Permanently changing specific log levels

To permanently change log levels of a particular application component, copy a modified log4j-eam.xml file to <APP_HOME>/overrides/log and rerun deploy.

Configuring SSL

Configure SSL environment to set up security for a site.

Note: Ensure the signed server certificate and key files are available. A test certificate and key combination may be used to initially verify that HTTPS connectivity is operating correctly; however, Infor strongly recommends a valid certificate signed by a reputable certificate authority, such as VeriSign, be used in production installations.

Common Name (CN) attribute must be a fully qualified domain name (FQDN) that the web server resolves to. Otherwise, the web browsers will not be able to verify if the certificate belongs to the web server that is presenting it.

Note: The information in this section is based on the assumption that port 80 is employed as the non-SSL port, port 443 as the SSL port, and that both ports are available. Adjust the steps below if employing an alternate port configuration.

Configuring Infor EAM SSL under JBoss

1. Open the file `<APP_HOME>/depconfig/properties/external/config.yml` in a text editor.
2. Add/modify the core and apache sections of the file like the examples below.

   core:

   server: < Common Name (CN) >

   ports:

   https: <some port>

   apache:

   ssl: true

   Note: If you name your certificate and key something other than server.crt and server.key, then you will need to include the sections below under apache:

   certname: '{{{apache.home}}}/certificates/<name of certificate file including extension>'

   keyname: '{{{apache.home}}}/certificates//<name of key file including extension>'

Also, make sure to set the server attribute to match the Common Name (CN) that was used when generating the certificate signing request.

3. Copy your certificate and key files to the appropriate <APP_HOME>/overrides/certificates directory.
4. Choose one of the following options to redeploy the Infor EAM application:
   - On Linux, execute the deploy shell script: ./deploy.sh
   - On Windows, execute the deploy batch script: deploy.bat

Configuring JWT

1. Navigate to the `<APP_HOME>/depconfig/generatejwt` folder.
2. Generate the JWT Keystore and public certificate by executing the following command:

   You will be prompted to input some values required for generating the JWT artifacts. The default value, if present, for any input is provided inside square brackets at the end of the prompt.
   - On Linux, execute the shell script: ./generatejwt.sh
   - On Windows, execute the powershell script: .\generatejwt.ps1
3. Open the file `<APP_HOME>/depconfig/properties/external/config.yml` in a text editor.
4. Add/modify the sso section of the file like the example below:

```
sso:
      jwt:
   keystore:
               path: "{{{sso.jwt.home}}}/<keystore file name with ex
tension from step 2>"
               password: "<Storepass secret from step 2>"
               alias: "<alias of keystore from step 2>"
      certpath: "{{{sso.jwt.home}}}/<Public Key/certificate name with
 extension from step
2>"
```

Note: The above example assumes that the default values for keystore, alias and public certificate have not been used in Step 2. If that is not the case, then the corresponding configuration can be omitted from the config.yml, except for the password as there is no default value provided for the password. So, if the default value of keystore is accepted in Step 2 and the values of alias and certificate are modified, then the sso section will be as follows.

```
sso:
jwt:
 keystore:
  password: "<Keystore password from step 2>"
  alias: "<alias of keystore from step 2>"
  certpath: "{{{sso.jwt.home}}}/<Public Certificate name with extension
 from step 2>"
```

5. Copy the public key/certificate and key store files generated by the script in step 2 to the appropriate: `<APP_HOME>/overrides/sso/jwt` directory.

6 Choose one of the following options to re-deploy the EAM application:
   - On Linux, execute the deploy shell script: `./deploy.sh`
   - On Windows, execute the deploy batch script: `deploy.bat`

   Note: It is not mandatory that EAM SSO is required to be configured in order to configure EAM JWT.

   If EAM is used behind a load balancer, then all the instances of the EAM server should use the same JWT certificate.

Configuring eSignature authentication with SSO from a browser

Note: This mechanism is only supported in base EAM. It is not supported in the Digital Work mobile app.

1 Beginning with EAM 11.6.1, an alternate mechanism is now supported to authenticate the user when SSO is enabled employing SAML methodology.

   You must set the install parameter values for LGNEAM and ESGATHSL as follows to enable this mechanism:
   - LGNEAM = **`EXTERN`**
   - ESGATHSL = **`YES`**

2 EAM should be configured with JWT. See the section in this guide on configuring JWT for full details.

3 The system considers the JWTEXPRY install parameter value to determine the lifespan of the JSON web token (JWT) used in this authentication mechanism.

   The maximum value will be 1800 seconds. If the value of this parameter is invalid or less than the system-configured default value (from the YML configuration), the default value will be used.

   Note: The install parameter JWTEXPRY is considered to define the lifespan of JWT only during the eSignature authentication with SSO from a browser, not during any other scenarios in which JWT is used for authentication in the EAM application.

Configuring Apache security settings

Configure Apache security settings.

Enabling HTTP Strict Transport Security header

1 Open the file <APP_HOME>/depconfig/properties/external/config.yml in a text editor.

2 Add/modify the apache sections of the file like the examples below:

apache:

hsts: true

3 Choose one of the following options to redeploy the Infor EAM application:
- On Linux, execute the deploy shell script: ./deploy.sh
- On Windows, execute the deploy batch script: deploy.bat

Configuring the application to work with Energy Star

To configure Infor EAM to work with Energy Star you must update the application server's java root certificate.

1 Go to InforEAM/depconfig.
2 Run updaterootcertificate.sh (for Windows use updaterootcertificate.bat) command.
3 Type in keystore password when prompted for "Enter keystore password"(default: changeit).
4 Specify **`yes`** when prompted for **Trust this certificate?**
5 Restart the Infor EAM application.

Rotating Apache logs

Use the rotatelogs utility to rotate the files to a new file name at a specified time interval. By default the use of rotatelogs is turned on. To turn rotatelogs off or change the frequency add/modify the `<APP_HOME>/depconfig/properties/external/config.yml` file like the example below:

apache:

log:

rotatelogs: "On"

rotateinterval: 86400

- rotatelogs - enable / disable automatic log rotation – Valid values: On or Off
- rotateinterval - the interval in seconds for log rotation - default is 86400 (one day) - shortest interval that can be specified is 60 seconds
- Next, change to directory <APP_HOME>/depconfig
- For JBoss on Windows, run deploy.bat.
- For JBoss on Linux, run deploy.sh

Configuring tenant to handle cache in stateful mode

When Infor EAM running in domain mode and/or under load balancer then configure tenant to handle cache in stateful mode which will handle the cache handling when refreshCache.jsp is called. Ensure this tenant exists in all EAM server instances running under load balancer.

1. 1 Open the file `<APP_HOME>/depconfig/properties/external/config.yml` in a text editor.
2. Add/modify the cache section of the file like the example below:

```
cache:
    configtenant: "" # tenant name, if it is empty then system will
sort all tenants alphabetically and takes the first tenant to handle
stateful mode cache management in multiple-JVM environment.
```

Note: If you don't configure configtenant then system will sort all tenants configured in alpha numeric order and takes first tenant as configtenant.

Chapter 2: Installing the SQL Server database for EAM

This chapter provides procedures for installing the SQL Server database for Infor EAM.

Software requirements and pre-installation considerations

See the *Infor EAM™ Product Family Version Software Requirements*, which can be obtained from the documentation ISO, for the hardware and software requirements for Infor EAM. Also, please review the following pre-installation considerations before beginning the installation.

- You must install Microsoft SQL Server on the Database Host Machine before you install a new SQL Server Database.
- Check to ensure that MS SQL Server was installed using Mixed Mode authentication (Infor EAM uses SQL Server authentication. If you use SQL Server authentication, you must connect to the database with a specific login and password from a non-trusted connection. SQL Server performs the authentication of the SQL Server login and password. If you do not have a login and password setup or if the password is incorrect, the authentication fails.).
- If you are installing a new SQL Server database or upgrading an existing SQL Server database, Infor strongly recommends that the increment values for both the Primary Data File and Log File are at least 50 MB and that the Log File for your Infor EAM user is at least 400 MB.
- The SQL Server database should be case-insensitive, and nested triggers must be enabled.

Installing a new SQL server database

Note: Only Microsoft SQL Server database administrators or equivalent should perform any function described in this chapter.

Ensure that the Microsoft sqlcmd utility is executable from a command prompt on this computer. After connecting to the database, issue any TRANSACT-SQL command to ensure that it is working properly.

See the following syntax when executing the Microsoft sqlcmd utility.

See the Microsoft SQL Server documentation for more information.

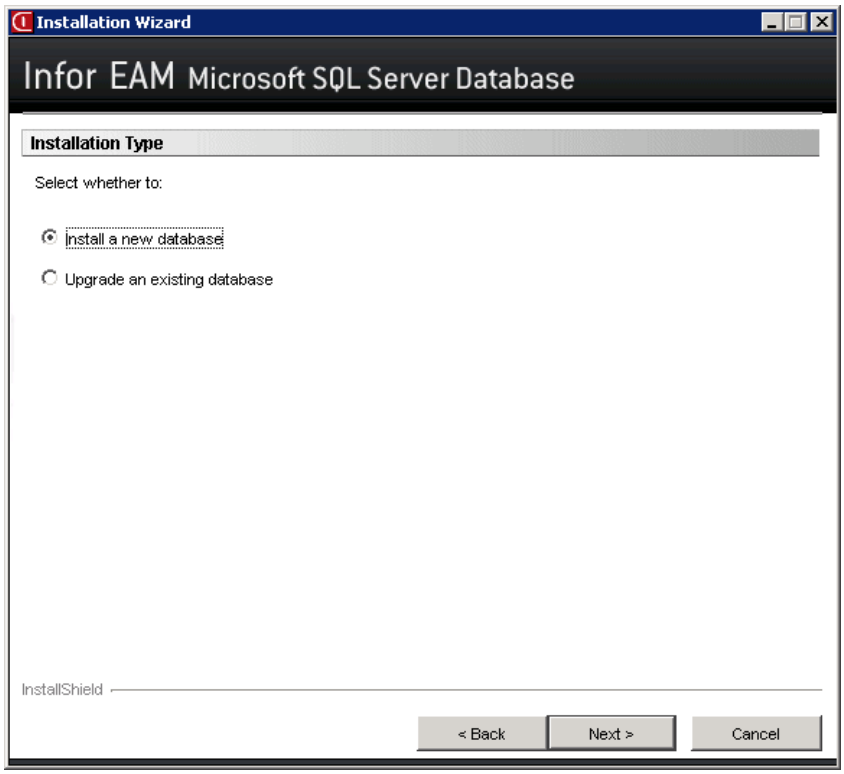
usage: sqlcmd	[-U login id]	[-P password]
[-S server]	[-H hostname]	[-E trusted connection]
[-d use database name]	[-l login timeout]	[-t query timeout]
[-h headers]	[-s colseparator]	[-w columnwidth]
[-a packetsize]	[-e echo input]	[-I Enable Quoted Identifiers]
[-L list servers]	[-c cmdend]	[-D ODBC DSN name]
[-q "cmdline query"]	[-Q "cmdline query" and exit]	[-n remove numbering]
[-m errorlevel]	[-r msgs to stderr]	[-V severitylevel]
[-i inputfile]	[-o outputfile]	
[-p print statistics]	[-b On error batch abort]	
[-O use Old ISQL behavior disables the following]		
<EOF> batch processing		
Auto console width scaling		
Wide messages		
default errorlevel is -1 vs 1		
[-? show syntax summary]		

Note: If you are installing on a machine that has Windows Server 2019, you must add the `setupwin32.exe` as an exception to the Data Execution Prevention List. This exception can be removed once installation is complete.

1. Insert the Infor EAM SQL Server Database Installation CD into the proper drive.
2. Locate and right-click the Setupwin32.exe file and run as administrator.

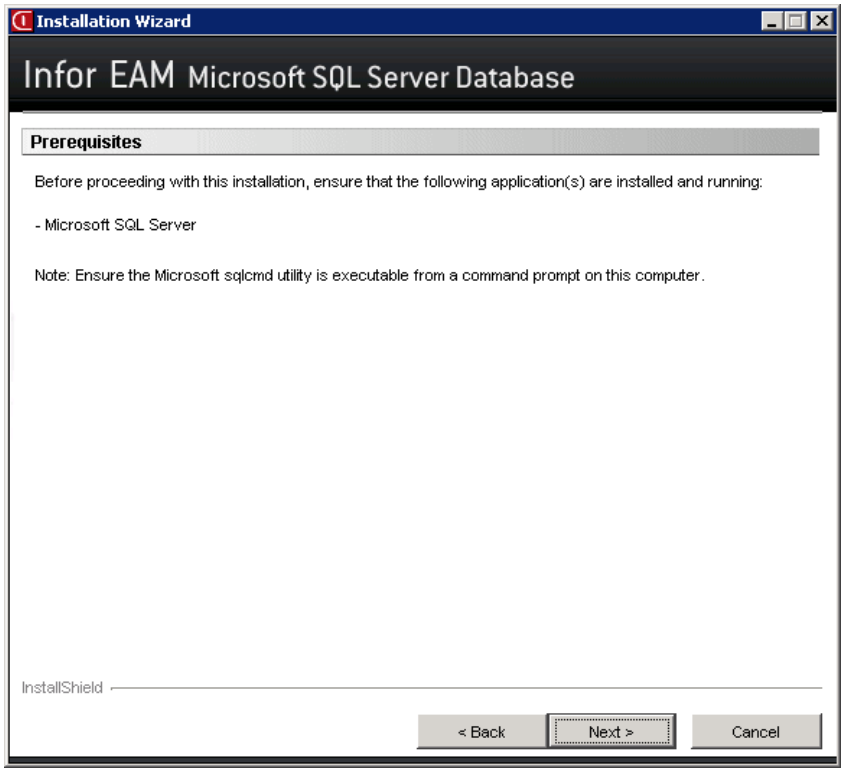
   Note: If you are installing from a drive other than D:, substitute that drive for D: in these instructions.
3. Select a language to use, and then click **OK**.

   Note: By selecting a language, you are selecting a language to be used during the installation, not a language to be used by the SQL Server database.
4. Click **Next**.
5. Enter the CD Key for the product, and then click **Next**.
6. Select **I accept the terms of the license agreement** if you agree to the terms, and then click **Next**.
7. Select to install a new database.

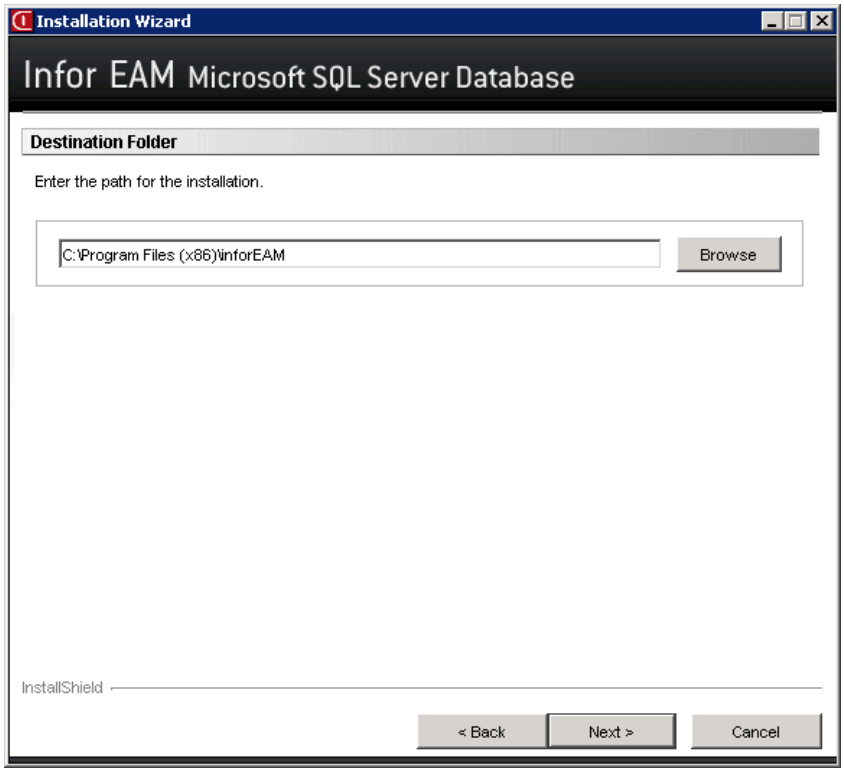


8 Click **Next**.

9 Ensure that your computer meets all installation requirements, and then click **Next**.



10 Specify the directory for database installation processing (the logs and all scripts are created in this directory), and then click **Next**.



Note: All database configuration scripts and installation logs are created and processed in the chosen directory.

11 Specify this information:

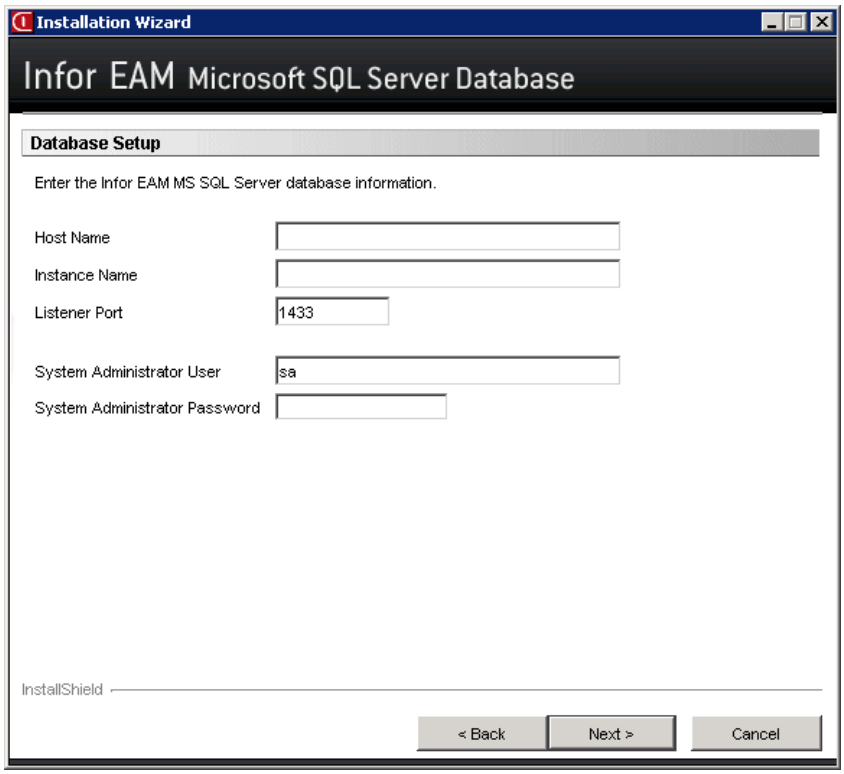
Host Name
Specify the Microsoft SQL Server name.
Note: If your server does not have specific instances installed, you do not have to enter a value for **Instance**.

Instance Name
Specify the name of the database instance, if any.

Listener Port
Specify the Microsoft SQL Server listener port.

System Administrator User
Specify the system administrator user name of the account that you will use to create the database.

System Administrator Password
Specify the system administrator password of the account that you will use to create the database.
Note: Infor strongly recommends that only SQL Server database administrators or equivalent with accesses to create and configure databases, create users, and grant privileges install and configure the SQL Server database.



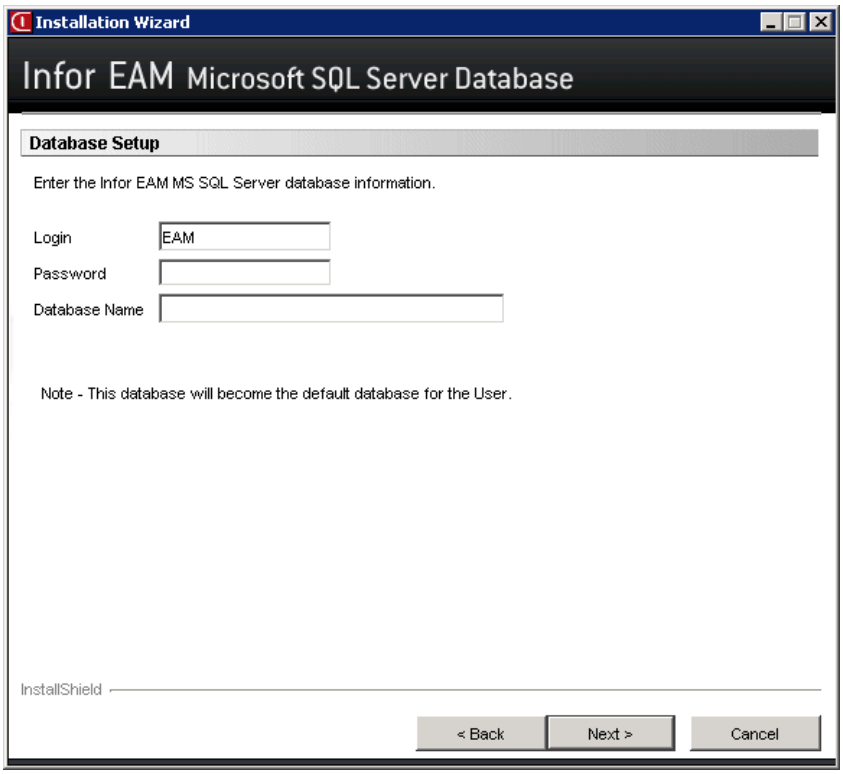
12 Click **Next**.

13 Specify this information:

Login
Specify the database login that you will use to connect to the EAM application.

Password
Specify the database password that you will use to connect to the EAM application.

Database Name
Specify the name of the database that will be used for the EAM application.
Note: You cannot enter an existing database name for **Database**.



14 Click **Next**.

Specify information for both the Primary Data File (the starting point of the database) and the Log File (the file used to recover the database).

15 Specify this information:

Name
Specify a unique name to identify the database file.

Path
Specify the valid path on the database server.

Size (MB)
Specify the size of the database file.

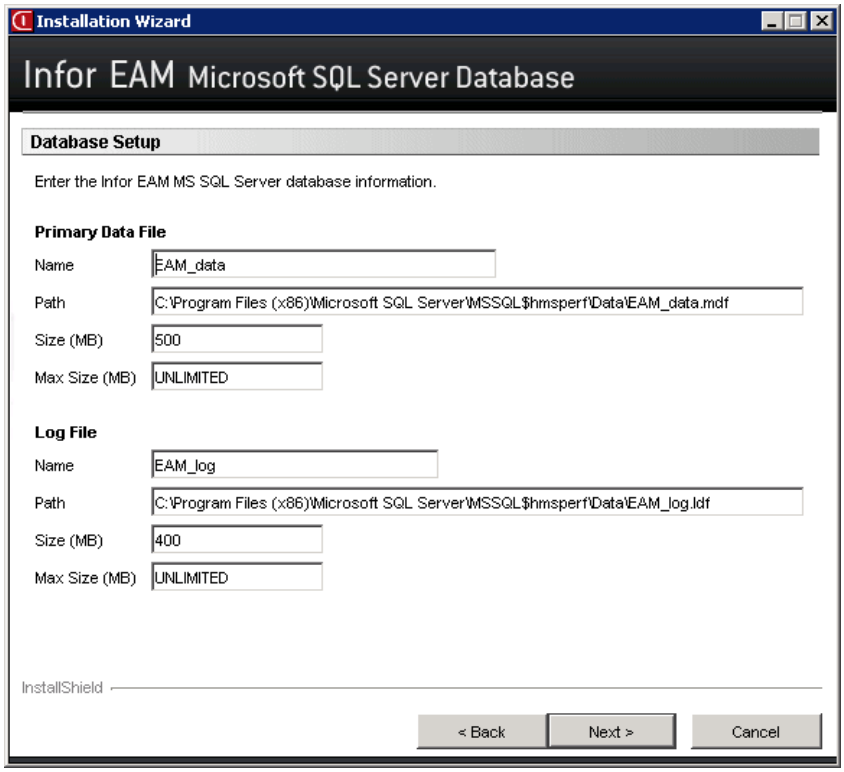
Max Size (MB)
Specify the maximum size of the database file.
Note: If you need unrestricted file growth, enter UNLIMITED for **Max Size (MB)**.

Name
Specify a unique name to identify the log file.

Path
Specify the valid path to the log file on the database server.

Size (MB)
Specify the size of the log file.

Max Size (MB)
Specify the maximum size of the log file.
Note: If you need unrestricted file growth, enter UNLIMITED for **Max Size (MB)**.



16 Click **Next**.

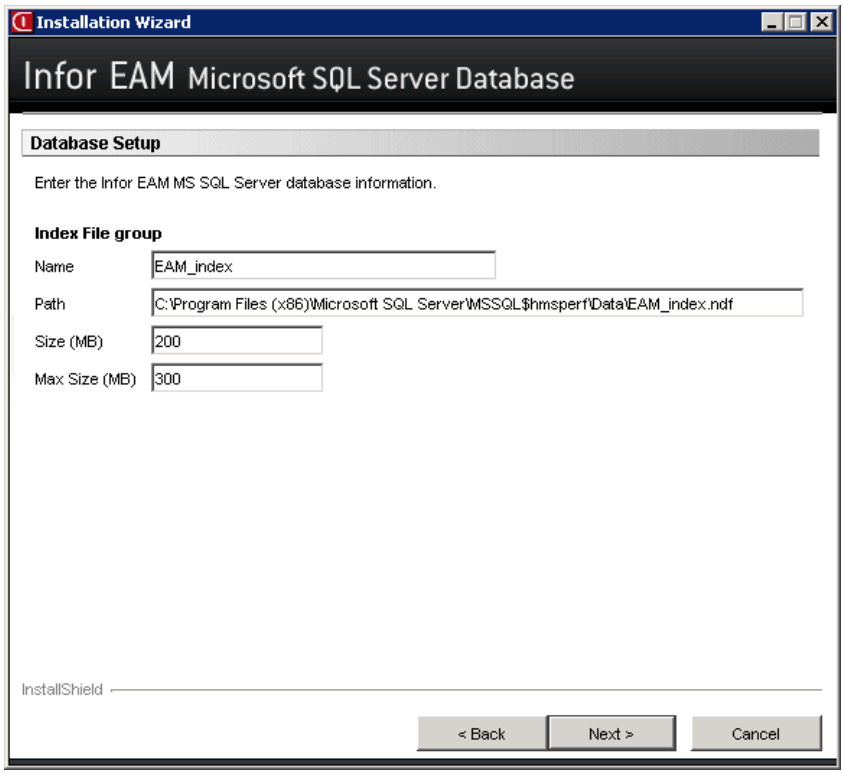
17 Specify this information:

Name
Specify a unique name to identify the index file group.

Path
Specify the valid path to the index file group on the database server.

Size (MB)
Specify the size of the index file group.

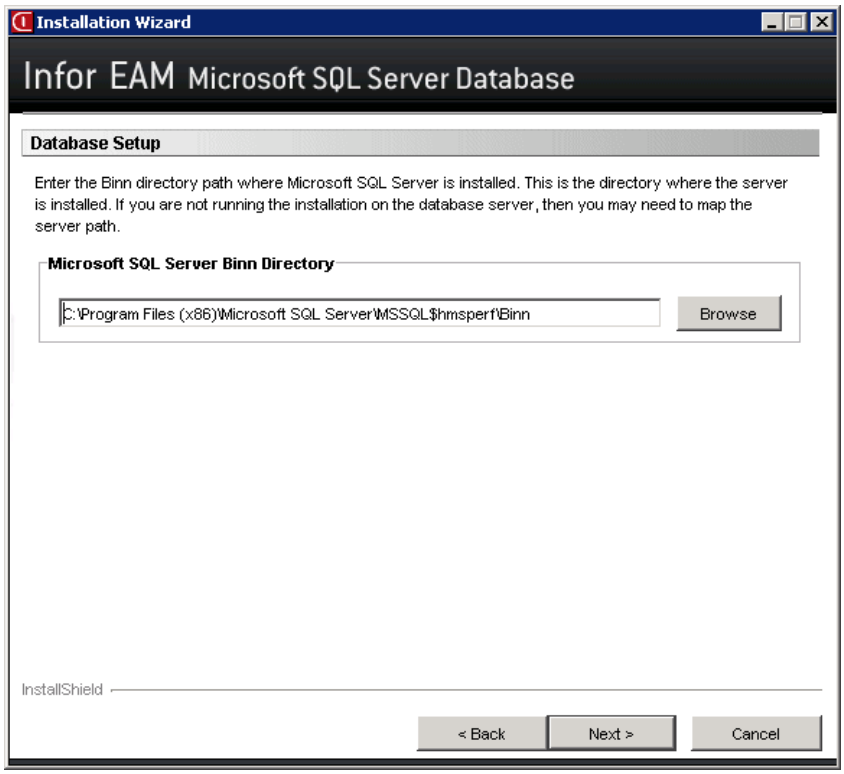
Max Size (MB)
Specify the maximum size of the index file group.
Note: If you need unrestricted file growth, enter UNLIMITED for **Max Size (MB)**.



18 Click **Next**.

19 Specify the path to the Binn directory for your Microsoft SQL Server instance.

Note: In future installers this screen will be removed.



20 Click **Next**.

21 Specify a CD key for the Mobile user license (optional) if you have purchased a license for Mobile from Infor, enter the CD key for the product.

22 Specify a CD key for the Connector user license (optional) if you have purchased a license for Connector from Infor, enter the CD key for the product.

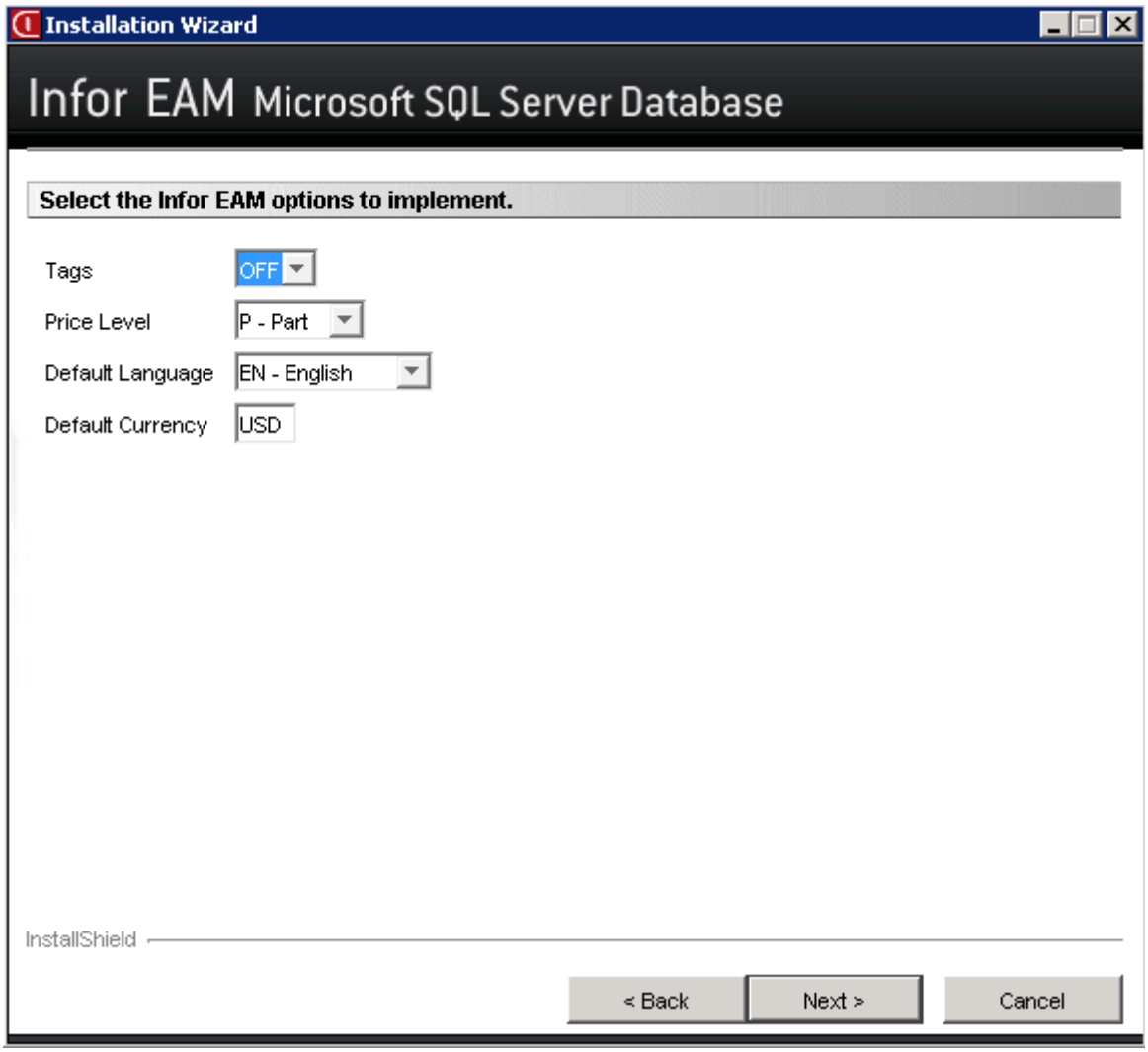
23 Specify a CD key for the Barcoding user license (optional) if you have purchased a license for Infor EAM Barcoding from Infor, enter the CD key for the product.

24 Specify a CD key for the Requestor user license (optional) if you have purchased a license for Requestor from Infor, enter the CD key for the product.

25 Click **Next**.

26 Select the language(s) to implement, and then click **Next**.

27 Select **Position** for a position to allow multiple assets as children. Select **Tags** for a position to allow only a single asset as a child.



Positions and assets are types of equipment that are used within Infor EAM. Pieces of equipment are entities for which you store data and create work orders. Equipment can be of many different types, but the four main types are locations, systems, positions, and assets.

Locations, systems, positions, and assets form a hierarchy of equipment information, with locations at the top of the hierarchy and assets at the bottom. Data is shared among the levels of the equipment hierarchy. For example, data for a work order performed on an asset is also stored in the position, system, and location equipment to which the asset belongs. This data sharing allows you to track assets and their performance in detail and under differing conditions, to evaluate the performance of entire systems, and to assess the effect that locations and positions have on systems and assets. See the *Infor EAM User Guide* .

Thus, by selecting Position, a position in the system can have multiple assets as children below it in the hierarchy, but by selecting Tag, a position in the system can only be linked to one asset.

28 Specify this information:

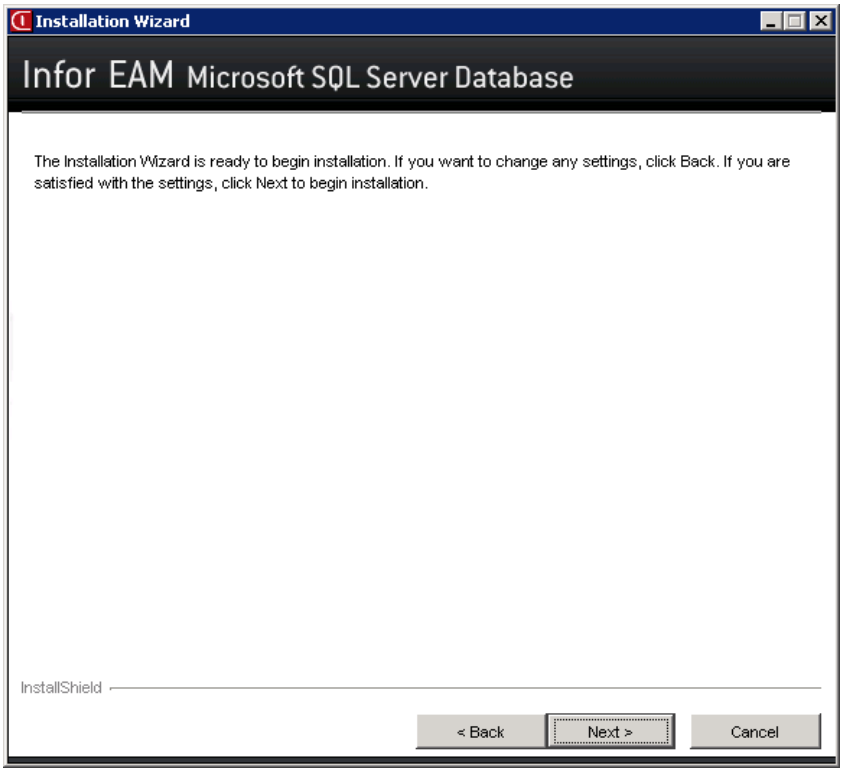
Price Level
Choose one of the following options:

Option	Description
P	Select to record prices at the part level.
S	Select to record prices at the stock level

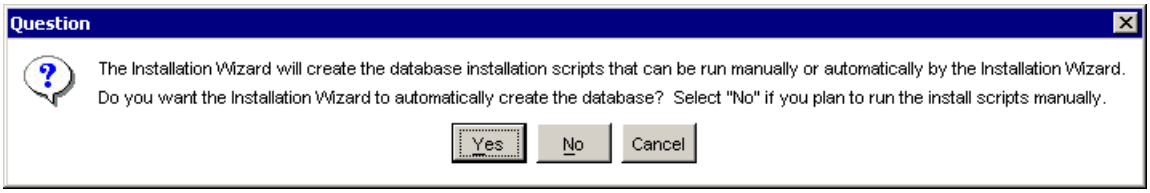
Default Language
Select the default language for the EAM application.

Default Currency
Specify the currency.

29 Click **Next**.



30 Click **Next**. A message is displayed asking whether you choose to run the database scripts manually or to have the database scripts created and automatically run.



31 Click **Yes** to create and automatically run the database scripts, or click No to run the installation database scripts manually. If you click **Yes**, the database scripts are created and run and the final installation dialog box is displayed. If you click **No**, the database scripts are created, but you must run the scripts manually.

32 Click **Finish**.

Note: If you selected to automatically run the database scripts, examine the log files in the log directory you created earlier in this section for errors.

Creating and configuring a new SQL Server Database

The system installs the Infor EAM database by completing the following steps. You can also create and configure the database manually.

Note: Only Microsoft SQL Server database administrators or equivalent should perform any function described in this chapter.

The system creates the directory you entered in the previous section, and then creates all of the scripts to the directory. Using Microsoft SQLCMD, the system executes the scripts created by the Installation Wizard, using the Microsoft SQLCMD utility. If you are creating and configuring the database manually, Infor recommends that you use the following syntax when executing the Microsoft SQLCMD utility:

sqlcmd	-S ‘servername’
	-d ‘databasename’
	-U ‘userid’
	-p ‘password’
	-i ‘file name with path’
	-o ‘log file name with path’

If you selected for the system to automatically run database scripts, the system runs the following scripts. If you select to run the scripts manually, you must manually run the scripts one at a time, in the given order listed below, as the System Administrator user you created previously:

Script	Function
`createdb.sql`	Creates the database
`createuser.sql`	Creates the user and sets up the user privileges to access the database
`stxcreate.sql`	Creates the text system tables, which are used by 22sl116i.sql, 26sl116i.sql, and 40sd116i.sql.
`10st116i.sql`	Creates the Infor EAM table structure in the database
`stobjmasterdata.sql`	Creates master data to check table, view, and database objects.
`stxdata.sql`	Populates the text system tables with seed data from the test systems by using insert scripts

Script	Function
stxdata1.sql	Populates and updates the Microsoft SQL Server specific seed data **Note:** Before running 22sl116i.sql, 26sl116i.sql, and 40sd116i.sql, run 7idef.sql to set up the session variables. To ensure that 7idef.sql, 22sl116i.sql, 26sl116i.sql, and 40sd116i.sql are all run during the same session, Infor recommends that you combine these four scripts into one script and run it using SQLCMD or run the scripts individually from Management Studio. Running the previously mentioned scripts separately using SQLCMD is not running them in the same session. Running the scripts via Management Studio constitutes running them in the same session.
22sl116i.sql	Sets the flag for the installed modules and options using 7idef.sql
26sl116i.sql	Populates the system basic data using 7idef.sql
40sd116i.sql	Contains a statement to populate several tables with seed data using 7idef.sql
50sc116i.sql	Creates table constraints, indexes, and sequences
60spr116.sql	Creates database procedures, functions, and views
70stg116.sql	Creates database triggers
80ed116i.sql	Seed data manipulation
dbinstall.sql	Sets up privileges to run Infor EAM functions

Note: To uninstall the Microsoft SQL Server database, back up the entire database, and then drop it. Infor strongly recommends that you back up the database before you drop it. See the Microsoft SQL Server documentation for more information on how to back up the database.
Note: As a part of regular database maintenance, you must periodically remove redundant rows from sequence tables. To clean the database, open the Management Studio and execute:

execute p_cleanout_id_tables

Handling general errors

If an error occurs during the installation process, the system displays an error message that instructs you on how to handle the error. Three types of general errors occur—validation errors, operational errors, and database installation errors. Validation errors may occur when you enter incorrect data into

a system field or leave a required field empty. Operational errors may occur during installation processes such as copying files to a disk, creating directories, configuring Infor EAM, and performing other miscellaneous tasks. When validation and operational errors occur, the system displays an error message and stays on the page, allowing you to rectify the problem and resume the installation. Database installation errors (both fatal and non-fatal) may occur when the system attempts to create database files, create users, grant privileges, configure seed data, or run scripts. The system captures database installation errors in the corresponding log file. After installation is complete, examine the log file in the log directory you created in the previous section for errors.

Verifying the installation

Open Microsoft SQL Server Management Studio and execute the following scripts to verify the installation:

Script	Function
`chkmod.sql`	Verifies that the correct modules and options are installed
`objcnt.sql`	Reports the number of each type of object in a Microsoft SQL Server database. See the final installation dialog box for more information.
`chkver.sql`	Verifies that the correct version is installed

Chapter 3: Installing EAM (SQL Server)

This chapter outlines software requirements and provides procedures for configuring your database, installing and uninstalling EAM, tuning memory usage after installation, configuring environments, and upgrading from the previous version of EAM.

Software requirements and pre-installation checklist

See the *Infor EAM™ Product Family Version Software Requirements*, which can be obtained from the documentation ISO, for the hardware and software requirements for Infor EAM.

Also, please perform the following pre-installation checks on your system:

- Ensure that your Internet Explorer version is configured to check for newer versions of stored pages automatically. To check this setting in Internet Explorer, choose **Tools > Internet Options**. Click Settings in the Temporary Internet files section. Select **Automatically** in the Check for newer versions of stored pages section.
- Adjust your Internet Explorer version Security settings. Choose **Tools > Internet Options**. Click the Security Tab, and then click **Custom Level**. Enable "Run ActiveX controls and plug-ins," "Script ActiveX controls marked safe for scripting," and "Active scripting," and then click **OK**.
- Verify that the SQL Server Database has been installed.
- Verify that the Infor EAM SQL Server Database has been installed and configured.

  See Installing EAM (SQL Server) on page 64
- Verify that you have installed the Microsoft Visual C++ redistributables as outlined in *Infor EAM™ Product Family Version Software Requirements*.

Changes to configuration beginning with 11.4

Beginning with 11.4, all configuration to the Infor EAM application server after the initial installation is handled through YAML files. To get more information on what YAML is and specific syntax considerations, please reference https://yaml.org/spec/1.2/spec.html. Any necessary updates must be made to the `<APP_HOME>/depconfig/properties/external/config.yml` file.

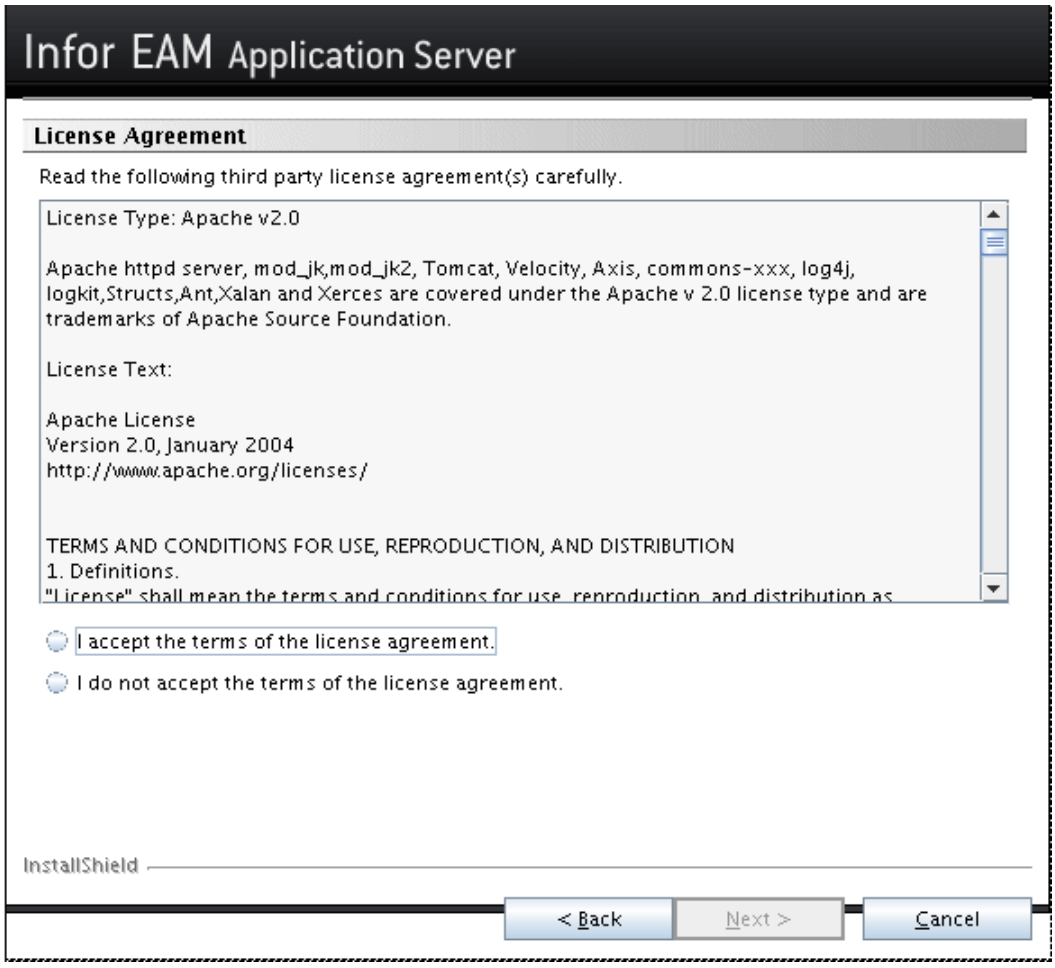
To see all configurable options, please reference `<APP_HOME>/depconfig/properties/internal/default.yml`. However, please be aware that no changes should be made to the default.yml file at any time. All updates should be made to the config.yml file only.

Installing Infor EAM for JBoss

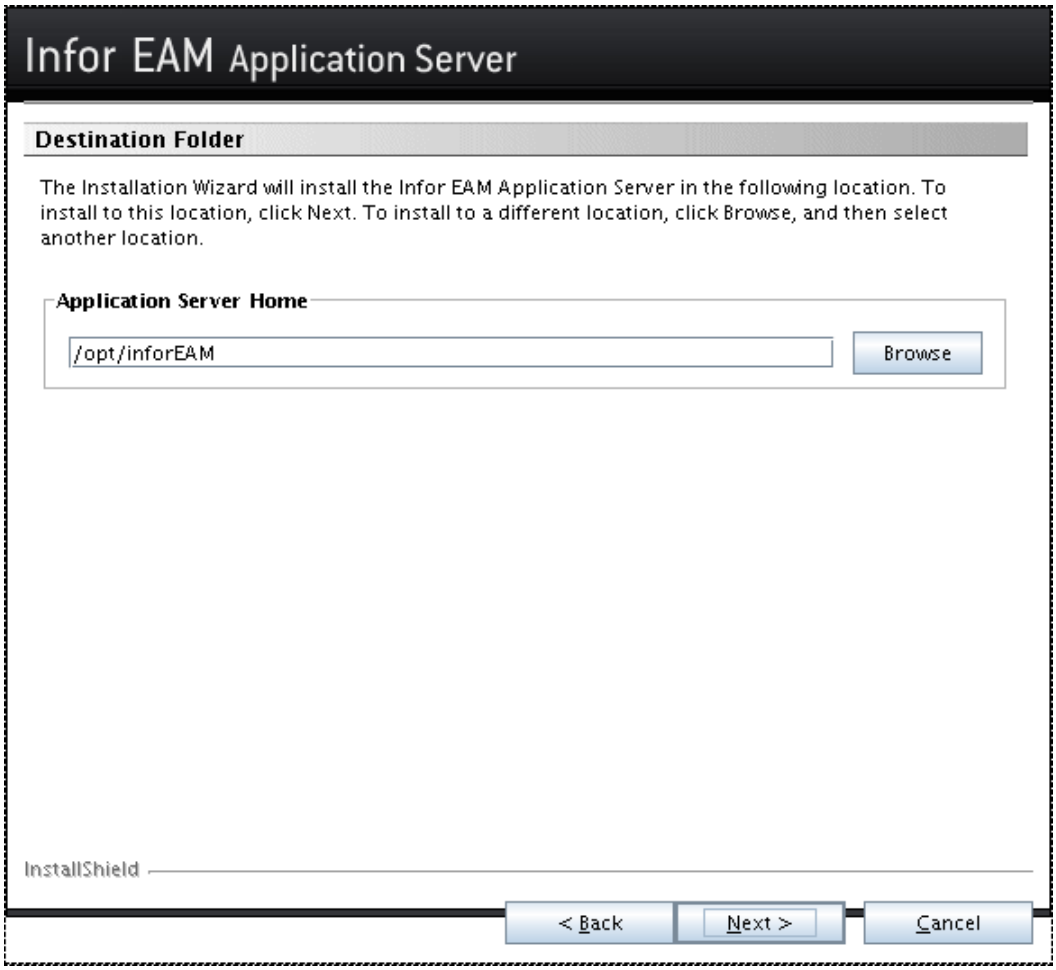
Note: If you have previously installed Infor EAM on your machine and wish to install an additional component, such as the Application Server or the Reporting Server, you must first uninstall the current component.

If you are installing on a machine that has Windows Server 2019, you must add the `setupwin32.exe` as an exception to the Data Execution Prevention List. This exception can be removed once installation is complete.

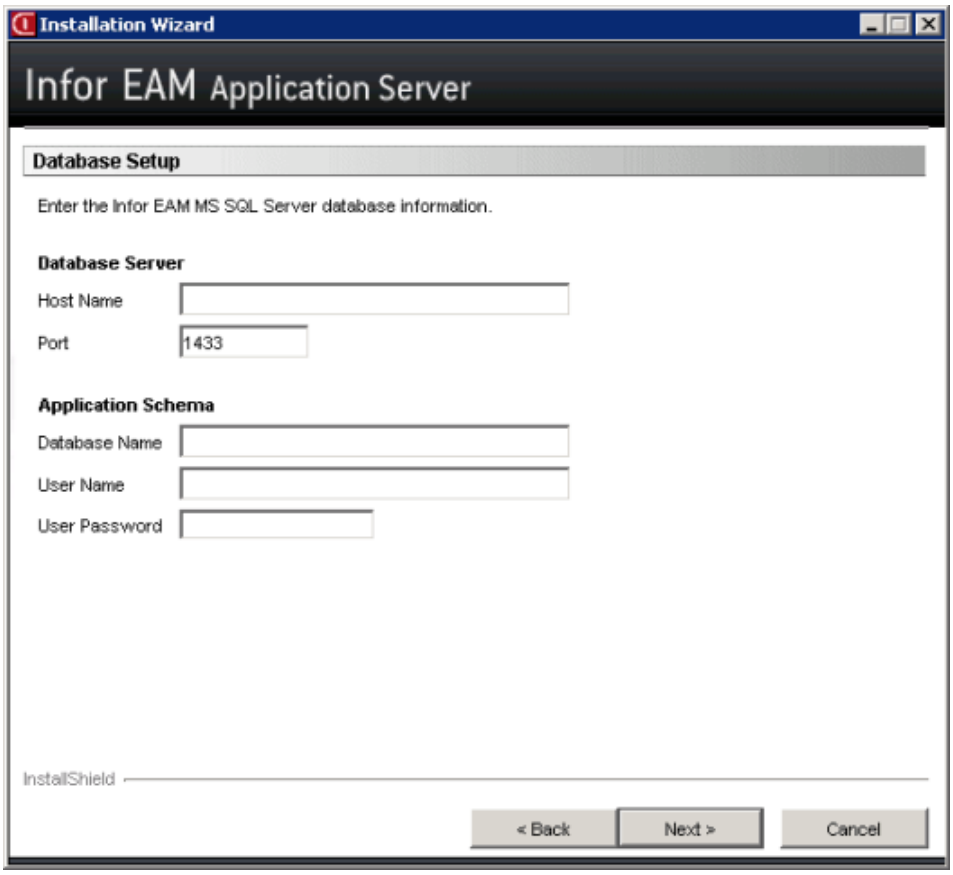
1. Locate and right-click the execute the Setupwin32.exe file, and run as administrator.
2. Select a language to use, and then click **OK**.
3. Click **Next**.
4. Enter the Infor EAM CD key, and then click **Next**.
5. Select **I accept the terms of the license agreement** if you agree to the terms, and then click **Next**.



6 Select **I accept the terms of the license agreement** if you agree to the terms, and then click **Next**.



7 Specify the directory in which to install Infor EAM, and then click **Next**.



Note: The directory in which you install Infor EAM cannot have a name that contains spaces. For example, C:\My Files is not a valid directory; however, C:\MyFiles is valid.

8 Specify this information:

Host Name
Specify the name of the machine on which the database server resides.

Port
Specify the listener port number associated with the database server.

Database Name
Specify the name of the database.

User Name
Specify the user name that you will use to connect to the system.

User Password
Specify the password that you will use to connect to the system.

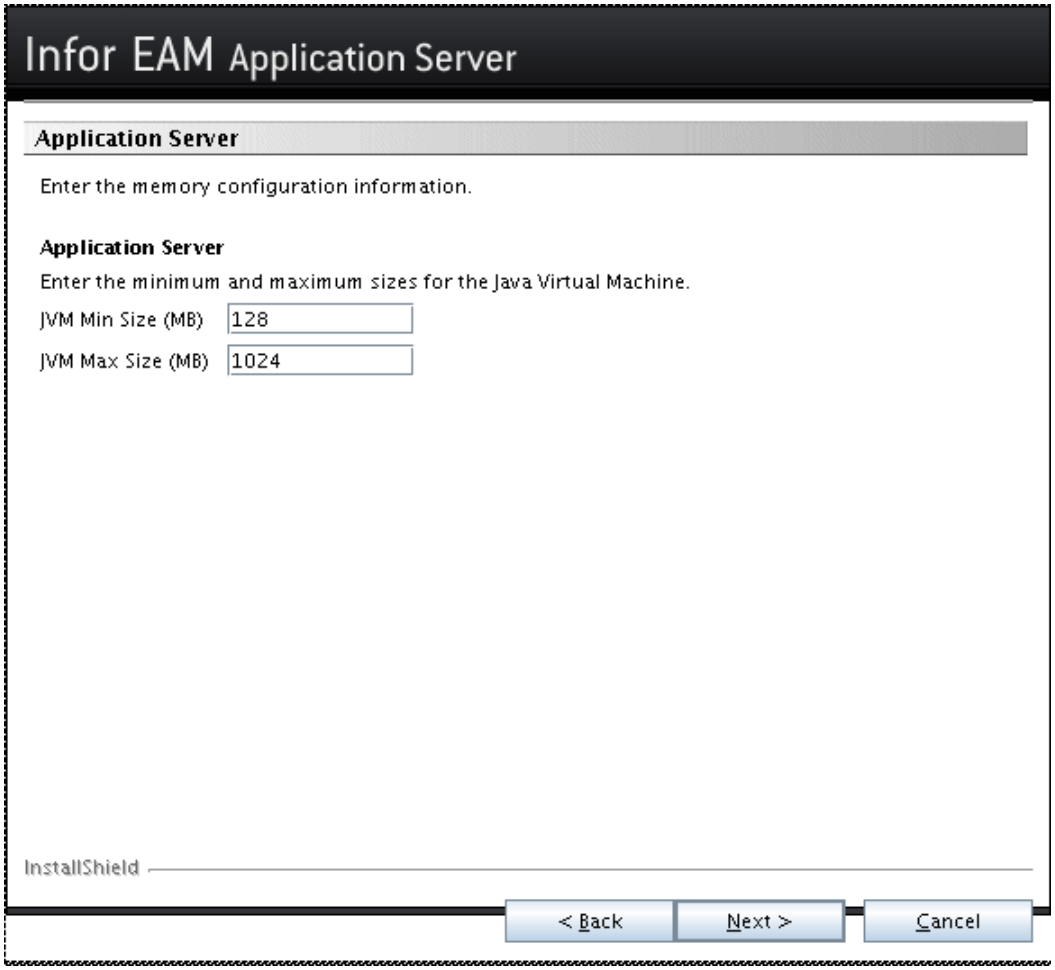
9 Click **Next**.

10 Specify this information:

JVM Min Size (MB)
Specify the minimum amount of memory to allocate to the Java Virtual Machine when running Infor EAM.

JVM Max Size (MB)
Specify the maximum amount of memory to allocate to the Java Virtual Machine when running Infor EAM.

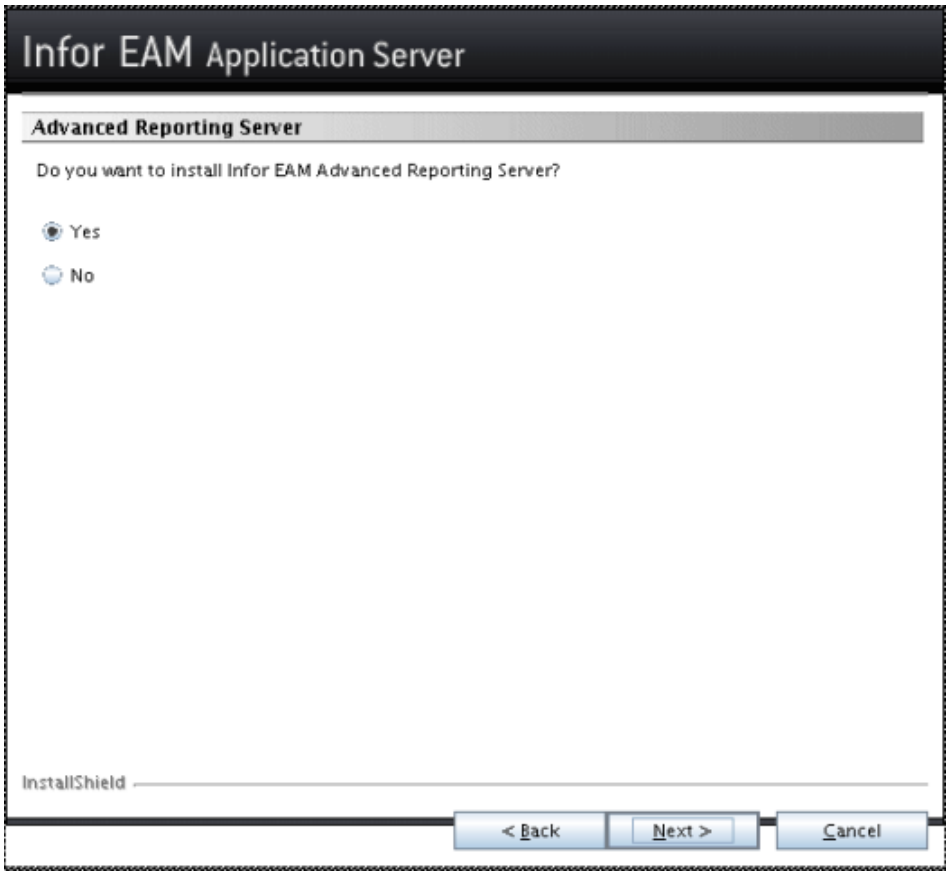
See Tuning memory usage after installation in Windows on page 92.



11 Click **Next**.

12 Choose to install Infor EAM Advanced Reporting Server.

Option	Description
Yes	Select to connect the application server to the Infor EAM Advanced Reporting Server.
No	Select if you do not want to connect the application server to the Infor EAM Advanced Reporting Server.



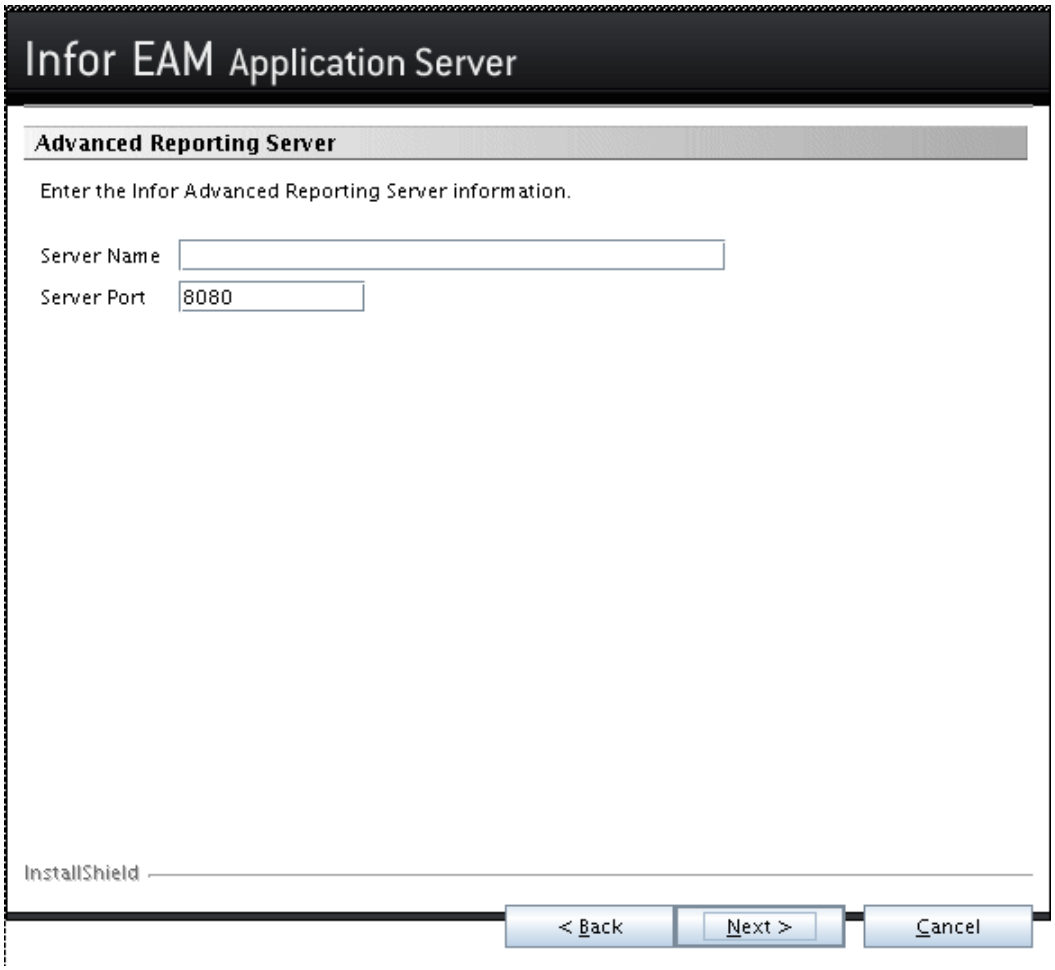
Note: The system only displays the next dialog box if you selected **Yes** to install the Infor EAM Advanced Reporting Server.

13 Click **Next**.

14 Specify this information:

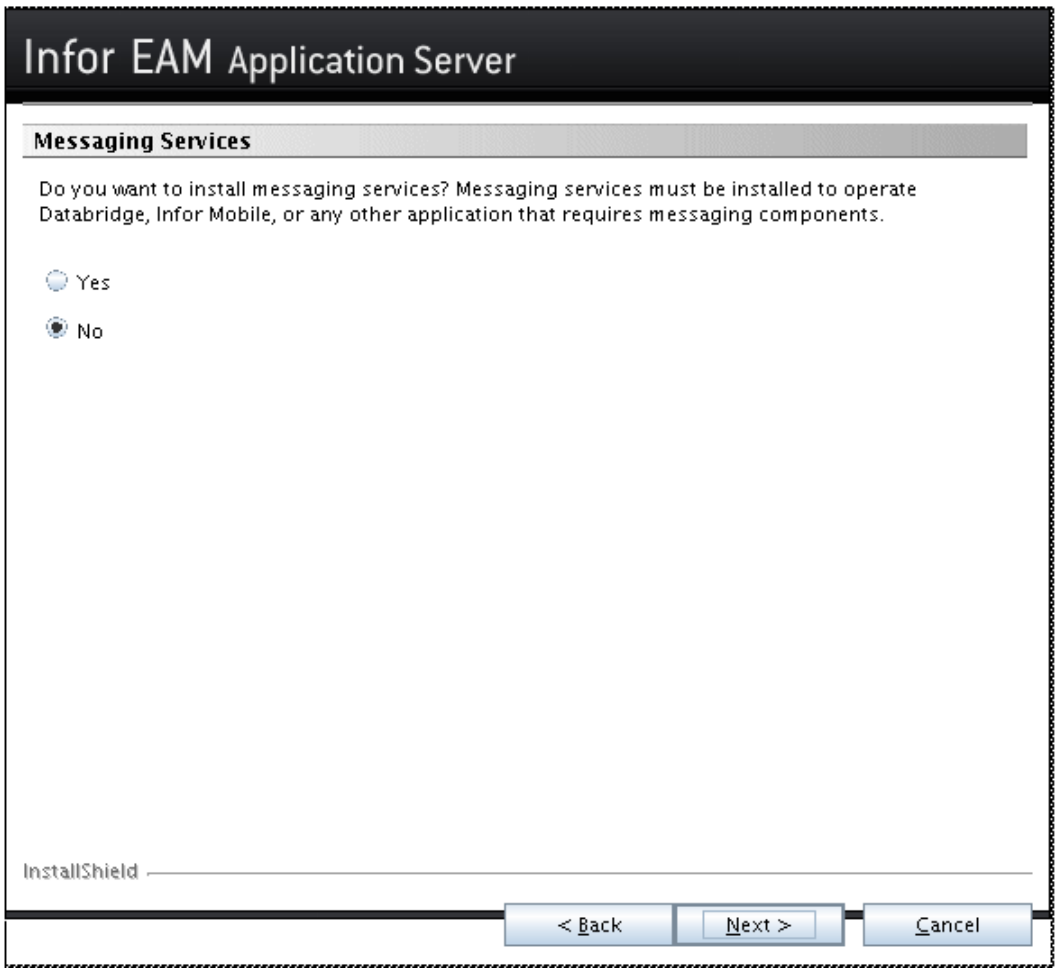
Server Name
Specify the name for the Infor EAM Advanced Reporting Server.

Server Port
Specify the port number for the Infor EAM Advanced Reporting Server.



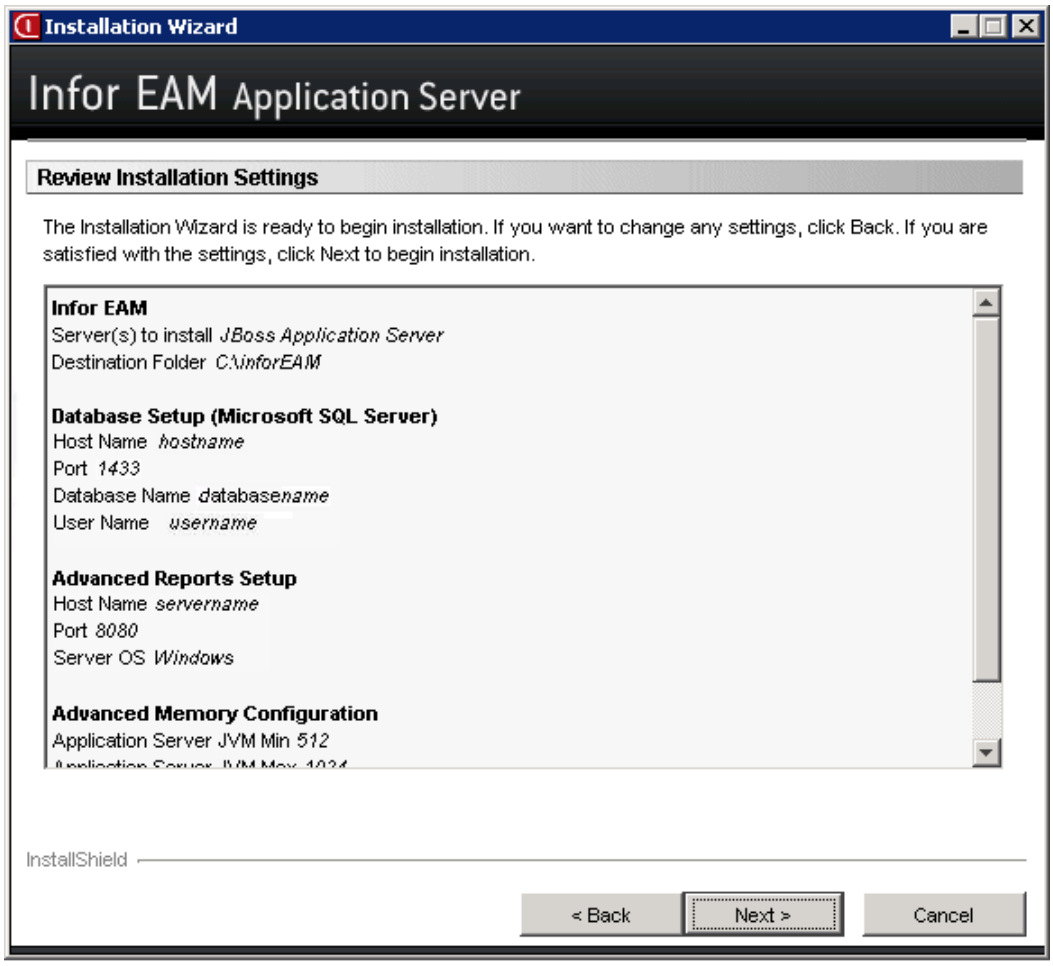
15 Click **Next**.

16 Select **No** to not install messaging services.

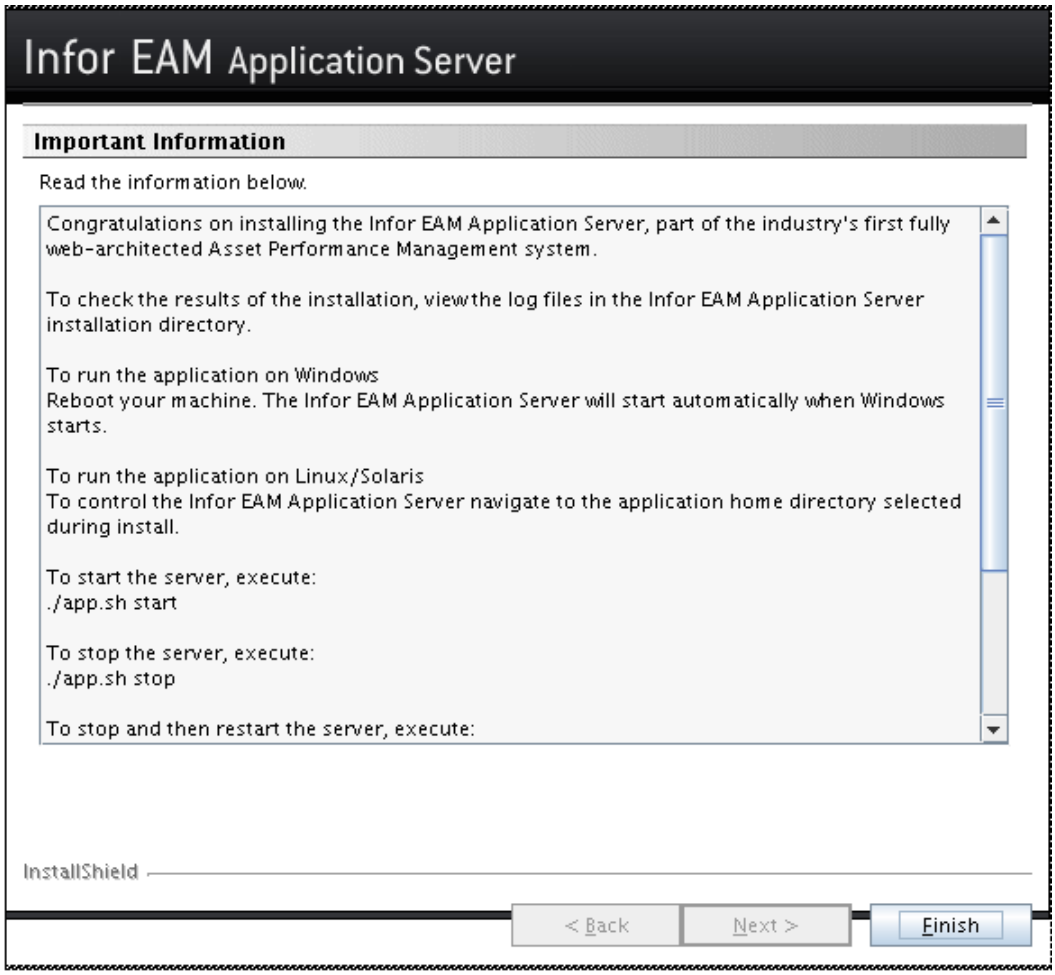


Note: If you select **Yes**, see Installing messaging services on page 74.

17 Click **Next**.



18 Click **Next**. The system installs the Infor EAM application files.



19 Click **Finish**.

20 To start the application, reboot your machine. The Infor EAM Application automatically starts when Windows starts.

Installing messaging services

During the Infor EAM installation, you have the option to install messaging services. Messaging services are used to support Databridge and Mobile. There are two types of installation scenarios for messaging services: single server and multiple servers.

See the following descriptions for more information.

- Single server, A single server installation scenario involves the use of one application server to host all messaging service transactions.
- Multiple server, A multiple server messaging service installation scenario involves setting up multiple application servers to host message service transactions for enhanced performance.

Note: If you intend to use Databridge in conjunction with the Infor ION, an additional integration architecture that facilitates integration of systems throughout your enterprise using a messaging interface, you must also configure Databridge to interact with the Infor ION.

See the *Infor EAM Databridge System Administrator Guide*.

Before installing messaging services, you must formulate an installation plan, which involves evaluating the system load, determining the number of machines/servers, determining the number of message queues, etc., by which you will determine the type of messaging services installation that is appropriate for your organization.

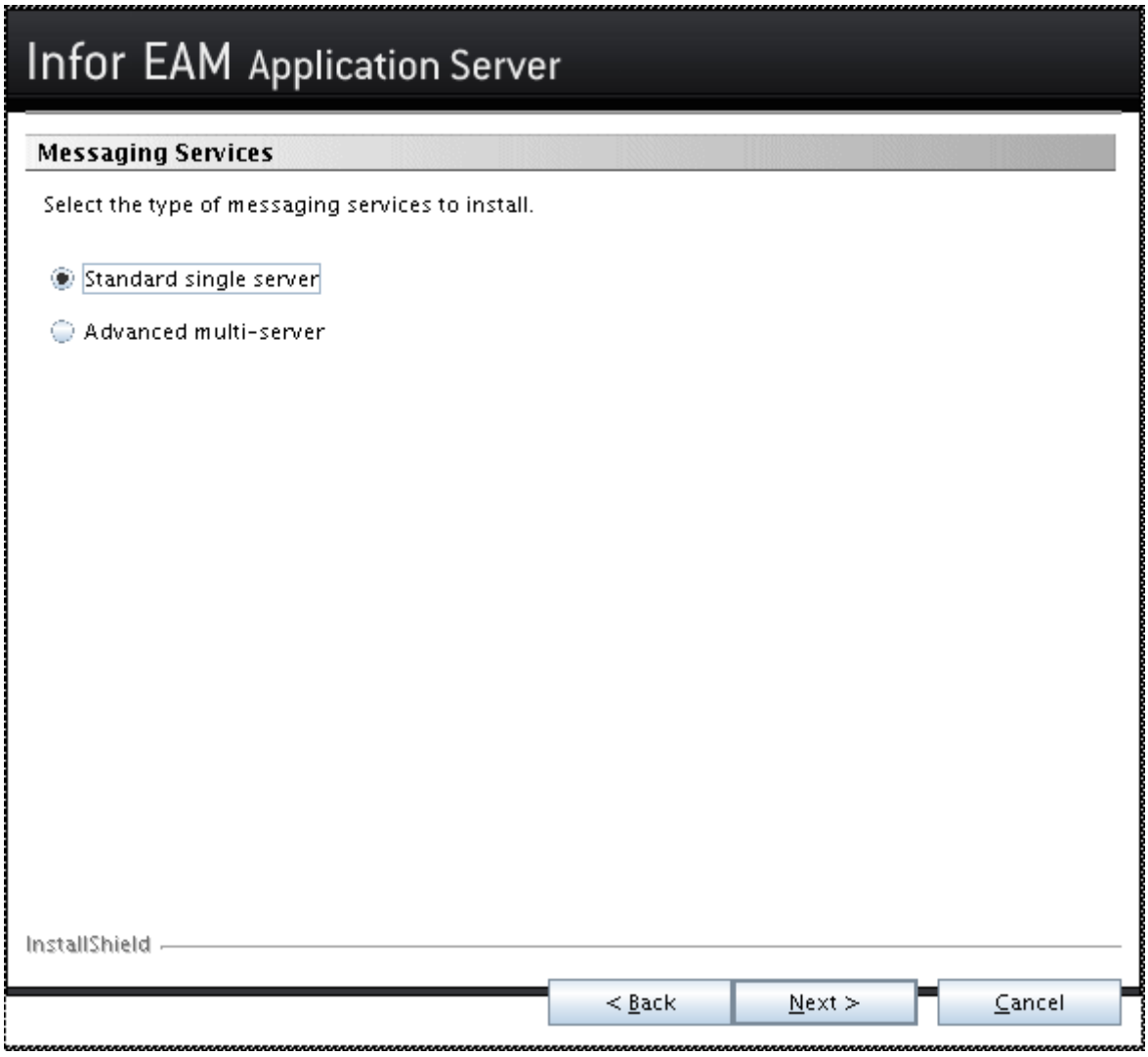
Installing messaging services on a single server

Install messaging services in a single server environment to install messaging services on the same server as the Infor EAM application server.

1. Insert the Infor EAM CD, and run the installation.

   See Installing Infor EAM for JBoss on page 65.

   At the point during the installation when you must choose whether to install messaging services, the system displays the following dialog box.
2. Select **Yes** to install messaging services for operating messaging services.
3. Click **Next**.
4. Select the type of messaging services to install. Select **Standard single server** to install the messaging services using one application server.

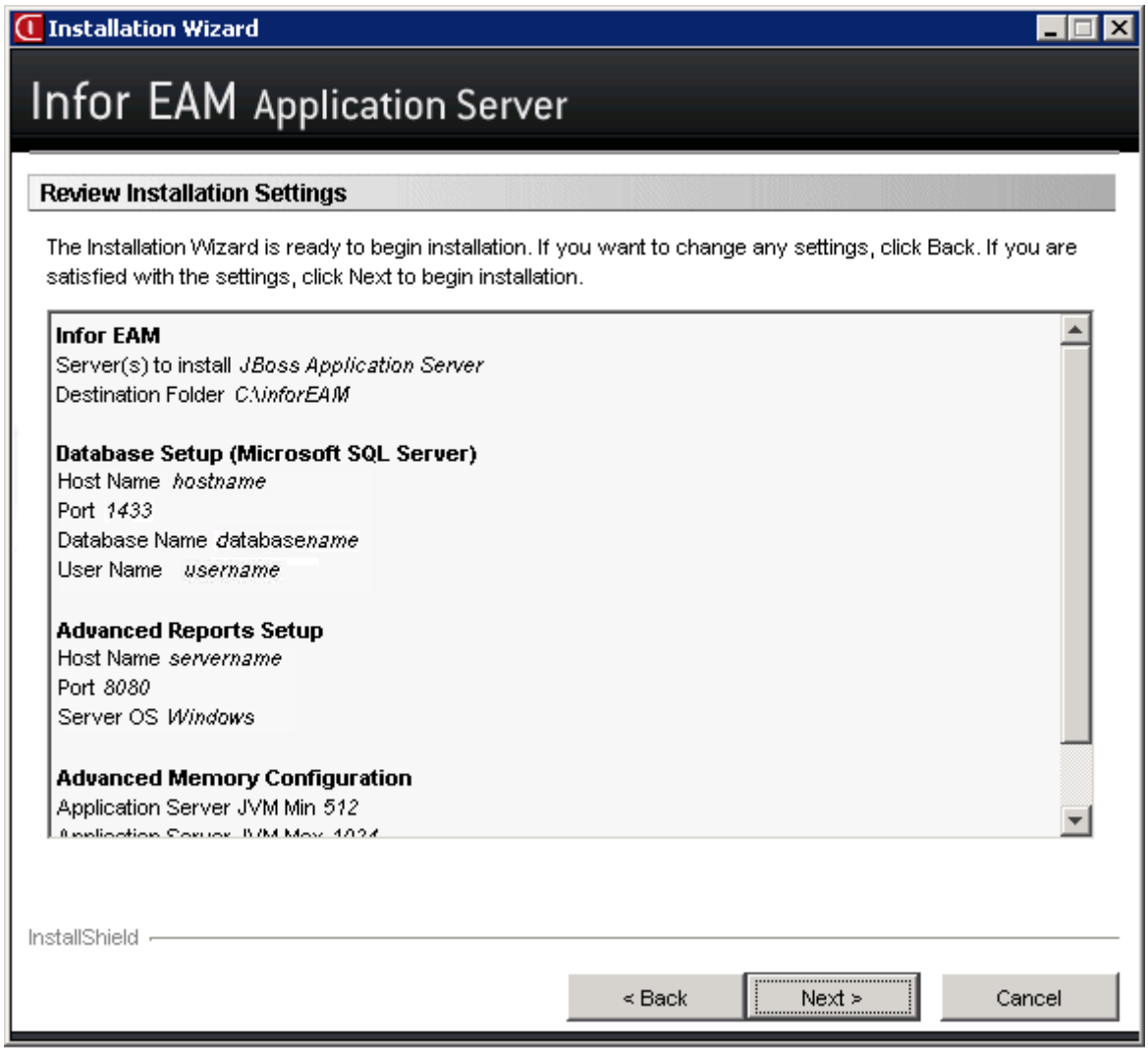


5 Click **Next**.

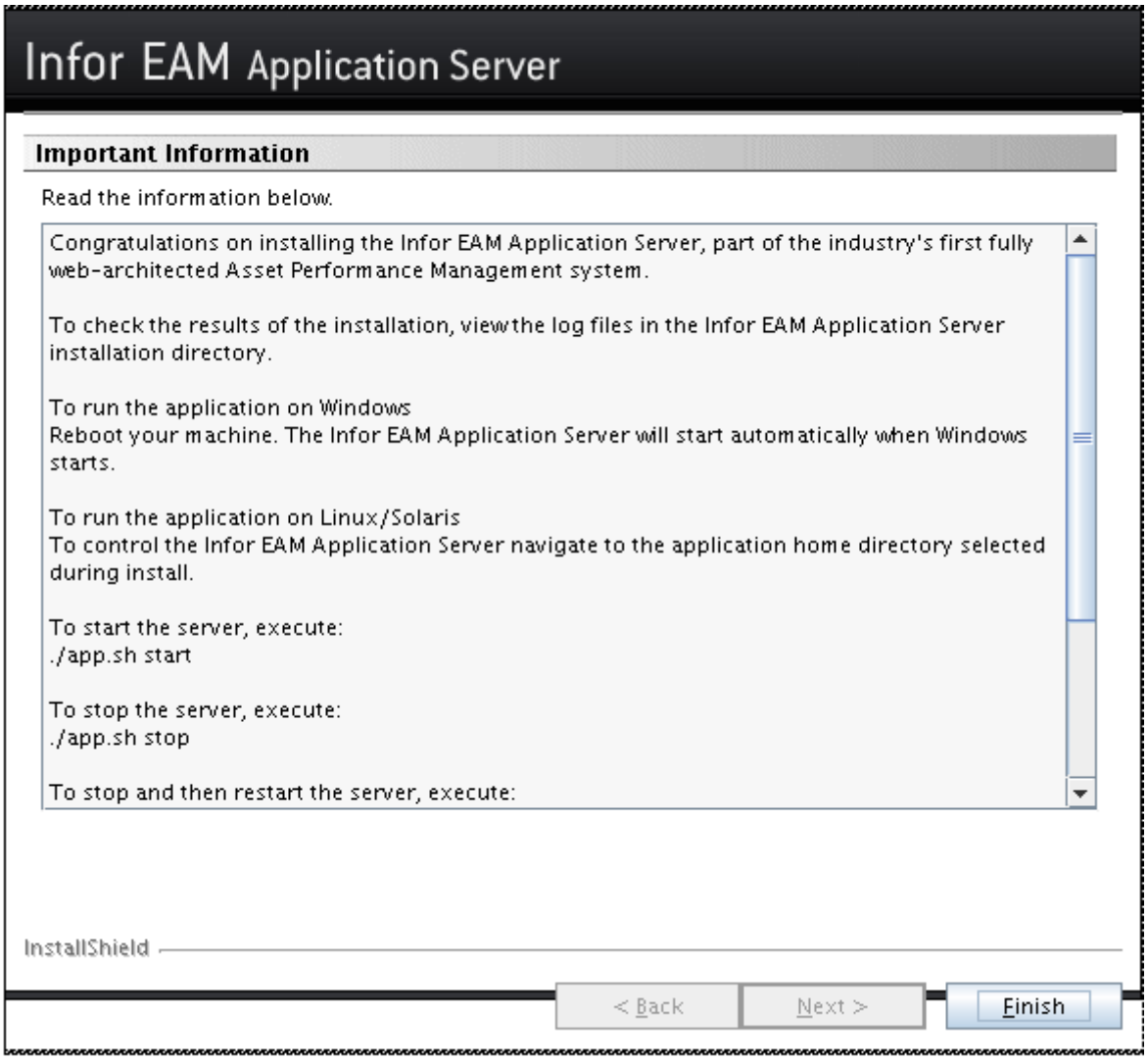
6 **Will this computer host the Databridge transactions?** Select **No**, and then click **Next**.

Note: Select **Yes** only if the computer on which you are installing the application server will also host the Databridge transactions.

See the *Infor EAM Databridge System Administrator Guide*.



7 Click **Next**. The system installs messaging services.



8 Click **Finish**.

Installing messaging services on multiple servers

Installing messaging services on multiple servers requires careful analysis and planning of system usage and resources. Infor strongly recommends that you use the Single Server option for most cases, and only use Multiple Servers option if you have specific needs to do so and you have a detailed deployment plan in place.

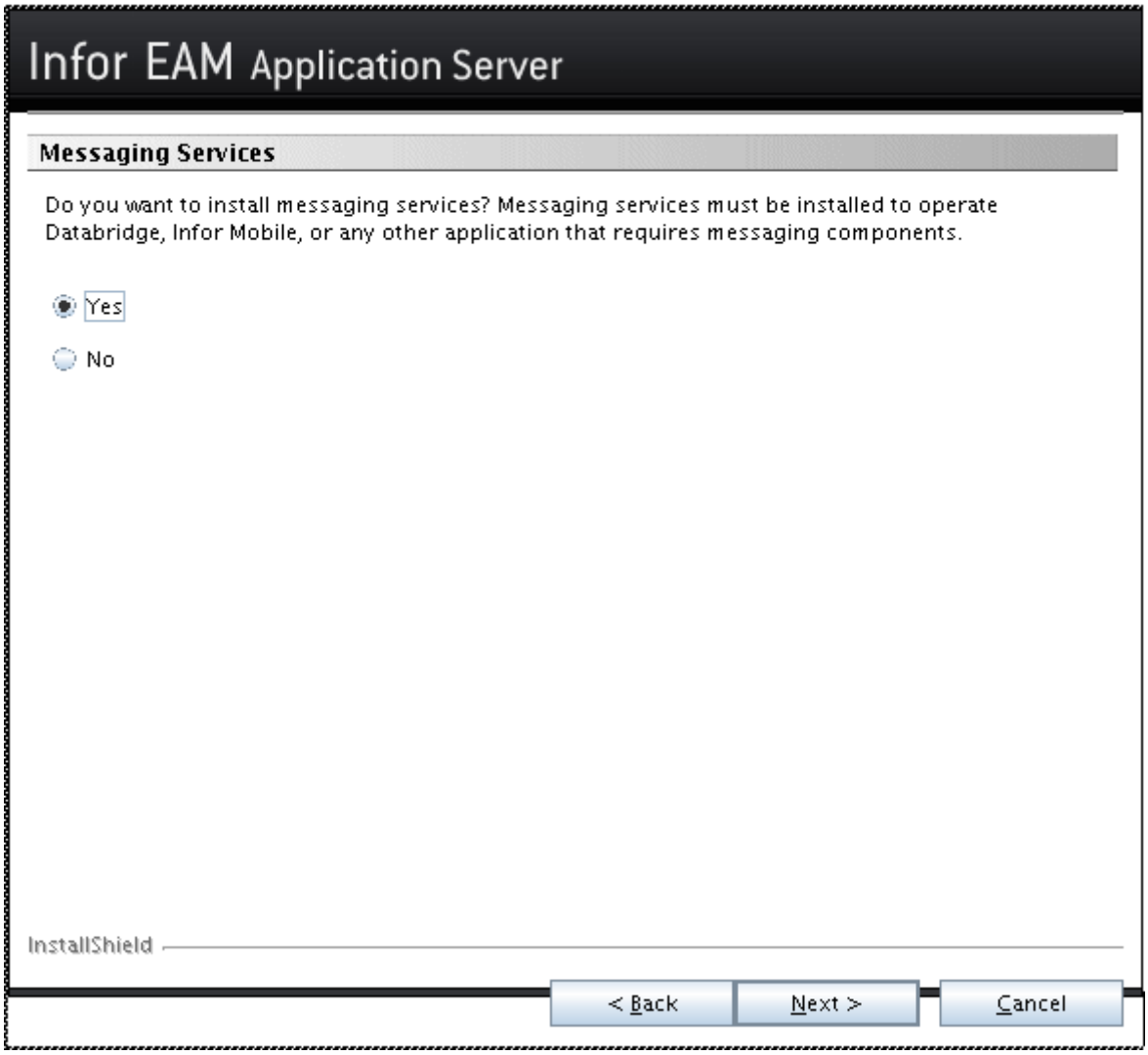
Note: Not using Multiple Servers does not exclude you from installing messaging services on multiple computers for load sharing and fail-over. Messaging services can be installed on multiple computers using the Single Server option.

The information in this section is for users with special needs that require the implementation of messaging services using multiple JMS providers in a JBoss environment.

1 Insert the Infor EAM CD, and run the installation.

See Installing Infor EAM for JBoss on page 65.

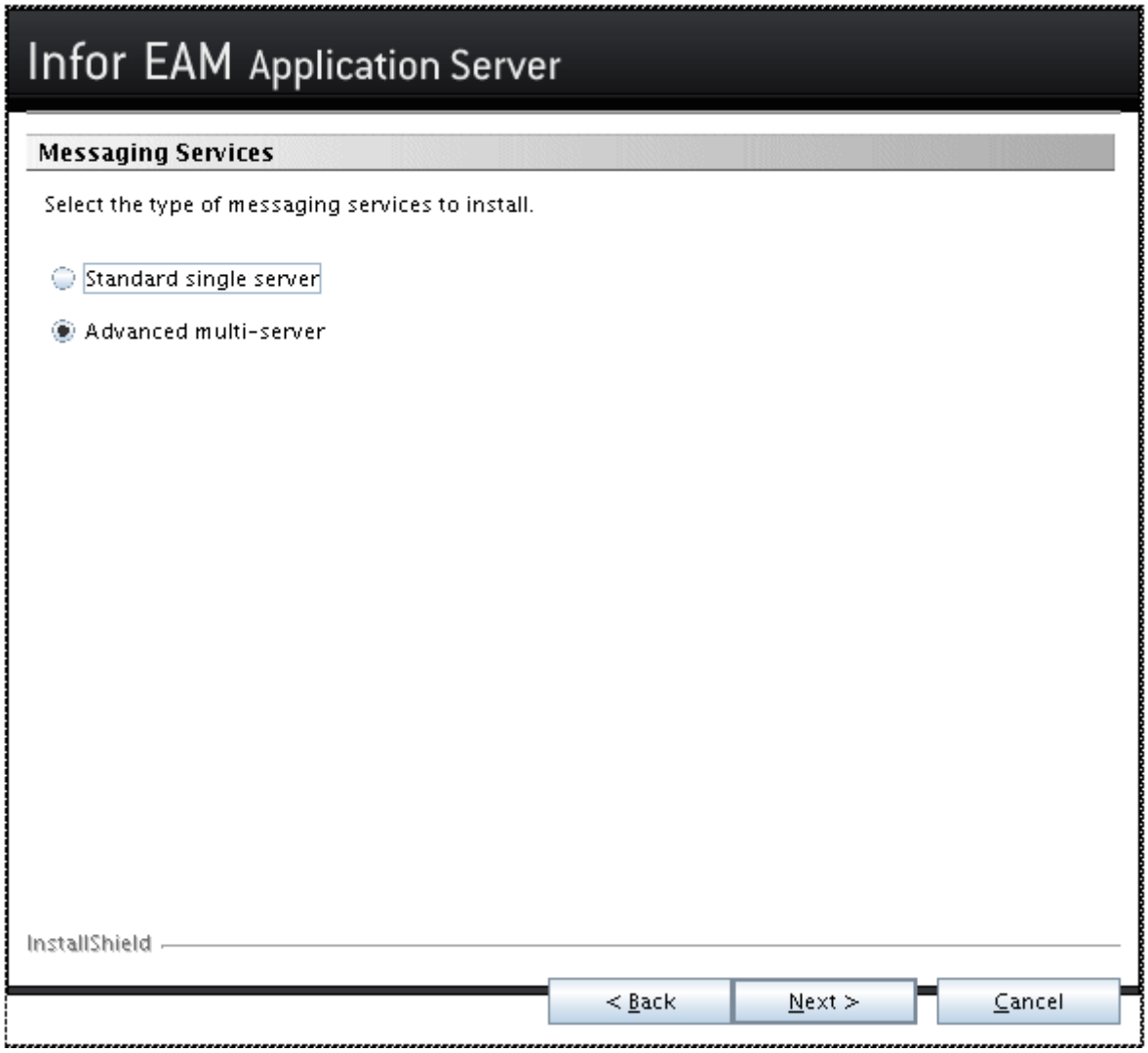
At the point during the installation when you must choose whether to install messaging services, the system displays the following dialog box.



2 Select **Yes** to install messaging services.

3 Click **Next**.

4 Select the type of messaging services to install. Select **Advanced multi-server** to install the messaging services for multiple servers.



5 Click **Next**.

6 **Will this computer host the Databridge transactions?**. Select **No**, and then click **Next**.

Note: Select **Yes** only if the computer on which you are installing the application server will also host the Databridge transactions.

See the *Infor EAM Databridge System Administrator Guide*.

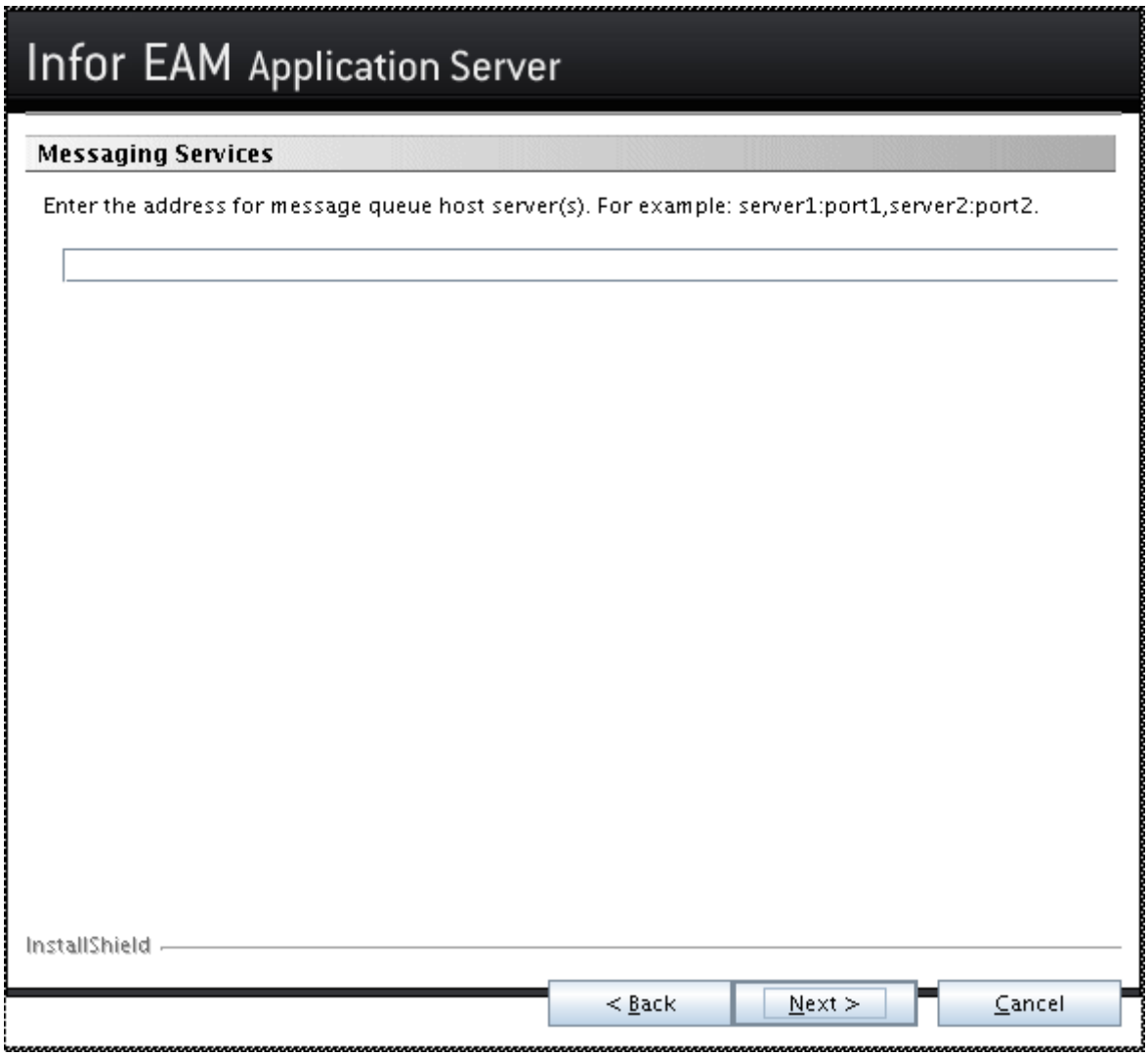
7 For the **Will this computer host a message queue?** prompt choose one of these options:

Option	Description
Yes	Select if the computer on which you are installing the application server will also host a message queue.
No	Select if you do not want to host a message queue on the computer on which you are installing the application server.

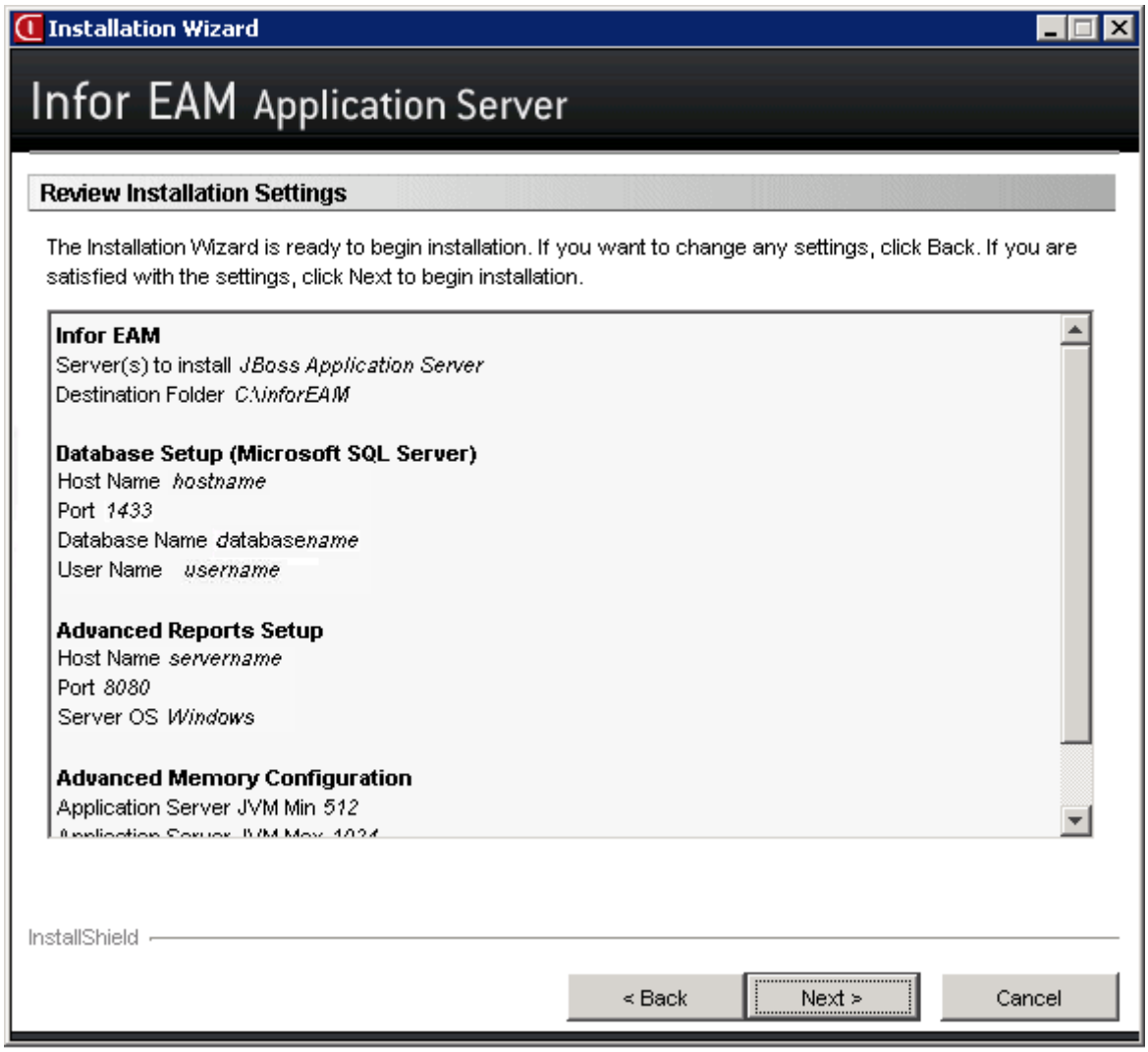
Note: For most installations, you will select **Yes**. However, you may want to select **No** for installation situations in which you are installing a large number of application servers for which you will only want to install JMS queues on a limited number of those application servers.

8 Click **Next**.

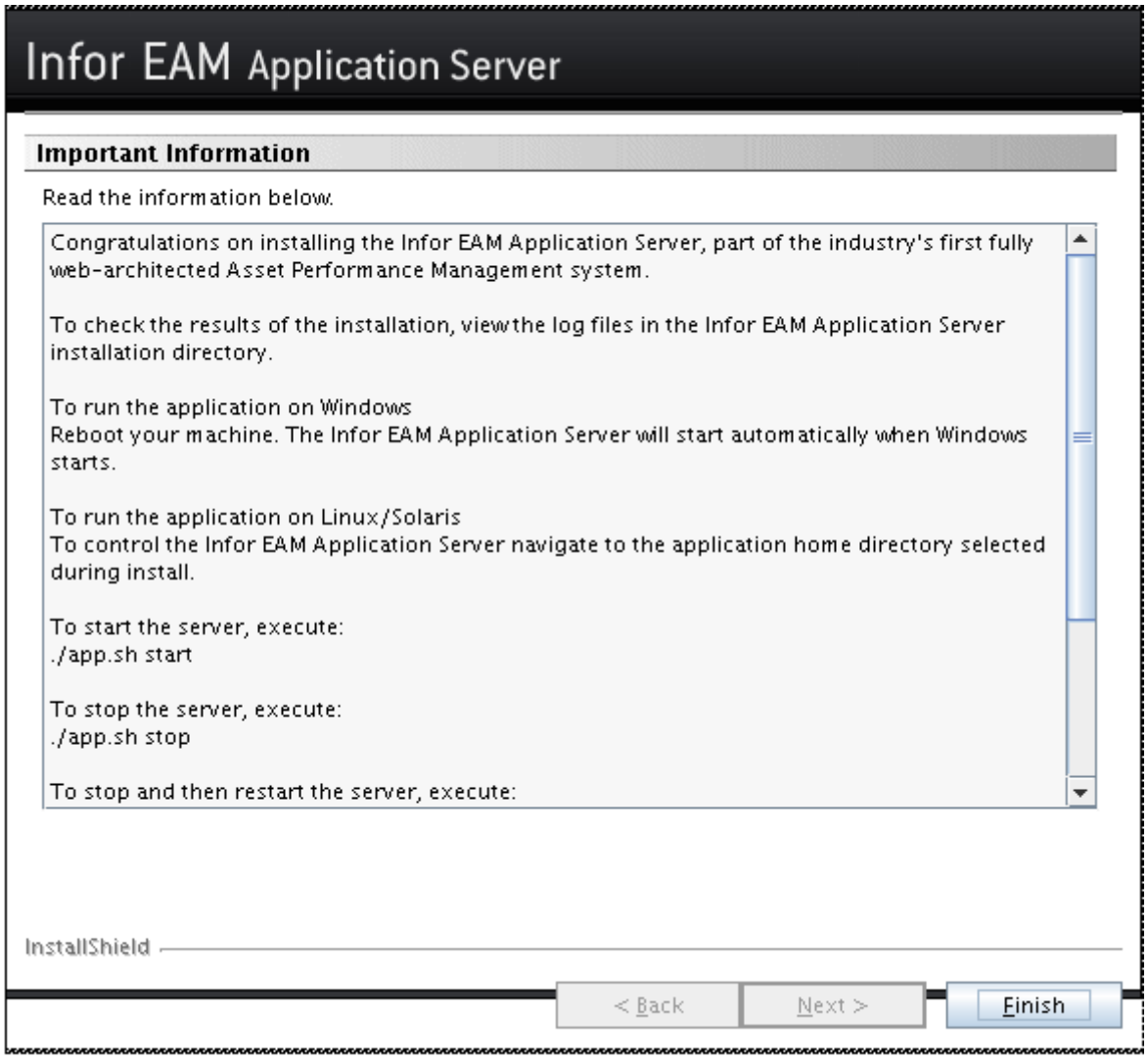
9 Enter the address of the application server(s) that are hosting the message queue(s). Use a comma (,) to separate multiple addresses, e.g., usgvl002-machine:1099, usgvl003-machine2:1099, etc. For a JBoss installation, the address is in the form of <server name>:<JBoss JNDI port number>.



10 Click **Next**.



11 Click **Next**. The system installs Messaging Services.



12 Click **Finish**.

Deploying Infor EAM using vertical scaling

Infor EAM can be deployed on a local machine using vertical scaling. Vertical scaling involves configuring multiple JVM instances to run simultaneously in order to achieve maximum efficiency by optimizing system resource usage.

When planning a vertically scaled deployment of Infor EAM using a multi-JVM configuration, you must consider the availability of physical RAM on the application server, as well as the memory requirements of any other applications that are running on the same system. Infor recommends that you allow an extra 256MB per JVM beyond what is normally available as the maximum JVM size.

To deploy Infor EAM using vertical scaling:

1. Navigate to the <APP_HOME>/depconfig/properties/external directory located in the Infor EAM application home directory.
2. Open config.yml and set jboss.domain.cluster. Set the cluster_size element to reflect the desired number of JVMs.

   The following sample extract from config.yml enables domain mode and sets the cluster size to two:

   Jboss:

   domain:

   enabled: true

   cluster: 2
3. Choose one of the following options to redeploy the Infor EAM application:
   - On Windows, execute the deploy batch script: deploy.bat

Configuring Infor EAM to use a different Infor EAM Advanced Reporting Server

To configure Infor EAM to use a different Infor EAM Advanced Reporting Server:

To configure Infor EAM to use a different Infor EAM Advanced Reporting Server:

1. Navigate to the depconfig/properties/external directory located in the Infor EAM application home directory.
2. Open config.yml and then change the following properties to reflect the updated Infor EAM Advanced Reporting Server information:

   reports:

   advrep:

   server: <servername>

   port: <port>
   - <servername>

     Change to the name for the Infor EAM Advanced Reporting Server (FQDN, WINS, or other resolvable hostname)
   - <port>

     Change to the port on which the Infor EAM Advanced Reporting Server is configured to listen.
3. Choose one of the following options to redeploy the Infor EAM application:
   - On Windows, execute the deploy batch script: deploy.bat

Installing the LDAP server component for Infor EAM

This section documents the procedures for installing and configuring the database server to enable the LDAP server component for Infor EAM. Infor supports two types of LDAP servers: Sun ONE Directory Servers and Microsoft Active Directory Servers (ADS).

The LDAP server component enables you to centrally maintain user and password information for each application that you may use on the LDAP server. If you are using LDAP, when a user logs in to Infor EAM, Infor EAM authenticates the user ID and password on the LDAP server rather than performing the authentication within Infor EAM.

See the *Infor EAM System Administrator Guide* .

The system searches for the tenant-specific LDAP configuration file when the LGNEAM installation parameter is set to LDAP. For other Infor EAM products such as Infor EAM Mobile, Infor EAM Databridge, and Infor EAM Connector, the system searches for the tenant-specific LDAP configuration file when the corresponding installation parameters are set to 'LDAP'. The installation parameters and corresponding Infor EAM products are:

- LGNCON (Infor EAM Connector)
- LGNDBR (Infor EAM Databridge)
- LGNMOB (Infor EAM Mobile)

See the *Infor EAM System Administrator Guide*.

If the system does not locate the tenant-specific LDAP configuration file, the system locates the `ldap-conf.xml` file.

Modifying the ldap-conf.xml configuration file (Sun ONE Directory Server)

Modify the `ldap-conf.xml` configuration file to define parameters for the LDAP server.

See the sample `ldap-conf.xml` below for more information.

```
<?xml version="1.0" encoding="UTF-8"?>

<!--Sample XML file generated by XMLSPY v5 rel. 4 U (http://www.xmlspy.com)-
->

<ldap-conf xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNames
paceSchemaLocation="ldap-conf.xsd">

<server>

<host>myserver.datastream.net</host>

<open-port enabled="true">389</open-port>

<secure-port enabled="false">0</secure-port>

<search-base>dc=datastream,dc=net</search-base>
```

```
<server-type>sun1</server-type>
</server>
<search type="full">
<dir-list>
<dir>cn=G1,ou=Org1,dc=ulberg,dc=deu</dir>
<dir>cn=G2,ou=Org1,dc=ulberg,dc=deu</dir>
</dir-list>
</search>
<role type="by-directory">
<attribute-name>attrole</attribute-name>
<translations>
<translation name="cn=G1,ou=O1,dc=datastream,dc=net">Role1</translation>
<translation name="cn=G2,ou=O1,dc=datastream,dc=net">Role2</translation>
</translations>
</role>
</ldap-conf>
```

1. Copy the `ldap-conf.xml` file from the `<APP_HOME>\depconfig\templates\mp_subsystem.ear\conf` directory to the `<APP_HOME>/overrides/ldap/` directory, and then open the `ldap-conf.xml` file in a text editor.

   Note: Your `ldap-conf.xml` file may have already been re-located to this location:`<APP_HOME>/overrides/ldap/ldap-conf.xml`.

2. Locate the `<server>` node section of the XML document, and then modify each of the following elements:

   <host>
   Specify the name of the host on which the LDAP server is running.

   <open-port>
   Specify the number of the port used for open (not encrypted) communication. Only use this port if the "enabled" attribute is set to "true". Set this value to 389.

   <secure-port>
   the number of the port used for secure (SSL-enabled port) communication. Disable this port and set it to 0.

   <search-base>
   Specify the root element of the LDAP tree. You can find the name using Sun One Server Console. For more information, see the configuration file above.

3 Locate the `<search>` node section of the XML document. The `<search>` node defines the strategy used by the LDAP client to locate user in the LDAP tree. Modify the `<search>` tag by entering one of the following elements:

Option	Description
Full Search	To configure the LDAP client for this type of search, the tag should be specified in the following form: `<search type="full">`. Full search presumes that the client has read access to the whole LDAP tree. In this case, the search starts from the top node of the tree and continues as long as the first user is found. This is the most widely used case.
By directory	The search tag should be configured in the following way: `<search type="by-directory">`. Use this feature if the client's LDAP installation will be configured for tighter security and only certain predefined directories are available for search. The list of the available directories for search directives should follow embedded into the `<dir-list>` tags.
Role discovery	A default user role defines for Infor EAM the default setup for a new user when logging in through LDAP the first time. You must provide this role in the LDAP response for this feature to work. Discover the default user role by mapping the LDAP properties to the predefined role. Current implementation supports two role mapping mechanisms: by attribute and by directory. **Role discovery by attribute** In this case, the user defined in the LDAP has a special attribute associated with the role. To perform role discovery: **a** Define the following tag `<role type="by-attribute">` in the configuration file. **b** Define the name of the dedicated LDAP attribute using the following tag: `<attribute-name>attrole</attribute-name>`. **Role discovery by directory** The association is based on the assumption that all LDAP users from the same LDAP directory will share the same role. Define only the mapping between the LDAP directory and Infor EAM role. To use this mechanism of the role discovery: **a** Define the following tag `<role type="by-directory">` in the configuration file. **b** Define the translation list that will map the name of the LDAP directory to the Infor EAM role (see example above).

4 Save and exit the file.

5 Run command

deploy.bat (Windows)

or

deploy.sh (Unix)

Modifying the ldap-conf.xml configuration file (Microsoft Active Directory Server)

Modify the `ldap-conf.xml` configuration file to define parameters for the LDAP server.

See the sample `ldap-conf.xml` below for more information.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSPY v5 rel. 4 U (http://www.xmlspy.com)-->
<ldap-conf xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="ldap-conf.xsd">
<server>
<host>myserver1.datastream.net</host>
<open-port enabled="true">389</open-port>
<secure-port enabled="false">0</secure-port>
<search-base>dc=datastream,dc=net</search-base>
<server-type>microsoft</server-type>
<access-user>
<user>user@mydomain.com</user>
<password>123</password>
</access-user>
<uid-attribute>cn</uid-attribute>
</server>
<search type="full">
<dir-list>
<dir>cn=G1,ou=Org1,dc=ulberg,dc=deu</dir>
<dir>cn=G2,ou=Org1,dc=ulberg,dc=deu</dir>
</dir-list>
</search>
<role type="by-directory">
<attribute-name>attrole</attribute-name>
<translations>
<translation name="cn=G1,ou=O1,dc=datastream,dc=net">Role1</translation>
<translation name="cn=G2,ou=O1,dc=datastream,dc=net">Role2</translation>
```

```
</translations>

</role>

</ldap-conf>
```

1 Copy the `ldap-conf.xml` file from the `<APP_HOME>\depconfig\templates\mp_subsystem.ear\conf` directory to the `<APP_HOME>/overrides/ldap/` directory, and then open the `ldap-conf.xml` file in a text editor.

Note: Your `ldap-conf.xml` file may have already been re-located to this location:`<APP_HOME>/overrides/ldap/ldap-conf.xml`.

2 Locate the `<server>` node section of the XML document, and then modify each of the following elements:

<host>
Specify the name of the host on which the LDAP server is running.

<open-port>
Specify the number of the port used for open (not encrypted) communication. Only use this port if the "enabled" attribute is set to "true". Set this value to 389.

<secure-port>
Specify the number of the port used for secure (SSL-enabled port) communication. Disable this port and set it to 0.

<search-base>

Specify the root element of the LDAP tree. For more information, see the configuration file above.

<access-user>
Specify the access user to connect to the Microsoft Active Directory Server (ADS) for search.

<uid-attribute>
Specify the search criteria for the user. The default value is "uid." Set the value to "cn" for ADS. The value may vary with specific ADS implementations.

3 Locate the `<search>` node section of the XML document. The `<search>` node defines the strategy used by the LDAP client to locate user in the LDAP tree. Modify the `<search>` tag by entering one of the following elements:

Option	Description
Full search	To configure the LDAP client for this type of search, the tag should be specified in the following form: `<search type="full">`. Full search presumes that the client has read access to the whole LDAP tree. In this case, the search starts from the top node of the tree and continues as long as the first user is found. This is the most widely used case.
By directory	The search tag should be configured in the following way: `<search type="by-directory">`. Use this feature if the client's LDAP installation will be configured for tighter security and only certain predefined directories are available for search. The list of the available directories for search directives should follow embedded into the `<dir-list>` tags.

Option	Description
Role discovery	A default user role defines for Infor EAM the default setup for a new user when logging in through LDAP the first time. You must provide this role in the LDAP response for this feature to work. Discover the default user role by mapping the LDAP properties to the predefined role. Current implementation supports two role mapping mechanisms: **a** by attribute **b** by directory **Role discovery by attribute** In this case, the user defined in the LDAP has a special attribute associated with the role. To perform role discovery: **a** Define the following tag `<role type="by-attribute">` in the configuration file. **b** Define the name of the dedicated LDAP attribute using the following tag: `<attribute-name>attrole</attribute-name>`. **Role discovery by directory** The association is based on the assumption that all LDAP users from the same LDAP directory will share the same role. Define only the mapping between the LDAP directory and Infor EAM role. To use this mechanism of the role discovery: **a** Define the following tag `<role type="by-directory">` in the configuration file. **b** Define the translation list that will map the name of the LDAP directory to the Infor EAM role (see example above).

4 Save and exit the file.

5 Run command

deploy.bat

Naming the LDAP configuration files

Create LDAP configuration files for each tenant and product combination.

Product-specific configuration files must use the following file name suffixes:

Name Suffix	Product
databridge	A Databridge-specific configuration file
mobile	A Mobile-specific configuration file
connector	A Connector-specific configuration file

Name Suffix	Product
eam	All other products, such as EAM, GIS, Analytics, Barcoding, and Esign

The general naming convention for the LDAP configuration files are as follows:

File Name	Description
ldap-config.xml	The default file name to use if one LDAP server will be used for all tenants and products
ldap-config-tenantid.xml	Use this to designate a specific LDAP server by tenant, e.g. `ldap-config-abc83_prd.xml`
ldap-config-tenantid-product.xml	Use this to designate a specific LDAP server by both tenant and product, e.g. `ldap-config-abc83_prd-mobile.xml`
dap-config-product.xml	Use this to designate a specific LDAP server by product, e.g. ldap-config-mobile.xml

Configuring ServerName

In order to ensure proper operation of the Infor EAM HTTP server, it is important for the ServerName parameter in the httpd.conf file to be set to the Fully Qualified Domain Name (FQDN) by which the application will be accessed. The system sets the ServerName to be the same as the hostname of the system on which the installer ran. For example, if the server's hostname is "extended" and you want to serve the application through the FQDN of "extended.yourdomain.com," then you must perform one of the following options:

Open the file <APP_HOME>/depconfig/properties/external/config.yml in a text editor.

Locate the server property under core and change it to your FQDN like the example below

core:

…

server: <fqdn servername>

Save the file.

Change to directory <APP_HOME>/depconfig.

For JBoss on Windows run deploy.bat.

Note: Regardless of what FQDN is used, it is important that the http server is able to resolve each FQDN to a local IP address in its local hosts file.

Tuning memory usage after installation in Windows

This section outlines procedures for tuning memory usage after installation in Windows.

Note: Make sure to consider overall physical memory capacity of the server when making these changes. Reserve memory for other applications if present. Also, make sure to reserve some system memory for the operating system itself.

To tune memory usage after installation:

1. Open the file <APP_HOME>/depconfig/properties/external/config.yml in a text editor.
2. Locate the heap-min and heap-max properties under jboss and change the upper and lower bounds like the example below.

   jboss:

   jvm:

   heap-min: 512

   heap-max: 1024
3. Save the file.
4. Change to directory <APP_HOME>/depconfig.
5. For JBoss on Windows run deploy.bat.

Setting up non-standard ports

After installing Infor EAM, if startup problems exist due to conflicts with ports already in use by other applications, complete the following steps:

1. The apache ports can be changed in depconfig/properties/external/config.yml:

   core:

   ports:

   http: 2443

   https: 4443
2. Several additional ports can be changed in the <APP_HOME>/depconfig/properties/external/config.yml file. Edit the file with a text editor and change any port definition to a new value:

   jboss:

   ports:

   ajp: <some port>

   cli: <some port>
3. Change to directory <APP_HOME>/depconfig:
4. For JBoss on Windows run deploy.bat.

Configuring environments

This section outlines procedures for modifying existing environments or configuring for multiple environments in Windows.

Configuring environments in Windows

To configure environments:

1. Open the file <APP_HOME>/depconfig/properties/external/config.yml in a text editor.
2. Add/modify DB connections definition like the example below.

   datasources:

   tenant: <db-connection name>

   url: jdbc:sqlserver://SERVER1:PORT1;DatabaseName=<database

   name>;ApplicationName=InforEAM;LoginTimeout=300

   driver: com.microsoft.sqlserver.jdbc.SQLServerDriver

   user: <user>

   password: '<password>'

   min-size: <min-size>

   max-size: <max-size>

   idle-timeout-minutes: 1

   tenant: <db-connection2 name>

   url: jdbc:sqlserver://SERVER2:PORT2;DatabaseName=<database2

   name>;ApplicationName=InforEAM;LoginTimeout=300

   driver: com.microsoft.sqlserver.jdbc.SQLServerDriver

   user: <user2>

   password: '<password2>'

   min-size: <min-size>

   max-size: <max-size>

   idle-timeout-minutes: 1

   - <db-connection name>

     Enter the name of the connection, which you must match with the tenant name that users provide on the login URL.

   - <url>

     Enter the host name of the database server, the port number for the database server

     Note: <database name> is the name of the SQL Server construct that contains the EAM tables, not the database server name

   - <user>

     Enter the user name.

- <password>
  Enter the user access password.
- <min-size>
  Enter the number of connections created during the Application Server startup.
- <max-size>
  Enter the maximum number of connections allowed per data source.

3 Save the file.
4 Change to directory <APP_HOME>/depconfig.
5 For JBoss on Windows run deploy.bat.
6 When the modifications are complete and the server is restarted, the URL that identifies which environment is running is http://ServerName/web/base/logindisp?tenant=XXX, where XXX would be what was set as <db-connection name> in our example above

Configuring the server trace log

If there is a need to see additional error and trace information during the execution of Infor EAM, you may turn on/off additional trace for the server log file while the server is running. If you are running in a single JVM environment, the server log will be located at `<APP_HOME>/jboss/standalone/log/server.log`. If you are running in a multiple JVM environment, the server log will be located at `<APP_HOME>/jboss/domain/servers/eam-<JVM #>/log`.

Note: The server automatically creates a backup of each day's log at midnight with the name in the following pattern: server.log.YYYY-MM-DD. The server.log is cleared for further trace logs. The server trace log is only available in JBoss.

Turning on the server trace log (Windows)

To turn on the server trace log:

1 Open the file <APP_HOME>/jboss/conf/log4j-eam.xml.
2 Locate the following text/xml:
  <appender name="CONSOLE" class="org.apache.log4j.ConsoleAppender">
  <errorHandler class="org.jboss.logging.util.OnlyOnceErrorHandler"/>
  <param name="Target" value="System.out"/>
  <param name="Threshold" value="FATAL"/>
3 Change the threshold value to "INFO."
4 Save the file.
  Note: There is no need to restart the server. Five seconds after the change has been made, the server log will start outputting the desired log.

If you want this setting to remain after restart, you must also edit the %SystemRoot%\EXTSvc.ini or RPTSvc.ini file and change the following line:

RunTimeLoggingLevel=INFO

Turning off the server trace log (Windows)

To turn off the server trace log:

1. Open the file `<APP_HOME>/jboss/conf/log4j-eam.xml`.
2. Locate the following text/xml:

   <appender name="CONSOLE" class="org.apache.log4j.ConsoleAppender">

   <errorHandler class="org.jboss.logging.util.OnlyOnceErrorHandler"/>

   <param name="Target" value="System.out"/>

   <param name="Threshold" value="INFO"/>
3. Change the threshold value to "FATAL."
4. Save the file.

   Note: There is no need to restart the server. Five seconds after the change has been made, the server automatically clears.

   If you want this setting to remain after restart, you must also edit the %SystemRoot%\EXTSvc.ini or RPTSvc.ini file and change the following line:

   RunTimeLoggingLevel=FATAL

Permanently changing specific log levels

To permanently change log levels of a particular application component, copy a modified log4j-eam.xml file to <APP_HOME>/overrides/log and rerun deploy.

Rotating apache logs

Use the rotatelogs utility to rotate the files to a new file name at a specified time interval. By default the use of rotatelogs is turned on. To turn rotatelogs off or change the frequency add/modify the <APP_HOME>/depconfig/properties/external/config.yml file like the example below:

apache:

log:

rotatelogs: "On"

rotateinterval: 86400

rotatelogs - enable / disable automatic log rotation – Valid values: On or Off

rotateinterval - the interval in seconds for log rotation - default is 86400 (one day) - shortest interval that can be specified is 60 seconds

Next, change to directory <APP_HOME>/depconfig

For JBoss on Windows, run deploy.bat.

Chapter 4: Installing EAM Advanced Reporting (Oracle and SQL)

This chapter provides information about Infor EAM Advanced Reporting, including installation, configuration, and setup.

Pre-installation checklist

Perform the following pre-installation checks on your system:

- Remove JAVA_HOME and ANT_HOME system environment variables from the machine on which you are installing the Infor EAM Advanced Reporting Server. User environment variables are acceptable, but system variables for JAVA_HOME and ANT_HOME will cause the installer to fail.
- For an Oracle Infor EAM Advanced Reporting Server installation, install Oracle client tools (version 9.2 or higher) and SQL Plus on the report server machine.
  Note: In a distributed installation environment, install Oracle client tools on each Report Server machine.

Content Store Database

Note: The content store schema must be installed on a multi-byte (Unicode) database instance.

- To determine if the database is Unicode. One method is to type the following select statement: select * from NLS_DATABASE_PARAMETERS

  The result set returns NLS_CHARACTERSET is UTF-8 or UTF-16, or AL32UTF8 or AL16UTF16, or not Unicode.

  If the result set returns an NLS_CHARACTERSET that is not Unicode, create a new database.

  For Oracle 12c, specify AL32UTF8 or AL16UTF16 for the database character set parameters.

  Note: The Oracle Client must be 12c 32-bit Database Server for Oracle installs.
- To determine which user account the Advanced Reporting Server will use to access the content store:

  Ensure that the user account that accesses the content store has permissions to do the following: connect to the database; create, alter, and drop tables, triggers, views, procedures, and sequences; insert, update, and delete data in the content store tables. It is recommended that you create the content store schema in a separate tablespace.

Infor EAM Database

- Set up a tnsnames.ora entry for the Infor EAM database server. This entry should be in the form <server name>_<instance name> (e.g., myserver1_inst1), where the values for server name and instance name match those specified in the Infor EAM application server ewsconfig.xml file.
- For a SQL Server Advanced Reporting Server installation, install SQL Server client tools (or Connectivity Only) on the report server machine. TCP/IP connectivity is required for SQL Server. **Note:** In a distributed installation environment, install SQL Server client tools on each Report Server machine.
- Create an empty database in Oracle or SQL Server to use as the Infor EAM Advanced Reporting content store, and create a user for this database that has rights to create, delete, and access objects.
- For SQL Server, the content store database must be created using a case-insensitive collation type. For example, Latin1_General_CI_AS. It is recommended that you create a login in SQL Server, set the database as the default for the user, and grant that user dbo rights to the database. Then, use this user's connection information to connect to the content store.

Installing Infor EAM Advanced Reporting (Oracle)

Note: If you are installing on a machine that has Windows Server 2019, you must add the `setupwin32.exe` as an exception to the Data Execution Prevention List. This exception can be removed once installation is complete.

1. Insert the Infor EAM Advanced Reporting CD into the proper drive.
2. Choose **Start > Run** from the Windows taskbar.

   Note: If you are installing from a drive other than D:, substitute that drive for D: in these instructions.
3. Specify `D:\SETUPWIN32.EXE`, and then click **OK**.
4. Select the language to be used, and then click **OK**.
5. Click **Next**.
6. Specify the Infor EAM **CD Key**, and then click **Next**.
7. Select **I accept the terms of the license agreement** if you agree to the terms, and then click **Next**.
8. Specify the directory in which to install the Infor EAM Advanced Reporting Server, and then click **Next**.
9. Specify this information:

   Database Host Name
   Specify the name of the machine on which the database server resides.

   Port
   Specify the port number associated with the database server.

   Instance Name
   Specify the name of the database instance.

Schema Name
Specify the Oracle schema under which Advanced Reporting will run.

User Password
Specify the password for the schema specified above.

Oracle Home
Specify the path to the Oracle Home on the machine on which you are installing the Advanced Reporting, and then click **Next**.

Memory Configuration
Choose one of the following options:

Option	Description
Small	Select to use this type of configuration for proof of concept, demonstration, or development environments where all Advanced Reporting components are installed on one computer, memory resources are limited, and the start-up time is more important than performance or processing a large number of simultaneous requests. **Note:** 10 GB of RAM is recommended.
Medium	Select to use this type of configuration for small production environments or medium test environments where it is important that there is a balance between fast start-up times and operating speeds. **Note:** 12 GB of RAM is recommended.
Large	Select to use this type of configuration in large production or test environments to maximize operating speeds and performance over fast start-up times. **Note:** 16 GB of RAM is recommended.

E-mail Notification
Choose one of the following options:

Option	Description
Yes	Select to enter information about the SMTP server on the next installation screen, which will allow Infor EAM Advanced Reporting Server to send reports through e-mail.
No	Select to skip the SMTP configuration screen; reports cannot be sent through email.

10 Click **Next**.

11 Specify this information:

Host
Specify the name of the SMTP e-mail server.

Port
Specify the port number associated with the SMTP server.

User E-mail Address
Specify the e-mail address to use as the From address for e-mail notification.

User Name
Specify the user name to use for the SMTP server.

User Password
Specify the password for the SMTP server.

SSL
Specify whether SSL will be used for email transmissions, and then click **Next**.

12 Specify the path to the Infor EAM Application Server ewsconfig.xml (`<app-home>/depconfig`) and security.properties (`<app-home>/depconfig/skeletons/mp_subsystem.ear/conf`) files, and the EWSConnector URL in their respective fields. The Gateway Port of the Report Application <this defaults to port 8080). Once all are completed, click **Next**.

13 Click **Next**. The Infor EAM Advanced Reporting application files are installed.

14 Click **Finish**.

Installing Infor EAM Advanced Reporting (SQL)

Note: If you are installing on a machine that has Windows Server 2019, you must add the `setupwin32.exe` as an exception to the Data Execution Prevention List. This exception can be removed once installation is complete.

1 Insert the Infor EAM Advanced Reporting CD into the proper drive.

2 Choose **Start > Run** from the Windows taskbar.

Note: If you are installing from a drive other than D:, substitute that drive for D: in these instructions.

3 Specify `D:\SETUPWIN32.EXE`, and then click **OK**.

4 Select the language to be used, and then click **OK**.

5 Click **Next**.

6 Provide the Infor EAM CD key for the product, and then click **Next**.

7 Select **I accept the terms of the license agreement** if you agree to the terms, and then click **Next**.

8 Specify the directory in which to install the Infor EAM Advanced Reporting Server, and then click **Next**.

9 Specify this information:

Database Host Name
Specify the name of the machine on which the database server resides.

Port
Specify the port number associated with the database server.

Database Name
Specify the name of the database.

User Name
Specify the user with which to log in to the database.

User Password
Specify the password for the user specified above, and then click **Next**.

Memory Configuration
Choose one of the following options:

Option	Description
Small	Select to use this type of configuration for proof of concept, demonstration, or development environments where all Infor EAM Advanced Reporting Server components are installed on one computer, memory resources are limited, and the start-up time is more important than performance or processing a large number of simultaneous requests. **Note:** 10 GB of RAM is recommended.
Medium	Select to use this type of configuration for small production environments or medium test environments where it is important that there is a balance between fast start-up times and operating speeds. **Note:** 12 GB of RAM is recommended.
Large	Select to use this type of configuration in large production or test environments to maximize operating speeds and performance over fast start-up times. **Note:** 16 GB of RAM is recommended.

E-mail Notification
Choose one of the following options:

Option	Description
Yes	Select to enter information about the SMTP server on the next installation screen, which will allow Infor EAM Advanced Reporting Server to send reports through e-mail.

Option	Description
No	Select to skip the SMTP configuration screen; reports cannot be sent through email.

10 Click **Next**.

11 Specify this information:

Host
Specify the name of the SMTP e-mail server.

Port
Specify the port number associated with the SMTP server.

User E-mail Address
Specify the e-mail address to use as the From address for e-mail notification.

User Name
Specify the user name to use for the SMTP server.

User Password
Specify the password for the SMTP server.

SSL
Specify whether SSL will be used for email transmissions, and then click **Next**.

12 Specify the path to the Infor EAM application server `ewsconfig.xml file` (`<app-home>/depconfig`) and `security.properties` (`<app-home>/depconfig/skeletons/mp_subsystem.ear/conf`) files, and the EWSConnector URL in their respective fields. The Gateway Port of the Report Application (this defaults to port 8080). Once all are completed, then click **Next**.

13 Click **Next**. The Infor EAM Advanced Reporting application files are installed.

14 Click **Finish**.

Configuring the Infor EAM application server

You must install the Infor EAM application server before configuring the connection to the Infor EAM Advanced Reporting Server.

The connection to the Infor EAM Advanced Reporting Server is configured automatically during the Infor EAM installation. However, if it becomes necessary to configure the connection manually, complete the following steps:

1 Navigate to the depconfig/properties/external directory located in the Infor EAM application home directory.

2 Open config.yml and then change the following properties to reflect the updated Infor EAM Advanced Reporting Server information:

reports:

advrep:

server: <servername>

port: <port>

- <servername>

  Change to the name for the Infor EAM Advanced Reporting Server (FQDN, WINS, or other resolvable hostname)

- <port>

  Change to the port on which the Infor EAM Advanced Reporting Server is configured to listen.

3 Choose one of the following options to redeploy the Infor EAM application:

- On Windows, execute the deploy batch script: deploy.bat

Configuring the web client

To configure the web client, ensure that the web browser supports/enables cookies, JavaScript, Run ActiveX controls and plug-ins, Script ActiveX controls marked safe for scripting, and Active scripting.

Setting up Advanced Reporting

Infor EAM includes three types of report users: Basic, Consumer, and Author. Each type includes different levels of access within Infor EAM.

Type	Description
Basic	Basic users may run the predefined reports delivered in EAM. All users may run Basic reports.
Consumer	Consumer users may run Consumer reports, and they may run any custom reports created by Author users. **Note:** Consumer users can only run custom reports created in the tenant folder (e.g., "DS_MP_1") from EAM.
Author	Author users may run Consumer reports, run custom reports, and create custom reports. **Note:** Author users can only create new reports in the report_author and tenant (e.g., "DS_MP_1") folders in Report Designer.

Setting up user groups

If you are upgrading from Crystal Clear Reports or if the ADVREPT installation parameter is set to NO, you must set up user groups to access Advanced Reporting.

Set up user groups by adding basic, consumer, and author reports to a user group's menu in Infor EAM.

To set up user groups:

1. Select **Administration > Security > User Groups**.
2. Select the user group to set up, and then click the **Menus** tab.
3. Specify this information:

   Dataspy
   Select **Advanced Reports**.

   Filter
   Select **Class**.

4. Click the lookup.
5. Choose one of the following options:

Option	Description
Add Basic reports to the user group's menu	Select REPB.
Add Consumer reports to the user group's menu	Select REPC.
Add Advanced Reports Author link to the user group's menu	Select REPA.

6. Click **OK**.
7. Click **Run**.
8. In **Available Screens** from the right panel of the form, select the report to add to the menu structure.
9. Drag and drop the report name into the desired menu structure location on the tree structure.
   The next time the user logs in to Infor EAM, the new report will display in the specified menu.

Setting up consumer users

Set up consumer reports by specifying users as consumer report users.

Note: Before setting up consumer reports for users, you must first enter a valid 7ICCDKEY install parameter on the Install Parameters form.

To set up consumer users:

1. Select **Administration > Security > User Setup** .
2. Select the user for which to set up consumer reports, and then click the **Record View** tab.
3. Select **Consumer** to allow the user to run consumer reports.
4. Click **Save Record**.

Setting up Author users

Only users with an Author license can create custom reports. Set up author reports by specifying users as author report users.

Note: Before setting up author reports for users, you must first enter a valid 7IPCDKEY install parameter on the Install Parameters form.

To set up author users:

1. Select **Administration > Security > User Setup** .
2. Select the user for which to set up author reports, and then click the **Record View** tab.
3. Select **Author** to allow the user to create and run consumer reports.
4. Click **Save Record**.

Setting up reports

Set up reports in Infor EAM so that Consumer users can view the custom reports created by Author users.

To set up reports:

1. Select **Administration > Setup > Reports** .
2. Click **New Record**.
3. Specify this information:

   Report
   Specify a unique code identifying the report, and then enter a description of the report in the adjacent field.

   Class
   Select REPC.

   File Name
   Specify the Advanced Reports path to the custom report. For example, DS_MP_1/myreport.xml.

4. Click **Save Record**.

Setting up consumer user access

Two properties in ADVREP_PROPERTIES.XML (and their defaults) control logging in and what users can see and access:

- allow_consumer_login (default=true)
- allow_consumer_access_to_report_folders (default=false)

If allow_consumer_login is true, consumer users can log in to Advanced Reporting directly. This will allow consumer users to log in and run a report sent via an e-mail link.

If allow_consumer_access_to_report_folders is false, consumer users cannot see any report folders when logging in to Advanced Reporting. Always set this value to false for the most secure reporting environment. Otherwise, consumer users have access to all reporting data regardless of their security settings in Infor EAM.

Additional setup information

This section includes additional setup information for LDAP, distributed installation, and upgrading custom reports.

LDAP setup

If the Infor EAM application server uses LDAP, you must set up the Infor EAM Advanced Reporting Server to use LDAP.

Note: In addition to the manual setup required for LDAP, Infor EAM Advanced Reporting Server also uses the setting of the `LGNEAM` installation parameter, which indicates whether the system uses LDAP authentication for user login.

See the *Infor EAM System Administrator Guide*.

First install the Infor EAM Advanced Reporting Server, and then following the instructions below.

1. Set the following property in the `advrep_properties.xml` file on the Advanced Reporting Server:
   ```
   crn.gen_info.extended.webservice.url=http://myextendedserver/axis/services/EWSConnector
   ```
2. Choose the following option to deploy the configuration:
   - If you are deploying on Windows

     Run `deploy.bat`.

Distributed installation setup

This section includes setup information for distributed components, manual installation, and distributed installation.

Distributed components

There are three types of Advanced Reporting components that may be installed across multiple machines. These are listed below with a brief description of their function.

- *Web Server*

  This component receives web requests and relays the information to a dispatcher on a Report Server. You may have as many web servers as desired, but you must provide your own hardware or software load-balancing solution.

  To ensure complete fail-over, each Web Server should communicate with a different Report Server.
- *Report Server*

  This component receives the requests from the web server and executes those requests by reading data from the Infor EAM database. You may have as many report servers as desired and requests are automatically load-balanced among them.

  Each Web Server communicates directly with a primary Report Server, which act as a request dispatcher. These dispatchers are responsible for distributing the workload among the other report servers.
- *Content Manager*

  This component receives data requests from the report server and retrieves that data from the Content Store. You may have as many content managers as desired, but only one is active at a time (the Primary content manager).

  All others run in standby mode and are automatically activated if the primary content manager goes down.

Note: For complete fail-over and load-balancing, it is recommended that you have at least two content managers (one primary and one standby), at least two report servers, and at least two web servers (that each communicate with a different report server), with each component installed on its own machine.

Although it is not recommended, some components can be shared on the same machine, such as a web server and a standby content manager. However, the primary content manager and the primary report server should always be installed on their own machines for maximum performance.

Manual installation

Performing a distributed Infor EAM Advanced Reporting installation requires running a manual install on each machine. A manual install is one that does not use the graphical Install Shield installer.

1 Copy the `ewsconfig.xml` file from your Infor EAM installation directory (by default, `/<path to Infor EAM>/depconfig`) on the machine where Infor EAM is installed, to the following directory on the machine where you are performing the manual installation of Infor EAM Advanced Reporting:

- Windows

  `<Windows Dir>\temp`

The `ewsconfig.xml` file provides the advanced reporting server with information about how to connect to the Infor EAM database.

2 Copy the `security.properties` file from your Infor EAM installation directory (by default, `/<path to Infor EAM>/depconfig/skeletons/mp_subsystem.ear/conf`) on the machine

where Infor EAM is installed, to the following directory on the machine where you are performing the manual installation of Infor EAM Advanced Reporting:

- Windows

  `<Windows Dir>\temp`

3 Copy the `advrep_properties.xml` file from the root directory of the Infor EAM Advanced Reporting CD to the following directory on the machine where you are performing the manual installation:

- Windows

  `<Windows Dir>\temp`

4 Edit the `advrep_properties.xml` file to indicate which components to install, the content store database to use, the installation directory to install to, and the ports to use for each component.

5 Save the file and close it. The advrep_properties.xml file is located in one of the following directories:

- Windows

  `<Windows Dir>\temp`

6 For Windows, run the `AdvRepIns.bat` file from the root directory of the Infor EAM Advanced Reporting CD. This will install the advanced reporting server to the local machine using the settings specified in the `advrep_properties.xml` file.

7 Check the `_installation<timestamp>.log` file in the Infor EAM Advanced Reporting installation directory for errors.

Note: To simplify making changes to the advrep_properties.xml file, run theInfor EAM Advanced Reporting InstallShield installer first, and then use the `advrep_properties.xml` file from the `/tmp` directory as a starting point for making your changes.

Distributed installation

When performing a distributed installation, the order in which components are installed is important. Follow these instructions carefully. For more information about each property, see the comments in the `advrep_properties.xml` file.

1 Perform a manual installation of Infor EAM Advanced Reporting on the machine that will be the Primary Content Manager by configuring the `advrep_properties.xml` file as follows (note that only changes from a normal installation are shown here) and then running `AdvRepIns.bat` (Windows) or `AdvRepIns.sh` (UNIX):

```
 <contentmanager>

<enabled>true</enabled>

<primary>true</primary>

 <contentmanagernames> cm1.yourdomain.com:9300,
cm2.yourdomain.com:9300</contentmanagernames>

<allow_consumer_access_to_report_folders>false</allow_consumer_ac
```

```
cess_to_report_folders>
<allow_consumer_login>true</allow_consumer_login>
</contentmanager>
<reportserver>
<enabled>false</enabled>
<webserver>
<enabled>false</enabled>
<deployreportcontent>true</deployreportcontent>
```

Note: Set the `<deployreportcontent>` to true, for the Primary Content Manager only.

2. Perform a manual installation of Infor EAM Advanced Reporting on the machine that will be the standby Content Manager by configuring the `advrep_properties.xml` file as follows (note that only changes from the primary content manager install are shown here) and then running `AdvRepIns.bat` (Windows):

```
<servercfg><contentmanager><primary> false
<servercfg><webserver><deployreportcontent> false
```

3. Perform manual installations of Infor EAM Advanced Reporting on each additional machine that will be a standby Content Manager as indicated in step 2.
4. Perform a manual installation of Infor EAM Advanced Reporting on the machine that will be a Report Server by configuring the `advrep_properties.xml` file as follows (note that only changes from a normal installation are shown here) and then running `AdvRepIns.bat` (Windows):

```
<contentmanager>
<enabled>false</enabled>
<reportserver>
<enabled>true</enabled>
<webservername> ws.yourdomain.com:80</webservername>
<contentmanagernames> cm1.yourdomain.com:9300,cm2.yourdomain.com:9300</
contentmanagernames>
</reportserver>
<webserver>
<primaryreportservername> rs1.yourdomain.com:9300</primaryreportserver
name><enabled>false</enabled>
<primaryreportservername> rs1.yourdomain.com:9300</primaryreportserver
name>
<deployreportcontent>false</deployreportcontent>
</webserver>
```

Note: The deployreportcontent is set to false which is a change from past releases.

5. Perform manual installations of Infor EAM Advanced Reporting on each additional machine that will be a Report Server as indicated in step 4.
6. Perform a manual installation of Infor EAM Advanced Reporting on the machine that will be a Web Server by configuring the advrep_properties.xml file as follows (note that only changes from a normal installation are shown here) and then running AdvRepIns.bat (Windows):

   ```
   <webserver>
   <enabled>true</enabled>
   <primaryreportservername> rs1.yourdomain.com:9300</primaryreportservername>
   <deployreportcontent>false</deployreportcontent>
   </webserver>
   ```

7. From any web browser, test the following URL to ensure a valid installation. You should get a login prompt. If not, check the `InforEAMAdvRep/crn/logs` directory on each machine for errors.

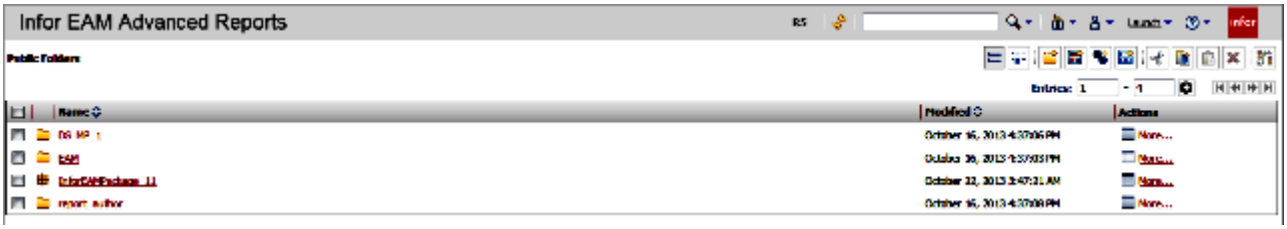
   `http://ws.yourdomain.com:80/`

8. After you have deployed the Advanced Reporting Server go to the Application Server and open the file `MPConfiguration.xml.vm` located in the `<App Server>\deconfig\templates\jboss` folder with a text editor. Search for the tag `<DISPATCHURL>` and add a value like rs1.yourdomain.com:9300 where rs1 is your primary Report Server. Then run deploy on the Application server.

Infor EAM Advanced Reporting Server administrator

In the current release of Infor EAM Advanced Reporting Server, the R5 user is designated as an Infor EAM Advanced Reporting Server Administrator, and this assignment cannot be changed. Infor recommends you protect the R5 password from users that should not be able to modify server parameters.

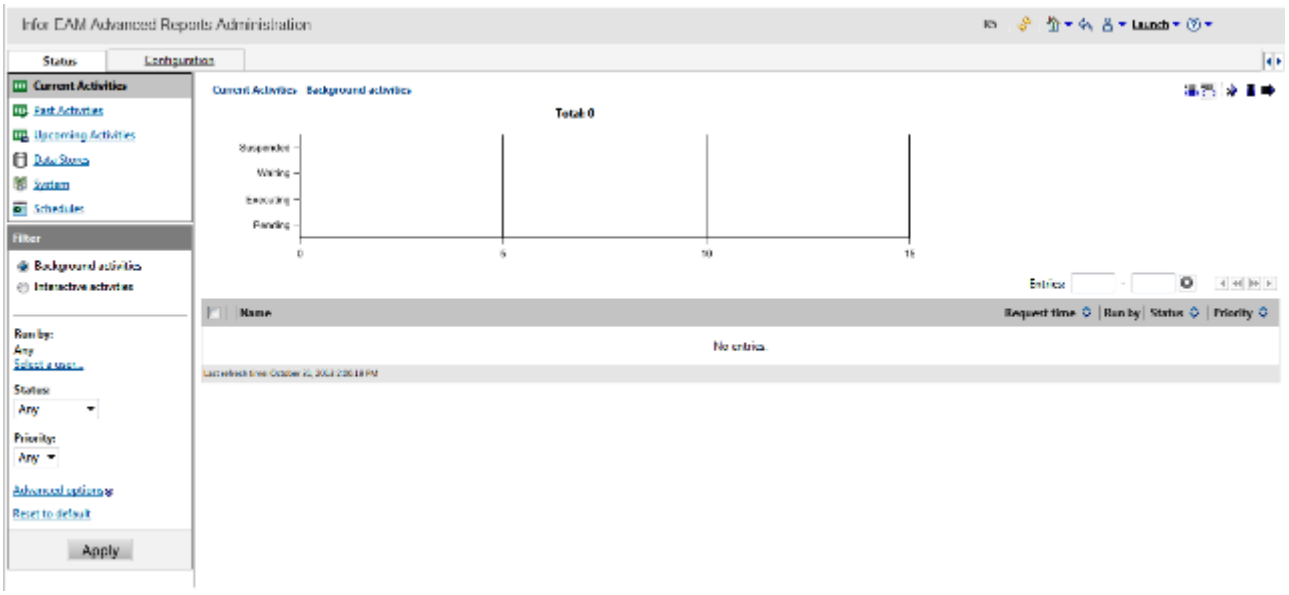
The server administrator user has access to new links on the Infor EAM Advanced Reporting home page, which provides the ability to monitor, test, and configure the Infor EAM Advanced Reporting application for better performance and reliability.



See the following descriptions for more information on the Infor EAM Administration console:

- Status

  View and manage the run activity of scheduled reports on the Activity of the Schedules section. View upcoming schedules on the Upcoming Activities section.



- Data Source Connections

  View the database information for each tenant and test connectivity on the **Data Sources** page of the **Directory** form.

Note: To add a new printer, click the **Printers** link, and then click the **New Printer** icon. The machine on which Advanced Reporting is installed (and the user that installed it) must have access to each printer added in order for reports to print correctly. See the Cognos documentation for more information.

- Dispatchers and Services

  Monitor the various Infor EAM Advanced Reporting Server components on the **Monitor** page of the **Server Administration** form.

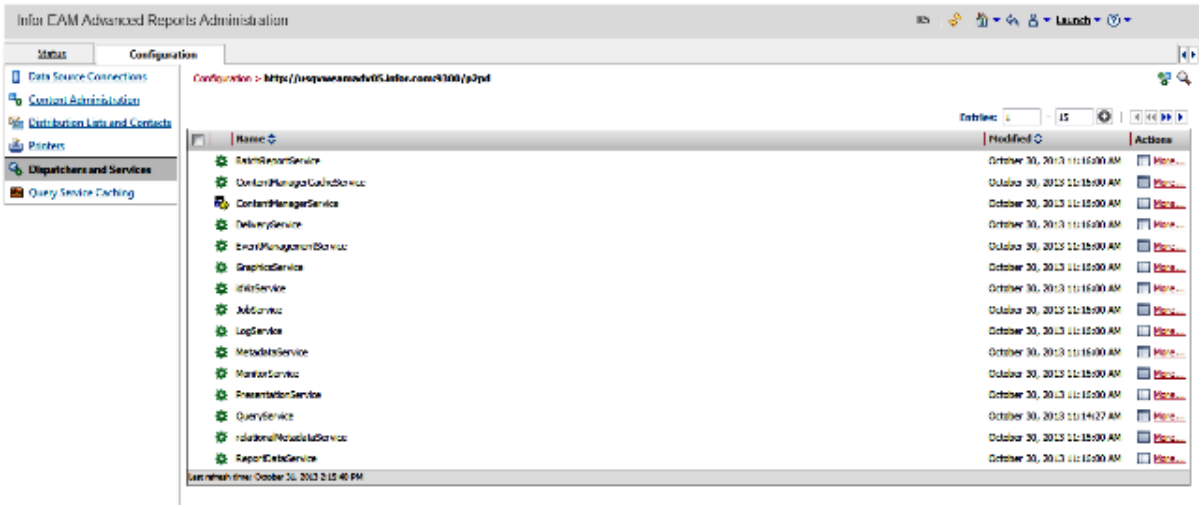
Modifying server parameters

To modify server parameters:

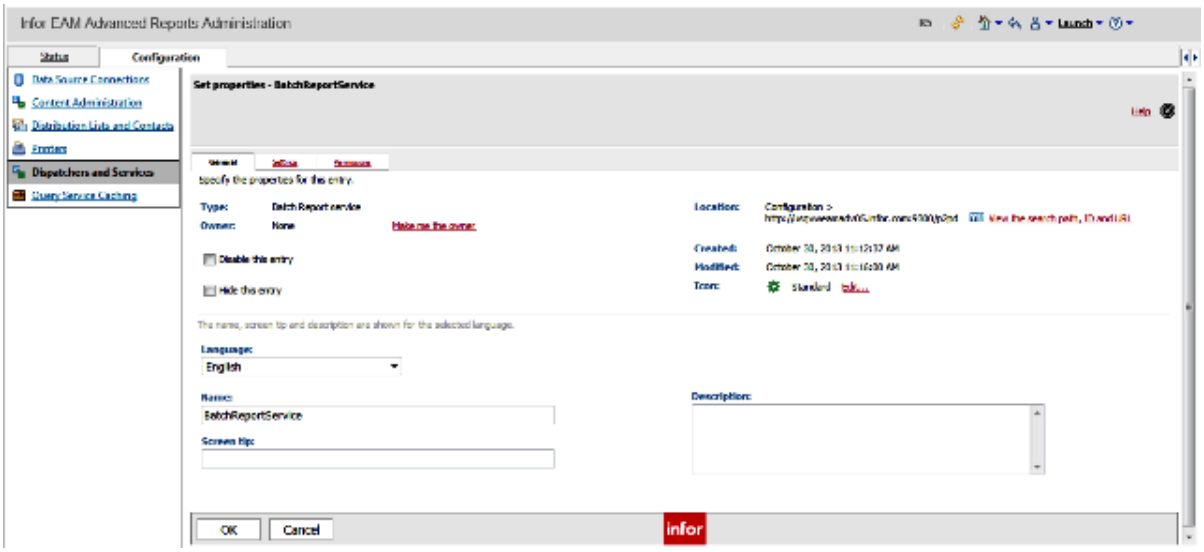
1 Open the Server Administration console.

2 Click Infor EAM Administration then the Configuration tab and the Dispatchers and Services section.

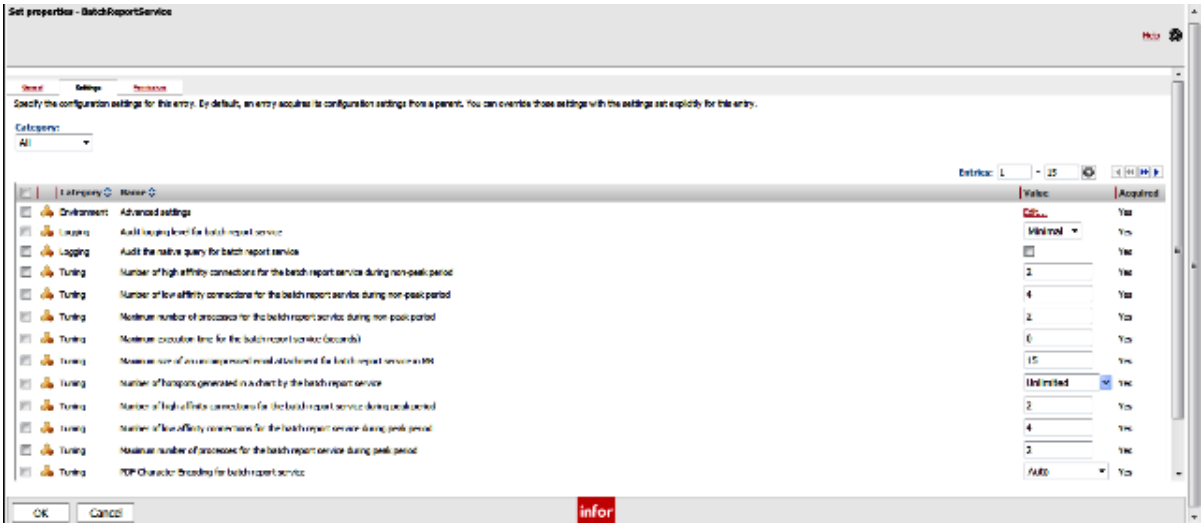
3 Click the server name hyperlink in the Configuration section, e.g., http://yourcompany.yourserver.com:9300/p2pd. The system displays the lists of dispatchers and services for which you can modify parameters.



4 Click ▫beside the service for which you want to modify parameters.

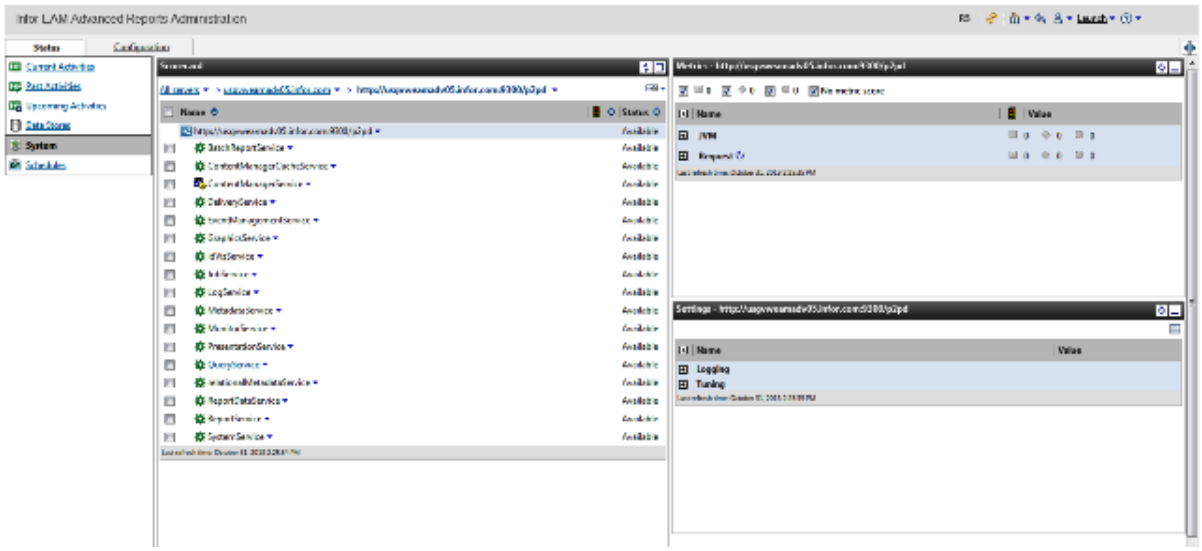


5 Click the Settings tab.



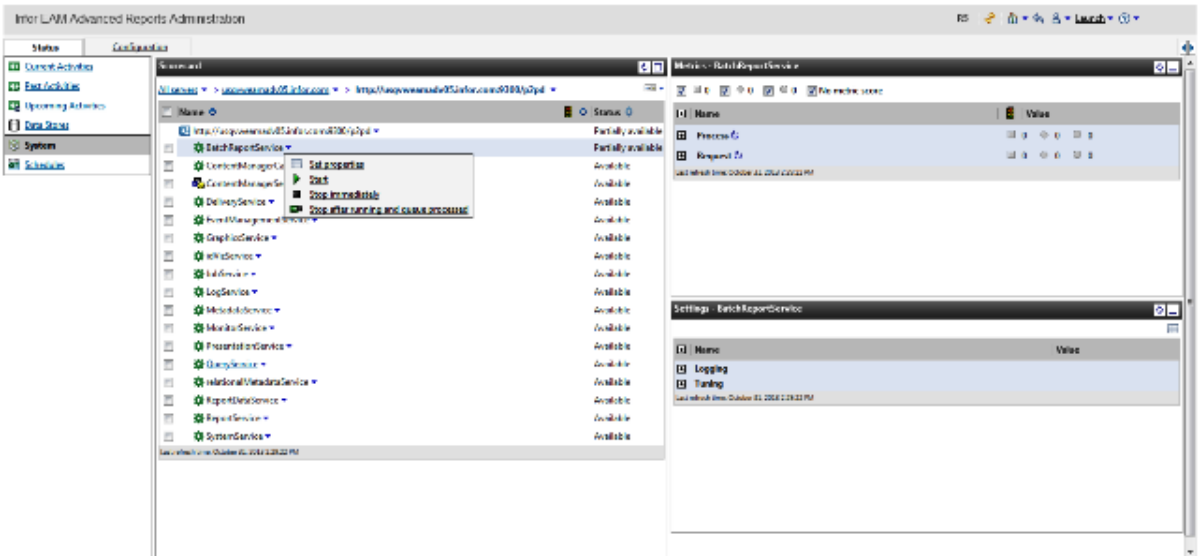
6 Modify the settings for the service, and then click **OK**.

7 Click the Status tab and the System section to enable the changes you made.

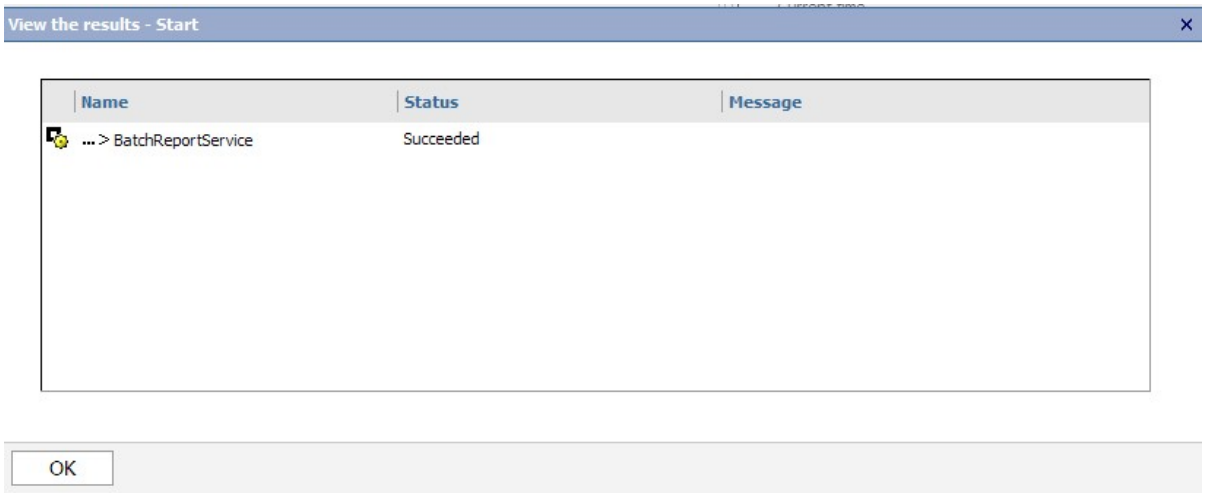


8 Select the service to which you made changes, and then click on the arrow. You will see a list of options then click ◪.

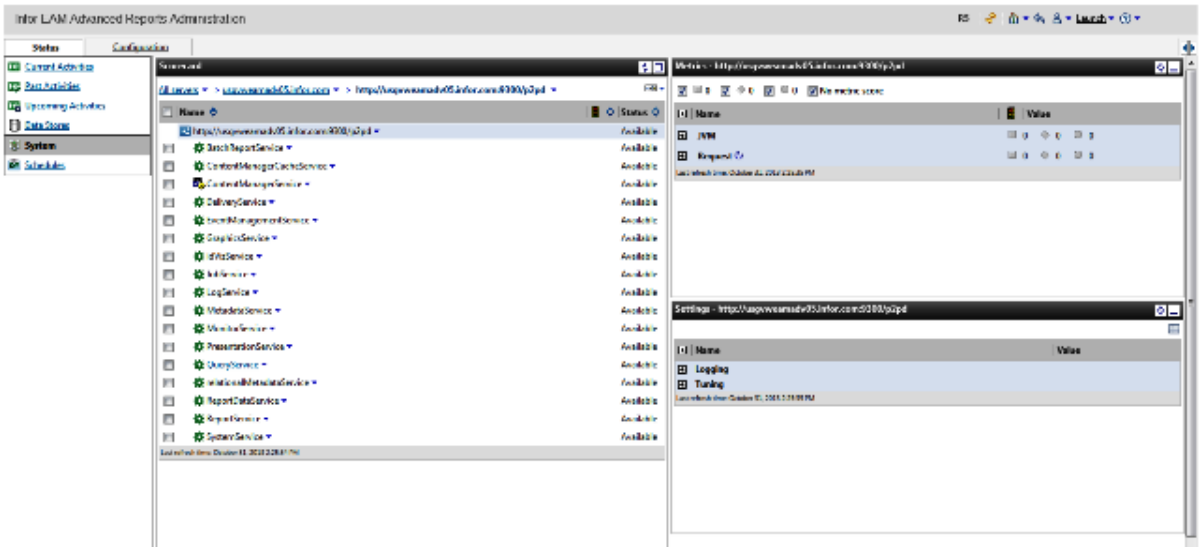
9 Click **OK**.



10 Select the service to restart, and click the arrow and then click  .



11 Click **OK**.



12 Modify additional server parameters as necessary.

13 Click **Home**.

Note: See Cognos documentation for more information on server administration.

Click **Help** on any page for more information about each server parameter.

Configuring the Infor EAM Advanced Reporting Server gateway to use SSL

Note: Only the communication to and from the gateway machine uses HTTPS. In a distributed installation environment, all traffic among the gateways, report servers, and content managers uses HTTP. However, the content passed among these machines is encrypted.

The information in this section is based on the assumption that you are using port 80 as the non-SSL port, port 443 as the SSL port, and that both ports are available. Adjust the steps below if your configuration is different.

Note: Make sure you have the signed server certificate and key files available. A valid certificate signed by a reputable certificate authority, such as VeriSign, must be used. A test certificate may be used to test the HTTPS connectivity on the report server, but reports will not run from Infor EAM with a test certificate unless the certifying authority's certificate is manually added to the jre's cacerts file on the Infor EAM application server.

1 Modify the `InforEAMAdvRep/depconfig/advrep_properties.xml` file to change the `crn/servercfg/ports/webserver/https/port` setting to **`443`**.

2 Modify the `InforEAMAdvRep/depconfig/advrep_properties.xml` file to change the `crn/servercfg/ports/gatewayport` setting to **`8443`**.

Note: Do not change the `crn/servercfg/ports/webserver/http/ssl` setting from its default value of false. This setting is not supported and will cause the deploy to fail.

3. Copy your certificate's files to the appropriate `InforEAMAdvRep/apache/conf/ssl.cert` directory. Copy the `.cer` file to the `ssl.crt` directory and the .key file to the `ssl.key` directory.
4. The `.cer` file needs to be `reports.cer` and `reports.key`. For the application certs, they should be named `app.cer` and `app.key`.
5. Modify the `InforEAMAdvRep/depconfig/templates/apache/httpd.conf.tmpl` file to uncomment the following line:

   #LoadModule ssl_module modules/mod_ssl.so
6. 6. Stop the Apache and Application Services.
7. Open a command prompt as Admin and go to `InforEAMAdvRep/depconfig` directory and run the command addssl.bat.
8. Once complete, disable the HTTP Service.
9. On the Infor EAM application server, add the following entry in `InforEAM/depconfig/properties/external/config.yml`:

   ```
   reports:
   advrep:
   protocol: https
   ```
10. Run deploy on the Infor EAM application server to complete the configuration.

Configuring the Infor EAM Advanced Reporting Server with JWT

Note: This feature was added beginning with EAM 11.7 using JWT configuration to establish secured communication between Infor EAM application server and Infor EAM Advanced Reporting Server.

The JWT configuration details must be copied from Infor EAM application server to Infor EAM Advanced Reporting Server.

1. Configure the Infor EAM application server first.

   Note: Verify JWT files and configuration exist in Infor EAM application server. If the configuration files exist, proceed to the next step in this section.

   If the files and configuration do not exist, see Configuring JWT on page 46.
2. Once Infor EAM application server is configured with JWT, copy the public key/certificate and key store files from path specified in step 5 of *"Configuring JWT* in Infor EAM application server to the appropriate folder in Infor EAM Advanced Reporting Server:

   `InforEAMAdvRep/tomcat/webapps/datastream/configuration/jwt` directory.

   Note: If jwt folder is not there, create it in `InforEAMAdvRep/tomcat/webapps/datastream/configuration`.

3 Modify the `InforEAMAdvRep/depconfig/advrep_properties.xml` file to change the JWT configuration below.

```
<jwt>
  <keystore_path>jwt/eamjwt.jks</keystore_path> <!-- Path to JWT Key
store in App Home-->
  <keystore_password>”This value needs to be copied from value of path
 sso: jwt: keystore: password: in config.yml of Infor EAM application
 server”</keystore_password> <!-- JWT Keystore Password -->
  <keystore_alias>>”This value needs to be copied from value of path
sso: jwt: keystore: alias: in config.yml of Infor EAM application
server”</keystore_alias> <!-- JWT certificate alias -->
  <certpath>jwt/eamjwt.cer</certpath> <!-- Path to the JWT Public Cer
tificate in App Home -->
  <tokenlifetime>30</tokenlifetime> <!-- Life time of the Json Web Token
 in seconds -->
</jwt>
```

4 Restart the tomcat server or run `InforEAMAdvRep/depconfig/deploy.bat`.

5 Once configuration is done in Infor EAM application server and Infor EAM Advanced Reporting Server, set the ADVJWTS install parameter value to **ON** from Infor EAM application server to enable this feature.

Note: If the value is set to **OFF**, it defaults to previous configuration as it was before EAM 11.7.

Whenever there is a change in JWT configuration in Infor EAM application server, the same needs to be updated in Infor EAM Advanced Reporting Server using the steps in this topic.

Known issues

Infor EAM Advanced Reporting Server version 11.6 includes the following known issues:

- I get a "Could not find trusted certificate" error when printing a report with attachments in a distributed reporting environment where the gateway is installed on its own machine.

  Solution: On the gateway, import your certificate into the keystore at `C:\InforEamAdvRep\java\bin\keystore` (your installation path might be different). Then, run regedit and browse to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Infor EAM Advanced Reporting\Parameters`. Increase the JVM Option Count string value from 3 to 4. Add a new String Value named "JVM Option Number 3" and give it the value "-Djavax.net.ssl.trustStore=C:\InforEamAdvRep\java\bin\keystore", modifying the path for your environment. Restart the Infor EAM Advanced Reporting service.

- I am in a non-Eastern timezone and all my timestamps and schedules are displaying in Eastern time.

  Solution: Open the InforEAMAdvRep\depconfig\templates\crn\cogstartup.xml file and change the serverTimeZoneID setting to your timezone. By default, this value is set to EST.

- Reports run without error, but only a blank page is displayed with a report title.

Solution: Add the Infor EAM Advanced Reporting Server as a **Trusted Site** in Internet Explorer. Do this by selecting Internet Options from the **Tools** menu and then selecting the **Security** tab. Select **Trusted Sites** and click the **Sites...** button. Type in the full machine and domain name of the Infor EAM Advanced Reporting Server (e.g, `http://MACHINE1.MYDOMAIN.COM`), and then click **OK**. Note that you may need to clear the **Require server verification (https:) for all sites in this zone** check box to add the entry to the list of trusted sites.

- When logging in to the Infor EAM Advanced Reporting Server after a session timeout, the user receives the error "The page cannot be displayed," and "javascript:doSubmit()" is displayed in the Address bar.

  Solution: Add the Infor EAM Advanced Reporting Server as a Trusted Site in Internet Explorer. See above for details.

- Printing using the browser's Print function just prints a blank page.

  Solution: Use the **Print** button in the Adobe Acrobat Reader frame of the report instead. This will print the entire report correctly.

- When trying to print a report, you might receive the following error message from Adobe Reader: "Could not start print job."

  Solution: This is a known problem in Adobe Reader 6.0. Documents with a URL and file name greater than 256 characters will not print. Upgrade to version 6.0.1 or greater to resolve the issue.

- Advanced reports fail to execute and the advanced reporting log (`InforEAMAdvRep\crn\logs\crnserver.log`) contains an error that says "connection refused."

  Solution: Change the Infor EAM Advanced Reporting service to log on as a user with domain access instead of the local system account. Do this by right-clicking on the service and choosing **Properties**. Click the **Log On** tab, and then select **This account**. Click **Browse** to locate a user in the domain that also has administrator rights to the Advanced Reporting machine. Specify the user's password and confirm password, and then click **OK**. Restart the service for the change to take effect.

- For work orders and purchase orders, you cannot schedule reports when the **Print Attachments** check box is selected.

  Solution: There is no known workaround.

- Japanese (or other Unicode language) characters do not show up correctly in reports on an Oracle Infor EAM Advanced Reporting Server.

  Solution: Make sure the NLS_LANG setting of the Oracle client on the Infor EAM Advanced Reporting Server matches that of the Oracle database and that both are using a Unicode setting (e.g, NLS_LANG = American_America.AL32UTF8).

- The graphics have changed in the current version of Infor EAM Advanced Reporting, but I prefer the old graphics and would like to replace them.

  Solution: The old graphics are delivered with the new ones and are located in the `InforEAMAdvRep/crn/webcontent/datastream/images/oldimages` directory. Back up the contents of the images directory, and then copy the contents of the `oldimages` directory into the images directory, choosing to overwrite existing files.

- A printer is set up correctly in Advanced Reporting and reports that are set up to print directly to the printer execute successfully with no errors in the log, but the reports are never printed on the printer.

Solution: Change the Infor EAM Advanced Reporting service to log on as a user with domain access and access to the printer instead of the local system account. Do this by right-clicking on the service and choosing **Properties**. Click the **Log On** tab, and then select **This account**. Click **Browse** to locate a user in the domain that also has administrator rights to the Advanced Reporting machine. Type in the user's password and confirm password, and then click **OK**. Restart the service for the change to take effect.

- My report schedules were running fine, but I recently updated my password and now they are all failing with an authentication error.

  Solution: You need to renew your credentials in Advanced Reporting because of the password change.

  1. Log directly into Advanced Reporting as the user whose password has recently changed. Use the new password to log in.
  2. Click the **Preferences** link.
  3. Click the **Renew my credentials** link.
  4. All the report schedules for this user will now work properly.

- If you get this error when installing Advanced Reporting:

  ```
  C:\adv84inst\install\advrep.xml:199:Following error occurred while exe
  cuting this line

  C:\adv84inst\install\advrep_inst.xml:253: Execute failed: java.io.IOEx
  ception: Create Process:

  C:\InforEAMAdvRep\depconfig\cognos_zip\win32\issetup.exe –s C:\InforEAMAdv
  Rep/depconfig/crn.ats error=740
  ```

  Then do the following:

  1. Select **Start > Administrative Tools > System Configuration > Tools**.
  2. Scroll down to the bottom, fourth from the bottom you will see **Disable UAC**. Click on it, and then click **Launch**.
  3. Reboot.
  4. Try the install again.

Chapter 5: Upgrading EAM (Oracle and SQL)

This chapter specifies the procedures necessary to upgrade an Infor EAM database, application server, and reporting server to the latest version of Infor EAM.

Note: Before beginning the upgrade process, shut down all transaction drivers/jobs. In the legacy Datastream 7i product, start and stop transaction drivers on the Manage transaction drivers/jobs using the Transaction driver control form (BXTDCL). In Infor EAM, start and stop transaction drivers/jobs using the Job Setup form.

Upgrade considerations

Infor EAM version 11.6 supports Oracle versions 12.2.0.1, 18.0.0.0 and 19.0.0.0.

Note: Database upgrades should be done by a qualified DBA who has knowledge of Oracle and SQL-related errors. If you have any questions, please contact the Infor Support group.

Some of these tasks may require you to reference your on-site report given to you by the installer.

Upgrading EAM (Oracle)

1. Upgrade the Infor EAM base product.

   See Upgrading Oracle database from the previous version to the current version on page 122.

   Note: If your organization has attached maps to work orders and needs to access them in version 11.6, locate the GISWO folder in `[Infor EAM Root Path]\data\attachments`. Copy the GISWO folder to a temporary location.

2. Uninstall the previous version of EAM.

   See Stopping the application on page 154.

   Note: Data.bak clarification - Files must be manually copied after uninstalling previous version.

3. Install Infor EAM. See the appropriate selection for the installation that you wish to complete earlier in this chapter.

   Note: If you moved the GISWO folder prior to uninstalling the previous version, copy the GISWO folder to `[Infor EAM Root Path]\data\attachments`. Manually create the attachments sub-folder, if necessary.

If you are running a multi-environment setup of Infor EAM as noted above, deploy again as described in Configuring environments on page 42.

Upgrading Oracle database from the previous version to the current version

Note: This section includes steps for upgrading EAM 11.5 Oracle database to the current 11.6 release. To upgrade the Oracle database to an EAM version released prior to EAM 11.5, see the *Infor EAM Oracle Database Installation and Upgrade Guide*.

The …\INSTALL\SERVER\116UPG directory on the Infor EAM Database Server CD contains both \SINGLE BYTE and \MULTI BYTE directories from which you should run the scripts required for upgrading to version 11.6. The file names for all the scripts required for the version 11.6 upgrade are the same in both the \SINGLE BYTE and \MULTI BYTE directories; however, you must run the script from the proper folder depending on whether you wish to upgrade to version 11.6 in a single byte or multibyte encoding scheme.

To upgrade to version 11.6 in a single byte encoding scheme, locate and run all of the scripts required for the upgrade to version 11.6 from the …\INSTALL\SERVER\116UPG\SINGLE BYTE directory on the Infor EAM Database Server CD.

To upgrade to version 11.6 in a multibyte encoding scheme, locate and run all of the scripts required for the upgrade to version 11.6 from the …\INSTALL\SERVER\116UPG\MULTI BYTE directory on the Infor EAM Database Server CD.

Step 1. Copying files from the Database server CD

1. Locate the …\ORACLE\ directory, and then create a new folder, e.g., SCRIPTS. If you have more than one Infor EAM environment (schema), you must create a folder for each schema.
2. Locate the …\TOOLS\SQL directory on the Infor EAM Database Server CD, and then copy all the scripts to the folder created in step 1.
3. Locate either the …\INSTALL\SERVER\116UPG\SINGLE BYTE or the …\INSTALL\SERVER\116UPG\MULTI BYTE directory on the Infor EAM Database Server CD depending on whether you wish to install version 11.6 in a single byte or multibyte encoding scheme, and then copy all the files to the folder created in step 1.

Step 2. Specifying installation parameters

1. Locate the …\ ORACLE\<SCRIPTS>\ directory, and then open the 7idef.sql file in a text editor. Modify this file for each installed Infor EAM schema.
2. Locate the DEFINE CDKEY section of the file, and then enter the serial number provided on the CD sleeve. Since the CDKEY value determines how the upgrade script works, it is important not

to skip this step. You can enter values for the other '%KEY%' named entries, but these can also be done later in the parameters screen.

3. Locate the DEFINE ADVREPT section of the file. Set the value to YES (default value) if you want to use Advanced Reporting Server. Set the value to NO if you want to use Crystal Clear Reporting.
4. Save, and then close the file.

Step 3. Creating additional grants

For the version 11.5 upgrade, a series of grants must be given to a DBA_USER.
Note: After creating the grants, you must then run the grant section of the 00cu116i.sql script to grant all the necessary privileges. See "Step 5. Upgrading the Database" later in this section for more information.

When completing a fresh Infor EAM installation, there is a larger series of grants that must be run.

See information on creating the EAM database user in the *Infor EAM Oracle Database Installation and Upgrade Guide*.

Step 4. Upgrading the database

Note: Before beginning the upgrade, ensure that all open invoices are approved or canceled and that all drivers on the Transaction driver control form (BXDCTL) have been stopped. Also disable flex SQL and email triggers if present.

Before beginning the upgrade, back up the current database by exporting the existing Infor EAM production schema.

The 7iset.sql script contains a setting to modify the number of rows processed at once by some of the large-scale updates; you may want to increase the number of rows when the rollback segments are sufficiently large enough to improve performance (the default setting of 5000 rows is a conservative estimate). The upgrade does not use the definition of the index tablespace that can be set here.

Note: Infor recommends performing a trial upgrade before upgrading a production database.

Execute the following scripts from the \ORACLE\<SCRIPTS>\ directory:

Script	Function
00ck116u.sql	Checks the version, the Oracle RDBMS version, any users still logged in, the available space, and the presence of auxiliary tables remaining from previous upgrades (these must be dropped or renamed before proceeding)
10tb116u.sql	Upgrades the table structure to Infor EAM version 11.6 using the storage parameters defined in the 7iset.sql file
7icomp.sql	Run this script to recompile any invalid database objects; however, not all objects need to be valid at this point.

Script	Function
20ip116.dmp	Imports "seed" data for the application Import the export file with this command—imp DBA/Pass@alias file=20ip116.dmp fromuser=d7idmp touser=<user> log=20ip116.log ignore=y Where DBA/Pass = an Oracle account with DBA privileges, alias = the database alias for the Oracle instance to be used, and <user> = the Infor EAM Oracle schema Ensure that the log file actually shows a list of imported tables. Do include ignore=y on the command line.
28lc116u.sql	Updates the basic Infor EAM setup to version 11.6
30dt116u.sql	Data manipulation for version 11.6. Refreshes the electronic archiving mapping metadata, gives new columns to default values, and converts user data whenever necessary.
50cs116u.sql	New version 11.6 database constraints, indexes, and views. Indexes are created in the same tablespace as the primary key index on the R5EVENTS table (R5PRIK_EVT).
60prc116.sql	Replaces all database procedures, functions, packages, and views (in dependency order)
70trg116.sql	Replaces all database triggers
7icomp.sql	To be used to recompile any invalid database objects; however, these invalid database objects should not be present at the end of the version 11.6 database installation. Run the next scripts from this same SQLPlus session or from a new session.
80ed116u.sql	Updates some settings and metadata according to the edition of the product.
7icomp.sql	To be used to recompile any invalid database objects; however, these invalid database objects should not be present at the end of the version 11.6 database installation. Run the next scripts from this same SQLPlus session or from a new session.

Upgrading EAM (SQL Server) to the current version

1 Uninstall the previous version of Infor EAM.

See Stopping the application on page 154.

Note: If your organization has attached GIS maps to work orders and needs to access them in this newer version, locate the GISWO folder in `[Infor EAM Root Path]\data\attachments`. Copy the GISWO folder to a temporary location.

2 Install Infor EAM.

See Installing Infor EAM for JBoss on page 65.

Note: If you moved the GISWO folder prior to uninstalling the previous version, copy the GISWO folder to `[Infor EAM Root Path]\data\attachments`. Manually create the attachments sub-folder, if necessary.

If you are running a multi-environment setup of Infor EAM as noted above, deploy again as described in Configuring environments on page 93.

Upgrading an existing SQL Server Database

Before upgrading an existing SQL server database, ensure that the Microsoft sqlcmd utility is executable from a command prompt on this computer. After connecting to the database, issue any TRANSACT-SQL command to ensure that it is working properly.

Note: Upgrading an existing SQL Server database does not drop existing set up conditions or recreate the database; the upgrade deploys the database constructs on top of the existing database setup.
Note: Only Microsoft SQL Server database administrators or equivalent should perform any function described in this chapter.

Before upgrading an existing database, Infor strongly recommends backing up the existing database and keeping a copy of the back-up in a safe place.

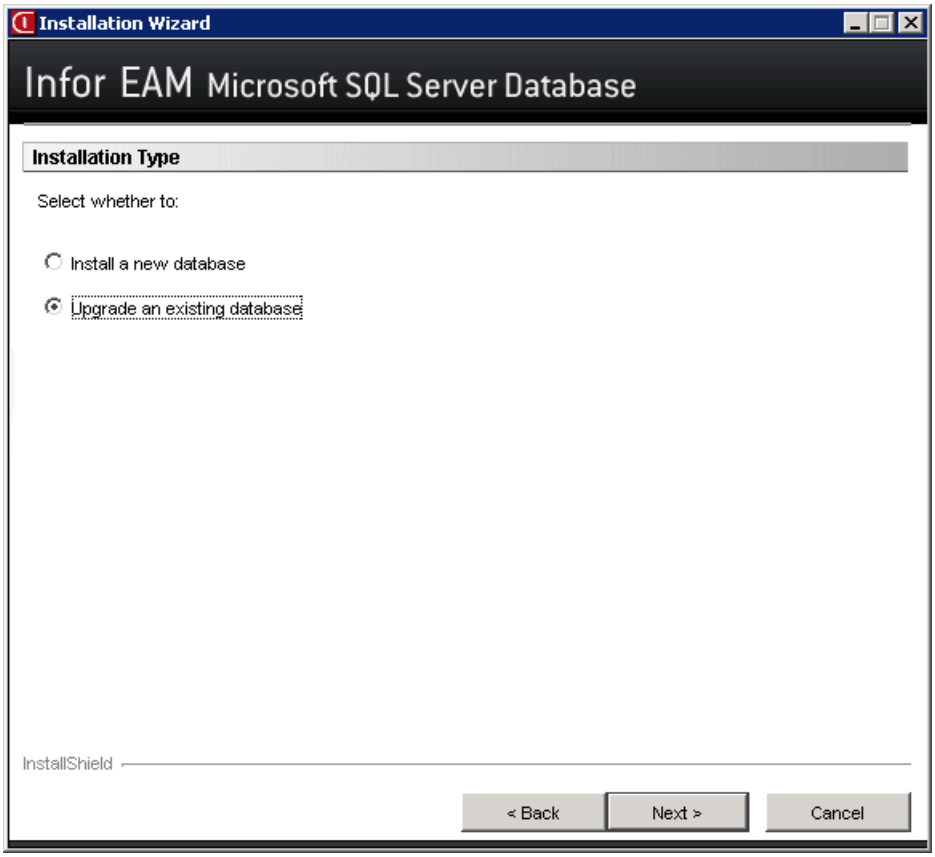
See the following syntax when executing the Microsoft sqlcmd utility. For more information, see the Microsoft SQL Server documentation.

usage: sqlcmd	[-U login id]	[-P password]
[-S server]	[-H hostname]	[-E trusted connection]
[-d use database name]	[-l login timeout]	[-t query timeout]
[-h headers]	[-s colseparator]	[-w columnwidth]
[-a packetsize]	[-e echo input]	[-I Enable Quoted Identifiers]
[-L list servers]	[-c cmdend]	[-D ODBC DSN name]
[-q "cmdline query"]	[-Q "cmdline query" and exit]	[-n remove numbering]
[-m errorlevel] [-i inputfile]	[-r msgs to stderr]	[-V severitylevel]
[-p print statistics]	[-o outputfile]	
[-O use Old ISQL behavior disables the following]	[-b On error batch abort]	
<EOF> batch processing Auto console width scaling Wide messages default errorlevel is -1 vs 1		
[-? show syntax summary]		

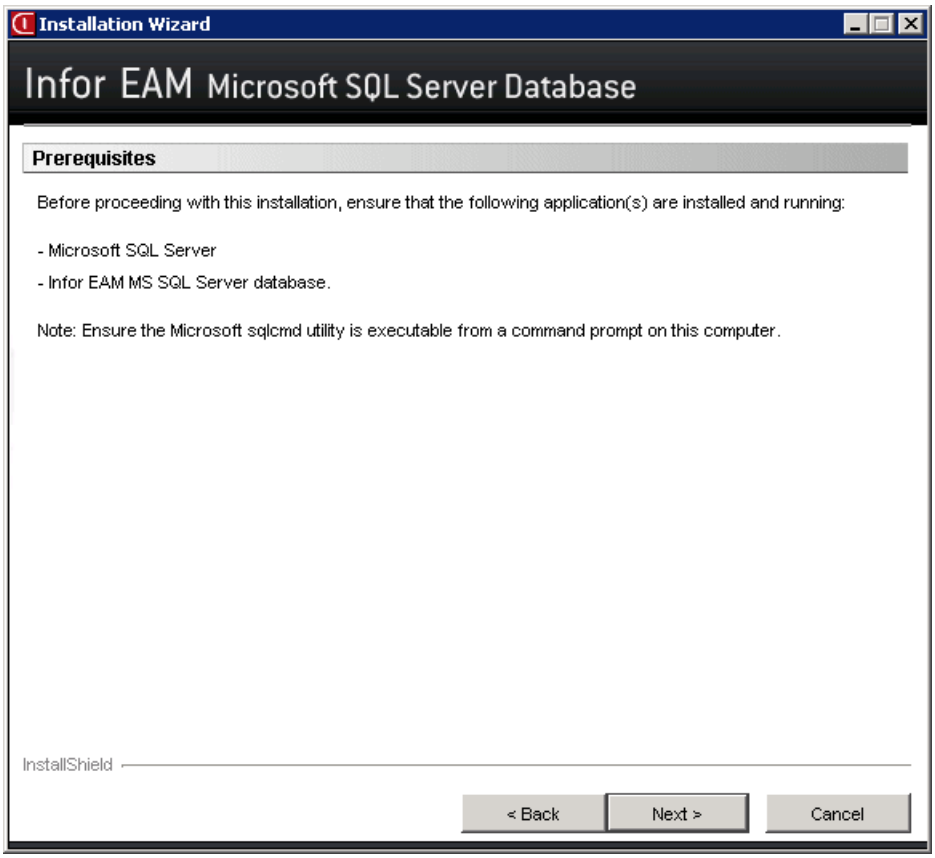
1. Insert the Infor EAM SQL Server Database Installation CD into the proper drive.
2. Locate and right-click the Setupwin32.exe file, and run as administrator.

   Note: If you are installing from a drive other than D:, substitute that drive for D: in these instructions.
3. Select a language to use, and then click **OK**.

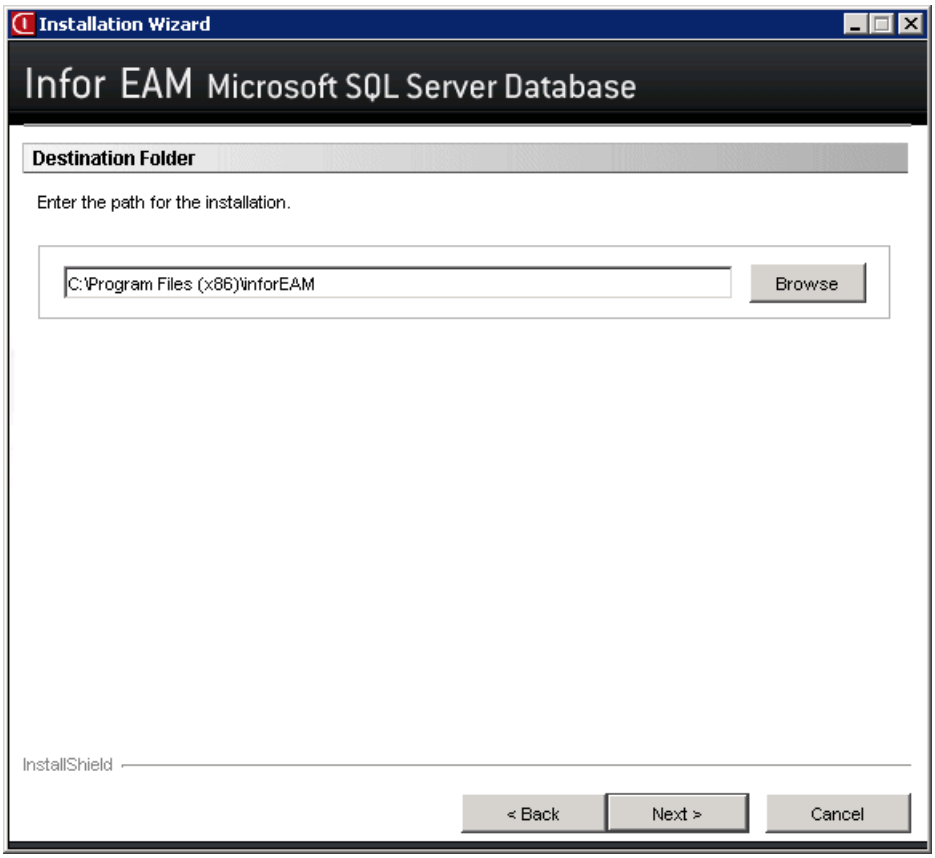
   Note: By selecting a language, you are selecting a language to be used during the installation, not a language to be used by the SQL Server database.
4. Click **Next**.
5. Enter the CD Key for the product, and then click **Next**.
6. Select **I accept the terms of the license agreement if you agree to the terms**, and then click **Next**.
7. Select to upgrade an existing database.



8. Click **Next**.
9. Ensure that your computer meets all installation requirements, and then click **Next**.



10 Specify the directory for database installation processing (the logs and all scripts are created in this directory), and then click **Next**.



Note: All database configuration scripts and installation logs are created and processed in the chosen directory.

11 Specify this information:

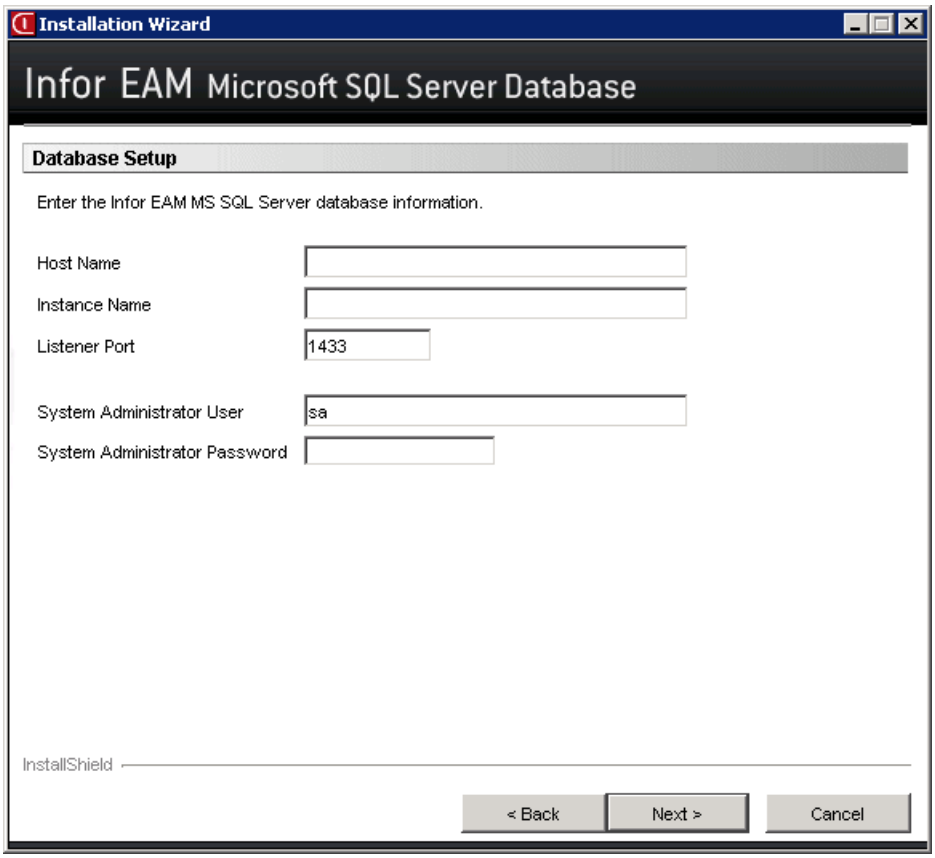
Host Name
Specify the name of the server on which Microsoft SQL Server is installed.

Instance Name
Specify the name of the database instance, if any.
Note: If your server does not have specific instances installed, you do not have to enter a value for **Instance**.

Listener Port
Specify the Microsoft SQL Server listener port.

System Administrator User
Specify the system administrator user name of the account that you will use to create the database.

System Administrator Password
Specify the system administrator password of the account that you will use to create the database.
Note: Infor strongly recommends that only SQL Server database administrators or equivalent with accesses to create and configure databases, create users, and grant privileges install and configure the SQL Server database.



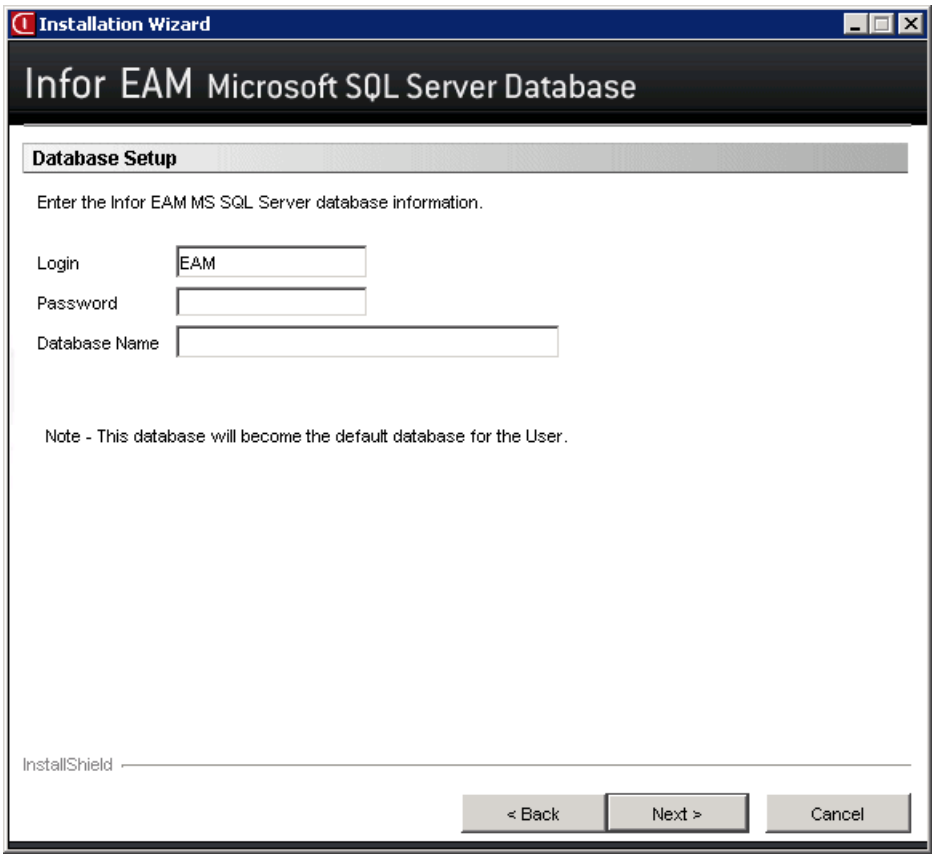
12 Click **Next**.

13 Specify this information:

Login
Specify the database login that you use to connect to the EAM application.
Note: Infor strongly recommends that you enter the **Login** and **Password** that you currently use to connect to EAM.

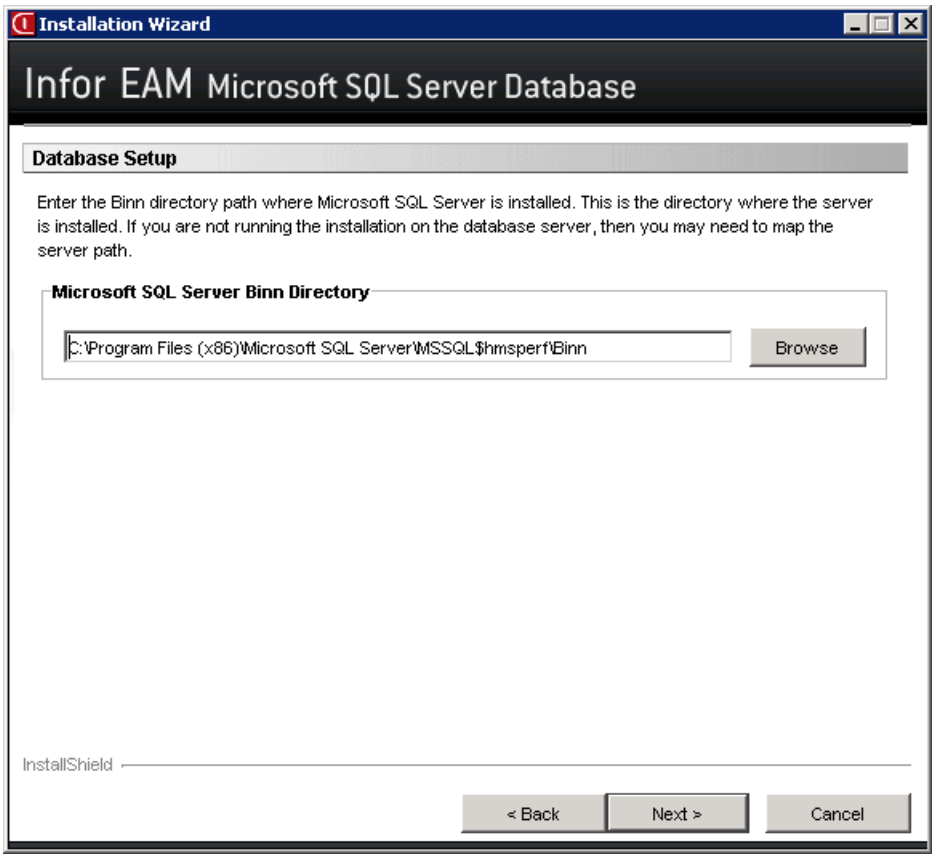
Password
Specify the database password that you will use to connect to the EAM application.
Note: The **Login** and **Password** that you entered are used for validation to connect to the database; it does not alter the server level security, replication, or back up settings.

Database
Specify the name of the database that is currently being used for the EAM application.
Note: To upgrade, you must enter an existing EAM database name for **Database**.



14 Click **Next**.

15 Specify the path to the Binn directory for your Microsoft SQL Server instance. Extended stored procedure .DLL and XML files are copied to this directory.



If you are installing the SQL Server database from a machine that is not the server:

- You must map to the Binn directory where SQL Server is installed. For example, if your target MS SQL Server is installed at C:\Program Files\Microsoft SQL Server, then map the drive C:\Program Files\Microsoft SQL Server\MSSQL$<Instance> and enter the input as <Mapped Drive>\Binn.
- You (the Windows user logged on for the Installation) must have write permission for that directory.
- If the Infor EAM application connects to the target SQL Server, you must stop the application server services. The Auto-Installation must update files that are used by the application servers during the SQL Server database installation.
- If your SQL Server engine is 64-bit, your remote server must be 64-bit as well.

16 Click **Next**.

If applicable, **Enter a CD key for the Mobile user license (optional)**, **Enter a CD key for the Connector user license (optional)**, **Enter a CD key for the Barcoding user license (optional)**, and **Enter a CD key for the Requestor user license (optional)** values are automatically populated.

17 Specify a CD key for the Mobile user license (optional) if you have purchased a license for Mobile from Infor, enter the CD key for the product.

18 Specify a CD key for the Connector user license (optional) if you have purchased a license for Connector from Infor, enter the CD key for the product.

19 Specify a CD key for the Barcoding user license (optional) if you have purchased a license for Barcoding from Infor, enter the CD key for the product.

20 Specify a CD key for the Requestor user license (optional) if you have purchased a license for Requestor from Infor, enter the CD key for the product.

21 Click **Next**. A message is displayed asking whether you choose to run the database scripts manually or to have the system create and automatically run the database scripts.

22 Click **Yes** to create and automatically run the database scripts, or click **No** to run the installation database scripts manually. If you click **Yes**, the system creates and runs the database scripts and displays the final installation dialog box. If you click **No**, the system creates the database scripts, but you must run the scripts manually.

Note: Once the system begins to create the scripts, Infor strongly recommends that you do not cancel the installation.

23 Click **Finish**.

Note: If you selected for the system to automatically run the database scripts, examine the log files in the log directory you created earlier in this section for errors.

Upgrading and configuring an existing SQL Server database

The system installs the Infor EAM database by completing the following process. You can also upgrade and configure the database manually.

Note: Only Microsoft SQL Server database administrators or equivalent should perform any function described in this chapter.

Before upgrading an existing database, Infor strongly recommends backing up the existing database and keeping a copy of the back-up in a safe place.

The system updates the log directory you created in the previous section, and then creates all of the scripts to the directory. Using Microsoft SQLCMD, the system executes the scripts created by the Installation Wizard, using the Microsoft SQLCMD utility.

If you are upgrading and configuring the database manually, Infor recommends that you use the following syntax when executing the Microsoft SQLCMD utility:

sqlcmd	-S ‘servername’
	-d ‘databasename’
	-U ‘userid’
	-p ‘password’
	-i ‘file name with path’
	-o ‘log file name with path’

If you clicked **Yes**, the system automatically runs the following scripts. If you clicked **No**, you must run the scripts manually, one at a time, in the given order listed below, as the System Administrator user you created previously.

Script	Function
stxcreate.sql	Creates the text system tables, which are used by 28sl116u.sql and 30sd116u.sql
stxdata.sql	Populates the text system tables with seed data from the test systems by using insert scripts
10st116u.sql	Creates or alters the Infor EAM table structure in the database using 7idef.sql
stobjmasterdata.sql	Creates master data to check table, view, and database objects.
28sl116u.sql	Populates the system basic data using existing data from R5INSTALL using 7idef.sql
30sd116u.sql	Contains a statement to populate several tables with seed data using 7idef.sql
50sc116u.sql	Creates table constraints, indexes, and sequences
60spr116.sql	Creates database procedures, functions, and views
70stg116.sql	Creates all database triggers
80ed116u.sql	Seed data manipulation
dbinstall.sql	Sets up privileges to run Infor EAM Extended functions

Note: To uninstall the Microsoft SQL Server database, back up the entire database, and then drop it. Infor strongly recommends that you back up the database before you drop it.

See the Microsoft SQL Server documentation for more information on how to back up the database.

Note: As a part of regular database maintenance, you must periodically remove redundant rows from sequence tables. To clean the database, open the Management Studio and execute:

execute p_cleanout_id_tables

Handling General Errors

If an error occurs during the installation process, the system displays an error message that instructs you on how to handle the error. Three types of general errors occur—validation errors, operational errors, and database installation errors. Validation errors may occur when you enter incorrect data into a system field or leave a required field empty. Operational errors may occur during installation processes such as copying files to a disk, creating directories, configuring Infor EAM, and performing other miscellaneous tasks. When validation and operational errors occur, the system displays an error message and stays on the page, allowing you to rectify the problem and resume the installation. Database installation errors (both fatal and non-fatal) may occur when the system attempts to create database files, create users, grant privileges, configure seed data, or run scripts. The system captures

database installation errors in the corresponding log file. After installation is complete, examine the log file in the log directory you created in the previous section for errors.

Upgrading Infor EAM Advanced Reporting from a previous version

Upgrading custom reports

To upgrade custom reports from a previous version of Datastream 7i Advanced Reporting, first export reports from the previous version, and then import reports to the new version.

Note: Before exporting custom reports, install the latest patch on the previous version of Datastream 7i Advanced Reporting or Infor EAM Advanced Reporting. This ensures the exported reports are in the correct format to be imported into the latest version.

Exporting custom reports from Datastream 7i Advanced Reporting version 7.8 for Windows

1. Before you uninstall your previous version, copy the contents of the upgrade folder on your new Infor EAM Advanced Reporting CD to a new directory on your existing Infor EAM Advanced Reporting Server.
2. Ensure that you are logged in as the same user that was used to install Datastream 7i Advanced Reporting.
3. Open a command prompt (cmd.exe), and then change directories to the directory created in step 1.
4. Set the variable `REPSRV_HOME` to the location where Datastream 7i Advanced Reporting is installed.

   For example, if Datastream 7i Advanced Reporting is installed in `C:\Datastream7iAdvRep`, then execute the following at the prompt:

   ```
   set REPSRV_HOME=C:\Datastream7iAdvRep
   ```
5. Execute `export.bat` at the command prompt to export your reports.

   Note: As portions of the export are completed, the status will be echoed to the console. Review the output after the process has completed to verify that the export was successful.

   The export process creates a file named export.zip in the current directory. This zip file contains all of your exported custom reports and is required by the import process.

   See Upgrading Infor EAM Advanced Reporting from a previous version on page 134.

   Note: The custom reports in export.zip are stored by tenant name. If the tenant names in ewsconfig.xml do not match between your existing Datastream 7i Advanced Reporting Server and

your new Infor EAM Advanced Reporting Server, some custom reports may not be imported. In this case, you will receive a warning during import.

Exporting custom reports from any version from Datastream 7i Advanced Reporting Server version 7.9 to Infor EAM Advanced Reporting Server version 11.5

1. Before you uninstall your previous version, log into the Advanced Reporting server as the same user that was used to install Advanced Reporting originally.
2. Open a command prompt (cmd.exe), and then change directory to `depconfig` in the installation directory.
   - By default this directory is `C:\Datastream7iAdvRep\depconfig`.
3. Choose the following option for exporting your custom reports:
   - Execute `export.bat` at the command prompt.

   Note: As portions of the export are completed, the status will be echoed to the console. Review the output after the process has completed to verify that the export was successful.

   The export process creates a file named export.zip in the current directory. This zip file contains all of your exported custom reports required by the import process.

   See Upgrading Infor EAM Advanced Reporting from a previous version on page 134.
4. Update the export.bat file to prevent the system from displaying an error when exporting a large number of reports. Set this in the export.bat file just above the last line:

   ```
   set ANT_OPTS=-Xmx512M
   ant -buildfile export.xml
   ```

   Based on the number of reports, you may need to increase the memory above 512M used in the example above.

Importing custom reports to Infor EAM Advanced Reporting

1. Install the new version of Infor EAM Advanced Reporting Server using a new content store database. Verify that the new installation is working properly.
2. Copy the export.zip file created by the export process into the new Infor EAM Advanced Reporting Server `depconfig` directory.
   - By default this directory is `C:\InforEAMAdvRep\depconfig`.

   Note: In a distributed installation environment, copy the export.zip file to the active content manager machine. The location for the export.zip has changed since the last product release.
3. Ensure that you are logged in as the same user that was used to install Infor EAM Advanced Reporting.
4. Open a command prompt (cmd.exe) on Windows, and then change directories to the `depconfig` directory where you copied export.zip.

5 Import your custom reports according to the following options:

- Execute import.bat at the command prompt.

Note: As portions of the import are completed, the status will be echoed to the console. Review the output after the process has completed to verify that the import was successful.

You do not have to restart Infor EAM Advanced Reporting after importing custom reports.

Chapter 6: Configuring Data Warehouse

This chapter provides information about configuring the Infor EAM data warehouse and accessing data warehouse administration features.

Note: This chapter describes Infor EAM functions that only a system administrator has rights to perform.

The data warehouse is a set of summary tables embedded within the Infor EAM database used for extracting report information for Infor EAM Analytics. The data warehouse enables you to combine databases across your entire enterprise.

The system extracts the reporting data from the production tables into the data warehouse data marts using a selective Extract, Transform, and Load (ETL) process that enables you to specify which data marts will be populated by the ETL. Configure the selective ETL process by setting the necessary data warehouse installation parameters and drivers, and the system will execute the ETL process that populates the data warehouse tables based on the installation parameters and schedule period specified during configuration.

The data warehouse administration functions enable you to specify and save parameters for running the data warehouse data loads and data purges, and they also enable you to view log messages and errors that are recorded during the execution of the data warehouse process.

Understanding basic data warehouse concepts

The data warehouse is a static data repository organized for quick data retrieval and easy data analysis that captures data from the Infor EAM schema enabling you to combine data from different organizations across your entire enterprise.

The data warehouse consists of several data marts. Data marts are a subset of a data warehouse and are considerably smaller than the data warehouse. Data marts focus on a specific data area (such as inventory, work, etc.) using a fact table associated with one or more dimension tables.

Note: The association between a fact table and its dimension tables is sometimes called a star schema, because the central fact table is surrounded by its dimension tables and joined to them via foreign keys.

Data marts can also be loaded into On-Line Analytical Processing (OLAP) cubes to enable fast, interactive access to a variety of possible information in a dimensional model.

The system populates the data warehouse tables using an ETL process that is administered by a database/system administrator who enables the ETL process to run at a regularly scheduled time or executes the process manually.

The following terms will help you become familiar with data warehouse concepts:

Term	Definition
Data mart	Data marts are subsets of a data warehouse and are generally categorized as one of the following: **Transaction data mart** A transaction data mart records individual transactions such as material transactions. There can be many such transactions each day, and the fact table can grow to a very large size. **Periodic snapshot** A periodic snapshot summarizes measured values over a period of time (usually by day), and is useful where transaction grain is not required. **Accumulating snapshot** Accumulating snapshots track lifecycle activity for entities such as work orders and purchase orders that pass through several stages before being closed or completed. For example, the work order accumulating snapshot records the creation date for each work order, the schedule date for work order start and completion, the actual start and completion date for each work order, the lag times between some of these dates, and work order cost information such as estimated and actual labor and material costs.
Dimension table	A dimension table is a collection of related fields used for analysis that usually contains text or descriptive fields. An example of a dimension table is an employee dimension table that contains the employee code, name, and shift field information. Another example of a dimension table is a date dimension table containing the date, day of week, day of month, quarter, and year field information.
Extract, Load, and Transform (ETL) Process	An Extract, Transform, and Load (ETL) process runs on a regular basis (usually nightly) to extract the day's data from the source database. The process then loads the data into the data warehouse. The data warehouse accumulates/collects data history over time to use as an analytical information source.

Term	Definition
Fact table	A fact table contains the measured fact data for tracking and analysis. Most facts are numeric, and record information such as levels, magnitudes, and costs. Fact table data is summed, averaged, counted, etc., according to the dimension fields selected by the analyst.
Grain	Grain of fact is the unit of analysis that indicates the level of detail captured in the data warehouse. The grain of fact represents the meaning of a single row within a fact table; for example, the grain of fact indicating the frequency that data is captured for a row in the data warehouse might be hourly, daily, or monthly, etc.

Configuring the data warehouse for Infor EAM Analytics

You must configure the data warehouse to supply variable data values to Infor EAM Analytics. Once configured, the data warehouse is populated by the Data Warehouse Load (DWTL) job in Infor EAM. The DWTL updates the data warehouse on a daily basis. By default, the job executes at 1:00 A.M. each day. The execution time of the DWTL driver can be changed by updating the value in the SCH_HOUR field of the R5SCHEDULES table, where the value of the SCH_NAME field is equal to DWTL.

Note: Infor strongly recommends turning the AETL driver off, because the DWTL job will start the AETL, and as a general rule, running the AETL job every 30 minutes is too much.

After configuring the data warehouse, activate the data warehouse load process.

See Activating the data warehouse load process on page 146.

To configure the data warehouse for Infor EAM Analytics:

1 Launch a command prompt from the Infor EAM database server.

```
SQL*Plus: Release 9.2.0.1.0 - Production on Wed Mar 23 11:30:19 2005

Copyright (c) 1982, 2002, Oracle Corporation.  All rights reserved.


Connected to:
Oracle9i Enterprise Edition Release 9.2.0.4.0 - Production
With the Partitioning, OLAP and Oracle Data Mining options
JServer Release 9.2.0.4.0 - Production

USER is "D7I0322"
SQL> @95ckdw79.sql

Oracle schema: D7I0322

Date and time:                    23-MAR-2005 11:30:33

========================

File: 95dw79.log
Datastream 7i v7.9 Data Warehousing record checking script
SHOW USER
Enter the date of the oldest data you plan to keep in the
data warehouse (mm/dd/yyyy):
```

2 Connect to SQL Plus as the D7IPROD user, enter the following command, and then press **ENTER**. SQL Plus prompts for a date value.

```
@95ckdw77.sql
```

```
SQL*Plus: Release 9.2.0.1.0 - Production on Wed Mar 23 11:34:55 2005

Copyright (c) 1982, 2002, Oracle Corporation.  All rights reserved.


Connected to:
Oracle9i Enterprise Edition Release 9.2.0.4.0 - Production
With the Partitioning, OLAP and Oracle Data Mining options
JServer Release 9.2.0.4.0 - Production

USER is "D7I0322"
SQL> @95ckdw79.sql

Oracle schema: D7I0322

Date and time:                   23-MAR-2005 11:34:57

================================================================================

File: 95dw79.log
Datastream 7i v7.9 Data Warehousing record checking script
SHOW USER
Enter the date of the oldest data you plan to keep in the
data warehouse (mm/dd/yyyy):
01/01/1997

Enter a date that is too old to be considered valid when used in
work orders or purchase orders having the previous date you entered,
e.g. 01/01/1950 (mm/dd/yyyy):
01/01/1950
```

3 Enter the date of the oldest data you plan to keep in the data warehouse, and then press **ENTER**. SQL Plus prompts for another date value. For this example, there are no historical data records in the schema, so the date can be any date in the past. When configuring this with a large data set in a production environment with transactional history, enter the date of the oldest record that should reside in the data warehouse.

4 Enter a date that is too old to be considered valid when used in work orders or purchase orders having the previous date you entered, and then press **ENTER**.

SQL Plus executes the script, and then returns to a prompt.

```
4936 rows selected.

r5transactions suspect null valued tra_tocode_org transactions
tra_code             tra_date
-------------------- --------------

no rows selected

End of 95dw79.sql

Oracle schema: D7I0322


Date and time: 23-MAR-2005 11:36:36


Script started at: 23-MAR-2005 11:34:57


END OF STEP ....

SQL>
```

5 Verify that there are no suspect records displayed based on the date ranges supplied. If there are any suspect records, the errors must be resolved before continuing with the configuration process.

6 Exit SQL Plus.

Setting the data warehouse installation parameters

Set the data warehouse installation parameters to specify which data marts will be populated by the ETL driver. The installation parameters work in conjunction with the data warehouse run parameters to establish the date range by which the ETL process extracts data from the system and then populates the specified data marts within the data warehouse with the extracted data.

Specifically, the data warehouse installation parameters indicate the system modules for which the ETL process is going to load the data. The data warehouse run parameters establish the date range of a load type (full or incremental) for loading and purging data from the data warehouse.

See the following table for a list of the data warehouse installation parameters:

Installation Parameter	Description	ETL Module	Table Values
DWLABOR	Booked Labor hours and Available Labor	LABOR	Trades, occupation types, personnel, and work orders
DWMATL	Daily Material transactions	MATL	Daily material transactions, stores, suppliers, work orders

Installation Parameter	Description	ETL Module	Table Values
DWPARTS	Parts and Stores daily values	PARTS	Parts, purchase orders, suppliers, classes, and stores for the SDS and PDS
DWORDERS	Purchase orders and order lines	ORDERS	Purchase orders, order line types, stores, suppliers, and part classes on orders
DWSTATUS	Daily Status changes	STATUS	Entities and status changes
DWWARNTY	Warranty claims accumulating values	WARRANTY	Equipment, suppliers, and warranty claims
DWWORK	Work orders accumulating and daily values	WORK	Equipment, service requests, work orders, budgets, and work order costs

Each of the previous parameters indicates a specific data mart. For example, the DWLABOR parameter represents the LABOR ETL module (data mart) for which the ETL extracts data for trades, occupation types, personnel, and work orders.

Specify the appropriate setting for each of the parameters/data marts as necessary. You can also change the setting of the data warehouse parameters to temporarily enable or disable the loading of data into any of the data marts.

1 Select **Administration > Security > Install Parameters**.

Note: Filter the list of installation parameter records to display only the data warehouse installation parameters using the Quick Filter.

2 Select the data warehouse parameter for which to enter a setting, and then click the **Record View** tab.

3 Specify one of the following settings for the data mart **Value**:

Option	Description
ON	Specify to indicate that the data mart is activated and will be populated by the ETL process based on the date entered for Load from Date on the **Data Warehouse Run Parameters** form. **Note:** The default Value setting for each parameter is `ON`.
OFF	Specify to indicate that the data mart is not active and will not be populated by the ETL process. **Note:** If you set the data mart to `OFF`, any data that is currently in the selected data mart at the time you set the parameter to `OFF` will remain in the data mart.
TRUNCATE	Specify to indicate that the ETL process will truncate the respective date mart tables, and the data mart will not be populated in the future (which is the same

Option	Description
	as setting the parameter to OFF) based on the date entered for Load from Date on the **Data Warehouse Run Parameters** form.

Note: If you change the setting of a data warehouse parameter from TRUNCATE to OFF, the change will have no effect on the data mart, because both the OFF and the TRUNCATE settings prevent the ETL process from loading data into the data mart. Changing the setting from TRUNCATE to ON will activate the load process for the data mart, and data will be loaded into the data mart by the ETL.

The DWTL driver must be enabled on the **Job Setup** form for any data mart to be populated by the ETL when you set any data warehouse installation parameter to ON.

However, if you set any of the parameters to OFF or TRUNCATE, the parameter setting will function as designed regardless of the setting of the DWTL driver.

4 Click **Save Record**.

Setting the data warehouse run parameters

Set the data warehouse run parameters to initialize the data warehouse run control table and establish the appropriate run parameter settings for executing the data warehouse ETL process at regularly scheduled intervals. You can also modify run parameters as necessary and execute an ETL process manually. Set parameters to initiate a full or partial (incremental) data load and/or purge data.

When running the ETL process for the first time, you must run a full load with no errors. After running a clean full load, you do not need to run a full load again, because the data warehouse retains all of the data from the full load. Subsequent future loads can be run automatically based on your data warehouse setup, e.g., on a nightly basis. Future loads will be incremental and will only add to the existing data by loading the data since the last load. Therefore, after completing a full load, the system automatically resets the Load from Date to the current date (date of the most recent load) and the Load Type to Incremental so that you do not have to reset those parameters for future data loads.

Note: Although an incremental load only loads data since the most recent load, an incremental load also verifies time stamps for records so that it will load any changes that have been made to an existing historical record or for transaction data that may be post-dated, etc.

Although it is not necessary, you can run a full load if desired. If you select Purge Old Data, running a full load purges all existing data in the data warehouse before loading any data; therefore, you can run a full load to purge the existing data from the data warehouse and then reload all of the data based on a new Load from Date, etc.

Note: The data warehouse does not maintain historical values for parts and stores. Instead, the data warehouse takes daily snapshots of the value of materials and inventory in each snapshot. Therefore, purging the existing data from the data warehouse will also purge non-historical value information.

See Understanding historical inventory valuation for the data warehouse on page 149.

After running a full ETL load, you must check the data warehouse run log for any errors.

See Viewing data warehouse run log errors on page 149.

You must run a full load without any errors prior to switching to an incremental load. If any errors occur during the full load, you must correct the errors and run a full load until no errors occur.

Setting the parameters for running the data warehouse load procedure

Set the parameters for running the data warehouse load procedure to indicate whether to initiate a full or partial data load, and to specify the date from which to load data. The system always runs a full load first and then sets the data load to the incremental setting. Save the settings for future use as necessary.

Note: Executing a data warehouse data load is an intensive database process, and Infor strongly recommends that you only initiate a data load during non-peak system usage hours.

The AETL process periodically updates Infor EAM Analytics data. If you are installing Infor EAM Analytics for the first time, you should complete a full load of the data warehouse ETL. If you are upgrading Infor EAM Analytics from a previous version, you should only perform incremental loads of the data warehouse ETL. Performing a full load after an upgrade will result in the loss of data.

1. Select **Administration > Data Collection > Data Warehouse Run Parameters**.
2. Select the **Execute Load Procedure** check box to enable the data warehouse ETL job to execute the data load process to transfer production data into the data warehouse tables.
3. Specify this information:

   Load Type
   Select one of the following options:

Option	Description
Full	Select to execute a full data load.
Incremental	Select to execute an incremental data load.

4. Specify the **Load from Date**.

   Note: You should only select **Full** as the **Load Type** when running the ETL process for the first time or after removing errors. After running a clean full load, you do not need to run a full load again unless you want to delete the existing data from the data warehouse.

   The **Load from Date** should generally be set from the beginning of the calendar or fiscal year two or more years in the past. When selecting the date, consider that each year added to the data warehouse results in the use of additional database space. Only include years for which the data is useful for analysis.

   You can select **Purge Old Data** and set **Purge to Date** to the date through which records should be purged. The next time the ETL runs, it will first purge records with dates on or before **Purge to Date**. The ETL will then clear the **Purge Old Data** check box, and continue with the load process. Infor strongly recommends that you select **Purge Old Data** if you are going to run a full data load.

   After running a full load with no errors, all future loads should be incremental. After completing a full load, the system automatically resets the **Load from Date** to the current date (date of the most recent load) and sets the **Load Type** to **Incremental**.

5 Click **Save Record**.

Note: Saving the run parameter settings applies the run parameter settings to the regularly scheduled ETL process and will be in effect when the system executes the process as scheduled.

You can set the run parameters to execute both a data load and data purge process simultaneously. To execute a data load and data purge simultaneously, select both **Execute Load Procedure** and **Purge Old Data**, and then enter a **Load Type**, **Load from Date**, and a **Purge to Date**.

The default setting indicating the threshold for committing records to the data warehouse tables is 1500 records. If you would like to specify a different threshold, a database administrator must reset this value in the database. Contact your database administrator for additional information.

Each step of the load process is recorded in the data warehouse run log.

See Viewing the data warehouse run log on page 148.

Setting the parameters for running the data warehouse purge procedure

Set the parameters for running the data warehouse purge procedure to specify to purge old data and indicate the date from which to purge the data.

1 Select **Administration > Data Collection > Data Warehouse Run Parameters**.
2 Select the **Purge Old Data** check box to execute a data purge process.
3 Specify the **Purge to Date** to purge the data through the specified date.
4 Click **Save Record**.

Note: Saving the run parameter settings applies the run parameter settings to the regularly scheduled ETL process and will be in effect when the system executes the process as scheduled.

You can set the run parameters to execute both a data load and data purge process simultaneously. To execute a data load and data purge simultaneously, select both **Execute Load Procedure** and **Purge Old Data**, and then enter a **Load Type**, **Load from Date**, and a **Purge to Date**.

Activating the data warehouse load process

Activate the Data Warehouse Load (DWTL) job to enable the system to execute the data warehouse ETL process. The system executes the ETL process based on the DWTL job setup that indicates the schedule pattern for the ETL process. The settings specified for the DWTL job setup work in conjunction with the run parameter settings specified on the **Run Parameters** page.

See Setting the data warehouse run parameters on page 144.

The combination of the DWTL job setup and the run parameter settings indicate how frequently the ETL process runs, what time the process runs, and the process action (load and/or purge). Before running the ETL process, you must activate the DWTL job.

The default run time for the DWTL job is 1:00 AM. To specify a different run time, a database administrator must reset this value in the database. Contact your database administrator for additional information.

To activate the data warehouse load process:

1. Select **Administration > Data Collection > Job Setup**.
2. Select the Data Warehouse Load (DWTL) job.
3. Select the **Active** check box to enable the DWTL job to start at the **Next Run** date and time.
4. View the schedule pattern using **Month**, **Day of Month**, **Day of Week**, **Hour**, and **Minute**.

   The schedule patterns are typically numeric, but can also include the following characters:

Character	Description
* (asterisk)	Matches all days, months, hours, and minutes. For example, an asterisk in Day of Week indicates that the system performs the job every day of the week.
, (comma)	Separates lists of days, months, hours, and minutes. For example, 31, 12, 0, 0 represents 12:00 A.M. on December 31.
- (hyphen)	Specifies a range. For example, 10-12 equals hours 10, 11, and 12.
/ (slash)	Specifies increments. For example, 0/15 minutes equals minutes 0, 15, 30, and 45.
L	Indicates the last. For example, Day of Month=L equals the last day of the month.

   See the following table for more detailed examples.

Month	Day of Month	Day of Week	Hour	Minute	Description
*	*	*	0	5	Run 5 minutes past midnight, every day.
*	*	1-5	22	0	Run at 10:00 P.M. on each weekday.
*	*	*	0-23/1	0	Run each hour, every day.

Month	Day of Month	Day of Week	Hour	Minute	Description
3-12/3	L	*	1	0	Run at 1:00 A.M. on the last day of each calendar quarter.

5 Click **Submit**.

Note: If you want to run the Analytics data load, you must also enable the AETL job. The AETL job runs after the DWTL job has run and loads the Analytics data from the data warehouse tables into the Analytics tables.

To enable execution of Analytics jobs, you must also use the Install Parameters form to ensure that the PRODUCTS parameter is set to BOTH if you are running Infor EAM, set to EXTSQL if you are running Infor EAM for SQL Server only, or set to EXTORCL if you are running Infor EAM for Oracle only.

Viewing the data warehouse run log

View the data warehouse run log to access detailed information about data warehouse processes. The **Data Warehouse Run Log** form enables you to view information such as the operation processed, the target database object, start and end time, the elapsed time of the process, and the status of a process. View detailed error information to view error numbers, error messages, and sequences.

Delete run log records and error messages as necessary. Infor recommends that you delete old run logs and error messages periodically.

Note: Check the data warehouse run log for any errors after running a full load. You must run a full load without any errors prior to switching to an incremental load. If any errors occur during the full load, you must correct the errors and run a full load and purge until no errors occur.

Viewing data warehouse run log details

View data warehouse run log details to access detailed information about data warehouse processes and their status.

1 Select **Administration > Data Collection > Data Warehouse Run Log**.

2 Select the **Run Number** for which to view details, and then click the **Details** tab.

3 View the details for the selected **Run Number**.

Viewing data warehouse run log errors

View data warehouse run log errors to access detailed error information such as error numbers and error messages.

1. Select **Administration > Data Collection > Data Warehouse Run Log**.
2. Select the **Run Number** for which to view details, and then click the **Errors** tab.
3. View the errors for the selected **Run Number**.

Understanding historical inventory valuation for the data warehouse

The data warehouse ETL process includes data marts, two of which are a stores daily snapshot (SDS) and a parts daily snapshot (PDS). The SDS data mart captures daily summaries of the value of your inventory by store, organization, and part class. The PDS data mart captures daily summaries of the value of your inventory by part. However, PDS only captures daily summaries for the parts for which you have indicated to save historical data using the **Save History** check box on the **Record View** tab of the **Parts** page when creating parts.

This section describes the manner in which the SDS and PDS derive historical inventory valuation data for the data mart when executing the initial data load for the SDS and PDS and how the ETL process calculates historical inventory valuation for the data warehouse for different inventory scenarios.

Inventory valuation is normally calculated using the sum of stock value as it exists at the time that the ETL process is executed. Historical stock values are derived using stock transactions in reverse order and backing out the changes to stock quantities and prices. However, some historical stock value information is either not available or is impractical for use in calculating historical values.

Note: Because of the manner in which historical inventory value must be determined for the data warehouse, the calculation of historical inventory value for some of the inventory scenarios may result in an approximate value that is as close to the exact value as possible.

Updating the invoice price

In EAM, pricing updates are determined based on the PRICETIM installation parameter. If PRICETIM is set to I, then a new price is calculated upon approval of an invoice for the stock item.

When updating the invoice price, the ETL process treats data from schemas set to update prices at invoice time as though they were set to update prices upon receipt.

The data warehouse updates prices upon receipt due to the complexity of synchronizing transactions with invoices while re-establishing historical stock levels and prices.

Note: Large gaps between receipt and invoice time may result in inaccuracies in the precise time the price update occurred, which also affects the value of inventory in stores during that period. However,

because daily inventory valuations are calculated at the store, part, and class level, small differences in price will not have a significant effect unless there is a large price difference on an expensive item or a large quantity of that item.

Recalculating pricing based on the average price type

Regardless of the selected price type for the store (Average, Standard, Last Price, LIFO, or FIFO), the ETL process assumes Average price type. Storeroom materials are priced at the storeroom level in EAM based on the setting of the PRICETYP installation parameter.

Accurate historic data for price types other than Average is not available. As receipt transactions are backed out, the part price is recalculated using the average pricing method, but the price is adjusted to the issue price whenever an issue or return to stock transaction occurs, unless you have selected LIFO or FIFO as the price type for a part. If you have selected LIFO or FIFO as your price type, SDS and PDS use average price for all transactions, including issues and returns, to ensure the accuracy of stock prices for transactions dates occurring a long time from the current system date.

Recalculating values for repairable spare parts

No historical data is available to calculate previous values for repairable spare parts that are currently being repaired internally and the value of the repairable spare currently being repaired by a supplier. These values are null for historical dates.

Recalculating prices for unapproved receipt transactions

EAM assumes a RECV transaction in the R5TRANSLINES table for parts received from a purchase order for which the receipt is not approved. However, EAM does not update the stock quantity and price until the receipt is approved. If there is a gap in time between the receipt and the approval of the receipt, it is possible that the quantities and prices inserted into the parts work table at the beginning of the process will not match the transaction. Therefore, only approved receipt transactions are reversed.

Adjusting stock quantities of child assets in an asset hierarchy

Normally if an asset is associated with dependent child assets in a hierarchy for which costs are tracked by asset, there are also spare parts associated with the assets in the hierarchy. EAM adjusts the stock quantity of the child assets when the parent is issued to a work order, and the structure of the assets is stored in the R5STRUCTURES table. However, the R5STRUCTURES table only shows the current

relationship between the assets, not any historical relationship. Therefore, the ETL process does not consider the object hierarchy structure when calculating historical stock values.

Chapter 7: Configuring your web browser

This chapter specifies the procedures necessary to configure your web browser to work with the application.

Configuring Internet Explorer

To configure Internet Explorer 9 or 10, add the application server as a trusted site, and then update your Internet Explorer security settings.

1. Open Internet Explorer.
2. Select **Tools > Internet Options** from the Internet Explorer menu bar.
3. Click the **Security** tab.
4. Select **Trusted sites**, and then click **Sites**.
5. Verify whether or not the Infor EAM site is listed for **Web sites**.
6. Choose from one of the following options:
   - If the Infor EAM site is listed as a trusted site, click **OK**, and then select the Security Level for the zone as Medium-Low.
   - If the Infor EAM site is not listed as a trusted site, add Infor EAM as a trusted site, click **OK**. **Note:** Unless your server is using https, clear Require server verification (https:) for all sites in this zone.
7. Click **Yes**, and then click the **Advanced** tab.
8. Clear **Send UTF-8 URLs**.
9. Click **OK**.

Configuring Chrome

Enable the pop-up setting to allow the application to run on Chrome.

1. Open Chrome.
2. Choose **Settings > Show Advanced Settings** from the Chrome menu.
3. Scroll to **Privacy**, and then click **Content Settings**.

4 Scroll to **Pop-ups**, and then select **Allow all sites to show pop-ups**.
5 Click **Done**, and then close **Settings**.

Configuring Safari

Enable pop-up windows to allow the application to run on Safari.

1 Open Safari.
2 Click the **Settings** icon.
3 Clear the **Block Pop-Up Windows** option.
4 Close **Settings**.

Configuring Microsoft Edge based on Chromium

Enable pop-up windows to allow the application to run on Microsoft Edge based on Chromium.

1 Open the new Microsoft Edge.
2 Choose **Settings and more > Settings > Cookies and site permissions** from the Edge menu.
3 Scroll to **Pop-ups and redirects**, and then move the **Block** toggle to **On**.
4 Close the browser window.

Chapter 8: Uninstalling the application

This chapter provides instructions for uninstalling all versions of EAM application server, the advanced reporting server, as well as details on stopping the application.

Stopping the application

To uninstall, you must first stop the application.

Note: To stop the application in Windows, you must first stop all the EAM application services.

Uninstalling the application on Windows platforms

Uninstalling app servers installed on Windows Server 2019

1. Add the `uninstaller.exe` located here: `<app-home>/_uninst` as an exception in the Data Execution Prevention list.
2. Navigate to `<app-home>/_uninst`, and run the `uninstaller.exe` as an administrator.
3. The EAM application is uninstalled.
4. Click **Finish**.

   Note: This exception can be removed once the uninstall is complete.

Uninstalling app servers installed on all other Windows servers

1. On your desktop, click **My Computer**.
2. Click **Control Panel**.

3 Click **Add/Remove Programs**.
4 Select **Infor EAM**.
5 Click **Change/Remove**.
6 Select a language to use, and then click **OK**.
7 Click **Next**.
8 Click **Next**. The EAM application is uninstalled.
9 Click **Finish**.

Uninstalling the application on Linux/Jboss platforms

Uninstalling app servers installed on Linux

1 Stop the EAMapplication.
2 Make a backup of the data and overrides directories.
3 Make a backup of the config.yml file found in <app-home>/depconfig.
4 Delete the <app-home> directory.

Uninstalling the Advanced Reporting server

To uninstall Infor EAM Advanced Reporting Server, first stop the application, and then uninstall the application.

Stopping the application

- Stop the application in Windows by stopping the Infor EAM Advanced Reporting, Infor EAM Advanced Reporting HTTP, and Infor EAM Advanced Reporting application services.

Uninstalling the Advanced Reporting server in Windows

1 On your desktop, click **My Computer**.
2 Click **Control Panel**.
3 Click **Add/Remove Programs**.

4 Select *IBM Cognos Analytics*.
5 Click **Change/Remove**.
6 Click **Next**.
7 Click **Finish**.
8 Open a command prompt window as an Administrator.
9 Go to the Advanced Reports Install Directory/uninstall.
10 Run the program uninstall.bat.

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