HEAT software

Installation and Deployment Guide for HEAT Service Management

Release 2016.1

August 4, 2016

Contents

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- Microsoft SQL Server 2012 Management Objects (SMO) redistributable, Microsoft SQL Server CE 4.0 redistributable
- Microsoft Entity Framework 5.0
- Microsoft Access Database Engine 2010, 2007 Office System Driver: Data Connectivity Components, and Service Pack 1 for Microsoft Access Database Engine 2010 (KB2460011) 64-bit edition.
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About this Guide

Intended Audience

The *Installation and Deployment Guide for HEAT Service ManagementRelease 2016.1* is intended for HEAT Service Management administrators who are going to install the HEAT Service Management system.

Document Organization

This guide contains the following sections:

- Deployment Overview. Describes recommended and optional HEAT Service Management deployment architectures, including the HEAT Operations Console, HEAT Reporting Services, and HEAT Voice.
- HEAT Service Management Installation Prerequisites. Provides information about confirming your role, the different accounts and passwords used in HEAT Service Management; the system, hardware, and software prerequisites; using a virtual machine, enabling file streaming and full-text search in Microsoft SQL Server, and verifying server roles and features.
- Installing the HEAT Service Management System. Describes installation of HEAT Service Management, HEAT Operations Console, HEAT Reporting Services, HEAT Discovery, and HEAT Knowledge.
- Initial System Configuration. Describes how to use the System Configuration Wizard to configure the HEAT Service Management system, including its servers and databases; and how to use the HEAT Operations Console to configure the deployment.
- Upgrading HEAT Service Management from an Earlier Release. Contains information and instructions for upgrading your HEAT Service Management system from earlier releases to Release 2016.1.
- Using the HEAT License Manager. Explains how to install and use the HEAT License Manager.
- Troubleshooting Contains solutions to common problems.

Document Conventions

This guide uses the following conventions:

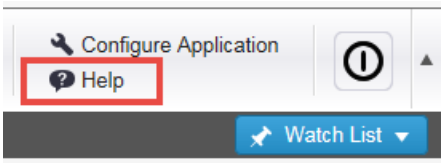
Convention	Definition and Usage
Bold	Text that displays in a GUI element (such as a menu item, button, or element of a dialog box) and command names are shown in bold. For example: Click **Edit** from the toolbar.
Purple	Text that names a GUI element (such as a field, window, or dialog box) and command names are shown in purple. For example: The Setup Type dialog box appears.
Italic	Variables appear in italics. Important information may be italicized for emphasis.
`Script/ message`	Scripts and error messages appear in fixed-width, red type.
`[]`	Square brackets surrounding a command-line argument mean that the argument is optional.
`|`	Vertical bars separating command-line arguments mean that only one of the arguments can be used.
	**Note**. Describes related, parenthetical information, such as an explanation, tip, comment, or other useful, but not imperative information.
	**Caution**. Describes mandatory information, but is not data-critical.
	**Warning**. Describes mandatory information about an action that could cause a loss of data.

Related Documentation

Online Help

The HEAT Service Management system has online help available within the application. Click **Help** at the top right corner of the HEAT Service Management window.

Fig. 1. Online Help Icon



List of User Documents

The following documentation is available in the HEAT Knowledge Base. See Related Documentation for information about how to obtain these documents.

Document	Knowledge Base Article Number
Release Notes for HEAT Service Management Release 2016.1	21987
Documentation Guide for HEAT Service Management Release 2016.1	22254
Installation Guide for HEAT Service Management Release 2016.1 (This document)	22253
System Requirements and Compatibility Matrix for HEAT Service Management Release 2016.1	22252
Configuration Database Guide for HEAT Service Management Release 2016.1	22251
Operations Console Guide for HEAT Service Management Release 2016.1	22250 and 22249
Migration Guide for HEAT Service Management Release 2016.1	22248
Performance Tuning Guide for HEAT Service Management Release 2016.1	22247

Accessing the Knowledge Base

Contact your HEAT administrator for credentials to access the HEAT Service Management Knowledge Base.

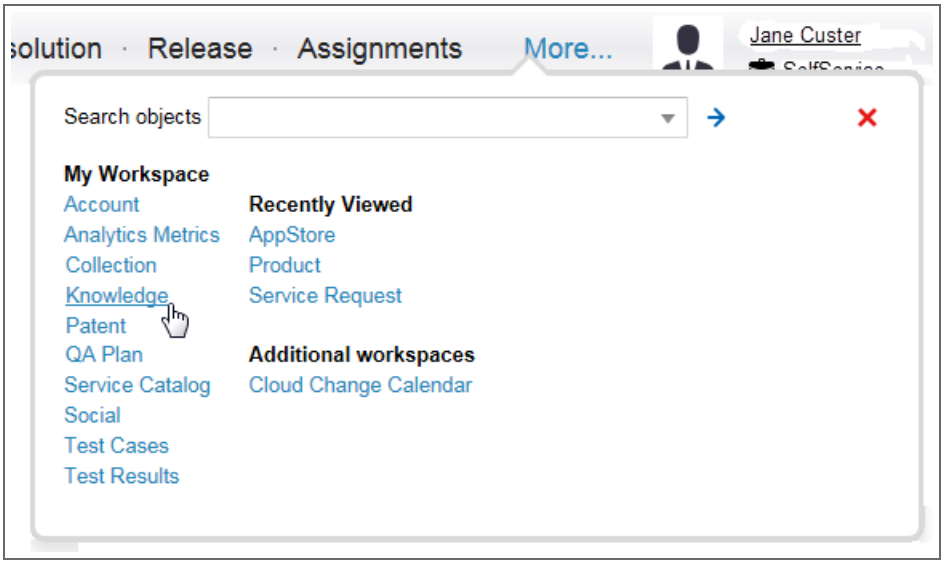
Because you need the *System Requirements and Compatibility Matrix for HEAT Service Management* to perform a successful installation, we use that document in the following example.

To access the Knowledge Base and download a document:

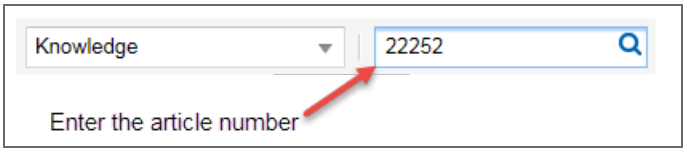
1. Log into the HEAT Service Management Customer Support website at https://support.heatsoftware.com/
2. Enter your user name and password. Then press **Login**.

   The system may require you to log in using external authentication. If so, enter your user name and click **Sign in with <*your company name*>**.
3. If the system prompts you, select a role and click **Submit**.

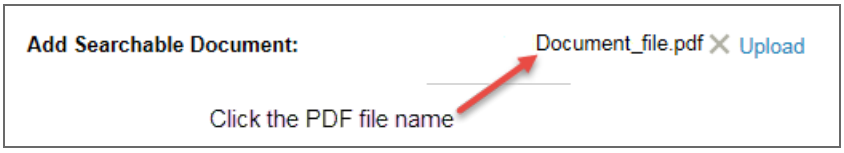
   The system opens to your home page.
4. From the top tool bar, click **More...** and select **Knowledge**.



   You are now in the HEAT Knowledge Base.
5. In the search box, enter **22252**, and press Enter.



6. Look for Add Searchable Document: near the bottom of the window.
7. Click the PDF file name and save the document to your workstation.



How to Contact Us

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Your Feedback Matters

For questions or comments about the HEAT Service Management system, including this online help, contact HEAT Global Support services by logging an incident via Self Service at http://support.heatsoftware.com/Support/Login.aspx.

For urgent matters, call your support services representative for immediate assistance.

Deployment Overview

When a new HEAT Service Management application is deployed, many factors can drive the hardware requirements of the new system. This chapter provides a guideline for sizing a HEAT deployment for budgeting purposes.

You can adjust the actual hardware required after deployment, when you have collected usage data. HEAT Service Management software is horizontally and vertically scalable. You can add more hardware to increase performance without license changes.

We cover three different scenarios:

- Demonstration or proof-of-concept deployment
- Typical small deployment for up to 10 users
- Typical large deployment for 100 users

Customers with more than 100 users should use 100 users as a baseline and then add the equivalent amount of hardware for each additional 100 users.

Another consideration is deployment landscapes. HEAT Service Management supports separate landscapes for:

- Development, also called Staging
- Test, also called UAT
- Production

You can run these landscapes on the same server or isolate them on separate servers. If you choose to isolate them, you must provide additional hardware.

Demonstration or Proof-of-Concept Deployment

> This deployment is only recommended for demonstration purposes. Do not use this deployment for any production environment.

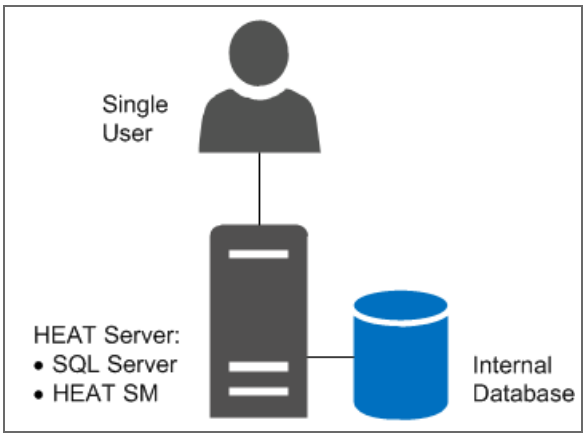
You can run the entire HEAT Service Management application on a single server for the purpose of a demonstration or a proof-of-concept system.

Install HEAT Service Management, with all options enabled, onto a single server that has Microsoft SQL Server loaded locally. Most users deploy in a virtual environment.

Hardware Requirements

- 1 server
- Virtual or physical
- 1 CPU
- 4 GB memory
- 40 GB hard drive

Fig. 2. Example of HEAT SM and Databases on a Single Server



HEAT SM Component Installation

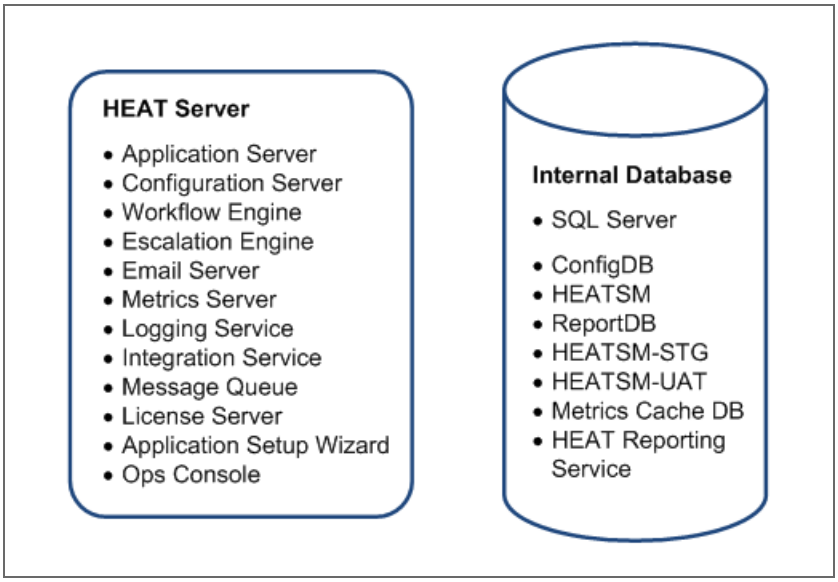
For a diagram of the recommended locations of the various HEAT Service Management software features, see HEAT SM Features and Databases on a Single Server

Before you begin installation, see the following topics:

- HEAT Service Management Installation Prerequisites
- Using the HEAT License Manager

When you are ready to install, see Installing the HEAT Service Management System.

Fig. 3. HEAT SM Features and Databases on a Single Server



If you plan to include the HEAT Reporting feature in your deployment, you must install the Microsoft SQL Server Reporting Services (SSRS) component of SQL Server. See Enabling SQL Server Reporting Services.

Minimum Production Deployment

Customers supporting 10 or fewer users often want to minimize their hardware investment. With the Minimum Production Deployment architecture, you install all HEAT Service Management (HEAT SM) features onto a single server.

Install your HEAT databases onto a separate SQL server.

Notice that all three landscapes: Development (Staging), Testing (UAT), and Production, run on the same server. As a result:

- Any issues created during the development cycle might affect production users.
- You cannot perform pre-upgrade testing.

Hardware Requirements

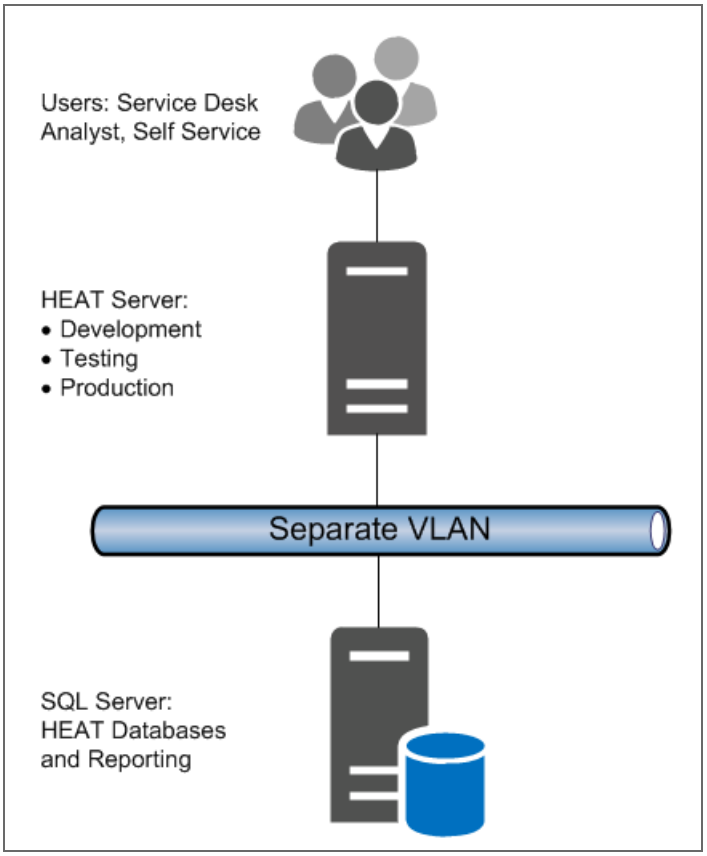
HEAT Server

- Physical or Virtual
- 2 CPU
- 4 GB memory
- 40 GB hard drive

SQL Server

- Physical recommended
- 2 CPU
- 8 GB memory
- 1 TB hard drive

Fig. 4. Example of HEAT SM and HEAT Databases on Separate Servers



HEAT SM Feature Installation

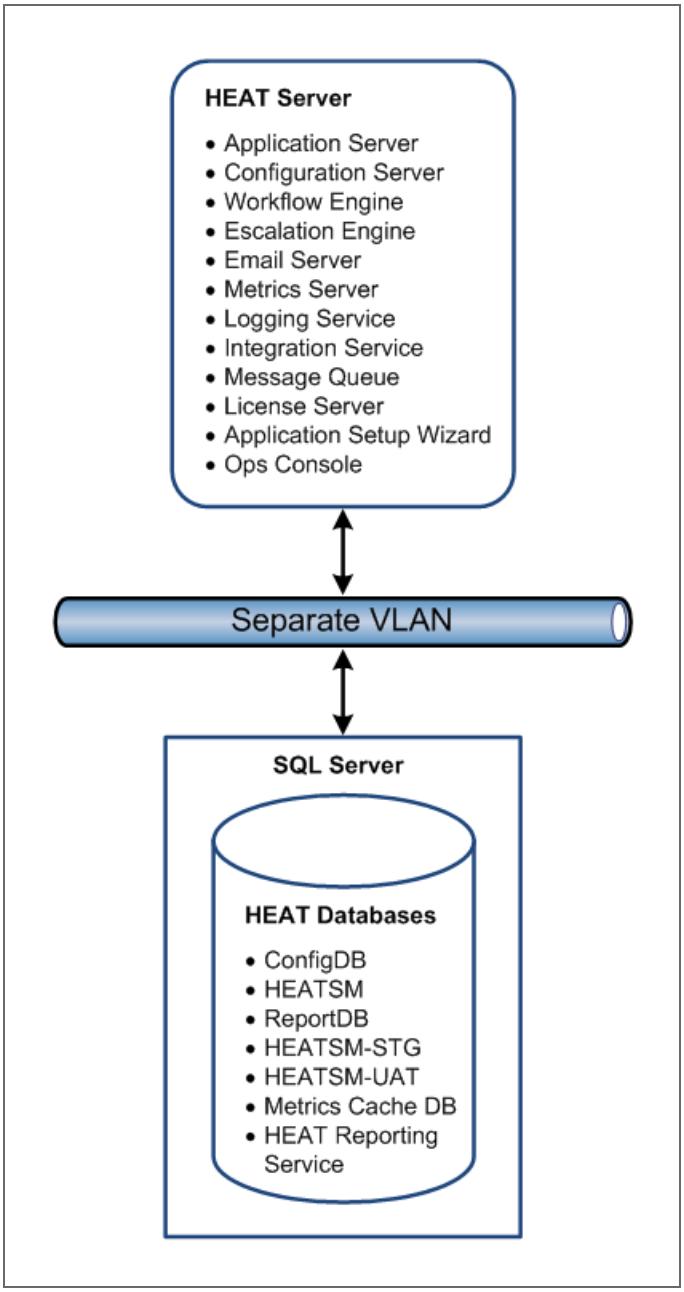
For a diagram of the recommended locations of the various HEAT Service Management features, see HEAT SM Features and Databases on Separate Servers

Before you begin installation, see the following topics:

- HEAT Service Management Installation Prerequisites
- Using the HEAT License Manager

When you are ready to install, see Installing the HEAT Service Management System.

Fig. 5. HEAT SM Features and Databases on Separate Servers



Enterprise Production Deployment

Customers supporting large user populations of 100 or more are primarily concerned with availability and load management rather than minimizing hardware expense. The Enterprise Production Deployment architecture splits HEAT into:

- Front-end user-interface servers
- Back-end processing servers

The back-end servers handle workflow, email processing, license allocation, inventory management, and so on. This architecture also separates the production environment from development and testing.

There are two key advantages of separating development and testing from production:

- Any issues created during the development cycle do not affect production users.
- You can perform upgrade testing on the development and testing servers before upgrading the production servers.

Optionally, you can install your development and test landscapes onto separate physical servers. That configuration is not required, however.

Hardware Requirements

HEAT UI Servers

- 2 servers
- Virtual
- Outside VPN
- Load balanced
- 4 CPU
- 16 GB memory

HEAT Processing Servers for Production

- 2 servers
- Virtual
- Inside VPN
- Load balanced
- 4 CPU
- 16 GB memory

HEAT Processing Server for Development and Testing

- Physical or Virtual
- 2 CPU
- 4 GB memory
- 40 GB hard drive

SQL Server

- Physical
- SQL Version 2012
- Inside VPN
- 8 CPU
- 24 GB memory
- 1 TB hard drive

SSRS Reporting Server

- Physical
- SQL Version 2012
- Inside VPN
- 8 CPU
- 24 GB memory
- 1 TB hard drive

SQL Server

The SQL server is the database server for the deployment. Depending on your needs, you may have multiple database servers.

SSRS Reporting Server

The HEAT Reporting feature requires Microsoft SQL Server Reporting Services (SSRS) to be installed and running on the database server that hosts HEAT Reporting Services.

Microsoft SSRS can be installed on the SQL server or on a *separate* SSRS server, depending on your preference. HEAT Software USA, Inc. recommends a separate installation in the following situations:

- Multi-tenant environments, including managed service providers and enterprises with multiple HEAT tenants.
- The SQL database is used also for non-HEAT applications.
- Installations where the database server must remain online, because upgrading SSRS often requires a reboot.

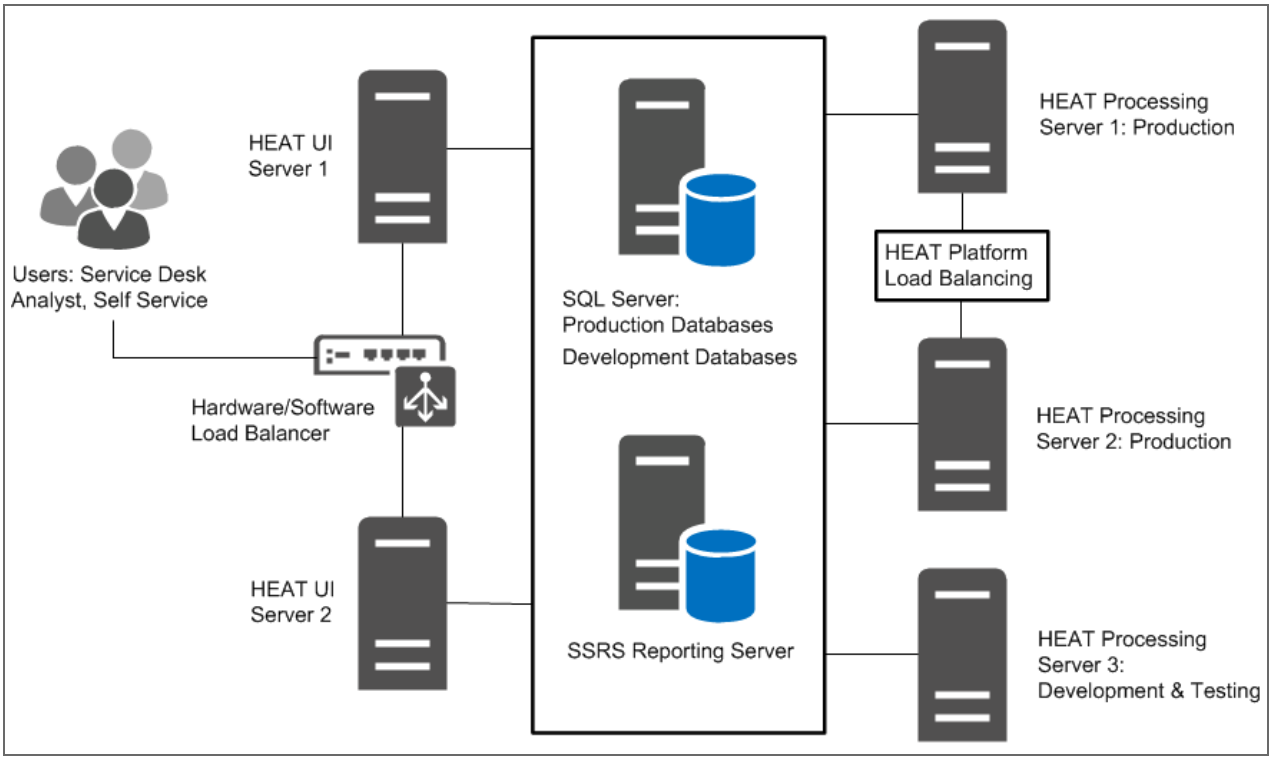
Each additional 100 users, add to this architecture:

- Two additional HEAT UI servers
- Two additional HEAT processing servers

System load determines the actual number of servers to add. HEAT UI and processing servers can be added on demand.

In most cases, you do not need to add more development (staging) or testing (UAT) servers.

Fig. 6. Example of HEAT SM in an Enterprise Deployment



HEAT Service Management Installation

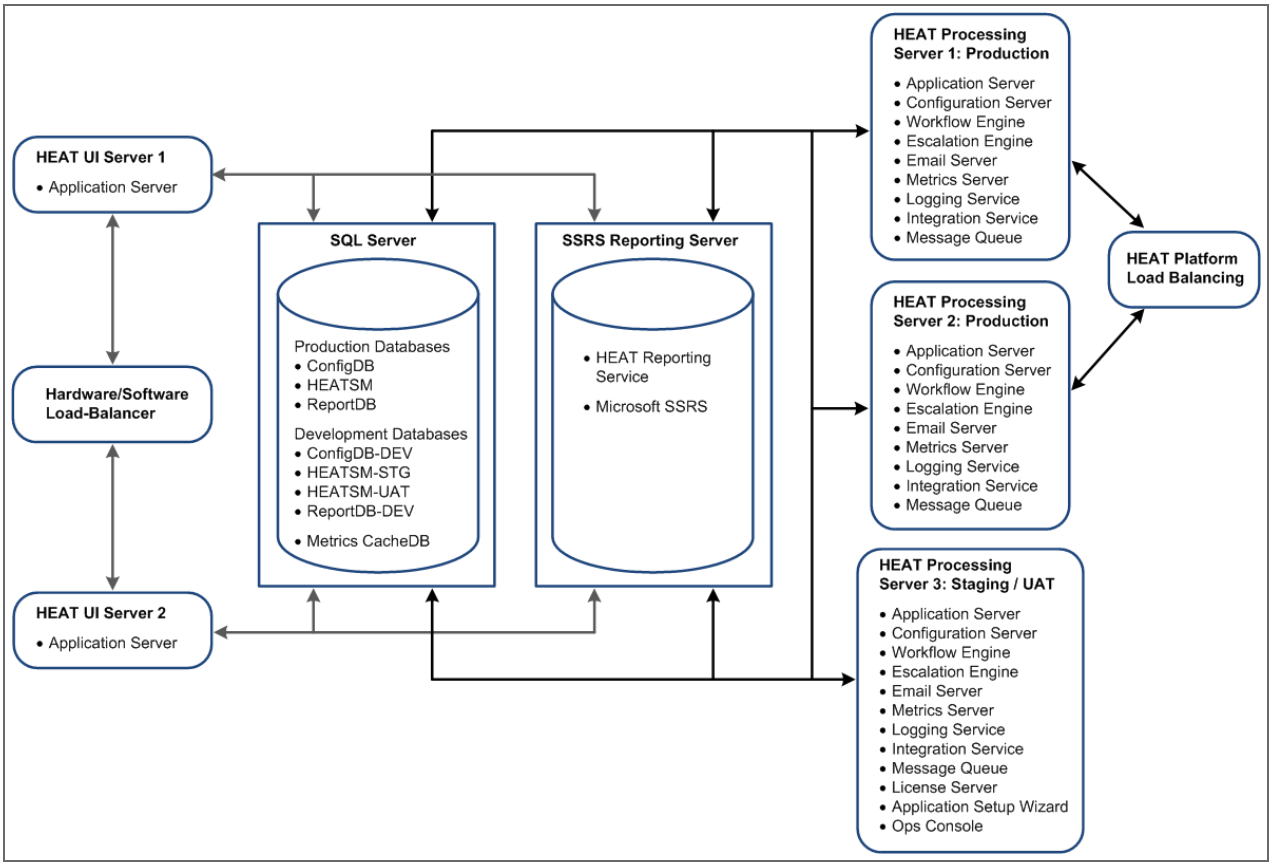
For a diagram of the recommended locations of the various HEAT Service Management features, see Fig. 7.

Before you begin installation, see the following topics:

- Database Deployment Options
- HEAT Operations Console Deployment Options
- Reporting Services Deployment Options
- HEAT Service Management Installation Prerequisites
- Using the HEAT License Manager
- Installing HEAT Discovery on a Dedicated Server

When you are ready to install, see Installing HEAT Service Management.

Fig. 7. HEAT SM Features and Databases in an Enterprise Deployment



Security Enterprise Production Deployment

- DMZ with UI Servers
- DMZ with Reverse Proxy Servers

This deployment is based on the Enterprise Production Deployment with a DMZ added to provide security where users log in from outside the company network.

HEAT Software recommends the following DMZ configurations:

- DMZ with HEAT UI servers
- DMZ with reverse proxy servers

The DMZ is configured for authenticated access. When UI servers are in the DMZ, each user must enter his user name and password to log into HEAT Service Management. This architecture involves the additional cost of a setting up and maintaining two firewalls.

Where you implement reverse proxy servers, you can add another layer of access authentication. This architecture involves the additional cost of a setting up and maintaining two reverse proxy servers and a load balancer.

DMZ with UI Servers

This option offers a greater level of security than placing your HEAT UI servers outside a single company firewall. Placing a second firewall between the Internet and UI servers forms a semi-trusted network that prevents external access to your HEAT process servers and databases.

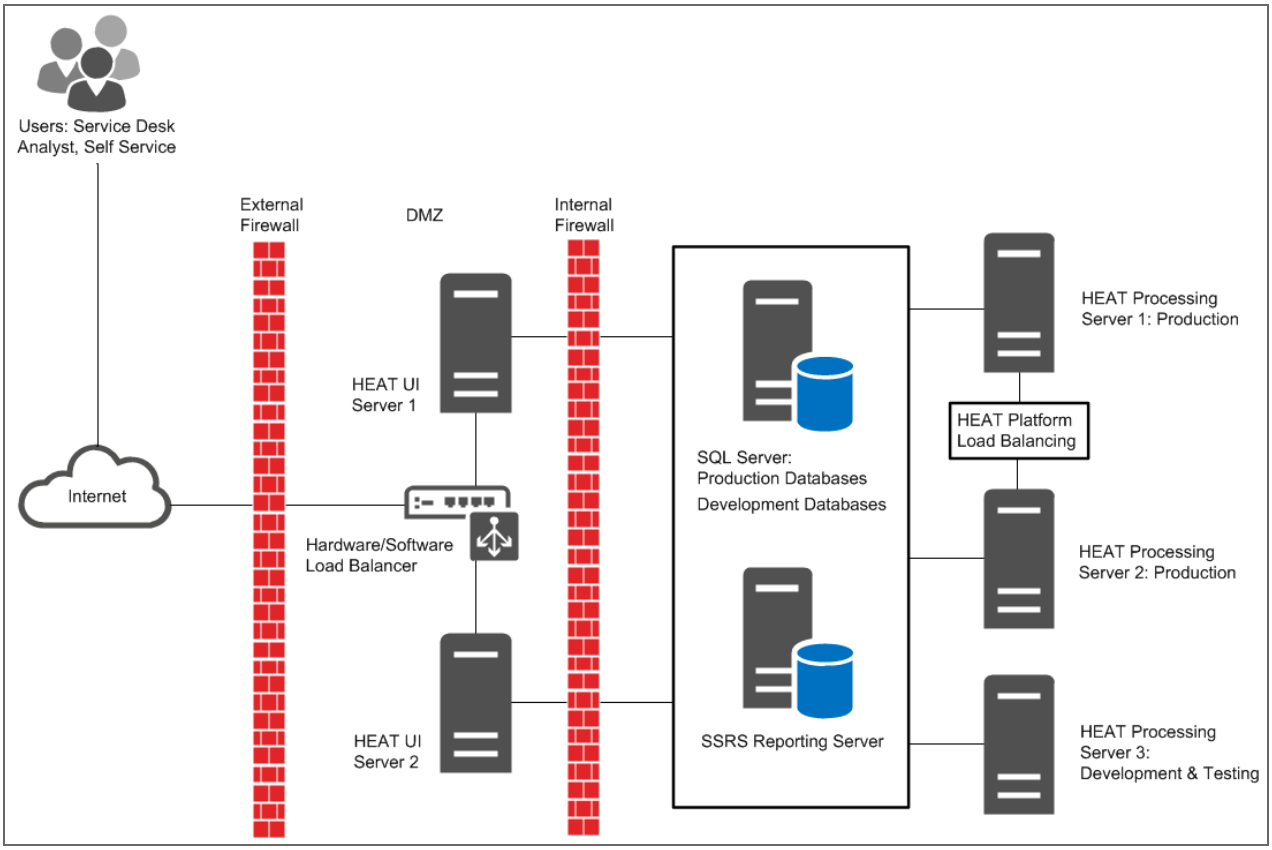
Hardening the UI Servers

HEAT Software recommends that you harden the HEAT UI servers by taking the following actions:

- Disabling all unnecessary services
- Running necessary services with the lowest possible privileges
- Requiring strong passwords
- Locking an account after a certain number of login failures
- Deleting or disabling unnecessary user accounts, such as Guest
- Renaming or changing the description of the Administrator account
- Installing the latest security updates and passages on the server
- Enabling security logging and checking the logs frequently

The same into HEAT Service Management features are installed on the UI servers when they are located in the DMZ as when they are located outside the company firewall. See HEAT Service Management Installation under Enterprise Production Deployment.

Fig. 8. Example of an Enterprise Deployment with HEAT UI Servers in the DMZ



DMZ with Reverse Proxy Servers

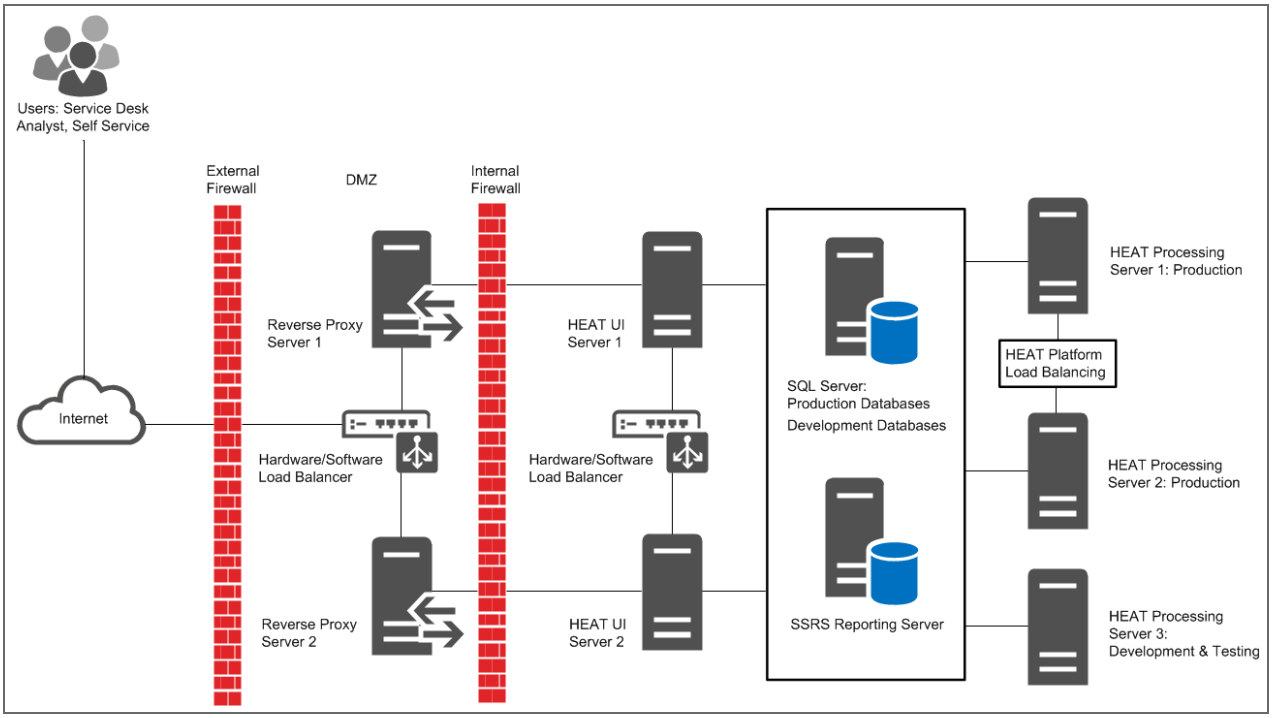
This option offers the greatest level of security by placing your UI servers inside the company firewall. By placing reverse proxy servers in the DMZ, you prevent direct user login to the HEAT UI servers.

In addition, by locating the UI servers on the same network as the process servers and databases, you achieve a true three-tier architecture.

The same into HEAT Service Management components are installed on the UI servers when they are located inside the firewalls as when the servers are located outside.

This architecture involves the additional costs of servers to host the reverse-proxy service, as well as setting up and maintaining a second firewall. See HEAT Service Management Installation under Enterprise Production Deployment.

Fig. 9. Example of an Enterprise Deployment with Reverse Proxy Servers in the DMZ



Database Deployment Options

This section describes the different options available for the HEAT databases.

About the Databases Used in HEAT Service Management

The following are the databases used in HEAT Service Management:

- HEAT configuration database (ConfigDB).
- HEAT application database (HEATSM).
- HEAT reporting database (ReportDB).
  This database is used for the HEAT Reporting feature. See Reporting Services Deployment Options for more information.
- HEAT metrics cache database (Metrics CacheDB).
  This database is used to cache the run-time state of the schedule jobs. Only one HEAT metrics cache database is needed in each isolated landscape. For example, if the HEAT configuration database and the HEAT Application Database are hosted on the same database server, your deployment only needs one HEAT metrics cache database.

In addition, there are generally three instances for each tenant:

- Staging
- UAT
- Production

Each tenant instance, production, staging (development), and UAT (testing), can have its own database instance or server. These are called:

Database	Description
HEATSM	HEAT application database for production
HEATSM-STG	HEAT application database for staging / development
HEATSM-UAT	HEAT application database for UAT / testing
HEATSM-Dev	HEAT application database for staging / development and UAT / testing
ConfigDB	HEAT configuration database for production
ConfigDB-STG	HEAT configuration database for staging / development
ConfigDB-UAT	HEAT configuration database for UAT / testing
ConfigDB-Dev	HEAT configuration database for staging / development and UAT / testing
HEATReportDB	HEAT report database for production
HEATReportDB-STG	HEAT report database for staging / development
HEATReportDB-UAT	HEAT report database for UAT / testing
HEATReportDB-Dev	HEAT report database for staging / development and UAT / testing

The advantage of hosting a database on its own server is that it ensures security by isolating the production landscape. It also enhances performance. When you make multiple changes or upgrades to the staging or UAT landscapes, you do not want that to affect the performance of the production landscape. Separating the different databases makes it easier to upgrade the systems, because when you upgrade the systems you have to shut them down and that affects users in the production landscape.

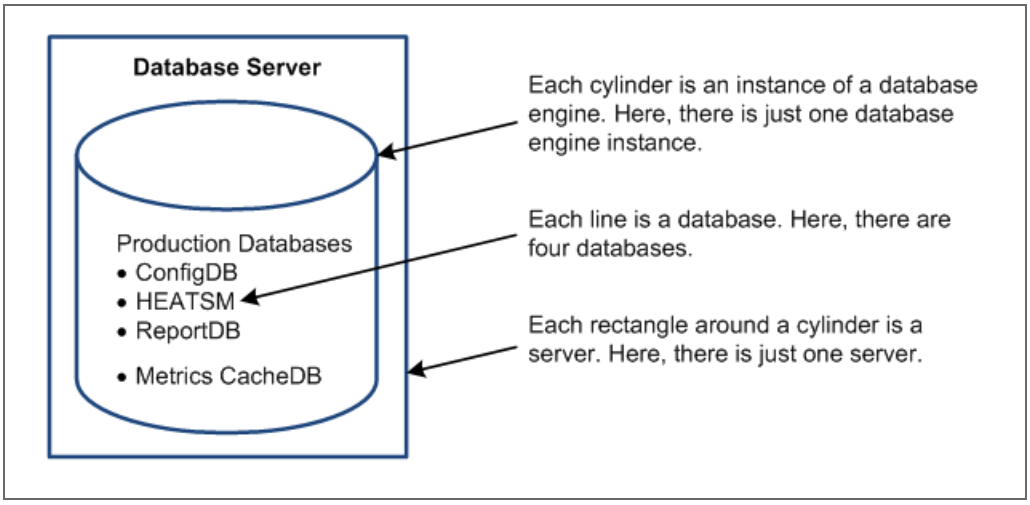
The advantage of hosting everything on one server is that you save money by only having to purchase and administer one server and one Microsoft SQL Server license.

Diagram Conventions

The following conventions are used in the diagrams:

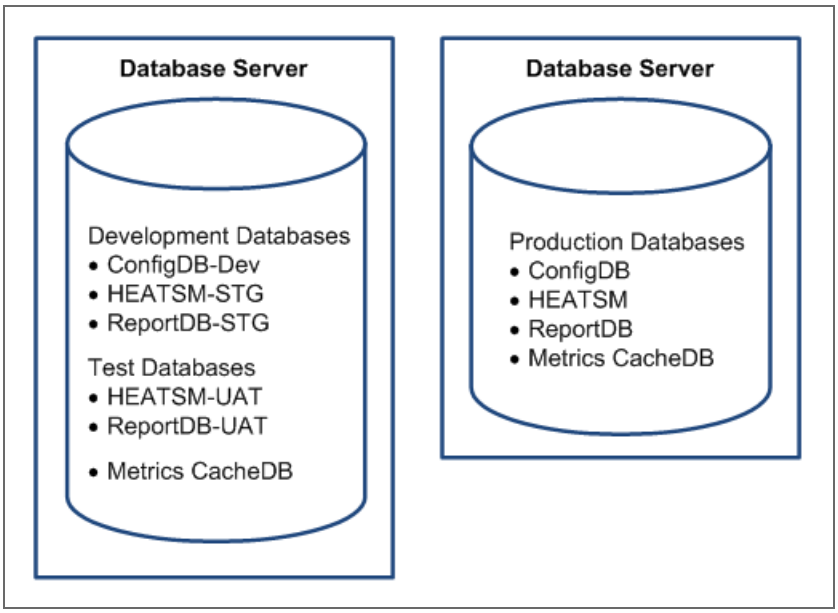
- A line item is considered a database. There can be many databases within one database engine instance.
- A barrel is considered a database engine instance. Can contain multiple database instances.
- A square or rectangle around something means it is on one server (machine). Each server can potentially host multiple database engine instances.

Fig. 10. Diagram Conventions



Option D1: Separate Database Servers (Best Practice)

Fig. 11. Example of Separate Database Servers

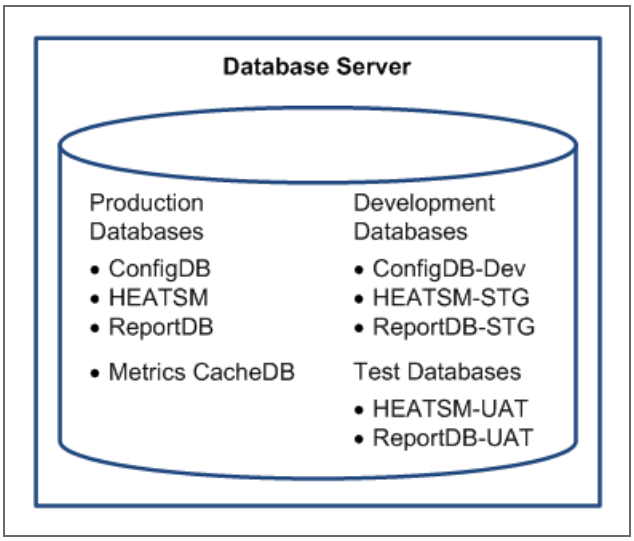


Here there are two separate database servers. One is for the production landscape and the other is for the staging and UAT landscape. The staging and UAT servers share a HEAT configuration database (ConfigDB).

Option D2a: Single Database Server (Best Practice)

This option uses a single configuration database (ConfigDB-Dev).

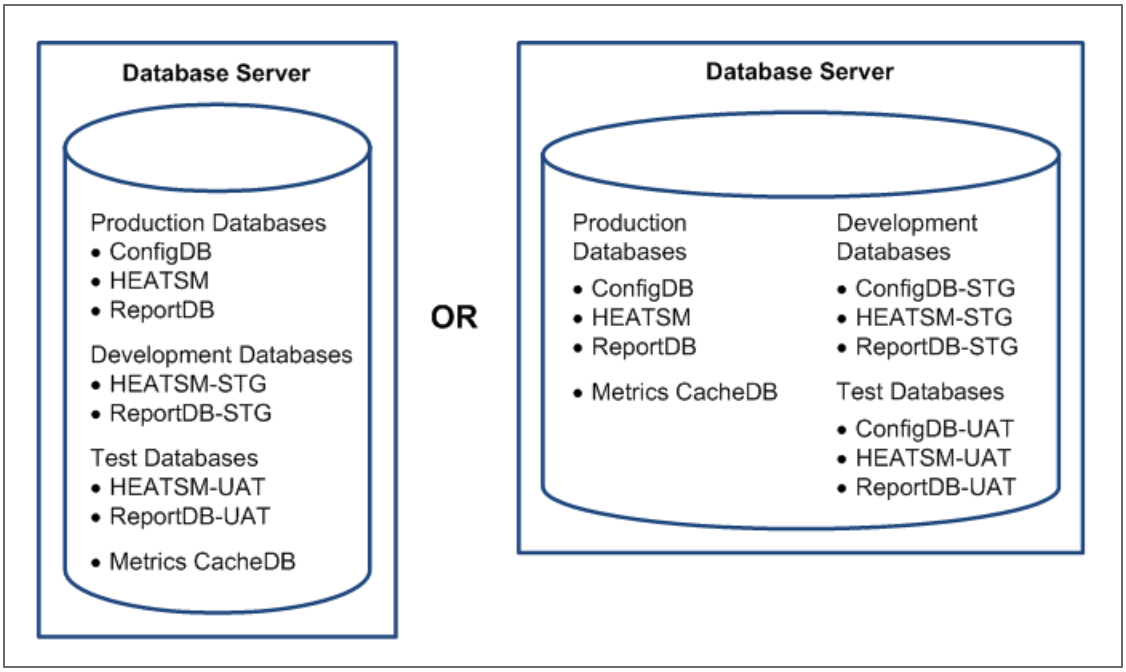
Fig. 12. Recommended Single Database Server



Option D2b: Single Database Server

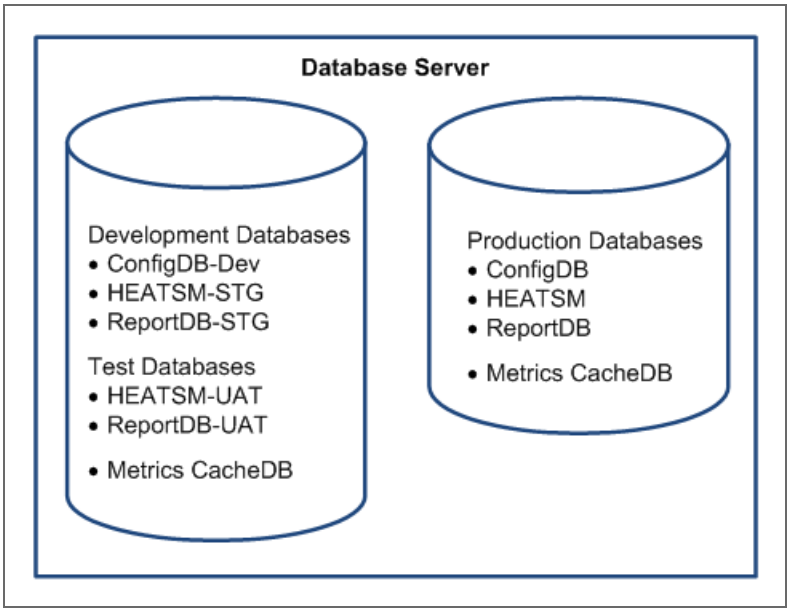
This option has either no configuration database or two configuration databases (ConfigDB-STG and ConfigDB-UAT).

Fig. 13. Alternative Single Database Servers



Option D3: Single Configuration Database on a Single Database Server

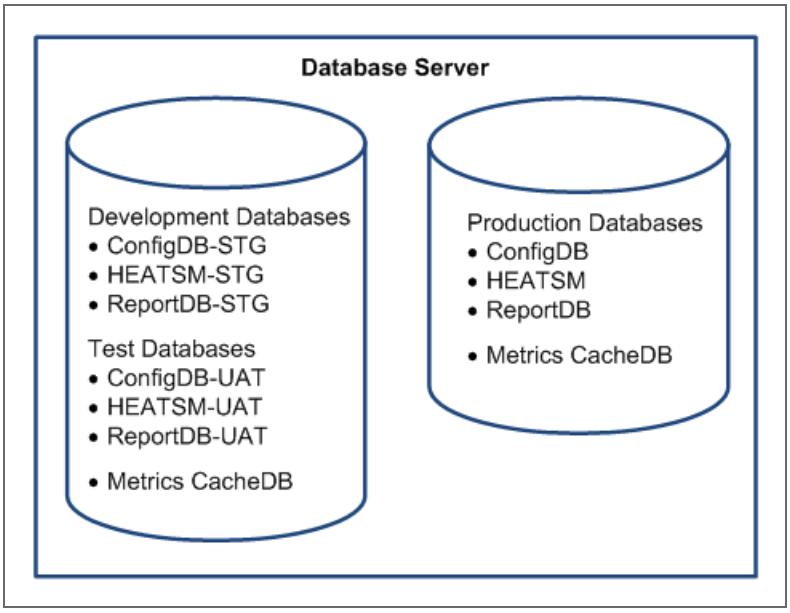
Fig. 14. Example of Separate Database Engine Instances on a Single Database Server



In this deployment, there is one HEAT configuration database (ConfigDB) for the production landscape and another HEAT configuration database (ConfigDB) shared between the staging and UAT landscapes.

Option D4: Multiple Configuration Databases on a Single Server

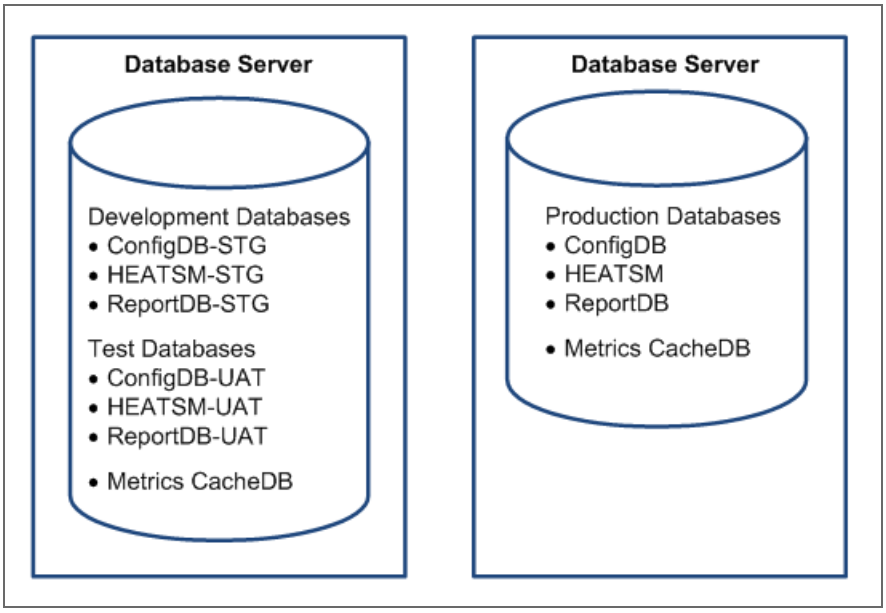
Fig. 15. Example of Multiple Configuration Databases on a Single Server



In this deployment, there are separate HEAT configuration databases (ConfigDB) for the production landscape, the staging landscape, and the UAT landscape.

Option D5: Multiple Configuration Databases on Multiple Servers

Fig. 16. Example of Multiple Configuration Databases on Multiple Servers

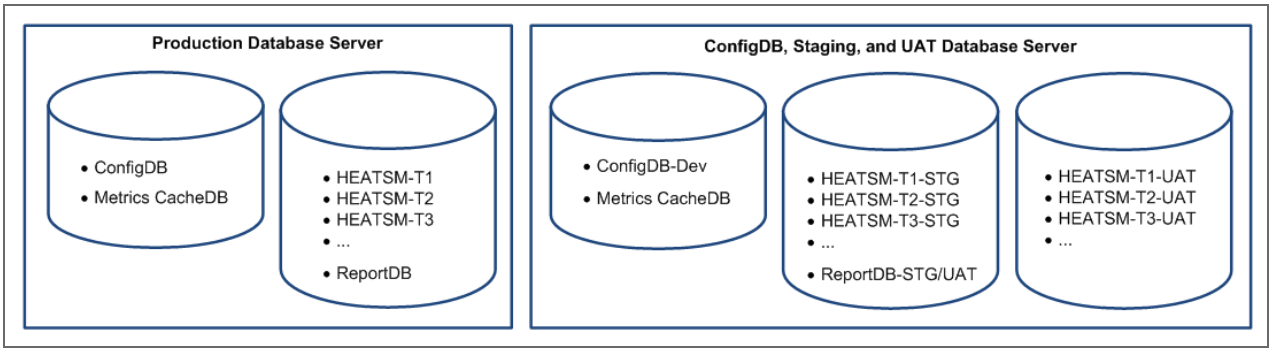


In this deployment, there are separate HEAT configuration databases for the production landscape, the staging landscape, and the UAT landscape and separate instances.

Option D6: Single Configuration Database on Separate Database Servers (for MSPs)

A Managed Service Provider (MSP) is a service partner who provides HEAT Service Management for multiple tenants or outside customers.

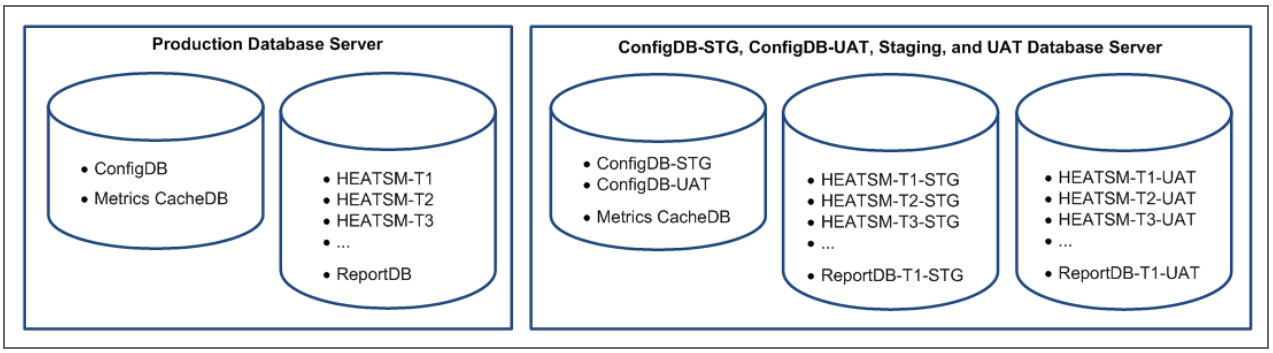
Fig. 17. Example of a Single Configuration Database on Separate Database Servers



Option D7: Multiple Configuration Databases on Separate Database Servers (for MSPs)

A Managed Service Provider (MSP) is a service partner who provides HEAT Service Management for multiple tenants or outside customers.

Fig. 18. Example of Multiple Configuration Databases on Separate Database Servers



HEAT Operations Console Deployment Options

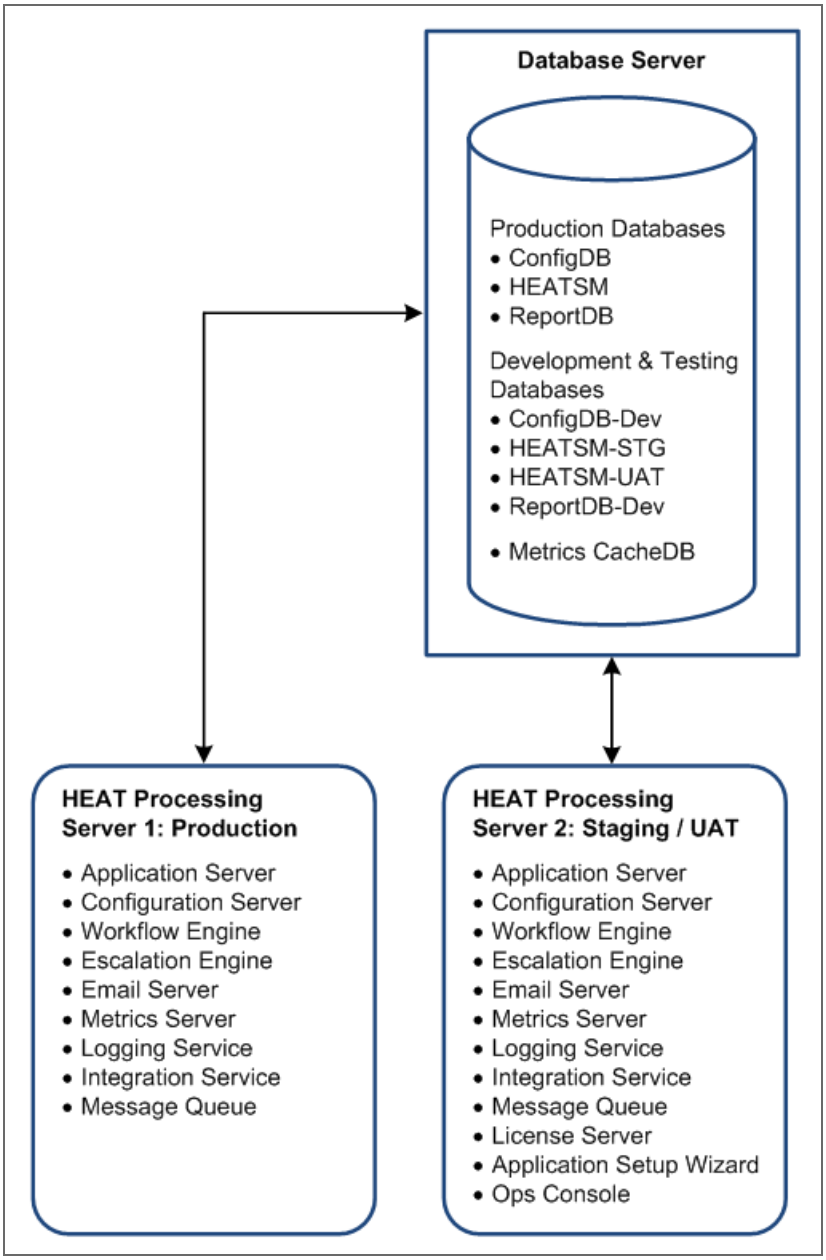
About the HEAT Operations Console Deployment Options

Determine your database deployment options first. In all of the HEAT Operations Console deployment options below, you can substitute any of the database deployments described in Database Deployment Options for the database deployments in the figure. So for the database engine instance shown in Option OC1 below, you could substitute Option D1, Option D2a, Option D2b, Option D3, and so on for that database engine instance.

We recommend using a deployment that has either two or three HEAT configuration databases (ConfigDB), such as Option OC1, Option OC2, or Option OC3.

Option OC1: Separate Configuration Databases and Application Servers for Production and Development (Best Practice)

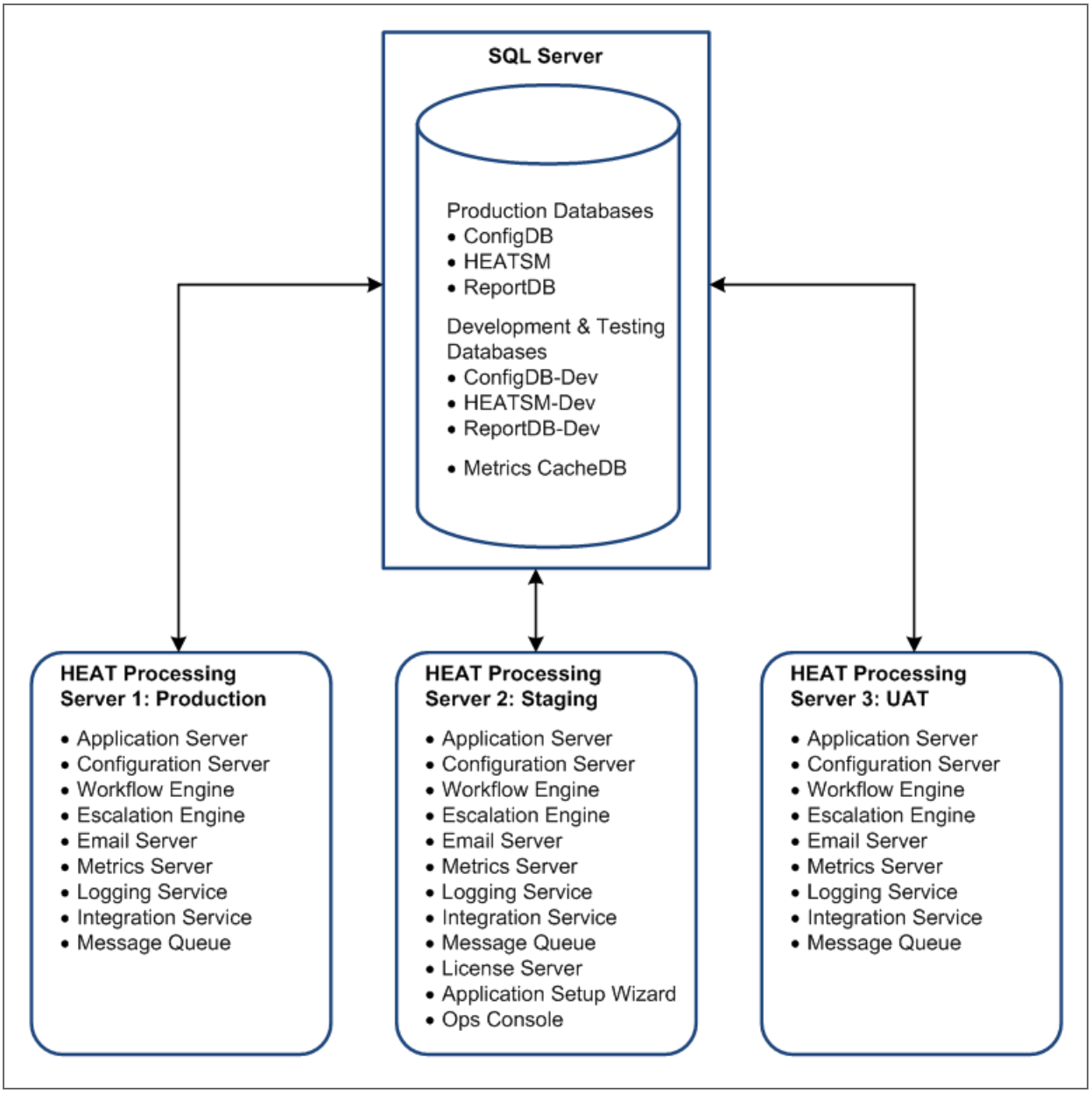
Fig. 19. Example of Separate Configuration Databases and Application Servers for Production and Development



To use the HEAT Operations Console, the production, staging, and UAT Application Servers must all use the same version of HEAT Service Management. When you test new versions of HEAT Service Management, either install the new version in a separate landscape or plan the HEAT Operations Console pushes before testing the new version.

Option OC2: Two Configuration Databases and Separate Application Servers for Each Landscape (Best Practice)

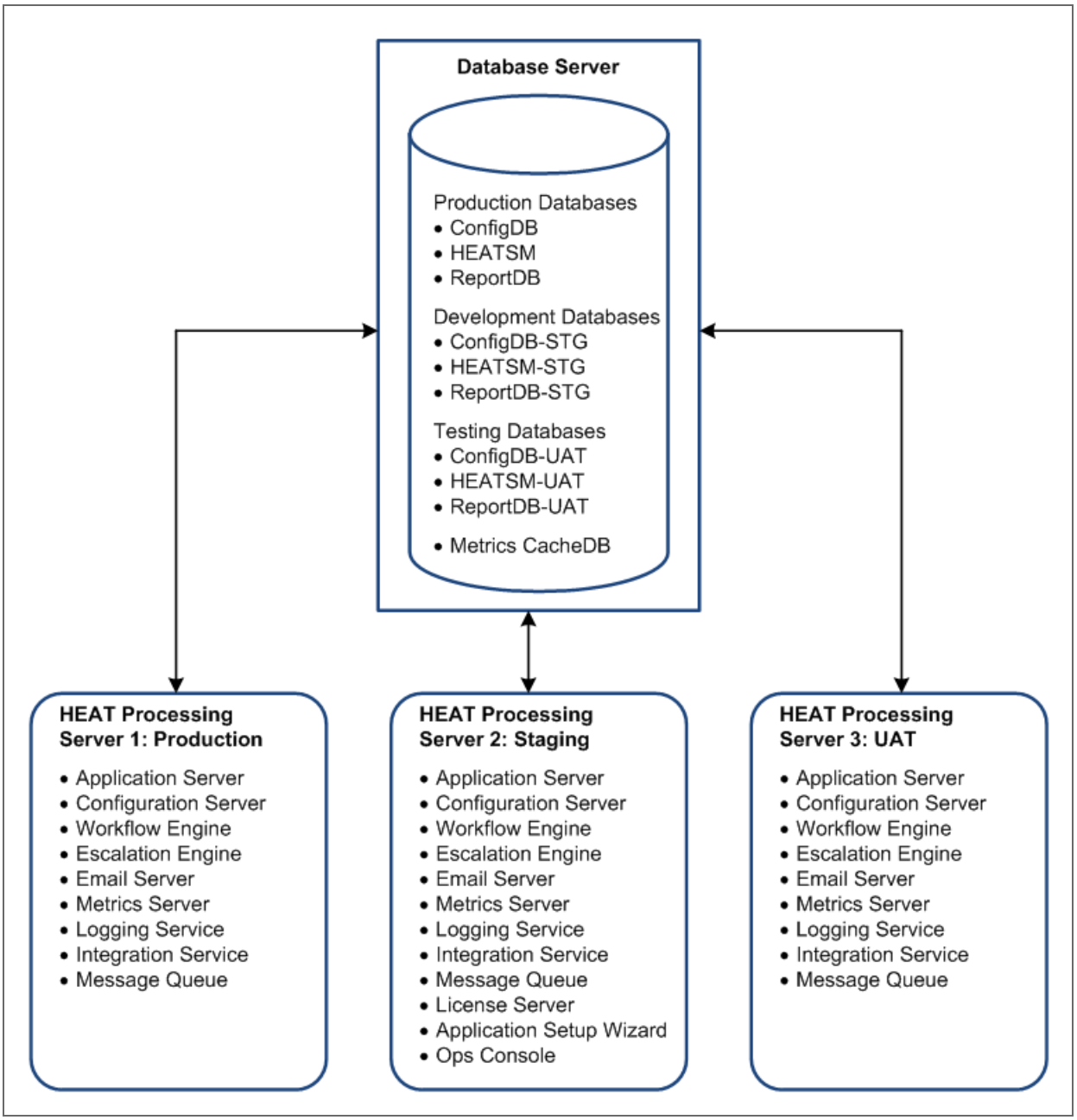
Fig. 20. Example of Two Configuration Databases and Separate Application Servers for Each Landscape



Option OC3: Separate Configuration Databases for Each Landscape (Best Practice)

The only use case for this option is to upgrade the staging or UAT landscape at different times.

Fig. 21. Example of Separate Configuration Databases for Each Landscape



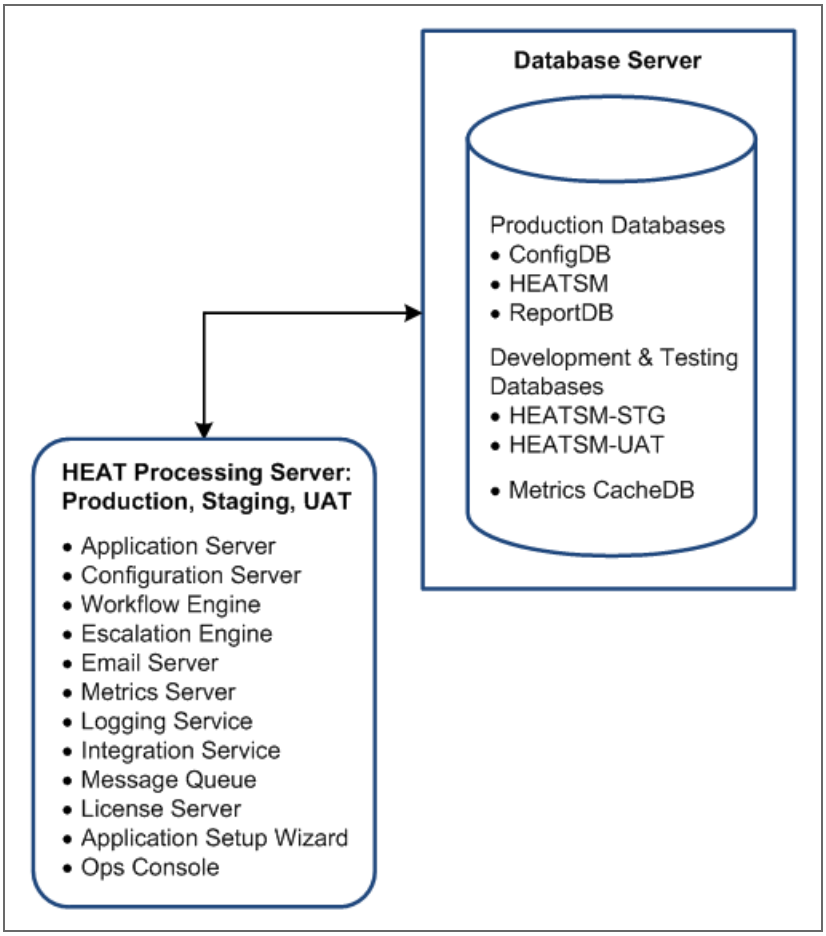
To use the HEAT Operations Console, the production, staging, and UAT Application Servers must all use the same version of HEAT Service Management. When you test new versions of HEAT Service Management, either install the new version in a separate landscape or plan the HEAT Operations Console pushes before testing the new version.

Option OC4: One Configuration Database and One Application Server

We do not recommend using this deployment unless you are setting up a demo environment.

We do not recommend using this or any similar deployment that has only one HEAT configuration database that is used for HEATSM, HEATSM-STG, and HEATSM-UAT.

Fig. 22. Example of One Configuration Database and One Application Server

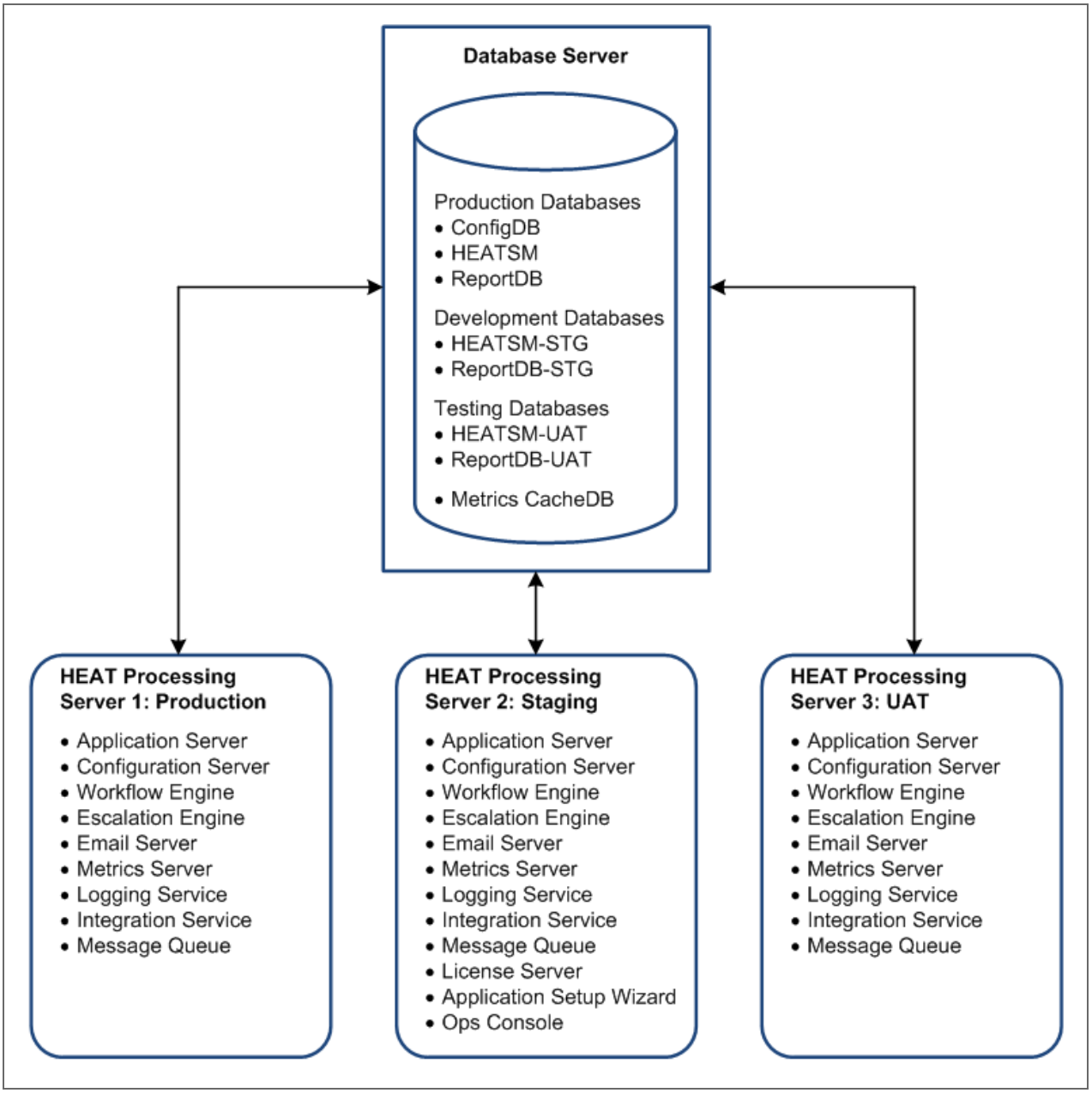


Option OC5: One Configuration Database and Separate Application Servers for Each Landscape

We do not recommend using this deployment unless you are setting up a demo environment.

We do not recommend using this or any similar deployment that has only one HEAT configuration database that is used for HEATSM, HEATSM-STG, and HEATSM-UAT.

Fig. 23. Example of One Configuration Database and Separate Application Servers for Each Landscape



To use the HEAT Operations Console, the production, staging, and UAT Application Servers must all use the same version of HEAT Service Management. When you test new versions of HEAT Service Management, either install the new version in a separate environment or plan the HEAT Operations Console pushes before testing the new version.

Reporting Services Deployment Options

About the Reporting Services Deployment Options

Determine your database deployment options first (see Database Deployment Options), and then your HEAT Operations Console deployment options (see HEAT Operations Console Deployment Options). Then determine your reporting services deployment options.

In all of the reporting services deployment options below:

- You can substitute any of the database deployments described in Database Deployment Options for the database deployments in the figure. So for the database engine instance shown in Option R5 below, you could substitute Option D1, Option D2a/b, Option D3, etc for that database engine instance.
- You can substitute any of the HEAT Operations Console deployments described in HEAT Operations Console Deployment Options for the HEAT Operations Console deployments in the figure. So for the single application server shown in Option R5 below, you could substitute Option OC3 for that application server.

Note the following:

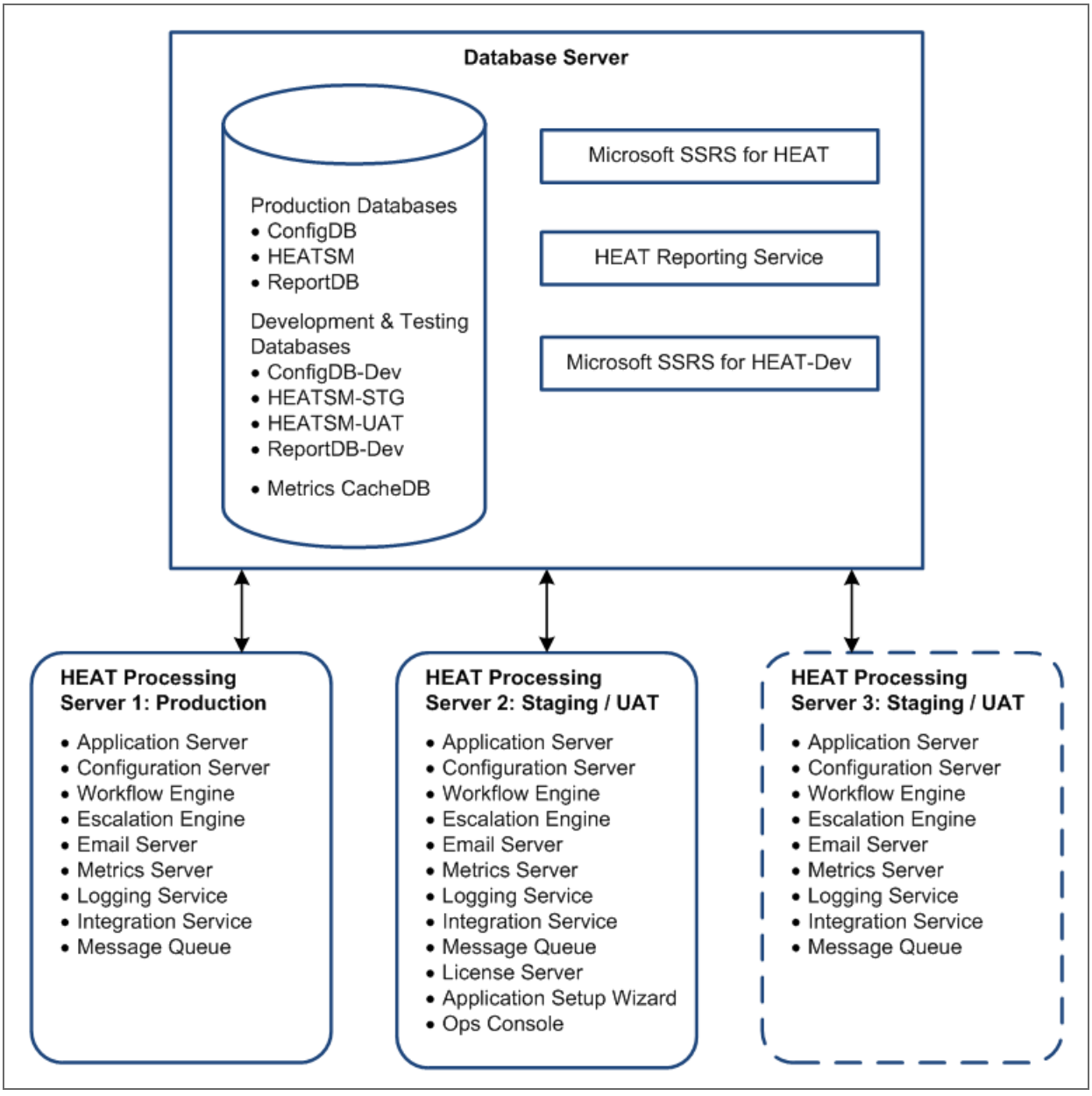
- The HEAT report database can reside on a separate database instance, or on a database instance on a separate server.
- The Microsoft SSRS instance can run on the HEAT database server, HEAT application server, or on a separate server.
- The HEAT Reporting feature should be deployed with the Microsoft SSRS Server.

We recommend using either Option R1 or Option R2.

For more information about the HEAT Reporting feature, see Installing the HEAT Reporting Feature.

Option R1: Multiple Microsoft SSRS Instances on the Same Database Server (Best Practice)

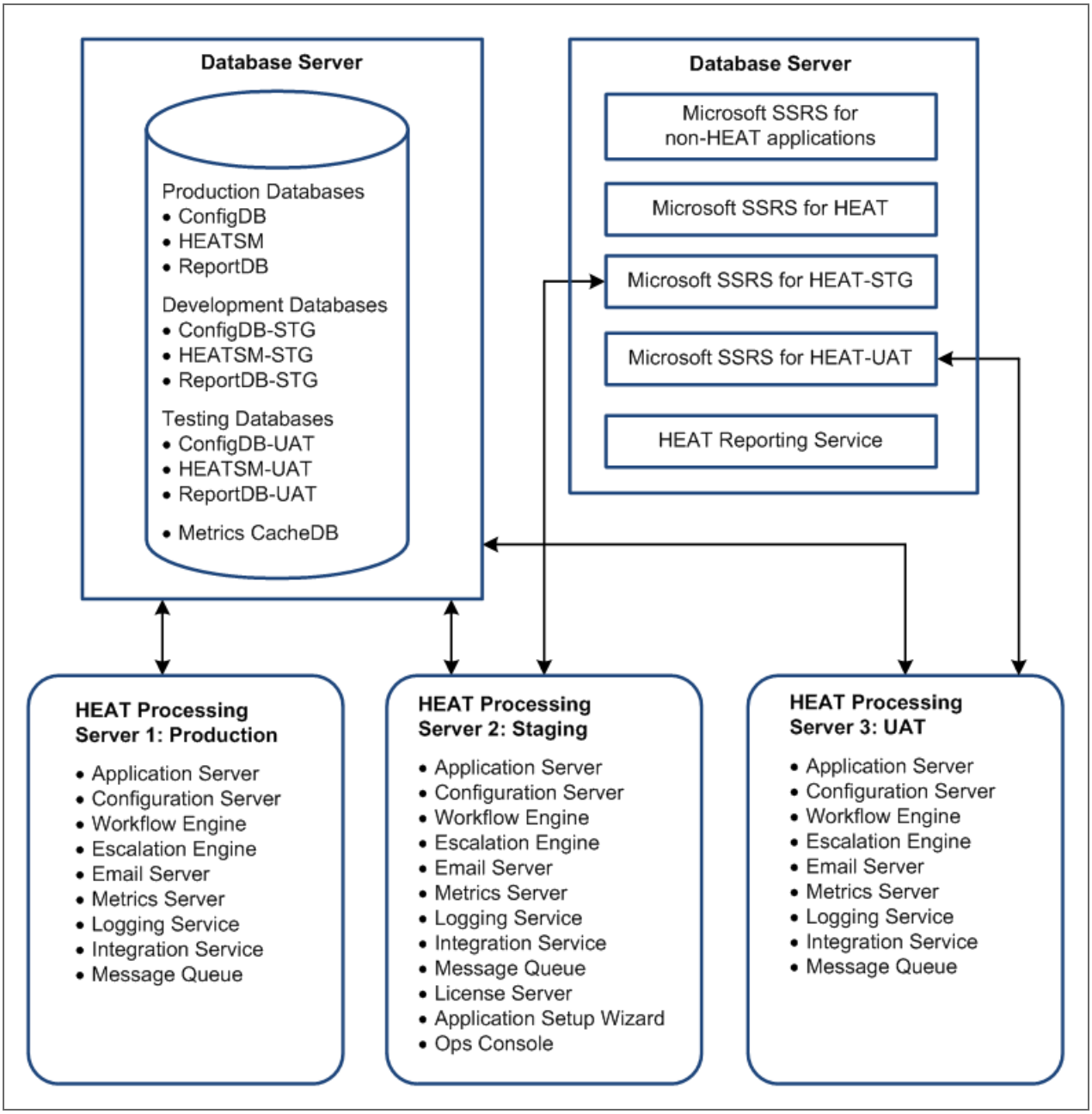
Fig. 24. Example of Multiple Microsoft SSRS Instance on One Database Server



This deployment is the most common and recommended for simplicity and security. The advantage of this deployment is that you have a HEAT Reporting feature for production that is separate from the development environments.

Option R2: Separate Microsoft SSRS Instances and a Separate Database Server (Best Practice)

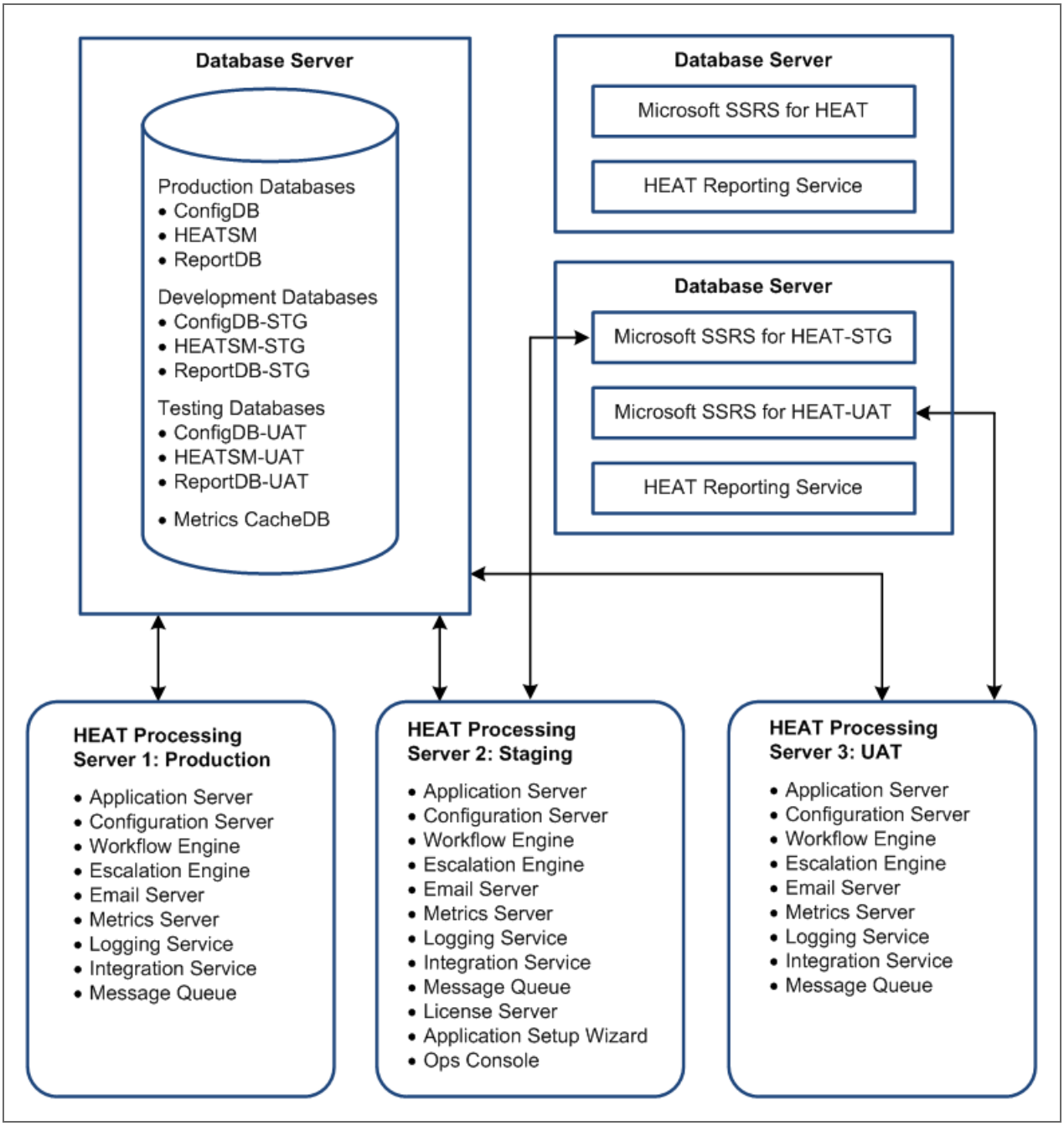
Fig. 25. Example of Separate Microsoft SSRS Instances and a Separate Database Server



Use this deployment to keep the reporting separate between the production and development environments.

Option R3: Separate Microsoft SSRS Instances

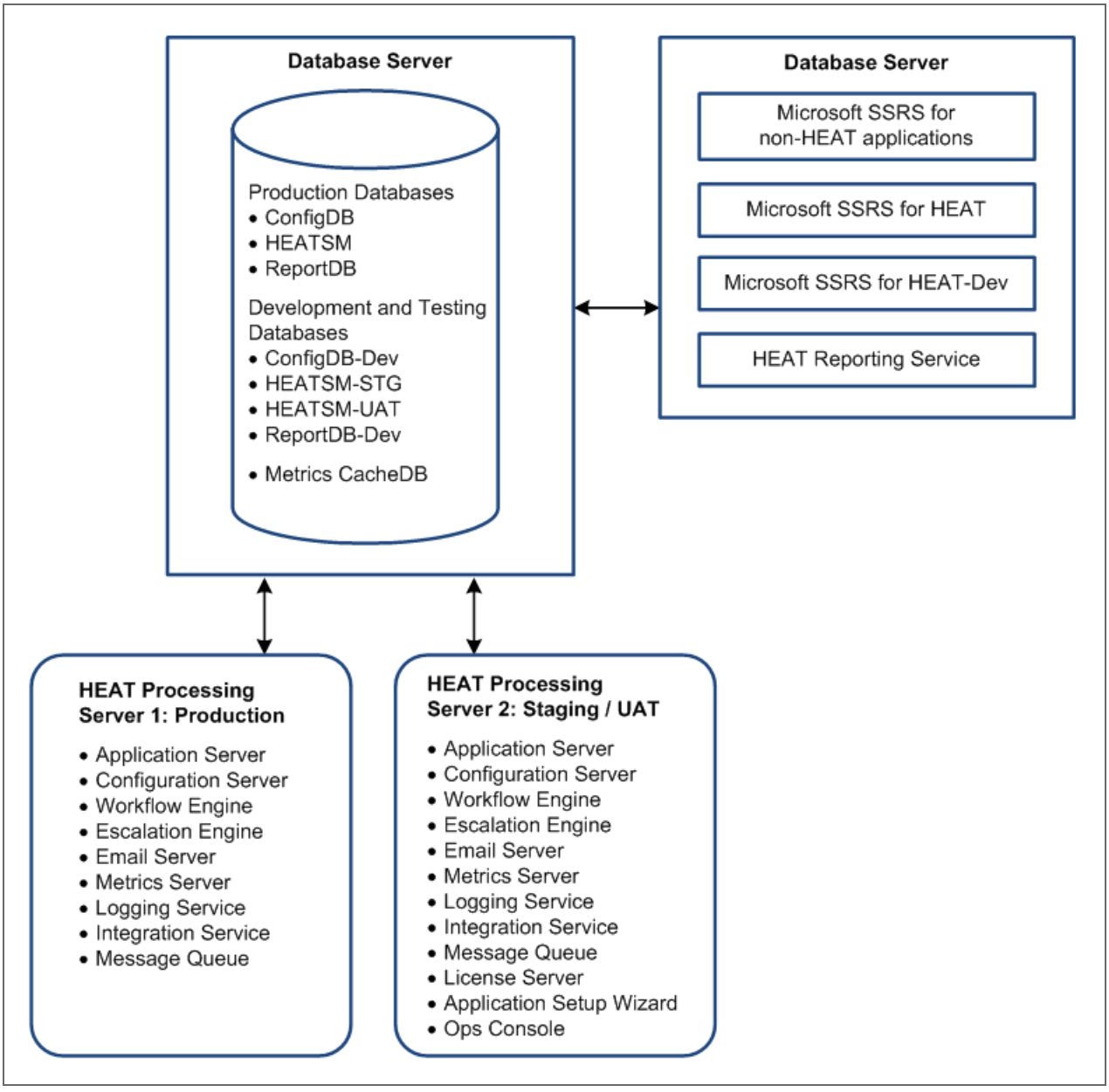
Fig. 26. Example of Separate Microsoft SSRS Instances



Use this deployment to keep the reporting separate between the production and staging/UAT environments.

Option R4: Multiple Microsoft SSRS Instances on a Separate Report Server

Fig. 27. Example of a Multiple Microsoft SSRS Instances on a Separate Report Server

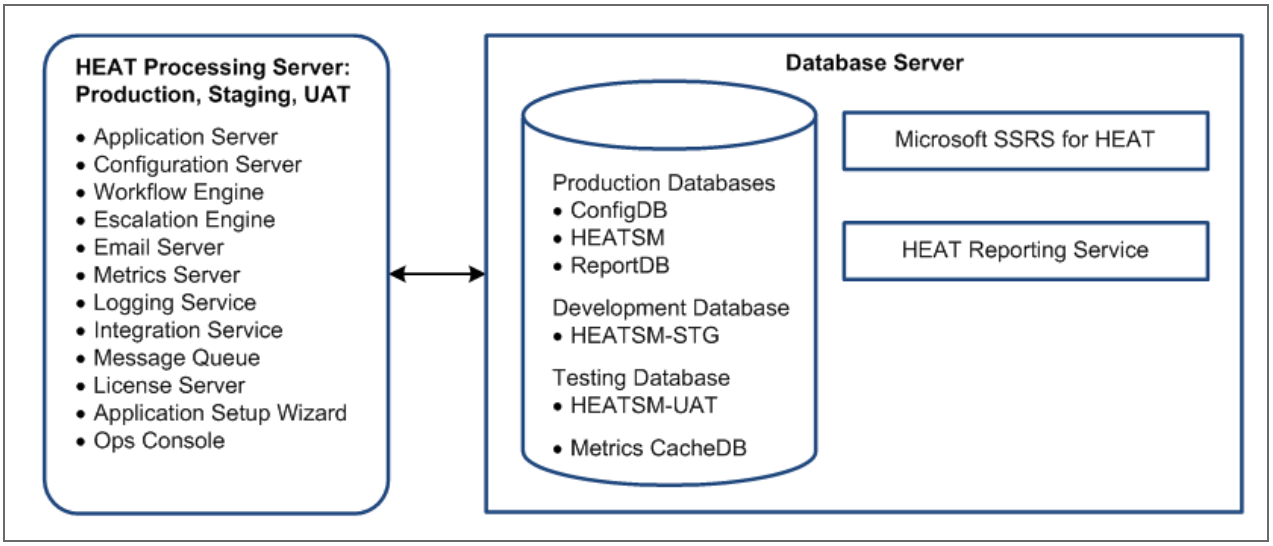


This deployment is recommended if you need to maintain your database in a locked down environment and keep it separate from the development environment. We also recommend this deployment if you already have a server with a Microsoft SSRS instance for other applications.

Option R5: Single Microsoft SSRS Instance on One Database Server

We do not recommend using this deployment unless you are setting up a demo environment.

Fig. 28. Example of a Single Microsoft SSRS Instance on One Database Server



HEAT Voice

About HEAT Voice

HEAT Voice is the telephony application that integrates automated call routing and management and Computer Telephone Integration (CTI) to HEAT Software USA, Inc. applications such as the HEAT Service Management system. The server components of HEAT Voice are referred to as IP Communications Management (IPCM).

IPCM uses the next-generation, standards-based IP communication transport, called Session Initiation Protocol (SIP). HEAT Service Management and HEAT Voice are typically installed and maintained on separate servers.

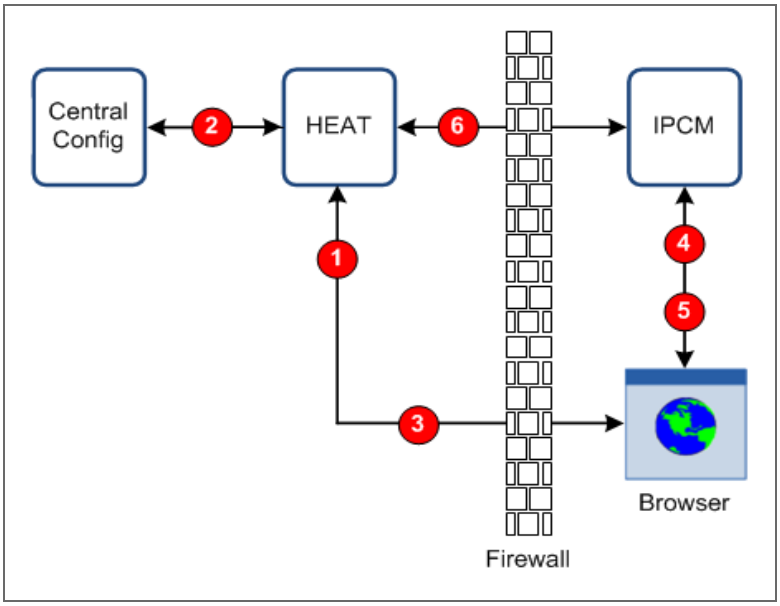
About this Deployment

> For general information about the HEAT Service Management deployment architecture, see HEAT Service Management Deployment Options.

Agent Login Sequence

The HEAT Voice agent login sequence is diagrammed in Agent Login Sequence

Fig. 29. Agent Login Sequence



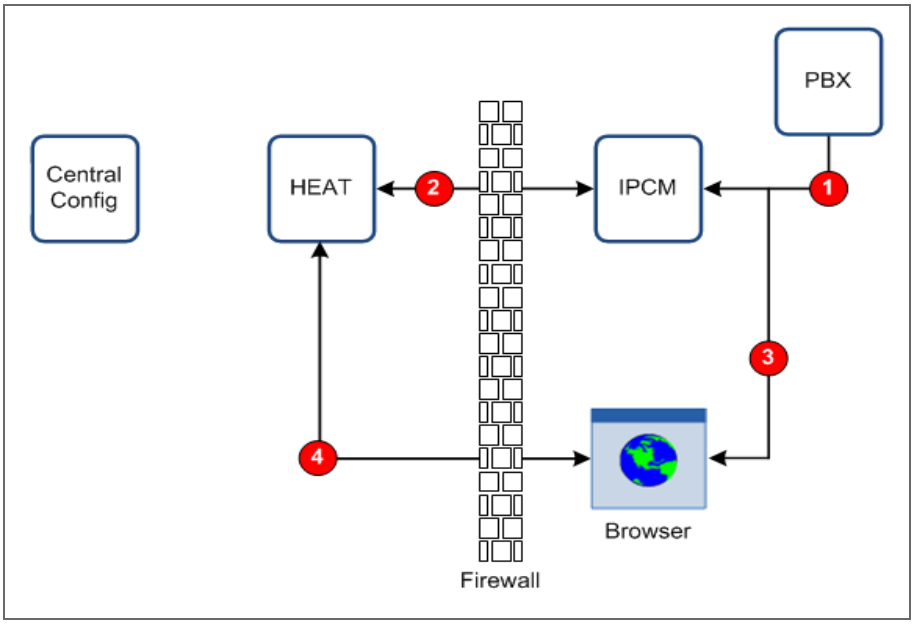
1. The agent logs into a secure (HTTPS) connection.
2. The system verifies the HEAT Voice server IP address or domain name.
3. The system obtains the session key from the HEAT Voice server IP address or domain name.
4. The system verifies the session key (TCP 5743).
5. The system makes the phone connection (SIP UDP 5060).
6. The system validates the session key (HTTPS).

Incoming Call Sequence

The sequence of events for HEAT Voice incoming calls is shown in Incoming Call Sequence.

1. The system receives a call (SIP UDP 500).

Fig. 30. Incoming Call Sequence.



2. The IVR searches and updates the record (HTTPS).
3. The call is forwarded to the agent (SIP UDP 5060, RTP UDP, TCP 5743).
4. The record appears to the agent (HTTPS).

Installing and Configuring HEAT Voice

For information about installing and configuring HEAT Voice, see the *IP Communications Management Administrator Guide* in the HEAT Knowledge Base at https://support.heatsoftware.com/.

Integrating HEAT Voice with HEAT Service Management

For complete information about integrating HEAT Voice with HEAT Service Management, see *Working with HEAT Voice* in the online help.

HEAT Service Management Installation Prerequisites

Before you install the HEAT Service Management system, ensure that you have completed the following:

- Confirm your role. See About Roles.
- Ensure that you have already created the needed accounts. See About the Different Accounts Used in HEAT Service Management.
- Confirm that the system, hardware, and software prerequisites are met. This information is contained in the *System Requirements and Compatibility Matrix for HEAT Service Management*. To download a copy, see Accessing the Knowledge Base.
- Configure the ports needed for your deployment. This information is contained in the *System Requirements and Compatibility Matrix for HEAT Service Management*. To download a copy, see Accessing the Knowledge Base.
- If you are going to deploy the HEAT Service Management system as a virtual image, review the requirements at Using a Virtual Machine.
- Ensure that FILESTREAM is enabled on the Microsoft SQL Server. See Enabling Attachment File Streaming.
- Ensure that Microsoft SQL Server Reporting Services (SSRS) is enabled. Required for the HEAT Reporting feature. See Enabling SQL Server Reporting Services.
- Ensure that full-text search is enabled for Microsoft SQL Server. See Enabling Full-Text Search.
- Verify the server roles and features described in Verifying Server Roles and Features (Optional).
- Determine the directories in which to install the HEAT Service Management components on the host that you are logged into.

About Roles

Administrator Account Permission

Use your account that has local administrator permission to install the HEAT Service Management system, including all optional components. This administrator account must have permission to create and modify folders, files, and registry keys.

Database Access Rights Needed for HEAT Service Management

The following are the minimum access rights required for the account of the user running the System Configuration Wizard:

Role	Access Right
Server	public
	dbcreator
	securityadmin *
* This role is only needed temporarily, to assign the db_owner role to the ConfigDB and HEATSM databases.	

> If you do not want to give this permission to the user running the System Configuration Wizard, you must go into the Microsoft SQL Server Management Studio and manually assign the service account as the db_owner for the ConfigDB and HEATSM databases.

Database Access Rights Needed for the HEAT Reporting Feature

The following are the minimum access rights used in Microsoft SQL Server Management Studio for HEAT Service Management when also using the HEAT Reporting feature:

Role	Access Right
Server	public
	dbcreator
	securityadmin **
Database	db_owner of master
	db_owner of msdb
** The securityadmin role, and the db_owner of the master Microsoft database, are only needed if you set up Microsoft SSRS and create a new report server database. If you have already configured Microsoft SSRS and do not make any changes to it, you do not need this role. The securityadmin role creates the following Microsoft SSRS-related roles in the master, msdb, report server, and report server temporary databases: ■ RSExecRole ■ SQLAgentOperatorRole ■ SQLAgentReaderRole ■ SQLAgentUserRole	

The service account for Microsoft SSRS requires:

Database	Role
MSDB	RSExecRole
	SQLAgentOperatorRole
	SQLAgentReaderRole
	SQLAgentUserRole
Master	RSExecRole
Report server	RSExecRole
	db_owner
Report server temporary	RSExecRole
	db_owner

About the Different Accounts Used in HEAT Service Management

Before you install and configure the HEAT Service Management system, you must create and know the credentials for the following accounts:

- IT Account
- HEAT Database Account
- HEAT Service Account

During configuration of HEAT Service Management, you create the following accounts:

- Administrator Account for the HEAT Configuration Database
- Administrator Account for HEAT Service Management
- Administrator Account for the HEAT Reporting Service
- Administrator Account for the HEAT Operations Console

IT Account

You are logged into this account when installing the HEAT Service Management system and running the System Configuration Wizard.

This account must be created before you start the installation and configuration and have administrator privilege on the servers where you are installing HEAT Service Management. Your IT department sets up this account for you.

HEAT Database Account

This account must be created before you start the installation and configuration.

You enter your credentials for the HEAT database account on the following System Configuration Wizard pages:

- HEAT Configuration Application
- HEAT Service Management Application
- HEAT Metrics Server
- HEAT Discovery Application Server

If you plan to install the HEAT Reporting feature, you also enter your credentials for the HEAT database account on the following System Configuration Wizard pages:

- Microsoft SSRS Configuration

- HEAT Reporting Service Configuration

HEAT Service Account

This account must be created before you start the installation and configuration and it must have administrator privilege on the HEAT Application Server.

A HEAT service account is only required when you:

- Do not to use the local system account for IIS Application Pool Identity and Windows Service.
- Install the HEAT Reporting feature.

You enter your credentials for the HEAT service account on the following System Configuration Wizard pages:

- HEAT Application Server Settings
- Microsoft SSRS Configuration

Administrator Account for the HEAT Configuration Database

This account enables you to log into the HEAT configuration database.

You create this account during system configuration on the HEAT Configuration Application page of the System Configuration Wizard.

There will probably be different accounts used for different tenants.

Administrator Account for HEAT Service Management

This account enables you to log into HEAT Service Management, with access to the Service Desk Console and Configuration Console.

You create this account during system configuration on the HEAT Service Management Application page of the System Configuration Wizard.

There will probably be different accounts used for different tenants.

Administrator Account for the HEAT Reporting Service

This account enables you to log into HEAT Reporting Services.

You create this account during system configuration on the HEAT Reporting Service Configuration page of the System Configuration Wizard.

Administrator Account for the HEAT Operations Console

This account enables you to log into thev HEAT Operations Console.

You create this account during system configuration when you check the Use this host for HEAT Operations Console box on the HEAT Application Server Settings page of the System Configuration Wizard.

About Passwords Used in HEAT Service Management

We recommend that you follow industry standards for creating strong passwords.

See https://msdn.microsoft.com/en-us/library/ms161962.aspx and https://msdn.microsoft.com/en-us/library/ms161959.aspx.

Using a Virtual Machine

You can also deploy the HEAT Service Management system as a virtual image. If you use a virtual machine (VM), always keep the same universally unique identifier (UUID). See your VM documentation for more information.

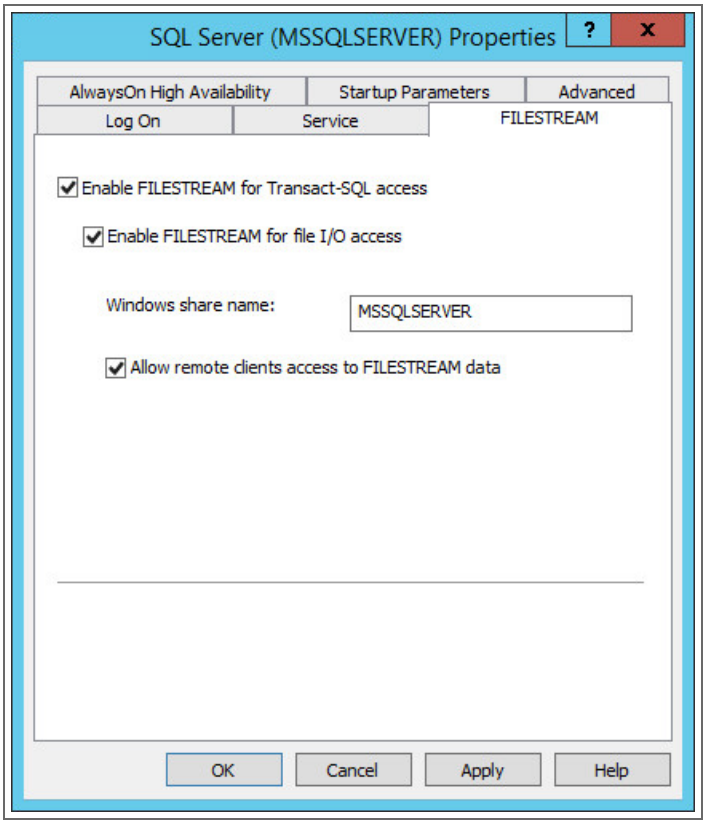
Enabling Attachment File Streaming

This feature is coming in HEAT Service Management Release 2016.1.1.

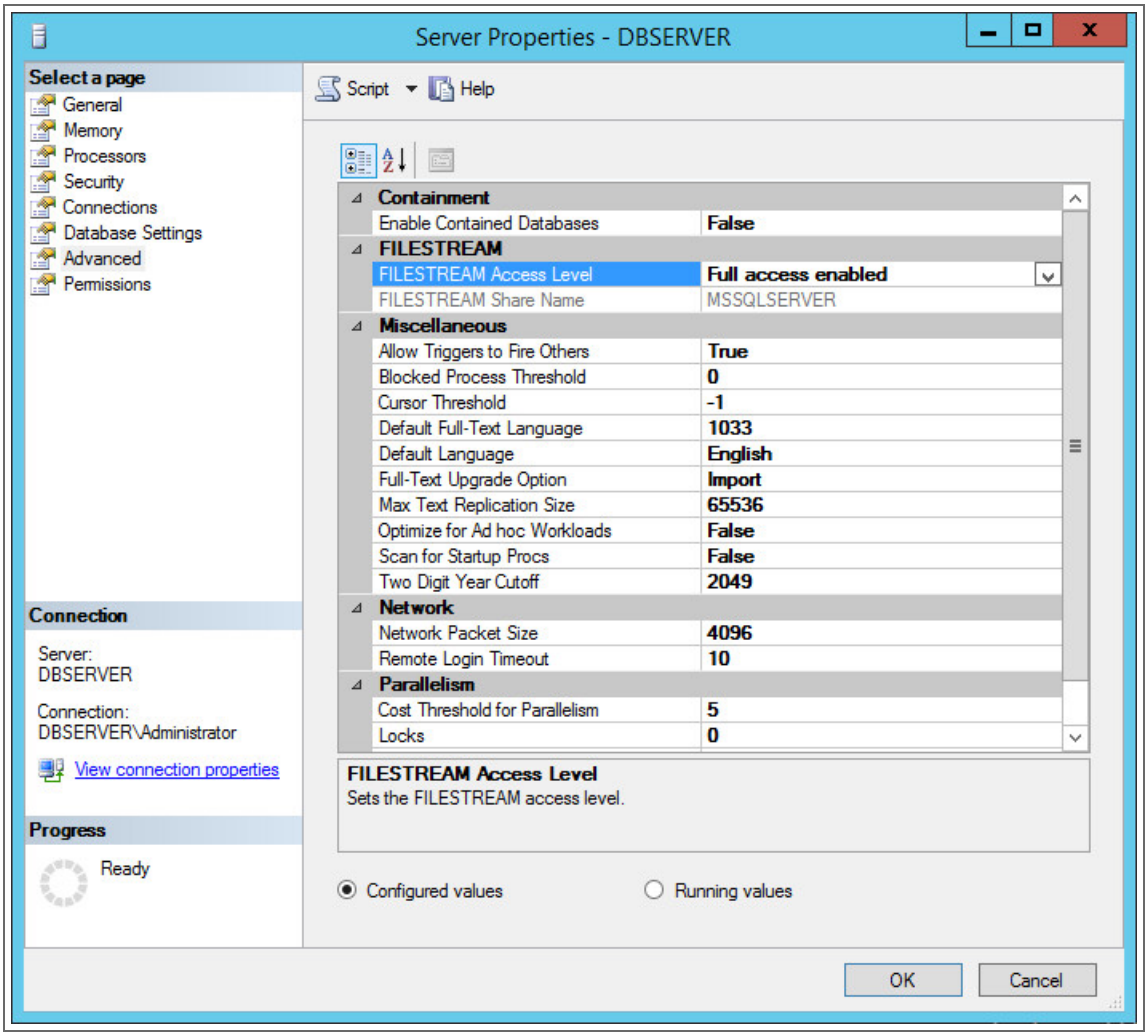
Task 1. Enabling the FILESTREAM Feature

You must enable the FILESTREAM feature on the Microsoft SQL Server instances where you plan to install the HEAT configuration database (ConfigDB) and the HEAT application database (HEATSM). The database administrator normally performs this task.

1. On the database server, go to the Windows Apps menu and click the **SQL Server Configuration Manager** icon.
2. Navigate to the **SQL Server Services** node and double-click the SQL Server instance you want to modify. Example: **SQL Server (MSSQLSERVER)**.
3. Click the FILESTREAM tab and select the check boxes to enable FILESTREAM and enter a Windows share name for the files.
4. Check the **Allow remote clients access to FILESTREAM data** box.
5. Click **OK**.



6. On the database server, go to the Windows Apps menu and click the **SQL Server Management Studio** icon.
7. In SQL Server Management Studio, connect to the database server.
8. Right-click the server and choose **Properties** from the pop-up menu.
9. In the Properties dialog box, click **Advanced**.
10. Double-click **FILESTREAM Access Level** until it displays **Full access enabled**.
11. Click **OK**.
12. Optional. If you see a restart required message, restart the SQL Server.

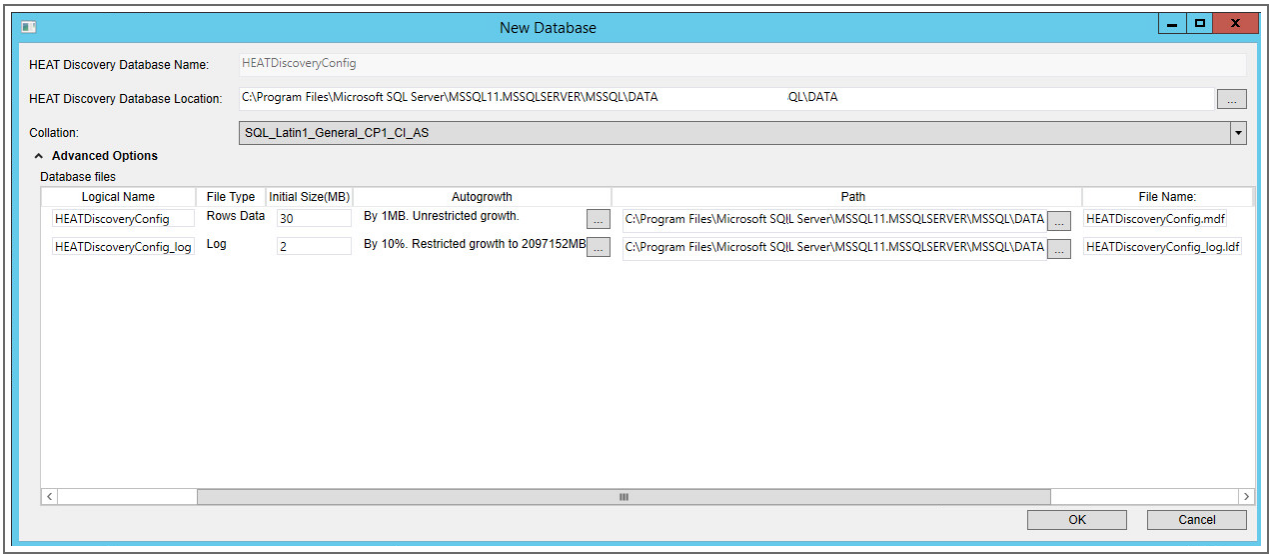


Task 2. Setting up HEAT Service Management

The Application database (HEATSM) and Configuration database (ConfigDB) are SQL databases. On SQL databases, user accounts with the *db_owner* fixed database role can perform all configuration and maintenance activities on the database.

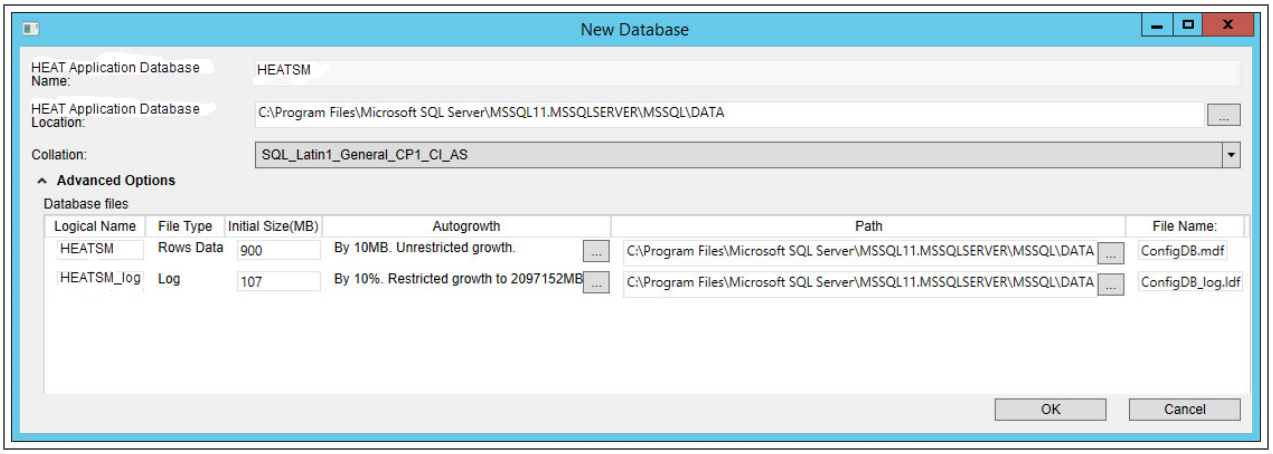
These steps are in addition to those described under Configuring the HEAT Service Management System.

1. On the database server, go to the Windows Apps menu and click the **System Configuration Wizard** shortcut.
2. On the HEAT Configuration Application page, specify a ConfigDB user account that has a *db_owner* role on SQL Server.
3. When you create a new HEAT Configuration Database, specify an additional path to the server.



4. On the HEAT Service Management Application page, specify a HEATSM user account that has a *db_owner* role on SQL Server.

5. When you create a new HEAT Application Database, specify an additional path to the server.



Task 3. Running the Script

The *FileStreamAttachment.sql* script is included on the HEAT Software product CD or download folder.

> Before you run the script, open it in SQL Server Management Studio and read the script notes carefully, so you understand what the script does.

1. On the SQL Server hosting the HEAT Configuration Database (ConfigDB), run the *FileStreamAttachment.sql* script.

2. On the SQL Server hosting the HEAT Application Database (HEATSM), run the *FileStreamAttachment.sql* script.

   The script creates:

   - An attachment filestream database filegroup
   - A filestream

Enabling SQL Server Reporting Services

About Microsoft SSRS

The HEAT Reporting feature requires Microsoft SQL Server Reporting Services (SSRS) on the database server.

> When you install Microsoft SSRS, the name of the Microsoft SSRS instance cannot have any special characters, for example **\ , : ; ...** and so on. **$** and **_** are OK.
>
> Also see https://technet.microsoft.com/en-us/library/aa176590%28v=sql.80%29.aspx.

To use the HEAT Reporting feature in a multi-tenant environment, we highly recommend that you install a separate Microsoft SSRS instance for the HEAT Reporting feature only. See Enterprise Production Deployment.

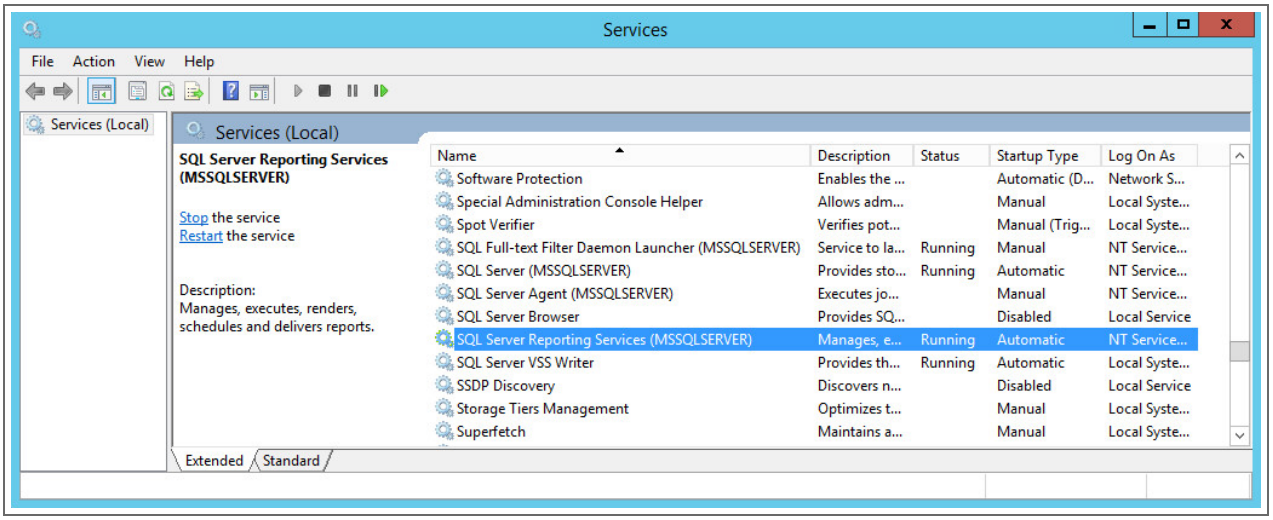
HEAT Service Management system deployments can have multiple reporting tenant instances. For example, a deployment may have one reporting server for the production instance of the tenant and another reporting server for the staging and UAT instances of the tenant.

Checking if Microsoft SSRS is Installed

To verify that Microsoft SSRS is installed on your system:

1. Open to the Windows Services dialog box and look for an entry called *SQL Server Reporting Services*.

Fig. 31. Services Dialog Box



The name in parentheses is the Microsoft SSRS instance name. See Fig. 31. During the HEAT Reporting feature configuration, you must enter this instance name.

> The instance name cannot contain any special characters, for for example **\ , : ; ...** and so on. **$** and **_** are OK.
>
> If the names of the current Microsoft SSRS instances have special characters, you must install an additional Microsoft SSRS instance with an instance name free of special characters.

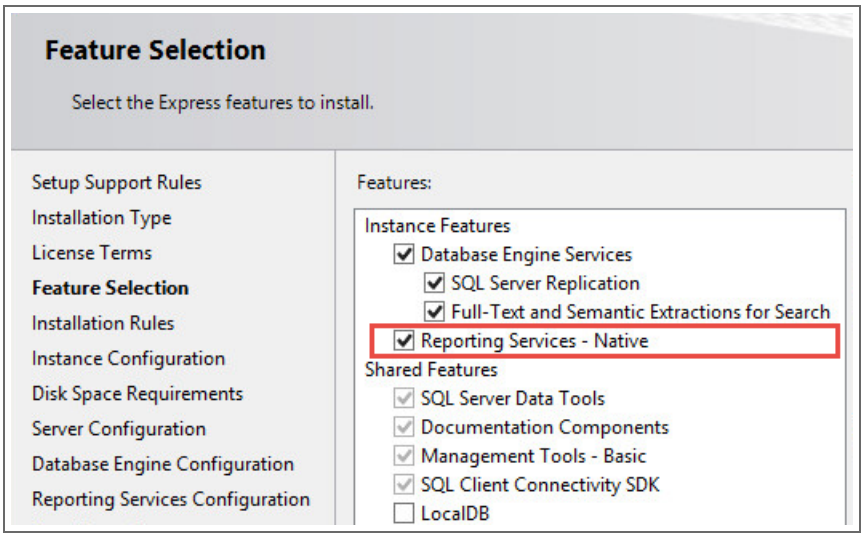
2. Choose the appropriate action:
   - If Microsoft SSRS is already installed and the instance name has no special characters (-, _, #, and so on), make sure that:
     - Status is set to *Running*.
     - Startup Type is set to either *Automatic* or *Automatic (Delayed Start)*.
   - If Microsoft SSRS is already installed but the instance name has special characters (-, _, #, and so on), use the SQL Server Installation Center to add a new Microsoft SSRS instance with an instance name free of special characters.
   - If Microsoft SSRS is not installed, use the SQL Server Installation Center to add a Microsoft SSRS component to an existing Microsoft SQL installation.

Installing Microsoft SSRS

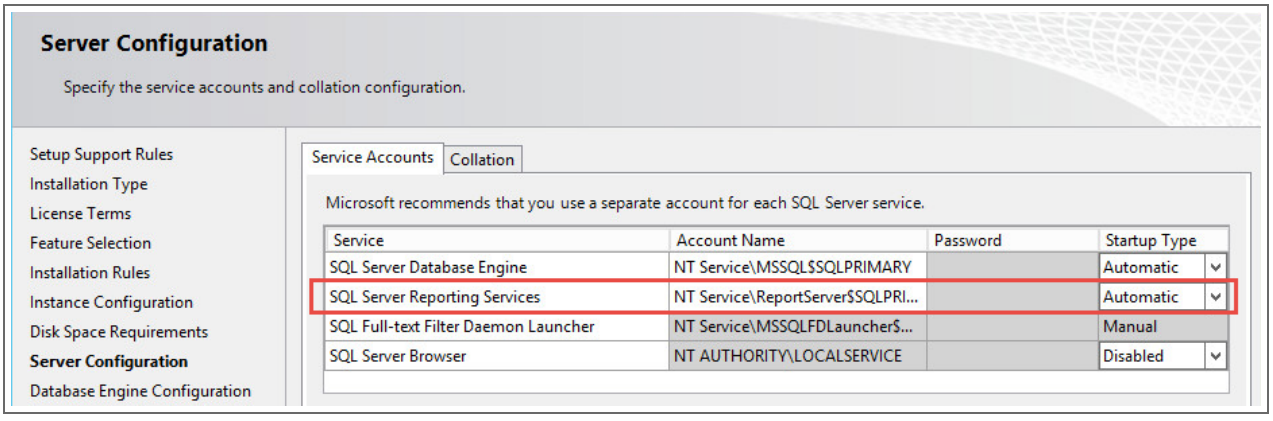
The SQL Server Reporting Services (SSRS) is an optional *Installation Feature* of Microsoft SQL Server. It is a server-based report generating software system.

The SSRS feature is disabled by default. This section describes how to enable and configure the SSRS feature of Microsoft SQL Server.

1. During Microsoft SQL Server installation, in the Feature Selection page of the Microsoft SQL Server setup wizard, ensure that **Reporting Services - Native** is selected:



2. As you work your way through the Microsoft SQL Server setup wizard, verify that Reporting Services - Native is part of the Server Configuration.



3. When the installation is completed, go back to Windows Services and verify that SQL Server Reporting Services is present. See Fig. 31.

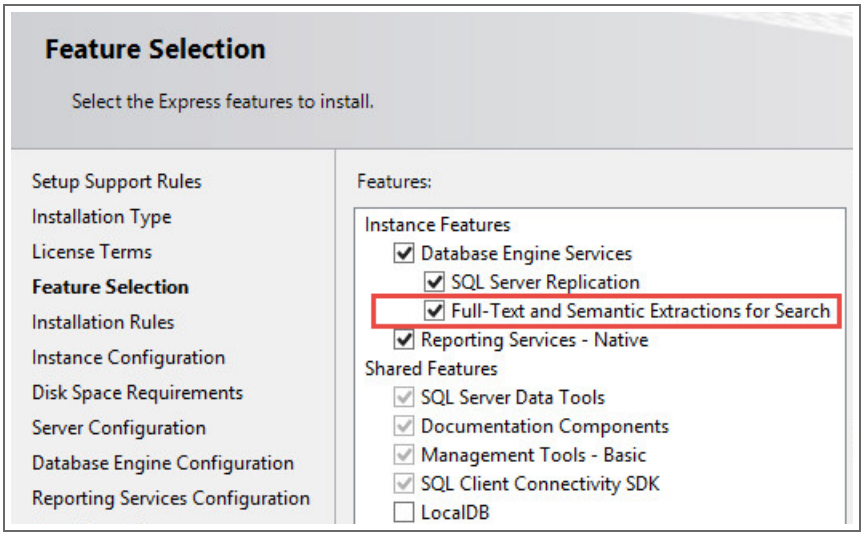
With Microsoft SSRS present and running, the database server is ready for you to install and configure HEAT Service Management.

Enabling Full-Text Search

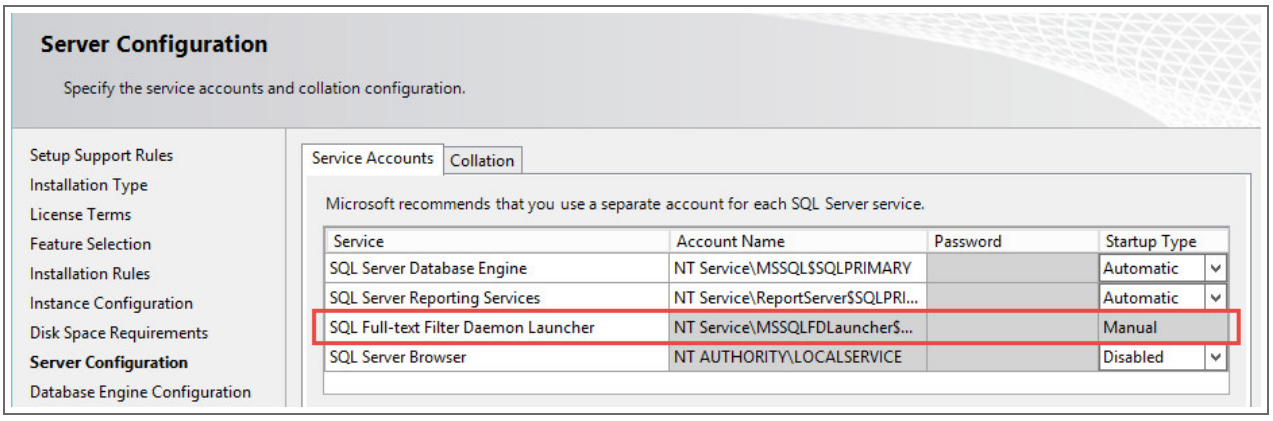
The full-text search feature of Microsoft SQL Server is a specialized indexing and querying service for character-based data in SQL Server database tables.

The full-text search feature is disabled by default. This section describes how to enable and configure the full-text search feature of Microsoft SQL Server.

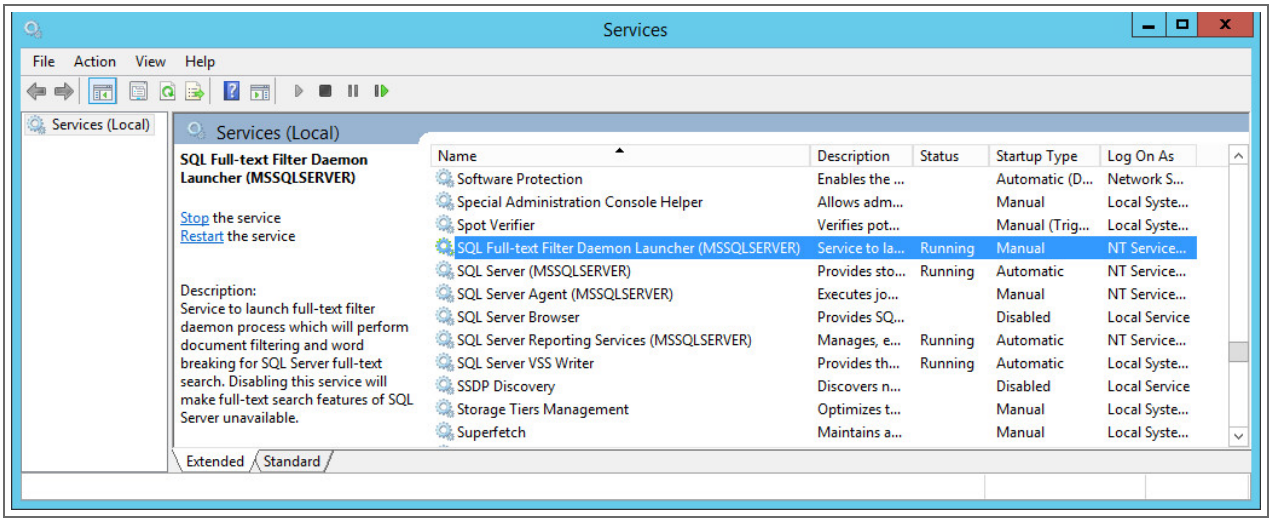
1. During Microsoft SQL Server installation, in the Feature Selection page of the Microsoft SQL Server setup wizard, ensure that **Full-Text and Semantic Extractions for Search** is selected:



2. In the Server Configuration page of the Microsoft SQL Server setup wizard, ensure that the **Microsoft SQL Full-text Filter Daemon Launcher** is configured with the local service account:



3. In the Services panel for the system, ensure that the SQL Full-text Filter Daemon Launcher is running:

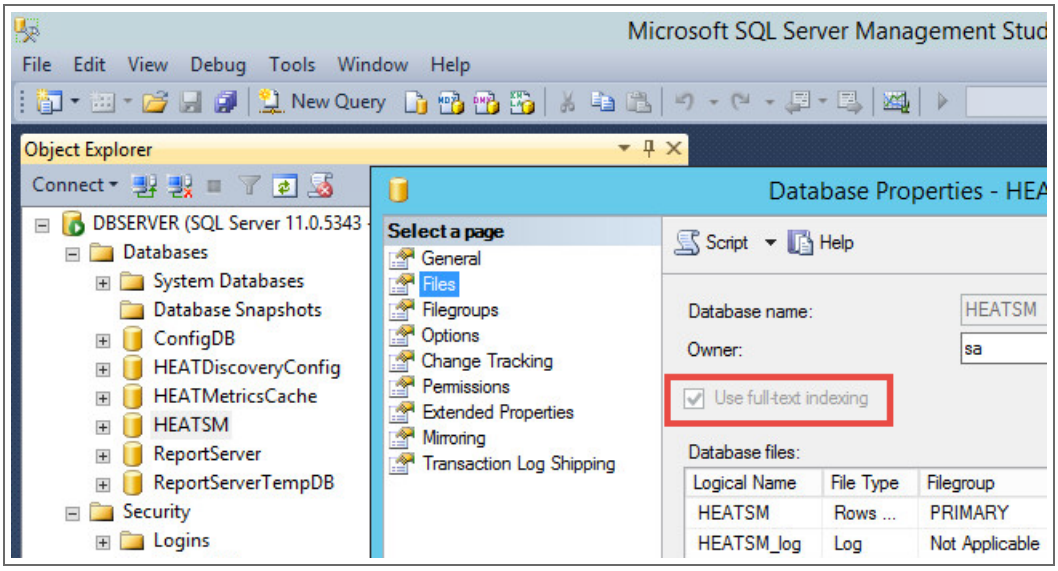


By default, the HEAT application database (HEATSM) is configured to index these incident fields:

- Owner
- ProfileFullName
- Resolution
- Subject
- Symptom

4. Verify that full-text search is configured in Microsoft SQL Server Management Studio:

   In the Database Properties dialog box, open the Files page.
   By default, **Use full-text indexing** is checked. If it is not, verify that the full-text search services are running as described in Step 3.


Microsoft SQL Server Management Stud
File Edit View Debug Tools Window Help
New Query
Object Explorer
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Databases
System Databases
Database Snapshots
ConfigDB
HEATDiscoveryConfig
HEATMetricsCache
HEATSM
ReportServer
ReportServerTempDB
Security
Logins
Database Properties - HEA
Select a page
General
Files
Filegroups
Options
Change Tracking
Permissions
Extended Properties
Mirroring
Transaction Log Shipping
Script
Help
Database name:
HEATSM
Owner:
sa
Use full-text indexing
Database files:
Logical Name
File Type
Filegroup
HEATSM
Rows ...
PRIMARY
HEATSM_log
Log
Not Applicable

Verifying Server Roles and Features (Optional)

You can optionally verify which server roles and features are installed by the HEAT Service Management installer.

- If you install the HEAT Service Management system on Windows Server 2008 R2, verify the Microsoft IIS Release 7.5 configuration. See Verifying Windows Server 2008 R2 Roles and Features.
- If you install the HEAT Service Management system on Windows Server 2012, verify the Microsoft IIS Release 8.0 configuration. See Verifying Windows Server 2012 Roles and Features.

Verifying Windows Server 2008 R2 Roles and Features

1. Go to the Start menu and click **Administrative Tools > Server Manager**.
2. In the Navigation pane, expand **Roles > Web Server (IIS)**.
3. Verify that these Role Services are installed under Web Server:
   - Common HTTP features
     - Static Content
     - Default Document
     - Directory Browsing
     - HTTP Errors
   - Application Development
     - ASP.NET
     - .NET Extensibility
     - ISAPI Extensions
     - ISAPI Filters
   - Health and Diagnostics
     - HTTP Logging
   - Security
     - Request Filtering
   - Performance
     - Static Content Compression

- Dynamic Content Compression
- Management Tools
  - IIS Management Console

Check the box of any listed Server Role that is not installed.

4. In the Navigation pane, expand **Features > Add Features**.
5. Verify that these items are selected for .NET Framework Features:
   - ASP.NET 4.5
   - WCF Services
     - HTTP Activation
   - Windows Process Activation Service
     - Process Model
     - Configuration APIs

   Check the box of any listed Feaure that is not installed.
6. Click **Next** and then click **Install**.

Verifying Windows Server 2012 Roles and Features

1. Go to the Windows Apps menu and click **Server Manager**.
2. Under configure this local server, click **Add roles and features**.
3. On the Roles page, verify that these Server Roles are installed under Web Server (IIS) > Web Server:
   - Common HTTP features
     - Default Document
     - Directory Browsing
     - HTTP Errors
     - Static Content
   - Health and Diagnostics
     - HTTP Logging
   - Performance
     - Static Content Compression
     - Dynamic Content Compression
   - Security

- Request Filtering
- Application Development
  - .NET Extensibility
  - ASP.NET
  - ISAPI Extensions
  - ISAPI Filters

Under Web Server (IIS) > Management Tools:

- IIS Management Console

Check the box of any listed Server Role that is not installed.

4. On the Features page, verify that these Features are selected:
   - NET Framework 4.5
     - ASP.NET 4.5
     - WCF Services > HTTP Activation
   - Windows Process Activation Service
     - Process Model
     - Configuration APIs

   Check the box of any listed Feature that is not installed.
5. Click **Next** and then click **Install**.

Installing the HEAT Service Management System

Installation Overview

This section describes how to install the HEAT Service Management system for a new, complete HEAT Service Management system installation using the recommended deployment as described in HEAT Service Management Deployment Options.

Installing in the Production Environment

To install the HEAT Service Management system in the production environment:

- Install all HEAT Service Management features *except* for the HEAT Operations Console.
- Use the System Configuration Wizard to configure your production environment.

  See Installing HEAT Service Management.

Installing in the Staging and UAT Environments

Follow the step below if you are hosting the staging and UAT environments *on one server*.

If you are hosting the staging and UAT environments *on separate servers*, follow the step below once for the staging environment and again for the UAT environment.

To install the HEAT Service Management system in the staging/UAT environment:

- Install all HEAT Service Management features *including* the HEAT Operations Console.
- Use the System Configuration Wizard to configure your staging/UAT environment.

See Installing HEAT Service Management.

Installing the HEAT Reporting Feature

To install the HEAT Reporting feature:

- Install the HEAT Reporting feature on the HEAT database server.
- Use the System Configuration Wizard to configure the HEAT Reporting feature

  See Installing the HEAT Reporting Feature.

Installing the HEAT Operations Console

Use the HEAT Operations Console to create the staging and UAT instances of the tenant. The production instance of the tenant was created automatically.

See Configuring the Deployment on the HEAT Operations Console.

If you have any problems with the installation, you can review the installation log file which resides with the other system temporary files in the system temporary folder at *%tmp%*.

Installing HEAT Service Management

Where to Install HEAT Service Management

Before you begin installation, be clear on your deployment plan for HEAT Service Management. See Deployment Overview.

For the Demonstration or Proof-of-Concept Deployment, you install HEAT Service Management onto the HEAT server.

> If you have a Demonstration or Proof-of-Concept Deployment, and you plan to install HEAT Reporting Services you must install Microsoft SQL Server and SQL Server Reporting Services (SSRS) before you install HEAT Service Management.

For the Minimum Production Deploymentyou install the HEAT Service Management onto the HEAT server.

For the Enterprise Production Deployment, you install HEAT Service Management onto each of your HEAT processing servers and UI servers, as described below.

Installing HEAT Service Management

Installation is basically the same for all hosts in your deployment, except for the features to be installed, which happens in Step 6.

On each production server in your deployment:

1. Access the installation folder on the HEAT Service Management product CD and run **HEATServiceManagement.exe.**

   The installer checks for the prerequisite software components. If any of those components is not installed, the system prompts you to install them now.

2. Select **Install** at the prompt.

   Installation of the prerequisite software can take several minutes.

   If you are prompted to restart the system, select **Yes**.

   The HEAT Service Management Welcome dialog box appears.

3. Click **Next**.

The License Agreement dialog box appears.

4. Select **I accept the terms in the license agreement** and click **Next**.

   The Destination Folder dialog box appears.

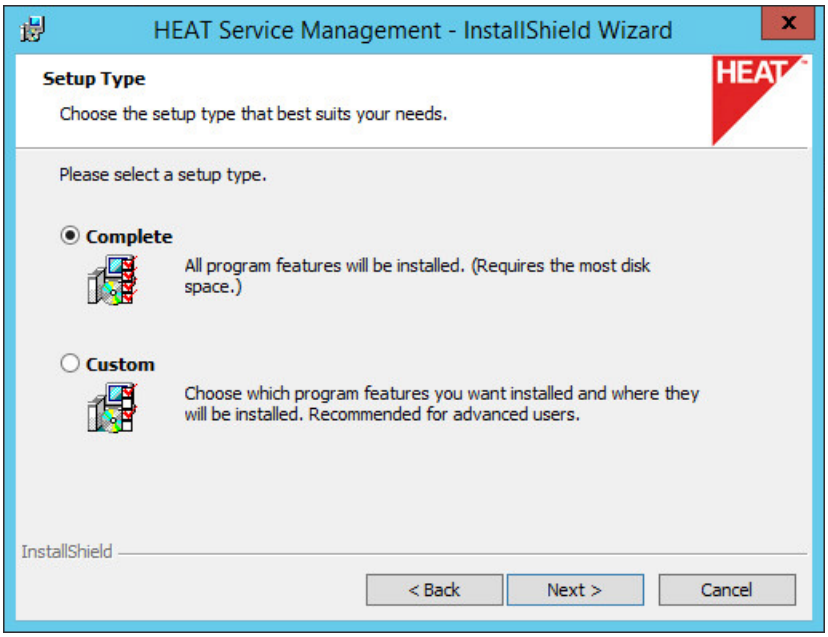
5. Click **Next** to accept the default installation folder

   Or click **Change...**, navigate to the new folder, and then click **OK**.

   The Setup Type dialog box appears.

6. Your selection of features from the Setup Type dialog box depends on the role of the individual host in your deployment plan.
   - For Demonstration or Proof-of-Concept Deployment, choose **Complete**.
   - For the Minimum Production Deployment, choose **Complete**.

Fig. 32. Setup Type Dialog Box: Install All Features

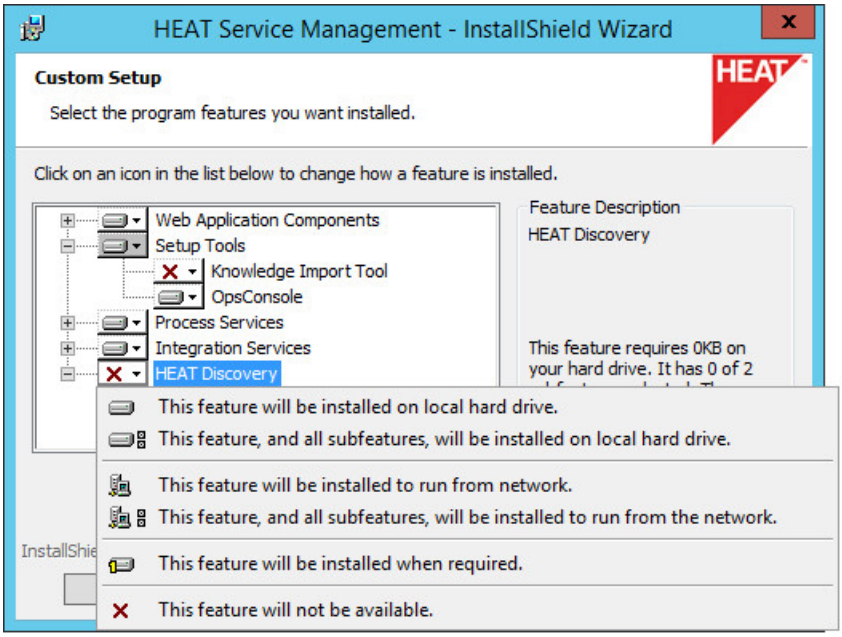


   - For the Enterprise Production Deployment, your choice depends on the role of the host:
     - Processing Servers – Production, choose **Custom** and click **Next**, and then install all components *except* for the Ops Console.
     - Processing Servers – Staging / UAT, choose **Complete**.
     - UI Servers, choose **Custom** and click **Next**, and then install *only* the Application Server.

If your deployment includes different processing servers for production, staging, and UAT, you must install the HEAT License Manager in every one of those landscapes. Following the instructions above will accomplish that.

For the Enterprise Production Deployment, you can choose **Complete** and install all HEAT Service Management features on all of your servers. But doing that takes up more disk space than necessary.

Fig. 33. Setup Type Dialog Box: Custom Setup



If there is any feature you do not want to install, click the down arrow next to the server icon next to the category name, highlight the feature, right click and select **This feature will not be available**. See Fig. 33.

If your deployment includes HEAT DSM integration, you do not need to install the DSM Integration Service because that function has been incorporated into HEAT Service Management since Release 2015.2.

7. Click **Next**.

   The system displays the Ready to Install the Program dialog box.

8. Click **Install**.

   The HEAT Service Management system installation begins. A status dialog box shows the installation progress of each component over the next few minutes.

   If you cancel the installation at any time, click **Finish** to close the installer.

   When the components are installed, the System Configuration Wizard launches automatically.

9. Go to Configuring the HEAT Service Management System for instructions about using the wizard.

Installing the HEAT Reporting Feature

Installation Prerequisite

The HEAT Reporting feature requires the 64-bit version of Microsoft SQL Server and SQL Server Reporting Services (SSRS) to be installed and running on the database server.

> HEAT Reporting Services do not support the 32-bit version of Microsoft SQL Server and SQL Server Reporting Services (SSRS).

To verify that Microsoft SSRS are installed and running, see Enabling SQL Server Reporting Services.

Where to Install the HEAT Reporting Service

Before you begin installation, be clear on your deployment plan for HEAT Service Management. See Deployment Overview.

For the Demonstration or Proof-of-Concept Deployment, you install HEAT Reporting Services onto the HEAT server, after you have installed HEAT Service Management.

For the Minimum Production Deploymentyou install HEAT Reporting Services on the database server.

For the Enterprise Production Deployment, you can install HEAT Reporting Services onto the database servers or onto a dedicated reporting server. See Reporting Services Deployment Options.

Installing the HEAT Reporting Service

> Be sure that Microsoft SSRS is installed and running before you install the reporting feature.

To install the HEAT Reporting feature:

1. Access the installation folder on the HEAT Service Management product CD and run **HEATReportingServices.exe.**

   The installer checks for the prerequisite software components. If any of those components is not installed, the system prompts you to install them now.

2. Select **Install** at the prompt.

Installing the prerequisite software can take several minutes.

If you are prompted to restart the system, select **Yes**.

The HEAT Reporting Services Welcome dialog box appears.

3. Click **Next**.

   The License Agreement dialog box appears.

4. Select **I accept the terms in the license agreement** and click **Next**.

   The Destination Folder dialog box appears.

5. Click **Next** to accept the default installation folder, or click **Change** and select a different folder.

6. Click **Next**.

   The Ready to Install the Program dialog box appears.

7. Click **Install**.

   The HEAT Reporting Services installation begins. A status dialog box shows the installation progress over the next few minutes.

   If you cancel the installation at any time, click **Finish** to close the installer.

   When the components are installed, the System Configuration Wizard launches automatically.

8. Go to Configuring the HEAT Reporting Feature for instructions about using the wizard.

Installing HEAT Discovery on a Dedicated Server

In small deployments, HEAT Discovery is installed with the other HEAT Service Management components on the HEAT production servers. For an Enterprise Production Deployment, to reduce the load on the production servers, you can configure a dedicated HEAT Discovery server.

> If you install HEAT Discovery on your production servers and then experience a significant load increase, we recommend configuring a dedicated HEAT Discovery server.

This topic describes how to install HEAT Discovery on a dedicated server.

> Perform this installation after you have installed and configured HEAT Service Management on your production servers.

On host dedicated to HEAT Discovery:

1. Access the installation folder on the HEAT Service Management product CD and run **HEATServiceManagement.exe.**

   The installer checks for the prerequisite software components. If any of those components is not installed, the system prompts you to install them now.

2. Select **Install** at the prompt.

   Installation of the prerequisite software can take several minutes.

   If you are prompted to restart the system, select **Yes**.

   The HEAT Service ManagementWelcome dialog box appears.

3. Click **Next**.

   The License Agreement dialog box appears.

4. Select **I accept the terms in the license agreement** and click **Next**.

   The Destination Folder dialog box appears.

5. Click **Next** to accept the default installation folder

   Or click **Change...**, navigate to the new folder, and then click **OK**.

The Setup Type dialog box appears.

6. Select the following components for the Custom Setup dialog box. Under HEAT Discovery, choose:
   - HEAT Discovery Application Server
   - HEAT Discovery Web Server
7. Click **Next**.

   The system displays the Ready to Install the Program dialog box.
8. Click **Install**.

   The HEAT Service Management system installation begins. A status dialog box shows the installation progress of each component over the next few minutes.

   If you cancel the installation at any time, click **Finish** to close the installer.

   When the components are installed, the System Configuration Wizard launches automatically.
9. Go to Configuring the HEAT Discovery Application Server for instructions about using the wizard.

Initial System Configuration

As part of the HEAT Service Management system installation, you must configure the system using the System Configuration Wizard. The wizard walks you through the first-time set up and configuration.

The tabs that you see in the wizard depend on which HEAT Service Management components are installed on your system. You may see all of the tabs or you may just see a subset of them.

See the following sections:

- Using the System Configuration Wizard
- Report Server Authentication
- Configuring the HEAT Service Management System
- Configuring the HEAT Reporting Feature
- Configuring HEAT Discovery
- Configuring the Deployment on the HEAT Operations Console
- Optional SSL Configuration
- Optional LDAP Configuration
- Optional ADFS Configuration

Using the System Configuration Wizard

The System Configuration Wizard provides an interface in which you can perform various configuration tasks for the initial setup of your HEAT Service Management system.

- Starting the System Configuration Wizard Manually
- Navigating the System Configuration Wizard
- Actions to Perform in Each Page

Starting the System Configuration Wizard Manually

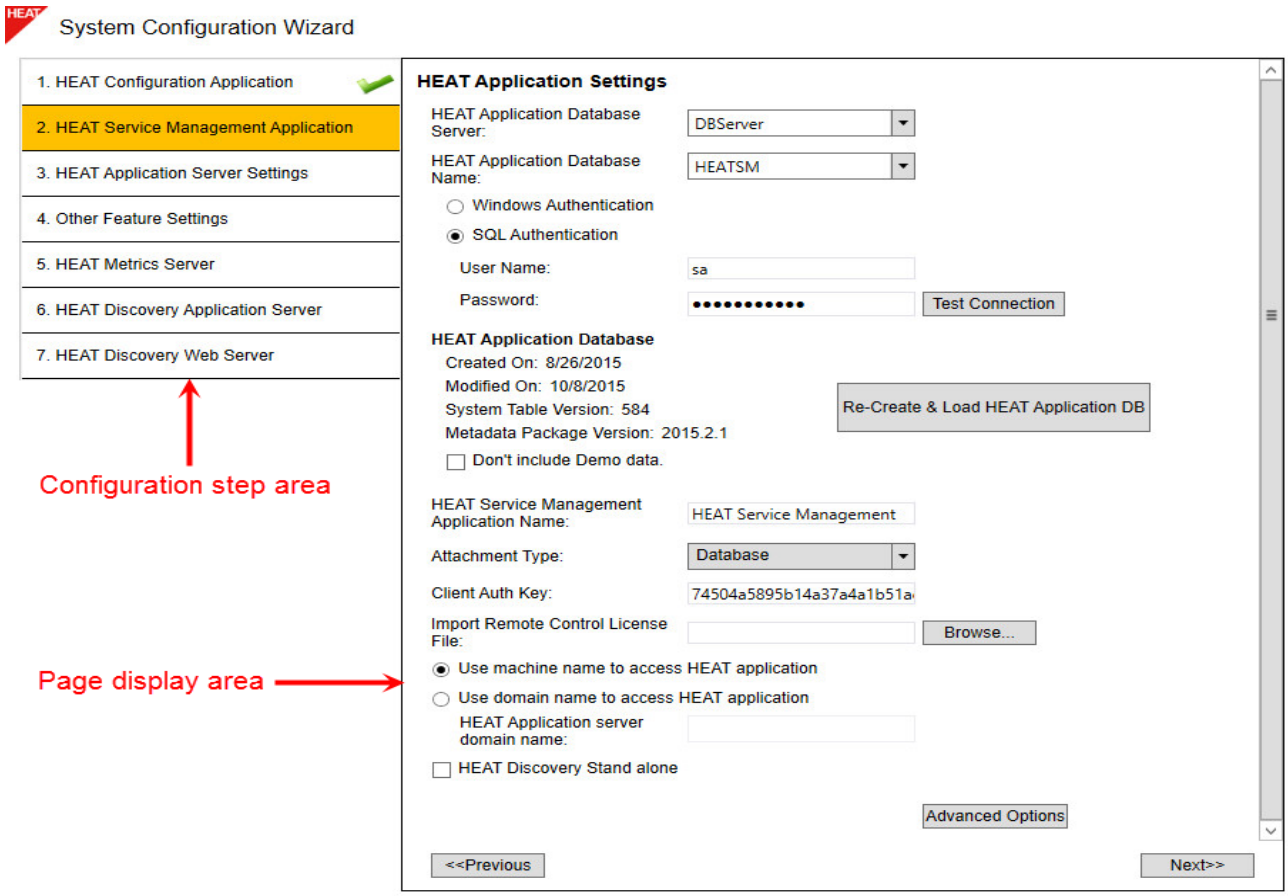
The System Configuration Wizard starts automatically after you finish installing the HEAT Service Management system files.

You can also start the System Configuration Wizard manually after your HEAT Service Management system is configured. See Adding Features and Changing Settings.

Navigating the System Configuration Wizard

The System Configuration Wizard contains the areas shown in HEAT System Configuration Wizard Areas

Fig. 34. HEAT System Configuration Wizard Areas



- In the configuration step area, the page you are currently working on is highlighted in yellow.
- After you complete a page and click **Next**, the system places a green check mark next to the completed page name to show that it has been completed.

> The configuration step area is not a navigation pane. You cannot go to a page by clicking it in the configuration step area. Instead, click the **Next** and **Previous** buttons to move through the pages sequentially.

- The page display area shows the wizard page itself, including the fields and controls that you set the various parameters.

> If you installed the HEAT Service Management system in a deployment other than the recommended deployment, the System Configuration Wizard might not appear exactly as shown in Fig. 34.

Actions to Perform in Each Page

The System Configuration Wizard page numbers can change depending on the features you choose to install. See Installing HEAT Service Management.

Unless otherwise noted, the settings that you specify in each wizard page are stored in the HEAT Configuration Database (ConfigDB).

1. HEAT Configuration Application page:

   - Specify the name of the HEAT Configuration Database Server and authentication method that all supported web applications will use when connecting to the HEAT Configuration Database Server.
   - Create or recreate the HEAT Configuration Database.
   - If you use Windows Integrated Security for the HEAT Configuration Database Server, specify the Windows domain credentials for the service account.

     See Configuring HEAT

2. HEAT Service Management Application page:

   - Specify the name and authentication method for the server where the HEAT Application Database resides.
   - Load the demo database on a server other than the server where the HEAT Application Database resides. This option allows you to review the demo database while the HEAT Application Database continues to run in its current configuration.
   - Specify the application name, attachment location, client authorization key, and the type of name to use when accessing the application.

     See Configuring the HEAT Service Management Application.

3. HEAT Application Server Settings page:

   - Specify the location of the HEAT Configuration Server and the host name.
   - Specify if you will use this server for survey or SCCM integration.
   - If you use Windows Integrated Security for the HEAT Application Server, specify the Windows domain credentials for the service account.

     See Configuring HEAT Application Server Settings

4. Other Feature Settings page:

   - Specify the log file and temporary file locations on the HEAT Configuration Server.
   - Specify different server hosts and whether to use SSL for the HEAT Application Server.

See Configuring Other Feature Settings.

5. HEAT Metrics Server page:

- Specify the locations for the log file and the HEAT Configuration Server.
- Map applications to the metrics server.

See Configuring the HEAT Metrics Server

6. Microsoft SSRS Configuration page:

- Appears when you install HEAT Reporting Services
- Specify information about the Microsoft SQL Server database for the HEAT Reporting feature.

See Configuring the HEAT Reporting Feature

7. HEAT Reporting Service Configuration:

- Appears when you install HEAT Reporting Services
- Specify information about the HEAT Report Database for the HEAT Reporting feature.

See Configuring the HEAT Reporting Feature

8. HEAT Discovery Application Server page:

- Specify information about the configuration of the HEAT DiscoveryApplication Server.

See Configuring the HEAT Discovery Application Server

9. HEAT Discovery Web Server page:

- Specify information about the configuration of the HEAT Discovery Web Server.
- Upgrade the HEAT Configuration Database and the HEAT Application Database.

See Configuring the HEAT Discovery Web Server.

10. Upgrade System page:

- Appears when you upgrade to a newer release of HEAT Service Management.
- Upgrade the HEAT Configuration Database and the HEAT Application Database.

See Upgrading HEAT Service Management from an Earlier Release.

Report Server Authentication

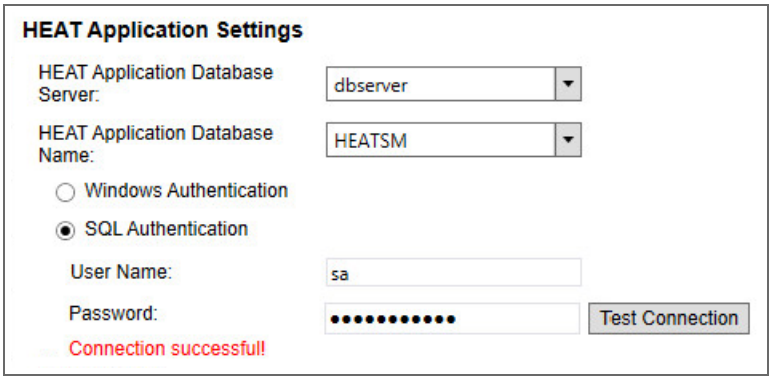
There are two parts to authentication for the HEAT Reporting feature:

- HEAT Application Database Authentication
- Microsoft SSRS Authentication

HEAT Application Database Authentication

When you are configuring HEAT Service Management, you encounter authentication for the HEAT Application database (HEATSM), on the HEAT Service Management page of the System Configuration Wizard, as shown in Fig. 35.

Fig. 35. HEAT Application Database Authentication



- You can choose either **Windows Authentication** or **SQL Authentication**.

> The SSRS service account and the IIS App Pool Identity must be the same and they must have permission to access the HEAT Application database (HEATSM), and the SSRS Database.

- A suggested approach is to have separate authentication for Microsoft SSRS, the HEAT Application database (HEATSM), and the SSRS Database.

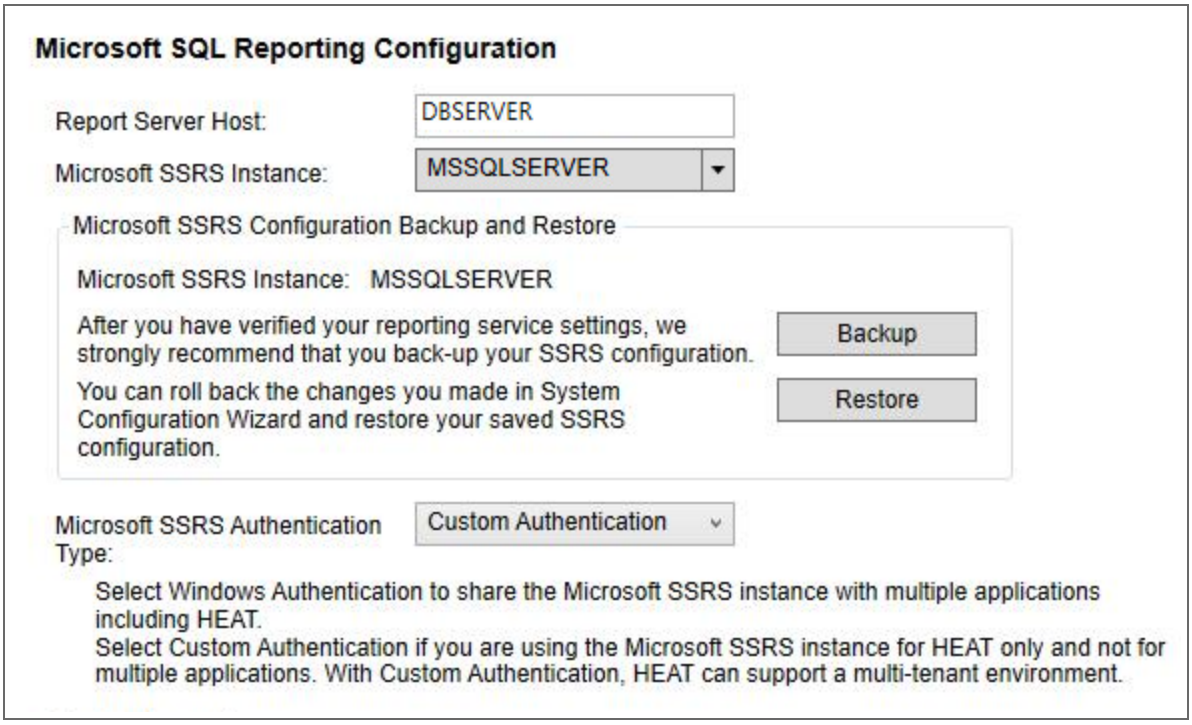
> When you configure HEAT Reporting Services, you will have an opportunity to review and change the authentication method, if necessary.
>
> See Configuring the HEAT Reporting Feature.

Microsoft SSRS Authentication

When you are configuring HEAT Reporting Services, you encounter authentication for Microsoft SSRS on the Microsoft SSRS Configuration page of the System Configuration Wizard, as shown in Fig. 36.

> If you have multiple instances of Microsoft SSRS, choose each instance carefully before choosing the authentication method to use with that instance.

Fig. 36. Microsoft SSRS Authentication



- If you plan to share the same Microsoft SSRS instance with other applications besides HEAT Reporting Services, you must use **Windows Authentication**.
- If you plan to create a multiple-tenant environment, you must use **Custom Authentication**.
- If you plan to use a dedicated Microsoft SSRS instance only for HEAT Reporting Services, you can use either Microsoft SSRS authentication type.

> When you select a Microsoft SSRS instance and **Custom Authentication**, the System Configuration Wizard overwrites the existing Microsoft SSRS configuration.

If the selected Microsoft SSRS instance is shared with another application, the HEAT installer also deletes the configuration for that application as well.

Before proceeding, be sure the Microsoft SSRS instance is not in use by any other applications.

Configuring the HEAT Service Management System

The following sections contain step-by-step instructions for the procedures that you can perform through the System Configuration Wizard.

> For all fields in the System Configuration Wizard that ask for a server location, unless noted otherwise, you can enter one of three things:
>
> - An IP address
> - A machine name
> - A fully qualified domain name
>
> We recommend that you use the same naming format in all server location fields, if possible.
>
> If you are using SSL, you must enter a fully qualified domain name.
>
> If you have a load-balanced system, we recommend using a fully qualified domain name.

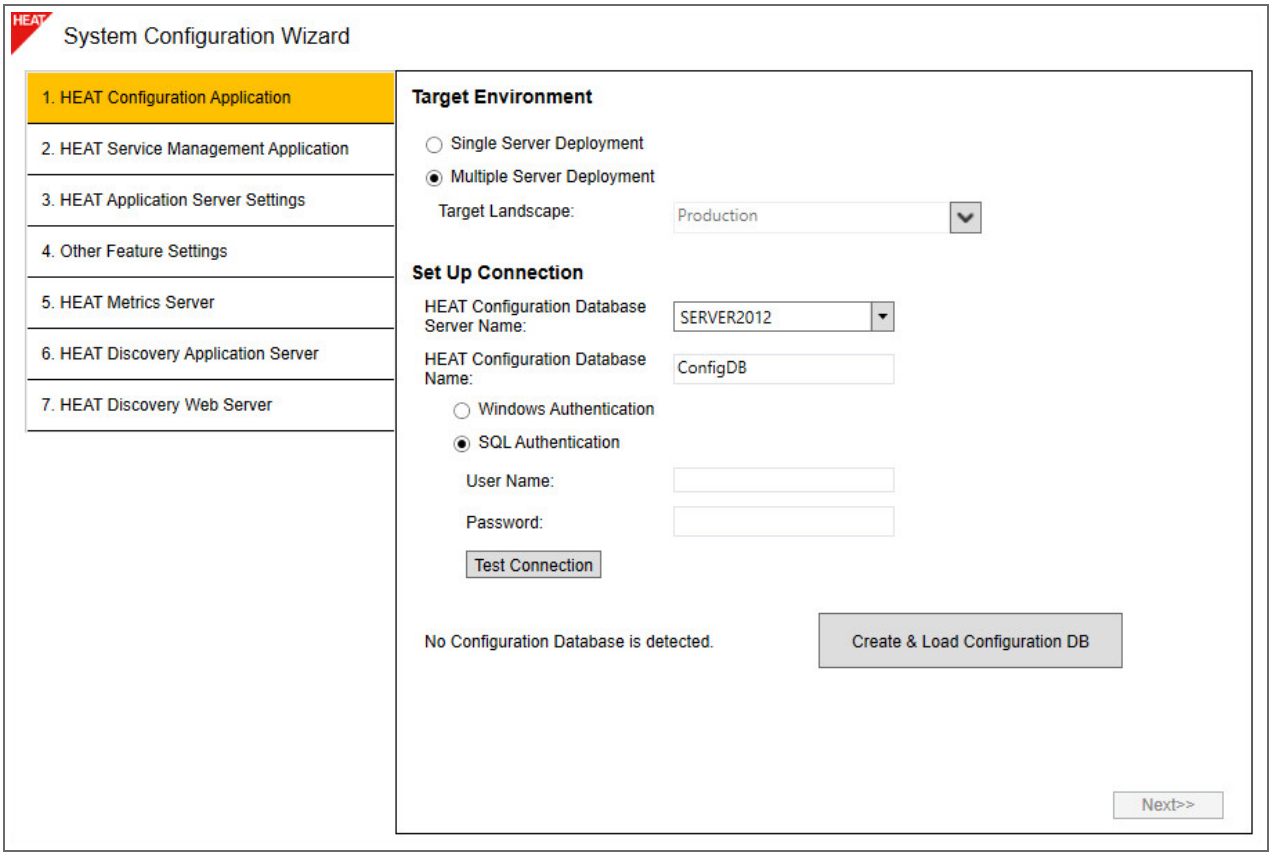
Configuring HEAT

After the HEAT software features have been installed, the System Configuration Wizard starts automatically and displays the HEAT Configuration Application page.

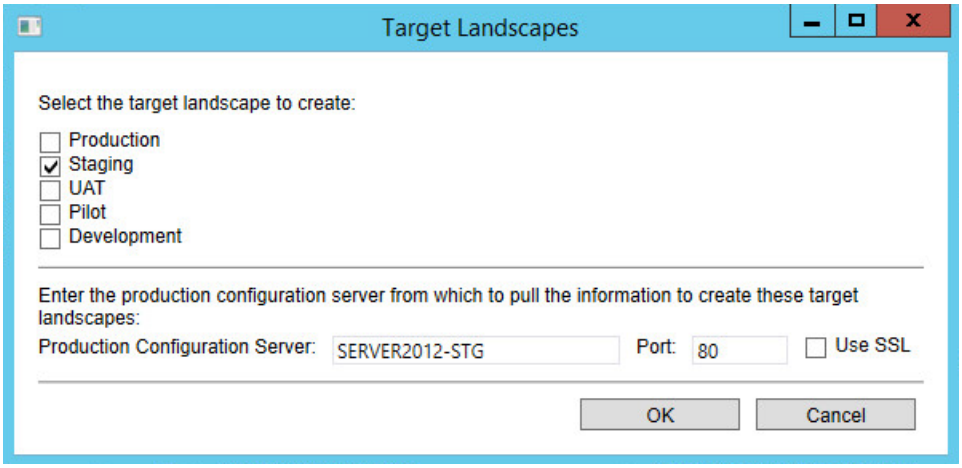
Initial Configuration

The first time you see this page, there is no HEAT Configuration Database, as shown in Fig. 37.

Fig. 37. HEAT Configuration Application Page: No Database



1. Under Target Environment, choose:
   - **Single Server Deployment** – If you are setting up a Minimum Production Deployment.
   - **Multiple Server Deployment** – If you are setting up a Enterprise Production Deployment.
2. If you choose **Multiple Server Deployment**, click the down-arrow icon to display the Target Landscapes dialog box.



- On the first host you configure, check **Production** and click **OK**.
- One subsequent hosts, check any combination of landscapes other than Production.
  - Enter the host name or domain name of the Production host.
  - Check **Use SSL** if you want secure communication.
  - Then click **OK**.

3. In the HEAT Configuration Database Server Name drop-down menu, choose or enter the name of the host of the HEAT Configuration Database (ConfigDB).

   To browse for a host name, click the down arrow and select **<Browse for more>**. The system displays any Microsoft SQL Server instances in your network. Choose a host and click **OK**.

   > Do NOT choose **localhost** unless you are setting up a Demonstration or Proof-of-Concept Deployment.

   The default name of the HEAT Configuration Database is *ConfigDB*. The database name cannot be changed.

4. Choose an authentication method and enter the user name and password.

   > See Report Server Authentication for information on the appropriate database authentication type.

5. Click **Test Connection** to test the connection to the HEAT Configuration Database Server.

   A success or failure message appears to the right of the Test Connection button.

You must have a working connection to create a database.

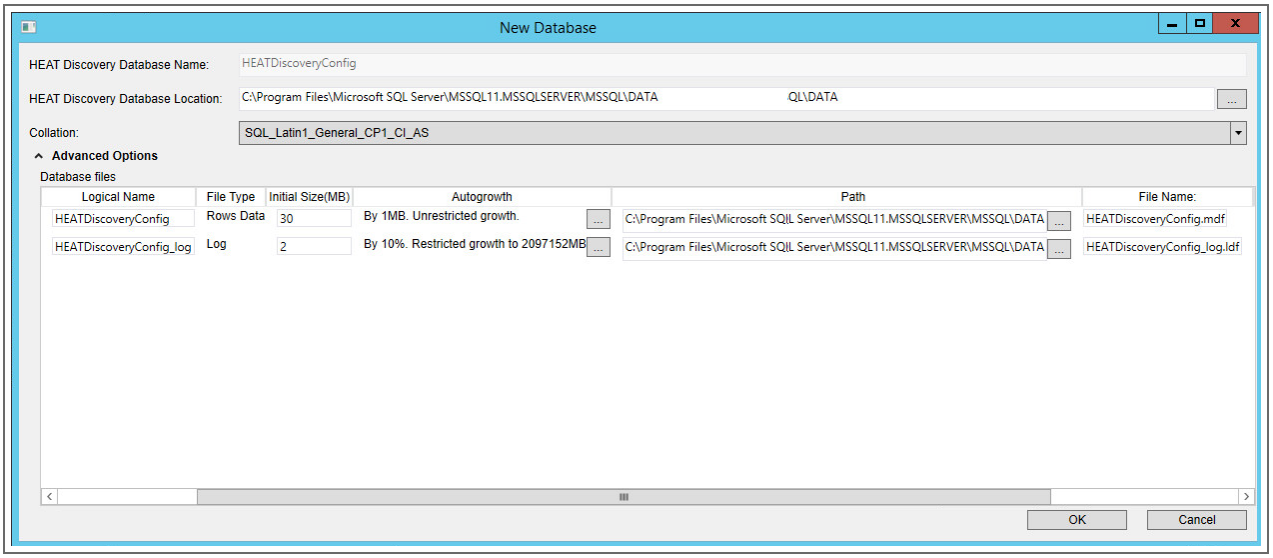
6. Do the appropriate action for your HEAT Service Management system:
   - If this is the initial setup, go to Creating a HEAT Configuration Database.
   - If your system already has a configuration database, go to HEAT Configuration Database Already Exists.

Creating a HEAT Configuration Database

An initial installation does not have a HEAT Configuration Database. Follow these steps to create one.

1. Click **Create and Load DB**.The New Database dialog box appears.

Fig. 38. New Database Dialog Box



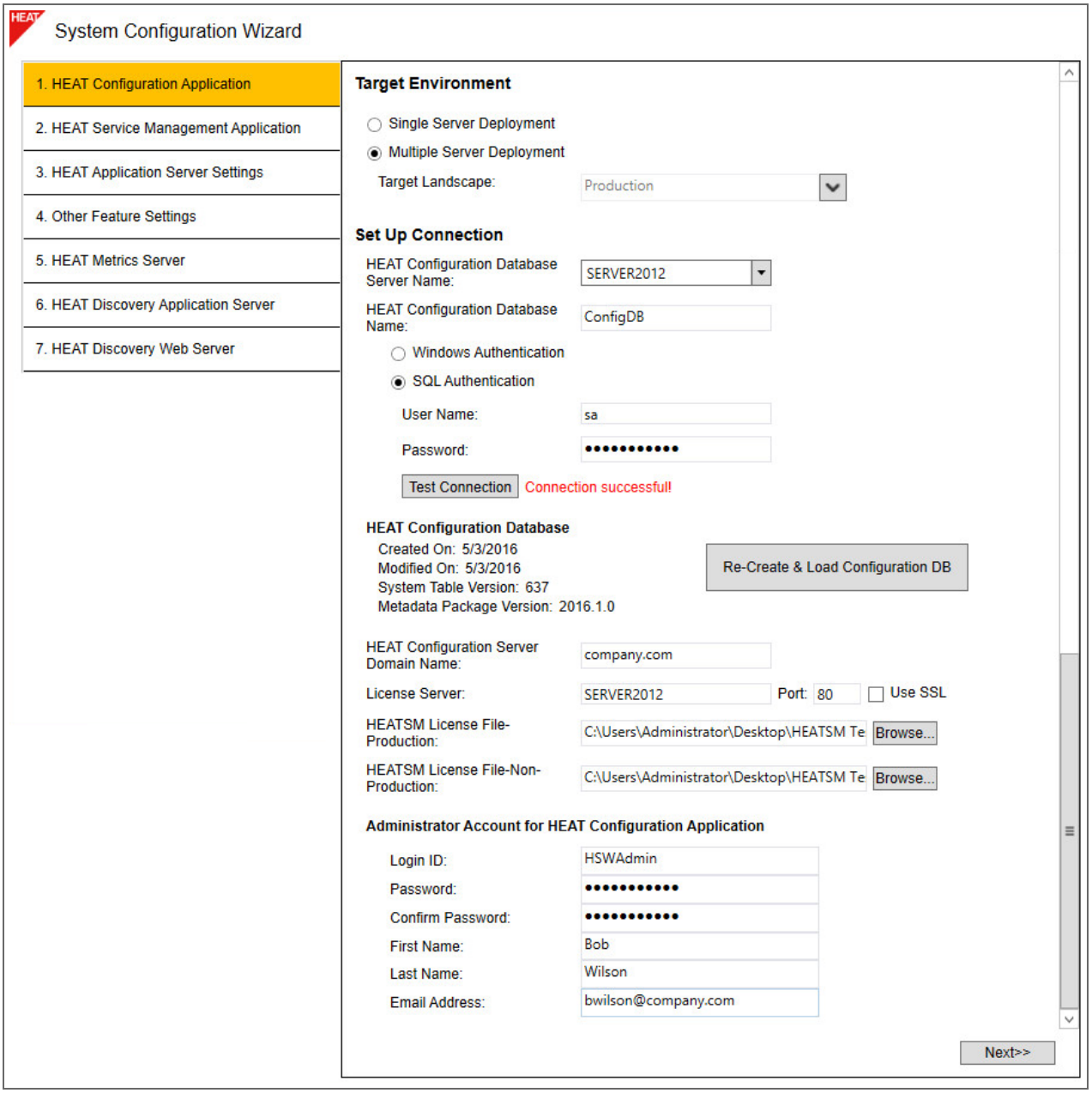
2. In the Location field, select a location for the HEAT Configuration Database.
3. Click **Advanced Options** to view and reconfigure these HEAT Configuration Database settings:
   - Logical name. This name is stored as a file name, and is a separate entity from the read-only database name that is displayed in Microsoft SQL Server Management Studio.
   - File type.
   - Initial size in MB.
   - Autogrowth size. Click **...** to update the values.
   - The location of the database. Click **...** to update the location.
   - File name.

4. Click **OK** in the New Database dialog box.

   The system creates the HEAT Configuration Database and installs it on the HEAT Database Server that you specified. Several progress dialog boxes appear as various Microsoft SQL scripts execute to create and load the HEAT Configuration Database. After the HEAT Configuration Database is loaded, the HEAT Configuration Application page shows *Configuration Database Loaded*.

5. Click **Next**. The HEAT Configuration Application page refreshes. See Fig. 39.

Fig. 39. HEAT Configuration Application Page: Newly Created Database



6. In the HEAT Configuration Server Domain Name field, enter the fully qualified domain name of the HEAT Configuration Server in this format: config.servername.com.

7. Optional. If your license server supports SSL and you want to use it:

   a. Check **Use SSL**.

   b. In the License Server field, enter a fully qualified domain name of your license server

8. In the HEATSM License File-Poduction and HEATSM License File-Non-Production fields, click **Browse...**, navigate to your license files, and click **Open**.

   License files have a **.lic** suffix.

   The system displays either one or both fields, depending on your landscape environment.

   At this point, you only need to enter one license, which allows the HEAT License Manager to start and run the HEAT Service Management system. You can import additional licenses, if needed, at as later from within the HEAT License Manager. See Using the HEAT License Manager.

9. Under Administrator Account for HEAT Configuration Application, enter a password and the administrator's name and email address.

   The Login ID is *HSWAdmin* and cannot be changed.

   This Login ID and password allows you to access the HEAT Configuration Database (ConfigDB). See Logging into HEAT Service Management.

   > Be sure to record this password for future reference. If you lose the password, you must recreate and load the configuration database.

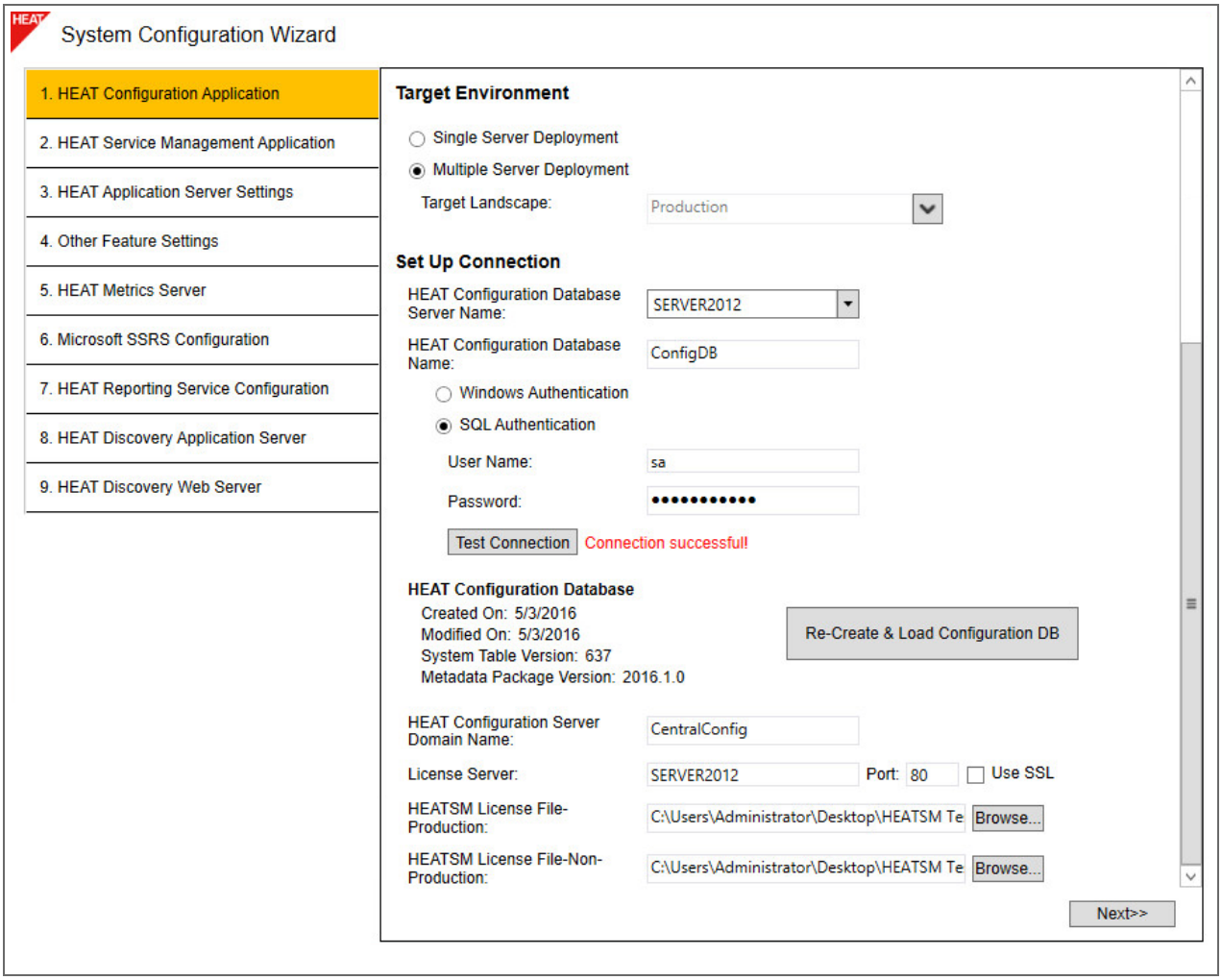
   > You only need to create this account once. If you return to this page in the System Configuration Wizard later, these fields are not displayed.

10. Do one of the following actions:
    - If you chose **Single Server Deployment**, click **Next** and advance to HEAT Service Management Application page.
    - If you chose **Multiple Server Deployment**, repeat this task to create a database for each of your tenants.
    - If you chose **Multiple Server Deployment** and you have created a database for each of your tenants, click **Next** and advance to HEAT Service Management Application page.

HEAT Configuration Database Already Exists

If you are upgrading or repairing a HEAT Service Management installation, you already have a HEAT Configuration Database, and the HEAT Configuration Application page looks like Fig. 40.

Fig. 40. HEAT Configuration Application Page: Preexisting Database



To recreate the HEAT Configuration Database, click **Re-Create and Load Configuration DB**.

> If you have customized the existing HEAT Configuration Database, specify a different location in the New Database dialog box.
> Otherwise, the system overwrites your customization when you load the recreated database.

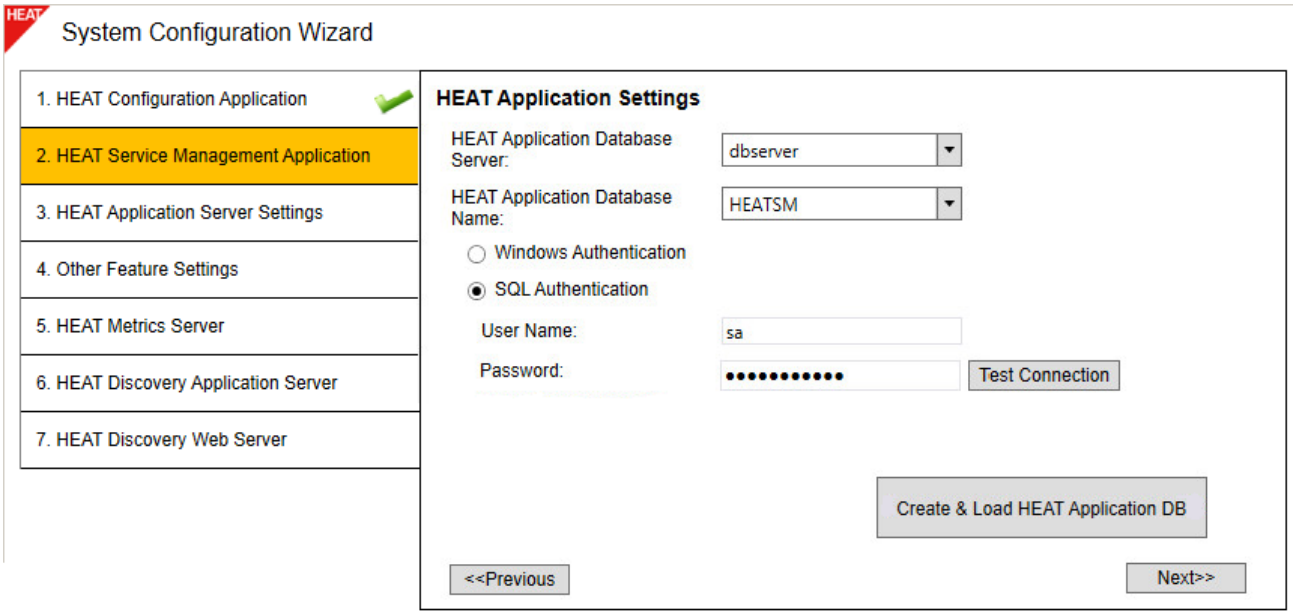
11. Click **Next** to move to the HEAT Service Management Application page of the System Configuration Wizard.

Configuring the HEAT Service Management Application

Initial Configuration

The first time you see this page, there is no HEAT Application Database (HEATSM), as shown in Fig. 41.

Fig. 41. HEAT Service Management Application Page: No Database



Perform the following steps to specify connection settings for the HEAT Database Server and to create the initial HEAT Application Database:

1. In the HEAT Application Database Server drop-down menu, choose or enter the name of the host of the HEAT Application Database.

   Usually this is the same server that hosts the HEAT Configuration Database (specified earlier on the HEAT Configuration Application page).

2. In the HEAT Application Database Name drop-down menu, enter the location of the HEAT Application Database.

The default name is HEATSM. The name that you specify here is used when the HEAT Application Database is created, and later, recreated.

3. Choose an authentication method and enter the user name and password.

> See Report Server Authentication for information on the appropriate database authentication type.

4. Click **Test Connection** to test the connection to the HEAT Application Database Server.

   A success or failure message appears to the right of the Test Connection button.

> You must have a working connection to create a database.

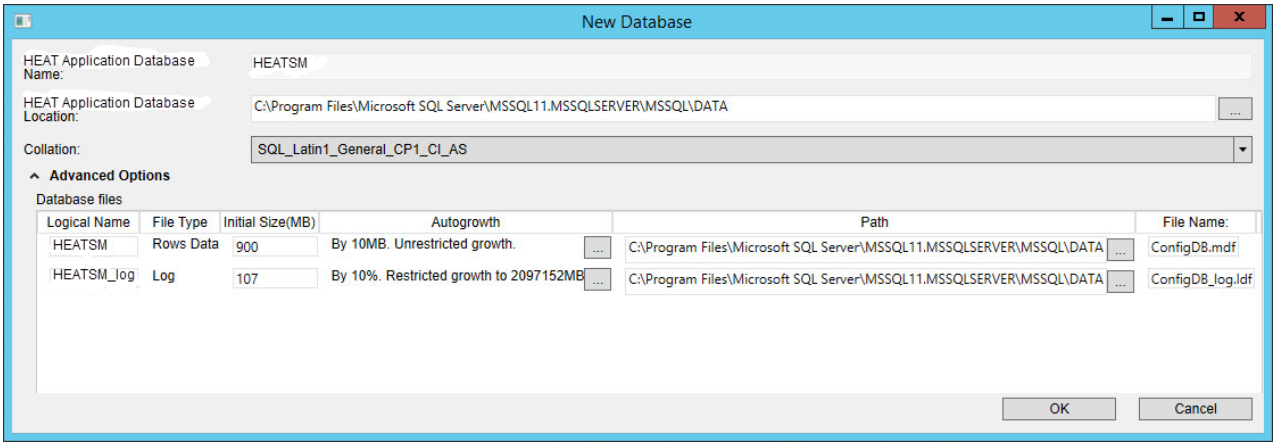
5. Do the appropriate action for your HEAT Service Management system:
   - If this is the initial setup, go to Creating a HEAT Application Database.
   - If your system already has a configuration database, go to HEAT Application Database Already Exists.

Creating a HEAT Application Database

An initial installation does not have a HEAT Application Database. If you have multiple tenants, you must perform this task for each of them.

1. Click **Create and Load HEAT Application DB**.

   The New Database dialog box appears.



2. In the Location field, select a location for the HEAT Application Database.

3. Click **Advanced Options** to view and reconfigure these HEAT Application Database settings:

- Logical name. This name is stored as a file name, and is a separate entity from the read-only database name that is displayed in Microsoft SQL Server Management Studio.
- File type.
- Initial size in MB.
- Autogrowth size. Click **...** to update the values.
- The location of the database. Click **...** to update the location.
- File name.

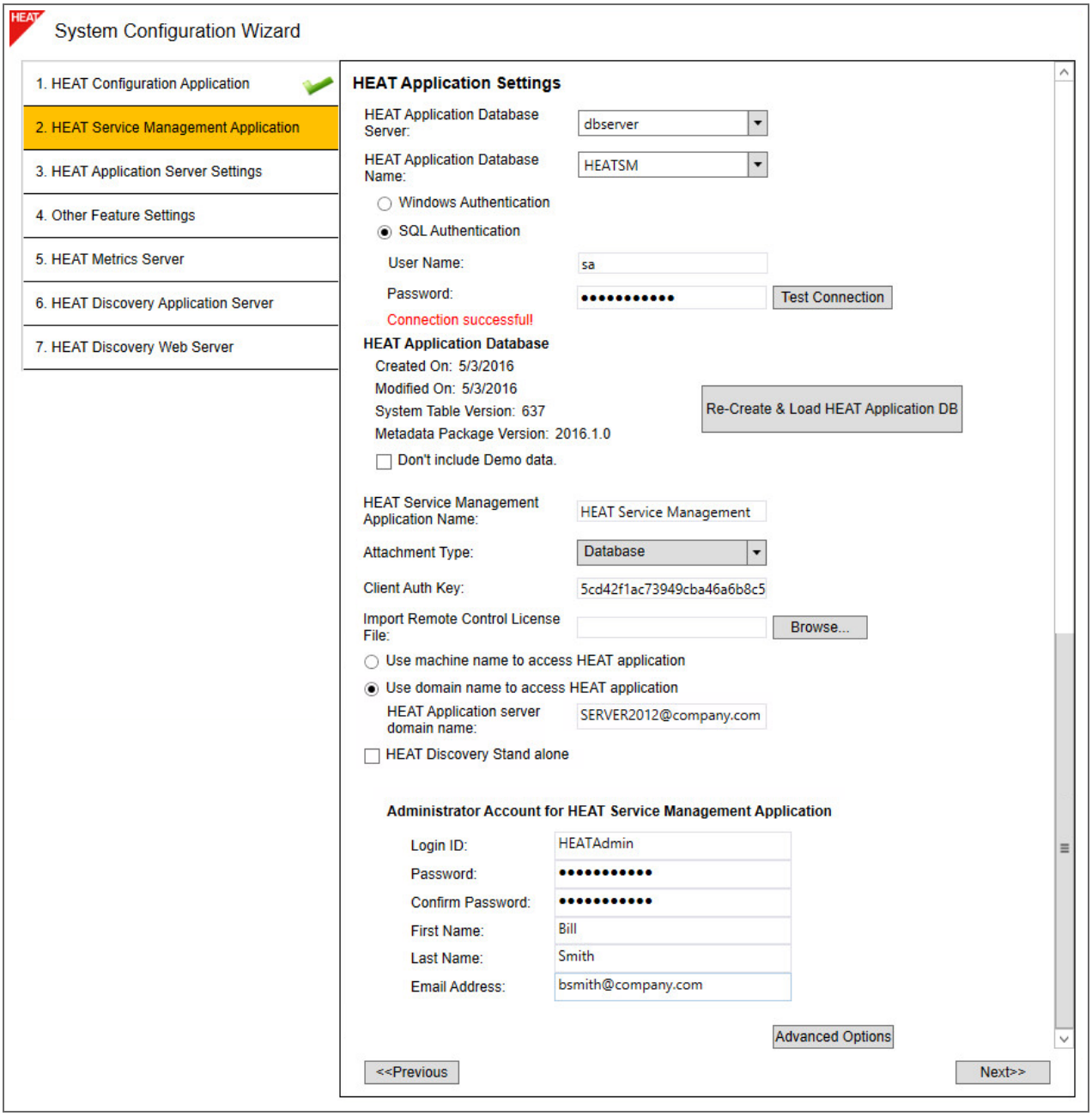
4. Click **OK** in the New Database dialog box.

   The system creates the HEAT Application Database and installs it on the HEAT Application Database Server that you specified. Several progress dialog boxes appear as various Microsoft SQL scripts execute to create and load the HEAT Application Database.

   After the HEAT Application Database is loaded, the HEAT Service Management Application page shows **Configuration Database Loaded**.

5. Click **Next**. The HEAT Service Management Application page refreshes. See Fig. 42.

Fig. 42. HEAT Service Management Application Page: Newly Created Database



The HEAT Service Management system comes with an additional transaction database that you can use to test and view the analytic metrics, financial, ITFM, and other HEAT Service Management features.

6. To include demo data, leave Don't include Demo data unchecked.

> You must install the demo data manually after the System Configuration Wizard finishes. See Installing the Demo Data Package.

7. In the HEAT Service Management Application Name field, enter a location for the HEAT Application Database.
8. In the Attachment Type drop-down menu, choose the location of the folder on the HEAT Application Database Server where any HEAT Service Management attachments will reside.
   - Database
   - FILESTREAM
   - File System
9. In the Client Auth Key field, enter the authentication key that is used when the web services API accesses the HEAT Service Management system.
10. Optional. If you are going to use the remote control feature, you must have a remote control license.
    a. Contact HEAT Software USA, Inc. to get the license. See How to Contact Us.
    b. To import the remote control license file, click **Browse...** next to the Import Remote Control License File field. Browse to the location of the license file and click **OK** to select it.
11. Select whether to use the HEAT Application Database Server machine name or fully qualified domain name for access to the HEAT Database Server:
    - **Use machine name to access HEAT application** – When other HEAT components log into the Application Server, they use the machine name of the server. For example, **SERVER-01**.
      If you choose this option, the system detects the current machine name and uses it automatically; you do not need to specify the machine name.
    - **Use domain name to access HEAT application** – When other HEAT Service Management system components log into the HEAT Application Server, they use the fully qualified domain name of the server. For example, **SERVER-01.company.com**.
      If you plan on using SSL for connecting to the HEAT Application Server (configured later on the Other Feature Settings page), you must enter a fully qualified domain name here, either for an individual machine or for a load-balanced instance.
12. Optional. If you are installing HEAT Discovery on a dedicated server, check HEAT Discovery Stand alone.

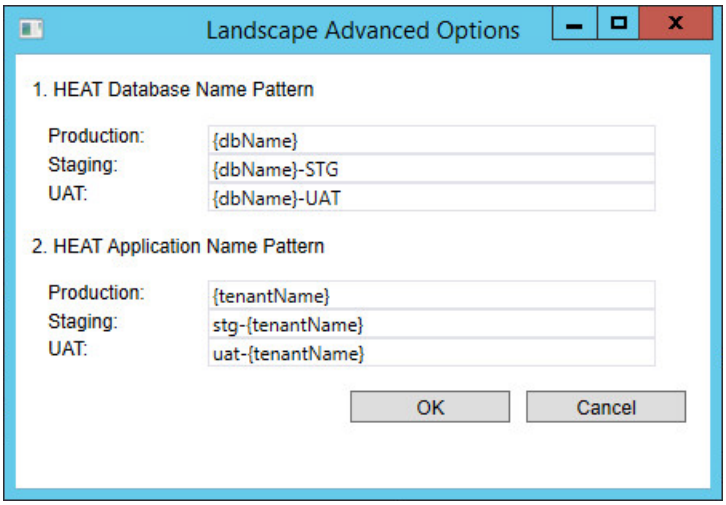
13. Under Administrator Account for HEAT Service Management Application, enter a password and the administrator's name and email address.

    The login ID is **HEATAdmin** and cannot be changed.

    This login ID and password allows you to access the HEAT Service Management Service Desk Console and Configuration Console. See Logging into HEAT Service Management.

    > Be sure to record this password for future reference. If you lose the password, you must recreate and load the application database.

14. Click **Advanced Options** to open the Landscape Advanced Options dialog box.



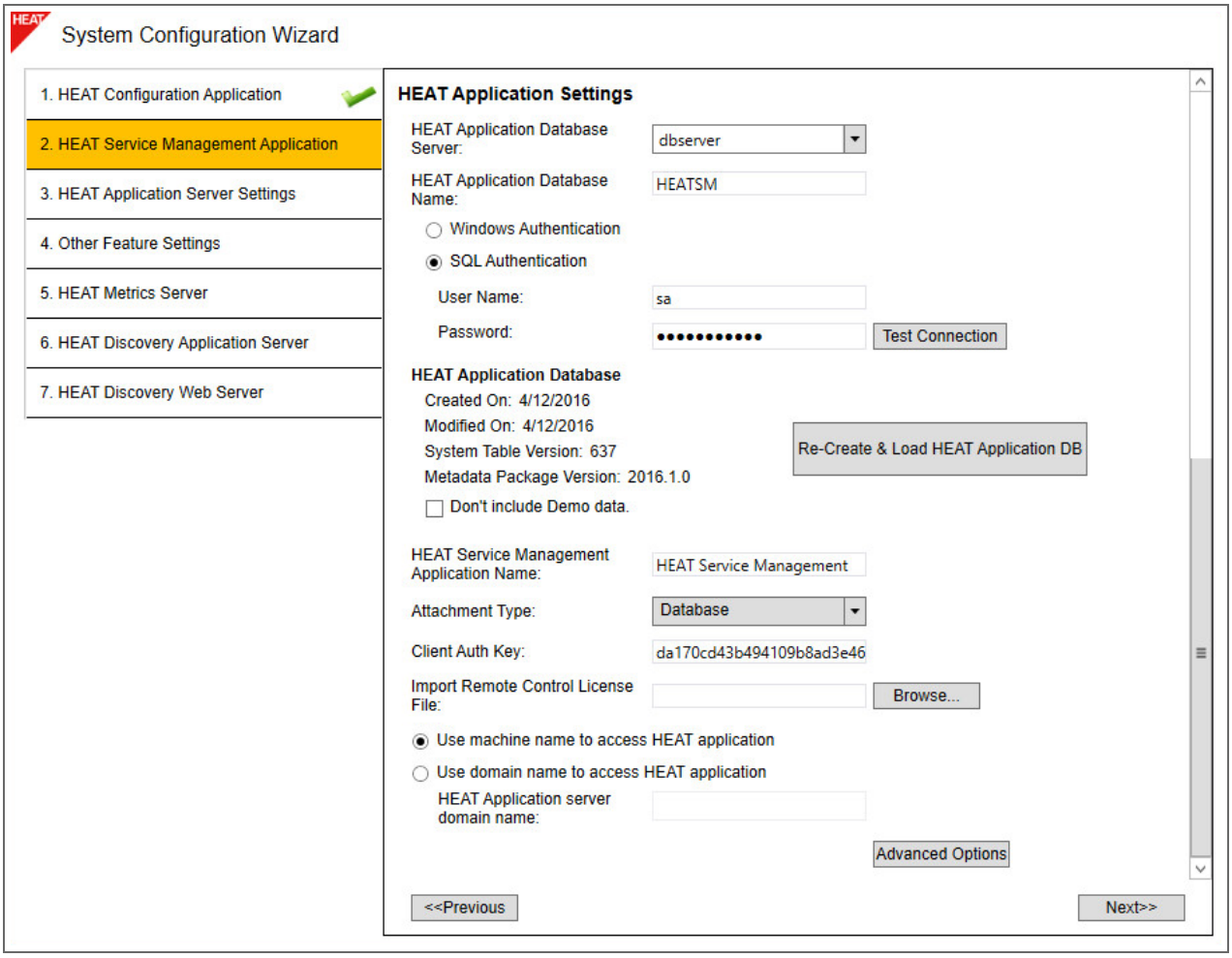
    See the *Operations Console User Guide for HEAT Service Management Release 2016.1* for more information about these patterns. See Related Documentation.

15. Click **Next** and advance to HEAT Application Server Settings page.

HEAT Application Database Already Exists

If you are upgrading or repairing a HEAT Service Management installation, you already have a HEAT Application Database, and the HEAT Service Management Application page looks like Fig. 43.

Fig. 43. HEAT Service Management Application Page: Preexisting Database



To recreate the HEAT Application Database, click **Re-Create and Load HEAT Application DB**.

> If you have customized the existing HEAT Application Database, specify a different location in the New Database dialog box.
>
> Otherwise, the system overwrites your customization when you load the recreated database.

Creating Administrator Accounts for Other Tenants

If you chose **Multiple Server Deployment** under Configuring HEAT, your system has multiple tenants. Each tenant must have an administrator account, so they can access the HEAT Service Management Service Desk Console and Configuration Console.

To create a new administrator account for another tenant instance:

1. In the HEAT Application Database Name drop-down menu, choose the next tenant to get an account.

   For example, say you used HEATSM for your Production tenant, HEATSM-STG for your Staging tenant, and HEATSM-UAT for your UAT tenant.

   The first time on the HEAT Service Management Application page, you chose **HEATSM** from the HEAT Application Database Name drop-down menu.

   The second time, you would choose **HEATSM-STG** from the HEAT Application Database Name drop-down menu.

   And the third time, you would choose **HEATSM-UAT** from the HEAT Application Database Name drop-down menu.

2. Under Administrator Account for HEAT Service Management Application, enter a password and the administrator's name and email address.

   The login ID is *HEATAdmin* and cannot be changed.

   This login ID and password allows you to access HEAT Service Management. See Logging into HEAT Service Management.

   > Be sure to record this password for future reference. If you lose the password, you must recreate and load the application database.

3. Click **Next**.

   The HEAT Application Server Settings page appears.

4. Click **Previous** to return to the HEAT Service Management Application page.

5. Repeat Steps 1 through 4 for for the next tenant.

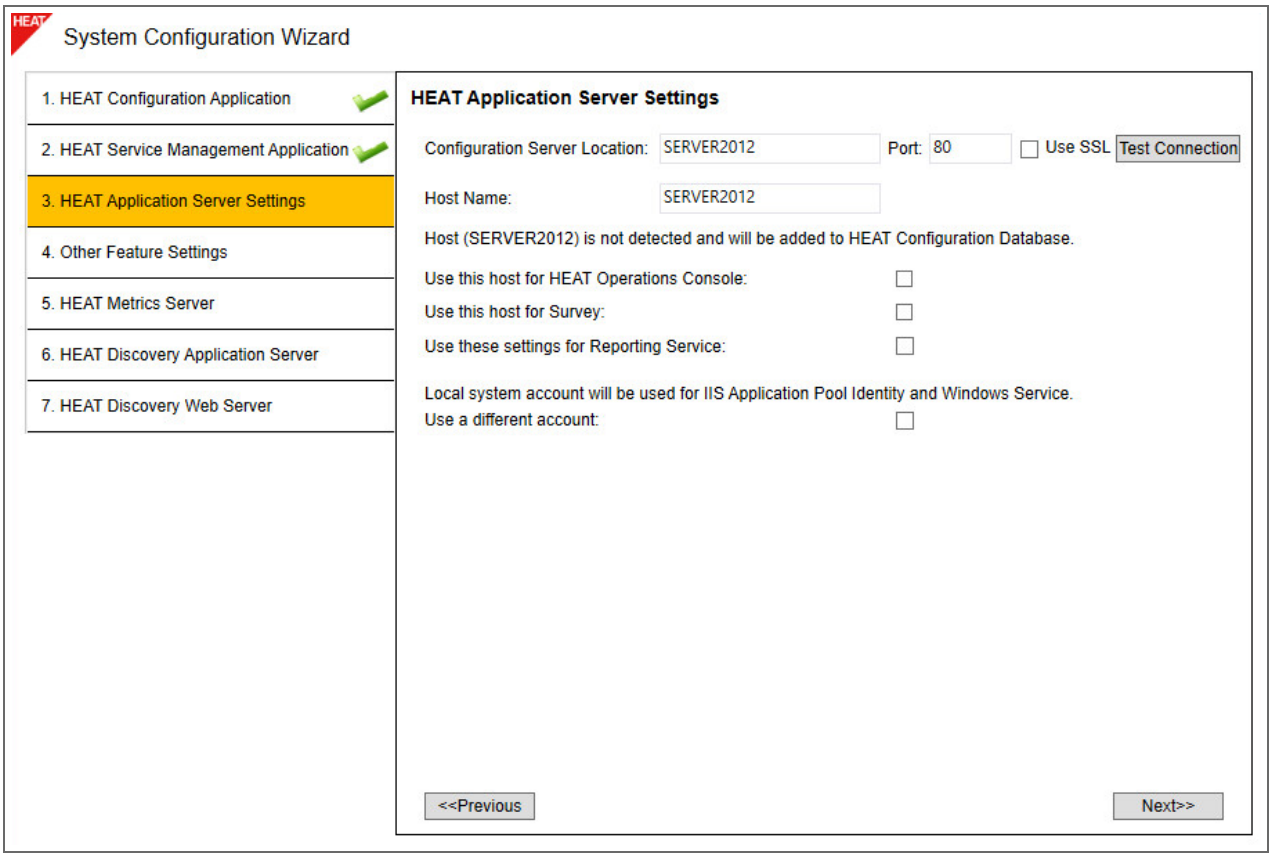
6. When all of your tenants have an administrator account, click **Next** and advance to HEAT Application Server Settings page, and then click **Next** again and advance to the Other Feature Settings page.

   See Configuring Other Feature Settings.

Configuring HEAT Application Server Settings

The HEAT Application Server Settings page enables you to connect the various databases with HEAT Service Management.

Fig. 44. HEAT Application Server Settings Page



The Configuration Server Location field indicates the location of the system that hosts the HEAT Configuration Server. The default value is the name of the host that you are logged into now.

1. If you are installing all of the HEAT Service Management system features on the same host, accept the default value.

   If the host that you are logged into now is not the HEAT Configuration Server, enter the machine name or fully qualified domain name of your HEAT Configuration Server.

   If you use SSL, you must the fully qualified domain name of the HEAT Configuration Server.

2. Enter the port number in the Port field.

   80 is the default value. If you click Use SSL, it changes to 443.

3. Select whether to use SSL for connections to the HEAT Configuration Server.

   If you use SSL, you must enter a fully qualified domain name in the Configuration Server Location field.

   > We do not recommend enabling SSL on the HEAT Configuration Database (ConfigDB) until you have fully tested the HEAT Service Management system to ensure that it works with SSL.
   >
   > For information on configuring the HEAT Service Management system with SSL, see Optional SSL Configuration.

   The Host Name field indicates the location of the system that hosts the HEAT Application Server. The default value is the name of the host that you are logged into now.

4. If you are installing all HEAT Service Management system components on the same host, accept the default value.

   If you enter a different location, it must be a machine name. Do *not* enter a fully qualified domain name.

5. Optional. Check **Use this host for HEAT Operations Console** if you want to use this host for the HEAT Operations Console.

   > For Enterprise Production Deployments, we recommend that you only install and use the HEAT Operations Console on the staging (STG) instance of the tenant.

   Choose the location of the HEAT Operations Console backup:

   - On a database server
   - On a network folder

   Just below is a path to the backup folder. Accept the default location, enter a new location, or click **Browse...** and navgiate to a new location.

6. Optional. Check **Use this host for Survey** if you want to use this host for the HEAT Survey component.

   If you specified Windows Authentication for the HEAT Configuration Server, the system prompts you for the Windows domain account and credentials. See Configuring HEAT.

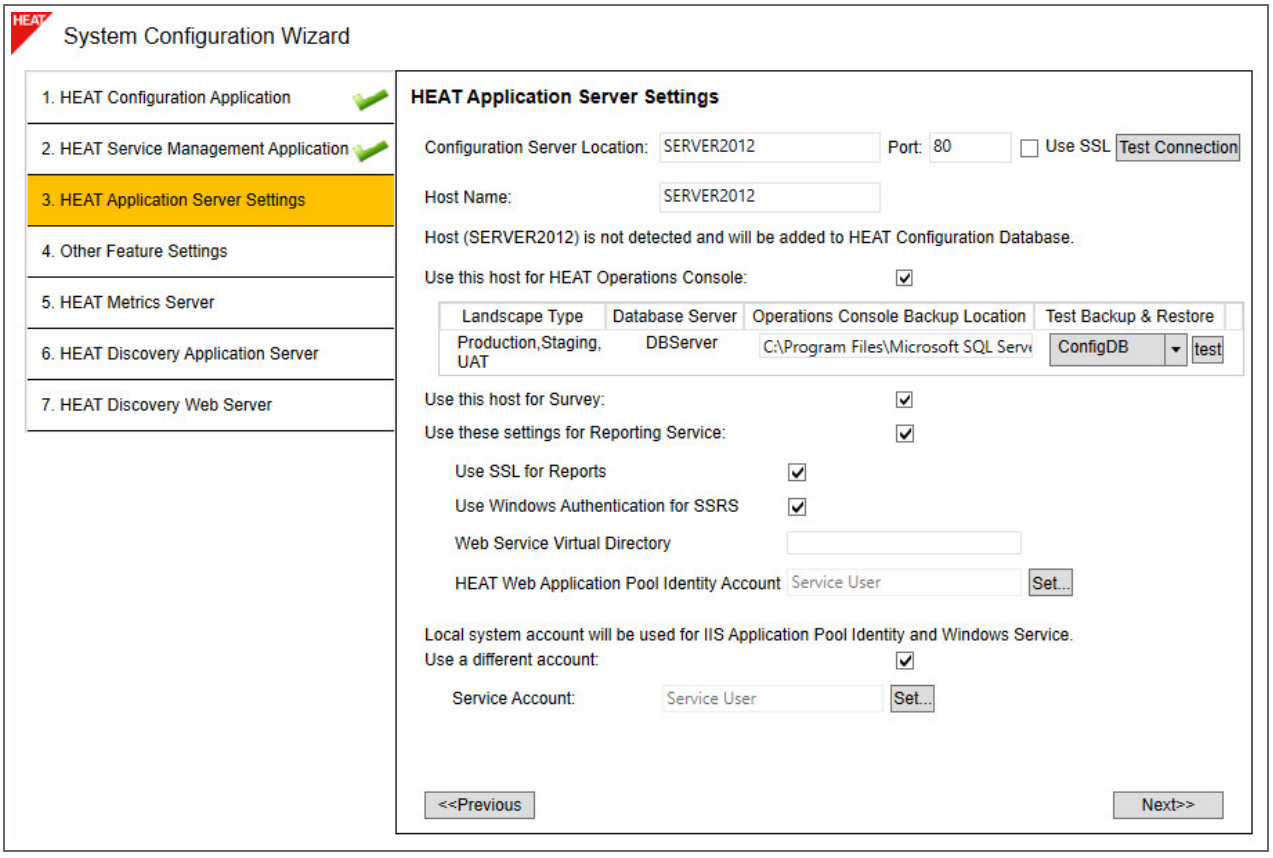
This setting is already configured if all HEAT Service Management system components are installed on one server.

7. Optional. If you specified SQL Authentication for the HEAT Configuration Server, this sentence appears: "Local system account will be used for IIS Application Pool Identity and Windows Service".

   To use a different account, check **Use a different account**. Then click **Set** and enter a user name and password for the service account. See HEAT Service Account.

8. Do one of the following actions:
   - If you chose **Single Server Deployment**, click **Next** and advance to Other Feature Settings page.
   - If you chose **Multiple Server Deployment**, see Creating Administrator Accounts for Other Tenants, below.

Fig. 45. HEAT Application Server Settings Page, Configured



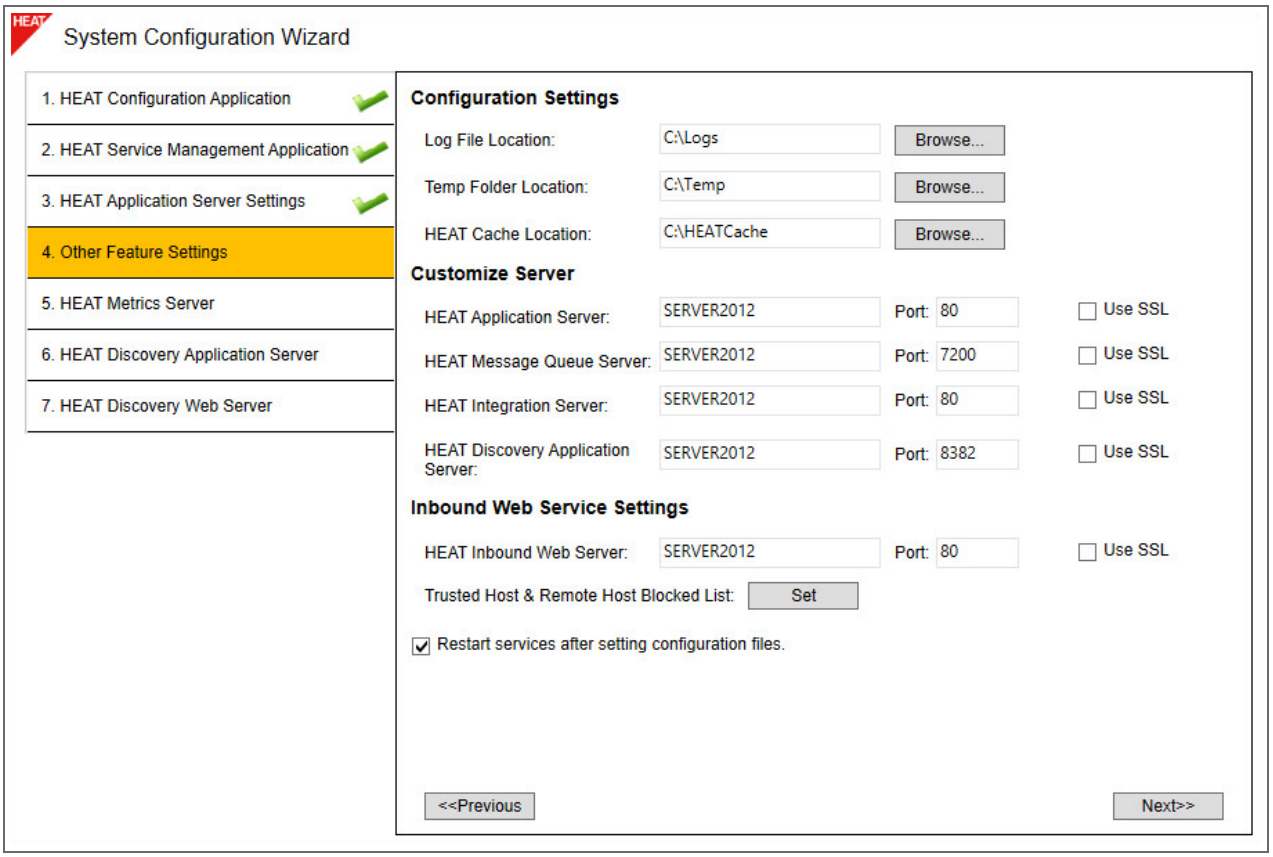
Creating Administrator Accounts for Other Tenants

Each tenant must have an administrator account. If you need to create additional tenant accounts, click **Previous** to return to the HEAT Service Management Application page. Follow the instructions under Creating Administrator Accounts for Other Tenants.

Configuring Other Feature Settings

Specifying Configuration Settings

Fig. 46. Other Feature Settings Page



On the Other Feature Settings page, *Configuration Settings* refers to the folders where logs and other items are saved. These folders are on the host that you are logged into now. You can accept the default locations or:

1. To specify a different location for the log file, enter the path in the Log File Location field or click **Browse...** and navigate to the new location.
2. To specify a different location for the temporary folder, enter the location in the Temp Folder Location field or click **Browse...** and navigate to the new location.

The temporary folder is used to cache JavaScript files and to enable integration server and HEAT Operations Console features.

3. To specify a different location on the HEAT Cache, enter the location in the HEAT Cache Location field or click **Browse...** and navigate to the new location.

Specifying Customized Server Settings

On the Other Feature Settings page, *Customized Server* refers to the host in your deployment where certain HEAT Service Management features have been installed. See Installing HEAT Service Management, Step 6. Those features are:

- HEAT Application Server
- HEAT Message Queue Server
- HEAT Integration Server
- HEAT Discovery Application Server

By default, the host name shown is the host that you are logged into now. If you want the current host to be the server for a feature, accept the default value.

You have the option of specifying a different host for each feature. For example, say your deployment includes a dedicated HEAT Discovery Server. In that case, you would:

1. Enter the host name of the server running HEAT Discovery.

   If you use SSL, you must enter a fully qualified domain name.

2. Optional. Change the port number.

3. Optional. Check **Use SSL** to enable SSL encryption.

> If you choose a different host for HEAT Application Server and check **Use SSL** on this wizard page, SSL is only enabled for the HEAT Application Server. It does NOT enable SSL for the HEAT Configuration Server.

Specifying Inbound Web Service Settings

By default, the HEAT Inbound Web Server host name shown is the host that you are logged into now. If you want the current host to be the server for the HEAT Inbound Web Server, accept the default value.

You have the option of specifying a different host for inbound web services:

1. Enter the host name of the server where you want to run the HEAT Inbound Web Server.

   If you use SSL, you must enter a fully qualified domain name.

2. Optional. Change the port number.

3. Optional. Check **Use SSL** to enable SSL encryption.

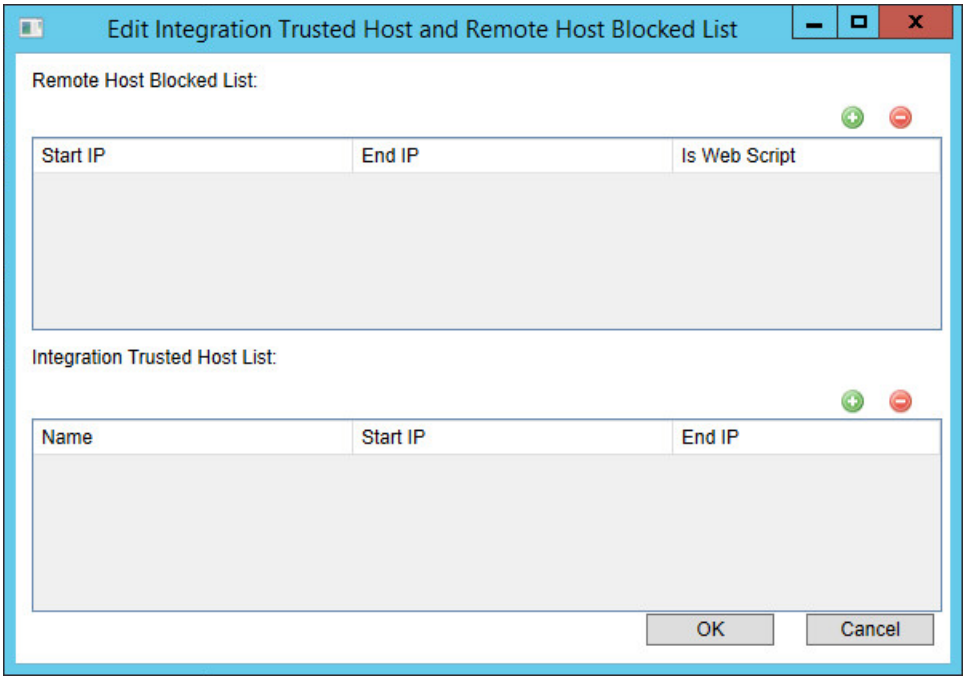
   HEAT Service Management provides a list for remote hosts you want to block and remote host that you trust. The list is empty.

4. If you want to designate blocked hosts, click **Set**, the plus icon, and then enter the host information.

   If you are blocking web scripts from the host, check **Is Web Script**.

   When you are done, click **OK**.

5. If you want to designate trusted hosts, click **Set**, the plus icon, and then enter the host information. When you are done, click **OK**.



> If you need to update the list at a later time, run the System Configuration Wizard, advance to the Other Feature Settings page, click **Set**, and make your changes. When you are done, click **OK**.

6. To restart the HEAT Service Management system services after you exit the System Configuration Wizard, check **Restart services after setting configuration files**.

   If you select this option, we recommend that you verify that the HEAT Service Management system services restart after the wizard closes.

If you do not select this option, you must restart the HEAT Service Management system services manually.

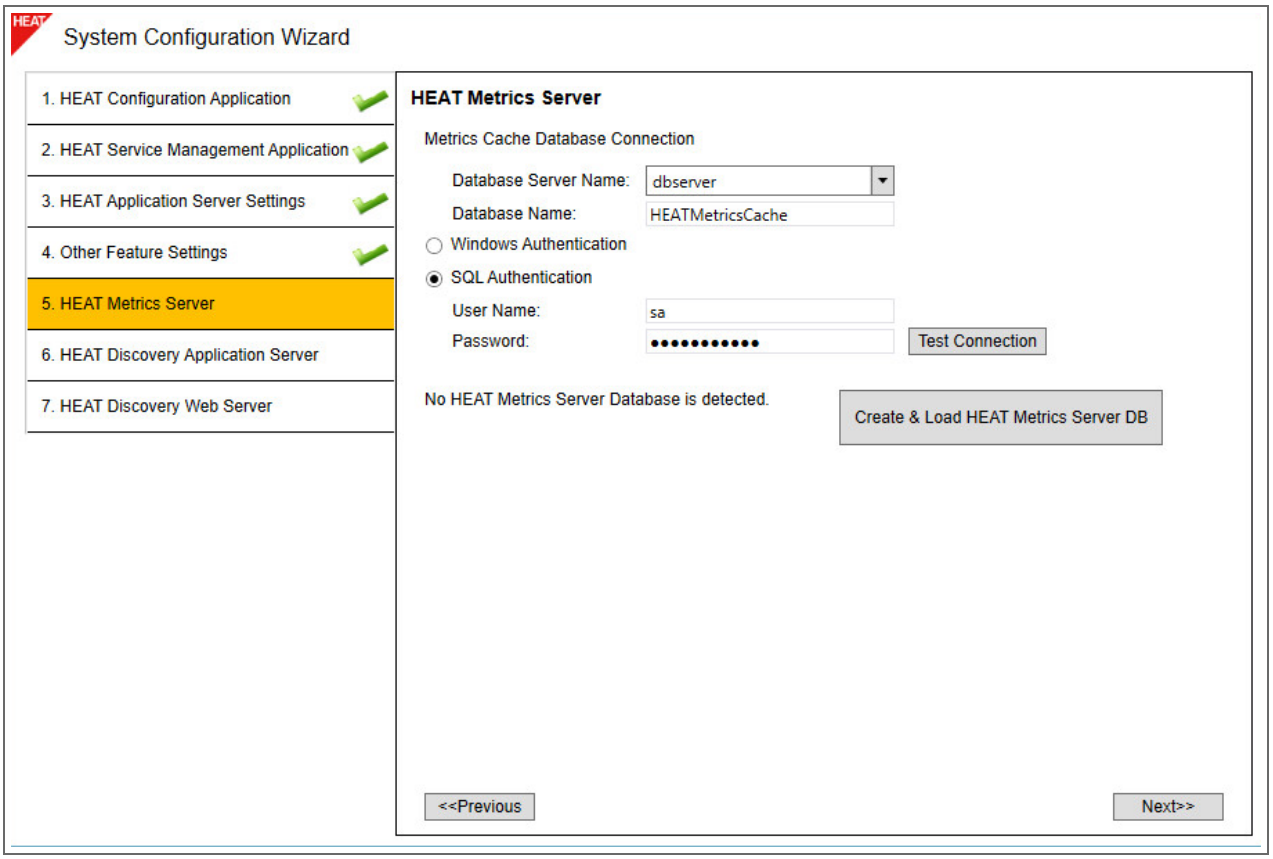
7. Click **Next**.

   The HEAT Metrics Server page appears.

Configuring the HEAT Metrics Server

Perform these steps to configure one or more HEAT Metrics Server Databases, which you can use to analyze data. Your deployment can have multiple HEAT Metrics Server Databases to improve performance.

Fig. 47. HEAT Metrics Server Page



The Database Server Name field indicates the location of the system proposed for hosting the HEAT Metrics Server Database. The default value is the name of the database server you designated on the HEAT Service Management Application page.

1. To accept the database server name shown, leave the default value and continue.

   If you want to use a different server, choose a name from the drop-down list or click **<Browse for more>**. The system displays all available database servers in the network for your connection. Select one and click **OK**.

2. To accept the database name shown, leave the default value and continue.

   If you want to use a different name, enter a name in the Database Name field.

3. Choose an authentication method and enter the user name and password.

See Report Server Authentication for information on the appropriate database authentication type.

The HEAT Metrics Server is not compatible with SSL if your HEAT Service Management system has Windows Authentication set up.

4. Click **Test Connection** to test the connection to the server that will host theHEAT Metrics Server Database.

   A success or failure message appears to the right of the Test Connection button.

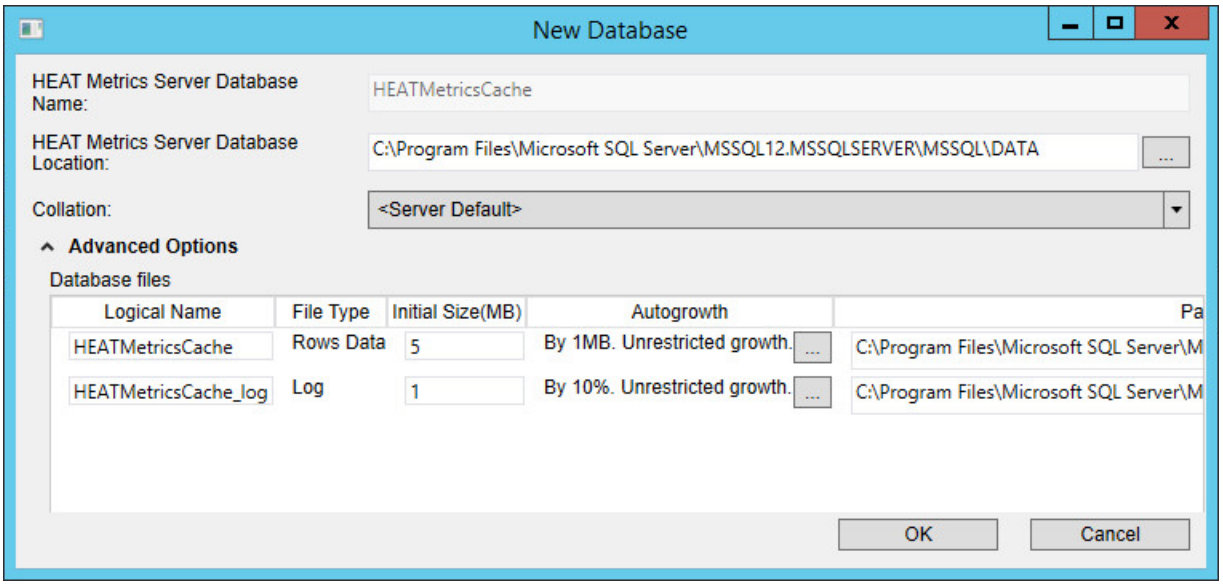
5. Do the appropriate action for your HEAT Service Management system:
   - If this is the initial setup, go to Creating a HEAT Metrics Server Database.
   - If your system already has a configuration database, go to Configuring the HEAT Metrics Server.

Creating a HEAT Metrics Server Database

An initial installation does not have a HEAT Metrics Server Database. Follow these steps to create one.

1. Click **Create & Load HEAT Metrics Server DB**.

   The New Database dialog box appears.



2. In the Location field, select a location for the HEAT Metrics Server Database.
3. Click **Advanced Options** to view and reconfigure these HEAT Metrics Server Database settings:

- Logical name. This name is stored as a file name, and is a separate entity from the read-only database name that is displayed in Microsoft SQL Server Management Studio.
- File type.
- Initial size in MB.
- Autogrowth size. Click **...** to update the values.
- The location of the database. Click **...** to update the location.
- File name.

4. Click **OK** in the New Database dialog box.

   The Configuration Server Location field indicates the location of the system that hosts the HEAT Configuration Server. The default value is the name of the host that you are logged into now.

5. If this is the system that hosts the HEAT Configuration Server, accept the default value.

   If the host that you are logged into now is not the HEAT Configuration Server, enter the machine name or fully qualified domain name of your HEAT Configuration Server.

   If you use SSL, you enter the fully qualified domain name of the HEAT Configuration server.

6. Enter the port number in the Port field.

   80 is the default value. If you click **Use SSL**, it changes to 443.

7. Select whether to use SSL for connections to the HEAT Configuration Server.

   If you use SSL, you must provide a fully qualified domain name in the Configuration Server Location field.

8. Click **Test Connection** to test the connection to the HEAT Configuration Server. A pop-up message notifies you of success or failure.

   > We do not recommend enabling SSL on the HEAT Configuration Server until you have fully tested the HEAT Service Management system to ensure that it works with SSL.
   >
   > For information on configuring the HEAT Service Management system with SSL, see Optional SSL Configuration.

9. Enter the following information to register a server in a multi-server deployment to the HEAT Metrics Server Database:
   - Accept the default server name or enter a different name.
   - Optional. Enter a description of the server.

- The default Server Name value is the name of the host that you are logged into now. You must use this name or *localhost*.
- Check the box to use SSL encryption.
- Check the box to enable this HEAT Metrics Server.

10. Click **Save**.
11. Map an application to the new metrics server to an application, check **Map**.

    You can reference the same metrics server to multiple HEAT Service Management applications.

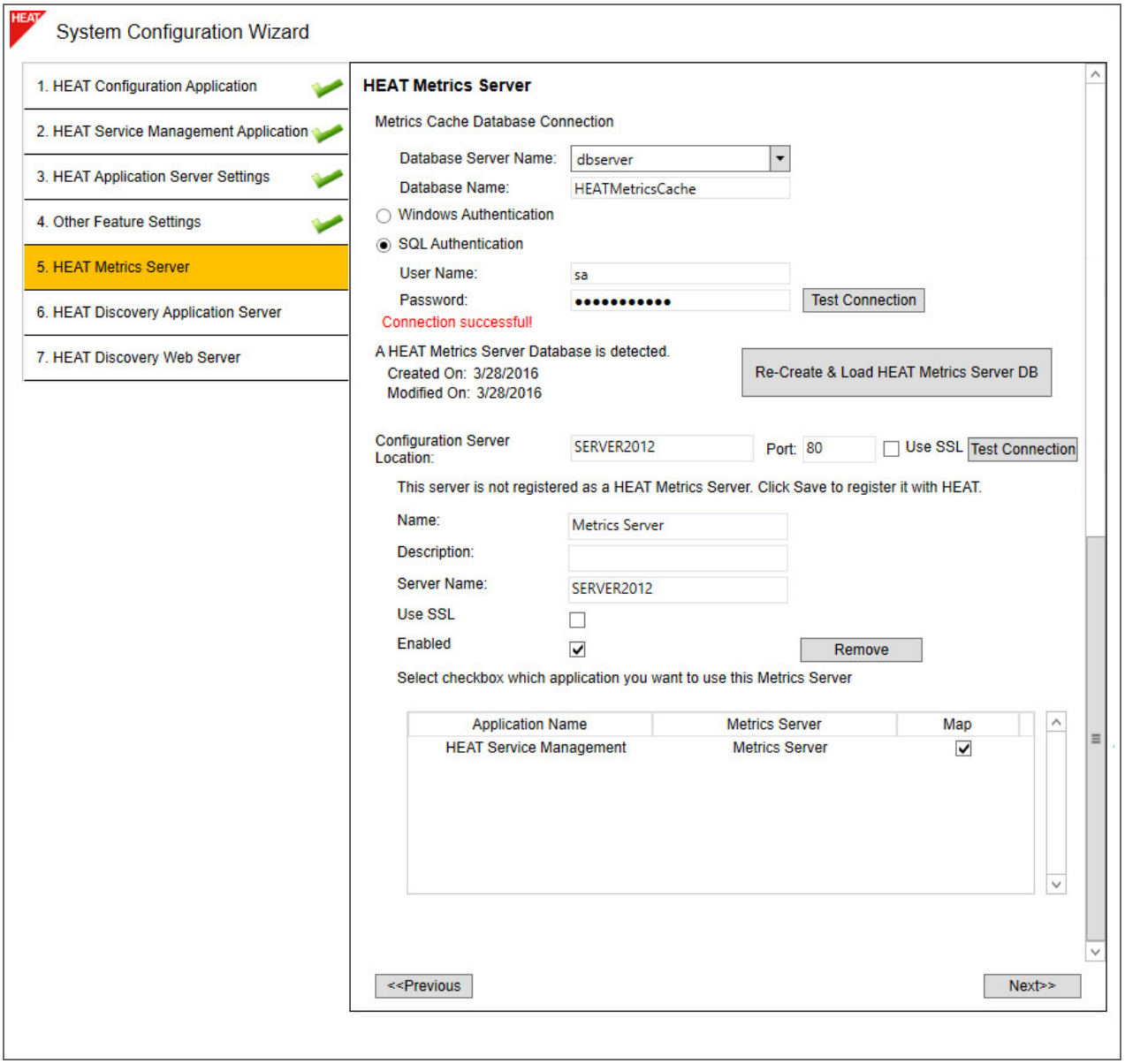
    > If you need to change this server at a later time, run the System Configuration Wizard, advance to the HEAT Metrics Server page, and click **Remove**.

12. Click **Next** and advance to HEAT Discovery Application Server page.

HEAT Metrics Server Database Already Exists

If you are upgrading or repairing a HEAT Service Management installation, you already have a HEAT Metrics Server Database, and the HEAT Metrics Server page looks like Fig. 47.

Fig. 48. HEAT Metrics Server Page



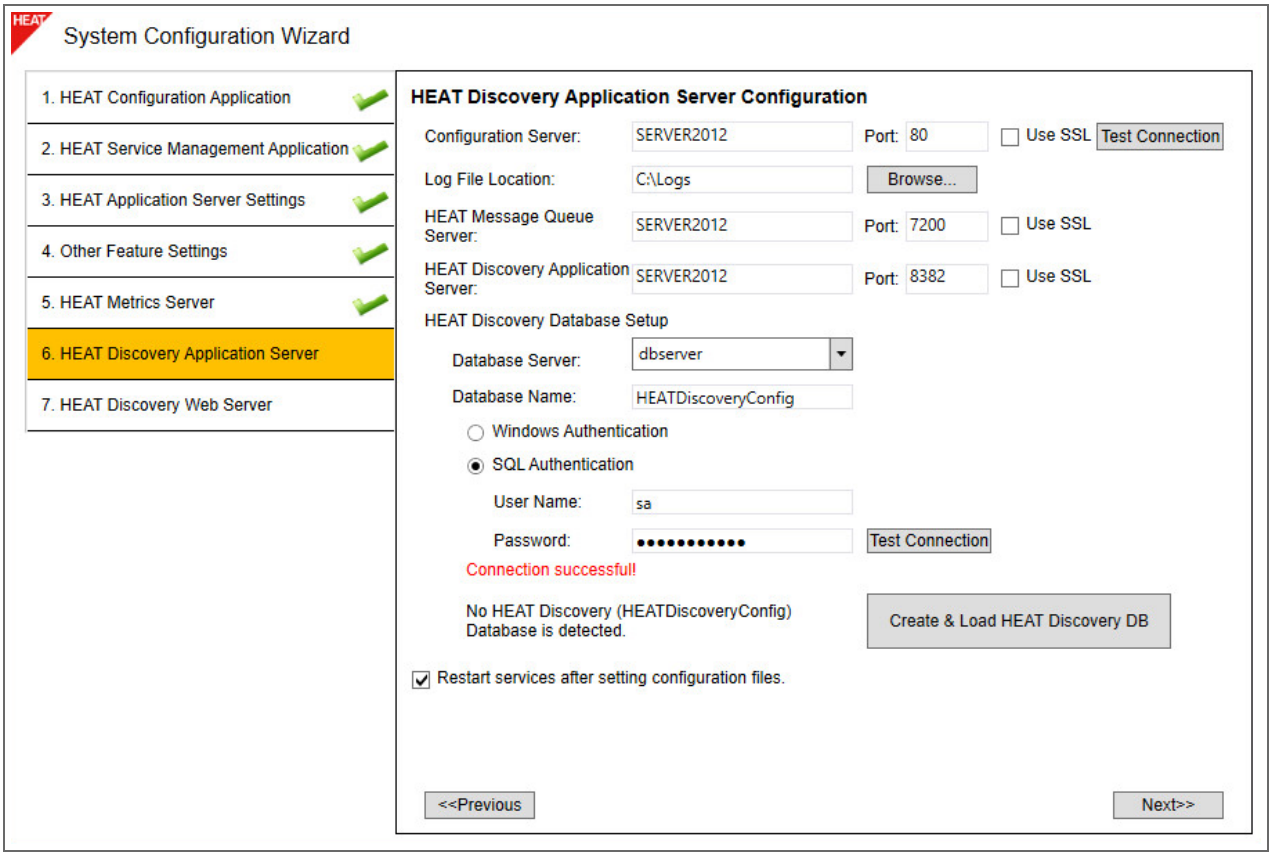
To recreate the HEAT Metrics Server Database, click **Re-Create & Load HEAT Metrics Server DB**.

> If you have customized the existing HEAT Metrics Server Database, specify a different location in the New Database dialog box.
>
> Otherwise, the system overwrites your customization when you load the recreated database.

Configuring the HEAT Discovery Application Server

Configure the relationship between the HEAT Service Management system and the HEAT Discovery Application Server from the HEAT Discovery Application Server page of the System Configuration Wizard.

Fig. 49. HEAT Discovery Application Server Page: No Database



Choosing a HEAT Configuration Server

The Configuration Server field indicates the name of the system that hosts the HEAT Configuration Server. The default value is the name of the host that you are logged into now.

1. If you want to use this same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   If you use SSL, you enter the fully qualified domain name of the Configuration Server.

2. Enter the port number in the Port field.

   80 is the default value. If you click **Use SSL**, it changes to 443.

3. Select whether to use SSL for connections to the HEAT Configuration Server.

   If you use SSL, you must provide a fully qualified domain name in the Configuration Server Location field.

4. Click **Test Connection** to verify the connection to the HEAT Configuration Server.

5. The default location for the log files is C:\Logs. To specify a different log file location on the HEAT Configuration Server, enter the location in the Log File Location field or click **Browse...** and navigate to a new folder.

Choosing a HEAT Message Queue Server

The HEAT Message Queue Server field indicates the name of the system proposed for the message queue server. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   If you use SSL, you enter the fully qualified domain name of the Configuration Server.

2. Enter the port number in the Port field.

   7200 is the default value. It remains the same if you click **Use SSL**.

3. Select whether to use SSL for connections to the HEAT Configuration Server.

   If you use SSL, you must provide a fully qualified domain name in the Configuration Server Location field.

Choosing a HEAT Discovery Application Server

The HEAT Discovery Application Server field indicates the name of the system proposed for HEAT Discovery. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   If you use SSL, you enter the fully qualified domain name of the Configuration Server.

2. Enter the port number in the Port field.

   8382 is the default value. If you click **Use SSL**, it changes to 443.

3. Select whether to use SSL for connections to the HEAT Discovery Application Server.

   If you use SSL, you must provide a fully qualified domain name in the Configuration Server Location field.

Configuring the HEAT Discovery Database

Note that there are two authentications for the HEAT Discovery database, one for creation and one for access.

The Database Server field indicates the name of the system proposed for the HEAT Discovery database. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

2. Choose an authentication method to *create* the HEAT Discovery database.
3. Enter the user name and password.
4. Click **Test Connection** to test the connection to the HEAT Database Server.

   A success or failure message appears below the Password field.

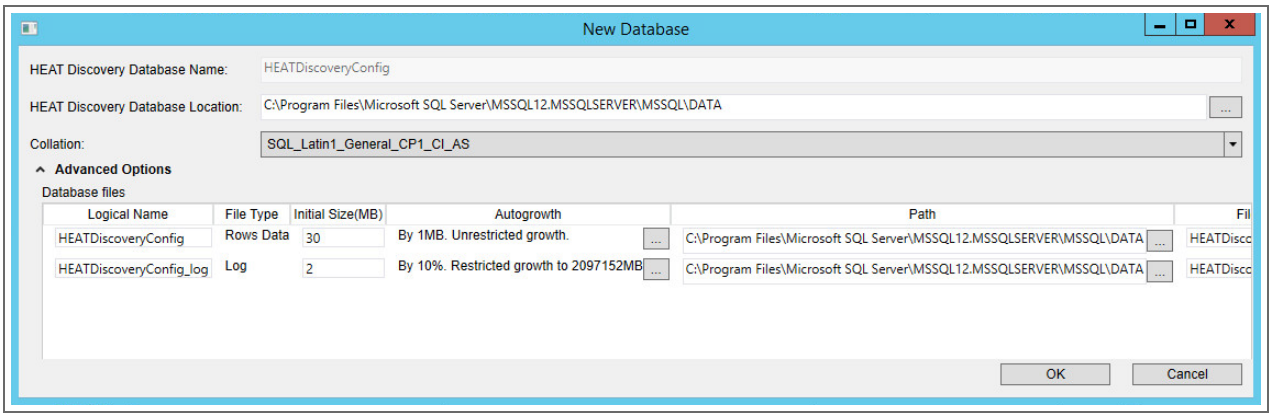
   > You must have a working connection to create a database.

5. Do the appropriate action for your HEAT Service Management system:
   - If this is the initial setup, go to Creating a HEAT Discovery Database.
   - If your system already has a configuration database, go to HEAT Discovery Database Already Exists.

Creating a HEAT Discovery Database

An initial installation does not have a HEAT Discovery Database. Follow these steps to create one.

1. Click **Create & Load HEAT Discovery DB** to create the HEAT Discovery Database.



2. In the Location field, select a location for the HEAT Discovery Database.

3. Click **Advanced Options** to view and reconfigure these HEAT Discovery Configuration Database settings:
   - Logical name. This name is stored as a file name, and is a separate entity from the read-only database name that is displayed in Microsoft SQL Server Management Studio.
   - File type.
   - Initial size in MB.
   - Autogrowth size. Click **...** to update the values.
   - The location of the database. Click **...** to update the location.
   - File name.
4. Click **OK** in the New Database dialog box.

   The system creates the HEAT Discovery Database on the specified server.
5. To restart the HEAT Service Management system services after you click **Finish**, check **Restart services after setting configuration files.**.

   If you select this option, we recommend that you verify that the HEAT Service Management system services restarted after the wizard closes.

   If you do not select this option, you must restart the HEAT Service Management system services manually.
6. Click **Next** and advance to HEAT Discovery Web Server page.

HEAT Discovery Database Already Exists

If you are upgrading or repairing a HEAT Service Management installation, you already have a configuration database.Fig. 49.

1. Optional. To recreate the HEAT Discovery Database, click **Re-Create & Load HEAT Discovery DB**.

   If you have customized the existing HEAT Discovery Database, specify a different location in the New Database dialog box.

   Otherwise, the system overwrites your customization when you recreate the database.
2. Optional. To restart the HEAT Service Management system services after you click **Finish**, check **Restart services after setting configuration files.**.

3. Click **Next** and advance to HEAT Discovery Web Server page.

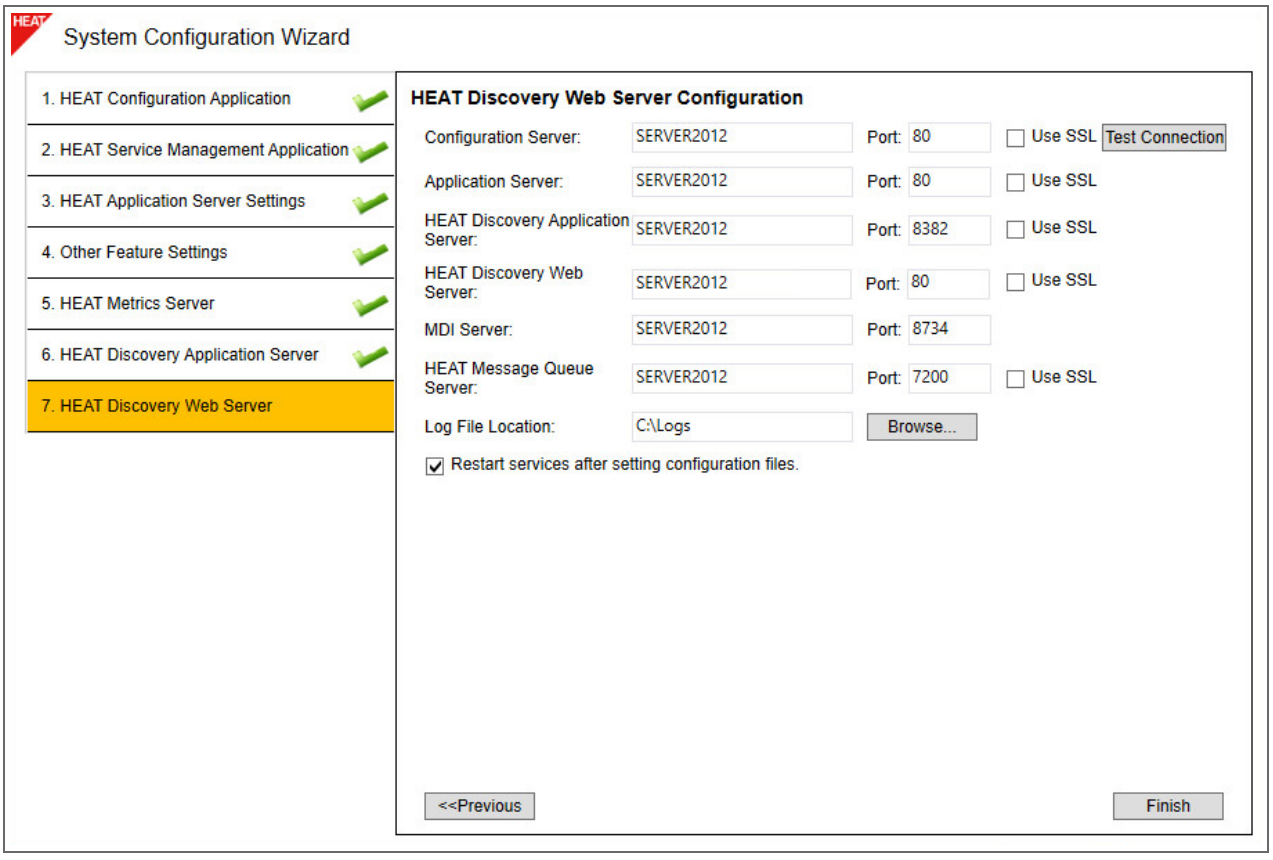
Configuring the HEAT Discovery Web Server

- Choosing a HEAT Configuration Server
- Choosing a HEAT Application Server
- Choosing a HEAT Discovery Application Server
- Choosing a HEAT Discovery Web Server
- Choosing an MDI Server
- Choosing a HEAT Message Queue Server
- Choosing a Log File Location
- Restarting Services

Configure the relationship between the HEAT Service Management system, the HEAT Discovery Web Server, and the HEAT Discovery Application Server from the HEAT Discovery Web Server page of the System Configuration Wizard.

The system displays the HEAT Discovery Web Server page. See Fig. 50.

Fig. 50. HEAT Discovery Web Server Page



Choosing a HEAT Configuration Server

The Configuration Server field indicates the name of the system that hosts the HEAT Configuration Server. The default value is the name of the host that you are logged into now.

1. If you want to use this same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   If you use SSL, you must enter the fully qualified domain name.

2. Enter the port number in the Port field.

   80 is the default value. If you click **Use SSL**, it changes to 443.

3. Select whether to use SSL for connections to the HEAT Configuration Server.

   If you use SSL, you must provide a fully qualified domain name in the Configuration Server field.

4. Click **Test Connection** to verify the connection to the HEAT Configuration Server.

Choosing a HEAT Application Server

The HEAT Application Server field indicates the name of the system proposed for HEAT Service Management. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   If you use SSL, you must enter the fully qualified domain name.

2. Enter the port number in the Port field.

   80 is the default value. If you click **Use SSL**, it changes to 443.

3. Select whether to use SSL for connections to the HEAT Application Server.

   If you use SSL, you must provide a fully qualified domain name in the Application Server field.

Choosing a HEAT Discovery Application Server

The HEAT Discovery Application Server field indicates the name of the system proposed for HEAT Discovery. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   If you use SSL, you must enter the fully qualified domain name.

2. Enter the port number in the Port field.

8382 is the default value. If you click **Use SSL**, it changes to 443.

3. Select whether to use SSL for connections to the HEAT Discovery Application Server.

   If you use SSL, you must provide a fully qualified domain name in the HEAT Discovery Application Server field.

Choosing a HEAT Discovery Web Server

The HEAT Discovery Web Server field indicates the name of the system proposed for the Discovery web server. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   If you use SSL, you enter the fully qualified domain name of the Configuration Server.

2. Enter the port number in the Port field.

   80 is the default value. If you click **Use SSL**, it changes to 443.

3. Select whether to use SSL for connections to the HEAT Discovery Application Server.

   If you use SSL, you must provide a fully qualified domain name in the HEAT Discovery Discovery Web Server field.

Choosing an MDI Server

The Mobile Device Inventory (MDI) service is bundled with HEAT Discovery. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

   There is no SSL option for the MDI (Mobile Device Inventory) server.

2. Enter the port number in the Port field.

   8734 is the default value.

Choosing a HEAT Message Queue Server

The HEAT Message Queue Server field indicates the name of the system proposed for the message queue server. The default value is the name of the host that you are logged into now.

1. If you want to use the same host, accept the default value.

   Or enter the machine name or fully qualified domain name of a different server in your deployment.

If you use SSL, you must enter the fully qualified domain name of the Configuration Server.

2. Enter the port number in the Port field.

   7200 is the default value. It remains the same if you click **Use SSL**.

3. Select whether to use SSL for connections to the HEAT Configuration Server.

   If you use SSL, you must provide a fully qualified domain name in the HEAT Message Queue Server field.

Choosing a Log File Location

The default location for the log files is C:\Logs on the HEAT Discovery Web Server you chose under Choosing a HEAT Discovery Web Server.

To specify a different log file location on the HEAT Discovery Web Server, enter the location in the Log File Location field or click **Browse...** to navigate to the location and select it.

Restarting Services

To restart the HEAT Service Management system services after you click **Finish**, check **Restart services after setting configuration files.**.

- If you select this option, we recommend that you verify that the HEAT Service Management system services restarted after the wizard closes.
- If you do not select this option, you must restart the HEAT Service Management system services manually.

When you have finished configuring the HEAT Discovery Web Server, see Finishing System Configuration.

Finishing System Configuration

When you have finished configuring the HEAT Discovery Web Server:

1. Click **Finish**.

   The System Configuration Wizard closes and the Completed page of the Install wizard appears.

2. Click **Finish**.

3. Restart your system (the host server you just configured).

4. After restart, ensure that you can access the HEAT Service Management system.

   Go to http://*server_name*/HEAT and ensure that the HEAT Service Management system is functional.

Installing the Demo Data Package

> Only perform this procedure if you did NOT check **Don't include Demo data** on the HEAT Service Management Application page of the System Configuration Wizard. See Fig. 42.

The HEAT Service Management system comes with additional transaction database that you can use to test and view the analytic metrics, financial, IT Financial Management, and other HEAT Service Management features.

Follow these steps to install the demo data package:

1. Navigate to: C:\Program Files\HEAT\Software\HEAT\SystemConfigurationWizard\DB\AppServer\SQL\DemoData.
2. Extract the **Demo Data Pkg.rar** file.
3. Use Microsoft SQL Management Studio to restore the file called **DemoData_Database.bak**.

   > This file was created based on Microsoft SQL Release 2008 R2.

4. Back up the current HEAT database.
5. Use Microsoft SQL Management Studio to *open* the script called **Demo Data Transfer Script.sql**.

   The script updates the names of the source and target databases, based on your environment.
6. Use Microsoft SQL Management Studio to *run* the script called **Demo Data Transfer Script.sql**.
7. Use Microsoft SQL Management Studio to *open* the script called **ITFM Demo Data Update.sql**.

   The script updates the IT Financial Management dates in the database.
8. Use Microsoft SQL Management Studio to *run* the script called **ITFM Demo Data Update.sql**.

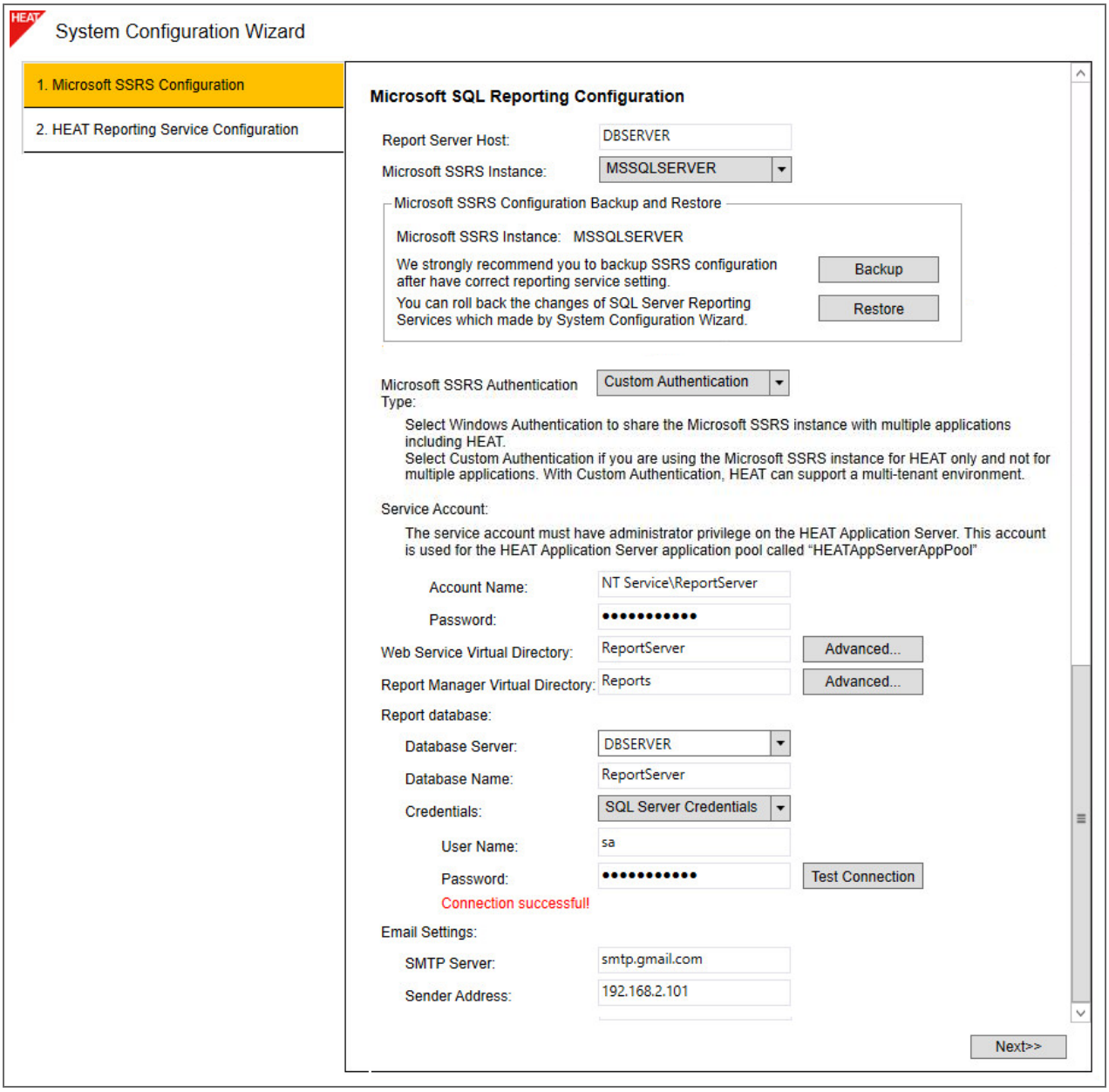
Configuring the HEAT Reporting Feature

Configuring Microsoft SQL Reporting

This procedure is a continuation of Installing the HEAT Reporting Feature and takes place on the Report Server.

When HEAT Reporting Services installation is finished, the System Configuration Wizard appears and displays Microsoft SSRS Configuration page:

Fig. 51. Microsoft SSRS Configuration Page



1. Choose an instance of Microsoft SSRS from the Microsoft SSRS Instance drop-down menu.
2. Recommended. Click **Backup** to back up your SSRS configuration.

   Enter a password to unlock the backup file, and then click **OK**.
3. Click **Next**.
4. In the Backup Encryption Key dialog box,

- Click **...** if you want to change the location of the backup file.
- Enter a password for locking and unlocking the file.
- Click **OK**.

If you see a message about Microsoft SQL Agent not running on a server, click **OK**.

5. Choose a Microsoft SSRS authentication type.

   See Report Server Authentication for information on the appropriate SSRS instance authentication type.

6. Enter the account name and password for the Service Account.

   This can be the same account used for IIS Application Pool Identity and Windows Service entered on the HEAT Application Server Settings page. See Configuring the HEAT Discovery Application Server

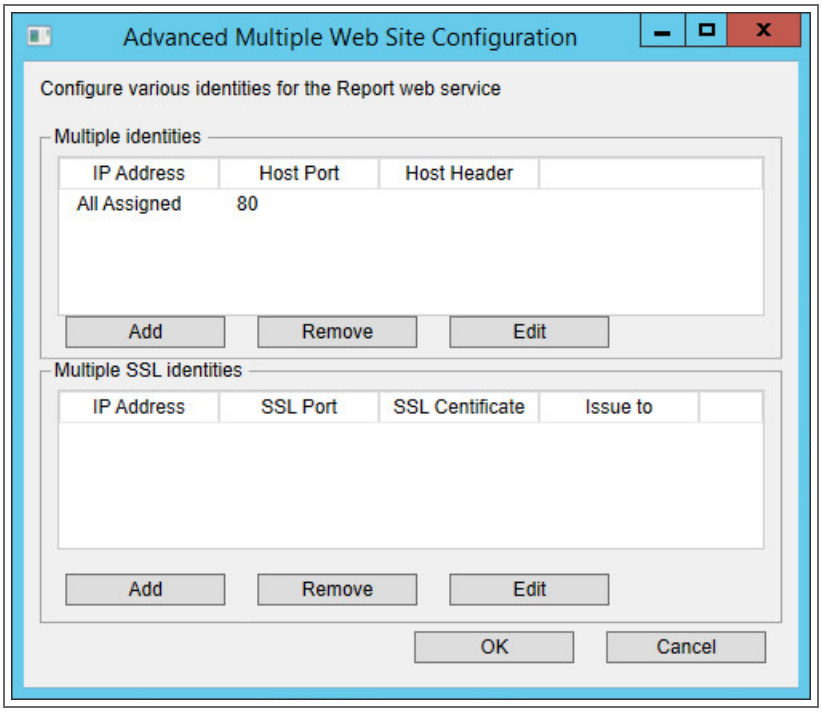
7. Ensure that the name of the Web Service Virtual Directory and the Report Manager Virtual Directory are correct.

   The Software Configuration Wizard populates the values used for the existing Microsoft SSRS instance.

   The default value is **ReportServer + _*SSRS instance name*** for the Web Service Virtual Directory and **Reports + _*SSRS instance name*** for the Report Manager Virtual Directory.

8. Optional. Click the **Advanced...** buttons to configure muliple identities for the Report Web Service and for the Report Manager.

Fig. 52. Advanced Multiple Web Site Configuration Dialog Box



When you are finished, click **OK**.

9. In the Report database Database Server drop-down menu, the default database SQL server name appears.

   You can choose a different server from the menu or enter a server name in this format: machinename\instance.

   If you change the server name and want to restore the SQL server name, open Microsoft SQL Server Management Studio. The SQL server name appears in the Connect to Server dialog box.

   In the Report database Database Name field, the name of the HEAT Reporting Database is **ReportServer + *$SSRS instance name***.

10. In the Report database Credentials drop-down menu, choose **Microsoft SQL Server**, **Windows**, or **Service Credentials**.

    If you change the setting, you must enter your user name and password.

    Click **Test Connection**.

    The system displays *Connection successful!* if the connection is good.

11. Enter the SMTP Server and Sender Address email settings for the account that will send the reporting output to the system.

> The system automatically verifies the SMTP server name that you enter. If the name is not valid, the wizard displays an error message

12. In the Sender Address field, enter an email address for the report sender.

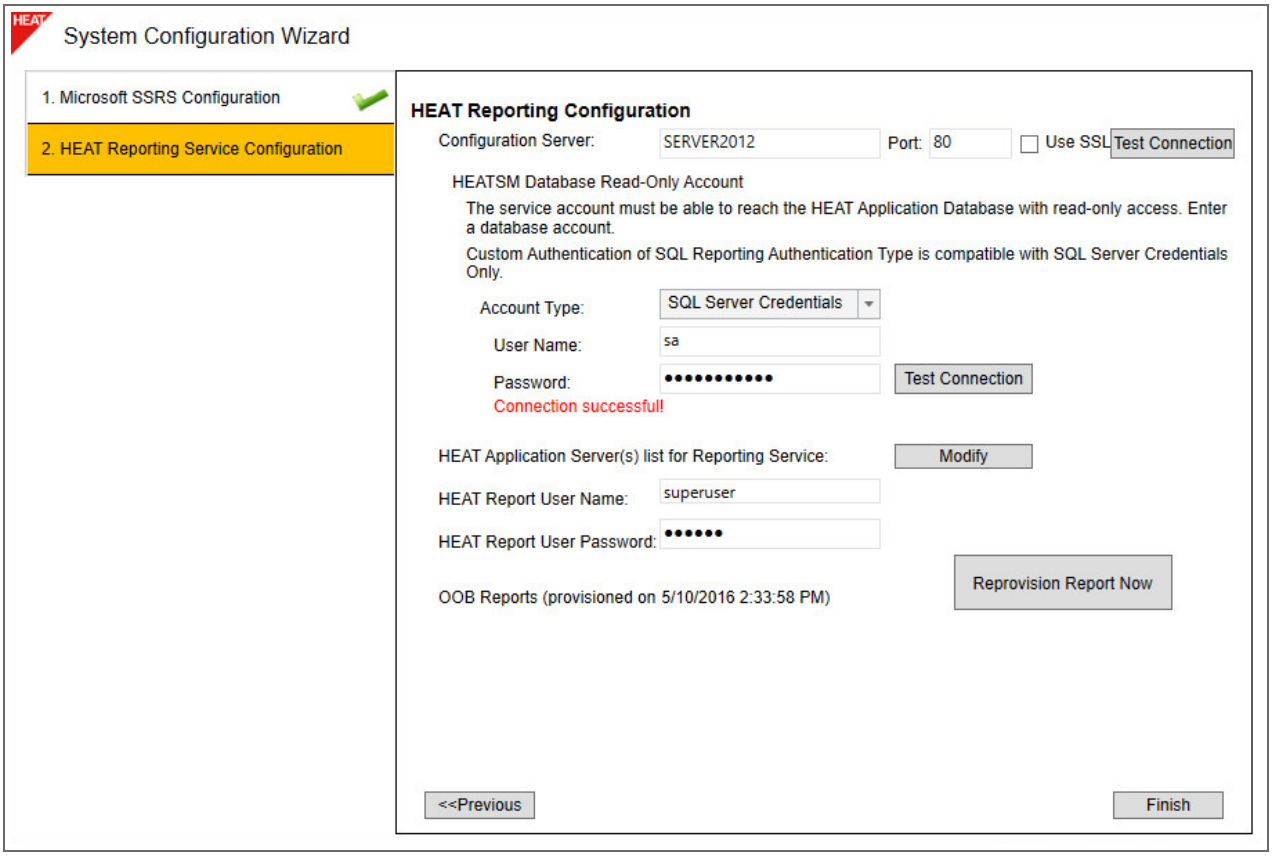
    When the system has set up your reporting configuration, click **Next** and the HEAT Reporting Service Configuration page appears. See Configuring the HEAT Reporting Service.

    If a message appears about the Microsoft SQL Agent service, click **OK**.

Configuring the HEAT Reporting Service

HEAT Reporting feature settings are made on the HEAT Reporting Service Configuration page. See Fig. 53.

Fig. 53. HEAT Reporting Service Configuration Page



1. For the Configuration Server, you can check the **Use SSL** box to enable a secure connection.

If you use SSL, you must provide a fully qualified domain name for the HEAT Configuration Server host.

2. Click **Test Connection** to verify.

   This is the same name that you entered on the HEAT Service Management Application page. See Configuring the HEAT Service Management System.

   Check **Use SSL** to use SSL for connections to the HEAT Configuration Server. If you use SSL, you must provide a fully qualified domain name for the HEAT Configuration Server host.

3. Enter the HEAT Database account type. You can choose **SQL Server Credentials** or **Windows Credentials**.

   If you chose **Custom Authentication** in step 2 of Configuring the HEAT Reporting Feature, this option automatically displays as SQL Server Credentials and you cannot change it.

   If not already filled in, enter the user name and password. Click **Test Connection** to ensure that the connection works.

4. Enter the location of the HEAT Application Server and check **Use SSL** if you want to use SSL.

5. (Optional) Enter the user name and password for user of the HEAT Reporting feature.

   If you chose **Windows Authentication** in Microsoft SSRS Configuration, this section does not appear.

6. To verify that the configuration settings work, do the following to use the HEAT Reporting feature:

   a. Click **Reprovision Report Now** to update the sample report data to the application. See Fig. 53.

   > If the systems returns an exception: "Cannot Decrypt the Symmetric Key", see Troubleshooting.

   b. Log into the HEAT Service Management system and change your role to **Report Manager**. You should be able to see the sample reports and be able to create one.

7. When you see confirmation that the out-of-the-box reports have been provisioned, that is, the last line of this step changes from *OOB Reports (not provisioned yet)* to *OOB Reports (provisioned on date)*, click **Finish** to close the System Configuration Wizard.

   The Completed page of the Install Wizard appears.

8. Click **Finish**.

9. Restart your system (the host server you just configured).

10. After restart, ensure that you can access the HEAT Service Management system.

    Go to http://*server_name*/HEAT and ensure that the HEAT Reporting feature is functional.

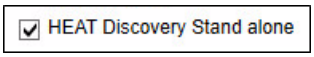
Configuring HEAT Discovery

This topic describes how to configure HEAT Discovery on a dedicated server.

Configuring HEAT Discovery on a Dedicated Server

When the HEAT Discovery software components have been installed, the System Configuration Wizard starts automatically and displays the HEAT Configuration Application page.

1. On the HEAT Configuration Application page:
   a. Under Target Environment, choose **Single Server Deployment**.
   b. Under Setup Connection, verify that the configuration matches the setting you made on when you configured HEAT Service Management on the production servers. See Configuring HEAT.
   c. Click **Next**.
2. On the HEAT Service Management Application page:
   a. Verify that the configuration matches the setting you made on when you configured HEAT Service Management on the production servers. See Configuring the HEAT Service Management Application.
   b. Check **HEAT Discovery Stand alone**.



   c. Click **Next**.
3. On the HEAT Application Server Settings page:
   a. Verify that the configuration matches the setting you made on when you configured HEAT Service Management on the production servers.
   b. Click **Next**.
4. On the Other Features Settings page:
   a. Under Customize Server, change the HEAT Discovery Application Server field to the name of the HEAT Discovery dedicated server.
      - If you are not using SSL, enter the host name.
      - If you are using SSL, enter the fully qualified domain name.

b. Verify that the rest of the configuration matches the setting you made on when you configured HEAT Service Management on the production servers. See Configuring Other Feature Settings.

c. Click **Next**.

5. On the HEAT Metrics Server page:

   a. Verify that the configuration matches the setting you made on when you configured HEAT Service Management on the production servers. See Configuring the HEAT Metrics Server.

   b. Click **Next**.

6. On the HEAT Discovery Application Server page:

   a. Change the HEAT Discovery Application Server field to the name of the HEAT Discovery dedicated server.

      - If you are not using SSL, enter the host name.
      - If you are using SSL, enter the fully qualified domain name.

   b. Verify that the rest of the configuration matches the setting you made on when you configured HEAT Service Management on the production servers. See Configuring the HEAT Discovery Application Server.

   c. Click **Next**.

7. On the the HEAT Discovery Web Server page:

   a. Change the HEAT Discovery Application Server field to the name of the HEAT Discovery dedicated server.

      - If you are not using SSL, enter the hostname.
      - If you are using SSL, enter the fully qualified domain name.

   b. Verify that the rest of the configuration matches the setting you made on when you configured HEAT Service Management on the production servers. See Configuring the HEAT Discovery Web Server.

   c. Click **Finish**.

   The Completed page of the Install Wizard appears.

8. Click **Finish**.

9. Restart your system (the host server you just configured).

10. After restart, ensure that you can access the HEAT Service Management system.

Go to http://*server_name*/HEAT and ensure that the HEAT Service Management system is functional.

Configuring HEAT Discovery on the Production Servers

Now that there is a dedicated HEAT Discovery server in your deployment, you must configure your production servers to recognize it.

On each production server in your deployment:

1. Go to the Windows Apps menu and click **System Configuration Wizard**.

   The System Configuration Wizard opens and displays the HEAT Configuration Application page.
2. On the HEAT Configuration Application page, click **Next**.
3. On the HEAT Service Management Application page, click **Next**.
4. On the HEAT Application Server Settings page, click **Next**.
5. On the Other Features Settings page:
   a. Under Customize Server, change the HEAT Discovery Application Server field to the name of the HEAT Discovery dedicated server.
      - If you are not using SSL, enter the hostname.
      - If you are using SSL, enter the fully qualified domain name.
   b. Click **Next**.
6. On the HEAT Metrics Server page, click **Next**.
7. On the HEAT Discovery Application Server page:
   a. Change the HEAT Discovery Application Server field to the name of the HEAT Discovery dedicated server.
      - If you are not using SSL, enter the hostname.
      - If you are using SSL, enter the fully qualified domain name.
   b. Click **Next**.
8. On the the HEAT Discovery Web Server page:

a. Change the HEAT Discovery Application Server field to the name of the HEAT Discovery dedicated server.
   - If you are not using SSL, enter the hostname.
   - If you are using SSL, enter the fully qualified domain name.

b. Click **Finish**.

Configuring the Deployment on the HEAT Operations Console

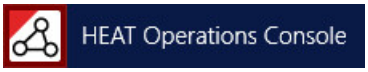
Perform these steps from the HEAT Operations Console, which you installed in the staging/UAT environment.

> This section only contains brief, high-level instructions.
>
> For complete information about using the HEAT Operations Console, including how to log in, see the *Operations Console User Guide for HEAT Service Management Release 2016.1*.
>
> See Related Documentation for instructions how to obtain the *Operations Console User Guide*

Configuring the HEAT Operations Console

To log into the HEAT Operations Console:

1. In the Start menu, click the down arrow to see the Apps menu, and then click HEAT Operations Console.



2. Enter your user name and password and then click **Login**.

> The default login credentials are:
> User name: admin
> Password: manage

Fig. 54. HEAT Operations Console Log In Screen

3. Use the HEAT Operations Console to update the values for the HEAT application database (HEATSM):

   a. Click the **Landscape** tab.

   b. Click **Database Servers** on the left.

   c. Click **Add Database Server**.

   d. Enter a database login ID and password and set the data and backup locations. See the example values in Fig. 55.

   e. For the data and backup locations, change the application pool identity so that it has read access. SeeFig. 56.

   See the *Editing a Database Server* section of the *Operations Console User Guide for HEAT Service Management Release 2016.1* for complete details about editing a database server. See Related Documentation

Fig. 55. HEAT Database Server

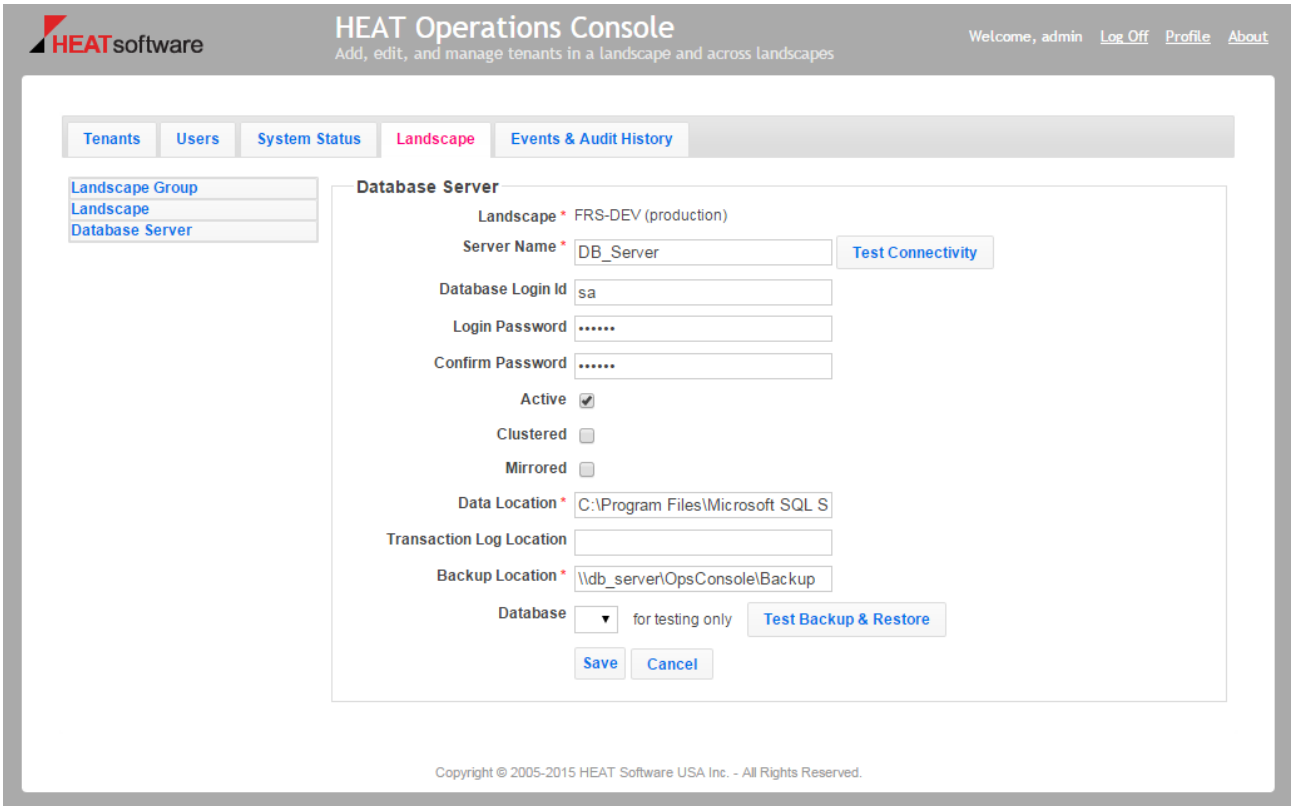
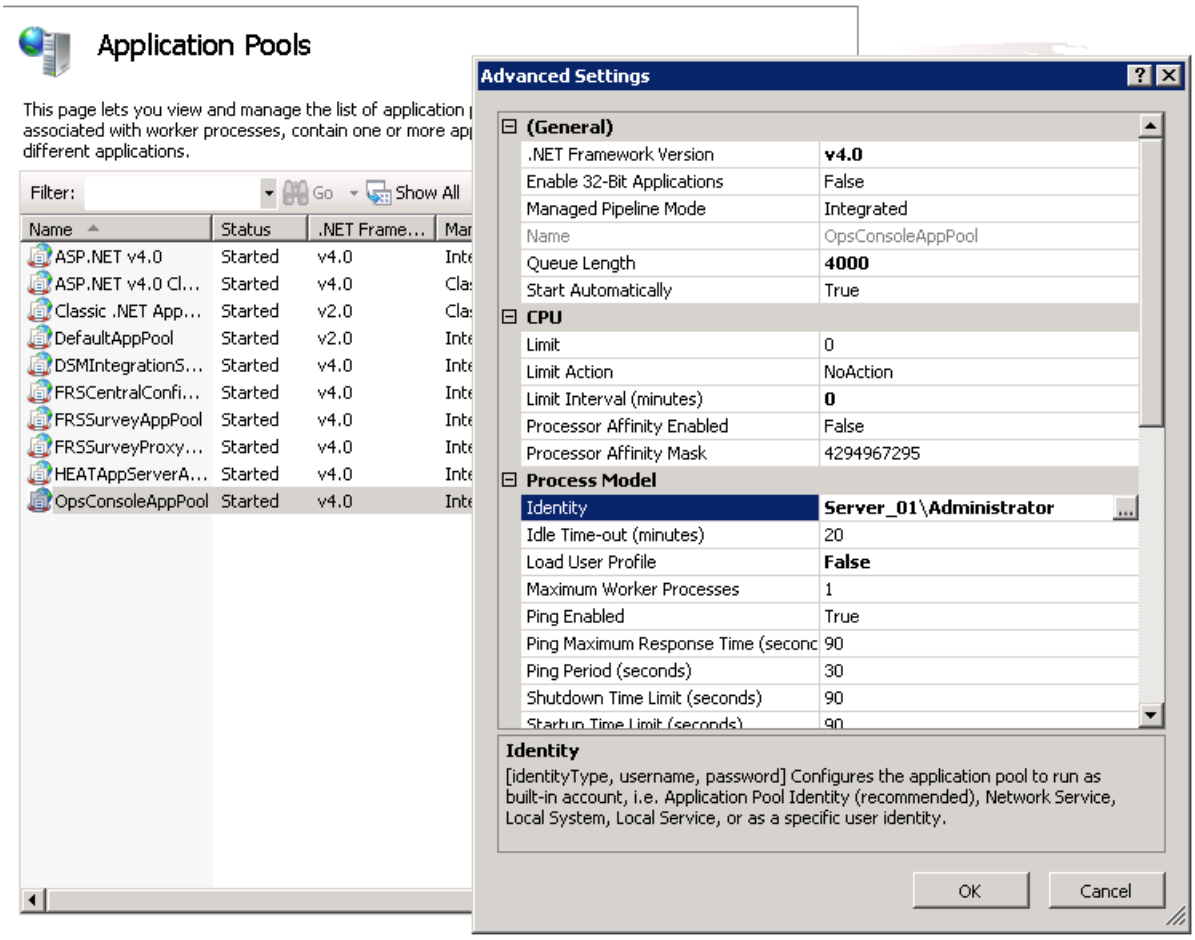


Fig. 56. Change the Application Pool Identity



4. Delete the HEAT Application Databases (HEATSM) on the staging and UAT instances of the tenant:

   a. Click the **Tenants** tab.

   b. Click **Expanded View** to view all the details about the tenants.

   c. Find the staging instance of the tenant and click **Deactivate**.

   d. Click **Deactivate** at the confirmation prompt.

   e. For the staging instance of the tenant, click **Delete**.

   f. Check **Skip Backup** and click **Delete** at the confirmation prompt.

   g. Repeat steps c. through f. for the UAT instance of the tenant.

You now have three instances of the HEAT Configuration Database (ConfigDB) and a production instance of the tenant.

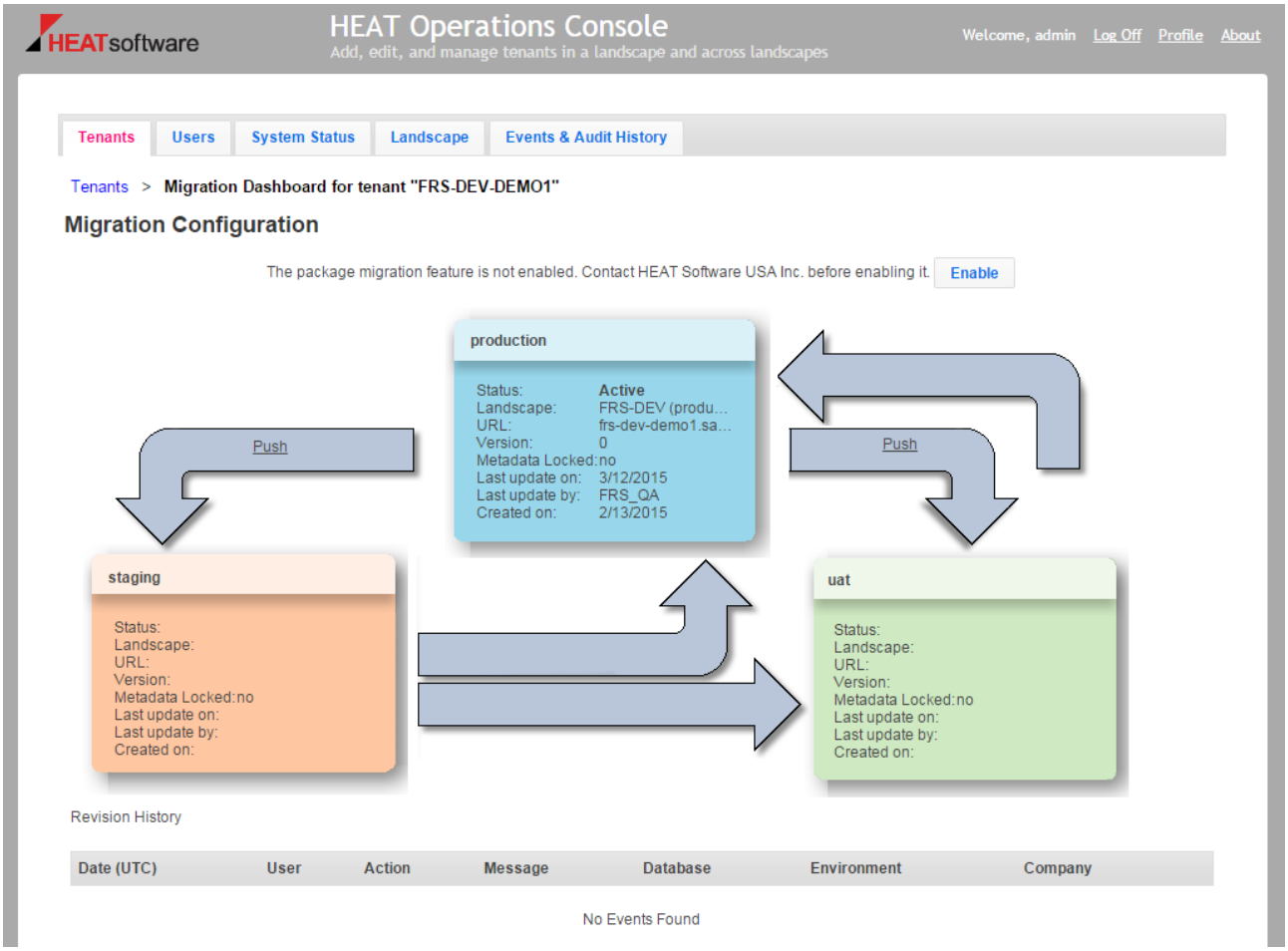
See the *Deleting a Tenant* section of the *Operations Console User Guide for HEAT Service Management Release 2016.1* for complete details about deleting tenants and tenant instances. See Related Documentation

Creating the Staging and UAT Instances of the Tenants

To create the staging and UAT instances of the tenant, based on the production instance:

1. Log into the HEAT Operations Console.
2. Click the **Tenants** tab.
3. Navigate to the production instance of the tenant and click **Manage Migration**.
4. Create the staging instance of the tenant:
   a. In the migration dashboard, click **Push** which is located inside the arrow going from the production instance of the tenant to the staging instance of the tenant. See Fig. 57.

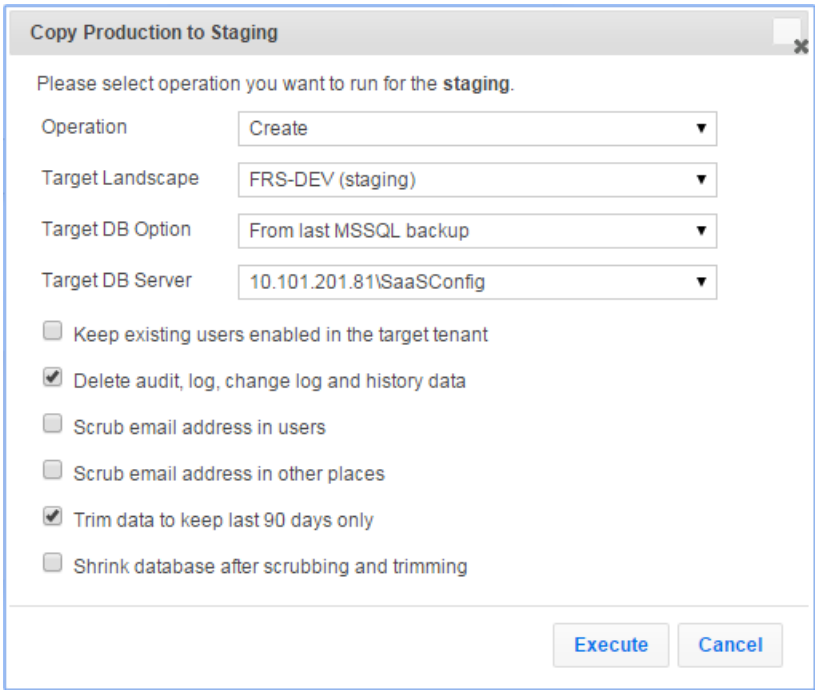
Fig. 57. Creating a Staging Instance of the Tenant



The system displays the Copy Production to Staging dialog box.

b. In the Target DB Option field, select **From live MSSQL backup**. See Fig. 58.

Fig. 58. Copy Production Instance of the Tenant to the Staging Instance of the Tenant



c. Click **Execute**.

5. Create the UAT instance of the tenant:

   a. In the migration dashboard, click **Push** which is located inside the arrow going from the production instance of the tenant to the UAT instance of the tenant. See Fig. 57. The system displays the Copy Production to UAT dialog box.

   b. In the Target DB Option field, select **From live MSSQL backup**. See Fig. 58.

   c. Click **Execute**.

   You can now customize the HEAT Service Management system and use the HEAT Operations Console to push those customizations to the other instances of the tenant.

Making Configuration Changes to Tenants

1. Log into the HEAT Operations Console.
2. Click the **Tenants** tab.

   Make configuration changes in the staging instance of the tenant.

3. Push the configuration changes that you made in the staging instance of the tenant to the UAT instance of the tenant:

a. Click **Push** which is located inside the arrow going from the staging instance of the tenant to the UAT instance of the tenant. See Fig. 57. The system displays the Copy Staging to UAT dialog box.

b. You can use simple mode by leaving **Advanced Mode** unchecked, or you can use advanced mode by checking **Advanced Mode**. If you use advanced mode, select **Copy Configuration** in the Operation field and check your options. See Fig. 58.

c. Click **Execute**.

4. Verify that the configuration changes that you made to the staging instance of the tenant (in step 1) were successfully migrated to the UAT instance of the tenant.

5. Repeat steps 1, 2, and 3 as necessary.

6. After you have finished making configuration changes and have verified them, push the configuration changes from the UAT instance of the tenant to the production instance of the tenant.

Optional SSL Configuration

About the SSL Configuration

> The HEAT Metrics Server is not compatible with SSL if your HEAT Service Management system has Windows Authentication set up.

> For all fields in the System Configuration Wizard that ask for a server location, when using SSL, you must enter a fully qualified domain name (FQDN).
>
> This is because SSL needs a certificate and the certificate authority requires an FQDN.

You can configure your HEAT Service Management system for SSL. This configuration is optional. There are three scenarios:

- The HEAT Application Database (HEATSM) and the HEAT Configuration Database (ConfigDB) both use SSL.

  See Configuring SSL for the Configuration and Application Databases.

- The HEAT Application Database (HEATSM) uses SSL but the HEAT Configuration Database (ConfigDB) does not use SSL.

  See Configuring SSL for the Application Database Only.

- Neither the HEAT Application Database (HEATSM) nor the HEAT Configuration Database uses SSL.

  In this scenario, do *not* check SSL on any of the pages of the System Configuration Wizard.

Configuring SSL for the Configuration and Application Databases

To configure both your HEAT Application Database (HEATSM) and the HEAT Configuration Database (ConfigDB) to use SSL, follow all of the steps in all of these sections:

Before You Begin

- Ensure that **https:\\localhost:443** displays the Microsoft IIS Manager welcome page.
- Ensure that your system has a valid certificate.

Configuring SSL in Microsoft IIS Manager

1. In Microsoft IIS Manager, navigate to **Sites > Default Web Site** and select **SSL Settings**.

   On the SSL Settings page, check **Require SSL** and under client certificates, select **Ignore**.

2. Navigate to **Sites > HEAT** and select **SSL Settings**.

   On the SSL Settings page, check **Require SSL** and under client certificates, select **Ignore**.

3. Navigate to **Sites > CentralConfig** and select **SSL Settings**.

   On the SSL Settings page, check **Require SSL** and under client certificates, select **Ignore**.

4. Navigate to **Sites > FRSSurveyProxy** and select **SSL Settings**.

   On the SSL Settings page, check **Require SSL** and under client certificates, select **Ignore**.

5. Add an SSL port:

   a. Navigate to **Sites > Default Web Site**, right click, and select **Edit Bindings...**.

   b. Click **Add...**.

   c. In the Add Site Binding dialog box, for the Type field, select **HTTPS** and in the SSL certificate field, select the certificate that you received from the Certificate Authority.
   The system automatically enters 443 for the port.
   In the IP Address field, enter an FQDN.

   d. Click **OK**.

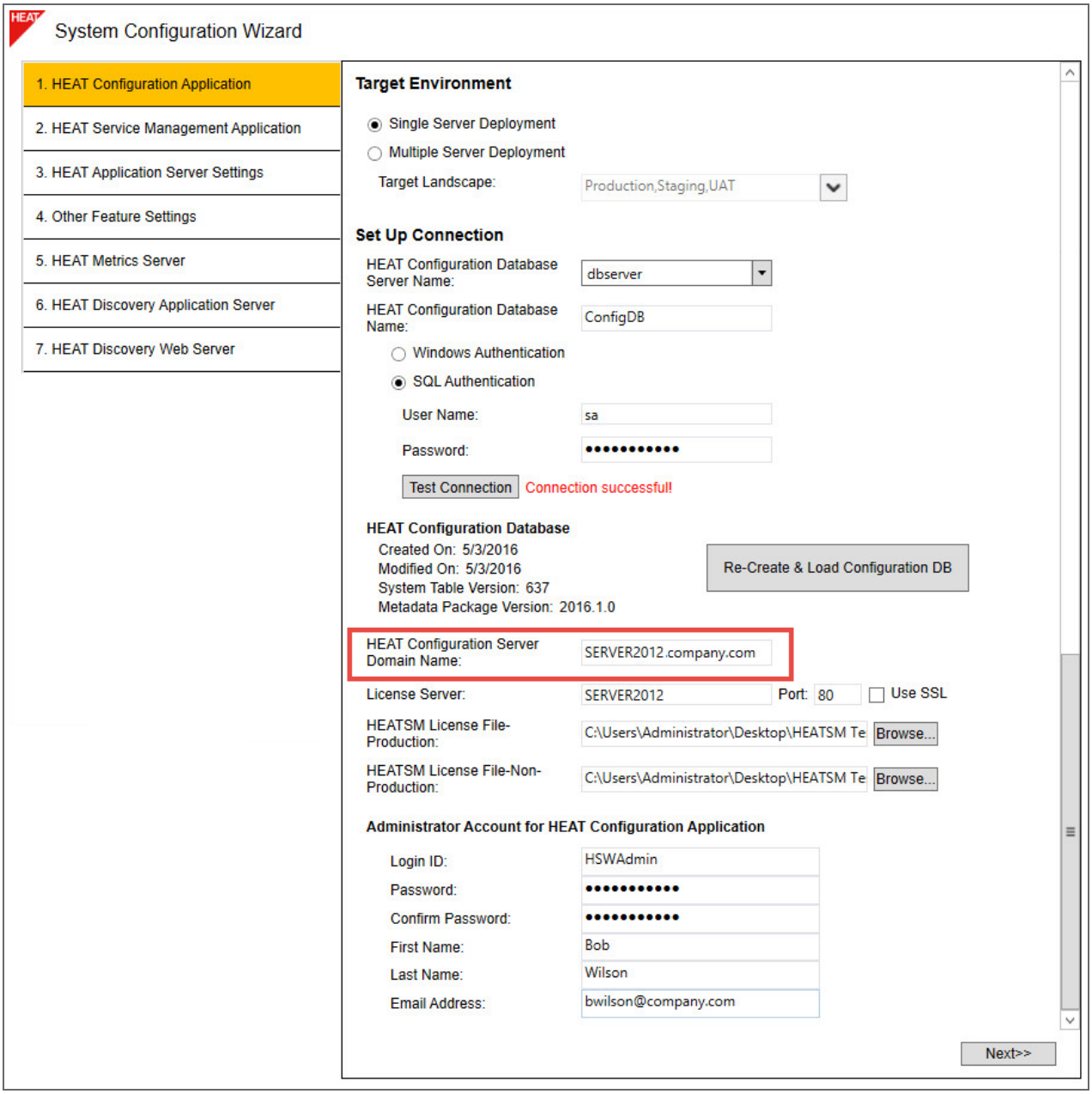
6. Verify that you can access https://*fully qualified domain name*.

Configuring SSL in the System Configuration Wizard

1. In the System Configuration Wizard, on the HEAT Configuration Application page, ensure that the value in the HEAT Configuration Server Domain Name field uses a fully qualified domain name (FQDN).

   Do *not* use a machine name.

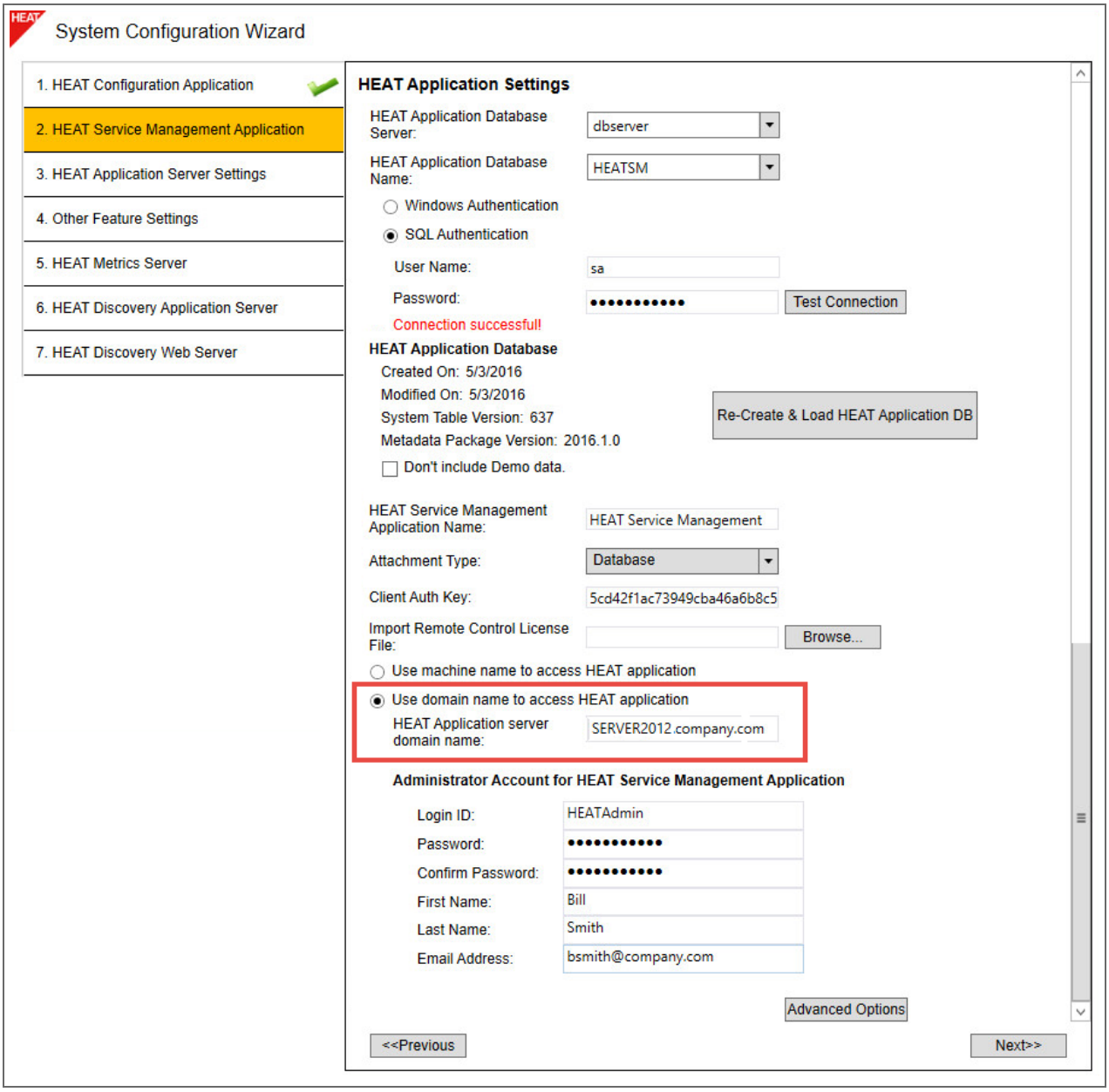
Fig. 59. HEAT Configuration Application Page



2. In the System Configuration Wizard, on the bottom of the HEAT Service Management Application page, ensure that you check **Use domain name to access HEAT Application** and enter an FQDN for the HEAT Application Server.

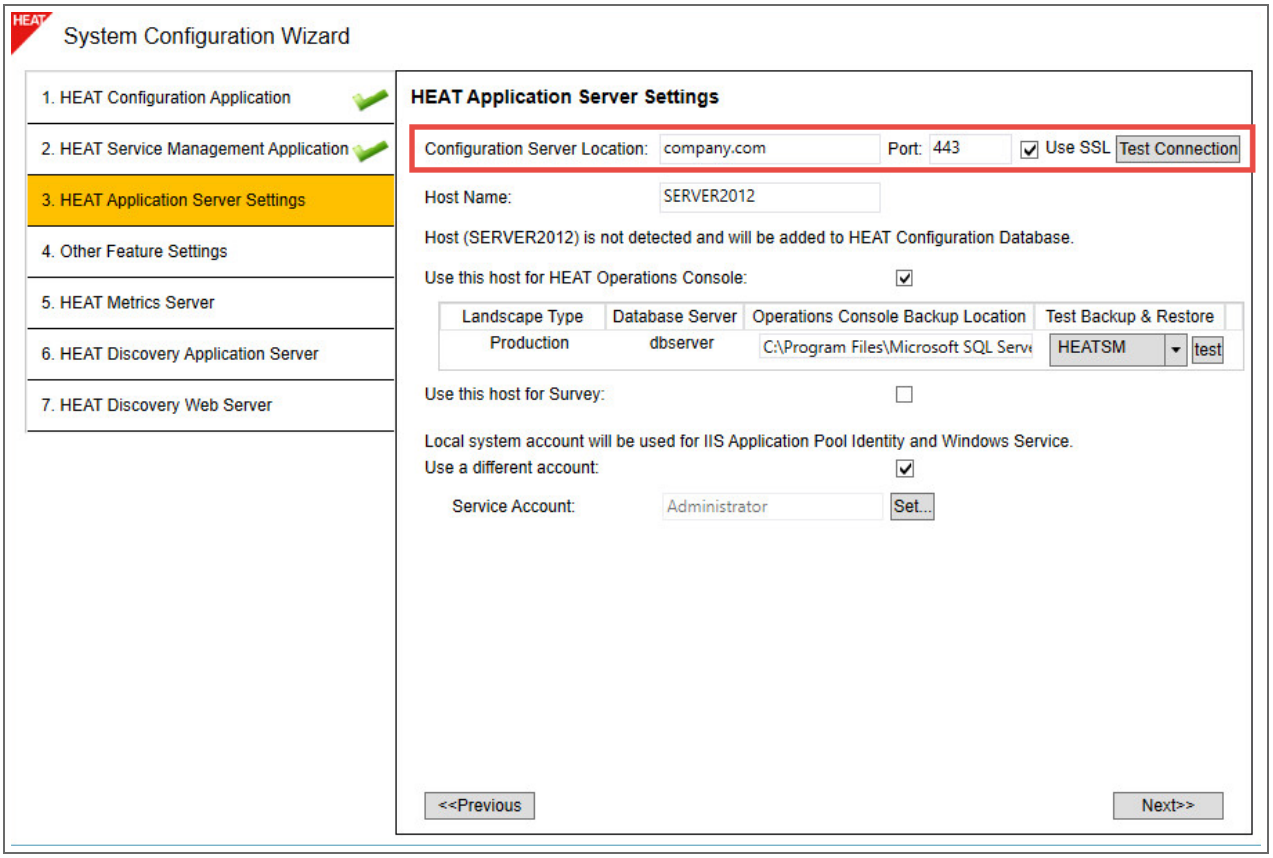
   Do *not* use a machine name.

Fig. 60. HEAT Service Management Application Page



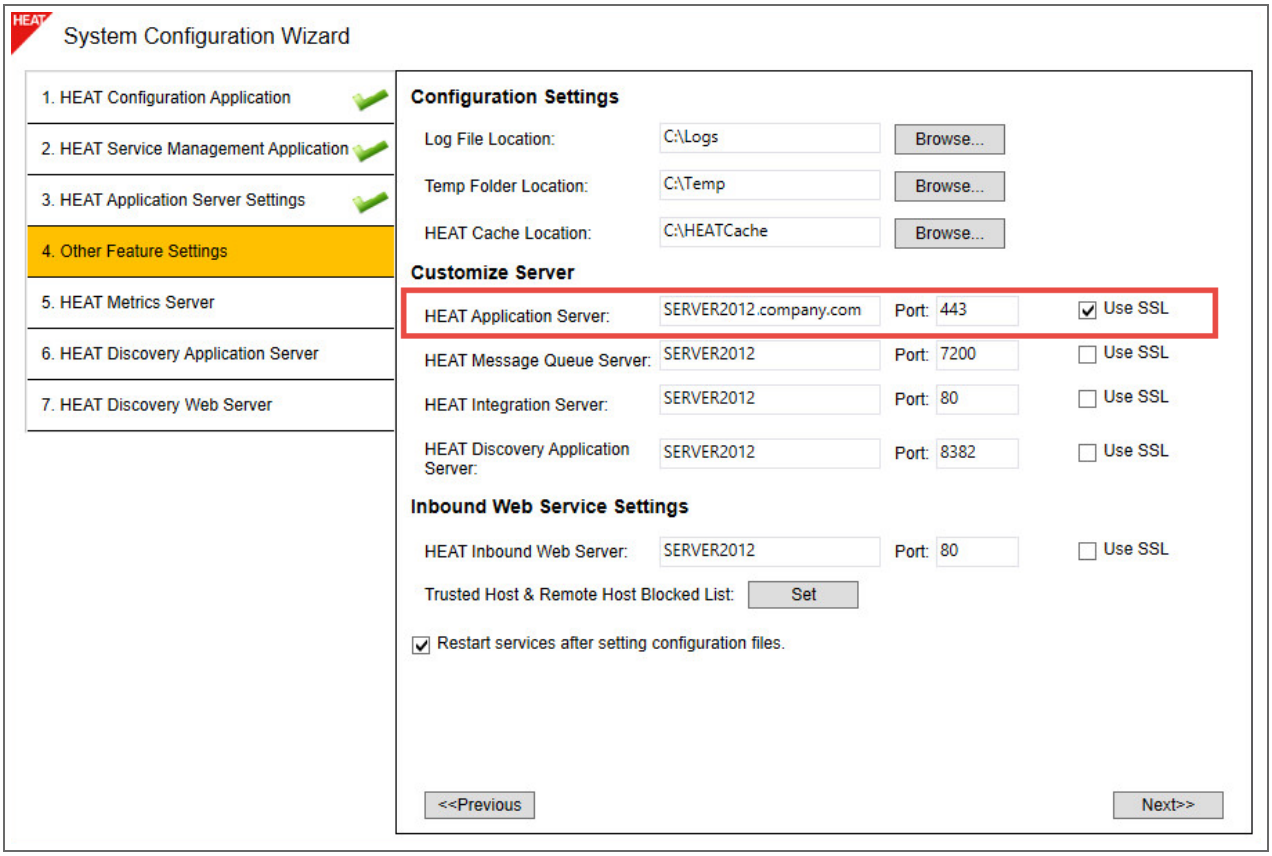
3. In the System Configuration Wizard, on the HEAT Application Server Settings page, do the following:
   - Ensure that you enter the FQDN in the Configuration Server Location field.
   - Check **Use SSL**.
   - Enter the FQDN in the Host Name field.

Fig. 61. HEAT Application Server Settings Page.



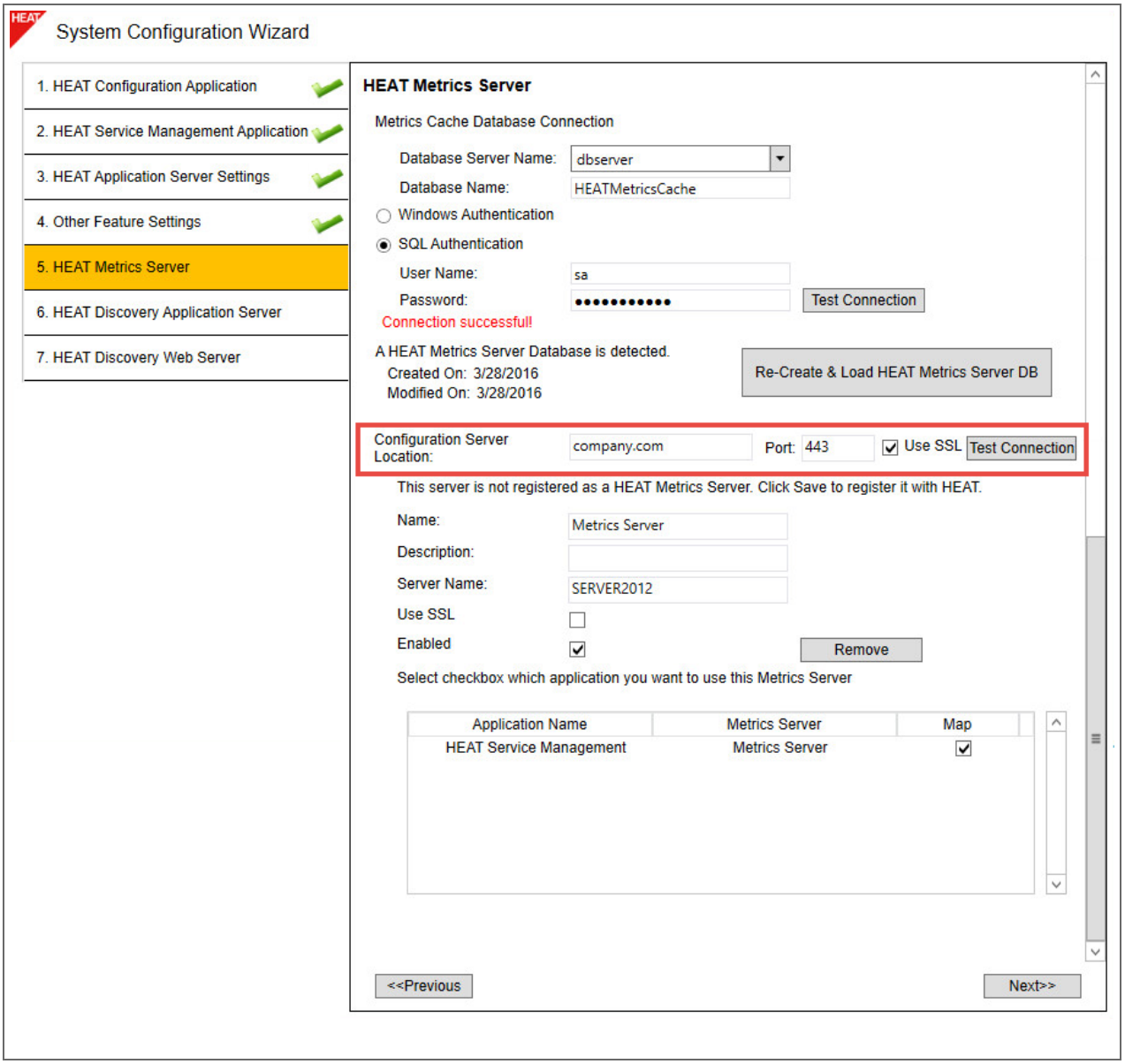
4. In the System Configuration Wizard, on the Other Feature Settings page, for the HEAT Application Server, check **Use SSL**.

Fig. 62. Other Feature Settings Page



5. In the System Configuration Wizard, on the HEAT Metrics Server page, check **Use SSL**.

Fig. 63. HEAT Metrics Server Page



Configuring SSL for the Application Database Only

To configure your HEAT Application Database (HEATSM) to use SSL but *not* the HEAT Configuration Database (ConfigDB), follow all of the steps in all three sections:

- Before You Begin
- Configuring SSL in Microsoft IIS Manager
- Configuring SSL in the System Configuration Wizard

Before You Begin

- Ensure that **https:\\localhost:443** displays the Microsoft IIS Manager welcome page.
- Ensure that your system has a valid certificate.

Configuring SSL in Microsoft IIS Manager

1. In Microsoft IIS Manager, navigate to **Sites > Default Web Site** and select **SSL Settings**

   On the SSL Settings page, ensure that **Require SSL** is *not* checked. Under client certificates, select **Ignore**.

2. Navigate to **Sites > HEAT** and select **SSL Settings**.

   On the SSL Settings page, check **Require SSL** and under client certificates, select **Ignore**.

3. Navigate to **Sites > CentralConfig** and select **SSL Settings**.

   On the SSL Settings page, ensure that **Require SSL** is NOT checked. Under client certificates, select **Ignore**.

4. Navigate to **Sites > FRSSurveyProxy** and select **SSL Settings**.

   On the SSL Settings page, check **Require SSL** and under client certificates, select **Ignore**.

5. Add an SSL port by doing the following:

   a. Navigate to **Sites > Default Web Site**, right click, and select **Edit Bindings...**.

   b. Click **Add...**.

   c. In the Add Site Binding dialog box, for the Type field, select **HTTPS** and in the SSL certificate field, select the certificate that you received from the Certificate Authority.

      The system automatically enters 443 for the port. In the SSL certificate field, enter a fully qualified domain name (FQDN).

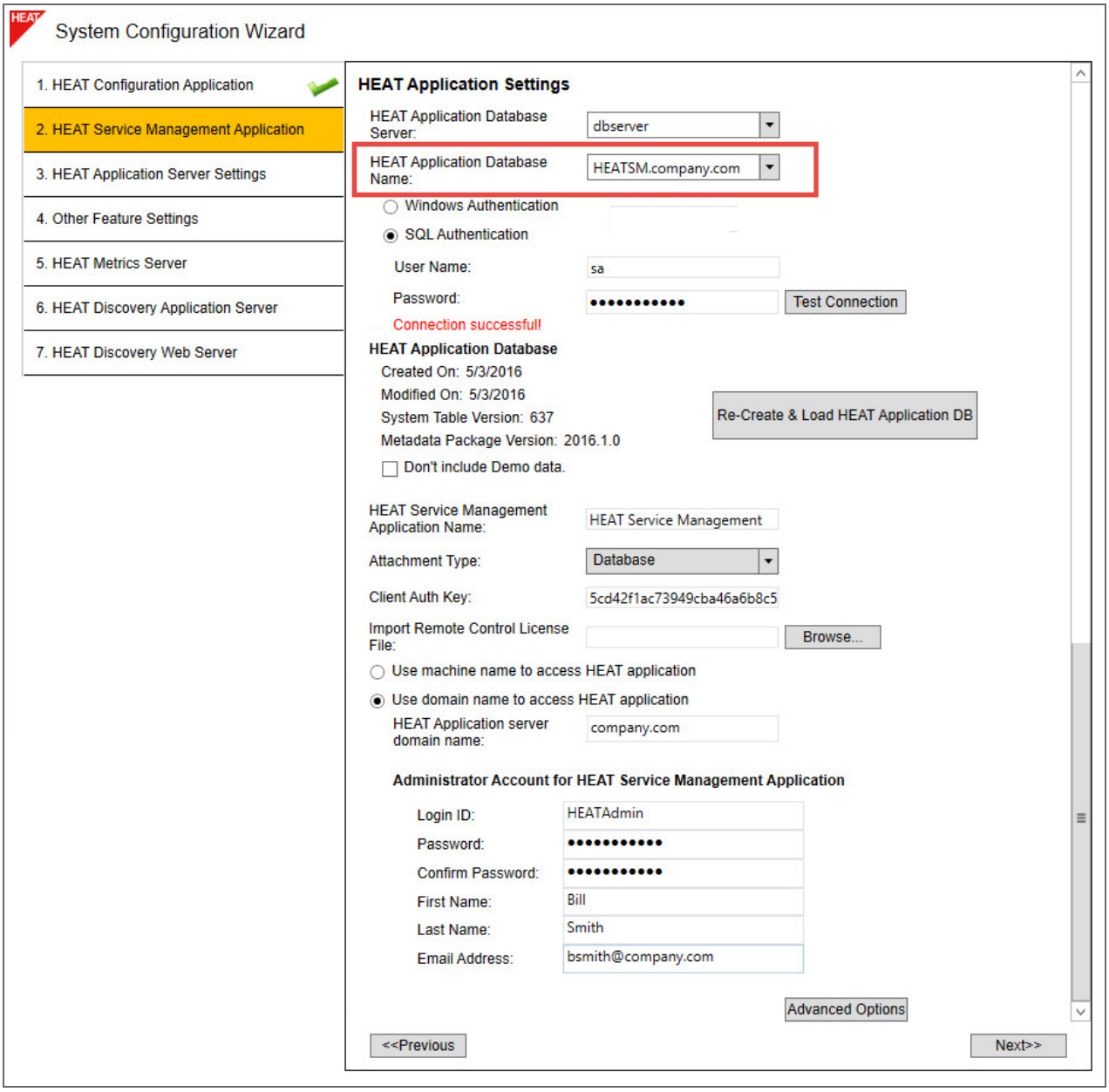
   d. Click **OK**.

6. Verify that you can access *https://localhost*.

Configuring SSL in the System Configuration Wizard

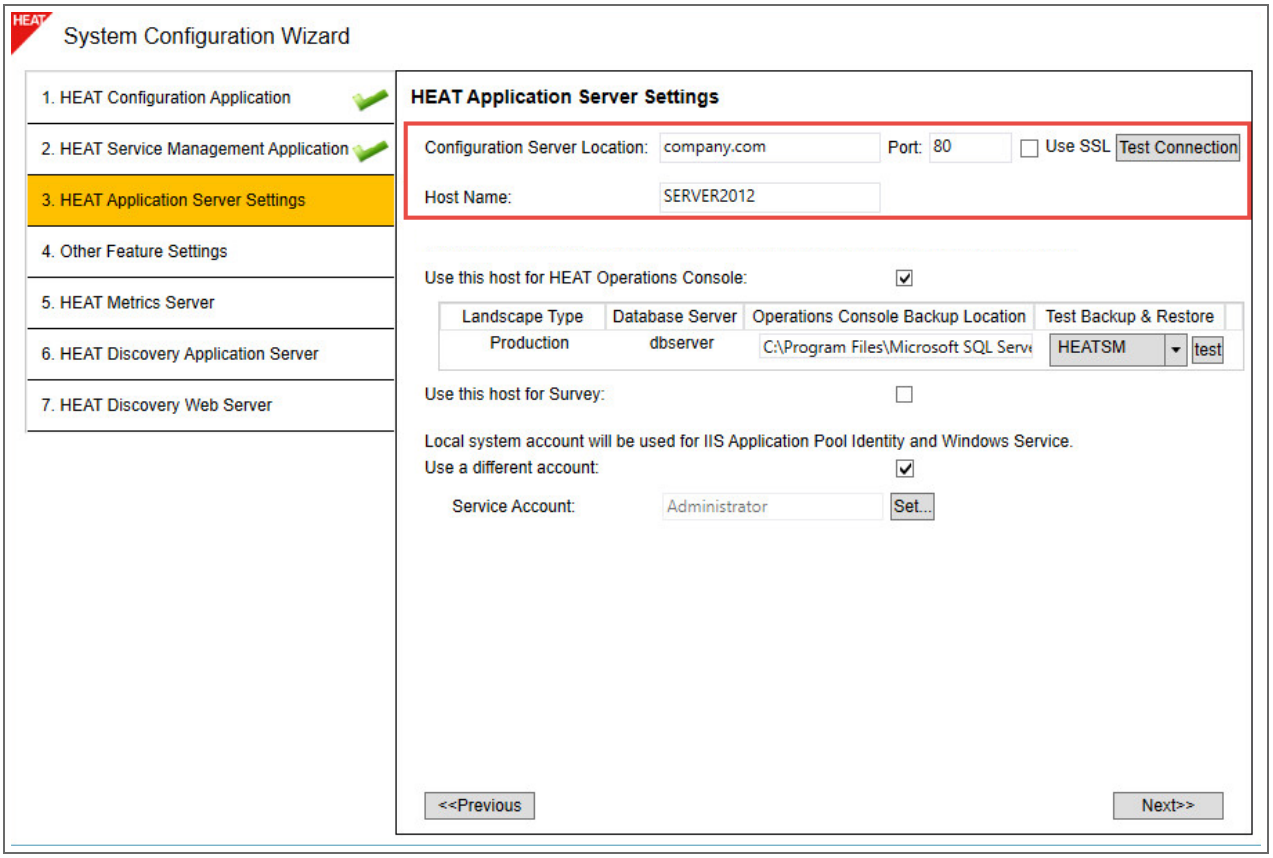
1. In the System Configuration Wizard, on the HEAT Service Management Application page, ensure that the HEAT Application Database uses a fully qualified domain name (FDQN), and not a machine name.

Fig. 64. HEAT Service Management Application Page



2. In the System Configuration Wizard, on the HEAT Application Server Settings page, do the following:
   - Ensure that **Use SSL** is *not* checked.
   - Ensure that you enter the FQDN in the Configuration Server Location field.
   - Ensure that you enter the *host name*, and not the FQDN, in the Host Name field.

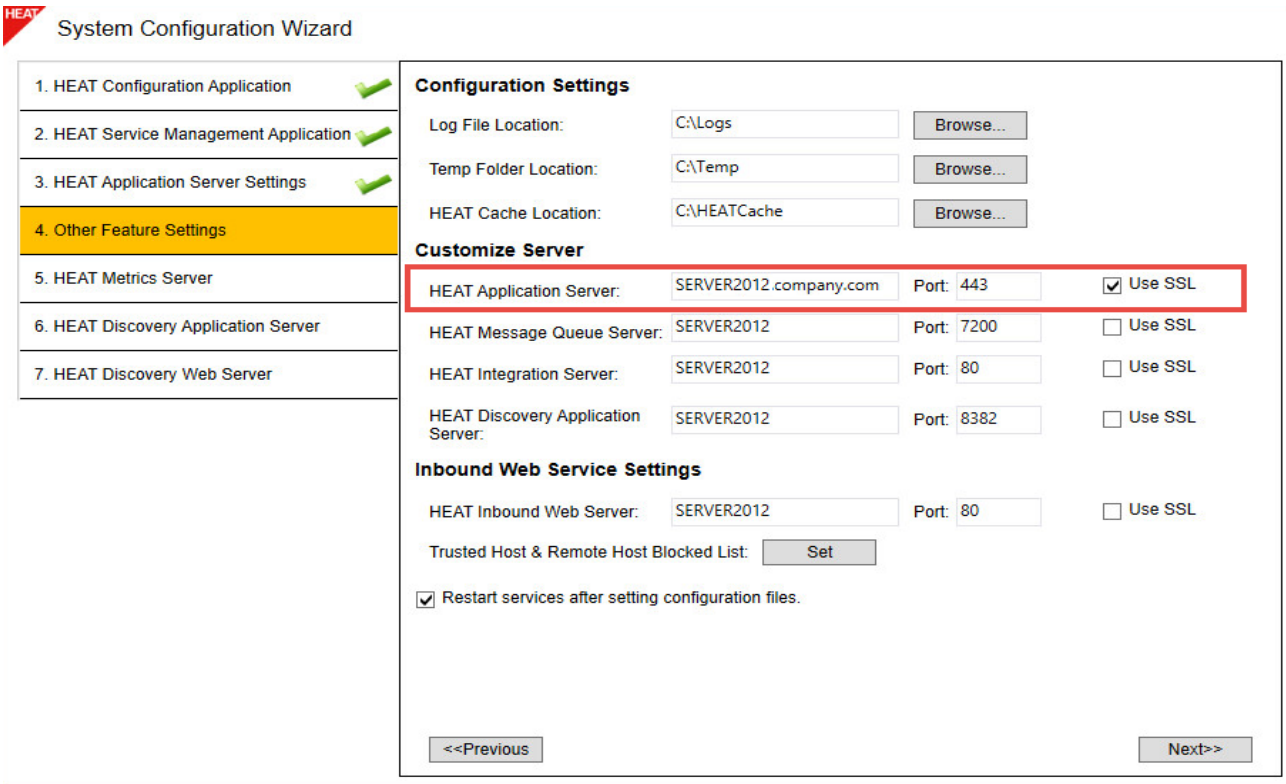
Fig. 65. HEAT Application Server Settings Page



3. In the System Configuration Wizard, on the Other Feature Settings page, check **Use SSL**.

   This is the *only* place in the wizard where you check **Use SSL**. Do *not* check **Use SSL** on any other page of the wizard.

Fig. 66. Other Feature Settings Page



Optional LDAP Configuration

The HEAT Service Management system supports the Lightweight Directory Access Protocol (LDAP). LDAP is configured from the HEAT Service Management Configuration Console. After installation, go to the online help and view the topic *Configuring LDAP Settings*.

Optional ADFS Configuration

HEAT Service Management system supports the Microsoft Active Directory Federation Services (ADFS). ADFS is configured from the HEAT Service Management Configuration Console. After installation, go to the online help and view the topic *Working with Single Sign On Authentication*.

Logging into HEAT Service Management

Standard Login

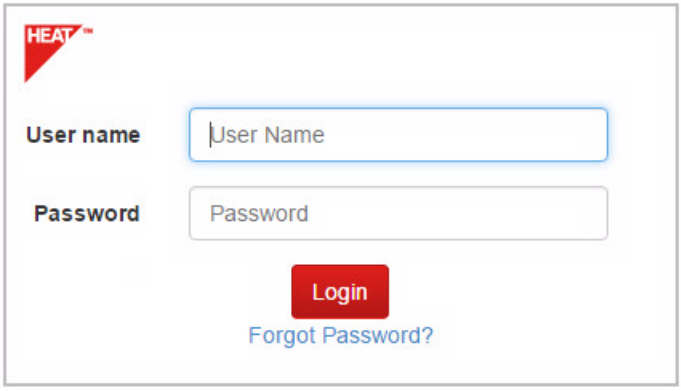
This login dialog box enables you to access HEAT Service Management on the host that you are logged into now.

You see this dialog box when you click the:

- HEAT Service Management Desktop shortcut

- Windows Apps Menu shortcut

In the dialog box, enter your user name and password, and then click **Login**.

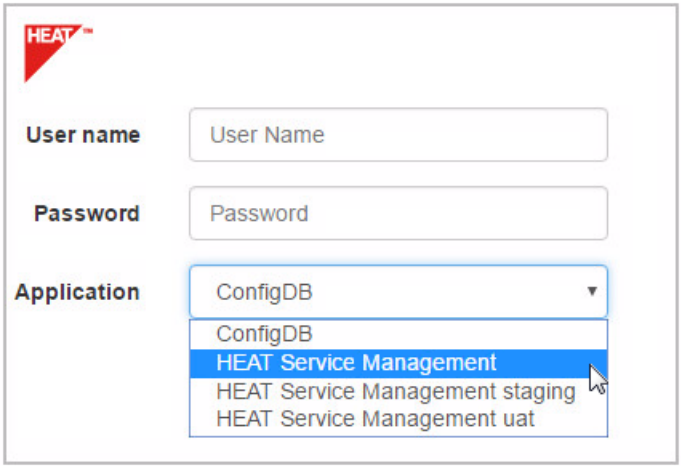


> The default user name for HEAT Service Management is *HEATAdmin*. You chose the password when you created the HEAT application database (HEATSM). See Creating a HEAT Application Database.

Login With Application Menu

This login dialog box enables you to access:

- HEAT Service Management on the host that you are logged into now.
- Individual tenants, if you have more than one.
- The HEAT Configuration Database (ConfigDB).



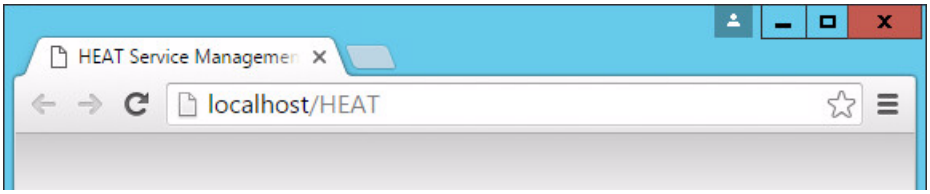
In the dialog box, enter your user name and password, choose the application, and then click **Login**.

> The default user name for the HEAT configuration database (ConfigDB) is *HSWAdmin*. You chose the password when you created the database. See Creating a HEAT Configuration Database
>
> The default user name for the HEAT Service Management is *HEATAdmin*. You chose the password when you created the HEAT application database (HEATSM). See Creating a HEAT Application Database.

To see the login dialog box with application menu:

- Open a directory window and enter **http://localhost/HEAT**.

- Open a browser window and enter **localhost/HEAT**.



- Edit the Desktop and Windows App Menu shortcuts as described below.

Editing Shortcuts

You can edit the Desktop and Windows App Menu shortcuts to display the login dialog box with application menu.

1. Go to C:\Program Files\HEAT Software\HEAT\AppServer\.
2. Right-click the **HEAT.url** file, and choose **Properties**.
3. Change the host name and port number to *localhost*. Example:

   Before: *http://SERVER2012:80/HEAT*

   After: *http://localhost/HEAT*
4. Click **OK**.

Adding Features and Changing Settings

Adding and Deleting Features

The action of adding or deleting features to an existing HEAT Service Management system is much easier than a system upgrade.

If you have an Enterprise Production Deployment, your action might apply to just one, some, or all of the servers, depending on the features being added or deleted.

> If you are adding servers to your deployment, follow the instructions under Installing the HEAT Service Management System

To add features or delete features:

1. Access the installation folder on the HEAT Service Management product CD and run **HEATServiceManagement.exe.**

   The installer checks for the prerequisite software components. If any of those components is not installed, the system prompts you to install them now.

2. Select **Install** at the prompt.

   Installation of the prerequisite software can take several minutes.

   If you are prompted to restart the system, select **Yes**.

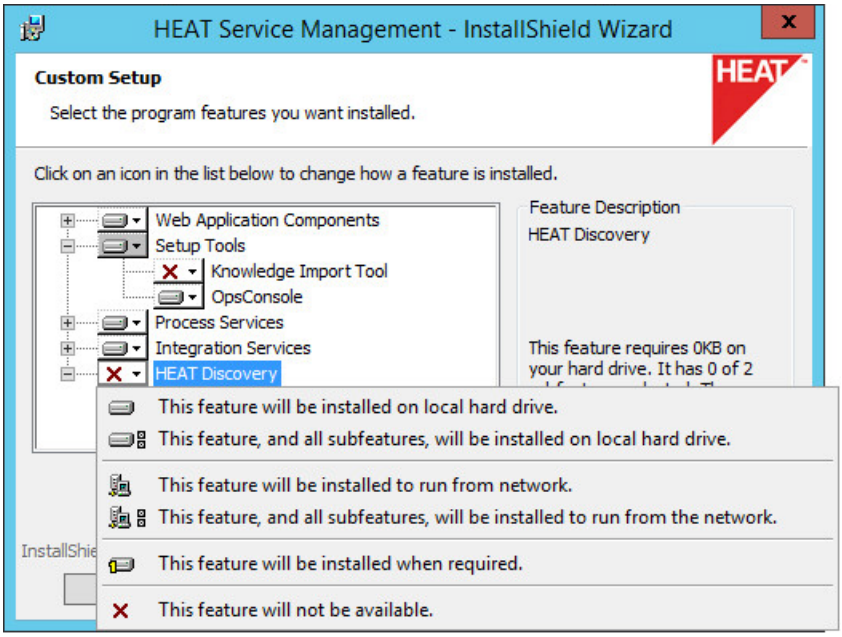
   The HEAT Service ManagementWelcome dialog box appears.

3. Click **Next**.

   The Program Maintenance dialog box appears.

4. Choose **Modify** and click **Next**.

   The Custom Setup dialog box appears.



5. Click the down arrow on each feature and make your selection.

> Adding features requires more hard-drive space. If there is not enough space on your hard drive, the installer displays a message.

6. Click **Next** and then click **Install**.

   The HEAT Service Management system installation begins. A status dialog box shows the installation progress of each component over the next few minutes.

   If you cancel the installation at any time, click **Finish** to close the installer.

   When the components are installed, the System Configuration Wizard launches automatically.

7. Go to Configuring the HEAT Service Management System for instructions about using the wizard.

Changing Feature Settings

To change settings without adding or deleting features, you do not need the HEAT Service Management product CD.

1. In the Start menu, click the down arrow to see the Apps menu, and then click **System Configuration Wizard**.

You must click **Run as administrator** when you start the wizard manually.

2. Go to Configuring the HEAT Service Management System for instructions about using the wizard.

Upgrading HEAT Service Management from an Earlier Release

About Upgrading

When you upgrade the HEAT Service Management system, you must upgrade both HEAT Service Management and HEAT Reporting Services at the same time. The versions of the software for both HEAT Service Management and HEAT Reporting Services must be the same.

During a HEAT Service Management system upgrade, you can upgrade the development, staging, or UAT landscapes and test them without affecting the production landscape. After you have verified that the development, staging, or UAT landscape upgrade was successful, then go ahead with production landscape upgrade.

Licenses

Previous versions of HEAT Service Management used a different licensing structure. When you upgrade to HEAT Service Management Release 2016.1, the system automatically uses the licenses that you used in the previous release.

In the System Configuration Wizard, on the HEAT Configuration Application page, there are fields to enter the license files. The system populates these fields automatically based on your previous license file. See Configuring HEAT.

HEAT DSM Integration

If your HEAT Service Management system has DSM integration, you must configure and verify your DSM integration for the new release. After you have upgraded HEAT Service Management:

1. Sign into https://support.heatsoftware.com/, then go to **More > AppStore > DSM Integration**.
2. Download the DSM Integration Upgrade Package for Release 2016.1 and the accompanying instructions.
3. Follow the instructions to configure and verify your DSM integration.

For more information about DSM, see *Working with HEAT DSM* in the online help and the *DSM HEAT Integration – HEAT Desktop and Server Management Booklet* for Release 2016.1. See Related Documentation.

> The DSM Integration Service feature component from the installer is only required for DSM integrations prior to HEAT Service Management Release 2015.2.
>
> For more information, see *Working with HEAT DSM* in the HEAT Service Management online help.

Upgrading from Release 2015.2.x

For this upgrade, you can just install Release 2016.1 over Release 2015.2.x.

Perform these steps on the system that hosts the HEAT Service Management components:

1. Back up the following items:
   - HEAT Configuration Database (ConfigDB)
   - HEAT Application Database (HEATSM)
   - Attachment folder (if used)
2. Access the installation folder on the HEAT Software product CD or download folder and run **HEATServiceManagement.exe.**

   The installer checks for the prerequisite software components. If any of those components is not installed, the system prompts you to install them now.
3. Click **Install** at the prompt.

   Installation of the prerequisite software can take several minutes.

   If you are prompted to restart the system, click **Yes**.
4. In the Upgrade confirmation dialog box, click **Yes**.

   The Welcome dialog box appears. The installer checks for space and other requirements before the Next button becomes available.
5. In the Welcome dialog box, click **Next**.

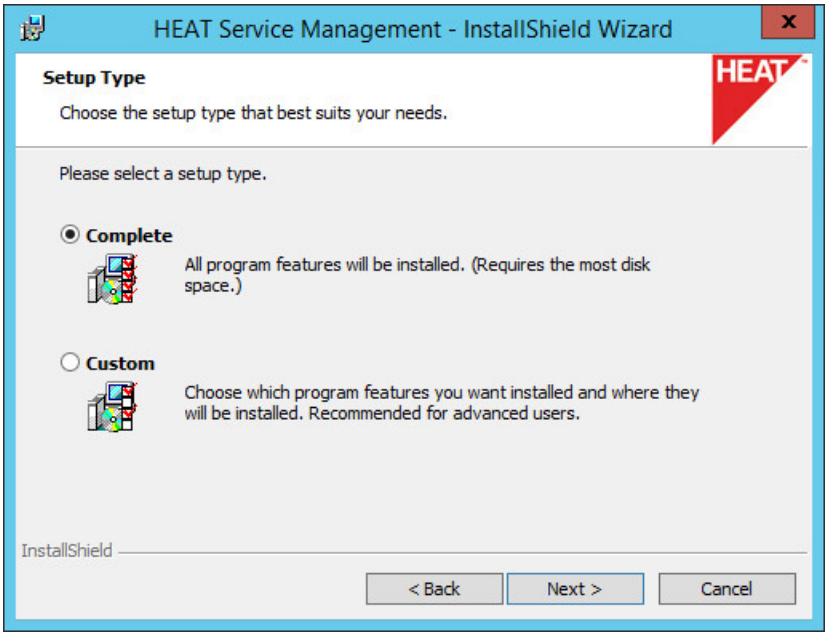
   The License Agreement dialog box appears.
6. Choose **I accept the terms in the license agreement** and click **Next**. The Destination Folder dialog box appears.

7. Click **Next** to accept the default installation folder, or click **Change** and select a different folder.

   The Setup Type dialog box appears.

8. Your selection of features from the Setup Type dialog box depends on the role of the individual host in your deployment plan.
   - For Demonstration or Proof-of-Concept Deployment, choose **Complete**.
   - For the Minimum Production Deployment, choose **Complete**.

Fig. 67. Setup Type Dialog Box: Install All Features

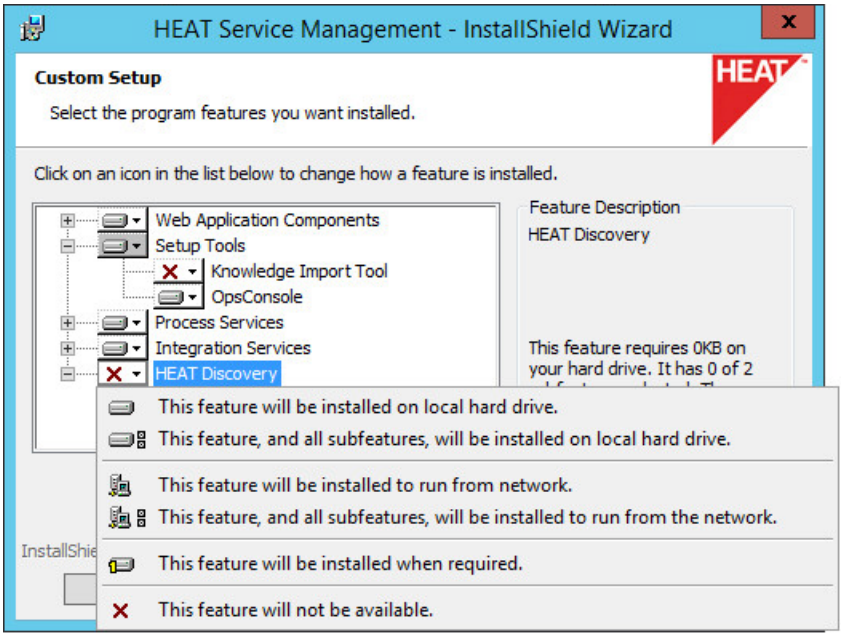


   - For the Enterprise Production Deployment, your choice depends on the role of the host:
     - Processing Servers – Production, choose **Custom** and click **Next**, and then install all components *except* for the Ops Console.
     - Processing Servers – Staging / UAT, choose **Complete**.
     - UI Servers, choose **Custom** and click **Next**, and then install *only* the Application Server.

> If your deployment includes different processing servers for production, staging, and UAT, you must install the HEAT License Manager in every one of those landscapes.

> For the Enterprise Production Deployment, you can choose **Complete** and install all HEAT Service Management features on all of your servers. But doing that takes up more disk space than necessary.

Fig. 68. Setup Type Dialog Box: Custom Setup



> If there is any component you do not want to install, click the down arrow next to the server icon next to the category name, highlight the component, right click and select **This feature will not be available**. See Fig. 68.

> If your deployment includes HEAT DSM integration, you do not need to install the DSM Integration Service because that function has been incorporated into HEAT Service Management since Release 2015.2.

9. Click **Next**.

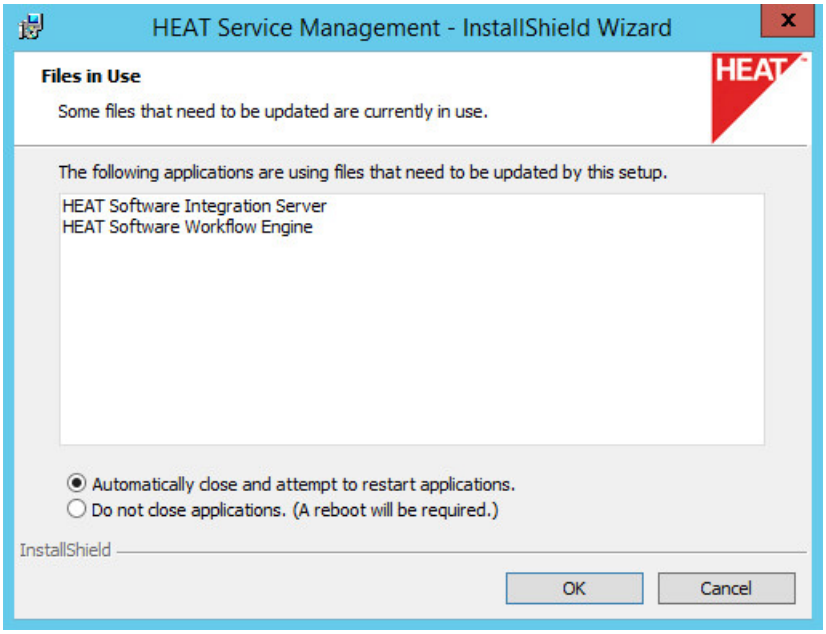
   The system displays the Ready to Install the Program dialog box.

10. Click **Install**.

    The HEAT Service Management file installation begins. A status dialog box appears, showing the installation progress of each module over the next few minutes.

    If the installer displays a dialog box saying that a reboot is required after installation, click **OK**.

If the installer displays a dialog box saying that some of the files that need to be updated are currently in use, choose **Automatically close and attempt to restart applications** and click **OK**.



When the installation is completed, the system displays the System Configuration Wizard.

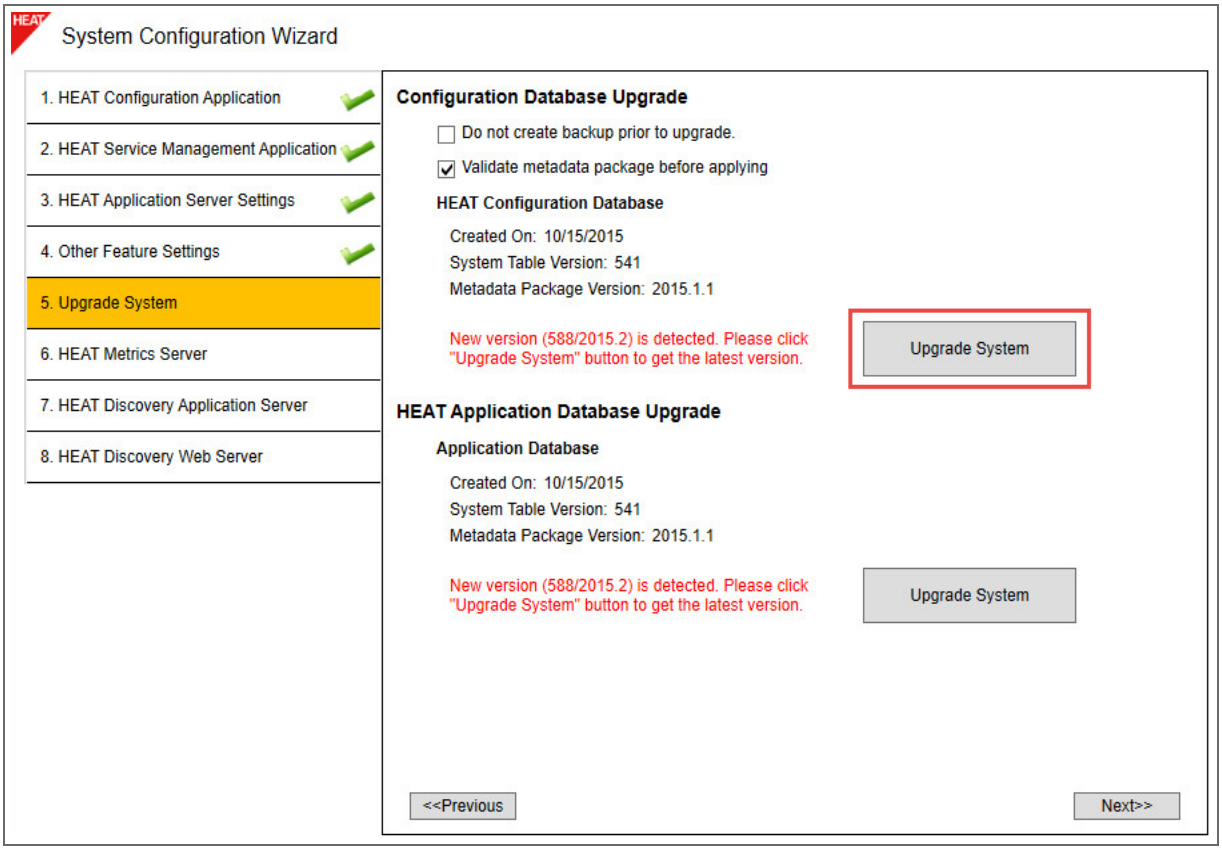
11. Go through the pages in the wizard making any changes that might be necessary:

    If you already have an existing administrator account, you do not need to create a new account. Just enter the information for your existing administrator account.

12. Continue through the wizard until you get to the Upgrade System page.

    On the Upgrade System page, notice that the System Table Version and Metadata package Version for the HEAT Configuration Database are not the latest versions. See Fig. 69.

Fig. 69. Upgrade System Page



13. Click the top **Upgrade System** button.
14. When prompted, enter the administrator role credentials for the HEAT Configuration Database and click **OK**.
15. If your deployment has additional databases to upgrade, repeat steps 13 and 14 until:
    a. All of your databases have been upgraded:
        - Configuration databases (ConfigDB)
        - Application databases (HEATSM)
    b. All of your environments have been upgraded:
        - Production
        - Staging
        - UAT
        - Development (optional combination of staging and UAT)
16. Click **Finish**.

17. Restart the host server.

    If the HEAT Reporting feature is installed, you must upgrade it to the match the release number of your HEAT Service Management system.

18. Optional. Access the installation folder on the HEAT Software product CD or download folder and run **HEATReportingService.exe** to upgrade HEAT Reporting Services.

Upgrading from Release 2014.3

From Release 2014.3, you must first upgrade to Release 2015.1 and then 2015.2, before can upgrade to Release 2016.1.

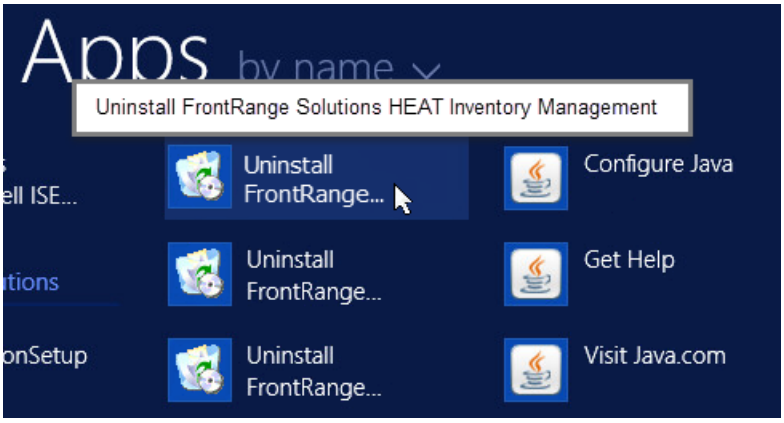
To upgrade the HEAT Service Management system, perform these steps on the system that hosts all HEAT Service Management components:

Uninstalling HEAT Inventory Management

> Beginning with Release 2015.1, HEAT Inventory Management is known as HEAT Discovery.

Perform these steps on the system that hosts the HEAT Service Management system:

1. Click the arrow at the bottom of the Start menu to view the Apps menu.
2. Mouse-over the Uninstall FrontRange... icons to find the one for HEAT Inventory Management.



3. Click the **Uninstall FrontRange Solutions HEAT Inventory Management** icon.

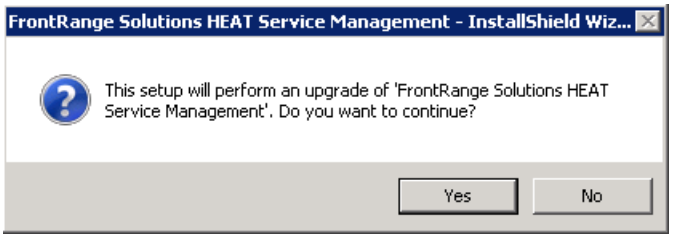
4. In the confirmation dialog box, click **Yes**.

Installing HEAT Service Management 2015.1

Perform these steps on the system that hosts the HEAT Service Management system:

1. Back up the following items:
   - HEAT Configuration Database (ConfigDB)
   - HEAT Application Database (HEATSM)
   - Attachment folder (if used)
2. Access the installation folder on the HEAT Software product CD or download folder and run **HEATServiceManagement.exe.**

   When the system detects another version of the HEAT Service Management system already installed, it asks you if you want to upgrade.



3. Click **Yes**.
4. In the Welcome dialog box, click **Next**.

   The License Agreement dialog box appears.
5. Select **I accept the terms in the license agreement** and click **Next**.

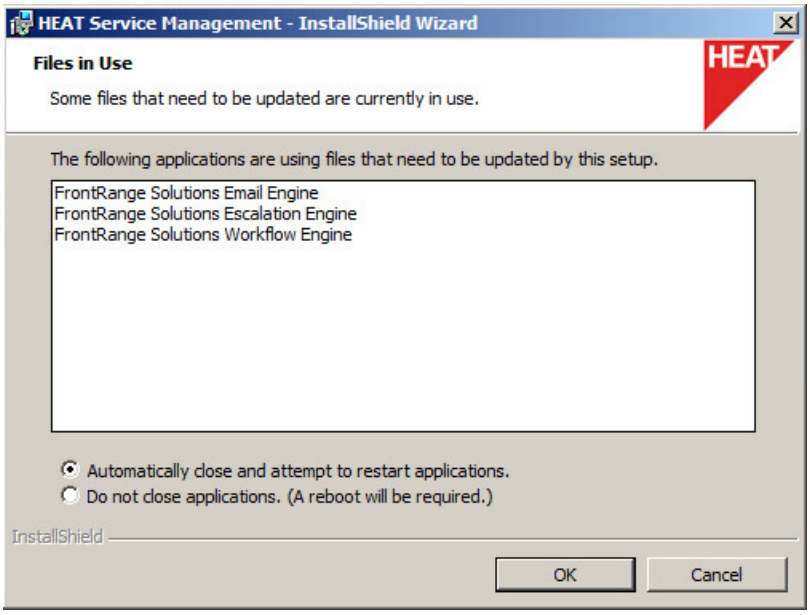
   The Destination Folder dialog box appears.
6. Click **Next** to accept the default installation folder, or click **Change** and select a different folder.

   The Setup Type dialog box appears.
7. Select **Complete** for the installation type and click **Next**.

   The Ready to Install the Program dialog box appears.
8. Click **Install**.

   The HEAT Service Management file installation begins. A status dialog box appears, showing the installation progress of each module over the next few minutes.

If the installer displays a dialog box saying that some of the files that need to be updated are currently in use, choose **Automatically close and attempt to restart applications** and click **OK**.



When the installation is completed, the system displays the System Configuration Wizard.

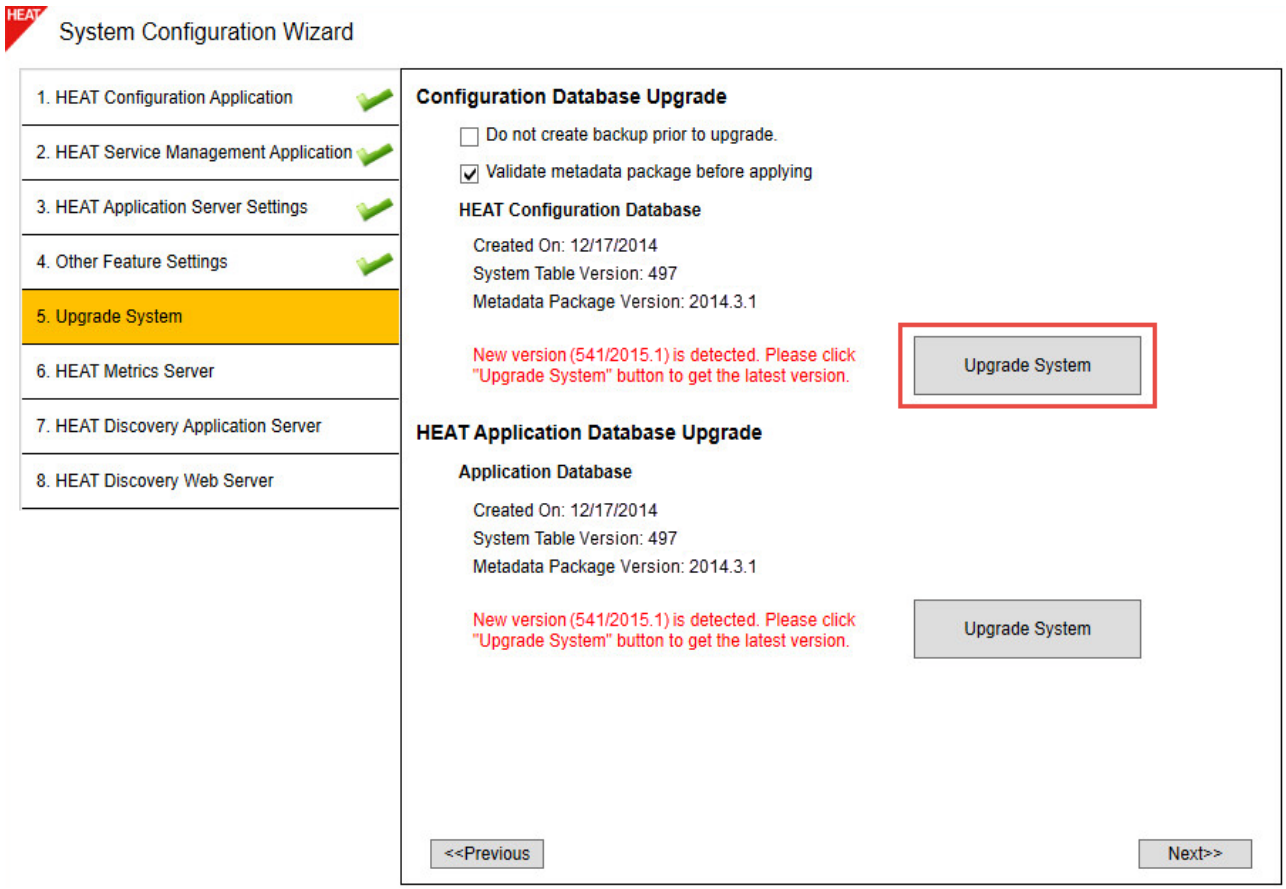
9. Go through the pages in the wizard making any changes that might be necessary:

   If you already have an existing administrator account, you do not need to create a new account. Just enter the information for your existing administrator account.

10. Continue through the wizard until you get to the Upgrade System page.

    On the Upgrade System page, notice that the system table version for the HEAT Configuration Database is not the latest version, as shown in Fig. 70.

Fig. 70. Upgrade System Page



11. Click the top **Upgrade System** button.
12. When prompted, enter the administrator role credentials for the HEAT Configuration Database and click **OK**.
13. If your deployment has additional databases to upgrade, repeat steps 11 and 12 until:
    a. All of your databases have been upgraded:
       - Configuration databases (ConfigDB)
       - Application databases (HEATSM)
    b. All of your environments have been upgraded:
       - Production
       - Staging
       - UAT
       - Development (optional combination of staging and UAT)

14. Click **Finish**.
15. Restart the host server.
16. Access the installation folder on the HEAT Software product CD or download folder and run **HEATReportingService.exe** to upgrade HEAT Reporting Services.
17. Repeat the steps above to upgrade to Release 2015.2.
18. Go to Upgrading from Release 2015.2.x.

Upgrading from Earlier Releases

To upgrade to HEAT Service Management Release 2016.1 from Release 2014.3.x and earlier, you must upgrade your system to every release between your currently installed release and Release 2015.2 in sequential order. See the table below.

Upgrade From Release	Uninstall	Install Release
2013.1.x	The current HEAT Service Management and HEAT Inventory Management, if present.	2013.2.2
2013.2.x		2014.1.1
2014.1.x		2014.2.1
2014.2.x		2014.3.1
2014.3.x	HEAT Inventory Management, if present.	2015.1
2015.1.x	Nothing.	2015.2
2015.2.x		2016.1

Using the HEAT License Manager

About the HEAT License Manager

HEAT License Manager was introduced in HEAT Service Management Release 2015.1, and is included in Release 2016.1. Use HEAT License Manager to track your license usage.

For Demonstration or Proof-of-Concept Deployment and Minimum Production Deployment, the HEAT License Manager is installed on the HEAT server along with the other HEAT Service Management features.

For Enterprise Production Deployment, the HEAT License Manager is installed on the HEAT processing servers along with the other HEAT Service Management features.

During installation, the System Configuration Wizard enabled you to import one production license, one non-production license, or both, depending on your landscape environment. You can import additional licenses, if needed. See Importing Licenses.

Types of Licenses

The HEAT Service Management system mainly uses production and non-production licenses:

License Type	Description	Expiration
Production	Used to access the production landscape of a tenant.	Does not expire unless the MAC address is unspecified. In that instance, the license expires after 30 days. If you move the license to a new server with a different MAC address, then you must acquire a new license tied to the new MAC address.

Development	A non-production license used to access the staging and UAT landscapes.	Expires according to the maintenance agreement between your organization and HEAT Software USA, Inc..
Not For Resale	A non-production license, mainly used by HEAT Service Management partners. It can also be used for staging, UAT, or testing if you already have development licenses.	Expires after 30 days if you do not specify the MAC address. After you set the MAC address, it expires according to the maintenance agreement between your organization and HEAT Software USA, Inc..
Evaluation	A non-production license used by potential customers. Has the maximum number of named and concurrent user licenses.	Expires after 30 days. Is not associated with a MAC address.

There are two types of user licenses, for both production and non-production licenses:

- Concurrent licenses, for any user who is currently logged into the system.

  This is a shared pool of licenses. The concurrent license that is used is specified by the bundle that is specified for each role.

- Named user licenses, which are specific to a certain user.

  The user can log in to the system from many places at one time and it is counted as only one license. You specify which users are named users in the employee record, and you can change which employees get a named user license at any time.

About License Bundles

- List of License Bundles and Components
- Assigning a Bundled License to a Role
- License Tracking in HEAT

HEAT Software USA, Inc. has defined several license bundles, which are sets of modules, or user interfaces. Each role is associated with a license bundle.

List of License Bundles and Components

License Bundle	Components
HelpDesk	■ Knowledge ■ Incident ■ Problem ■ Self Service ■ Service Catalog
ServiceDesk	■ Knowledge ■ Availability ■ Change ■ Configuration ■ Incident ■ Problem ■ Self Service ■ Service Catalog
ServiceManagement	■ Knowledge ■ Availability ■ Change ■ Configuration ■ Incident ■ Problem ■ Release ■ Service Level Management ■ Self Service ■ Service Catalog
ServiceCatalog	■ Self Service ■ Service Catalog ■ Incident ■ Knowledge
SelfService	■ Self Service ■ Service Catalog ■ Incident ■ Knowledge

The following are considered license add-on modules:

Add-On Module	Components
Discovery	HEAT Discovery
Voice	HEAT Voice
Mobile	HEAT Mobil

Assigning a Bundled License to a Role

To assign a bundled license to a role, follow the procedure in the *Assigning a Bundled License to a Role* topic in the HEAT Service Management online help. By default, roles do not have a license bundle associated with them, so you must assign a license bundle to each role manually. If you do not, you may get license violation errors logged in your system even though you have the correct licenses.

> If you have imported licenses but do not see the correct license bundles displayed in the Configuration Console, clear the validation cache.
>
> Go to **Configure > Cache Management** and then click **Reset cached validation lists only**.
>
> See the HEAT Service Management online help for more information.

License Tracking in HEAT

In previous releases of HEAT Service Management, the system used an automatic license usage reporting system. In HEAT Service Management Release 2015.1, we updated the license tracking capability.

You cannot use the HEAT Service Management system unless you have a license. When you purchased the HEAT Service Management system, you also purchased a set number of licenses. If needed, you can purchase additional licenses.

If you consume more seats than you have licenses for, the system does not log you out. It does, however, log an event into a log file. For example, if you have 10 concurrent licenses and try to log in 11 times, the system allows it.

Due to the way that web browsers work, it is very possible for one user to consume more than one license. For example, if a user logs in to the HEAT Service Management system using Microsoft Internet Explorer and then opens Google Chrome and logs in again, another license is consumed. If this happens, the system logs a license violation error that you can view in the HEAT License Manager on the System Audit Information page.

Using the HEAT License Manager

Logging Into the HEAT License Manager

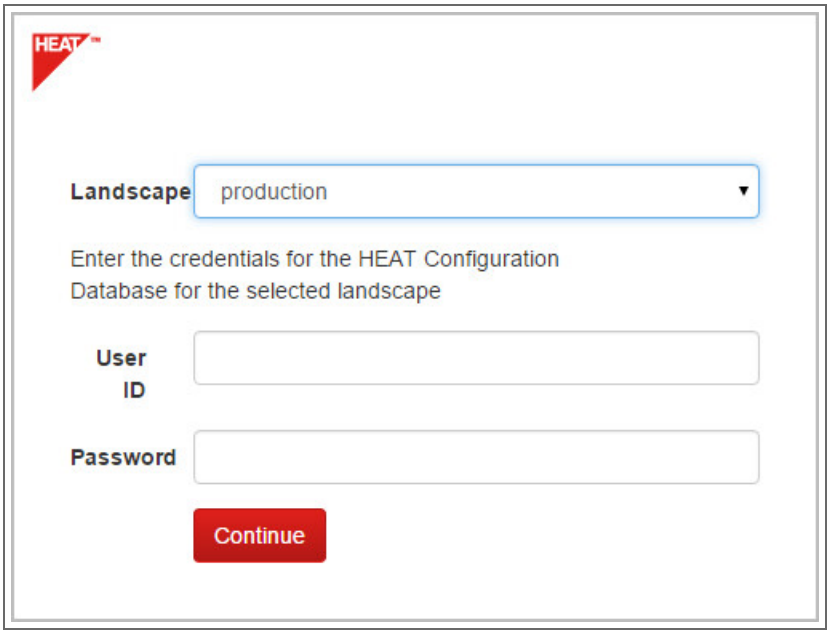
The HEAT License Manager uses the same credentials that are used to access the HEAT Configuration Database.

To log into the HEAT License Manager:

1. In the Start menu, click the down arrow to see the Apps menu, and then click **HEAT License Server**.

2. Select a landscape.
3. Enter your user ID and password.
4. Click **Continue**.

Fig. 71. HEAT License Manager Log In Screen

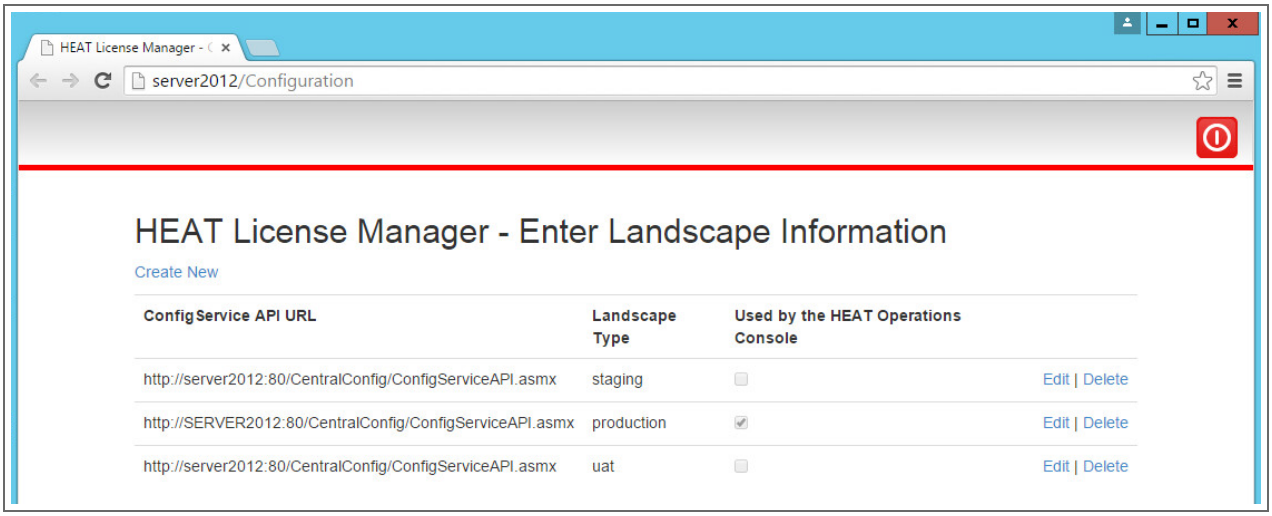


Configuring Landscape Information

You can create, edit, and delete information about the landscapes to which the HEAT License Manager is associated.

1. Log into the HEAT License Manager.
2. Click either **Configure Landscapes** in the top right corner of the login page or click **Configure Landscape Information** from any page in the HEAT License Manager. The system opens a new browser window and displays the Enter Landscape Information page.

Fig. 72. Enter Landscape Information Page



3. To allow the HEAT Operations Console to use this landscape, check **Used by the HEAT Operations Console** on the line associated with the landscape.

   The HEAT Operations Console can only use one landscape at a time.

4. To edit the information for an existing landscape, do the following:

   a. Click **Edit** on the line associated with the landscape. The system displays the Edit Landscape page.

   b. Make changes as needed.

   c. Click **Save**.

5. To delete the landscape information, do the following:

   a. Click **Delete** on the line associated with the landscape.

   b. Click **Delete** at the confirmation message.

6. When you configured the HEAT Service Management system using the System Configuration Wizard, the system automatically created a link to the landscape.

   Therefore, in general, you do not need to add a link to a landscape. However, if you do need to add a new link to a landscape, follow these steps:

   a. Click **Create New**. The system displays the Create Landscape page.

   b. In the ConfigService API URL field, enter the URL of the HEAT Configuration Server.

c. Check **Used by the HEAT Operations Console** if the system should use this link to connect with the HEAT Operations Console. The HEAT Operations Console can only connect to one landscape.

d. Click **Load Landscape Types** and then select a landscape from the drop-down list.

e. Click **Create**.

Importing Licenses

When you initially configured the HEAT License Manager in the System Configuration Wizard, you imported either one production license file, one non-production license file, or both. (See Configuring the HEAT Service Management System.)

If your deployment has multiple HEAT License Managers, when you import a license, ensure that you are importing it on the server that has the same MAC address as the license file.

For example, say you installed HEAT License Managers on:

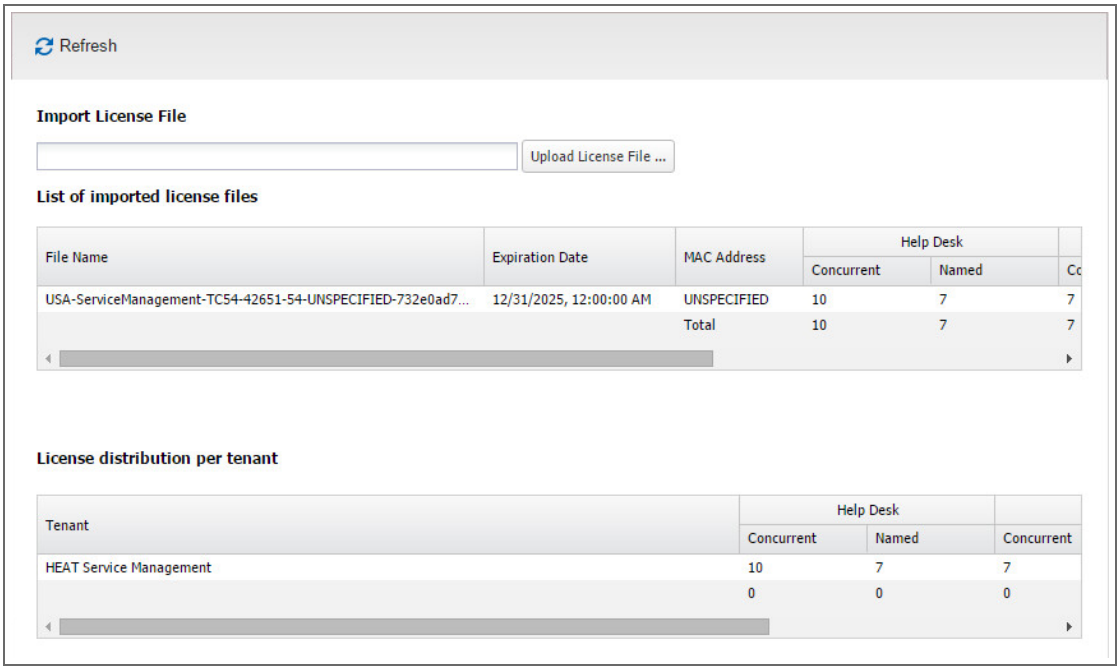
- HEAT Application Server 1 with a MAC address of AA:10:23:10:00
- HEAT Application Server 2 with a MAC address of BB:10:23:10:00

Then you ask for and receive a production license for MAC address AA:10:23:10:00. You import the license from the HEAT License Manager that is installed on HEAT Application Server 1. After you have imported the license, the HEAT License Managers on both HEAT application servers respect the license. You do not need a second license for the second HEAT Application Server.

To import additional license files, follow these steps:

1. Log into the HEAT License Manager.
2. Click **Licensing > Import License Files**. The system displays the Licensing - Import License Files page.

Fig. 73. Import License Files Page



3. Click **Upload License File...**.
4. Navigate to and select a license file and click **Open**.

   The system adds the license to the system. This page shows the following information:

List of Imported License Files

This table contains information about each license file that you have uploaded.

Field	Description
File Name	The name of the license file that you uploaded.
Expiration Date	The expiration date of the license file.
MAC Address	The MAC address associated with the license file.
Self Service	Self Service is the bundle name. The number of Self Service licenses contained in the license file. Broken into concurrent and named licenses.
Service Catalog	Service Catalog is the bundle name. The number of Service Catalog licenses contained in the license file. Broken into concurrent and named licenses.
Service Management	Service Management is the bundle name. The number of Service Management licenses contained in the license file. Broken into concurrent and named licenses.

5. Click the Delete icon to remove the license file and its associated licenses from the HEAT License Manager.

6. Click the Show Details icon to display the details.

   The details contain the following information:

Field	Description
Bundle	The name of the bundle.
Name	The name of the module.
Named Licenses	The number of named licenses contained in the license file.
Concurrent Licenses	The number of concurrent licenses contained in the license file.
Expiration Date	The date when the license expires.

License Distribution per Tenant

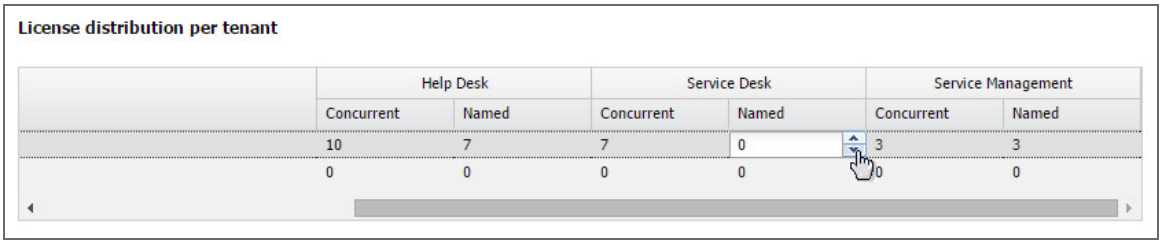
If your deployment only has one tenant, the information displayed here is the same as in the List of imported license files section.

If your deployment has more than one tenant, this table displays the license distribution across the tenants. How to distribute the licenses among multiple tenants.

Field	Description
Tenant	The name of the tenant.
Self Service	The number of Self Service licenses allocated per tenant. Broken into concurrent and named licenses.
Service Catalog	The number of Service Catalog licenses allocated per tenant. Broken into concurrent and named licenses.
Service Management	The number of Service Management licenses allocated per tenant. Broken into concurrent and named licenses.

7. To distribute licenses among multiple tenants, click in a cell and change the number of licenses to allocate to a tenant. The total number of licenses across the tenants cannot exceed the total number of licenses. See Fig. 74.

Fig. 74. Allocating Licenses Across Tenants



Viewing the HEAT Discovery Node Count

This information tracks the trend associated with the HEAT Discovery licenses and is based on the HEAT Discovery Count scheduled job.

1. Log in to the HEAT License Manager.
2. Click **Licensing > HEAT Discovery**.

   The system displays the Licensing - HEAT Discovery page.

   This page shows the following information:

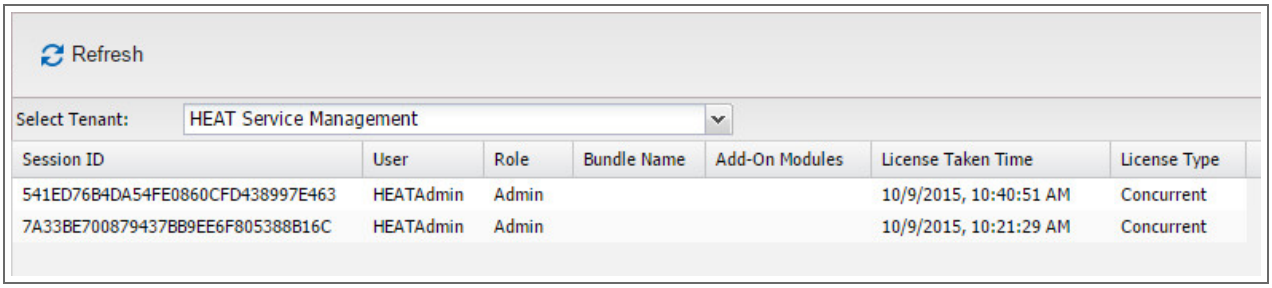
Field	Description
Tenant Name	The name of the tenant.
Last Scan Date	The date and time when the job was run.
Nodes Count	The number of configuration items found during the job.

Viewing the Active Licenses

This page displays the active sessions on the HEAT Service Management system. It does not show active sessions on the HEAT Configuration Database.

1. Log in to the HEAT License Manager.
2. Click **Licensing > Active Licenses**. The system displays the Licensing - Active Licenses page.

Fig. 75. Active Licenses Page



3. Select a tenant from the drop-down list.

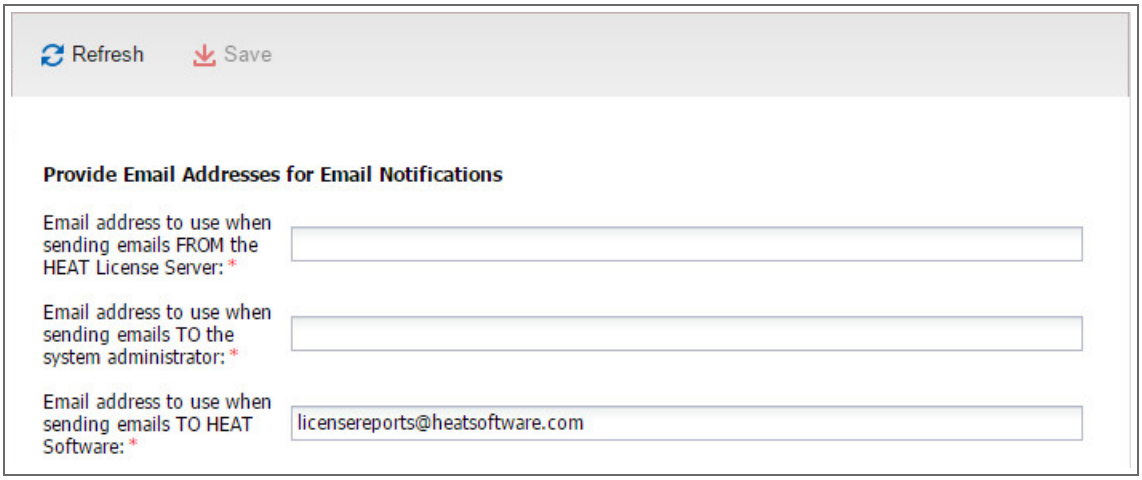
   This page shows the following information:

Field	Description
Session ID	The session ID associated with the logged-in user.
User	The user name of a logged-in user.
Role	The role with which the user is logged in.
Bundle Name	The bundle associated with the license associated with the user. See About License Bundles.
Add-On Modules	Any add-on modules associated with the bundle. See About License Bundles.
License Taken Time	The time when the system used the license.
License Type	The license type. Can be named or concurrent.

Configuring the Email Address for Notifications

1. Log in to the HEAT License Manager.
2. Click **Configuration > Email Address**. The system displays the Configuration - Email Address page.

Fig. 76. Email Address Page



3. Enter the following information:

Field	Description
Email address to use when sending emails from the HEAT License Server	The email address to use as the FROM email address for emails sent from the HEAT License Manager.
Email address to use when sending emails to HEAT Software	The email address to use as the TO email address for emails sent from the HEAT License Manager to HEAT Software USA, Inc.. The system sends license usage information based on the License Violation Notification to Frs scheduled job.
Email address to use when sending emails to the system administrator	The email address to use as the TO email address for emails sent from the HEAT License Manager to the system administrator of your organization. The system sends license usage information based on the License Violation Notification to Admin scheduled job.

4. Click **Save**.

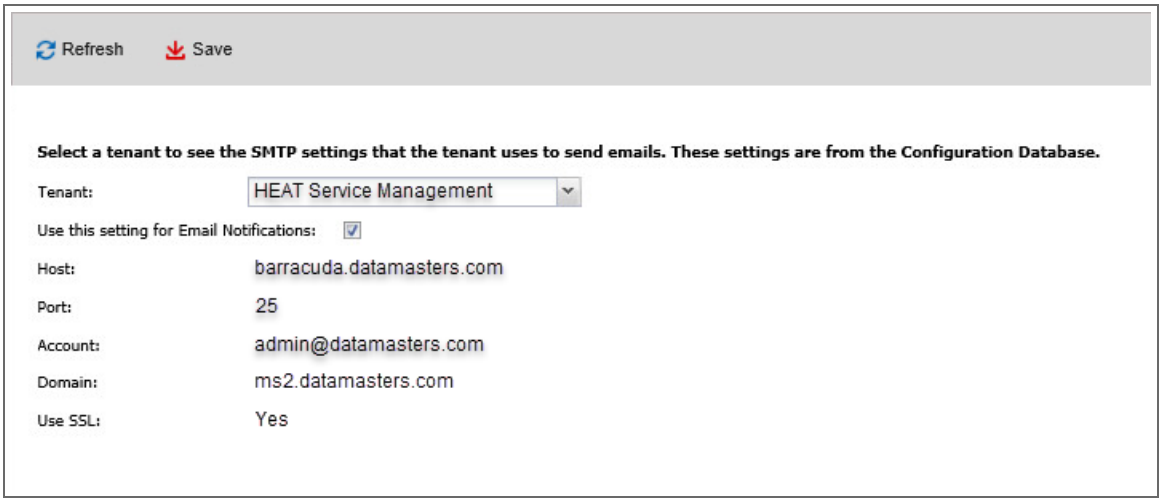
Configuring the SMTP Settings

Use this page to view and edit the SMTP settings used to send emails. The information on this page comes from the System Configuration Wizard.

1. Log into the HEAT License Manager.
2. Click **Configuration > SMTP Setting**.

   The system displays the Configuration - SMTP Setting page.

Fig. 77. SMTP Setting Page



The system displays the following information:

Field	Description
Host	The email server host.
Port	The port associated with the email server.
Account	The account associated with this tenant. This is the same as the value in the Username field on the Email Configuration workspace in the Service Desk Console.
Domain	The domain associated with the account.
Use SSL	Specifies if this account should use SSL.

3. Select a tenant from the Tenant drop-down list.
4. Check **Use this setting for Email Notifications** to use these SMTP settings for emails.
5. Click **Save**.

Working with Scheduled Jobs

The HEAT License Manager has several predefined scheduled jobs. These are used to send information to the administrator on a regular basis instead of sending an email every single time there is an event. All violations are listed on the System Audit Information page.

The following are the predefined scheduled jobs that cannot be changed:

- **License Capacity Allocation Notification Job**: Determines if your licenses are valid and that you actually have the licenses that you are allocating.

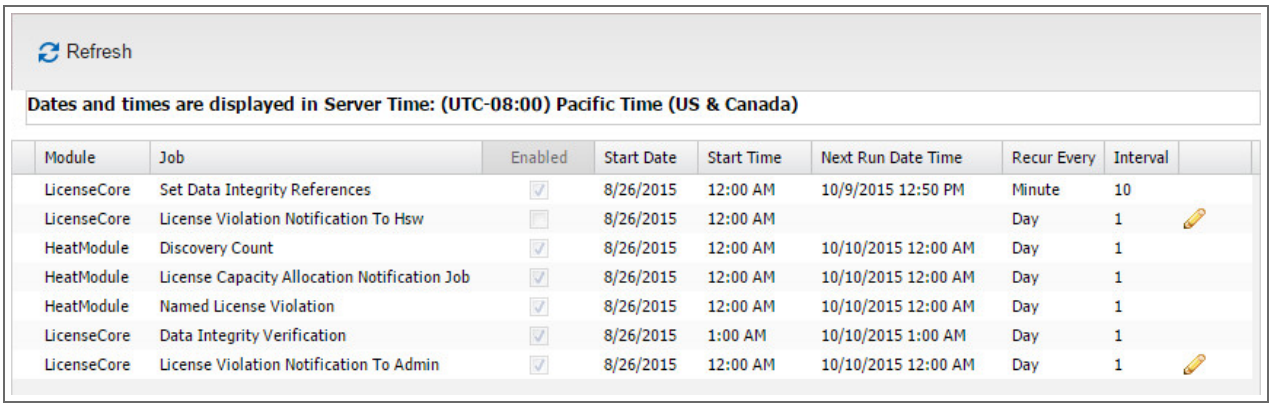
- **Named License Violation**: Determines if you have more users listed as named users than you have named user licenses.
- **Data Integrity Verification**: Determines if the licenses have been modified.
- **HEAT Discovery Count**: Determines if the licenses for your configuration items are valid.

The following are the predefined scheduled jobs that you can edit:

- **License Violation Notification to FRS**: Sends an email to HEAT Software USA, Inc. with information about license violations. By default, this job is disabled.
- **License Violation Notification to Admin**: Sends an email to your system administrator with information about license violations.

1. Log in to the HEAT License Manager.
2. Click **System Jobs**. The system displays the System Jobs - Scheduled Jobs page.

Fig. 78. Scheduled Jobs Page



This page contains the following information:

Field	Description
Module	The name of the module. Can be either LicenseCore or HeatModule.
Job	The name of the job.
Enabled	Specifies if the scheduled job is enabled.
Start Date	The start date of this scheduled job.
Start Time	The start time of this scheduled job.
Next Run Date and Time	The next date and time when the scheduled job runs.
Recur Every	The time period for the recurrence. Can be day, hour, or minute.
Interval	The interval for the recurrence.

For each entry, the system displays additional information at the bottom of the page:

Field	Description
Module	The name of the module. Can be either LicenseCore or HeatModule.
Job	The name of the job.
Run Time	The date and time when the scheduled job was run.
Details	Details of the job. Can be Success, if the job is successful. If the job is not successful, contains detailed information.

3. To see the job details in a larger format, click the Show Details icon at the end of the row.
4. You can edit the details associated with the License Violation Notification To Frs and the License Violation Notification to Admin scheduled jobs.

   To edit a scheduled job, do the following:

   a. Click the Edit icon at the end of the row. The system displays a dialog box.

   b. Enter or change any of the following information:

Field	Description
Job	The name of the scheduled job. You cannot change this name.
Description	A description of the scheduled job.
Start Date	The start date and time.
Enabled	Specifies if the scheduled job is enabled.
Next Run Date Time	The next date and time when the scheduled job runs.
Recur Every	Specifies the recurrence for this job.

5. Click **Save** to close the dialog box.

Viewing Reports

You can view two types of reports in the HEAT License Manager:

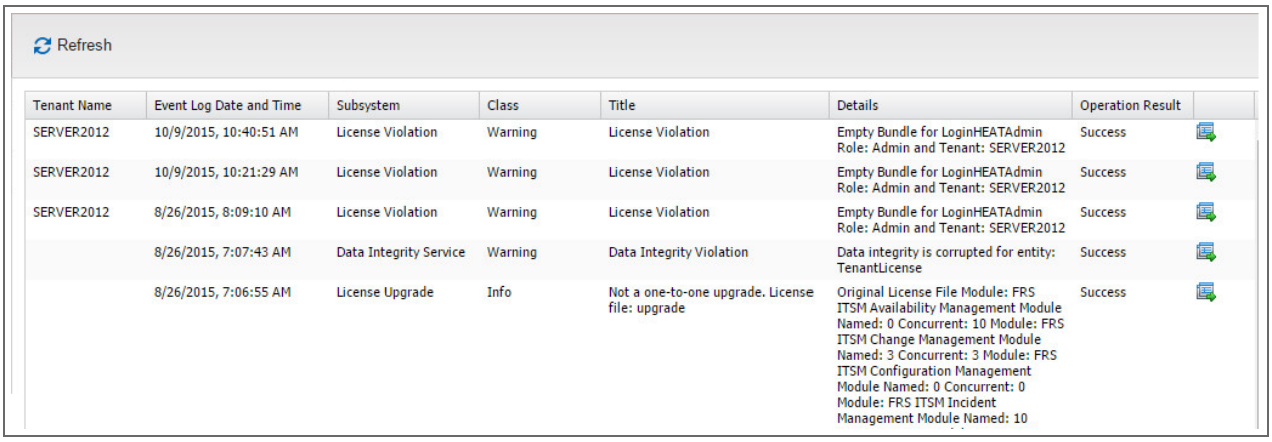
- System audit information
- Logs

1. Log in to the HEAT License Manager.
2. Click **Reports**.
3. To view the system audit information, click **System Audit Information**.

The system displays the Reports - System Audit Information page. See Fig. 79. Examples of the information on this page include license upgrades and license violations.

We recommend that you review the information on this page if you have any problems and then review the information on the Log page. See Fig. 80.

Fig. 79. System Audit Information Page



This page contains the following information:

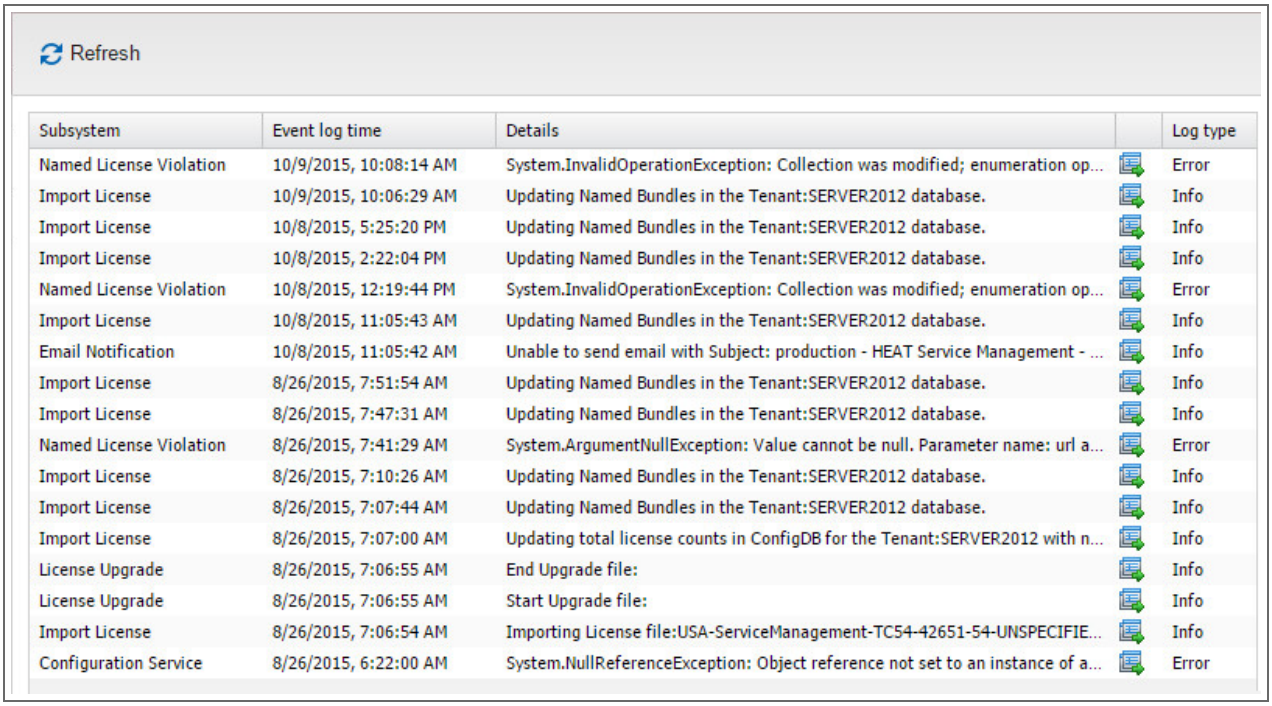
Field	Description
Tenant Name	The name of the tenant.
Event Log Date and Time	The date and time of the log event.
Subsystem	The specific area. Can be License Violation, License Upgrade, or Data Integrity Service.
Class	The type of information. Can be warning, info, debug, fatal, or error.
Title	A short description of the event.
Details	A longer description of the event.
Operation Result	The result of the operation. Can be Success or Failure.

If you cannot see all of the columns, resize the columns that you can see so that the remaining columns are displayed.

4. Click the Show Details icon at the end of the row to see the details. If you cannot see the the Show Details icon, resize the columns until it is displayed.

5. To view log information, click **Log**. The system displays the Reports - Log page. Use this information for troubleshooting.

Fig. 80. Log Page



This page contains the following information:

Field	Description
Subsystem	The name of the subsystem. Can be Email Notification, Import License, License Upgrade, Named License Violation, or Configuration Service.
Event Log Time	The time and date of this log event.
Details	Information about this log event.
Log Type	The type of log. Can be info, error, or warning.

6. To see the log details in a larger format, click the Show Details icon at the end of the row.

Troubleshooting

If you have problems with your installation or deployment, check this section first.

Error Messages

Login Errors

Error Message

```
Error upon executing commands: The following error occurred when
authenticating with the tenant <tenantUrl>.
Status: TenantNotFound
```

Possible Cause

The tenant that you specified is invalid.

Solution

Ensure that the tenant URL and tenant ID are valid.

Error Message

```
Error upon executing commands: The following error occurred when
authenticating with the tenant <tenantUrl>.
Status: AccessDenied
```

Possible Cause

You entered an invalid user name or password.

Solution

Ensure that the user name and password are valid.

Error Message

```
Error upon executing commands: The following error occurred when
authenticating with the tenant APPSERVER.
Status: InvalidRole
```

Possible Cause

You do not have administrator rights.

Solution

Ensure that you have administrator rights. See About Roles.

Error Message

```
Error upon executing commands: Could not establish trust relationship for
the SSL/TLS secure channel with authority '<IP_address>'.
```

Possible Cause

You did not connect to the HEAT application server using HTTPS.

Solution

Configure the HEAT Application Server to use SSL. See Optional SSL Configuration. Enter the URL for the HEAT application server that is configured to use SSL.

Error Message

```
Failed to execute applyPatch: The remote server returned an unexpected
response: (400) Bad Request.
```

Possible Cause

The database version is not up to date.

Solution

If the system table upgrade fails, review the log files and fix any metadata issues. Then upgrade the system table.

Problem

Cannot view the login dialog box. A message says:

```
Please use your subdomain when accessing the
application, for example
https://yourname.saas.frontrange.com
```

Possible Cause

Web.config file parameter "RequireTenantIdInURL" value is set to *true*.

Solution

1. Go to C:\Program Files\HEAT Software\HEAT\AppServer\ and open the **Web.config** file.
2. Search for the parameter "RequireTenantIdInURL" and change its value to *false*.
3. Save and close the **Web.config** file.

Upgrade Errors

Problem

After upgrading to Release 2016.1, the list of tenants in the HEAT Operations Console is empty.

Possible Cause

During the upgrade, the system updated the connection strings for the landscape with the incorrect name for the data source.

Solution

In the HEAT Operations Console, edit each landscape to update the data source to the correct database server name. See Upgrading HEAT Service Management from an Earlier Release for more information on how to do this.

Error Message

```
Failed to execute applyPatch: The request channel timed out while waiting
for a reply after 00:59:59.7741622. Increase the timeout value passed to the
call to Request or increase the SendTimeout value on the Binding. The time
allotted to this operation may have been a portion of a longer timeout.
```

Possible Cause

By default, the upgrade tool is set to wait for one hour for a response from the HEAT application server. This message indicates that the HEAT application server is still applying the patch or package. The patch can be completed at any time.

Solution

Check the status of the upgrade tool later by looking at the patch log in the HEAT Configuration Database.

Backup Error

Error Message

```
No database backup location specified in configuration database. Please
contact support.
Backup failed for Server 'db_server'.
```

Possible Cause

- The backup location is not set in the HEAT configuration database (ConfigDB).
- The backup failed to execute because of permissions issues

Solution

Ensure that you have set the backup location and ensure that you have the correct permissions.

Database Migration Errors

Error Message

```
Error during metadata commit operation: System.Exception: The following
errors were encountered when synchronizing the schema…….:
```

Possible Cause

This indicates a serious problem in business object metadata and is a synchronization schema error. The system cannot synchronize the database schema change with the business object definition. If you get this error, the system usually stops upgrading the metadata.

Solution

If this happens in your production environment, restore the database from a backup that was made before the upgrade. Then contact HEAT Software USA, Inc. support so that they can look into the error. See How to Contact Us.

Error Message

```
Error during metadata commit operation: DataLayer.SaaSDbException: Invalid
object name 'Frs_ITFM_Account_Status'. --->
System.Data.SqlClient.SqlException: Invalid object name 'Frs_ITFM_Account_
Status'.
```

Possible Cause

Part of the database is corrupt.

Solution

Call HEAT Software USA, Inc. support. See How to Contact Us. They may suggest that you restore the database from a backup that was made before the upgrade.

Error Message

```
Error during metadata commit operation:
System.Reflection.TargetInvocationException: Exception has been thrown by
the target of an invocation. ---> System.NullReferenceException: Object
reference not set to an instance of an object.
```

Possible Cause

Part of the database is corrupt.

Solution

Call HEAT Software USA, Inc. support. They may suggest that you restore the database from a backup that was made before the upgrade.

Microsoft SQL Execution Errors

Error Message

```
An error occurred when applying patch named <some_filename>.sql in package
<some_package>.MetadataPackage to tenant <tenantUrl>.
Unable to execute SQL due to Invalid column name 'IPCMUrlPort'.:
update FRS_IPCM_Integration set IPCMUrlPort = 2323 where IPCMUrlPort is null
Unable to execute SQL due to Invalid column name 'IPCMUrl'.:
update FRS_IPCM_Integration set IPCMUrl = 'http://' + IPCMServerHost + ':' +
convert(varchar(6), IPCMUrlPort) where IPCMUrl is null and IPCMServerHost is
not null
```

Possible Cause

An embedded Microsoft SQL statement is corrupt.

Solution

Review the Microsoft SQL statements.

Update Key Not Found Warnings

Error Message – Business Object

```
Error during metadata update operation. MetadataType: BusinessObject, ID:
Frs_AuthenticationProvider#
SaaS.StandardizedMetadata.UpdateKeyNotFoundException: Update key not found:
key = Rel2s
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences)
at DataLayer.MetadataPatch.ApplyGroupedActions(IMetadataProvider provider,
ISessionContext sessionContext, IEnumerable`1 definitionGroup) in
c:\depot\Eng\SaaS\main\Platform\AppServer\MetadataServices\MetadataPatch.cs:
line 1034
```

Possible Cause

There is a problem updating the metadata and the system did not update the business object.

Solution

Review the business object to make sure it was updated.

Error Message – Form

```
Error during metadata update operation. MetadataType: Form, ID:
Task.WorkOrder System.Exception: Update key not found: key = Details
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1377
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1359
at DataLayer.MetadataPatch.ApplyGroupedActions(IMetadataProvider provider,
ISessionContext sessionContext, IEnumerable`1 definitionGroup) in
c:\depot\Eng\SaaS\main\Platform\AppServer\MetadataServices\MetadataPatch.cs:
line 1016
```

Error Message – Dashboard

```
Error during metadata update operation. MetadataType: Dashboard, ID:
8e2cce05-c593-4545-bf4d-5f719a9bd5a5 System.Exception: Update key not found:
key = OLA Target Compliance ( e94a602f-959e-4cf1-9c07-be4d5eb0da68 )
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1377
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1359
at DataLayer.MetadataPatch.ApplyGroupedActions(IMetadataProvider provider,
ISessionContext sessionContext, IEnumerable`1 definitionGroup) in
c:\depot\Eng\SaaS\main\Platform\AppServer\MetadataServices\MetadataPatch.cs:
line 1016
```

Error Message – Validation Data

```
Error during metadata update operation. MetadataType: ValidationData, ID:
Justification# System.Exception: Update key not found: key = Justification#_
culture#pt-BR
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1377
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1359
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1359
at DataLayer.MetadataPatch.ApplyGroupedActions(IMetadataProvider provider,
ISessionContext sessionContext, IEnumerable`1 definitionGroup) in
c:\depot\Eng\SaaS\main\Platform\AppServer\MetadataServices\MetadataPatch.cs:
line 1016
```

Error Message – Rule

```
Error during metadata update operation. MetadataType: Rule, ID: Incident#
System.Collections.Generic.KeyNotFoundException: The given key was not
present in the dictionary.
at System.Collections.Generic.Dictionary`2.get_Item(TKey key)
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1386
at SaaS.StandardizedMetadata.MetadataExtensions.Patch(XElement element,
XElement differences) in
c:\depot\Eng\SaaS\main\Platform\StandardizedMetadata\MetadataExtensions.cs:l
ine 1359
at DataLayer.MetadataPatch.ApplyGroupedActions(IMetadataProvider provider,
ISessionContext sessionContext, IEnumerable`1 definitionGroup) in
c:\depot\Eng\SaaS\main\Platform\AppServer\MetadataServices\MetadataPatch.cs:
line 1016
```

Possible Cause

There is a problem updating the metadata.

Solution

You do not need to do anything.

Workflow Warnings

Error Messages

```
Error during metadata delete operation. MetadataType: Workflow, ID:
69d31c7248b54f92bc1bff415cd29e0f System.Exception: Could not deactivate
workflow definition RecId: 69d31c7248b54f92bc1bff415cd29e0f --->
System.Exception: Error updating existing active workflow definition to
inactive, RecId 69d31c7248b54f92bc1bff415cd29e0f
at SaaS.WebUI.WorkflowMetadataServices.WorkflowMetadataUpdate.Delete
(MetadataType metadataType, String id) in
c:\depot\Eng\SaaS\main\Platform\AppServer\BPE\src\WorkflowMetadataServices.c
s:line 409
Error during metadata insert operation. MetadataType: Workflow, ID:
871d9466c4754fa19ffb03de179cd057 System.Exception: Inactive definition
exists with the same RecId: Name:LDAP Sync_LC_
133k134k135k13k14k15k16k17k18k19k, ObjectType:ScheduleEntry, Definition
RecId 871d9466c4754fa19ffb03de179cd057 at
SaaS.WebUI.WorkflowMetadataServices.WorkflowMetadataUpdate.CreateWorkflowDef
inition(String name, String objectType, String defRecId, String typeRecId,
XElement workflow) at
SaaS.WebUI.WorkflowMetadataServices.WorkflowMetadataUpdate.Insert
(MetadataType metadataType, XElement workflow) at
SaaS.StandardizedMetadata.MetadataProvidersContainer.Insert(MetadataType
metadataType, XElement definition) at
DataLayer.MetadataPatch.ApplyGroupedActions(IMetadataProvider provider,
ISessionContext sessionContext, IEnumerable`1 definitionGroup)
```

Possible Cause

There is a problem updating the workflows.

Solution

You do not need to do anything.

Software Problems

- HEAT Discovery cannot detect assets on the network.
- System cannot search.
- The HEAT Service Management demo database does not load properly.
- Web servers do not work correctly.

- Troubleshooting
- The HEAT Reporting feature does not work correctly.
- Dashboard and report controls, such as charting, pivoting, and copy/paste, control, and Service Catalog attachment control do not work.
- Cannot download or edit reports in Chrome.
- Cannot download or edit reports in Firefox.
- Cannot download files or run controls in Internet Explorer.
- Cannot open websites in Internet Explorer.
- Logging into a tenant using Internet Explorer fails.
- Unable to use integrated components, such as HEAT Voice.

Problem

HEAT Discovery cannot detect assets on the network.

Possible Cause

Service Center Configuration Manager (SCCM) service is stuck in starting mode.

You are using a domain account for running all HEAT Service Management services but the domain account has insufficient rights.

Solution

Use your local system account and restart the HEAT Service Management system.

Problem

System cannot search.

Possible Cause

Full-text search is disabled.

Solution

Enable full-text search. See Enabling Full-Text Search.

Problem

The HEAT Service Management demo database does not load properly.

Possible Cause

Full-text search is disabled.

Solution

Enable full-text search. See Enabling Full-Text Search.

Problem

Web servers do not work correctly.

Possible Cause

In multi-server environments, each HEAT web server must meet the system requirements.

Solution

Refer to the *System Requirements and Compatibility Matrix for HEAT Service Management Release 2016.1* for more information. See Related Documentation

Problem

Provision Report Now returns an exception: `Cannot Decrypt the Symmetric Key`.

Possible Cause

The Report Server service cannot use the symmetric key to access the data from the report server database.

Solution

1. Click **OK**, but do not close the System Configuration Wizard.
2. Start the Reporting Services Configuration Manager and connect to your Microsoft SRSS instance.
3. Select **Encryption Keys** from the list in the left panel.
4. Click **Delete** and then click **Yes** at the confirmation message.
5. Return to the wizard and click **Provision Report Now**.

Problem

The HEAT Reporting feature does not work correctly.

Possible Cause

Attempting to use Microsoft SQL Server 2008 R2 SP2 with Microsoft SSRS 2012.

Solution

They are not compatible. If you are using Microsoft SQL Server 2008 R2 SP2, you must use Microsoft SSRS 2008. Refer to the *System Requirements and Compatibility Matrix for HEAT Service Management Release 2016.1* for more information. See Related Documentation.

Problem

Dashboard and report controls, such as charting, pivoting, and copy/paste, control, and Service Catalog attachment control do not work.

Possible Cause

Browser does not have, or do not support, Adobe Flash.

Solution

Install Adobe Flash. Go to https://get.adobe.com/flashplayer/.

If your current browser does not support Adobe Flash, upgrade the browser.

Problem

Cannot download or edit reports in Chrome.

Possible Cause

The Chrome ClickOnce extension is not installed.

Solution

Install the ClickOnce extension for Chrome. Navigate to https://chrome.google.com/webstore/detail/eeifaoomkminpbeebjdmdojbhmagnncl# and download the extension.

Problem

Cannot download or edit reports in Firefox.

Possible Cause

The Firefox Microsoft .NET framework assistant extension is not installed.

Solution

Install the Microsoft .NET framework assistant extension. Navigate to https://addons.mozilla.org/en-US/firefox/addon/9449 to download the extension.

Problem

Cannot download files or run controls in Internet Explorer.

Possible Cause

Scripting is diabled.

Solution

Set properties in Internet Explorer as follows:

1. Go to the **Tools > Internet Options > Security > Custom level** page.
2. Set the following options to **enable**:
   - Run ActiveX controls and plug-ins
   - File download
   - Scripting > Active scripting

Problem

Cannot open websites in Internet Explorer.

Possible Cause

You have not set the HEAT Service Management system to be a trusted site.

Solution

Set properties in Internet Explorer as follows:

1. Go to the **Tools > Internet Options > Security** page.
2. Highlight **Trusted sites** and click **Sites**.
3. Click **Add**.

Problem

Logging into a tenant using Internet Explorer fails.

IE displays this message: `You cannot login to the system now. Please contact your administrator. Additional information is available in the logs`.

Possible Cause

Internet Explorer does not accept cookies if the hostname of DNS server or the server NetBIOS names contain an underscore character '_'.

Solution

Do one of the following actions:

- Change the hostname of your DNS server or its NetBIOS names so they no longer contain an underscore character '_'
- Use a Chrome or Firefox browser.

Problem

Unable to use integrated components, such as HEAT Voice.

Possible Cause

You must use the Microsoft Windows operating system when you use integrated components.

Solution

Change to the Microsoft Windows operating system. Refer to the *System Requirements and Compatibility Matrix for HEAT Service Management Release 2016.1* for more information. See Related Documentation.