Oracle® MICROS Simphony
Installation Guide

Release 19.3
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Oracle MICROS Simphony Installation Guide, Release 19.3

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Preface

Audience

This installation guide is intended for installers, programmers, technical support teams, product specialists, and others who are responsible for installing Oracle MICROS Simphony.

Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:

https://support.oracle.com

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received and all associated log files
- Screen shots of each step you take

Documentation

Once Simphony has been installed, for information about accessing the Simphony Enterprise Management Console (EMC) or when performing Simphony upgrades on existing systems, see the *Oracle Hospitality Simphony Post-Installation or Upgrade Guide*, specifically the **EMC Access Security** chapter.

Product documentation is available on the Oracle Help Center at https://docs.oracle.com/en/industries/food-beverage/pos.html.

Revision History

Date	Description of Change
September 2021	Initial publication.
June 2022	Removed information about recycling application pools from step 19 in Installing Microsoft Internet Information Services (IIS) and Windows Communication Foundation (WCF) Features. Created new topic called Recycling Application Pools in the Post-Installation Tasks chapter.

1
Getting Started

This guide provides instructions on how to perform a fresh installation and configure Oracle MICROS Simphony.

Install R&A separately from Simphony using the Back Office R&A installation application. The *Oracle Food & Beverage Compatibility Matrix* provides more information on compatibility between R&A and Simphony.

For Simphony Cloud Services users, refer to the *Simphony Cloud Services Post-Installation or Upgrade Guide* for more about the required steps to take both before and after performing an installation or upgrade.

About Simphony Release Numbers

Simphony releases are categorized by numeric segments that indicate release information.

A release in a calendar year starts with the last two digits of the calendar year. For example, if the release year is 2019, the release version starts with 19. If the release year is 2020, the release version starts with 20. Previously, release versions were in this format: 2.10.X.

A minor release can occur in the year that follows the major release. For example, there can be a 19.X minor release in 2020 to support the major release from 2019.

Release versions are in the format [NN].[N].[N].[X].[XXXX], where:

- N is a number
- X is a wild-card number
- Changes made at the major level include architectural changes to the application
- The first [NN] represents the year of the release
- Changes made at the minor level include minor changes to the application

Additional hardware platform and operating system support can be added at the minor level.

For functional changes to the product with no changes in the operating system or security of the application:

- Changes at an interim level are represented by a wild-card (X).
- Changes made at the build level are daily changes that include partial or full changes made on a daily basis. Changes at this level are not represented or shown on the released product.

Simphony Deployment Process

This section shows deployment scenarios for on-premises installations of Simphony and Reporting and Analytics. Starting with Reporting and Analytics version 20.1, R&A is not available for on-premises installations. See the *Food and Beverage Compatibility Matrix* for compatibility details between Simphony and Reporting and Analytics versions.

The following high-level steps comprise the Simphony deployment process.

1. Select the deployment scenario that aligns with the Reporting and Analytics (R&A) release to be used.

   Before installation and configuration, determine which deployment scenario meets your requirements. See Implementation Deployment Scenarios for more information about the minimum requirements based on the implementation scenario that is deployed.

2. Install the database server application.

   The database platform must be installed prior to installing Simphony application components. See the Oracle Food and Beverage Compatibility Matrix for more information about the supported database platforms.

3. Install or upgrade R&A.

   Run the Simphony installation application to perform a fresh installation, upgrade, or upon adding application or database servers. List of Simphony Components and Services contains more installation information.

4. Install Simphony.

5. Configure Post-installation Settings to ensure that the application components and the database are configured correctly after installation.

6. Log in to EMC to ensure that the Simphony application and the database applications are set correctly.

Implementation Deployment Scenarios

The following implementation deployment scenarios are valid for Reporting and Analytics (R&A) version 9.1 in conjunction with versions of Simphony which remain compatible with this version of R&A. These scenarios are no longer valid for upgrades or installations of R&A version 20.1 and later.

Simphony and Reporting and Analytics Installation Elements

Here are the required installation elements for implementing Simphony release 18.2 along with Reporting and Analytics version 9.1.

Figure 1-1 Simphony and Reporting and Analytics Installation Elements
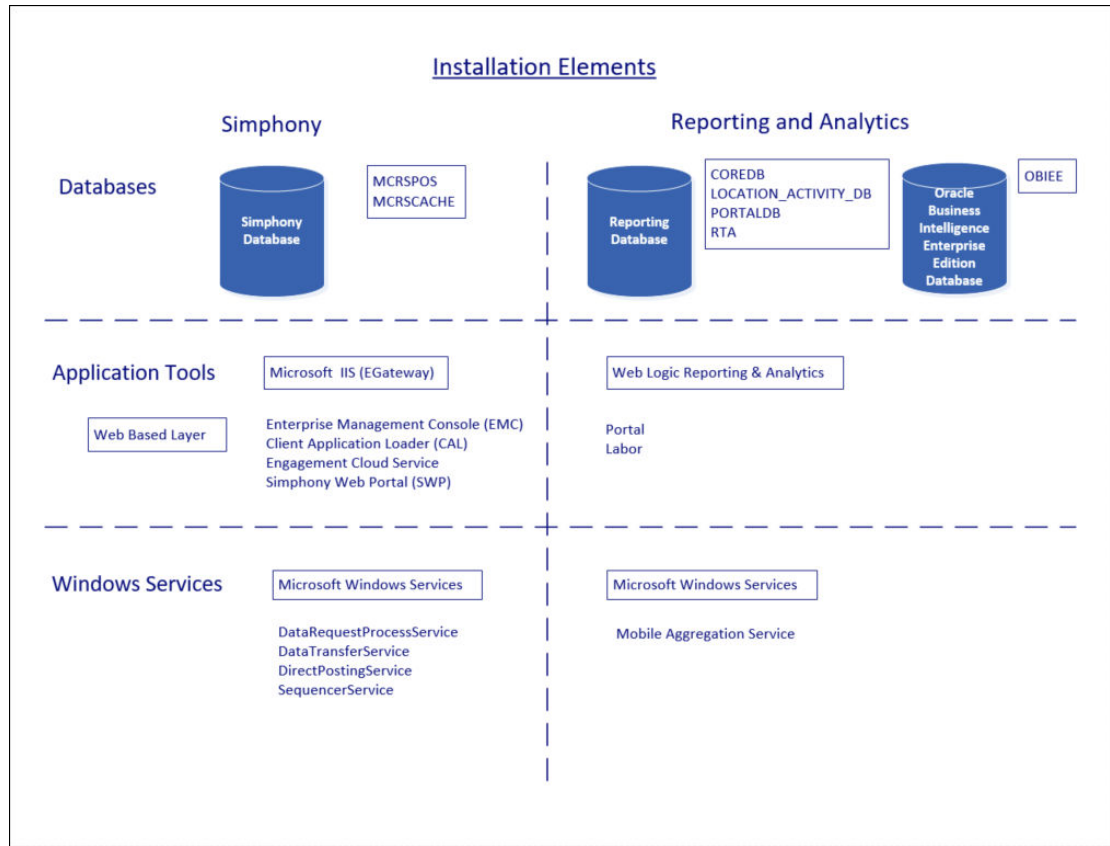
Single Server All-in-One Installation

Here are the minimal installation requirements for a single server implementation of Simphony releases 19.1, 19.2.x, 19.3, and Reporting and Analytics version 9.1.

Figure 1-2   Single Server All-in-One Deployment
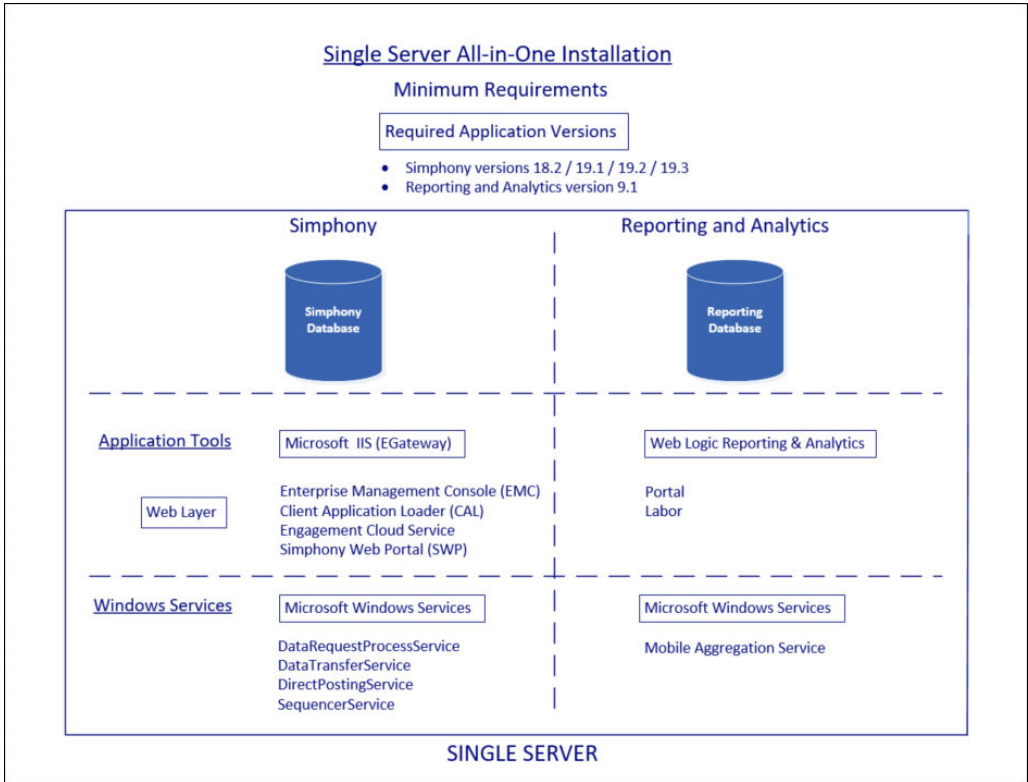
Multiple Server Installation

Here are the minimal installation requirements for a multiple server implementation of Simphony releases 19.1, 19.2.x, 19.3, and Reporting and Analytics version 9.1.

Figure 1-3   Multiple Server Deployment
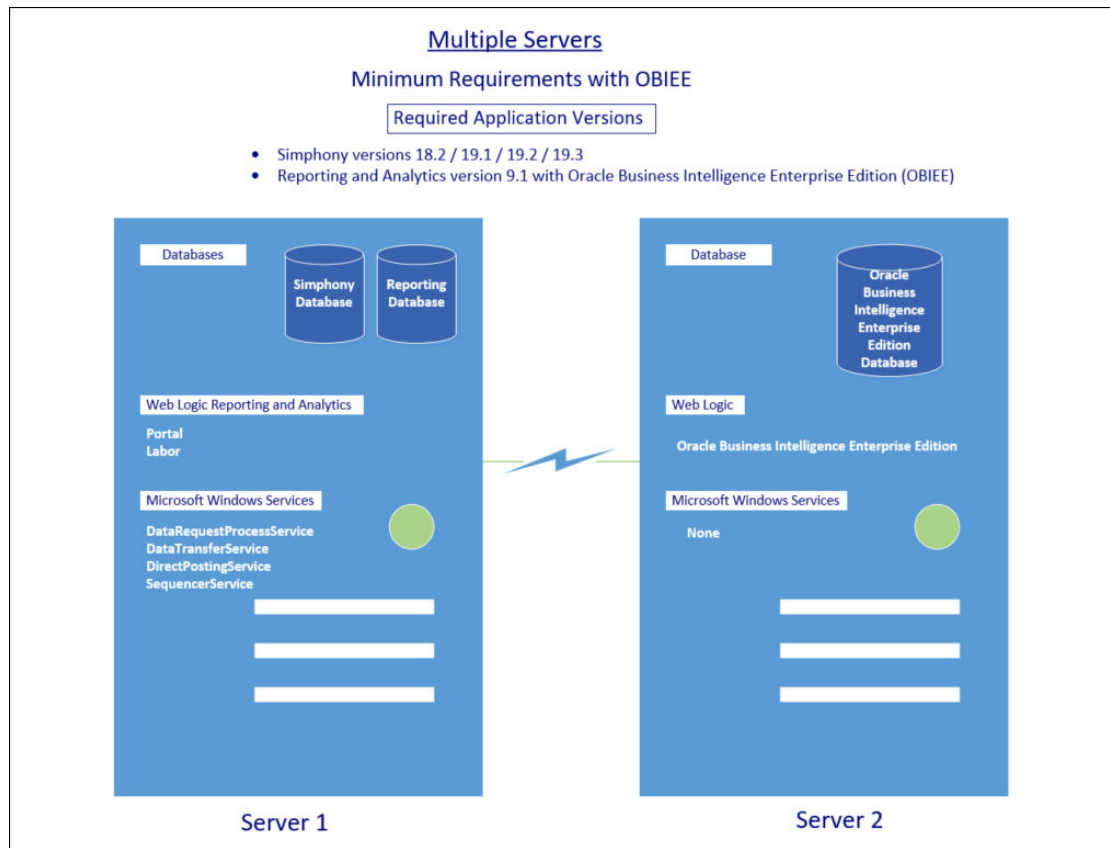
Multiple Server Load Balanced System

Here are the minimal installation requirements for a multiple server load balanced system implementation of Simphony releases 19.1, 19.2.x, 19.3, and Reporting and Analytics version 9.1.

Figure 1-4   Multiple Server Load Balanced Deployment
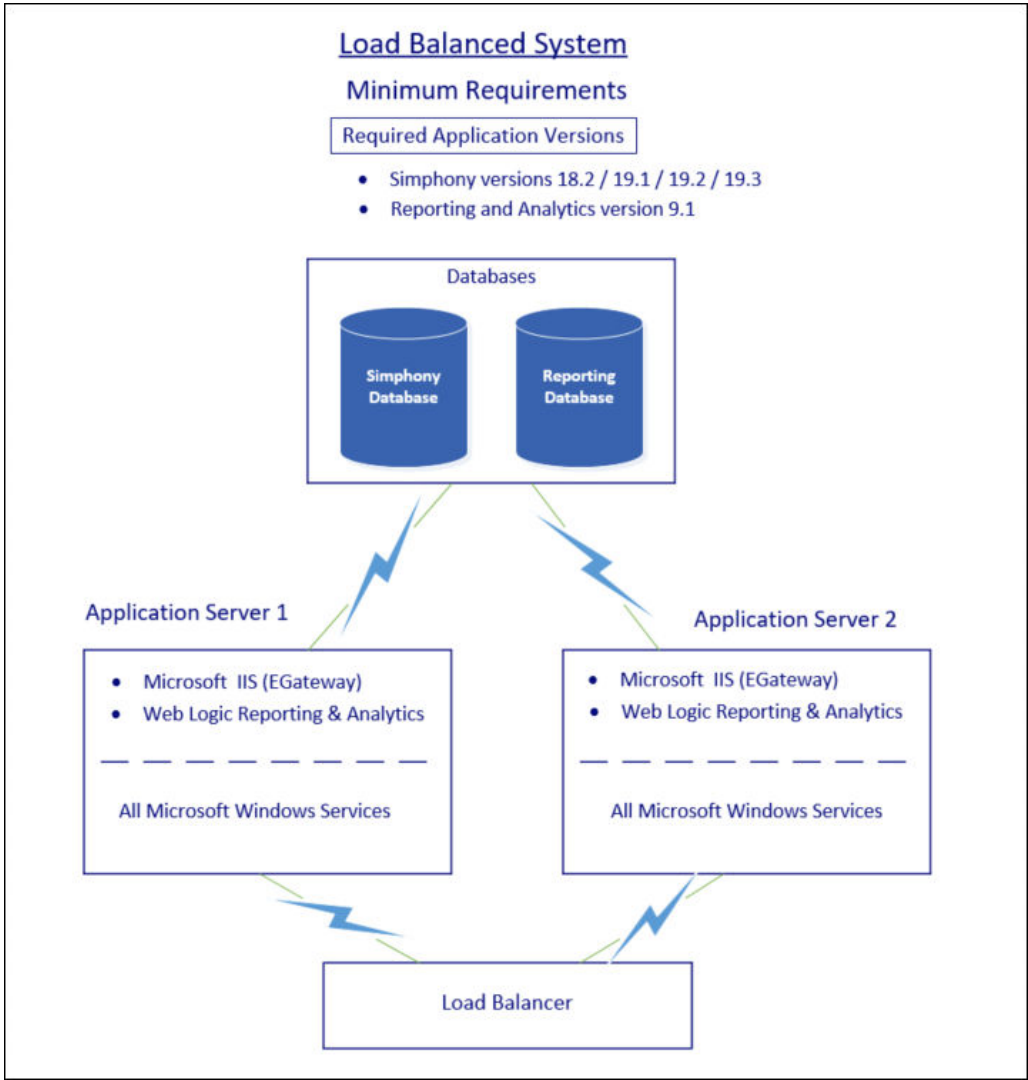
2

Pre-Installation Tasks

The following table lists the database platform pre-installation tasks that must be performed on the Simphony application and database server (or servers).

If you are performing an upgrade from a version prior to the Simphony 19.3 release (or importing a database after a fresh installation), see the Cloud Services Post-Installation or Upgrade Guide (specifically the **Simphony Upgrade Procedures** section) for important pre-upgrade task information.

Table 2-1   Pre-Installation Tasks for Simphony

Pre-Installation Task	Instructions
Obtain the Simphony and Reporting and Analytics (R&A) software installation media and the latest patch set software (as needed). Install R&A separately from Simphony using the Enterprise Back Office R&A installation application.	For instructions on obtaining software, see Obtaining Installation and Patch Set Software. See the *Enterprise Back Office Installation Guide*, specifically the **Installing Reporting and Analytics** section for installation instructions.
Obtain and install a database platform on the database server (or servers)	See the Oracle Food and Beverage Compatibility Matrix for more information about supported databases.
	Oracle Database users must manually create Tablespaces for the database. See After Installing Oracle Database 19c for information about creating Tablespaces.
	For instructions on installing and setting up the Oracle Database, see Installing Oracle Database 19c.
Grant PUBLIC access for the DBMS_LOB and DBMS_SCHEDULER on the database server	The Simphony installer requires access to execute certain Oracle database packages for which public privileges are not granted. This makes it necessary to request that temporary public access be granted for the installation to run successfully, after which the public grant can be revoked and a specific schema grant be created.
	Before performing a new installation, using Oracle SQL Developer, execute the following requests:
	• GRANT EXECUTE ON DBMS_LOB TO PUBLIC
	• GRANT EXECUTE ON DBMS_SCHEDULER TO PUBLIC
	Before performing an upgrade, using Oracle SQL Developer, execute the following request: • GRANT EXECUTE ON DBMS_SCHEDULER TO PUBLIC
	Refer to the Oracle Database Security Guide for more information.

Table 2-1   (Cont.) Pre-Installation Tasks for Simphony

Pre-Installation Task	Instructions
Install and configure Microsoft Internet Information Services (IIS)	Microsoft IIS needs to be installed and configured on each Simphony and Reporting and Analytics (R&A) application server. Microsoft IIS is required to be installed in order to initiate the process to obtain and install secure certificates as outlined in the next step.
	See Installing Microsoft Internet Information Services (IIS) and Windows Communication Foundation (WCF) Features for information about configuring IIS for a Simphony system.
Obtain Certificate Authority issued certificates for use with Simphony and R&A	From within Microsoft IIS, initiate a Certificate Signing Request (CSR) to obtain and install a TLS 1.2 compliant Certificate Authority (CA) issued secure certificate on each Simphony application and Reporting and Analytics (R&A) server. CA issued certificates are required to be installed. Self-signed certificates are not supported.
	Note: If you are utilizing a Load balanced system, you are only required to install CA certificates on the load balanced servers, not the Simphony application servers. As stated earlier, non-load balanced environments require installed CA certificates for each Simphony application and R&A server.
	For information about requesting and installing secure certificates, see Creating a Certificate Signing Request and Completing a Secure Server Certificate Installation.
Configure Log File Rollover options for Internet Information Services (IIS)	For instructions on configuring log file rollover options, refer to the Microsoft TechNet Library and search the site using: **Configure Log File Rollover Options** as the search phrase.
Turn on Data Execution Prevention (DEP)	To enable DEP on servers, open a Command Prompt as an Administrator and execute this command: **bcdedit.exe /set {current} nx AlwaysOn** and then restart the server.

Table 2-1   (Cont.) Pre-Installation Tasks for Simphony

Pre-Installation Task	Instructions
Temporarily disable anti-virus software from the application and database servers just before the installation	Simphony can silently fail to install due to anti-virus software. Temporarily disable or add exclusions for anti-virus software on Simphony and database servers just before installing Simphony. You can re-enable the anti-virus software after Simphony applications and databases are installed.

Obtaining Installation and Patch Set Software

To obtain software installation media, click here: Oracle Software Delivery Cloud (OSDC).

A Demo is available on the OSDC page that reviews the software download process if you require more information.

1. To download the Simphony software:

    a. Sign In (or register) on the home page.

    b. Enter **Simphony** in the **Search** field.

    c. Select the latest release of **Oracle Hospitality Simphony**, and then click **+ Add to Cart**.

    d. Click **View Cart** and follow the instructions there.

2. To download the Reporting and Analytics software:

    a. Enter **Reporting and Analytics** in the **Search** field.

    b. Select the latest release of **Oracle Hospitality Reporting and Analytics**, and then click **+ Add to Cart**.

    c. Click **View Cart** and follow the instructions there.

3. To obtain the latest software patch for Simphony or Reporting and Analytics, click here: My Oracle Support (MOS).

    a. Sign In (or register) on the home page.

    b. Click the **Patches & Updates** tab on the toolbar.

    c. In the **Patch Search** section, click **Product or Family (Advanced)**, from the **Product** field, enter **Oracle Hospitality Simphony**.

Figure 2-1   MOS Patches and Updates — Simphony Patch Search
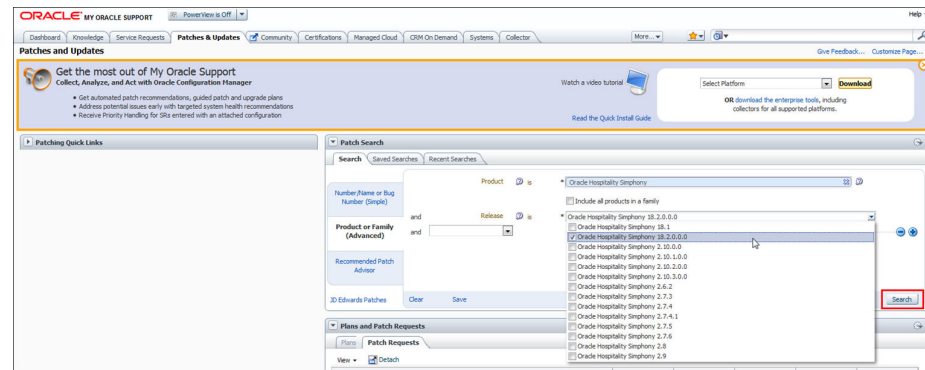
d. Click the drop-down list from the **Release** field, select the latest patch for that release, and then click **Search**.

e. In the results area, select the latest patch set from the **Patch Name** column.

Figure 2-2   MOS Patches and Updates — Simphony Patch Advanced Search Results
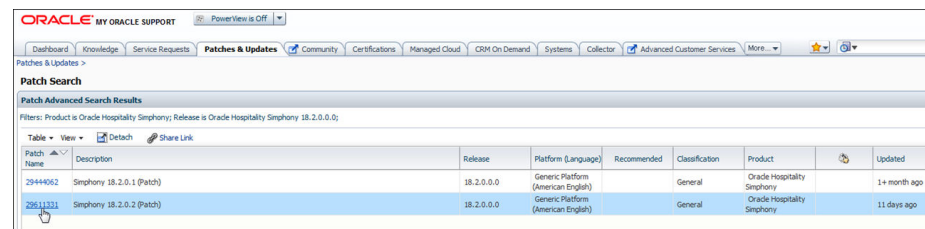
f. To obtain the patch software, click the **Download** button. The **File Download** window appears.

Figure 2-3   MOS Patches and Updates — Simphony Patch Download and Read Me Documentation Access
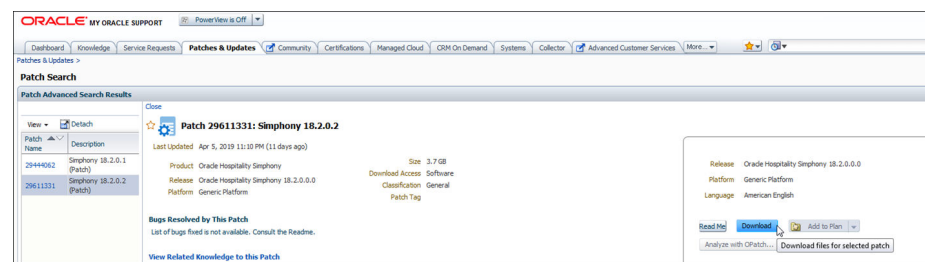
g. To read about the fixes included in the patch set, click the **Read Me** button.

h. To complete the download process, click the **Download** or **Download All** button.

Figure 2-4   MOS — File Download
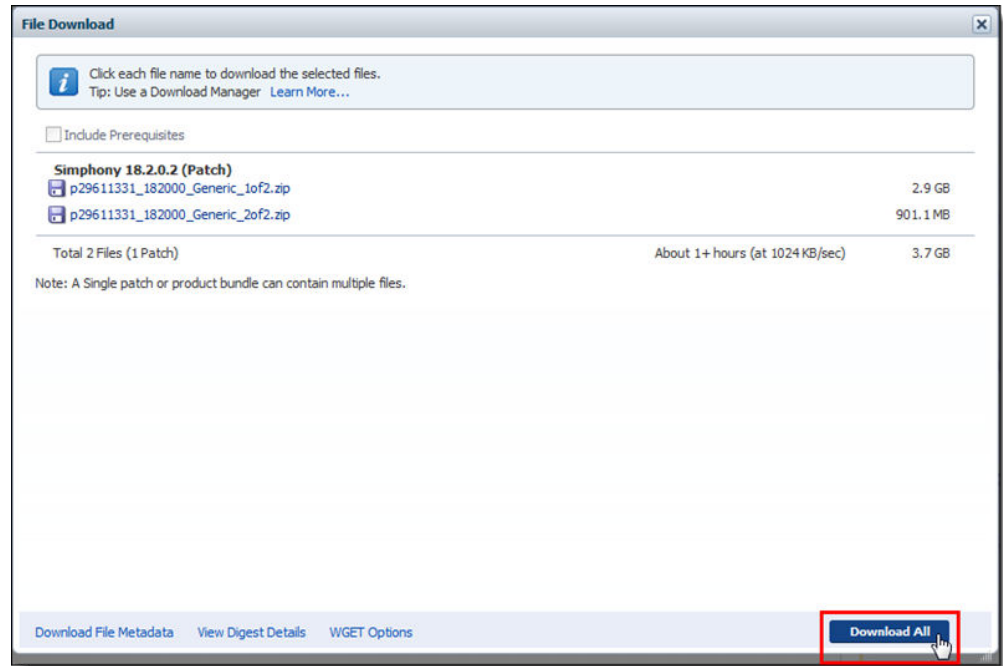
4. To obtain the latest Reporting and Analytics patch set:

   a. In the **Patch Search** section, on the **Search** tab, enter **Oracle Hospitality Reporting and Analytics** in the **Product** field.

   Figure 2-5   MOS Patches and Updates — Reporting and Analytics Patch Search
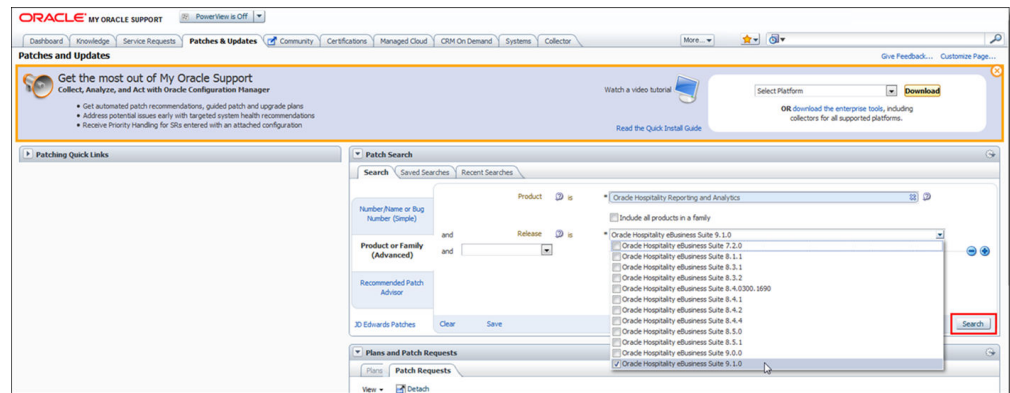
   b. Click the drop-down list from the **Release** field, select the latest patch for that release, and then click **Search**. In the results area, select the latest patch set from the **Patch Name** column.

Figure 2-6   MOS Patches and Updates — Reporting and Analytics Patch Advanced Search Results

c. To obtain the patch set software, click the **Download** button. The **File Download** window appears.

Figure 2-7   MOS Patches and Updates — Reporting and Analytics Patch Download and Read Me Documentation Access

d. To read about the fixes included in the patch set, click the **Read Me** button.

e. To complete the download process, click the **Download** or **Download All** button.

f. After the product installation or patch set software has been downloaded, place the software on the appropriate application server and implement the installation or upgrade.

Installing Microsoft Internet Information Services (IIS) and Windows Communication Foundation (WCF) Features

This section reviews configuring Microsoft Internet Information Services (IIS) and Microsoft Windows Communication Foundation (WCF) Services (if necessary) on Simphony application servers. Microsoft WCF configuration only needs to be performed on servers where the Simphony Web Portal (Import/Export) and API are installed.

For more information about the Server Manager - Add Roles and Features Wizard, refer to the Microsoft TechNet Library at https://technet.microsoft.com/en-us/.

Access the Simphony application server (running Microsoft Windows Server 2016 R2):

1. Access the **Control Panel**, click **Programs**, and then beneath Programs and Features, click **Turn Windows features on and off**.

2. The Server Manager Dashboard loads and subsequently, the Add Roles and Features Wizard.

3. Access the Server Manager and select **2 Add roles and features**.

Figure 2-8   Server Manager – Dashboard – Adding Roles and Features
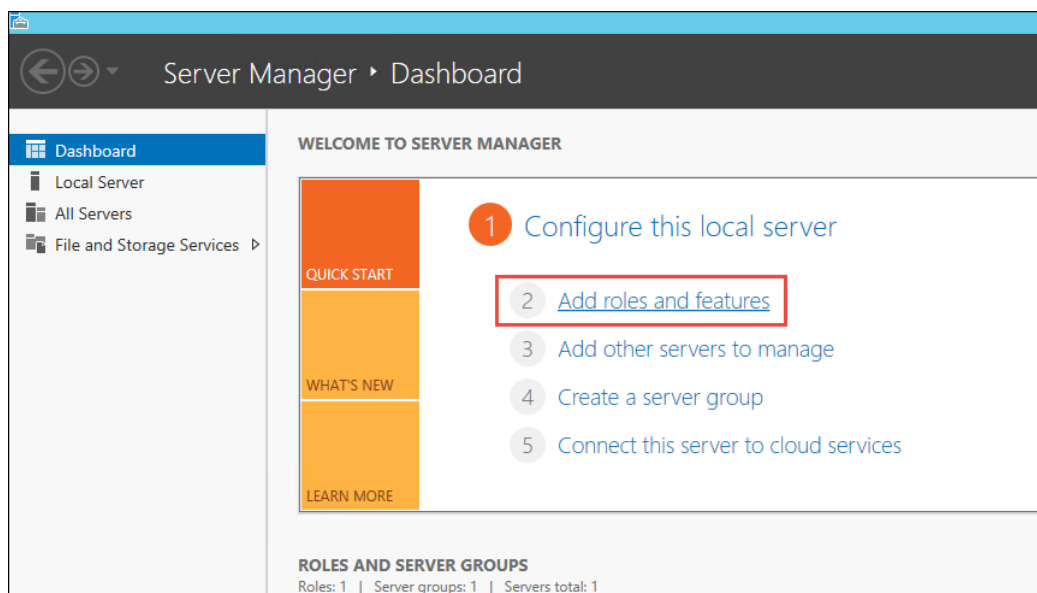
4. Click **Next**.

Figure 2-9   Server Manager – Before You Begin
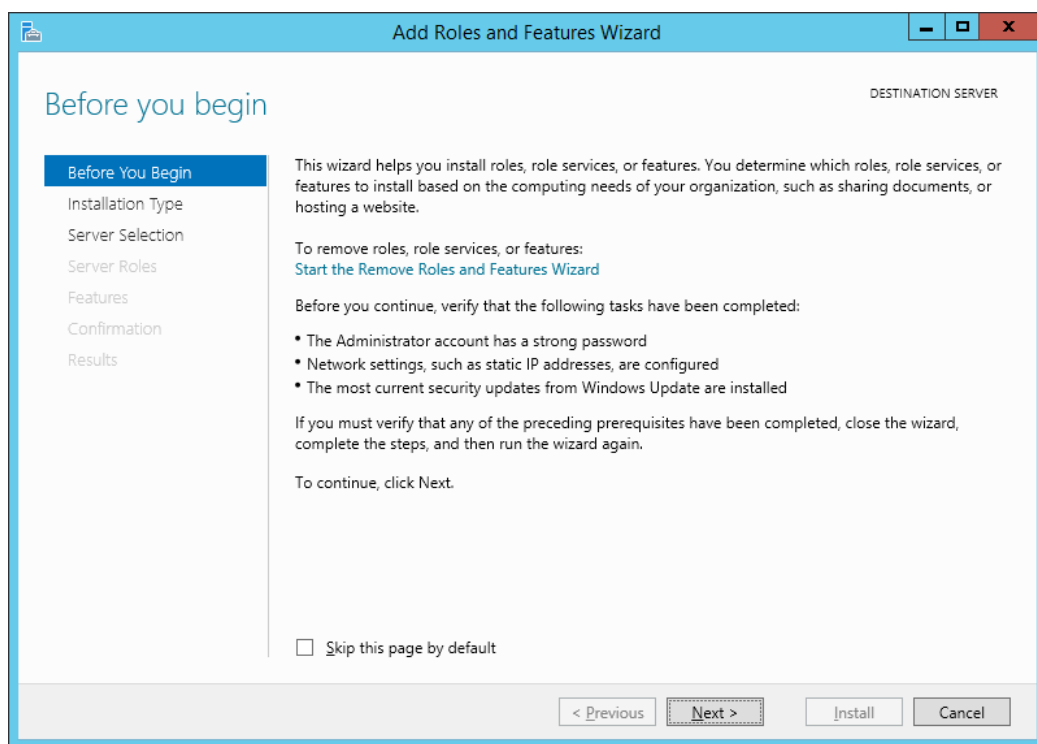
5. Select **Role-based or feature-based installation**, and then click **Next**.

Figure 2-10   Server Manager – Select Installation Type
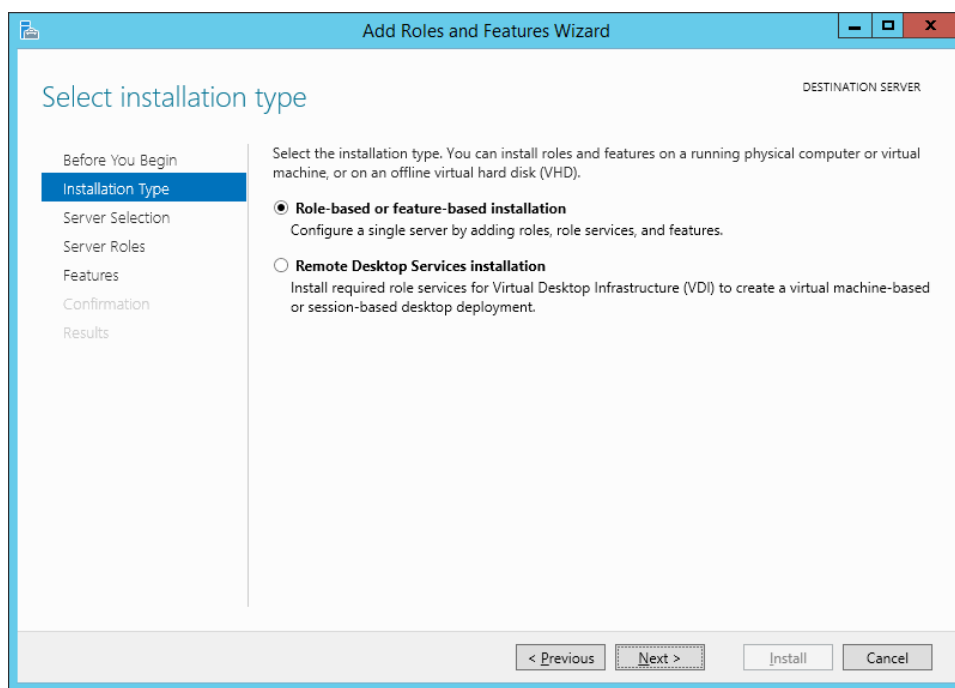
6. Select the **Select a server from the server pool** option.

7. Select the server you are configuring, and then click **Next**.

Figure 2-11   Server Manager – Select Destination Server
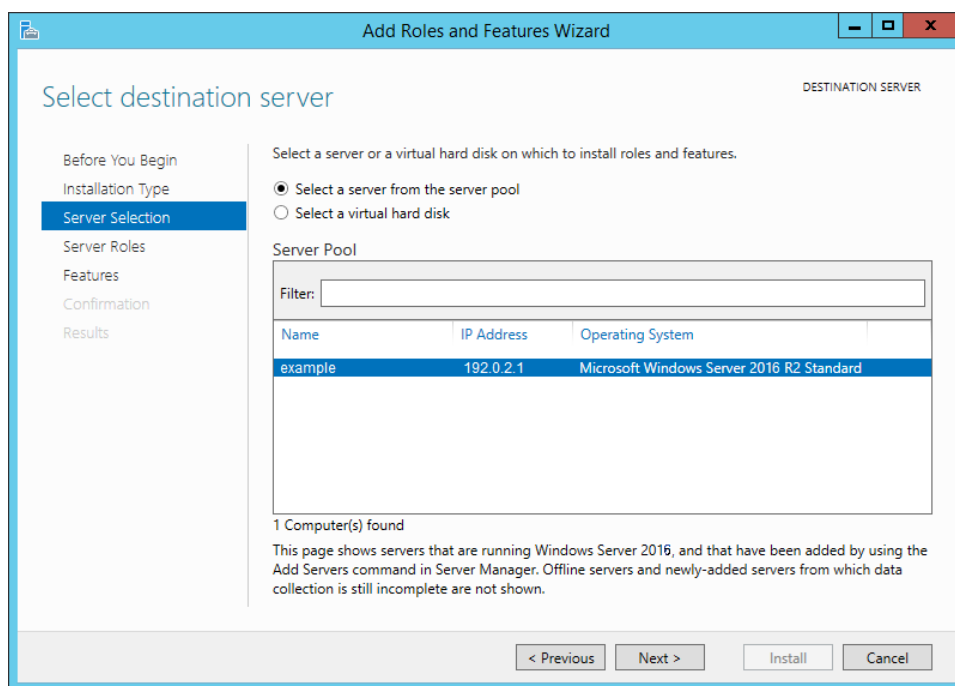
8. From the wizard, select **Server Roles**. Scroll down the Roles section. Under **File and Storage Services**, enable the **Web Server (IIS)** checkbox and click **Next**.

Figure 2-12   Add Roles and Features Wizard – Select Server Roles
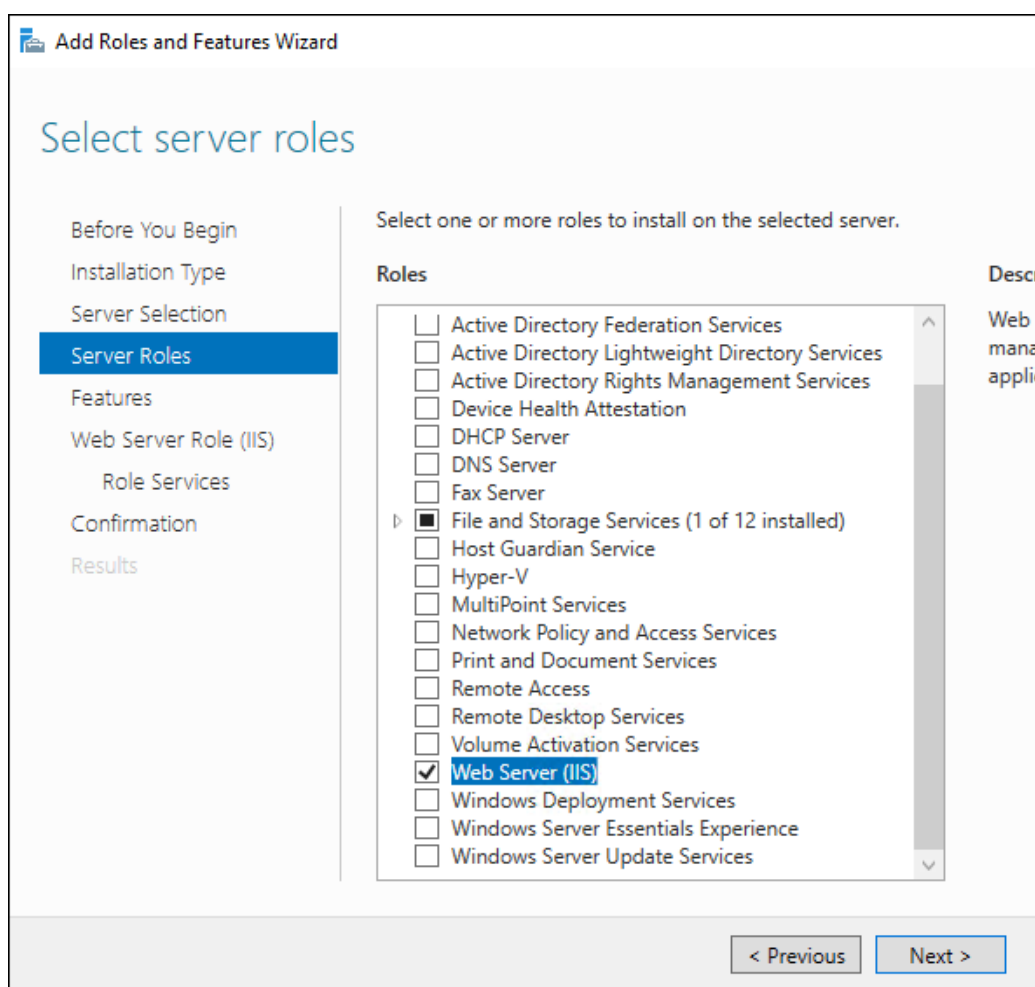
9. Ensure that the **Include management tools (if applicable)** checkbox is selected, and then click **Add Features**.

Figure 2-13   Server Manager – Add Roles and Features
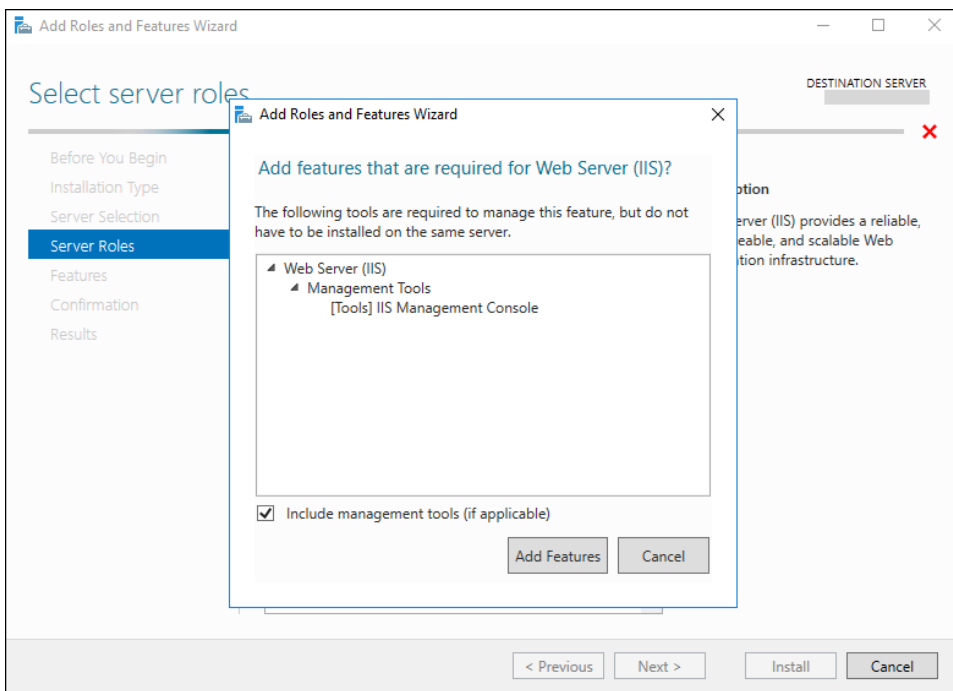
10. Scroll down and expand **.NET Framework 4.6 Features**. Enable and expand **WCF Services**, and then ensure the **HTTP Activation** and **TCP Activation** checkboxes are selected.

> **Note:**
>
> Again, WCF Services configuration only needs to be performed on servers where the Simphony Web Portal (Import/Export) and API are installed.

Figure 2-14   Add Roles and Features Wizard – Select Server Roles – WCF Service Settings
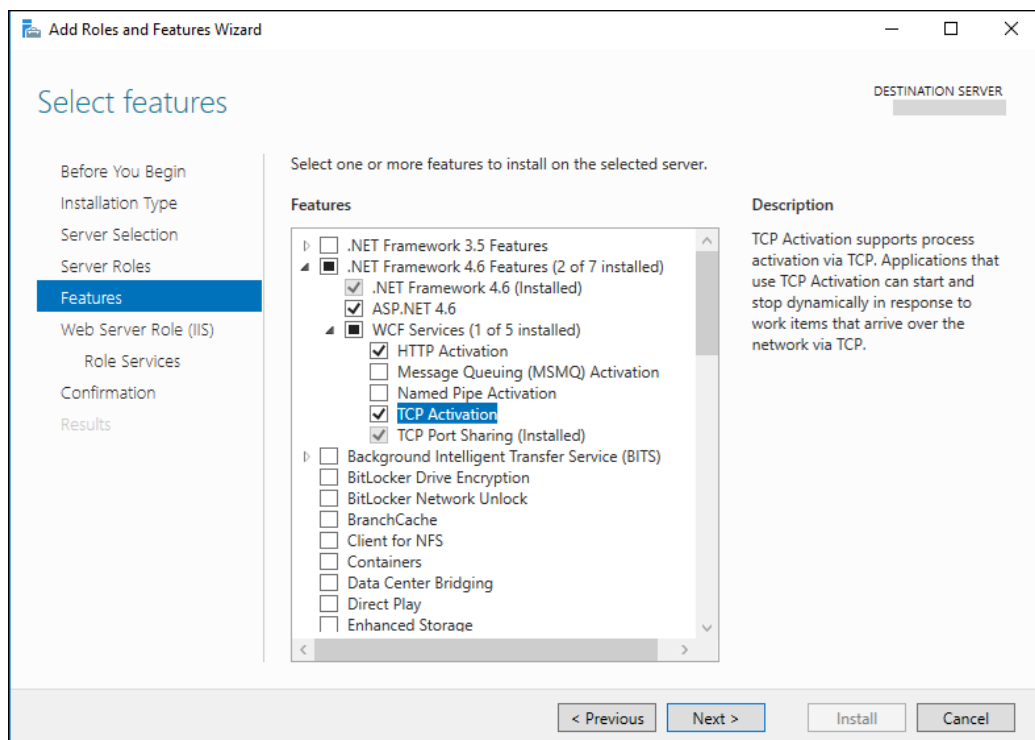
11. Select **Web Server Role (IIS)** and click **Next**.

Figure 2-15   Add Roles and Features Wizard – Web Server Role (IIS)
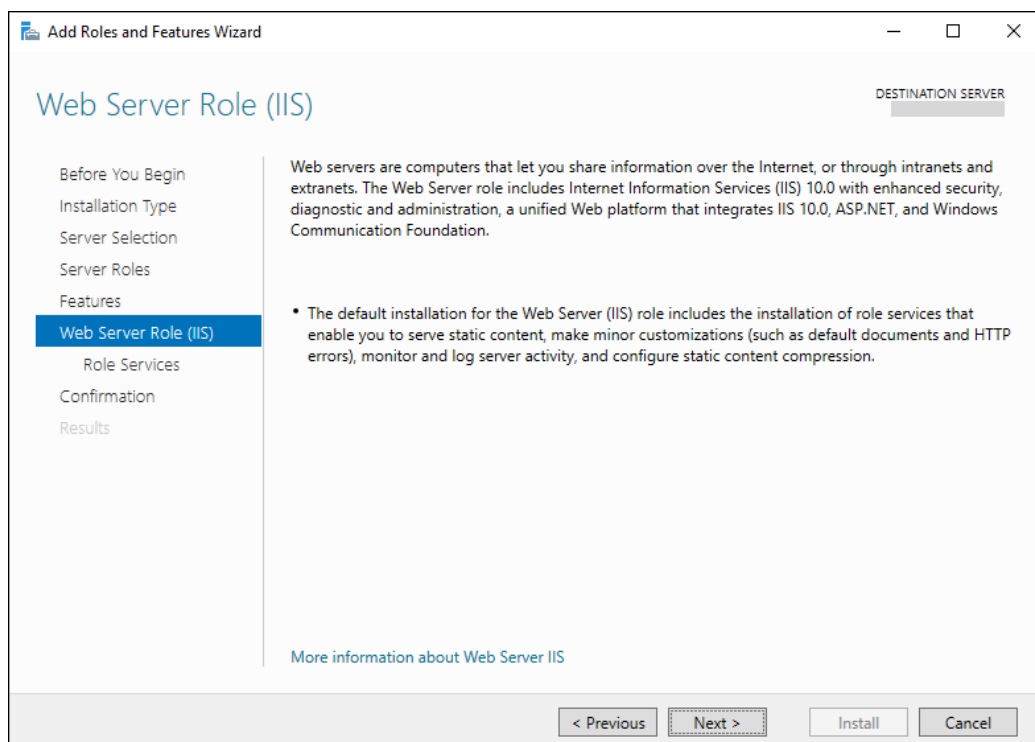
12. Expand the **Web Server** role services and options and select the following Common HTTP Features:

   • **Default Document**

   • **HTTP Errors**

   • **Static Content**

   From a system security standpoint, the **Directory Browsing** role service should not be enabled.

Figure 2-16   Add Roles and Features Wizard – Web Server Role Services
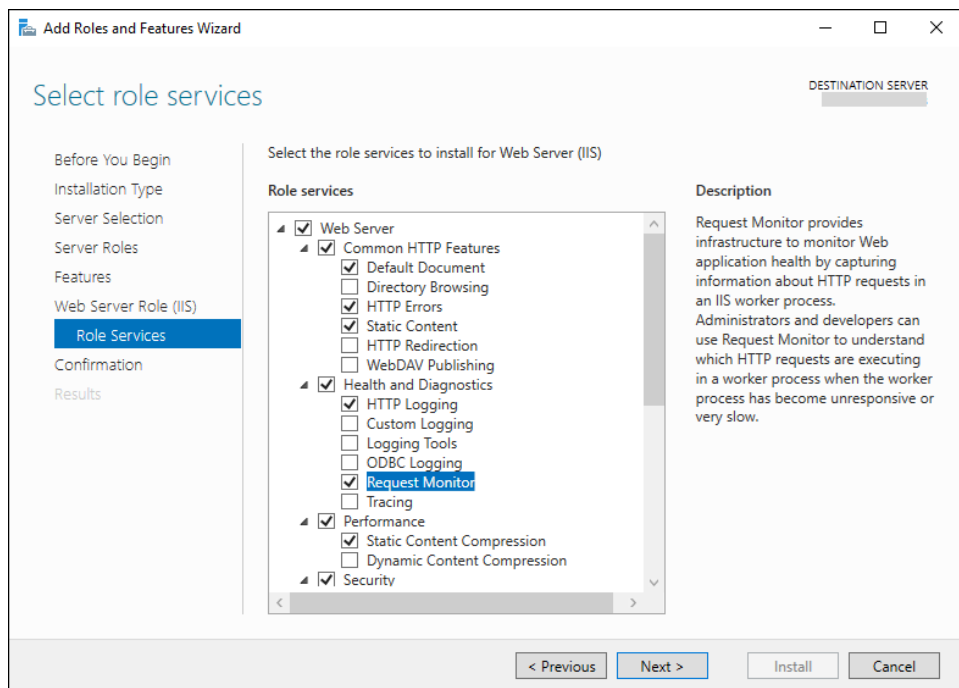
13. Select the following **Health and Diagnostics** options:

   • **HTTP Logging**

   • **Request Monitor**

14. Select the **Performance** option **Static Content Compression**.

15. Select the **Security** option **Request Filtering**.

Figure 2-17   Add Roles and Features Wizard – Security Role Services
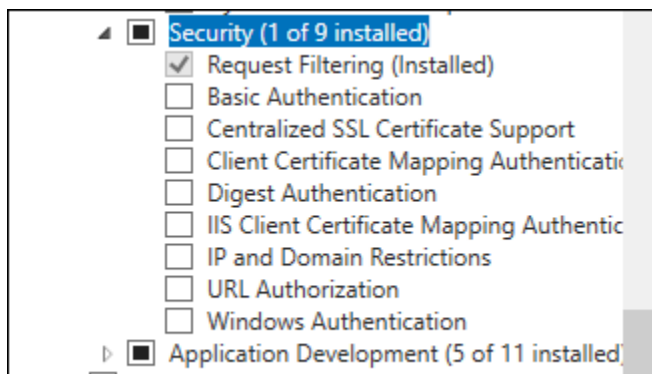
16. Select and expand **Application Development**, and then select the following options:

  • **.NET Extensibility 4.6**

  • **ASP**

  • **ASP .NET 4.6**

  • **ISAPI Extensions**

  • **ISAPI Filters**

Figure 2-18   Add Roles and Features Wizard – Application Development Role Services
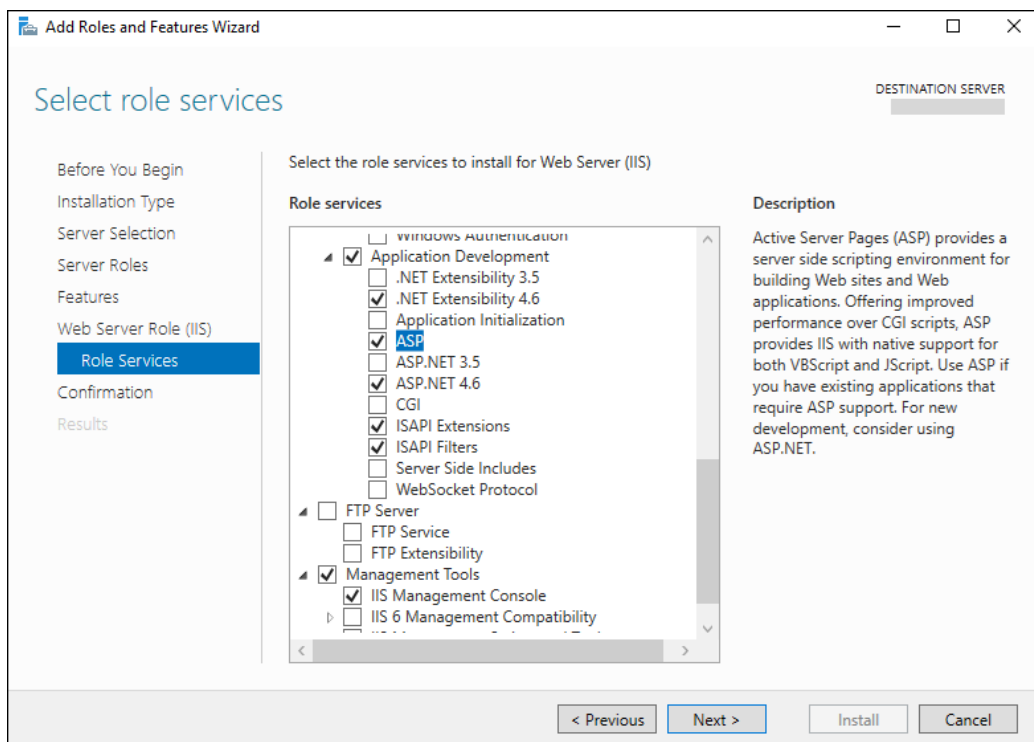
17. Select and expand **Management Tools**, and then select the following options:

- • **IIS Management Console**

- • **IIS Management Scripts and Tools**

18. Select **IIS 6 Management Compatibility**, and then select the following checkboxes:

- • **IIS 6 Metabase Compatibility**

- • **IIS 6 Management Console**

- • **IIS 6 Scripting Tools**

- • **IIS 6 WMI Compatibility**

Figure 2-19   Add Roles and Features Wizard – Management Tools
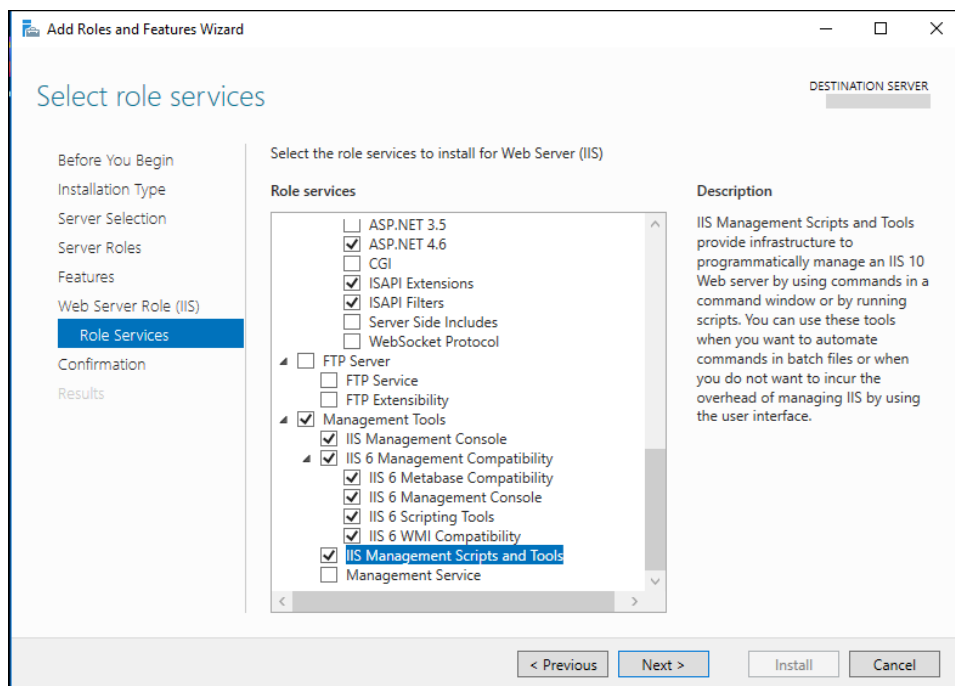
19. Click **Next** and confirm your previous selections. If any edits are required, select the **Previous** button. Once confirmed, click **Install**.

Figure 2-20   Add Roles and Features Wizard – Confirmation Window
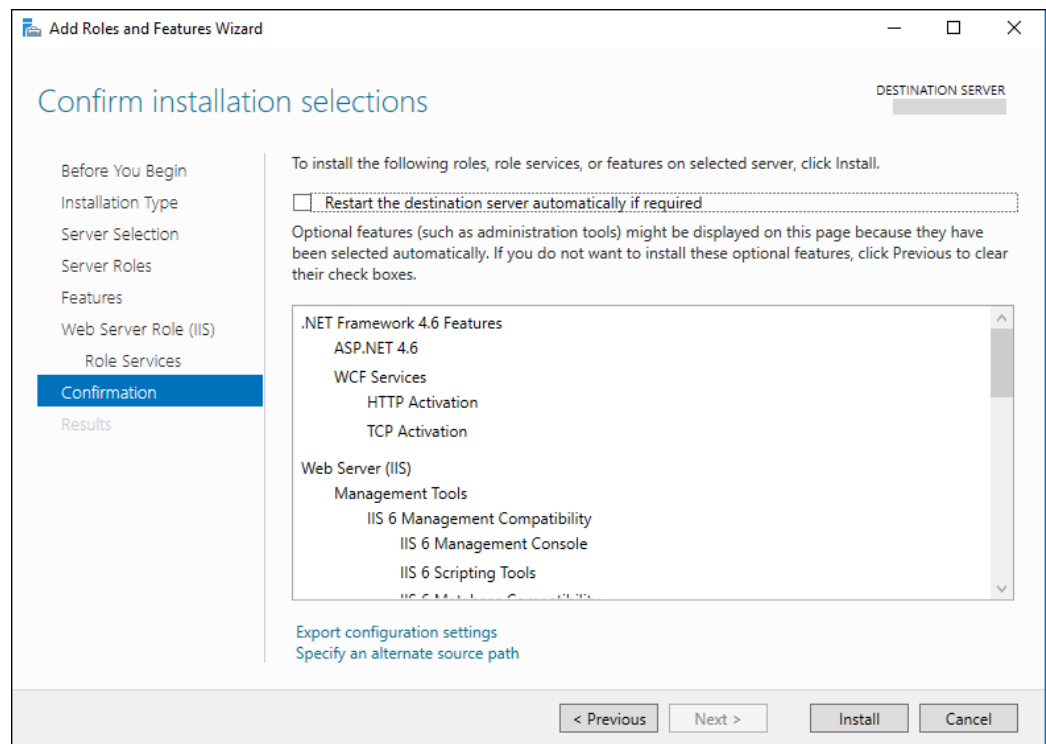
20. Restart the server for the roles and features to become operative.

Requesting and Installing Secure Certificates

Secure certificates (issued by a Certified Authority) must be installed on Simphony and Reporting and Analytics servers prior to installing these applications. During the Simphony installation, there is an opportunity to load the certificate from the installation wizard. Simphony and Reporting and Analytics do not support self-signed certificates.

This section provides instructions on how to request and complete the installation of secure certificates.

Creating a Certificate Signing Request

1. From the application server, click the **Start** button, click or search for the **Internet Information Services (IIS) Manager** and open it.

2. In the **Connections** section, click the server name.

3. In the center Home menu, double-click the **Server Certificates** button in the IIS section.

Figure 2-21   Internet Information Services (IIS) Manager - IIS Section
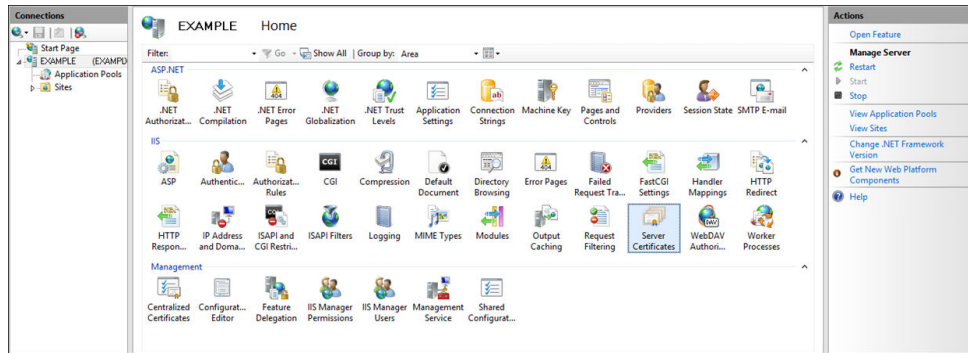
4. Click **Create Certificate Request…** from the Actions menu.

Figure 2-22   Actions - Create Certificate Request Link
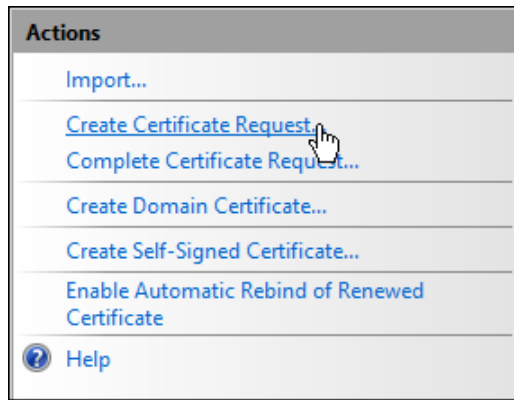
5. Enter the appropriate information in the Request Certificate window, and then click **Next**.

The **Common name** field (through which the certificate is eventually accessed) is usually the application server's fully qualified domain name (FQDN) (for example, `www.domain.com` or `mail.domain.com`).

Figure 2-23   Request Certificate - Distinguished Name Properties

6. Select **Microsoft RSA SChannel Cryptographic Provider** from the **Cryptographic service provider** drop-down list, unless you have another specific cryptographic provider.

7. Select **2048** (or higher) from the **Bit length** drop-down list, and then click **Next**.

Figure 2-24   Request Certificate - Cryptographic Service Provider Properties

8. Click the ellipsis (**...**) button to browse to a location where you want to save the Certificate Signing Request (CSR) file.

    a. Remember the filename and the location where you save it.

Figure 2-25   Request Certificate - File Name

b. Open this file using a text editor and copy the entire body of it (including the **Begin** and **End New Certificate Request** tags) into the CSR order form.

9. After you receive your Secure Sockets Layer (SSL) certificate, save the certificate on the server where you created the CSR, and then you can install it.

Completing a Secure Server Certificate Installation

1. From the application server, click the **Start** button, click or search for the **Internet Information Services (IIS) Manager** and open it.

2. In the **Connections** section, click the server name.

3. In the center Home menu, double-click the **Server Certificates** button in the IIS section.

Figure 2-26   Internet Information Services (IIS) Manager - IIS Section
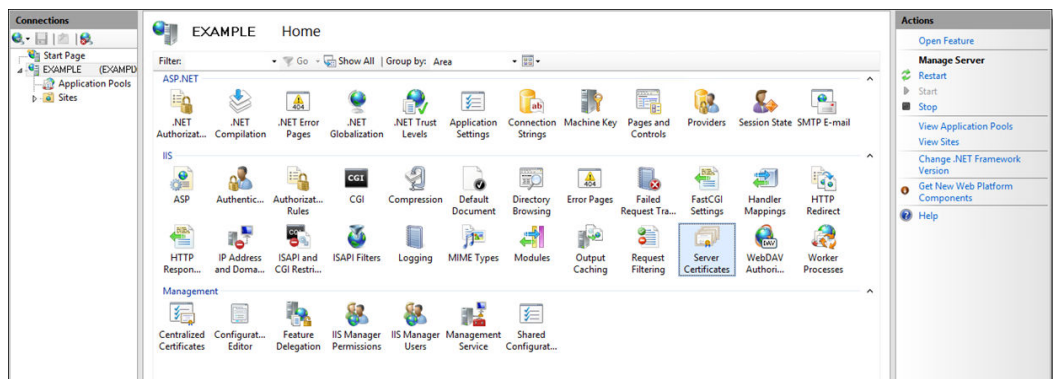
4. Click **Complete Certificate Request…** from the Actions menu.

Figure 2-27   Actions - Complete Certificate Request Link
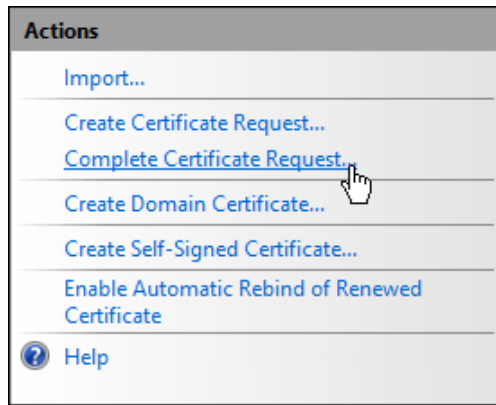
5. Configure the following in the Complete Certificate Request window:

a. Browse and select your certificate (in .cer format). This file should be provided to you from the vendor where you purchased your certificate, and in response to your CSR submission.

b. Enter the **Friendly name**, if it is not already populated. This is the application server's fully qualified domain name (FQDN) (for example, www.domain.com or mail.domain.com).

Figure 2-28   Complete Certificate - Specify Certificate Authority Response
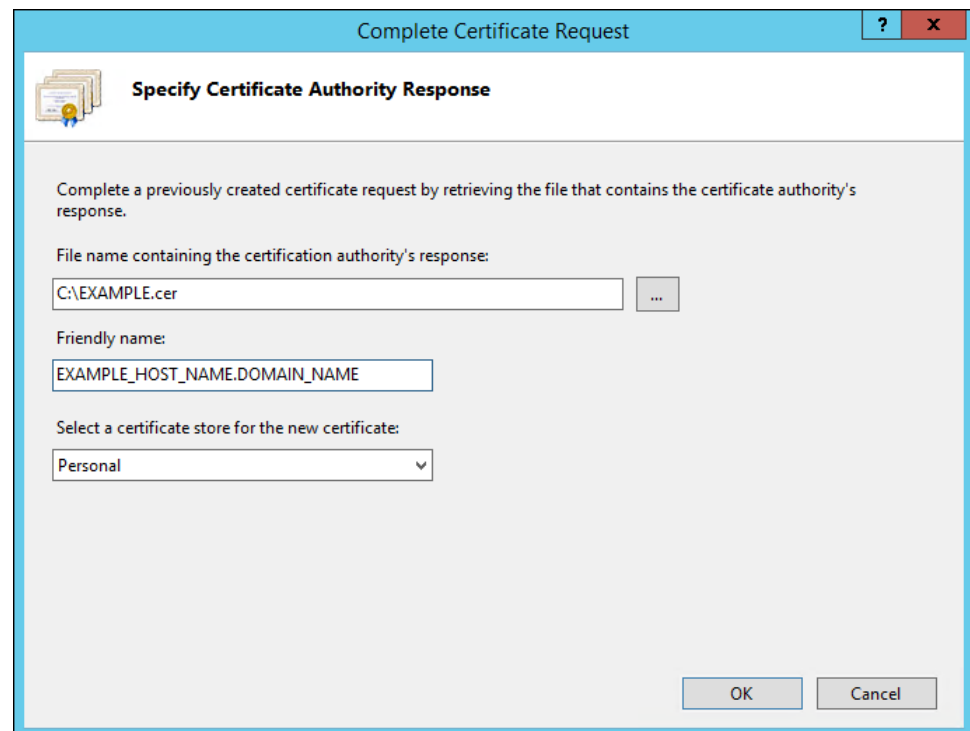
6. Click **OK**.

   If a certificate is installed or changed after installing Simphony, you must perform several steps to bind the certificate to the IIS website. See Binding Secure Server Certificates to IIS for instructions.

Configuring Recycle Settings for the IIS Application Pool

If you configure the application pool to recycle at a scheduled time using the IIS Manager, consider configuring the following recycle settings for the IIS Application Pools:

- Ensure that the specific times you define do not coincide with your Start-of-Day (SOD) or periods of peak sales activity.

- Set the **Memory Based Maximums** to less than half of the available server memory.

- Set the **Simphony2 App Pool Pipeline** mode to **Classic**.

- Set the **Disable Overlapped Recycle** setting to **True** for the Simphony2 App Pool.

In addition to the Simphony2 App Pool, the following IIS App Pools are also installed:

- ImportExportAPIPool: For the Import Export Service.

- SimphonyAppPool: For the Simphony Web Portal.

- WCCPool: For the Engagement feature.

These App Pool's Pipeline mode settings can remain on their default settings.

For instructions on configuring an application pool to recycle at a scheduled time, refer to the Microsoft TechNet Library at https://technet.microsoft.com/en-us/.

Binding Secure Server Certificates to IIS

If a certificate is installed or changed after installing Simphony, you must perform the following steps to bind the secure certificate to the IIS website.

1. Click **Start**, and then click **Control Panel**.

2. If you are using Microsoft Windows Server 2016 R2, click **System and Security**, and then click **Administrative Tools**.

3. In the Administrative Tools window, double-click **Internet Information Services (IIS) Manager**.

4. Under **Connections**, **Sites**, select the site to be secured with the SSL Certificate.

5. From the **Actions** menu (on the right), click **Bindings...**. The Site Bindings windows opens.

6. In the Site Bindings window, click **Add...**. The Edit Site Bindings window opens.

7. From the **Type** drop-down list, select **https**.

8. Enter the IP address of the site or select **All Unassigned**.

9. Enter the port number in the **Port** field.

   The port over which traffic is secured by SSL is usually 443. The SSL Certificate field should specify the installed certificate.

10. Click **OK**.

Database Platform Installation

A database platform must be selected and installed prior to installing Simphony or Reporting and Analytics. See the Oracle Food and Beverage Compatibility Matrix for more information about supported databases.

See Installing Oracle Database 19c for Oracle Database installation instructions for a Simphony system.

Installing Oracle Database 19c

To download and install Oracle Database, refer to the Oracle Technology Network (OTN) website at http://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html.
To install Oracle Database 19c for a Simphony installation, from the database server:

1. Select the **Accept License Agreement** option to download the software.

2. Select the server's compatible operating system, typically **Microsoft Windows x64 (64–bit)**.

3. Since the downloaded file is compressed, beginning with Oracle Database 19c, **Image Based Installation** has been introduced. With Oracle Database 19c, via Image Based Installation, the Oracle Universal Installer takes the location of the **setup.exe** file and assigns its db_home location.

    a. Prior to performing the Oracle Database 19c software download, create a new folder on the database server's 'C' drive named: **Oracle19c** (with no spaces in the folder name).

    b. Logon as a Windows Administrator and, download and extract the Oracle 19c installation file into the newly created Oracle19c folder. Since the file is nearly 10GB in size, the extraction takes some time.

4. Once extracted, locate and right-click on the **setup.exe** and select **Run as administrator**.

5. Select **Set Up Software Only**, and then click **Next**.

Figure 2-29   Select Configuration Option
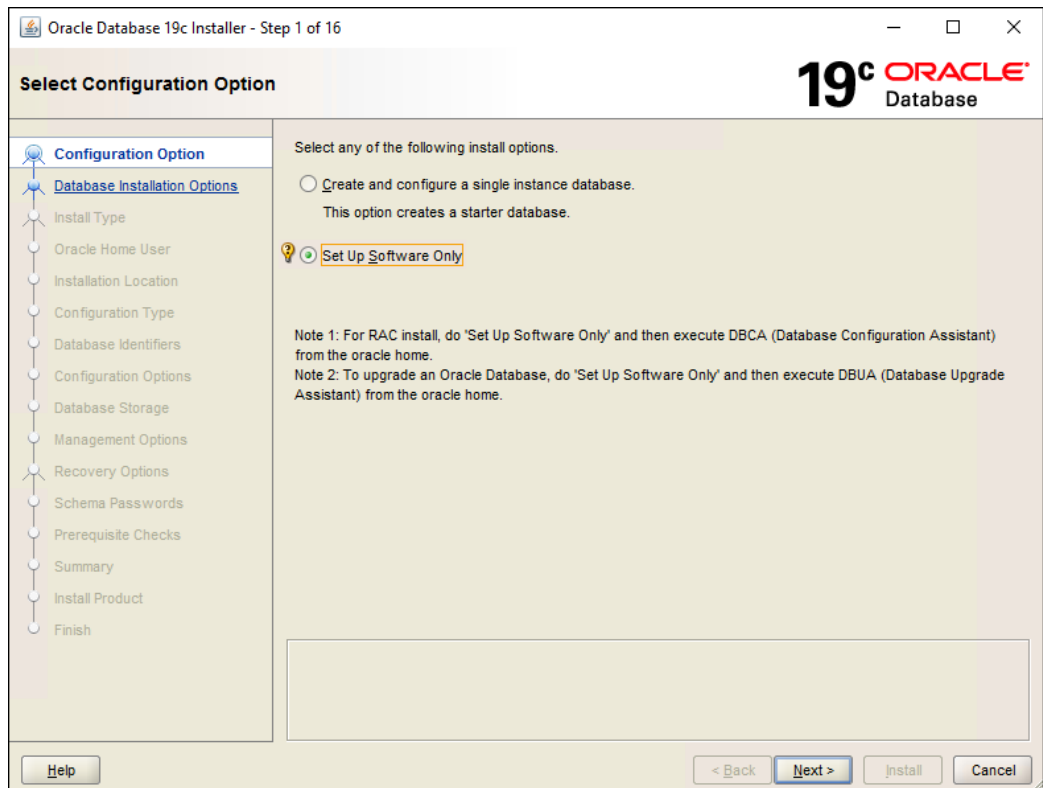
6.   Select **Single instance database installation**, and then click **Next**.

Figure 2-30   Select Database Installation Option
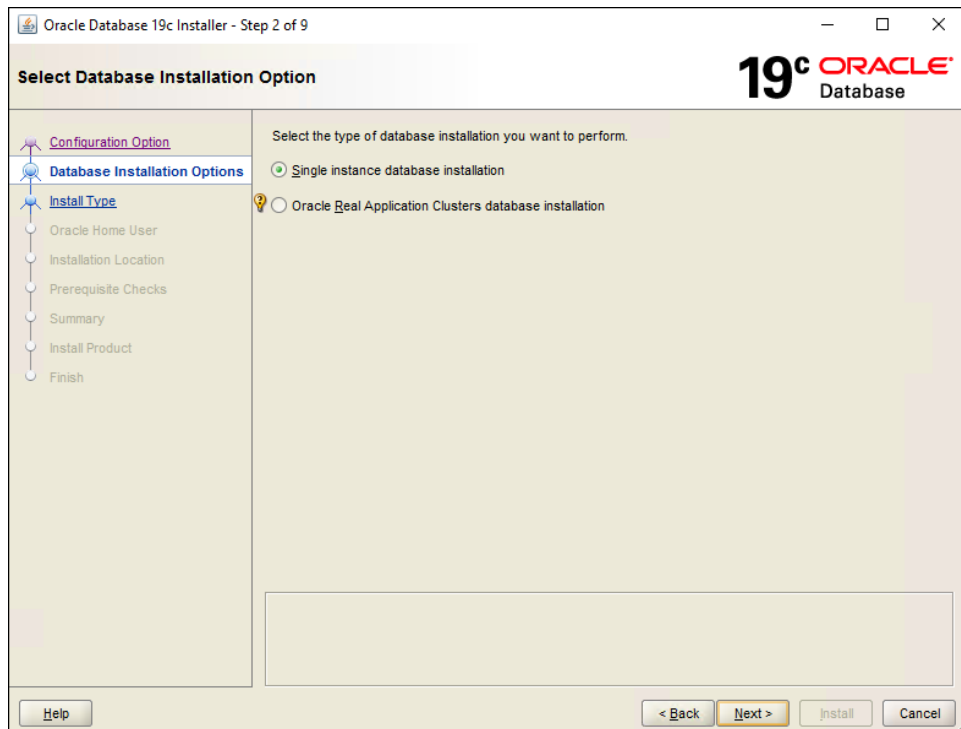
7.   Select **Enterprise Edition**, and then click **Next**.

Figure 2-31   Select Database Edition
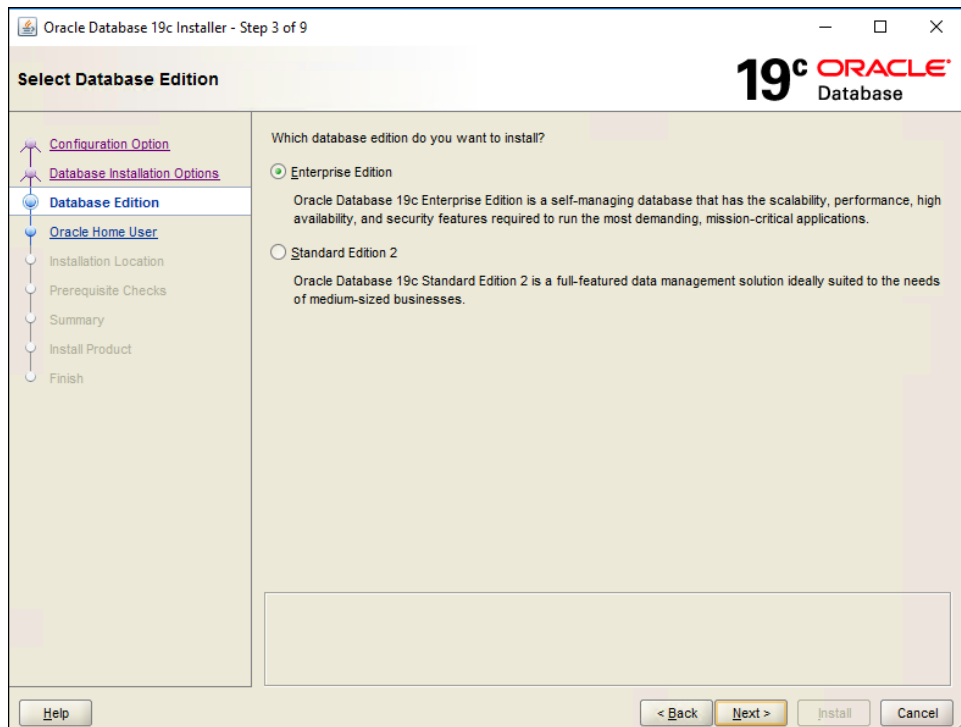
8. Select **Use Virtual Account** and then click **Next**. *(Optional) - You can specify an existing (or create a new) Microsoft Windows user account.

Figure 2-32   Specify Oracle Home User
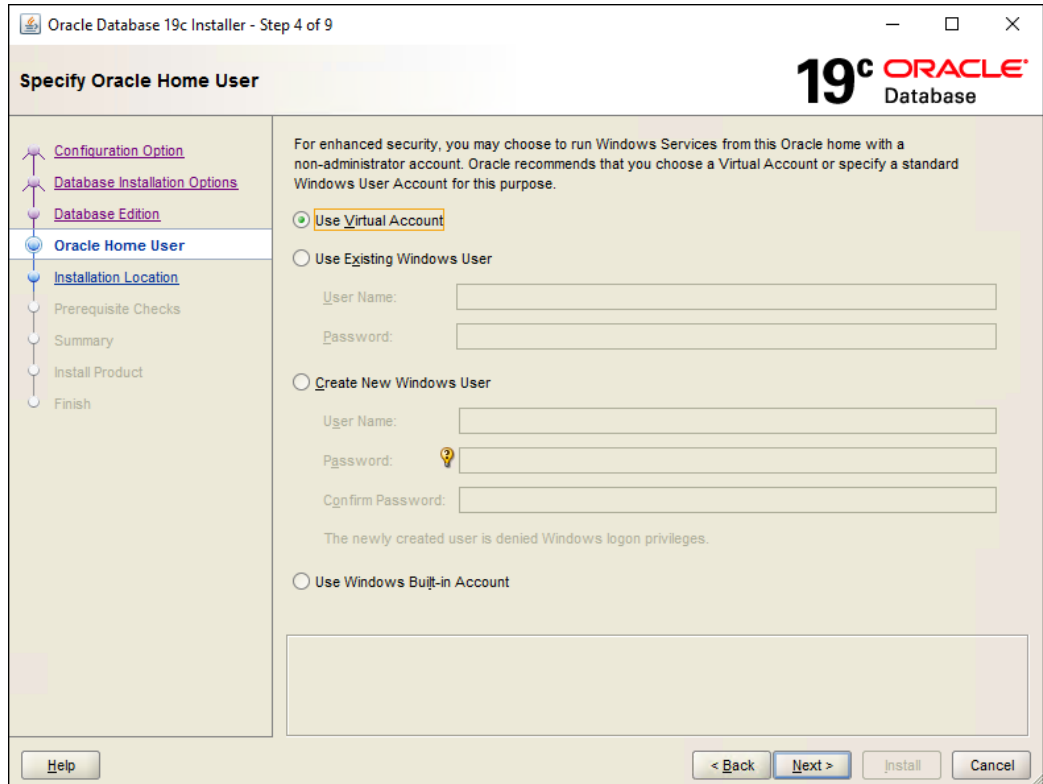
9. From the **Oracle base** field, enter or browse to select the database installation location, and then click **Next**. This is where the path is identified to store the Oracle Database software and configuration files.

Figure 2-33   Specify Installation Location
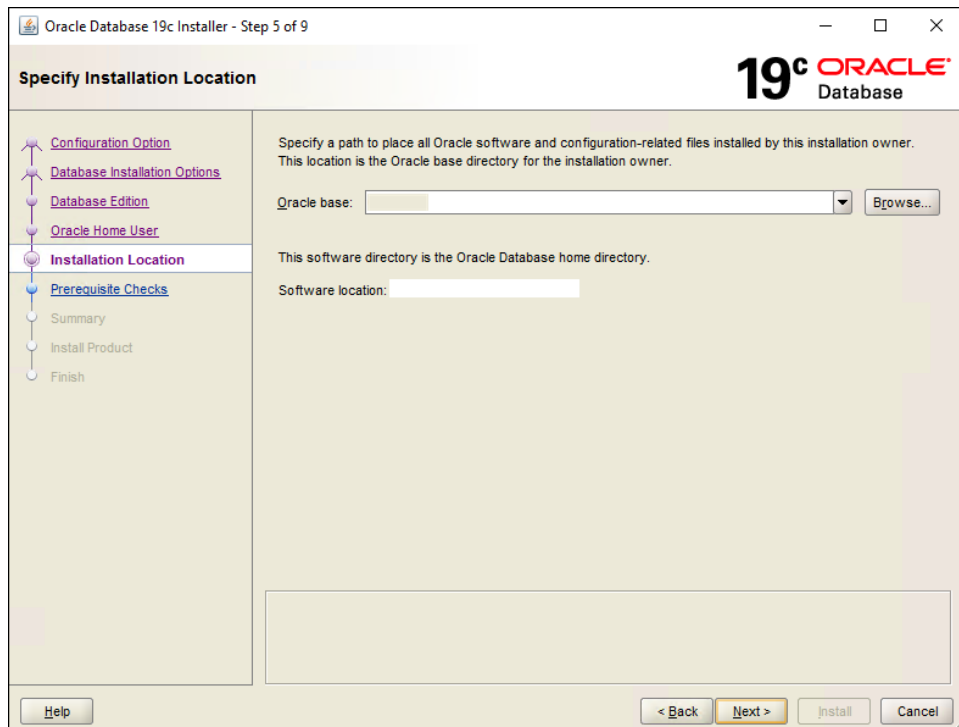
10. The installer performs several installation prerequisite checks and shows a progress bar until the checks are completed.

11. The **Summary** window shows your previous selections. Once reviewed, select **Install** to proceed.

Figure 2-34   Installation Summary
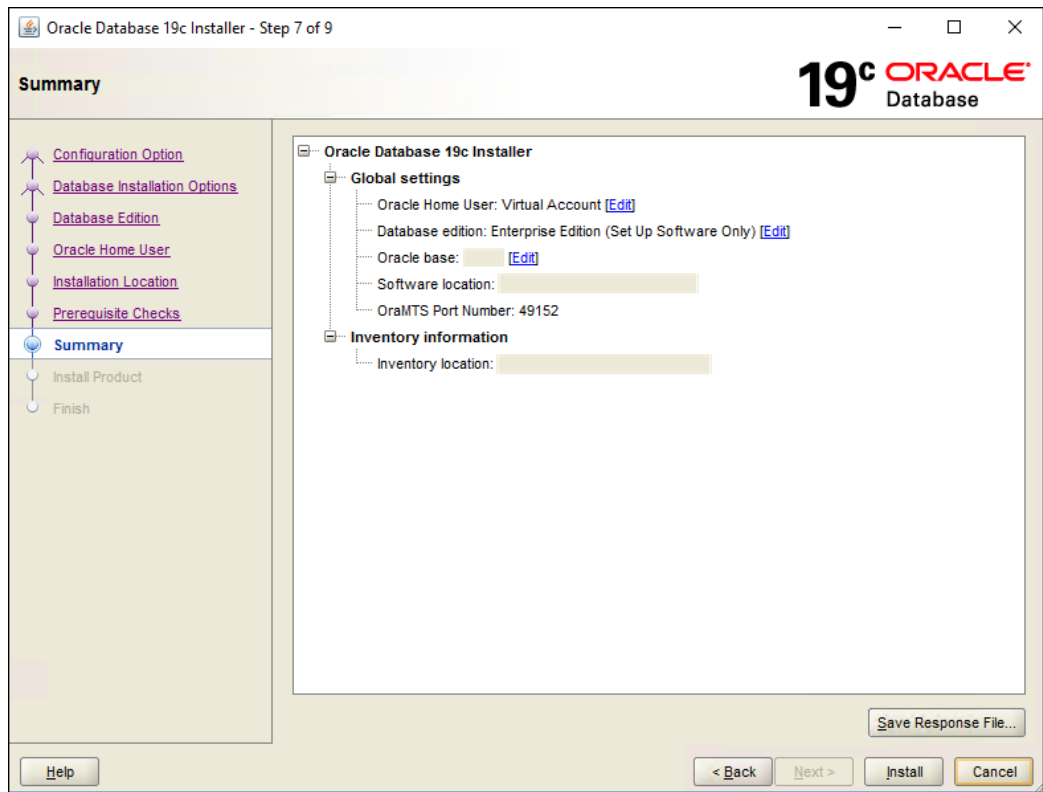
12. The **Finish** window shows your Oracle Database registration was successful. Click **Close**.

13. Open a Command prompt session. Enter and run this command: `./dbca` from the $ORACLE_HOME/bin.

14. Select **Create a database**, and then click **Next**.

Figure 2-35   Select Database Operation
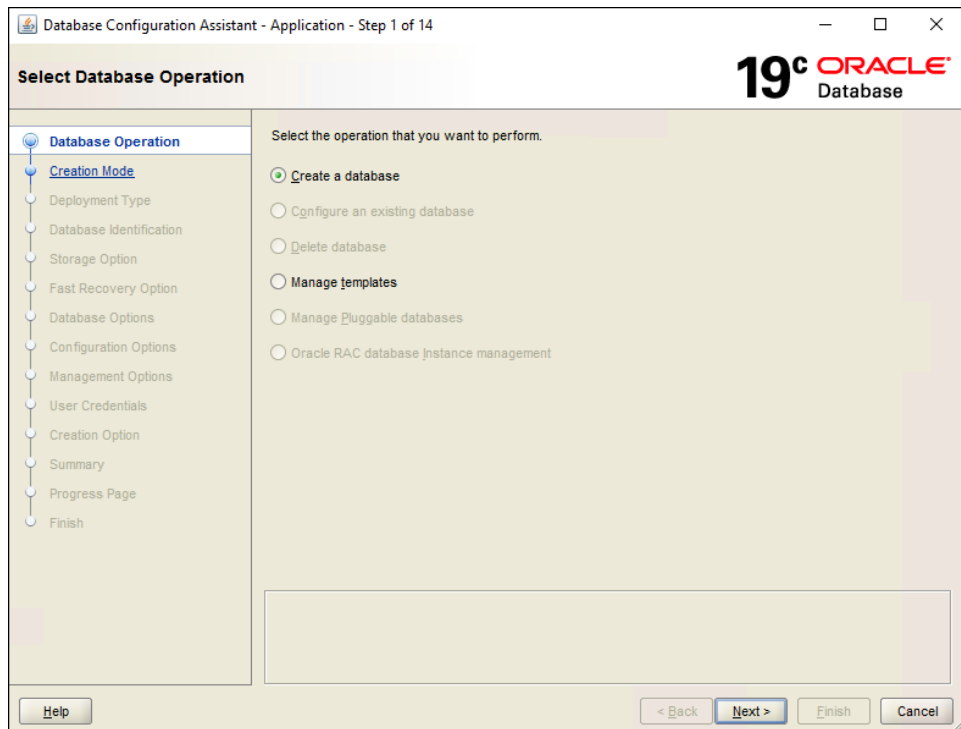
15. Select **Advanced configuration**, and then click **Next**.

Figure 2-36   Select Database Creation Mode
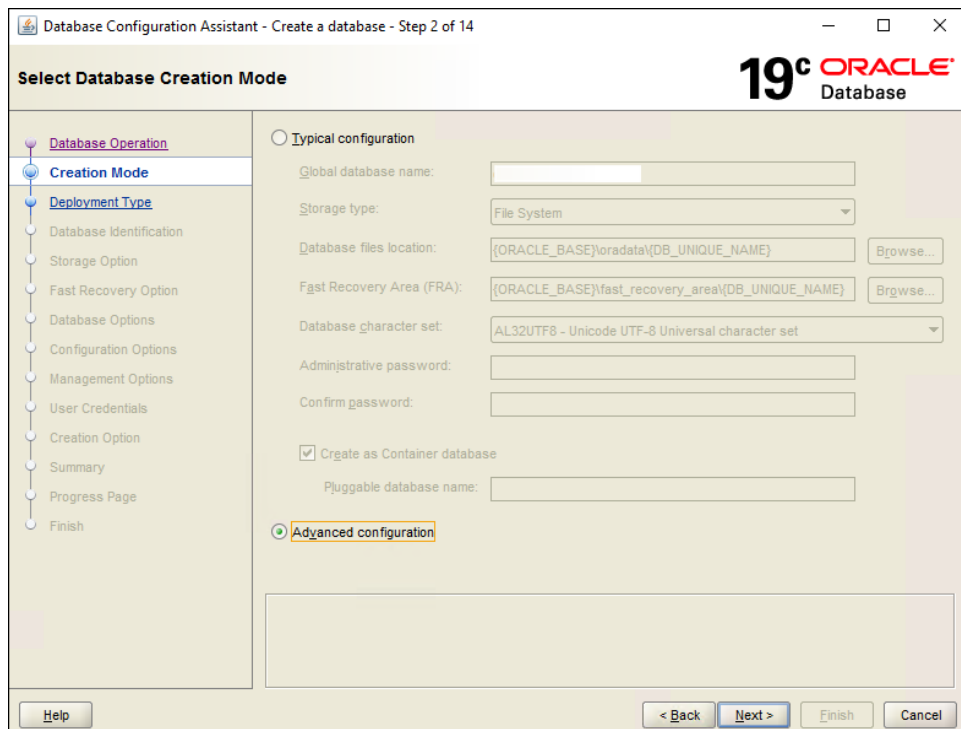
16. From the **Database type** drop-down list, select **Oracle Single Instance database** from the drop-down list. Select the **General Purpose or Transaction Processing** template option, and then click **Next**.

Figure 2-37   Select Database Deployment Type
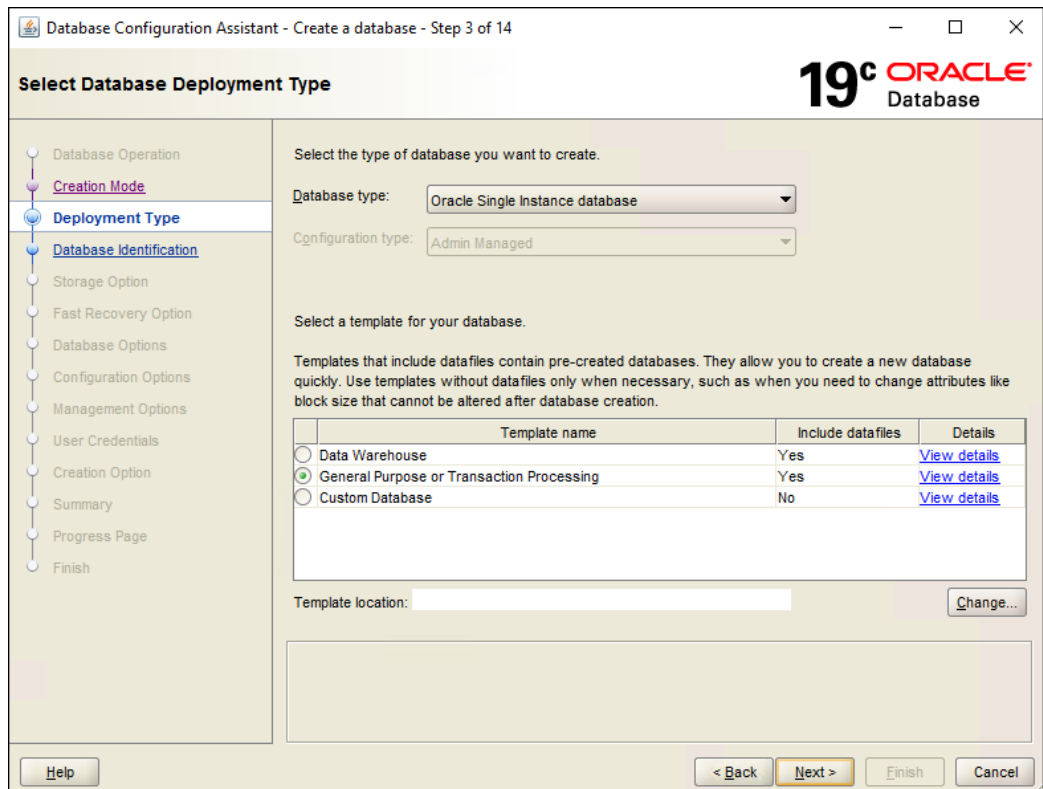
17. From the **Global database name field**, enter the database name.

    a.   From the **SID** field, enter the Service ID name.

    b.   Enable the **Create as Container database** checkbox.

    c.   Enable the **Use Local Undo tablespace for PDBs** checkbox.

    d.   Select **Create a Container database with one or more PDBs**.

    e.   From the **Number of PDBs** drop-down list, select **1**.

    f.   From the **PDB name** field, enter a name for your pluggable database (PDB).

Figure 2-38   Specify Database Identification Details
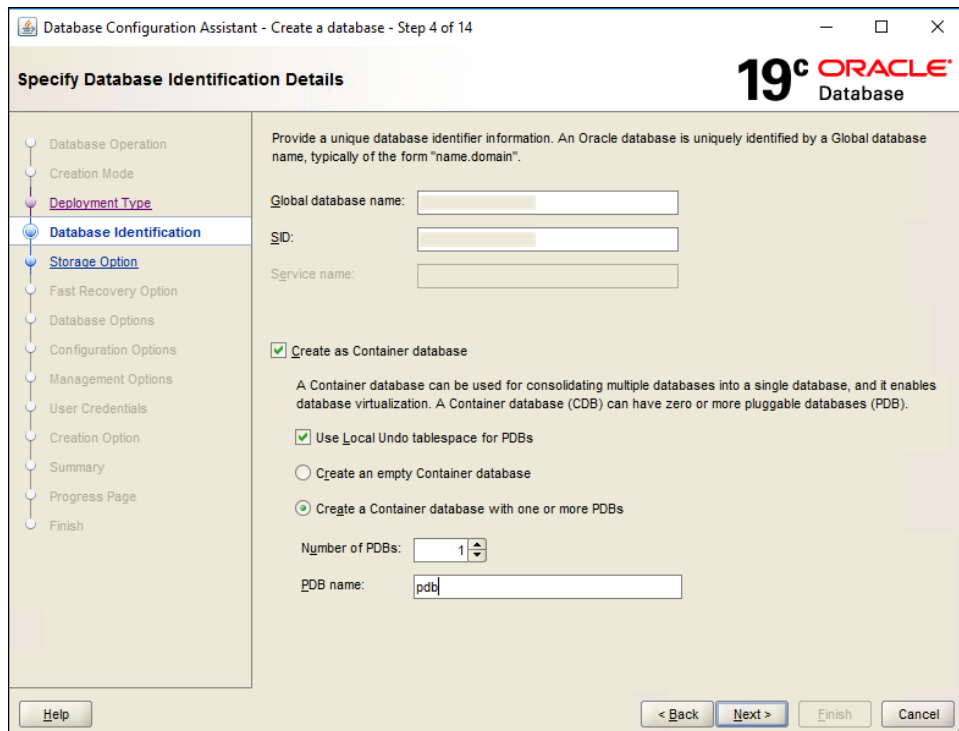
18. Select **Use following for the database storage attributes**.

    a.   Ensure the **Database files storage type** drop-down list is set to **File System**.

    b.   From the **Database files location** field, enter or browse to select the database file path.

    c.   Enable the **Use Oracle-Managed Files (OMF)** checkbox, and then click **Next**.

Figure 2-39   Select Database Storage Option
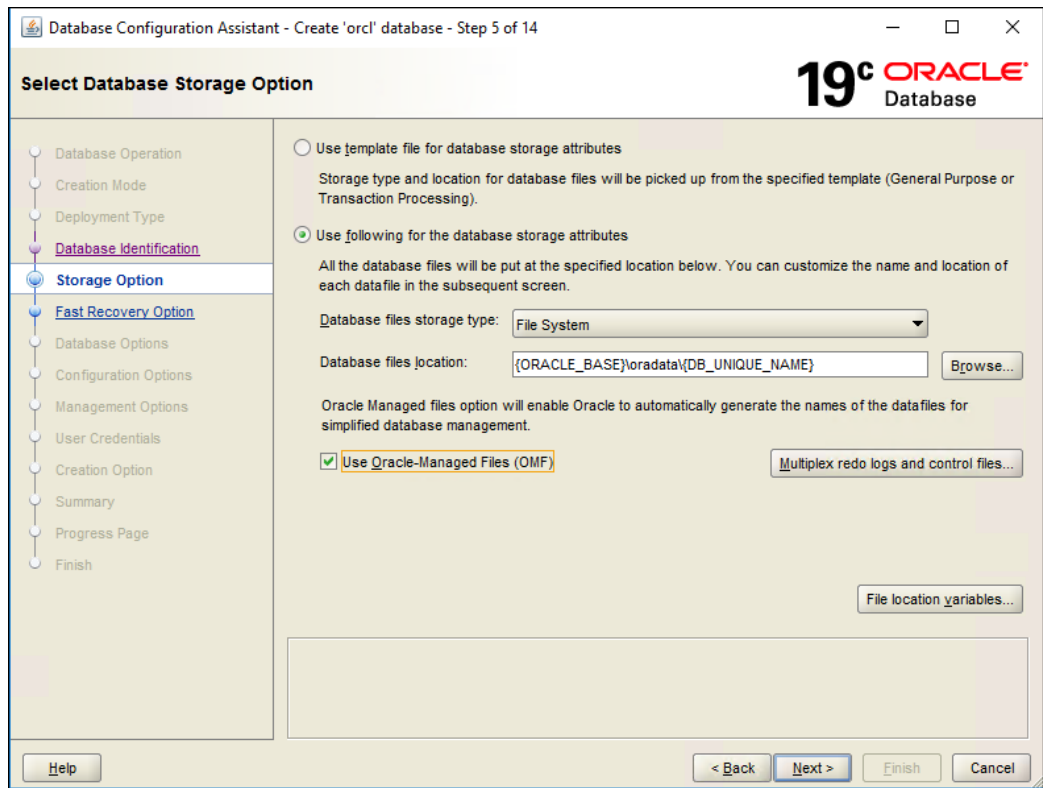
19. Select the **Specify Fast Recovery Area** checkbox.

    a. Ensure the **Recovery files storage type** drop-down list is set to **File System**.

    b. From the **Fast Recovery Area** field, enter or browse to select the database files recovery location.

    c. From the **Fast Recovery Area size** drop-down list, select the size of the database files recovery area.

    d. Enable the **Enable archiving** checkbox, and then click **Next**.

Figure 2-40   Select Fast Recovery Option
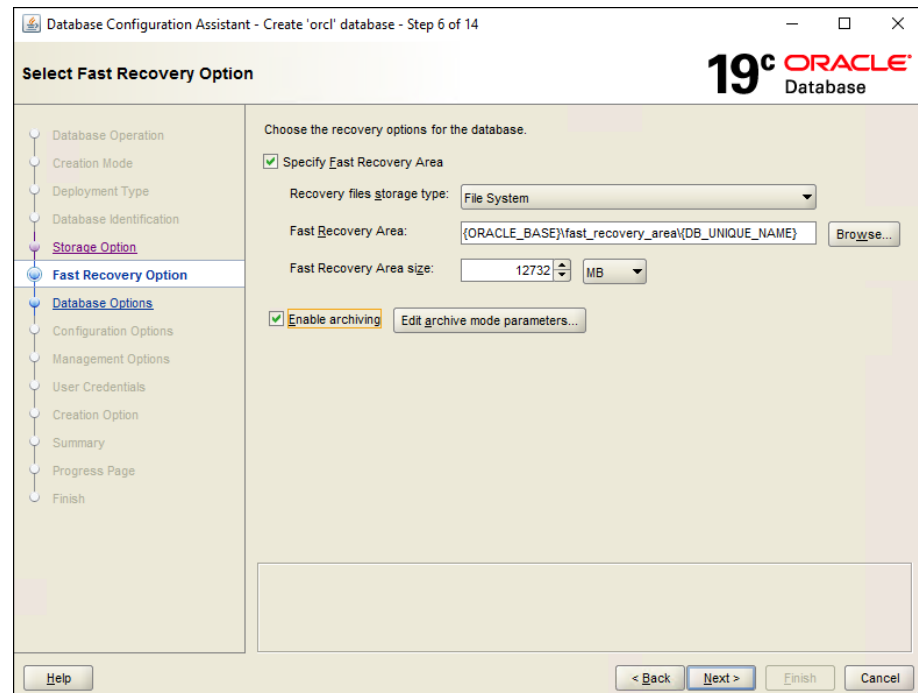
20. Enable the **Create a new listener** checkbox.

    a. Enter **LISTENER** in the **Listener name** field.

    b. Assign a port number in the **Listener port** field, and then click **Next**.

Figure 2-41   Specify Network Configuration Details
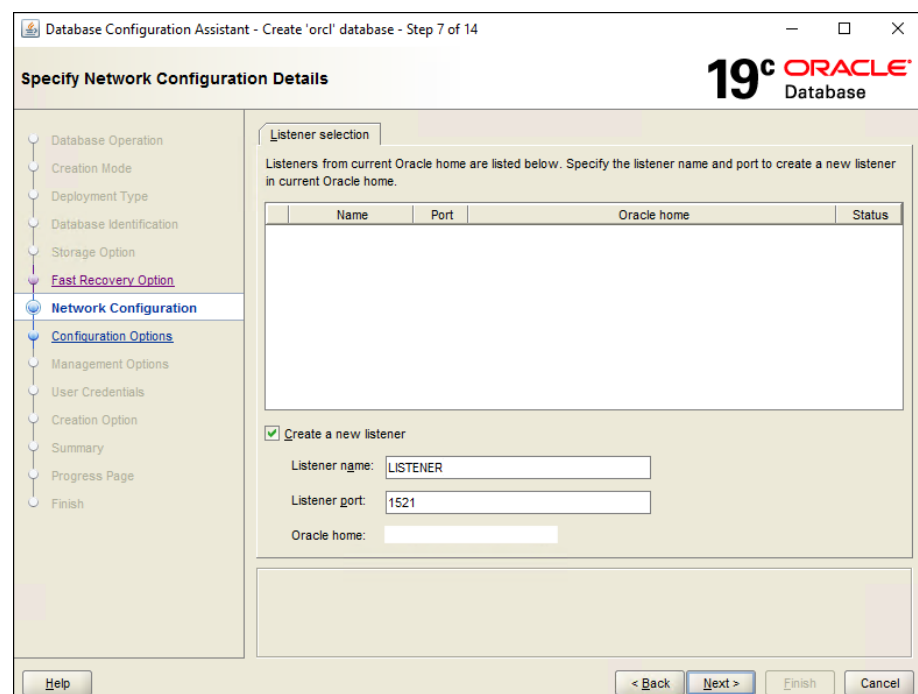
21. Enable the **Configure Oracle Database Vault** checkbox.

   a. Enter the name of the **Database Vault owner** and their associated **Password** in the appropriate fields.

   b. Re-enter the password in the **Confirm password** field.

   c. Enable the **Create a separate account manager** checkbox.

   d. Enter the name of the **Account manager** and their associated **Password** in the appropriate fields.

   e. Re-enter the password in the **Confirm password** field, and click **Next**.

Figure 2-42   Select Oracle Data Vault Config Option

22. From this window, select the **Sizing** tab and specify the maximum number of operating system user processes that can be simultaneously connected to the database in the **Processes** field. Click **Next**.

Figure 2-43 Specify Configuration Options — Sizing tab
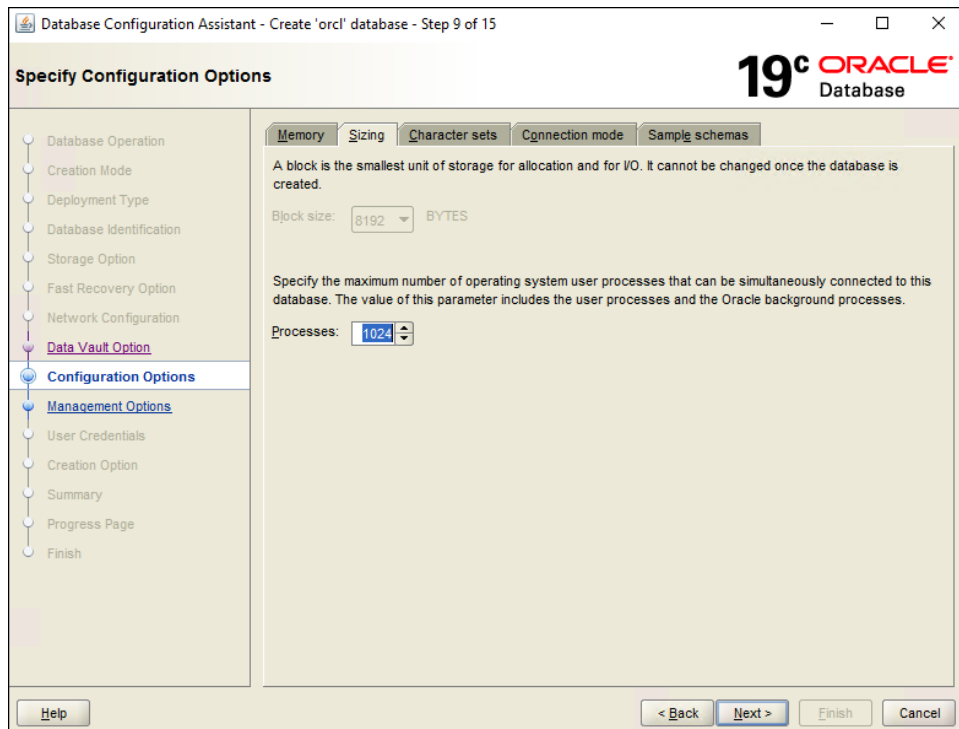
23. From the **Character sets** tab, select **Use Unicode (AL32UTF8)** as the character set. *(Optional) - You can click the **Sample schemas** tab and install a sample schema in the starter database, and then click **Next**.

Figure 2-44 Specify Configuration Options — Character sets tab
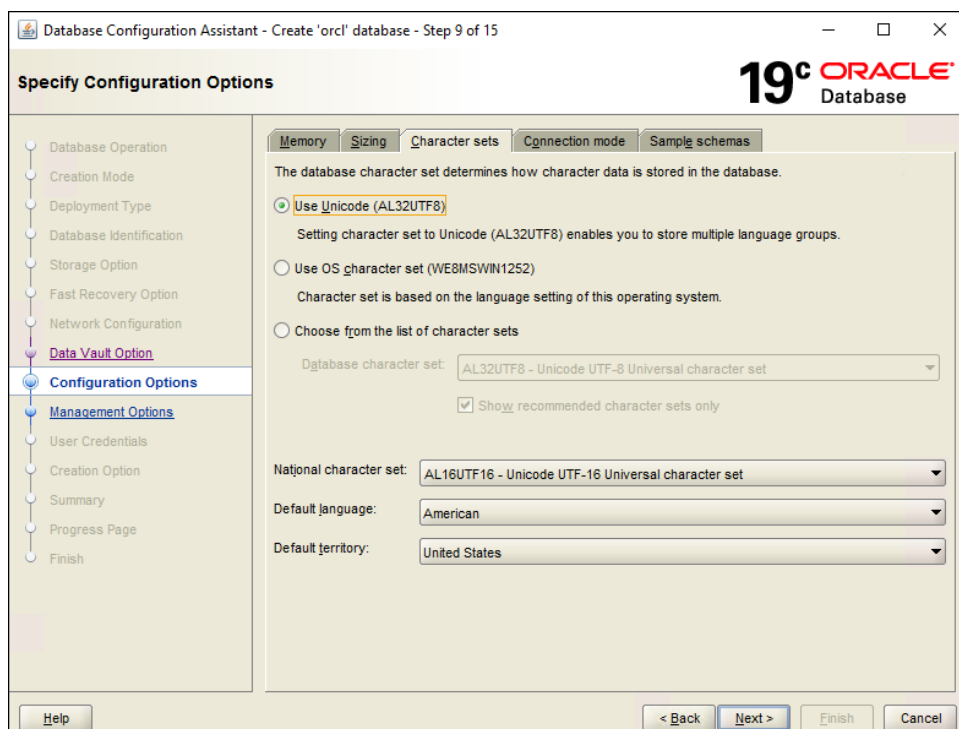
24. *(Optional) - Configuring enterprise managers from the **Specify Management Options** window is an optional step. Click **Next.**

25. Select **Use different administrative passwords**, and enter and confirm unique passwords for the following users:

    • SYS

    • SYSTEM

    • PDBADMIN

Figure 2-45   Specify Database User Credentials
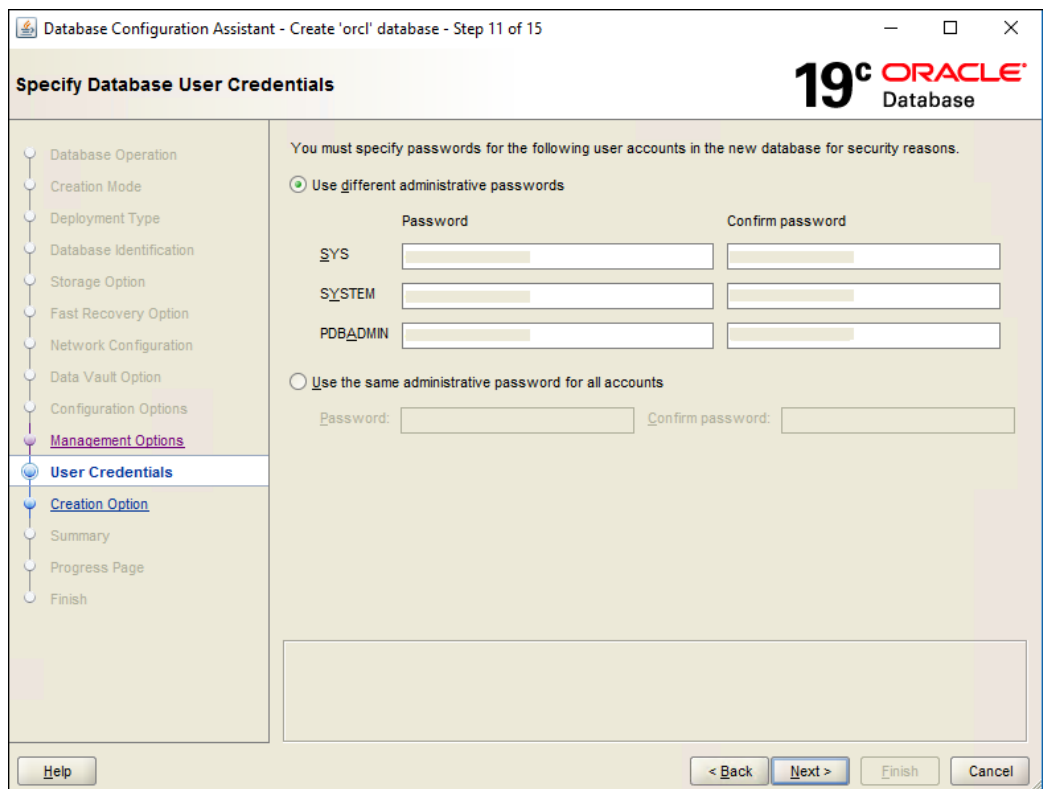
26. *(Optional) - Enable **Use the same password for all accounts** and enter and confirm the sole administrative password, and then click **Next**.

27. Enable the **Create database** checkbox, and then click **Next**.

Figure 2-46   Select Database Creation Option
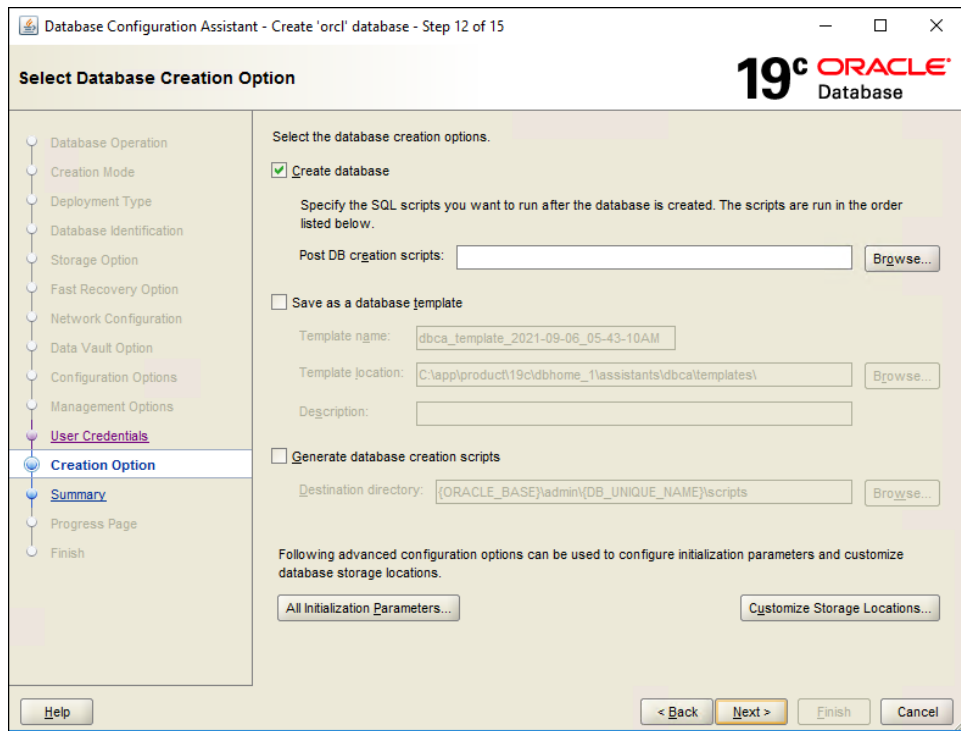
28. Review the **Summary** window to ensure that your previous selections are correct. If edits are required, click **Back** until you reach the window that contains the setting that needs to be changed. If no edits are necessary, click **Finish**.

Figure 2-47   Summary
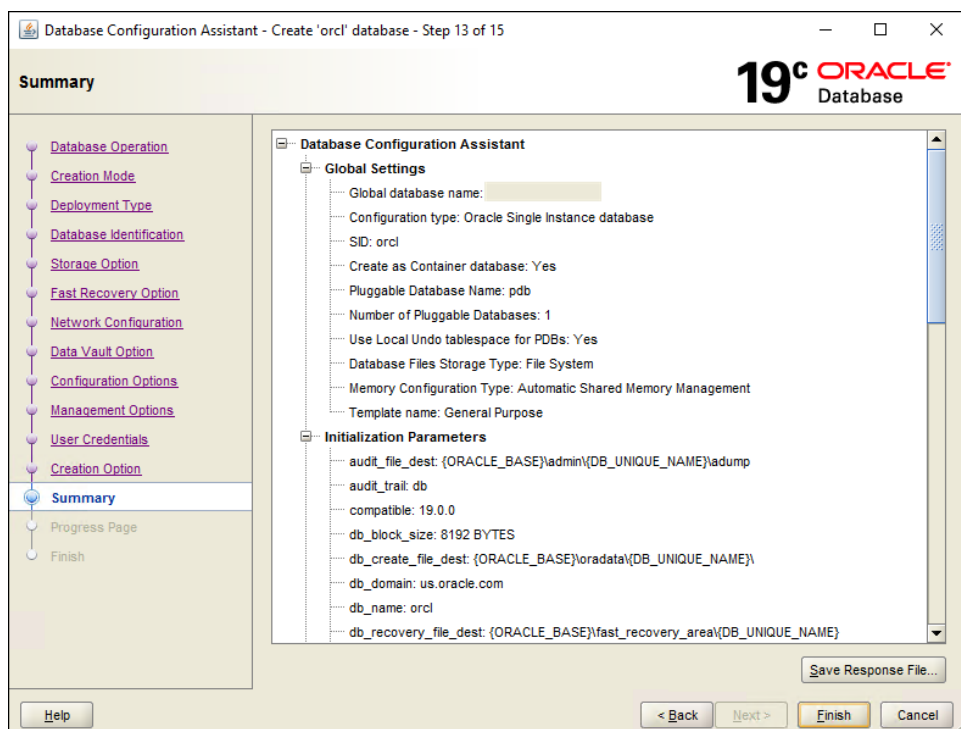
29. An installation **Progress Page** appears that allows you to track the ongoing database creation.

30. Once complete, the **Finish** window appears and indicates a successful installation. Click **Close** to exit the installation program.

After Installing Oracle Database 19c

The Oracle Database version that is installed on your database server must match the one on your Oracle Database Client. Oracle Client Installation contains more information about installing Oracle Database Clients.

Creating Oracle Database Tablespaces

If using Simphony 19.2.1 or later, creation of database Tablespaces is automatically performed by the Simphony installation application.

For versions prior to the Simphony 19.2.1 release, ensure the following Simphony database Tablespaces are created on your database server or servers:

- MCRSPOS
- MCRSCACHE

Appendix A: Sample Script for Creating Oracle Tablespaces contains a sample script to create the database Tablespaces. The Database Administrator's Guide contains more information about creating database Tablespaces. The Administrator's Reference for Linux and UNIX-Based Operating Systems contains information about administering an Oracle Database on these platforms.

Increasing Database Process Count

Run the `ALTER SYSTEM SET processes=300 SCOPE=SPFILE;` command on the Oracle Database and restart the Oracle Database Service. If you are using the Oracle Linux operating system, run the `shutdown immediate;` command and then run the `STARTUP pfile=init.ora;` command to restart the service. The *Oracle Database Platform Guide for Microsoft Windows* and the *Oracle Database Administrator's Reference for Linux and UNIX-Based Operating Systems* contain more information about restarting the Oracle Database Service.

If you are using a Microsoft Windows Server, restart the `OracleServiceSIMPHONY` service using the Windows Services dialog. The *Platform Guide for Microsoft Windows* contains more information about restarting the Oracle Database Service on Microsoft Windows Servers.

Oracle Database Client Installation

The Simphony installation media automatically installs the Oracle Database Client onto the application servers. Ensure that the Oracle Database Client version matches the version of Oracle Database that is installed on your database server.

> **✎ Note:**
>
> Beginning with the Oracle MICROS Simphony version 19.3 release, you are no longer required to explicitly install the Oracle Database Client.

Depending on the version of Oracle Database you are running, here are manual installation instructions for various versions of the Oracle Database Client:

1. For the Oracle Database 11g Release 2 client for both Microsoft Windows 64-bit, and Microsoft Windows 32-bit versions, click here.

2. For the Oracle Database 12c Release 1 client for Microsoft Windows 64-bit and 32-bit, click here.

3. For the Oracle Database 12c Release 2 client for Microsoft Windows 64-bit, click here.

4. For the Oracle Database 18c Release 1 client for Microsoft Windows 64-bit and 32-bit, click here.

5. For the Oracle Database 19c Release 1 client for Microsoft Windows 64-bit and 32-bit, click here.

Installing Reporting and Analytics

Install Reporting and Analytics (R&A) separately from Simphony using the Enterprise Back Office (EBO) R&A installation application. If you are upgrading from a release prior to Simphony 2.9, upgrade to R&A release 8.5.1 Patch 3 prior to installing or upgrading to Simphony release 2.9.

With Simphony release 2.10 or later (which includes the Simphony 18.2, 19.1.x, 19.2.x, and 19.3 releases), you can still use R&A version 9.0 Patch 8 or later.

If you are running Simphony version 19.3 GR, you can still utilize EBO version 9.1 (including Reporting and Analytics).

When you install or upgrade to EBO version 20.1 (including Reporting and Analytics and MyLabor) in conjunction with installing or upgrading to Simphony versions 19.1.2, 19.2.x, or 19.3, the Simphony EMC's Employee Maintenance, Reporting tab is now disabled (or has been removed). Going forward, new reporting users need to be added and configured in R&A. Reporting access passwords are no longer synced between Simphony and R&A If you still utilize R&A version 9.1, the Simphony EMC's Employee Maintenance, Reporting tab remains accessible and is configurable as usual.

The *Oracle Food & Beverage Compatibility Matrix* provides you with the latest information and versioning compatibilities between R&A and Simphony.

For users of EBO version 9.1, the Oracle Hospitality Enterprise Back Office Installation Guide contains more information about installing reports for Simphony.

See the Enterprise Back Office 20.1 documentation, specifically the *Reporting and Analytics User Guide Adding Users* section for more information about adding users from R&A.

Enabling Communication Between the Enterprise and Workstations

To allow workstations at the property to communicate with the Enterprise, you must add Firewall exceptions for the following services on the Simphony application servers using either the default ports or the ports you assign when installing Simphony.

- Internet Information Services (IIS): By default uses Transmission Control Protocol (TCP) port 8080 or port 443 for HTTPS connections.
- Oracle MICROS Labor Management: By default uses TCP port 81.

You may need to open extra ports for additional Simphony features. Contact your local support representative or Oracle Hospitality Support Services for assistance.

For instructions on opening a port in Windows Firewall, refer to the Microsoft TechNet Library at https://technet.microsoft.com/en-us/library.

List of Simphony Database Configuration Fields

The following table describes the fields that appear on the Simphony installation application when creating the Simphony databases.

Table 2-2   List of Database Configuration Fields

Field	Description
Server Name	Enter the database server name. For example, `example.databaseservername.example.com`
Service Name	Enter the name of the remote Oracle service (TNS alias) to install the Simphony database.
Username	Enter a strong username for the database.
Password	Enter a strong password for the user defined in the Username field to use to connect to the database.
Confirm Password	Re-enter the password from the previous step.
Database Port	To use a port other than the default, enter the port number to use to connect to the database.

3

Simphony Installation

This chapter contains instructions to install Simphony using the Simphony POS Installation application.

Simphony Installation for an All-in-One Server

The *Oracle Food & Beverage Compatibility Matrix* provides more information on compatibility between R&A and Simphony.

1. Log in and download the Simphony installation application from the Oracle Technology Network (OTN) website at https://edelivery.oracle.com/.

2. Run the **Setup** file, and then click **Next** to continue the installation.

3. Select **Application and Database Components**, and then click **Next**. List of Simphony Components and Services contains more information.

Figure 3-1   Simphony Installation Application
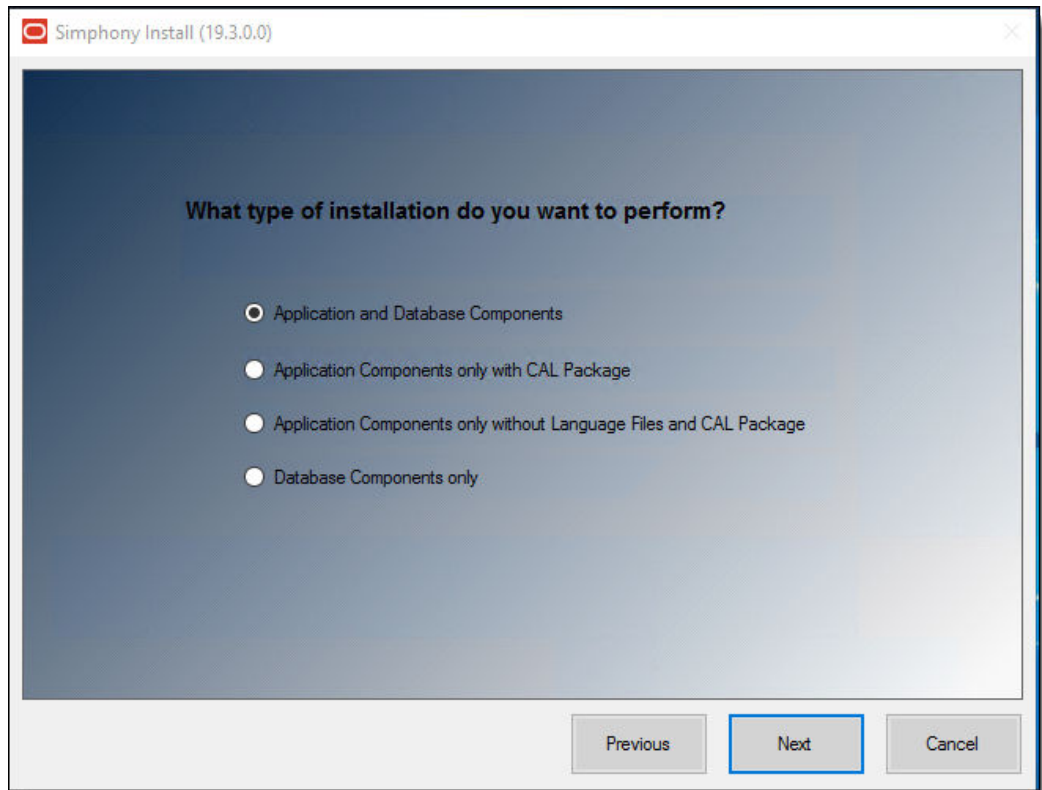
4. Select all of the components, and then click **Next**. The Simphony Data Request Processing Service is installed by default, and is used for Import/Export tasks.

Figure 3-2   Simphony Install Component Selections
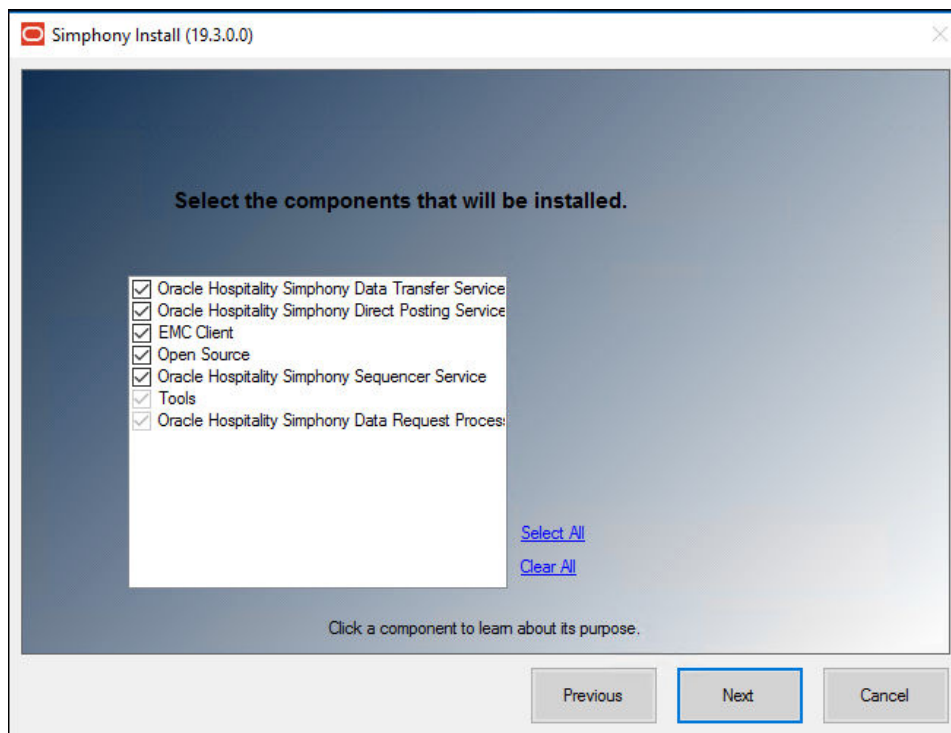
5. Select all of the components that are to be enabled by default, and then click **Next**.

Figure 3-3   Simphony Install Components to Enable by Default
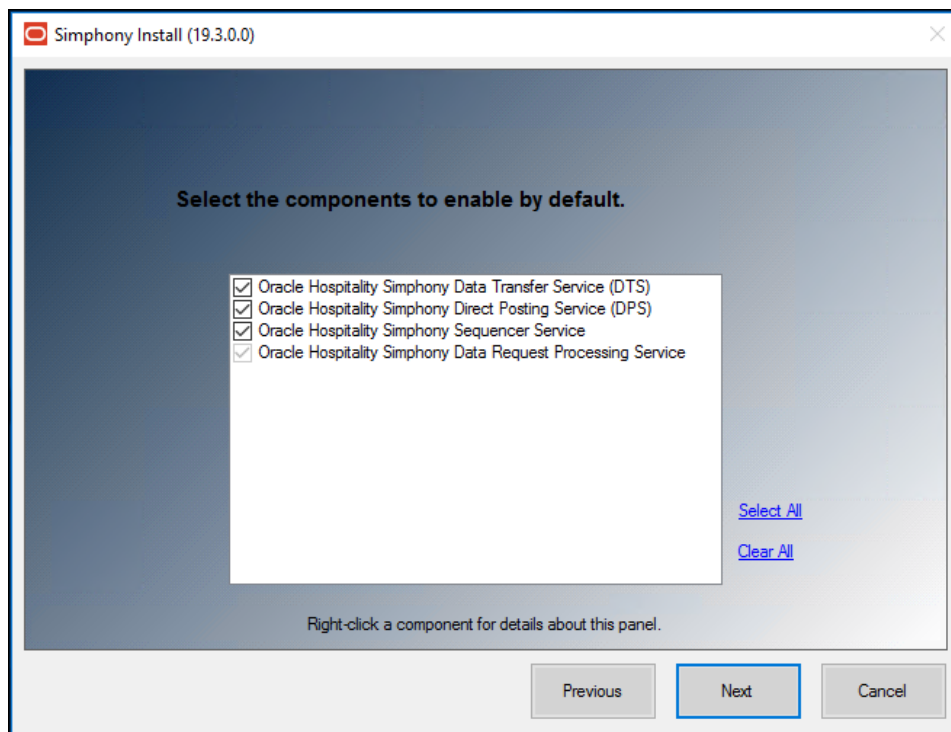
6. If you are not using a Load Balancing server and are using the Import/Export feature or plan to use the Simphony Engagement Cloud Service:

   a. Select **IIS** for the **Certificate Location** field.

   b. To add a new certificate, select **New**, click **Select**, enter or select the certificate location, and then enter the **Password** for the certificate.

   c. To add an existing certificate, select **Existing**, and then select the certificate from the drop-down list.

   d. Enter the port number in the **Service Host Secure Port** field.

      See Requesting and Installing Secure Certificates for more information about requesting and installing secure certificates.

      If you define a Service Host Secure Port number other than the default of 443, you need to configure the IIS Bindings of each Application Pool to the new port. To add IIS Bindings, refer to Binding Secure Server Certificates to IIS and the Microsoft TechNet Library at https://technet.microsoft.com/en-us/ for more information.

7. Enter the IP address of the server for the **Service Host Name** (computer name) in the **Https IP Address** field. If the server is using a Domain Name System (DNS) or Host file mapping, you can enter the name of the server instead of the IP address.
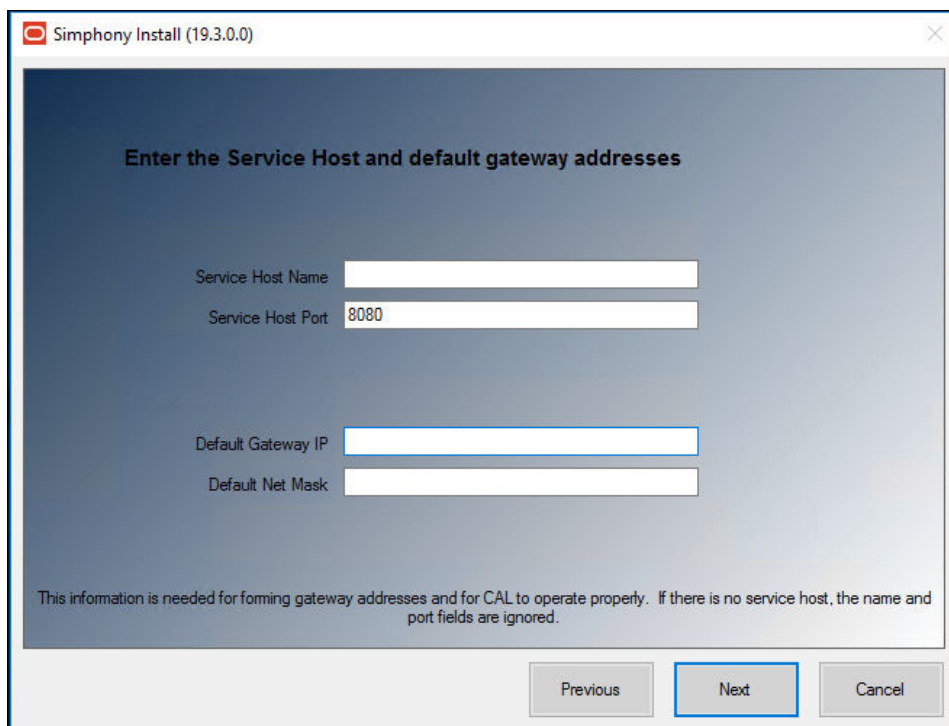
Figure 3-4   Simphony Install Certificate Information
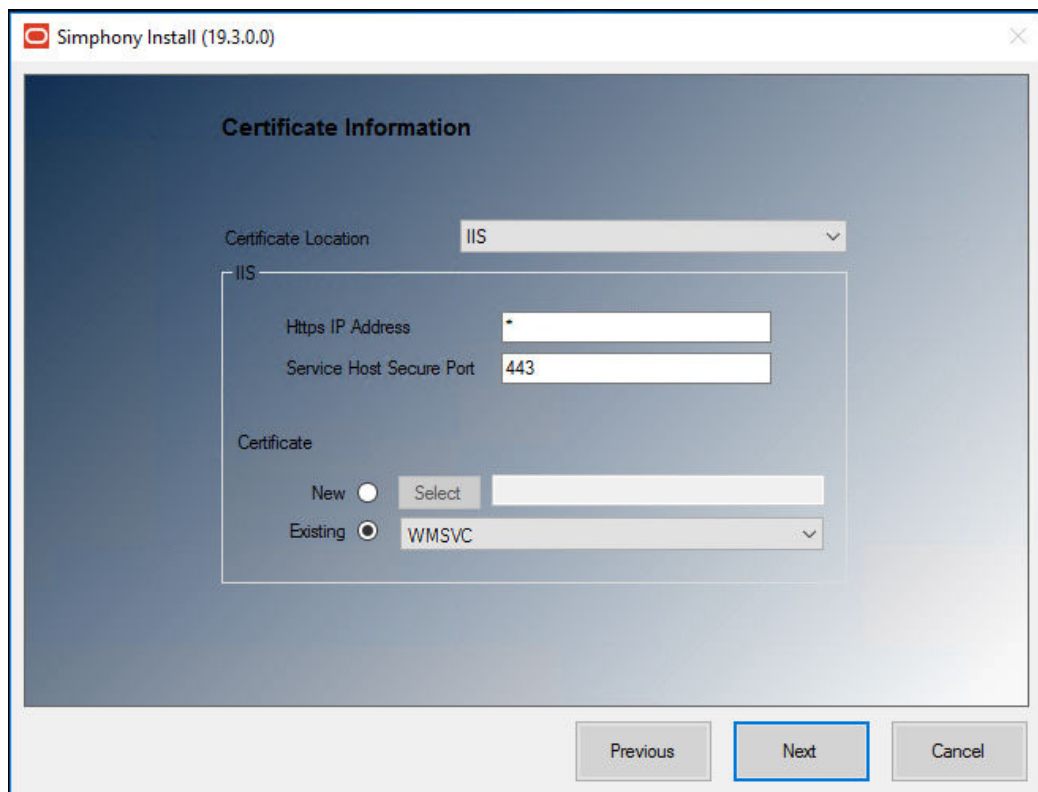
8. Click **Next**.

   For the **All-in-One Server** installation scenario, skip Steps 9, 10, and 11.

9. If you are using the Import/Export Service or plan to use the Simphony Engagement Cloud Service, on Oracle RAC or a Load Balancing server, select **LoadBalancer** for the **Certificate Location** field.

10. Enter the port number in the **Service Host Secure Port** field.

   • If you define a Service Host Secure Port number other than the default of 443, you need to enable that port on the Load Balancer server.

   • If you define a Service Host Secure Port number other than the default of 443, you need to configure the IIS Bindings of each Application Pool to the new port. To add IIS Bindings, refer to Binding Secure Server Certificates to IIS and the Microsoft TechNet Library at https://technet.microsoft.com/en-us/ for more information.

   • You can define any free port number for the Service Host Port. If you define a port number other than the default 443, you must manually change the port number when you install subsequent services.

   • If you plan to install Reporting and Analytics on the same server as Simphony, do not assign port number 8081 for the Service Host Port. This is the default port number assigned to the Red Hat JBoss server for Back Office Reports.

   a. Select **IIS** in the **Certificate Location** field.

   b. To add a new certificate, select **New**, click **Select**, enter or select the certificate location, and then enter the **Password** for the certificate.

   c. To add an existing certificate, select **Existing**, and then select the certificate from the drop-down list.

11. Click **Next**.

Figure 3-5   Service Host and Default Gateway Addresses

12. Enter the **Service Host Name** and **Service Host Port** number, as well as the **Default Gateway IP** and **Default Net Mask** IP addresses, and then click **Next**.

13. Select Oracle Database, and then click **Next**:

    a. For your Oracle Database, select **Oracle**.

    For All-in-One installation scenarios, the installation application installs an Oracle 19c client (even if you are using Oracle Database 12c as a platform). If you are using Oracle Database 19c, the installer does not install an Oracle 19c client.

    b. Click **OK** to install the Oracle 19c Database client if prompted to do so.

14. Enter or select the location to install Simphony, and then click **Next** twice.

    Oracle Food and Beverage recommends that you install the Simphony application on a separate partition from where the Microsoft Windows or Oracle Linux for MICROS operating system resides (usually the C:\ drive).

15. To install Simphony with a blank database:

    a. Select **Blank Database**.

    b. Enter a strong **Username** and **Password** to comply with Payment Card Industry (PCI) security guidelines. The credentials that you enter here are used to create the Simphony super user to access the EMC.

    c. Confirm the password, and then click **Next**.

    Oracle Food and Beverage recommends separating the Transaction and Security databases onto different servers for additional security.

16. Enter the following information that is used to connect to the transaction database, and then click **Next**

    a. **Server Name**: Enter the name of the transaction database server.

    b. **Service Name**: Enter the name of the service (TNS alias).

    c. **Username**: Enter your transaction database access user name.

    d. **Password**: Enter your transaction database access password.

    e. **Confirm Password**: Re-enter the password from the previous step.

    f. **Database Port**: Enter the port number used to access the transaction database server, and then click **Next**.

Figure 3-6   Transaction Database Information

17. Enter the following information that is used to connect to the existing security database, and then click **Next**.

   a. **Server Name**: Enter the name of the security database server.

   b. **Service Name**: Enter the name of the service (TNS alias).

   c. **Username**: Enter your security database access user name.

   d. **Password**: Enter your security database access password.

   e. **Confirm Password**: Re-enter the password from the previous step.

   f. **Database Port**: Enter the port number used to access the security database server, and then click **Next**.

Figure 3-7   Security Database Connection Information

18. Enter the following information to connect to the reporting database server or the Enterprise Back Office (for Reporting and Analytics) portal.

   If you are using cloud-based Enterprise Back Office (EBO) version 20.1 for Reporting and Analytics (R&A):

   a. **Use Reporting and Analytics Configuration Service** checkbox: Enable this checkbox to use the Enterprise Back Office portal (which includes R&A 20.1). When this checkbox is enabled, all irrelevant fields are automatically disabled and grayed out.

   b. **Configuration Service URL**: Enter the URL containing the Fully Qualified Domain Name (FQDN) of the cloud-based server running the Reporting and Analytics Configuration Service. You must also include the Port Number. For example, `https://FQDN:7002/ConfigurationService/v1`, where 7002 is the assigned port number.

   If you are not utilizing R&A version 20.1, do not enable the **Use Reporting and Analytics Configuration Service** checkbox and enter the following:

   a. **Server Name**: Enter the name of the reporting database server.

   b. **Service Name**: Enter the name of the service (TNS alias).

   c. **Username**: Enter (or verify) your reporting database access user name.

   d. **Password**: Enter your reporting database access password.

   e. **Database Port**: Enter the port number used to access the reporting database.

   f. **Username**: Enter (or verify) your reporting database access user name.

g. **Password**: Enter your reporting database access password, and then click **Next**.

Figure 3-8   Simphony Install Reporting Database Connection

19. You have the option to configure Multi-Factor Authentication (MFA) if you already have your SMTP email servers set up and validated. MFA Configuration During the Installation of Simphony contains instructions about configuring MFA during the installation process.

20. Click **Confirm**.

21. After the installation completes, click **Finish** to exit the Simphony setup.

22. Click **Yes** to restart the computer.

23. Proceed to Post-Installation Tasks to continue.

Installing Simphony on Multiple Servers

In a multi-server installation, you can install the Simphony application and database components on separate servers.

The following table outlines the process for installing Simphony:

Table 3-1   Multiple Server Installation

Database Type	Description
Oracle Database	When installing Simphony with an Oracle database, you can install Simphony database components on separate database servers from a remote machine while installing Simphony on the application servers.
	For properties using separate servers for the Simphony application and databases, install an Oracle 19c Client on all application servers so that it can connect to the remote database server.

Ensure all of the pre-installation tasks have been completed as outlined in the Pre-Installation Tasks chapter.

1. Using the Simphony installation media, select and install **Database Component Only** on the database servers.

   a. After setting up the database components on the database servers, access the Simphony application server. Using the Simphony installation media, select and install **Application Components Only**.

   b. Select all components, and then click **Next**.

      List of Simphony Components and Services contains more information.

   c. If you are installing all Simphony application components on a single server, select all the services, and then click **Next**.

   d. If you are installing Simphony application components on more than one server, for example, the Data Transfer Service (DTS) on one server and the Direct Posting Service (DPS) on another:

      • On the primary application server, select all services, and then click **Next**.

      • On all other application servers, deselect **Sequencer Service**, and then click **Next**.

2. Follow the instructions in Simphony Installation for an All-in-One Server to complete the installation. When configuring the databases, enter the Server Host Name or IP Address, Service Host Name, and Login Credentials for the Simphony database servers.

3. Run the Simphony installation application to install the Oracle 19c Client on all Simphony application servers.

List of Simphony Components and Services

You can install the following components and services by running the Simphony installation application.

Table 3-2   List of Application and Database Services

Component	Description
Data Transfer Service (DTS)	Moves point of sale (POS) definitions and journal data to Reporting and Analytics. This is typically installed on each Simphony application server.

Table 3-2   (Cont.) List of Application and Database Services

Component	Description
Direct Posting Service (DPS)	Posts sales data to the Simphony Reports database. This is typically installed on each Simphony application server.
Enterprise Management Console (EMC) Client	Contains all of the files necessary to run the EMC.
Open Source	This is typically installed on each Simphony application server.
Sequencer Service	Responsible for running the Start of Day Autosequences. This is typically installed on each Simphony application server, but is only enabled on one server
Tools	Installs the tools required for import/export, encryption, and so on. This is typically installed on each Simphony application server.
Data Request Processing Service	Installs the Import Export Web API and the Web Application Data Request Processing Service. This is typically installed on each Simphony application server.
	The Web Application Data Request Processing Service processes Simphony Data Import/ Export requests and scheduled Import/ Export requests.

MFA Configuration During the Installation of Simphony

When running the Simphony installation application, you are prompted to configure Multi-Factor Authentication (MFA). You can either bypass or configure the MFA configuration.

1. To bypass the MFA configuration until after Simphony has been installed, deselect the **Email One-Time Password** checkbox, and then click **Next**.

   After you deselect **Email One-Time Password**, you receive a message that indicates your system is not in compliance with Payment Card Industry (PCI) standards.

2. If you choose to configure MFA at this time, the configuration instructions are outlined in the *Simphony Post-Installation or Upgrade Guide*, specifically in the chapter named **EMC Access Security**. Search for the **Configuring the SMTP and Backup SMTP Servers in the EMC** section.

   If you are performing a Simphony Standard Cloud Service installation, MFA configuration that is completed during the installation of Simphony is duplicated for each enterprise. After Simphony is installed, you can go back and make edits in the EMC for individual enterprises (or organizations) that might have differing SMTP servers or settings from each other.

Figure 3-9   Enabling Multi-Factor Authentication

Configuring Workstation Database Passwords in the EMC

To maintain workstation database access control, you must assign unique usernames and complex passwords in the Simphony EMC.

See the *Oracle MICROS Simphony Security Guide* for more information about configuring workstation database passwords.

4
Post-Installation Tasks

Perform all post-installation tasks to ensure that the Simphony components and the database are configured correctly.

Recycling Application Pools

After installing or upgrading Simphony, the Microsoft Internet Information Services (IIS) web server is restarted, which recycles the application pools. Follow these steps to manually recycle three application pools.

1. Open Microsoft Internet Information Services (IIS) Manager.

2. In the Connections pane, expand the server name, and then click **Application Pools**.

3. In the **Application Pools** pane, select one of the following application pools, right-click it, and then click **Recycling...**.

   • **ImportExportAPIPool**

   • **Simphony2Pool**

   • **SimphonyAppPool**

4. Repeat Step 3 for each application pool listed.

Logging Onto the EMC

The Enterprise Management Console (EMC) is the primary configuration application in Simphony. A shortcut for accessing EMC is installed on the application server during the installation.

1. Open the **EMC** from the shortcut on the desktop or **Start** menu.

2. Enter the Host Name or IP address of the Simphony application server or the Load Balanced address.

   > ✎ **Note:**
   >
   > To determine the Host Name of a machine, open a Command prompt session and execute the `hostname` command. Make note of the returned host name value.

3. If you installed the blank database, enter the logon credentials for the Simphony super user that you created when installing Simphony.

4. Click **Login**.

5. Click **OK** for the EMC Database Credentials Non-Compliance message.

   If you can launch and see that the EMC and the Simphony Gateway are running, Simphony is successfully installed.

Setting the Start-Of-Day Sequencer Machine and the App Server Time Zone

1. In the EMC, select the Enterprise level, click the **Setup** tab, and then click **Enterprise Parameters**.

2. From the machine running the **Oracle Hospitality Simphony Sequencer Service**, open a Command prompt session and execute the `hostname` command. Make note of the returned host name value.

3. From the EMC, click the **Miscellaneous** tab, and enter the previously returned hostname value in the **SOD Sequencer Machine Name** field.

    > **Note:**
    >
    > An IP address or Fully Qualified Domain Name (FQDN) are not valid entries for this field.

4. Select the **App Server Time Zone**.

    If you are deploying Simphony on multiple servers, the date, time, and the time zone settings of each application server and database server must correspond. Additionally, the servers' time zone must correspond with the application server time zone setting in the EMC.

    You can synchronize the time settings between the servers by configuring one of the servers to be a Network Time Protocol (NTP) server and then point the rest of the servers to the NTP server. For information on configuring a Network Time Protocol server, refer to the Microsoft TechNet Library at https://technet.microsoft.com/en-us/.

5. Click **Save**.

6. If you installed Simphony on multiple application servers, disable the **Oracle Hospitality Simphony Sequencer Service** on all servers other than the SOD Sequencer Machine.

    In the event the application server that is running the Oracle Hospitality Simphony Sequencer Service has performance issues, start the Oracle Hospitality Simphony Sequencer Service on another Simphony application server if the main application server is going to be down for multiple days.

    The Oracle Hospitality Simphony Sequencer Service on the original server must be stopped prior to it being started on the alternate one. Also, when changing where the Oracle Hospitality Simphony Sequencer Service is running, the designation of the SOD Sequencer Machine Name must be updated in the EMC.

Connecting Reporting and Analytics to Simphony

With Simphony version 2.10 or later (which includes the Simphony 18.2, 19.1.x, 19.2.x, and 19.3 releases), if you use Reporting and Analytics (R&A) version 9.0 Patch 8 or later (including the R&A version 9.1), the steps outlined below are no longer required. Core Simphony reports are now available to set up by default from within the R&A application.

If you are using R&A version 8.5.1, complete the following steps. Before you connect to R&A, you need to have:

- At least one property in the Enterprise. The *Oracle Hospitality Simphony Configuration Guide* contains more information about adding properties to the Enterprise.

- Organizations and report locations created in R&A for your properties in the Enterprise. The Hospitality Enterprise Back Office Installation Guide contains more information about the prerequisite configurations that are required when creating organizations and report locations.

To identify the location of R&A on the system, perform the following steps:

1. In the EMC, select the Enterprise level, click the **Setup** tab, click **Enterprise Parameters**, and then click the **Reporting and Analytics** tab.

> **Note:**
>
> If you selected the **Use Reporting and Analytics Configuration Service** checkbox while installing Simphony, all irrelevant fields are automatically disabled and grayed out.

2. In the **Reporting and Analytics Machine Name** field, enter the name of the computer that is running the **MICROS Portal Service**.

3. Select the Enterprise level, click the **Setup** tab, and then click **Properties**.

4. Double-click a property to open it.

5. Select the **Report Location** for the property.

6. If the Report Location is not available in the drop-down list:

   a. Click **Edit**, and then create a Report Location.

   Figure 4-1   Enterprise Properties R&A Setup

   b. Complete each field (required) as described below:
      - **Name**: Enter the property name.
      - **Location Reference**: Enter the Property ID. This must be unique.
      - **Time Zone**: Select the time zone from the drop-down list that matches the property's time zone.
      - **Simphony Labor Logon**: Enter a unique user name.
      - **Simphony Labor Password**: Enter a unique password.

7. Click **OK**, and then click **Save**.

Figure 4-2   Report Location Configuration

8. Repeat Steps 4 through 7 for all properties in the Enterprise.

5

Removing POS and Reporting

Uninstalling Simphony and Reporting and Analytics

Uninstalling removes the Simphony application only. To completely remove Simphony from the servers, you must manually delete the Simphony database components from the database after uninstalling the application.

1. Run the Simphony installation application wizard (for all versions), and click **Next**.

   If you have the application and the database on separate servers, run the installation application on the application server.

2. Enter the credentials for a database administrator, and then click **OK**.

   - For your Oracle database, enter the credentials for the `sys` user.

3. Select **Uninstall Simphony**, and then click **Next**.

4. Click **Confirm**.

   To uninstall Reporting and Analytics see the Hospitality Enterprise Back Office Installation Guide for more information.

6

Appendix A: Sample Script for Creating Oracle Tablespaces

This sample script is meant for creating Oracle Tablespaces for Simphony versions prior to the release of Simphony version 19.2.1. Beginning with Simphony version 19.2.1, the installation application automatically creates all necessary Tablespaces.

Create the following Simphony Oracle Database Tablespaces on the database server or servers:

```
/* MCRSPOS */
DECLARE
    CURSOR mcrspos_tablespace_check IS
    SELECT tablespace_name
    FROM dba_tablespaces
    WHERE tablespace_name = 'MCRSPOS';

    CURSOR mcrspos_platform_check_w IS
    SELECT substr(platform_name, 1, 9)
    FROM gv$database;

    CURSOR mcrspos_platform_check_l IS
    SELECT substr(platform_name, 1, 5)
    FROM gv$database;

    CURSOR mcrspos_rac_check IS
    select value from gv$parameter
    where name = 'cluster_database';

    CURSOR mcrspos_asm_check IS
    select substr(file_name, 1,1)
    from dba_data_files;

    v_tablespace    VARCHAR2(40);
    v_path          VARCHAR2(100);
    sql_stmt        VARCHAR2(10000);
    v_platform_w    VARCHAR2(40);
    v_platform_l    VARCHAR2(40);
    v_rac           VARCHAR2(10);
    v_asm           VARCHAR2(10);

BEGIN
    OPEN mcrspos_tablespace_check;
    OPEN mcrspos_platform_check_w;
    OPEN mcrspos_platform_check_l;
    OPEN mcrspos_rac_check;
    OPEN mcrspos_asm_check;
    FETCH mcrspos_tablespace_check INTO v_tablespace;
    FETCH mcrspos_platform_check_w INTO v_platform_w;
```

```
    FETCH mcrspos_platform_check_l INTO v_platform_l;
    FETCH mcrspos_rac_check INTO v_rac;
    FETCH mcrspos_asm_check INTO v_asm;
    IF mcrspos_tablespace_check%NOTFOUND AND v_platform_w =
'Microsoft' THEN
        SELECT substr(file_name, 1,((instr(file_name, '\', - 1, 1))))
INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

        sql_stmt := 'CREATE TABLESPACE MCRSPOS LOGGING DATAFILE ' ||
'''' || v_path || 'MCRSPOS01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE
MANAGEMENT AUTO';
        EXECUTE IMMEDIATE sql_stmt;
    ELSE
        IF mcrspos_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac <> 'TRUE' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1,
1)))) INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS LOGGING DATAFILE '
|| '''' || v_path || 'MCRSPOS01.dbf' || '''' || ' SIZE 512M AUTOEXTEND
ON NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE
MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
    ELSE
        IF mcrspos_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '+' THEN

            sql_stmt := 'CREATE TABLESPACE MCRSPOS DATAFILE ''+DATA''
SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED LOGGING ONLINE
PERMANENT BLOCKSIZE 8192 EXTENT MANAGEMENT LOCAL AUTOALLOCATE
ENCRYPTION USING ''AES256'' DEFAULT NOCOMPRESS STORAGE(ENCRYPT)
SEGMENT SPACE MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
    ELSE
        IF mcrspos_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '/' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1,
1)))) INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS LOGGING DATAFILE '
|| '''' || v_path || 'MCRSPOS01.dbf' || '''' || ' SIZE 512M AUTOEXTEND
ON NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE
MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
        END IF;
        END IF;
        END IF;
    END IF;
    CLOSE mcrspos_tablespace_check;
    CLOSE mcrspos_platform_check_w;
    CLOSE mcrspos_platform_check_l;
    CLOSE mcrspos_rac_check;
    CLOSE mcrspos_asm_check;
END;
```

```
/
/* MCRSCACHE */
DECLARE
    CURSOR mcrscache_tablespace_check IS
    SELECT tablespace_name
    FROM dba_tablespaces
    WHERE tablespace_name = 'MCRSCACHE';

    CURSOR mcrscache_platform_check_w IS
    SELECT substr(platform_name, 1, 9)
    FROM gv$database;

    CURSOR mcrscache_platform_check_l IS
    SELECT substr(platform_name, 1, 5)
    FROM gv$database;

    CURSOR mcrscache_rac_check IS
    select value from gv$parameter
    where name = 'cluster_database';

    CURSOR mcrscache_asm_check IS
    select substr(file_name, 1,1)
    from dba_data_files;

    v_tablespace   VARCHAR2(40);
    v_path         VARCHAR2(100);
    sql_stmt       VARCHAR2(10000);
    v_platform_w   VARCHAR2(40);
    v_platform_l   VARCHAR2(40);
    v_rac          VARCHAR2(10);
    v_asm          VARCHAR2(10);

BEGIN
    OPEN mcrscache_tablespace_check;
    OPEN mcrscache_platform_check_w;
    OPEN mcrscache_platform_check_l;
    OPEN mcrscache_rac_check;
    OPEN mcrscache_asm_check;
    FETCH mcrscache_tablespace_check INTO v_tablespace;
    FETCH mcrscache_platform_check_w INTO v_platform_w;
    FETCH mcrscache_platform_check_l INTO v_platform_l;
    FETCH mcrscache_rac_check INTO v_rac;
    FETCH mcrscache_asm_check INTO v_asm;
    IF mcrscache_tablespace_check%NOTFOUND AND v_platform_w = 'Microsoft'
THEN
        SELECT substr(file_name, 1,((instr(file_name, '\', - 1, 1)))) INTO
v_path FROM dba_data_files WHERE ROWNUM < 2;

        sql_stmt := 'CREATE TABLESPACE MCRSCACHE LOGGING DATAFILE ' || ''''
|| v_path || 'MCRSCACHE01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON NEXT
128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT
AUTO';
        EXECUTE IMMEDIATE sql_stmt;
     ELSE
        IF mcrscache_tablespace_check%NOTFOUND AND v_platform_l = 'Linux'
```

```
AND v_rac <> 'TRUE' THEN
             SELECT substr(file_name, 1,((instr(file_name, '/', - 1,
1)))) INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

             sql_stmt := 'CREATE TABLESPACE MCRSCACHE LOGGING DATAFILE
' || '''' || v_path || 'MCRSCACHE01.dbf' || '''' || ' SIZE 512M
AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO';
             EXECUTE IMMEDIATE sql_stmt;
     ELSE
       IF mcrscache_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '+' THEN

             sql_stmt := 'CREATE TABLESPACE MCRSCACHE DATAFILE
''+DATA'' SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED LOGGING
ONLINE PERMANENT BLOCKSIZE 8192 EXTENT MANAGEMENT LOCAL AUTOALLOCATE
ENCRYPTION USING ''AES256'' DEFAULT NOCOMPRESS STORAGE(ENCRYPT)
SEGMENT SPACE MANAGEMENT AUTO';
             EXECUTE IMMEDIATE sql_stmt;
     ELSE
       IF mcrscache_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '/' THEN
             SELECT substr(file_name, 1,((instr(file_name, '/', - 1,
1)))) INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

             sql_stmt := 'CREATE TABLESPACE MCRSCACHE LOGGING DATAFILE
' || '''' || v_path || 'MCRSCACHE01.dbf' || '''' || ' SIZE 512M
AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO';
             EXECUTE IMMEDIATE sql_stmt;
       END IF;
       END IF;
       END IF;
    END IF;
    CLOSE mcrscache_tablespace_check;
    CLOSE mcrscache_platform_check_w;
    CLOSE mcrscache_platform_check_l;
    CLOSE mcrscache_rac_check;
    CLOSE mcrscache_asm_check;
END;
/
/* MCRSPOS_PAR */
DECLARE
    CURSOR mcrspos_par_tablespace_check IS
    SELECT tablespace_name
    FROM dba_tablespaces
    WHERE tablespace_name = 'MCRSPOS_PAR';

    CURSOR mcrspos_par_platform_check_w IS
    SELECT substr(platform_name, 1, 9)
    FROM gv$database;

    CURSOR mcrspos_par_platform_check_l IS
    SELECT substr(platform_name, 1, 5)
    FROM gv$database;
```

```
        CURSOR mcrspos_par_rac_check IS
        select value from gv$parameter
        where name = 'cluster_database';

        CURSOR mcrspos_par_asm_check IS
        select substr(file_name, 1,1)
        from dba_data_files;

        v_tablespace    VARCHAR2(40);
        v_path          VARCHAR2(100);
        sql_stmt        VARCHAR2(10000);
        sql_stmt2        VARCHAR2(10000);
        v_platform_w    VARCHAR2(40);
        v_platform_l    VARCHAR2(40);
        v_rac           VARCHAR2(10);
        v_asm           VARCHAR2(10);

BEGIN
    OPEN mcrspos_par_tablespace_check;
    OPEN mcrspos_par_platform_check_w;
    OPEN mcrspos_par_platform_check_l;
    OPEN mcrspos_par_rac_check;
    OPEN mcrspos_par_asm_check;
    FETCH mcrspos_par_tablespace_check INTO v_tablespace;
    FETCH mcrspos_par_platform_check_w INTO v_platform_w;
    FETCH mcrspos_par_platform_check_l INTO v_platform_l;
    FETCH mcrspos_par_rac_check INTO v_rac;
    FETCH mcrspos_par_asm_check INTO v_asm;
    IF mcrspos_par_tablespace_check%NOTFOUND AND v_platform_w = 'Microsoft'
THEN
        SELECT substr(file_name, 1,((instr(file_name, '\', - 1, 1)))) INTO
v_path FROM dba_data_files WHERE ROWNUM < 2;

        sql_stmt := 'CREATE TABLESPACE MCRSPOS_PAR LOGGING DATAFILE ' ||
'''' || v_path || 'MCRSPOS_PAR01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT
AUTO';
        EXECUTE IMMEDIATE sql_stmt;
        sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_PAR ADD DATAFILE ' || '''' ||
v_path || 'MCRSPOS_PAR02.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON NEXT 128M
MAXSIZE UNLIMITED';
        EXECUTE IMMEDIATE sql_stmt2;
    ELSE
        IF mcrspos_par_tablespace_check%NOTFOUND AND v_platform_l = 'Linux'
AND v_rac <> 'TRUE' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1, 1))))
INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_PAR LOGGING DATAFILE ' ||
'''' || v_path || 'MCRSPOS_PAR01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT
AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_PAR ADD DATAFILE ' ||
```

```
'''' || v_path || 'MCRSPOS_PAR02.dbf' || '''' || ' SIZE 512M
AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
     ELSE
        IF mcrspos_par_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '+' THEN

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_PAR DATAFILE
''+DATA'' SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT
MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_PAR ADD DATAFILE
''+DATA'' SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
     ELSE
        IF mcrspos_par_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '/' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1,
1)))) INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_PAR LOGGING
DATAFILE ' || '''' || v_path || 'MCRSPOS_PAR01.dbf' || '''' || ' SIZE
512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_PAR ADD DATAFILE '
|| '''' || v_path || 'MCRSPOS_PAR02.dbf' || '''' || ' SIZE 512M
AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
        END IF;
        END IF;
        END IF;
    END IF;
    CLOSE mcrspos_par_tablespace_check;
    CLOSE mcrspos_par_platform_check_w;
    CLOSE mcrspos_par_platform_check_l;
    CLOSE mcrspos_par_rac_check;
    CLOSE mcrspos_par_asm_check;
END;
/
/* MCRSPOS_NDX */
DECLARE
    CURSOR mcrspos_ndx_tablespace_check IS
    SELECT tablespace_name
    FROM dba_tablespaces
    WHERE tablespace_name = 'MCRSPOS_NDX';

    CURSOR mcrspos_ndx_platform_check_w IS
    SELECT substr(platform_name, 1, 9)
    FROM gv$database;

    CURSOR mcrspos_ndx_platform_check_l IS
    SELECT substr(platform_name, 1, 5)
    FROM gv$database;
```

```
        CURSOR mcrspos_ndx_rac_check IS
        select value from gv$parameter
        where name = 'cluster_database';

        CURSOR mcrspos_ndx_asm_check IS
        select substr(file_name, 1,1)
        from dba_data_files;

        v_tablespace    VARCHAR2(40);
        v_path          VARCHAR2(100);
        sql_stmt        VARCHAR2(10000);
        sql_stmt2       VARCHAR2(10000);
        v_platform_w    VARCHAR2(40);
        v_platform_l    VARCHAR2(40);
        v_rac           VARCHAR2(10);
        v_asm           VARCHAR2(10);

BEGIN
    OPEN mcrspos_ndx_tablespace_check;
    OPEN mcrspos_ndx_platform_check_w;
    OPEN mcrspos_ndx_platform_check_l;
    OPEN mcrspos_ndx_rac_check;
    OPEN mcrspos_ndx_asm_check;
    FETCH mcrspos_ndx_tablespace_check INTO v_tablespace;
    FETCH mcrspos_ndx_platform_check_w INTO v_platform_w;
    FETCH mcrspos_ndx_platform_check_l INTO v_platform_l;
    FETCH mcrspos_ndx_rac_check INTO v_rac;
    FETCH mcrspos_ndx_asm_check INTO v_asm;
    IF mcrspos_ndx_tablespace_check%NOTFOUND AND v_platform_w = 'Microsoft'
THEN
        SELECT substr(file_name, 1,((instr(file_name, '\', - 1, 1)))) INTO
v_path FROM dba_data_files WHERE ROWNUM < 2;

        sql_stmt := 'CREATE TABLESPACE MCRSPOS_NDX LOGGING DATAFILE ' ||
'''' || v_path || 'MCRSPOS_NDX01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT
AUTO';
        EXECUTE IMMEDIATE sql_stmt;
        sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_NDX ADD DATAFILE ' || '''' ||
v_path || 'MCRSPOS_NDX02.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON NEXT 128M
MAXSIZE UNLIMITED';
        EXECUTE IMMEDIATE sql_stmt2;
     ELSE
        IF mcrspos_ndx_tablespace_check%NOTFOUND AND v_platform_l = 'Linux'
AND v_rac <> 'TRUE' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1, 1))))
INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_NDX LOGGING DATAFILE ' ||
'''' || v_path || 'MCRSPOS_NDX01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT
AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_NDX ADD DATAFILE ' ||
'''' || v_path || 'MCRSPOS_NDX02.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
```

```
NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
       ELSE
         IF mcrspos_ndx_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '+' THEN

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_NDX DATAFILE
''+DATA'' SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT
MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_NDX ADD DATAFILE
''+DATA'' SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
       ELSE
         IF mcrspos_ndx_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '/' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1,
1)))) INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_NDX LOGGING
DATAFILE ' || '''' || v_path || 'MCRSPOS_NDX01.dbf' || '''' || ' SIZE
512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_NDX ADD DATAFILE '
|| '''' || v_path || 'MCRSPOS_NDX02.dbf' || '''' || ' SIZE 512M
AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
       END IF;
       END IF;
       END IF;
    END IF;
    CLOSE mcrspos_ndx_tablespace_check;
    CLOSE mcrspos_ndx_platform_check_w;
    CLOSE mcrspos_ndx_platform_check_l;
    CLOSE mcrspos_ndx_rac_check;
    CLOSE mcrspos_ndx_asm_check;
END;
/
/* MCRSPOS_LOB */
DECLARE
    CURSOR mcrspos_lob_tablespace_check IS
    SELECT tablespace_name
    FROM dba_tablespaces
    WHERE tablespace_name = 'MCRSPOS_LOB';

    CURSOR mcrspos_lob_platform_check_w IS
    SELECT substr(platform_name, 1, 9)
    FROM gv$database;

    CURSOR mcrspos_lob_platform_check_l IS
    SELECT substr(platform_name, 1, 5)
    FROM gv$database;

    CURSOR mcrspos_lob_rac_check IS
```

```
    select value from gv$parameter
    where name = 'cluster_database';

    CURSOR mcrspos_lob_asm_check IS
    select substr(file_name, 1,1)
    from dba_data_files;

    v_tablespace    VARCHAR2(40);
    v_path          VARCHAR2(100);
    sql_stmt        VARCHAR2(10000);
    sql_stmt2       VARCHAR2(10000);
    v_platform_w    VARCHAR2(40);
    v_platform_l    VARCHAR2(40);
    v_rac           VARCHAR2(10);
    v_asm           VARCHAR2(10);

BEGIN
    OPEN mcrspos_lob_tablespace_check;
    OPEN mcrspos_lob_platform_check_w;
    OPEN mcrspos_lob_platform_check_l;
    OPEN mcrspos_lob_rac_check;
    OPEN mcrspos_lob_asm_check;
    FETCH mcrspos_lob_tablespace_check INTO v_tablespace;
    FETCH mcrspos_lob_platform_check_w INTO v_platform_w;
    FETCH mcrspos_lob_platform_check_l INTO v_platform_l;
    FETCH mcrspos_lob_rac_check INTO v_rac;
    FETCH mcrspos_lob_asm_check INTO v_asm;
    IF mcrspos_lob_tablespace_check%NOTFOUND AND v_platform_w = 'Microsoft'
THEN
        SELECT substr(file_name, 1,((instr(file_name, '\', - 1, 1)))) INTO
v_path FROM dba_data_files WHERE ROWNUM < 2;

        sql_stmt := 'CREATE TABLESPACE MCRSPOS_LOB LOGGING DATAFILE ' ||
'''' || v_path || 'MCRSPOS_LOB01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT
AUTO';
        EXECUTE IMMEDIATE sql_stmt;
        sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_LOB ADD DATAFILE ' || '''' ||
v_path || 'MCRSPOS_LOB02.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON NEXT 128M
MAXSIZE UNLIMITED';
        EXECUTE IMMEDIATE sql_stmt2;
      ELSE
        IF mcrspos_lob_tablespace_check%NOTFOUND AND v_platform_l = 'Linux'
AND v_rac <> 'TRUE' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1, 1))))
INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_LOB LOGGING DATAFILE ' ||
'''' || v_path || 'MCRSPOS_LOB01.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT
AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_LOB ADD DATAFILE ' ||
'''' || v_path || 'MCRSPOS_LOB02.dbf' || '''' || ' SIZE 512M AUTOEXTEND ON
NEXT 128M MAXSIZE UNLIMITED';
```

```
          EXECUTE IMMEDIATE sql_stmt2;
      ELSE
        IF mcrspos_lob_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' and v_asm = '+' THEN

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_LOB DATAFILE
''+DATA'' SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT
MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_LOB ADD DATAFILE
''+DATA'' SIZE 512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
      ELSE
        IF mcrspos_lob_tablespace_check%NOTFOUND AND v_platform_l =
'Linux' AND v_rac = 'TRUE' AND v_asm = '/' THEN
            SELECT substr(file_name, 1,((instr(file_name, '/', - 1,
1)))) INTO v_path FROM dba_data_files WHERE ROWNUM < 2;

            sql_stmt := 'CREATE TABLESPACE MCRSPOS_LOB LOGGING
DATAFILE ' || '''' || v_path || 'MCRSPOS_LOB01.dbf' || '''' || ' SIZE
512M AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO';
            EXECUTE IMMEDIATE sql_stmt;
            sql_stmt2 := 'ALTER TABLESPACE MCRSPOS_LOB ADD DATAFILE '
|| '''' || v_path || 'MCRSPOS_LOB02.dbf' || '''' || ' SIZE 512M
AUTOEXTEND ON NEXT 128M MAXSIZE UNLIMITED';
            EXECUTE IMMEDIATE sql_stmt2;
        END IF;
        END IF;
        END IF;
    END IF;
    CLOSE mcrspos_lob_tablespace_check;
    CLOSE mcrspos_lob_platform_check_w;
    CLOSE mcrspos_lob_platform_check_l;
    CLOSE mcrspos_lob_rac_check;
    CLOSE mcrspos_lob_asm_check;
END;
/
```

7

Appendix B: Troubleshooting

Insufficient System Privileges

The Insufficient System Privileges message appears when the prerequisite, Internet Information Services (IIS), was not installed.

Installing Microsoft Internet Information Services (IIS) and Windows Communication Foundation (WCF) Features contains instructions to install Microsoft IIS.

Cannot Connect to the Database Server During the Simphony Installation

The Simphony installation application may not connect to the database server due to the following reasons:

- Windows Firewall is running
- Simphony and SimphonyXDB instances are not running

Adding Simphony to the Windows Firewall Exceptions

The Microsoft Windows Firewall that is enabled by default on your operating system could prevent the Simphony installation application from connecting to the database server. You must set up an exception rule on your firewall setting for the Simphony server and the database server to continue with the installation. For instructions setting up exception rules in Microsoft Windows Firewall, refer to the Microsoft TechNet Library at https://technet.microsoft.com/en-us/library.

Installing Simphony on Separate Servers

If you are using a separate database server, you must set up an incoming rule to allow connections from Simphony, depending on your database platform, using either the default port or the port you assign during Installation. By default, the Oracle database server uses port 1521 and Microsoft SQL Server uses port 1443. For instructions on opening a port in Microsoft Windows Firewall, refer to the Microsoft TechNet Library at https://technet.microsoft.com/en-us/library.

Starting the Oracle Listener

If the Oracle Listener is not running, Simphony services cannot start. Ensure that the Oracle Listener is running.

- If you are using Oracle Linux, run the command `$ lsnrctl status`. If the Listener is running, you will see the listener configuration settings and the services summary.
- If you are using Microsoft Windows, make sure that the Oracle TNS Listener service (for example, `OracleOraDb11g_home1TNSListener`) is set to **Started** in the Microsoft Windows Services utility.

If the Oracle Listener is not running, you need to manually restart the Listener using the Linux command = lsnrctl start. The *Platform Guide for Microsoft Windows* and the *Administrator's Reference for Linux and UNIX-Based Operating Systems* contain more information about manually starting Oracle services.