

Postgres Enterprise Manager Release 7.15

Installation Guide for Windows

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Postgres Enterprise Manager (PEM) is designed to assist database administrators, system architects, and performance analysts when administering, monitoring, and tuning PostgreSQL and Advanced Server database servers. PEM has been designed to manage and monitor a single server or multiple servers from a single console, allowing complete control over monitored databases.

This document provides step-by-step instructions to guide you through the installation of Postgres Enterprise Manager.

Throughout this guide, the term *Postgres* refers to either a PostgreSQL or an Advanced Server installation, where either is appropriate.

Language pack installers contain supported languages that may be used with EDB Postgres Advanced Server and EnterpriseDB PostgreSQL database installers. The language pack installer allows you to install Perl, TCL/TK, and Python without installing supporting software from third party vendors. For more information about installing and using Language Pack, please see the *EDB Postgres Language Pack Guide*, available from the EnterpriseDB Website.

CHAPTER 1

Whats New

The following features have been added to Postgres Enterprise Manager 7.15:

- Enhanced EDB Backup and Recovery Tool management: Support for two new configuration parameters archive_path and bart_socket_directory enhances PEM's integration with BART 2.5.4.
- **Row Security Policy**: You can now CREATE, UPDATE, DELETE, ENABLE, and disable row-level security policies for the database tables via the PEM Web Client.
- Improved User Interface (UI) for Performance diagnostics tool: You can now see the number of active sessions at a sample time, and can also see a session's wait event or CPU utilization at a specific sample time.
- Improved the EDB Failover Manager (EFM) monitoring: PEM now provides the capability to monitor the xLogReceive parameter set by EFM.
- Other features and changes include:
 - Added support to monitor PostgreSQL/EDB Postgres Advanced Server 13.
 - Added documentation explaining how the SNMP trap OID is generated by PEM.
 - Added support for schema level restriction.
 - Added RLS Policy support in the Schema Diff tool.

CHAPTER 2

Postgres Enterprise Manager - Overview

Postgres Enterprise Manager (PEM) consists of components that provide the management and analytical features of PEM:

- **PEM server:** The PEM server is used as the data repository for monitoring data and as a server to which both agents and clients connect. The PEM server consists of an instance of PostgreSQL and an associated database for storage of monitoring data, and a server that provides web services.
- **PEM web interface:** The PEM web interface allows you to manage and monitor Postgres servers and utilize PEM extended functionality. The web interface software is installed with the PEM server installer, and is accessed via your choice of web browser.
- **PEM Agent:** The PEM Agent is responsible for executing tasks and reporting statistics from the agent host and monitored Postgres instances to the PEM server. A single PEM agent can monitor multiple installed instances of Postgres that reside on one or many hosts.

The PEM agent installer creates two executables: the PEM worker (pemworker.exe) and the PEM agent (pemagent.exe). Each PEM worker has a corresponding PEM agent that you can use to start or stop the PEM worker. The PEM agent will also restart the PEM worker should it terminate unexpectedly.

The PEM worker log file contains information related to PEM worker activity (probe activities, heartbeat responses, etc.), and is stored in /var/log/pem/worker.log.

• **SQL Profiler plugin:** This plugin to the Postgres server is used to generate the monitoring data used by the SQL Profiler tool. Installation of the SQL Profiler plugin is optional, but the plugin must be installed into each instance of Postgres you wish to profile. The SQL Profiler may be used with any supported version of an EnterpriseDB distribution of a PostgreSQL server or an Advanced Server (not just those managed through the PEM server). See the PEM SQL Profiler User's Guide for details and supported versions.

The architectural diagram below illustrates the relationship between the various servers and workstations involved in a typical PEM installation.



Fig. 1: A typical PEM installation

2.1 Hardware Prerequisites

For optimum performance when monitoring servers and rendering dashboards, we recommend installing PEM on a system with at least:

- 4 CPU cores
- 8 GB of RAM
- 100 GB of Storage

Additional disk space is required for data storage. Please note that resource usage will vary based on which probes are defined and enabled, and the activity level on the monitored databases. Monitoring server resources (as you use PEM) will let you know when you need to expand your initial system configuration.

2.2 Software Prerequisites

Supported Platforms and Versions

For information about the platforms and versions supported by PEM, visit the EnterpriseDB website at:

https://www.enterprisedb.com/services-support/edb-supported-products-and-platforms#pem

Modifying the pg_hba.conf File

The pg_hba.conf file manages connections for the Postgres server. You must ensure that the pg_hba.conf file on each monitored server allows connections from the PEM server, the monitoring PEM agent, and the host of the PEM-HTTPD server.

For information about modifying the pg_hba.conf file, see the PEM Administrator's Guide available at:

https://www.enterprisedb.com/edb-docs

Information about managing authentication is also available in the Postgres core documentation available at:

https://www.postgresql.org/docs/current/static/auth-pg-hba-conf.html

Firewall Restrictions

Please note that you must adjust your firewall to allow communication between PEM components.

Supported Locales

Currently, the PEM server and web interface support a locale of English (US) en_US and use of a period (.) as a language separator character. Using an alternate locale, or a separator character other than a period may result in errors.

CHAPTER 3

Installing Postgres Enterprise Manager

The PEM server graphical installer for Windows installs and configures the PEM server, a PEM agent, and the software required to connect to the PEM web interface with your choice of browser.

The PEM server uses a Postgres installation and backing database to manage data. The pem backing database gets created while installing the PEM Server through installer.

For detailed information about using the PEM server graphical installer, see Installing the PEM Server on Windows.

The PEM agent graphical installer for Windows installs and registers the PEM agent. The PEM agent that is installed with the PEM server is capable of monitoring multiple servers that reside on the same host, or on remote hosts. Please note that the PEM functionality on servers monitored by a remote agent may be limited.

For detailed information about using the PEM agent graphical installer, see Installing a PEM Agent on Windows.

3.1 Installing the PEM Server on Windows

At the heart of each PEM installation is the server. In a production environment, the server will typically be a dedicated machine, monitoring a large number of Postgres servers or a smaller number of busy servers.

The PEM server backend database may be an EnterpriseDB distribution of the PostgreSQL or Advanced Server database server, or an existing Postgres server installed from another source. The Postgres backend database server must be any of the supported version, and will contain a database named pem, which is used by the PEM server as a repository.

• If you would like to use an existing Postgres server to host the PEM server, the PEM server installer can create the pem database on the Postgres host. You must manually satisfy the software pre-requisites if you choose to use an existing server.

For more information about using an existing Postgres server to host the PEM server backend database, see *Installing the PEM Server on an Existing Postgres Server* section.

• If you do not wish to use an existing installation of Postgres as the PEM server host, the PEM server installer can install PostgreSQL, satisfy the server host's software pre-requisites, and create an instance (a PostgreSQL database cluster) that contains the pem database. This is the simplest PEM server installation option.

- PEM-HTTPD is made available for Postgres installations through the PEM server installer or the StackBuilder utility. If PEM-HTTPD is already installed on the host, the PEM server installer will review and update the existing installation if required. If the PEM server host does not contain an existing PEM-HTTPD installation, the PEM server installer will add it.
- Before installing the PEM server, you must decide if you wish to run PostgreSQL and PEM-HTTPD on the same host or on separate hosts. If you intend to run the PostgreSQL database server and PEM-HTTPD on different hosts, then you must run the PEM server installer twice once on each host, as detailed in *Installing the PEM Server and PEM-HTTPD on Separate Hosts* section.

The PEM server installer will also install the software required to access the server via the PEM web interface. You can access the web interface with a supported version of your browser.



Fig. 1: The PEM web interface

You can use the web interface to review information about objects that reside on monitored servers, manage databases and database objects that reside on monitored servers, or review statistical information gathered by the PEM server.

3.1.1 Installing the PEM Server and PEM-HTTPD on the Same Host

The easiest PEM server installation configuration consists of a PEM backend database server (hosted on a PostgreSQL database installed with the PEM server installer) and a PEM-HTTPD service that reside on the same host. In this configuration, the PEM server installer will provide the pre-requisite software for the backend host register the service (on Windows).

To invoke the PEM server installer on a Windows system, right click the installer icon and select Run as Administrator. The installer displays a Welcome dialog.



Fig. 2: PEM Server Wizard - Welcome dialog

Click Next to continue to the License Agreement dialog.



Fig. 3: PEM Server Wizard - License Agreement dialog

Carefully review the license agreement before highlighting the appropriate radio button and accepting the agreement. Click Next to continue to the Installation Directory dialog.

Setup			_		×
Installation Directory					
Please select a directory for the PEM server inst	allation.				
Installation Directory C:\Program Files\edb\pe	n	12			
Show advanced options					
VMware InstallBuilder					
	< Back	N	ext >	Car	icel

Fig. 4: PEM Server Wizard - Installation directory dialog

Use the Installation Directory dialog to specify the location of the PEM server:

- By default, the PEM server is installed in C:\Program Files\edb\pem on Windows. Accept the default location, or use the Installation Directory button to open a browser dialog and select the directory in which the PEM server will be installed.
- Use the Show advanced options check box to instruct the installer to open the Advanced options dialog.
- Use the Advanced options dialog when installing the Postgres database server and the PEM-HTTPD on different hosts, or if you wish the PEM server to reside on an existing Postgres server installation.

To install the PostgreSQL server packaged with the installer and PEM-HTTPD on the same host, leave the Show advanced options box unchecked and click Next.

The PEM server installer will perform a pre-installation check for PEM-HTTPD, Language Pack, and PostgreSQL 10. If the installer does not locate these packages, it will inform you in the Dependency missing dialog.

Note: By default EDB Language Pack is installed in C: \edb\languagepack\v1.

📲 Setup	_		×
Dependency missing			
* PEM-HITPD, LanguagePack for Postgres Enterprise Manager and PostgreSQL 10 The installer will attempt to install these dependencies.) were not	found.	^
Please dick 'Next' to continue			
			~
VMware InstallBuilder			
< Back	lext >	Can	icel

Fig. 5: PEM Server Wizard - Dependencies check dialog

If the dependencies are missing, the PEM server installer will launch the respective installation wizards; follow the onscreen directions presented by the installation wizards for each package.

After installing any missing dependencies, the installation process continues by displaying the Database Server Installation Details dialog.

<table-of-contents> Setup</table-of-contents>				_		\times
Database	Server Installation Details					
Please speci 5432.	fy user and password for the local server - 'Postg	eSQL 10 (64 b	oit)' instal	lation rur	nning on	port
User	postgres]				
Password	***]				
VMware Instal	Builder					
		< Back	Nex	t >	Can	cel

Fig. 6: PEM Server Wizard - Database Server Installation details dialog

The information provided on the Database Server Installation Details dialog enables the installer to connect to the PostgreSQL server. Provide the User name and Password of a database superuser. After supplying the requested information, click Next to continue to the pemAgent Service Account dialog.

<table-of-contents></table-of-contents>			_		×
pemAgent service account	t				
Please provide the password fo The agent certificate and key fi directory.	r the Nidhi Bhammar account under whic les will be created in its C:\Users\Nidhi B	:h the po hammar	emAgent serv `\AppData\Ro	vice will rur aming \per	n. n
Nidhi Bhammar's password 📲	******]		
VMware InstallBuilder	< Back		Next >	Can	icel

Fig. 7: PEM Server Wizard - pemAgent Service Account Password dialog

After providing the name and password of the Postgres database superuser, you may be prompted for the password to the user account under which the PEM agent will run. If prompted, provide the password, and press Next to continue to the Network Details dialog.

<table-of-contents> Setup</table-of-contents>				_		\times
Network Details						•
Please enter the Cl added to the serve	DR formatted network address range that r's pg_hba.conf file. For example, 192.168	t agents 8. 1.0/24	will connec	t to the serv	er from, t	to be
Network address	127.0.0.1/32]			
VMware InstallBuilder						
		< Bac	k	Next >	Car	ncel

Fig. 8: Supply the network address from which the agent will connect

Use the Network Details dialog to specify the CIDR-style network address from which the PEM agents will connect to the server (the *client-side* address).

You may specify the address of a network host, or a network address range. For example, if you wish to monitor database servers with the addresses 192.168.10.23, 192.168.10.76 and 192.168.10.184, enter 192.168.10.0/24 to allow connections with hosts in that network.

The specified address will be added to the server's pg_hba.conf file. You can specify additional network addresses by manually adding entries to the pg_hba.conf file on the PostgreSQL server if required, using the initial entry as a template.

When you've added the Network address, click Next to continue to the Agent Details dialog.

The PEM server installer will install a PEM agent on the host on which the server resides, to monitor the server and provide alert processing and garbage collection services. A certificate will also be installed in the location specified in the Agent certificate path field.

and Carbon			_		~
w Setup			_		~
Agent Details.					
Please specify a descrip	tion for the agent.				
Description.	Postgres Enterprise Manager Host]			
Agent certificate path	C: \Users\Nidhi Bhammar \AppData \Roaming \pem	r 9			
VMware InstallBuilder					
	< Back	Ne	ext >	Car	icel

Fig. 9: PEM Server Wizard - Agent Description and Certificate Path dialog

Enter an alternate description or select an alternate agent certificate path for the PEM agent, or accept the defaults. Click Next to continue to the Ready to Install dialog.



Fig. 10: PEM Server Wizard - Ready to Install dialog

The wizard is now ready to install the PEM server.

Click Back to modify any of the options previously selected, or Next to continue with the installation.

📲 Setup	_		×
Installing			
Please wait while Setup installs the PEM server on your computer.			
Installing			
Restarting the database server - 'PostgreSQL 10 (64 bit)'			
VMware Installbuilder Sack Ne	ext >	Can	cel

Fig. 11: PEM Server Wizard - Installation in progress

During the installation process, the installer will copy files to the system, and set up the database and web services required to run PEM. When the installation completes, a popup dialog opens confirming that the webservice has been configured, and is listening on port 8443, and that the pem database has been created and configured.

🔁 Setup		_		\times		
Installing	1					
Please wait info	while Setun installs the DEM server on your computer		×]		
Configured the webservice for Postgres Enterprise Manager (PEM) Server on p '8443'. Created and configured the 'pem' database.						
Www.re Inst	sllö iddar					
VMware Insta	< Back Nex	<t></t>	Can	cel		

Fig. 12: PEM Server Wizard - pem database created

Click OK to acknowledge that the webservice has been configured, and that the pem database has been created, and continue to the Completed... dialog.



Fig. 13: PEM server Wizard - Installation Finish dialog

3.1.2 Installing the PEM Server and PEM-HTTPD on Separate Hosts

To use separate hosts for the PEM server backend database and PEM-HTTPD, you must:

- 1. Invoke the PEM server installer on the host of the Postgres server that will contain the pem database. During the installation, select the Database option on the Advanced options dialog, and provide connection information for the Postgres server.
- 2. Modify the pg_hba.conf file of the Postgres installation on which the PEM server (and pem database) resides, allowing connections from the host of the PEM-HTTPD server.
- 3. Invoke the PEM server installer on the host of the PEM-HTTPD server, selecting the Web Services option on the Installation Type dialog.

To invoke the PEM server installer on a Windows system, right click the installer icon and select Run as Administrator. The installer displays a Welcome dialog.

📑 Setup		_		Х
FDR	Setup PEM Server			
POSTGRES	Welcome to the Postgres Enterprise Manage Wizard.	r (PEM) Ser	ver Setup	
EDB Postgres [™]				
	< Back	Next >	Cano	el

Fig. 14: PEM Server Wizard - Welcome dialog

Click Next to continue to the License Agreement dialog.

🍯 Setup		-		\times				
License Agreement								
Please read the following Lic with the installation.	ense Agreement. You must accept the terms of this	agreement be	fore contir	nuing				
Limited Use Software License Agreement Version 2.9								
IMPORTANT - READ CAREFULLY								
This Limited Use Software License Agreement ("Agreement") is a legal document between you ("Customer") and EnterpriseDB Corporation ("EnterpriseDB"). It is important that you read this document before using the EnterpriseDB-provided software ("Software"). By clicking the "I ACCEPT" button, or by installing, or otherwise using the Software, Customer agrees to be bound by the terms of this Agreement, including,								
without limitation, the w	arranty disclaimers, limitations of liability ar	nd terminati	on	~				
Do you accent this license?	 I accept the agreement 							
I do not accept the agreement								
Instandunder	< Back	Next >	Cano	el				

Fig. 15: PEM Server Wizard - License Agreement dialog

Carefully review the license agreement before highlighting the appropriate radio button and accepting the agreement; click Next to continue.

<table-of-contents> Setup</table-of-contents>				_		×
Installation Directory						
Please select a directory for	the PEM server installatio	n.				
Installation Directory C:\P	rogram Files\edb\pem		<u>۳</u>			
Show advanced option	s					
TaskallDuilden						
Instalibulider		< Back	N	ext >	Can	cel

Fig. 16: PEM Server Wizard - Installation Directory dialog

Use fields on the Installation Directory dialog to specify the directory in which the PEM server will reside, and to access the Advanced options dialog:

- By default, the PEM server is installed in the C:\Program Files\edb\pem on Windows. Accept the default location, or use the Installation Directory field to open a browser dialog and select the directory in which the PEM server will be installed.
- To install the PEM server and PEM-HTTPD on separate hosts, you must use the Advanced options dialog

to specify the installation type (Web Services or Database). Select the Show advanced options check box to instruct the installer to include the Advanced options dialog in the installation process.

Click Next to continue to the Advanced Options dialog.

Setup		_		×
Advanced options				
Select installation type				
O Web Services				
O Database				
VMware InstallBuilder	< Back	Next >	Can	cel

Fig. 17: PEM Server Wizard - Advanced Options dialog

Use the radio buttons on the Advanced options dialog to specify the component or components that you would like to install:

- Select Web Services and Database to indicate that the Postgres server and PEM-HTTPD will both reside on the current host. If you select the Web Services and Database option, the PEM server installer will allow you to specify which Postgres server you wish to use for the PEM server before checking for a PEM-HTTPD installation.
- Select Web Services to install PEM-HTTPD on the current host, while using a Postgres database server that resides on another host to host the PEM server and pem database.

Note: You must complete the PEM server installation process on the host of the PEM server (and pem backend database), selecting Database on the Advanced options dialog, and modifying the connection properties of the pg_hba.conf file on the PEM server before using the Web Services option to install PEM-HTTPD.

This option invokes the installation steps documented in Installing Web Services section.

• Select Database to use an existing Postgres server, or to install only the database server that is distributed with the PEM server installer. This option invokes the installation steps documented in *Specifying a Database Host*.

After selecting an installation option, click Next to continue.

3.1.2.1 Specifying a Database Host

Selecting the Database option on the Advanced options dialog allows you to specify connection information for the host on which the PEM server backend database (named pem) will reside.

🖥 Setup			_		\times
Advanced options					
Select installation type O Web Services and Database					
O Web Services					
Database					
vmware Instalibulider	< Back	Nex	(t >	Car	ncel

Fig. 18: PEM Server Wizard - Advanced options - select database dialog

Click Next to continue to the Database Server Selection dialog.

Setup.	_		×
Database Server Selection			
Select the database server.	e data store		
The database servers below may be used by Postgres Enterprise Manager for to	s data store.		
PostgreSQL 10 (64 bit) on Port 5432	~		
Other Database Server			
VMware InstallBuilder			
< Back	Next >	Car	ncel

Fig. 19: Selecting a database server

Use the drop-down listbox on the Database Server Selection dialog to select a host for the PEM server backend database. You can:

• Select a host from existing Postgres installations that reside on the current host.

Note: You may be required to add the sslutils package to your installation.

- Select the PostgreSQL x option to install the Postgres server that is distributed with the PEM server installer where x is the PostgreSQL database server version. If you decide to use the version of PostgreSQL that is bundled with the PEM server installer, the EnterpriseDB one-click PostgreSQL installer will open and walk you through the installation.
- Select Other Database Server to specify connection information for a Postgres server that was not installed using a one-click graphical installer from EnterpriseDB. For information about the software pre-requisites for the PEM server database host, please see *Preparing the Postgres Server* section.

Click Next to continue.

If the PEM server will reside on an existing Postgres server, the Database Server Installation Details dialog shown in opens.

<table-of-contents> Setup</table-of-contents>		_		×
Database	Server Installation Details			
Please spec 5432.	ify user and password for the local server - 'PostgreSQL 10 (64 b	it)' installation ru	unning on	port
User	postgres			
Password	***			
VMware Instal	Builder			
	< Back	Next >	Can	cel

Fig. 20: PEM Server Wizard - Database Server Installation Details dialog

The information required on the Database Server Installation Details dialog may vary; the PEM server installer will ask you to provide only the information about the selected installation that it cannot locate:

- Specify the name of a Postgres database superuser in the User field.
- Specify the password associated with that user in the Password field.

Click Next to continue.

If prompted, provide the system password for the service account under which the PEM agent will run.

👹 Setup			_		×
pemAgent service accor	int				
Please provide the password The agent certificate and ke directory.	for the Nidhi Bhammar account u y files will be created in its C:\Use	nder which the p rs\Nidhi Bhammai	emAgent servic r\AppData\Roa	:e will run ming \pem	
Nidhi Bhammar's password	*****]		
VMware InstallBuilder					
		< Back	Next >	Cano	:el

Fig. 21: PEM Server Wizard - PEM Agent Service Account Password

click Next to continue to the Network Details dialog.

1						
<table-of-contents> Setup</table-of-contents>				_		×
Network Details	:					
Please enter the C added to the serve	IDR formatted network address r's pg_hba.conf file. For exam	s range that agents wil ple, 192.168.1.0/24.	l connect to th	e server	from, to	be
Network address	127.0.0.1/32					
VMware InstallBuilder						
		< Back	Next	>	Cance	el

Fig. 22: PEM Server Wizard - Network Details dialog

Use the Network Details dialog to specify the CIDR-style network address from which PEM agents will connect to the server (the client-side address). The specified address will be added to the server's pg_hba.conf file.

Note: You can specify additional network addresses by manually adding entries to the pg_hba.conf file on the PostgreSQL server.

Accept the default (specifying the localhost), or specify a Network address range, and click Next to continue to

the Agent Details dialog.

The PEM server installer will install a PEM agent on the host on which the server resides, to monitor the server and provide alert processing and garbage collection services. A certificate will also be installed in the location specified in the Agent certificate path field.

🗃 Setup			_		×
Agent Details.					
Please specify a descrip	tion for the agent.				
Description.	Postgres Enterprise Manager Host				
Agent certificate path	C: \Users\Nidhi Bhammar \AppData \Roaming \pem	[]			
VMware InstallBuilder					
	< Back	Ne	xt >	Can	cel

Fig. 23: PEM Server Wizard - Agent Description and Certificate Path dialog

You can enter an alternate description or an alternate agent certificate path for the PEM agent, or accept the defaults. Click Next to continue.

<table-of-contents></table-of-contents>	-		×
Ready to Install			•
Setup is now ready to begin installing the PEM server on your computer.			
VMware InstallBuilder	Next >	Car	ncel

Fig. 24: PEM Server Wizard - Ready to Install dialog

The wizard is now ready to install the PEM server. Click Back to modify any of the options previously selected, or Next to proceed with the installation.

📲 Setup	_		×					
Installing								
Please wait while Setup installs the PEM server on your computer.								
Installing								
Creating SSLUtils extension								
VMware InstallBuilder								
< Back Ni	ext >	Can	cel					

Fig. 25: PEM Server Wizard - Installation in progress

During the installation process, the installer will copy files to the system, and set up the PEM server's backend database. A popup dialog opens confirming that the pem database has been created and configured.

<table-of-contents> Setup</table-of-contents>		_		\times
Installing				Þ
Please wait while Setup instal	s the PEM server on your computer.			
Installation completed	fo X]		
	Created and configured the 'pem' database.			
	ОК			
VMware InstallBuilder	< Back Ne	ext >	Can	icel

Fig. 26: PEM Server Wizard - pem database created

Click OK to acknowledge that the pem database has been created, and continue to the Completed... dialog.



Fig. 27: PEM server Wizard - Finish Installation dialog

When the database portion of the PEM server installation is complete, you can invoke the PEM server on another host to install (or upgrade) PEM-HTTPD.

3.1.2.2 Installing Web Services

Selecting the Web Services radio button on the Advanced options dialog instructs the PEM server installer to either install PEM-HTTPD on the current host or update an existing PEM-HTTPD installation.

🖥 Setup		-		×
Advanced options				
Select installation type O Web Services and Database				
Web Services				
🔿 Database				
VMware InstallBuilder	< Back	Next >	Car	ncel

Fig. 28: PEM Server Wizard - Advanced Options - Web Services option

Note:	The current host may not be the host of the PEM backing database.	
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Before selecting this option, you must have:

- Completed an installation of the PEM server installer on a host system, during which you specified a backing database for the PEM server.
- Modified the pg_hba.conf file on the PEM server database host to allow connections from the PEM-HTTPD host, and restarted the database server.

When you select the Web Services option and click Next, the PEM server installer will check the current host for existing PEM-HTTPD and LanguagePack installations.

If the installer does not locate the components, the installer will inform you that one or more dependencies are missing.

👹 Setup	-		\times
Dependency missing			•
* PEM-HTTPD, LanguagePack for Postgres Enterprise Manager and P The installer will attempt to install these dependencies. Please dick 'Next' to continue	ostgreSQL 10 were not	t found.	< >
VMware InstallBuilder	ck Next >	Can	cel

Fig. 29: PEM Server Wizard - Missing dependencies dialog

Click Next to instruct the server to install LanguagePack

📲 Setup	_		\times
Dependency missing		i	F
* PEM-HITPD, LanguagePack for Postgres Enterprise Manager and PostgreSQL 1 The installer will attempt to install these dependencies.	10 were not	found.	^
P 📑 Setup	- C]	×
Installing Language Pack Unpacking C: \edb \lang[]Lib \site-packages \setuptools-39.2.0	py3.7.egg		
VMware InstallBuilder	Next >	С	ancel

Fig. 30: PEM Server Wizard - Installing LanguagePack

After installing language pack, the installer will invoke the PEM-HTTPD setup wizard.



Fig. 31: PEM Server Wizard - Installing PEM-HTTPD wizard

Follow the onscreen instructions of the PEM-HTTPD Setup Wizard. When the wizard completes the installation, click Finish to open the Database Server Installation Details dialog.

<table-of-contents> Setup</table-of-contents>		_		×
Database	Server Installation Details			
Please spec component	ify the details of the database server on which Postgres Enterprise Ma has been installed.	anager's da	tabase	
Host	127.0.0.1			
Port	5432			
User	postgres			
Password	***			
Whater Testel	Duilder			
www.are Instal	< Back	Next >	Can	cel

Fig. 32: PEM Server Wizard - Database Server Installation Details dialog

Use the fields on the Database Server Installation Details dialog to provide connection information for the Postgres installation that is hosting the PEM server installation:

- Enter the name or IP address of the PEM server host in the Host field.
- Enter the port number on which the Postgres server is listening in the Port field.
- Enter the name of a Postgres database superuser in the User field.
- Enter the password associated with the Postgres superuser in the Password field.

Click Next to continue. Before completing the PEM server installation, the installer will contact the database host. The pg_hba.conf file on the PEM database host must be configured to accept connections from the host of the httpd server and the firewall must allow a connection for the installation to continue. The PEM server installer will complete the PEM server installation, adding only those items that must reside on the host of the PEM-HTTPD server.

3.1.3 Installing the PEM Server on an Existing Postgres Server

You can use an existing Postgres server to host the PEM server and the pem database. Postgres installers and prerequisite software extensions are freely available on the EnterpriseDB website.

This section provides information about configuring an existing Postgres server for a PEM server installation.

Note: The steps that follow should be considered guidelines only; the

actual steps required to configure your Postgres installation will vary depending on the configuration of your Postgres server.

The following versions of Postgres are pre-configured to contain the sslutils extension and a service script; no additional preparation is required to use the following Postgres versions as a PEM backend database server:

- PostgreSQL (as bundled with the PEM Server installer)
- Advanced Server

3.1.3.1 Preparing the Postgres Server

Before installing the PEM server on an existing Postgres server, you must:

- Ensure that the Postgres server contains an installation of the sslutils extension. For more information, see *Installing the sslutils Extension* section.
- Register the server with the Windows service manager. For more information, see the *Registering the Service* section.

After preparing the server, you can use the PEM server installer to install PEM on the existing Postgres server.

3.1.3.2 Installing the sslutils Extension

The Postgres server on which the PEM server will reside must contain the sslutils extension. The sslutils package is freely available for download from the EDB website

When the web page opens, select the link for the SRC- SSL Utils 1.3 package. When the download completes, extract the file, and copy it into the Postgres installation directory.

Remember: You are *not* required to manually add the sslutils extension when using the following Postgres installations:

- PostgreSQL (as distributed with the PEM server installer)
- Advanced Server

sslutils must be built with the same compiler that was used to compile the backend Postgres installation. If you are using a backend Postgres database that was installed on a Windows platform using a PostgreSQL one-click installer (from EnterpriseDB) or an Advanced Server installer, you must use Visual Studio to build sslutils.

While specific details of the installation process will vary by platform and compiler, the basic steps are the same. You must:

- 1. Copy the sslutils package to the Postgres installation directory.
- 2. Open the command line of the appropriate compiler, and navigate into the sslutils directory.
- 3. Use the following commands to build sslutils:

```
SET USE_PGXS=1
SET GETTEXTPATH=<path_to_gettext>
SET OPENSSLPATH=<path_to_openssl>
SET PGPATH=<path_to_pg_installation_dir>
SET ARCH=x86
REM Set ARCH x64 for 64 bit
msbuild sslutils.proj /p:Configuration=Release
```

Where:

path_to_gettext specifies the location of the GETTEXT library and header files.

path_to_openssl specifies the location of the openssl library and header files.

path_to_pg_installation_dir specifies the location of the Postgres installation.

1. Copy the compiled sslutils files to the appropriate directory for your installation. The sslutils directory will contain the following files:

```
sslutils--1.3.sql
sslutils--unpackaged--1.3.sql
sslutils--pemagent.sql.in
sslutils.dll
```

Copy the .dll libraries and .sql files into place:

```
COPY sslutils*.sql* "%PGPATH%\share\extension\"
```

```
COPY sslutils.dll "%PGPATH%\lib\"
```

3.1.3.3 Registering the Service

When you install a PostgreSQL or an Advanced Server database using an installer from EnterpriseDB, the installer will register the service for you.

If you are using Windows to host the PEM backend database, you must register the name of the Postgres server with the Windows service manager. If you are using a Postgres server that was created using an EnterpriseDB installer, the service will be registered automatically. If you are manually building the installation, you can use the register clause of the Postgres pg_ctl command to register the service. The syntax of the command is:

```
pg_ctl register [-N <service_name>] [-U <user_name>]
    [-P <password>] [-D <data_directory>]
```

Where:

service name specifies the name of the Postgres cluster.

user_name specifies the name of an operating system user with sufficient privileges to access the Postgres installation directory and start the Postgres service. password specifies the operating system password associated with the user.

data_directory specifies the location of the Postgres data directory.

For more information about using the pg_ctl command and the available command options, see the

Postgres core documentation

3.1.3.4 Invoking the PEM Server Installer

After preparing the existing Postgres server, invoke the PEM server installer. Assume Administrative privileges and navigate into the directory that contains the installer. Then, invoke the installer with the command:

pem_server-7.<x>.<x>-<x>-<platform>

Where *x* is the major and minor versions of PEM and platform is the platform.

The installer displays a Welcome dialog.



Fig. 33: PEM server Wizard - Welcome dialog

Click Next to continue to the License Agreement dialog.

赵 Setup		_		\times
License Agreement				
Please read the following Lic with the installation.	ense Agreement. You must accept the terms of this ag	reement be	fore conti	nuing
Limited Use Software Li Version 2.9	cense Agreement			^
IMPORTANT - READ CAREFULLY				
This Limited Use Software License Agreement ("Agreement") is a legal document between you ("Customer") and EnterpriseDB Corporation ("EnterpriseDB"). It is important that you read this document before using the EnterpriseDB-provided software ("Software"). By clicking the "I ACCEPT" button, or by installing, or otherwise using the Software, Customer agrees to be bound by the terms of this Agreement, including, without limitation, the warranty disclaimers, limitations of liability and termination				
Do you accept this license?	 I accept the agreement I do not accept the agreement 			
InstallBuilder	< Back	Next >	Cano	cel

Fig. 34: PEM Server Wizard - License Agreement dialog

Carefully review the license agreement before highlighting the appropriate radio button and accepting the agreement; click Next to continue to the Installation Directory dialog.

📲 Setup		_		×
Installation Directory				F
Please select a directory for the PEM server installation.				
Installation Directory C:\Program Files\edb\pem	٢			
Show advanced options				
TostallBuildar				
< Back		Next >	C	ancel

Fig. 35: PEM Server Wizard - Installation Directory dialog

Use the Installation Directory dialog to specify the location of the PEM server and access the Advanced options dialog:

- Use the Installation Directory field to open a browser dialog and select the directory in which the PEM server will be installed.
- If you are installing the PEM server on an existing server, check the box next to Show advanced options to instruct the installer to include the Advanced options dialog in the installation process.

Click Next to continue.

<table-of-contents></table-of-contents>		_		×
Advanced options				
Select installation type Web Services and Database				
O Web Services				
🔿 Database				
InstallBuilder				
	< Back	Next >	Cano	cel

Fig. 36: PEM Server Wizard - Advanced Options dialog

Use the radio buttons on the Advanced options dialog to specify an installation type. Select:

• Web Services and Database if both the Postgres server and the PEM-HTTPD server will reside on the current host. This option is valid if you are using an existing Postgres server to host the PEM server, or using the PEM server installer to install the Postgres server on which the PEM server will reside.

If you select Web Services and Database, the PEM server installer will check the current host for a PEM-HTTPD installation, and upgrade or install PEM-HTTPD if necessary.

- Web Services if only the PEM-HTTPD server will reside on the current host. See *Installing Web Services* section for more information about invoking this option.
- Database if you are installing only the PEM server (and creating the pem backend database) on the current host. This option is valid if you are using an existing Postgres server to host the PEM server, or using the PEM server installer to install the PostgreSQL server on which PEM will reside.

After selecting an installation option, click Next to continue.

🗃 Setup	-		Х
Database Server Selection			
Select the database server.			
The database servers below may be used by Postgres Enterprise Manager for its dat	a store.		
PostgreSQL 10 (64 bit) on Port 5433	\sim		
PostgreSQL 10 (64 bit) on Port 5433			
PostgreSQL 12 (64 bit) on Port 5432			
Other Database Server			
InstallBuilder			
< Back Nex	t >	Can	icel

Fig. 37: PEM Server Wizard - Database Server Selection dialog

Use the drop-down listbox on the Database Server Selection dialog to select a backend database for the PEM server:

- Select the name of a Postgres server on the current host that was installed using a Postgres one-click installer or Advanced Server installer.
- Select the PostgreSQL x (Packaged) option to instruct the installation wizard to install and use the PostgreSQL server that is packaged with the PEM server installer. Where x is the version of the PostgreSQL database server.
- Select Other Database Server to instruct the PEM server installer to use a Postgres database that was installed from a source other than an EnterpriseDB installer (i.e. from an rpm, or built from source).

Note: The selected database server must include an installation of the sslutils contrib module, and a registered service (on Windows).

For information about Preparing the Postgres Server, please see this section.

If you selected Web Services and Database on the Advanced options dialog, the installation wizard will check the current host for an existing PEM-HTTPD installation, and upgrade or install the service as needed.

If you selected Database on the Advanced options dialog, the Database Server Installation Details dialog opens.

<table-of-contents> Setup</table-of-contents>		_		×
Database	Server Installation Details			
Please spec 5432.	ify user and password for the local server - 'PostgreSQL 12 (64 bit)' in	stallation ru	inning on p	port
User	postgres			
Password	******			
InstallBuilder -	< Back	Next >	Can	cel

Fig. 38: PEM Server Wizard - Database Server Installation Details dialog

Use the fields on the Database Server Installation Details dialog to describe the connection to the Postgres server that will host the PEM server:

- Enter the name of a database superuser in the User field.
- Enter the password associated with the superuser in the Password field.

Click Next to continue.

<table-of-contents> Setup</table-of-contents>			-		×
pemAgent service acc	ount				
Please provide the passwo The agent certificate and k directory.	rd for the Administrator account under ey files will be created in its C: \Users\A	which the pemA dministrator\Ap	igent servici pData (Roan	e will run. hing\pem	
Administrator's password	***				
InstallBuilder	<	Back	Next >	Can	cel

Fig. 39: PEM Server Wizard - PEM Agent Service Account - Administrator's Password

Provide the administrators password under which PEM Agent service will run.

Click Next to continue.

🍯 Setup			_	
Network Details				-
Please enter the CIDR format added to the server's pg_hba	ed network address ra conf file. For example,	inge that agents will co , 192.168.1.0/24.	nnect to the serve	er from, to be
Network address 127.0.0.1	/32			
InstallBuilder				
		< Back	Next >	Cancel

Fig. 40: PEM Server Wizard - Network Details dialogsx

Use the Network Details dialog to specify the CIDR-style network address from which the PEM agents will connect to the server (the client-side address). The specified address will be added to the server's pg_hba. conf file.

You can specify additional network addresses by manually adding entries to the pg_hba.conf file on the PostgreSQL server if required, using the initial entry as a template.

When you've added the Network address, click Next to continue to the Agent Details dialog.

The PEM server installer will install a PEM agent to the host on which the server resides, to monitor the server and provide alert processing and garbage collection services. A certificate will also be installed in the location specified in the Agent certificate path field.

<table-of-contents> Setup</table-of-contents>			_		×
Agent Details.					•
Please specify a descrip	tion for the agent.				
Description.	Postgres Enterprise Manager Host				
Agent certificate path	C:\Users\Administrator\AppData\Roaming\pem	۳			
TostallRuilder					
11Stallbulluci	< Back	Ne	ext >	Car	ncel

Fig. 41: PEM Server Wizard - Agent Description and Certificate Path dialog

You can enter an alternate description or an alternate agent certificate path for the PEM agent, or accept the defaults. Click Next to continue to the Ready to Install dialog.

🗃 Setup	_		×
Ready to Install			
Setup is now ready to begin installing the PEM server on your computer.			
TestallQuides			
< Back	Next >	Car	ncel

Fig. 42: PEM Server Wizard - Ready to Install dialog

The wizard is now ready to install the PEM server. Click Back to modify any of the options previously selected, or Next to continue with the installation.

<table-of-contents></table-of-contents>		-		×
Installing				
Please wait while Setup installs the PEM server on your com	puter.			
Installing)			
Creating directory C:[]are\web\pgadmin\tools\schema_d	ff\static\scss			
Installbuilder	< Back	Next >	Cano	el

Fig. 43: PEM Server Wizard - Installation in progress

During the installation process, the installer will copy files to the system, and set up the PEM server's backend database. A popup dialog opens confirming that the pem database has been created and configured.

<table-of-contents> Setup</table-of-contents>		_		\times
Installing				Þ
Please wait v	while Setup installs the PEM server on your computer.			
<table-of-contents> Info</table-of-contents>			×	
Ir I	Configured the webservice for Postgres Enterprise Manager (PE '8443'. Created and configured the 'pem' database.	M) Server	on port	
	UK			
InstallBuilder ·				
	< Back N	lext >	Can	cel

Fig. 44: PEM Server Wizard - pem database created

Click OK to acknowledge that the pem database has been created, and continue to the Completed... dialog.



Fig. 45: PEM server Wizard - Finish Installation

If you are using a PEM-HTTPD service that resides on a separate host, you must:

- Modify the pg_hba.conf file on the Postgres server host to allow connections between the hosts.
- Invoke the PEM server installer on the host of the PEM-HTTPD server. See *Installing Web Services* section for more information about installing PEM-HTTPD.

3.1.4 Invoking the Server Installer from Command Line

The command line options of the PEM server and PEM agent installers offer functionality in situations where a graphical installation may not work because of limited resources or system configuration. You can:

• Include the --mode unattended option when invoking the installer to perform an installation without additional user input.

Not all command line options are suitable for all platforms. For a complete reference guide to the command line options, include the --help option when you invoke the installer.

3.1.4.1 Invoking the PEM Server Installer in Unattended Mode

You can perform an unattended PEM server installation by providing installation preferences on the command line when invoking the installer. Please note that the system on which you are installing the PEM server must have internet access.

You must have Administrative privileges to install the PEM server. Before invoking the PEM server installer, you must install the following dependencies:

- PostgreSQL
- pem-httpd
- Language Pack

You can use the PEM server installer to satisfy the dependencies of the PEM server; use the following command to extract the dependencies. Navigate to the location of the installer, and use the following command to extract the dependencies:

pem-server-7.<x>.<x>-windows-x64.exe --extract-dependents C:\

In our example, the files are extracted to the $C: \setminus$ directory. After extracting the files, you must install each program. Navigate into the directory that contains the files (in our example, $C: \setminus$), and enter:

```
edb-languagepack-<version>-windows-x64.exe --mode unattended
pem-httpd-<version>-windows-x64.exe --mode unattended
postgresql-<version>-windows-x64.exe --mode unattended
```

Then, you can invoke the PEM server installer:

```
pem-server-7.<x>.<x>-windows-x64.exe --mode unattended
--existing-user <registered_edb_user> --existing-password
<edb_user_password> --pgport <port> --pguser postgres
--agent_description pem-agent --systempassword <windows_password>
--agent-crt-path C:\edb``
```

Where:

- registered_edb_user specifies the name of a registered EnterpriseDB user. To register, visit the EDB website
- edb_user_password specifies the password associated with the EDB user account.
- port specifies the port used by the backing PostgreSQL database; by default, the PostgreSQL database uses port 5432.
- cidr_address_range specifies the address range that will be added to the pg_hba.conf file of the PEM server's backing database to allow connections from the agents that will be monitored by the server. You may

wish to specify a network range (for example, 192.168.2.0/24) to provide server access to agents that reside on the same network.

• windows_password specifies the password associated with the Windows Administrator's account.

Note: when invoked in unattended mode, the PostgreSQL installer creates a user named postgres, with a password of postgres.

3.2 Installing a PEM Agent on Windows

To invoke the PEM agent installer, assume Administrative privileges and navigate into the directory that contains the installer. Then, invoke the installer with the command:

```
pem_agent-7.<x>.<x>-<x>-platform.exe
```

The Setup... page opens, welcoming you to the PEM Agent installer.



Fig. 46: PEM Agent Wizard - Welcome dialog

Click Next to continue to the License Agreement.



Fig. 47: PEM Agent Wizard - License Agreement dialog

Carefully review the license agreement before highlighting the appropriate radio button and accepting the agreement; click Next to continue to the Installation Directory dialog.

📲 Setup	_		Х
Installation Directory			
Please select a directory for PEM agent installation.			
Installation Directory C:\Program Files (x86)\edb\pem			
Show advanced options			
Register now?			
InstallBuilder Kack	lext >	Can	cel

Fig. 48: PEM Agent Wizard - Installation Directory dialog

By default, the PEM agent is installed in the C:\Program Files (x86)\edb\pem directory. You can accept the default installation directory, or modify the contents of the Installation Directory field, specifying an alternate installation directory for the PEM agent.

By default, the PEM agent installer places a certificate in the Administrator's %APPDATA%\pem directory. Check the Show advanced options box to indicate that you would like the PEM agent installer to include a dialog that allows you to specify an alternate path for the certificate file.

Check the box next to Register now? to instruct the installer to register the newly installed PEM agent with the PEM server.

Click Next to continue to the PEM Server Installation Details dialog.

<table-of-contents> Setup</table-of-contents>				_		×
PEM serve	r installation details					*
Please verify	the PEM server installation details					
Host	localhost					
User Name	postgres					
	[
Password						
Port	5432					
, or c	0.02					
InstallBuilder —		< Back	Ne	xt >	Can	icel

Fig. 49: PEM Agent Wizard - PEM Server Installation details dialog

Enter the connection details for the PEM server on the PEM server installation details dialog:

- Specify the name or IP address of the system on which the PEM database server resides in the Host field. Please note: If the PEM-HTTPD web server and PEM database are hosted on different systems, you must specify *the host of the PEM database*.
- Specify the name of the database superuser in the User Name field.
- Specify the password associated with the database superuser in the Password field.
- Specify the port that PostgreSQL is monitoring in the Port field.

Click Next to continue to pemAgent Service Account. The installer will attempt to connect to the server to verify that the details are correct.

Note: The PEM server must allow connections from the PEM agent installer. If you encounter a connection error, confirm the connection properties specified on the PEM Server Installation Details dialog are correct, and confirm that the pg_hba.conf file (on the PEM server) will allow a connection to the server described in the error message.

Setup	-		×
pemAgent service account			
Please provide the password for the edb account under which the pemAgent s The agent certificate and key files will be created in its C:\Users\edb\AppData	ervice will run Roaming\pem	directory	
edb's password			
InstallBuilder Sack	Next >	Can	cel

Fig. 50: PEM Agent Wizard - pemAgent Service Account password dialog

Provide the password for the edb account under which the pemAgent service will run. The agent certificate and key files will be created in C:\Users\edb\AppData\Roaming\pem directory. Click Next to continue to Agent Details dialog.

<table-of-contents> Setup</table-of-contents>			_		×
Agent Deta	ils				
Please provid	e the agent description				
Description	WIN-HJLOR94IJNK				
InstallBuilder —		< Back	Next >	Cano	cel

Fig. 51: PEM Agent Wizard - Naming PEM agent dialog

The tree control displayed in the Browser panel of the PEM web interface displays the value entered in the Description field to identify the PEM agent. Specify a descriptive name for the agent, such as the hostname of the machine the agent is installed on, or a name that reflects the host's functionality.

Provide a descriptive name, or accept the default provided by the PEM agent host, and click Next to continue.

If you checked the Show advanced options checkbox, the Advanced options dialog opens.

<table-of-contents> Setup</table-of-contents>			-		×
Advanced options				i	
Please provide the certificate	path				
Certificate Path C:\Users\	dministrator \AppData \Roaming \pem	1			
VMware InstallBuilder	< B	ack	Next >	C	ancel

Fig. 52: PEM Agent Wizard - Advanced Options - Certificate Path dialog

By default, the PEM agent installer places the certificate in the C: $Program Files (x86) \edbpem directory$. Specify an alternate path for the certificate or accept the default and click Next.

The wizard is now ready to install the PEM agent; click Back to amend the installation directory, or Next to continue.

📑 Setup	_		×
Ready to Install			
Setup is now ready to begin installing the PEM agent on your computer.			
InstallBuilder			
< Back N	lext >	Can	icel

Fig. 53: PEM Agent Wizard - Ready to install

Click Next on the Ready to Install dialog to instruct the installer to copy files to the system and register the agent on the PEM server.

📲 Setup	_		×
Installing			
Please wait while Setup installs the PEM agent on your computer.			
Installing			
Creating certificates.			
InstallBuilder			
< Back	Next >	Can	cel

Fig. 54: PEM Agent Wizard - Installation in progress

The PEM agent installer displays progress bars to mark the PEM agent's installation progress.



Fig. 55: PEM Agent Wizard - Finish Installation dialog

When the installation has completed, the PEM agent will be running and reporting operating system and host data to the PEM server. To start monitoring Postgres instances on the host of the PEM agent, they must now be added to PEM's enterprise directory and bound to the agent.

3.2.1 Invoking the Agent Installer from the Command Line

The command line options of the PEM agent installers offer functionality in situations where a graphical installation may not work because of limited resources or system configuration. You can:

• Include the --mode unattended option when invoking the installer to perform an installation without additional user input.

Not all command line options are suitable for all platforms. For a complete reference guide to the command line options, include the --help option when you invoke the installer.

3.2.1.1 Invoking the PEM Agent Installer in Unattended Mode

You can perform an unattended PEM server installation by providing installation preferences on the command line when invoking the installer. Please note that the system on which you are installing the PEM server must have internet access.

Before invoking the PEM agent installer in unattended mode, you must:

- Install the PEM server; the pg_hba.conf file of the PEM server must allow connections from the host of the PEM agent.
- Ensure that the monitored Postgres database has SSL enabled, and is accepting connections.

You must have Administrator privileges to install the PEM agent. Use the following command to invoke the PEM agent installer in unattended mode:

```
pem-agent-7.<x>.<x>-windows-x64.exe --mode unattended
--pghost <pem_server_host_address> --pgport <pem_server_port>
--pguser postgres --pgpassword <pguser_password>
--agent_description <agent_name>
```

Where:

- pem_server_host_address specifies the IP address of the host of the PEM server.
- pem_server_port specifies the port used by the backing PEM database; by default, the database uses port 5432.
- pguser_password specifies the password associated with the PEM database superuser.
- agent_name specifies a descriptive name for the PEM agent.

```
EnterpriseDB is the leading provider of value-added products and services for the 

→Postgres community. Please visit our website at www.enterprisedb.com.
```

Note: When configuring a shell/batch script run by a Windows agent that has PEM 7.11 or later version installed, the AllowBatchJobSteps parameter must be set to True in the agent.cfg file. The PEM agent will not execute any batch/shell script by default.

CHAPTER 4

The PEM Web Interface

After installing a PEM server and agent, you can configure PEM to start monitoring and managing PostgreSQL or Advanced Server instances. The PEM server installer installs the PEM web interface. You can use the interface to review information about objects that reside on monitored servers, or to review statistical information gathered by the PEM server.

After installing and configuring PEM, you can use any supported browser to access the PEM web interface. Open your browser, and navigate to:

https://<ip_address_of_PEM_host>:8443/pem

Where ip_address_of_PEM_host specifies the IP address of the host of the PEM server. The Postgres Enterprise Manager Web Login window opens:



Fig. 1: The PEM Web Login page

Use the fields on the Postgres Enterprise Manager Login window to authenticate yourself with the PEM server:

- Provide the name of a pem database user in the Username field. For the first user connecting, this will be the name provided when installing the PEM server.
- Provide the password associated with the user in the Password field.

Click the Login button to connect to the PEM server.

Enterprise	e Dashboard	i													
		Status													
		3.00 2.50 2.00 1.50													
		0.50													
		0.00	Agents Up)		_	Agents Down		Servers Up		Servers Do	own			
A 01															
Agent Sta	itus	N		41				Thoras da	ODU UNIT- Mar (A		- I Will Al (A			(0)	Distribution
заскоит	Status	Name		Alerts	versio	on	Processes	Inreads	CPU Utilisation (%) Memor	y Utilisation (7	6) Swap	Utilisation	(%)	DISK Utilisati
	O UP	Postgres Enterprise Manag	<u>ger Host</u>	0	7.14.0	0-dev	309	810	24.85	77.18		17.88			45.84
	UP V	PEM Agent on Remote Hos	st	U	7.13.0	U	207	524	0.35	51./3		3.03			24.30
Server Sta	atus														
lackout	Status	Name	Connec	tions	Alerts	Vers	sion								Remotely Monitored
	💙 UP	Postgres Enterprise Manager Server		12	6	Pos bit	tgreSQL 12.1	on x86_64-p	oc-linux-gnu, compil	ed by gcc (G	CC) 4.8.5 201	50623 (Red	Hat 4.8.5-3	39), 64-	No
	💙 UP	EDB Postgres Advanced Server 11		3	3	Pos (GC	tgreSQL 11.7 C) 4.8.5 2015	3 PostgreSQL 11.7 (EnterpriseDB Advanced Server 11.7.14) on x86_64-pc-linux-gnu, compiled by gcc (GCC) 4.8.5 20150623 (Red Hat 4.8.5-36), 64-bit						cc	No
	A DOMAN	DCCOL12 Contor7 1		-											
	U DOWN	PGSQL12_Centos7_1		0	0	Pos bit	tgreSQL 12.2	on x86_64-ŗ	oc-linux-gnu, compil	ed by gcc (G	CC) 4.8.5 201	50623 (Red	Hat 4.8.5-3	39), 64-	Yes
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Fig. 2: The Global Overview Dashboard

Before you can use the PEM web interface to manage or monitor a database server, you must *register* the server with the PEM server. When you register a server, you describe the connection to the server, provide authentication information for the connection, and specify any management preferences (optionally binding an agent).

A server may be managed or unmanaged:

• A managed server is bound to a PEM agent. The PEM agent will monitor the server to which it is bound, and

perform tasks or report statistics for display on the PEM dashboards. A managed server has access to extended PEM functionality such as Package Management or Custom Alerting; when registering a server, you can also allow a managed server to be restarted by PEM as required.

• An unmanaged server is not bound to a PEM agent; you can create database objects on an unmanaged server, but extended PEM functionality (such as Package Management or Custom Alerting) is not supported on an unmanaged server.

You must also ensure the pg_hba.conf file of the server that you are registering allows connections from the host of the PEM web interface.

To access online help information about the PEM web interface, select Help from the menu bar. Additional information is available in .pdf and .html format from the EnterpriseDB website

- The PEM Administrator's Guide contains information about registering and managing servers, agents, and users.
- The PEM Enterprise Features Guide contains information about using the tools and wizards that are part of the web interface.
- The PEM Agent User Guide contains helpful information about managing your PEM agents.
- The PEM Upgrade and Migration Guide contains information about upgrading PEM to its latest version from a previous version.
- The PEM PgBouncer Configuration Guide contains information about using PgBouncer with your PEM installation.
- The PEM EDB Ark Management Guide contains information about using PEM to manage cloud installations of Advanced Server and PostgreSQL.

CHAPTER 5

Uninstalling Postgres Enterprise Manager™ Components

If you uninstall the PEM server from a host, the PEM agent installed on the same host is uninstalled. But if you uninstall the PEM agent, then the PEM server installed on the same host will not be uninstalled.

You can use the Windows Add/Remove Programs application to remove PEM components from a Windows host. Select the Add/Remove Programs option from the Windows Control Panel. When the control panel opens, locate the name of the PEM component in the program list. Click the Remove button to remove the component.

You can also invoke the uninstaller that resides at the following location:

For the PEM Server, C:\Program Files\edb\pem\server\uninstall-pemserver

For the PEM Agent, C:\Program Files\edb\pem\agent\uninstall-pemagent

CHAPTER 6

Conclusion

EDB Postgres Enterprise Manager Installation Guide for Windows

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- EDB designs, establishes coding best practices, reviews, and verifies input validation for the logon UI for EDB Postgres Enterprise Manager where present. EDB follows the same approach for additional input components, however the nature of the product may require that it accepts freeform SQL, WMI or other strings to be entered and submitted by trusted users for which limited validation is possible. In such cases it is not possible to prevent users from entering incorrect or otherwise dangerous inputs.
- EDB reserves the right to add features to products that accept freeform SQL, WMI or other potentially dangerous inputs from authenticated, trusted users in the future, but will ensure all such features are designed and tested to ensure they provide the minimum possible risk, and where possible, require superuser or equivalent privileges.
- EDB does not that warrant that we can or will anticipate all potential threats and therefore our process cannot fully guarantee that all potential vulnerabilities have been addressed or considered.

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