Installation Guide

PowerAlert[®] Element Manager

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1. Introduction

The PowerAlert Element Manager (PAEM) is a software application that facilitates configuration and maintenance of Tripp Lite LX Platform devices and certain Tripp Lite software solutions. PAEM contains a discovery engine to identify supported Tripp Lite solutions on the network. PAEM then leverages this information when performing the following functions:

- Mass Configuration Concurrently applying a source configuration to multiple target devices
- Mass Update Concurrently installing LX Platform firmware onto multiple LX Platform devices

1.1 System Requirements

- Personal computer with a supported operating system: Windows 7, 8 or 10; Windows Server 2008, 2012, 2016 or 2019
- CPU: 4 core 2.0 GHz or higher
- Memory: minimum of 1.5 GB
- Disk Space: minimum of 40 GB
- Ethernet network that supports the TCP/IP protocol
- Supported web browser: Google Chrome, Mozilla Firefox, Internet Explorer 10 or later, Safari

Note: Windows and Internet Explorer are trademarks of Microsoft Corporation. Safari is a trademark of Apple, Inc. Google Chrome is a trademark of Google LLC. Firefox is a trademark of The Mozilla Foundation.

1.2 Components

During PAEM installation, several 3rd party components will be loaded. Review the list and links below for information on the 3rd party components and licenses.

- OpenJDK An open source Java platform implementation. Website: https://openjdk.java.net/
- MongoDB MongoDB is a cross-platform, document-oriented database. Website: https://www.mongodb.com/
- **RabbitMQ** RabbitMQ is a message broker that implements Advanced Message Queuing Protocol (AMQP). Website: https://www.rabbitmq.com/
- **YAJSW** Yet Another Java Service Wrapper is an open source Java service wrapper for Windows. Website: http://yajsw.sourceforge.net/
- Jasypt Password encryption. Website: http://www.jasypt.org/
- OpenSSL Converting *.crt certificate to Java Keystore. Website: https://www.openssl.org/
- Spring Boot Framework A web and microservices framework. Website: https://spring.io/projects/spring-boot
- Erlang/OTP The Erlang runtime system and related components. Website: https://erlang.org/doc/
- Angular A web application framework used for the PAEM user interface. Website: https://angular.io/

1.3 Compatibility

PAEM supports the following hardware and software products:

- Tripp Lite LX Platform devices, including WEBCARDLX, WEBCARDLXMINI, PDU3E-Series PDUs, PDU3XE-Series PDUs, LX Platform PDUs, SRCOOLNETLX and SRCOOLNET2LX
- Instances of PowerAlert Device Manager Local (PADM-Local) future

PAEM does NOT support the following hardware and software products:

- SNMPWEBCARD Platform devices, including SNMPWEBCARD, legacy PDUs and SRCOOLNET
- PowerAlert Local software (PAL)
- PowerAlert Network Management System Software (PANMS)
- Tripp Lite KVMs and IP Consoles
- Tripp Lite managed switches
- Non-Tripp Lite devices

- 1. Download the latest version of PowerAlert Element Manager from the Tripp Lite website at tripplite.com/products/management-software
- 2. Once downloaded, right click the PAEM.exe file and select **Run as administrator** (Figure 2-1). Without administrative rights, the application will not install correctly.

Note: If a previous version of PAEM is already installed, the installer will attempt to uninstall it before installing the newer version.



Figure 2-1: Run as administrator

3. At the User Account Control prompt (Figure 2-2), click Yes. The application will not install properly otherwise.



Figure 2-2: User Account Control

4. A dialog box appears identifying components that need to be installed (Figure 2-3). Click Install to start the process.

Status	Requirement
installing	Microsoft Visual C++ 2015 Update 3 Redistributable Package (x64)
Pending	Erlang OTP 22 (x64)
Pending	OpenSSL_Light-1_1_1
Pending	JRE_SE 1.8.0_211 (x64)

Figure 2-3: Installing required components

5. In the InstallShield Wizard welcome dialog box (Figure 2-4), click Next to proceed with the installation.





6. Review the End-User License Agreement, then click Yes to accept the terms of the agreement (Figure 2-5).

AEM - InstallShield Wizard	2				
License Agreement Please read the following license agreement carefully.	Z				
Press the PAGE DOWN key to see the rest of the agreement.					
	^				
END-USER LICENSE AGREEMENT FOR POWERALERT SOFTW	ARE				
IMPORTANT-READ CAREFULLY. This Trippe Manufacturing End-User License Agreement ("EULA") is a legal AGREEMENT between you (either as a registered individual developer or as the registered developer/representative and on behalf of a single entity) and Trippe Manufacturing Co. ("COMPANY") for the Deverylopt of the software					
Do you accept all the terms of the preceding License Agreement? If you select No, the setup will close. To install PAEM, you must accept this agreement.					
< Back Yes	No				

Figure 2-5: End User License Agreement

- 7. Three setup types are supported. Each is covered in the steps below.
- 7.1. HTTP For the HTTP setup type, enter the HTTP port number, then click Next. The default port value is 8080.

AEM - InstallShield Wizard	AEM - InstallShield Wizard
Setup Type Select the setup type to install.	Port Port number is necessary to continue.
Click the type of setup you prefer, then dick Next.	Specify the port number to be used by this application.
HTTP The default HTTP setup without certificate.	Port Number:
O HTTPS with HTTPS setup with Self-Signed certificate, it will be generated and installed automatically.	8080
OHTTPS with Third-Party HTTPS setup with SSL certificate you want to be installed. Certificate	
InstallShield	InstallShield
< Back Next > Cancel	< Back Next > Cancel

Figure 2.6: HTTP setup without Certificate

7.2. **HTTPS with Self-Signed Certificate** – This setup type automatically generates the certificate via Java Keystore. Enter the HTTPS port number, then click **Next**. The default port value is 4040.

AEM - InstallShield Wizard	>	AEM - InstallShield Wizard	\rightarrow
Setup Type Select the setup type to insi	tal.	Port Port number is necessary to continue.	
Click the type of setup you	prefer, then dick Next.	Specify the port number to be used by this application.	
Онттр	The default HTTP setup without certificate.	Port Number:	
● HTTPS with Self-Signed Certificate	HTTPS setup with Self-Signed certificate, it will be generated and installed automatically.	4040	
CHTTPS with Third-Party Certificate	HTTPS setup with SSL certificate you want to be installed.		
InstallShield		- InstallShield	
	< Back Next > Cancel	< Back Next >	Cancel

Figure 2-7: HTTPS setup with Self-Signed Certificate

7.3. **HTTPS with Third-Party Certificate** – Two options for Third-Party Certificates are available: Java Keystore and CRT Certificate. Click **Next** to make the selection.

AEM - InstallShield Wizard	×
Setup Type Select the setup type to inst	tal.
Click the type of setup you p	prefer, then dick Next.
Онттр	The default HTTP setup without certificate.
O HTTPS with Self-Signed Certificate	HTTPS setup with Self-Signed certificate, it will be generated and installed automatically.
HTTPS with Third-Party Certificate	HTTPS setup with SSL certificate you want to be installed.
installShield	
	< Back Next > Cancel

Figure 2-8: HTTPS Setup with Third-Party Certificate

7.3.1. Java Keystore – Select the Java Keystore option and click Next. Use the Browse button to select the Keystore file. Enter the Java Keystore Password, then click Next. Proceed to step 7.3.3.

AEM - InstallShield Wizard	AEM - InstallShield Wizard
Setup Type Select the setup type to install.	Java Keystore Information Specify the java keystore.
Please select a setup type.	Specify the keystore to be used by this application.
Java Keystore Program will be installed with Java keystore. Certificate Program will be installed with certificate and private key.	Java Keystore Path: Enter Java Keystore Password:
nstallShield < Back Next > Cancel	InstallShield Cancel

Figure 2-9: Java Keystore Setup

7.3.2. Certificate – Select the Certificate option and click Next. Use the Browse buttons to select the Certificate file and the Private Key file, then click Next.

AEM - InstallShield Wizard	AEM - InstallShield Wizard
Setup Type Select the setup type to install.	Certificate and Private Key Information Enter requested data.
Please select a setup type.	Specify the certificate and private key to be used by this application.
Java Keystore Program will be installed with Java keystore. Certificate Program will be installed with certificate and private key.	Certificate:
installShield < Back Next > Can	cel InstallShield

Figure 2-10: Certificate Installation

7.3.3 **Port** – Enter the HTTP port number, then click **Next**. The default port value is 4040. If the Keystore Password, Certificate or Private Key file are invalid/expired, an error message will appear.

AEM - InstallShield Wizard		,	×
Port number is necessary to continue.			Z
Specify the certificate to be used by this a	application.		
Port Number:			
4040			
stallShield			
	< Back	Next >	Cancel

Figure 2-11: Specify the Port Number

8. By default, PAEM will be installed at C:\Program Files\Tripp Lite\PAEM. To specify a different location, click Browse and navigate to the desired location. Click Next to proceed.

Note: If entering a location path, do not use the following characters: < > : " / \ | ? * \$ ^ ~

hoose Destination Location		
Select folder where setup will install files.		
Setup will install PAEM in the following folder		
To install to this folder, click Next. To install another folder.	to a different folder, o	lick Browse and select
Destination Folder		
Destination Folder		Browse
Destination Folder C:\Program Files\Tripp Lite\PAEM\		Browse
Destination Folder C:\Program Files\Tripp Lite\PAEM\ allShield		Browse

Figure 2-12: Choose Destination Location of Installed Application

9. Click **Install** to start the installation or **Back** to review the previous steps. When the installation has completed, click the **Finish** button.

AEM - InstallShield Wizard	PAEM - InstallShield Wizard
Ready to Install the Program The wizard is ready to begin installation.	InstallShield Wizard Complete
Click Install to begin the installation.	The InstallShield Wizard has successfully installed PAEM. Click Finish to exit the wizard.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
InstallShield	
< Back Install Cancel	< Back Finish Cancel

Figure 2-13: Ready to Install

3. PAEM Maintenance

Use the steps in this section to modify the installation, including:

- Installation type (e.g., from HTTP to HTTPS with Third-Party Certificate)
- Port number
- SSL Certificate (replace an existing certificate)
- **IMPORTANT:** Be sure to clear your browser cache before modifying the installation
- 1. Open Control Panel and select the Program and Features (or similar) item.



Figure 3-1: Control Panel > Programs and Features

2. In the "Uninstall or change a program" window that opens (Figure 3-2), right-click on the PAEM item and select the Change option.

Programs and Features						_	×
\leftarrow \rightarrow \checkmark \uparrow 🗖 \ll All Contr	rol Panel Items > Programs and Features	✓ Ŏ Search Programs and Features				م	
Control Panel Home	Uninstall or change a prog	gram					
View installed updates							
💡 Turn Windows features on or							
off	Organize 🔻 Uninstall Change						 ?
	Name		Publisher	Installed On	Size	Version	
	🕌 Java 8 Update 202 (64-bit)		Oracle Corporation	2/23/2021	120 MB	8.0.2020.8	
	2 PAEM		Tripp Lite	2/23/2021	507 MB	1.0.0.264	
	Erlang OTP 22 (10.4)	Uninstall	1	2/23/2021			
	📧 OpenSSL 1.1.1d Light (64-bit)	Change	penSSL Win64 Installer Team	2/23/2021	9.84 MB		
	Microsoft Update Health Tools		Microsoft Corporation	2/19/2021	1.09 MB	2.75.0.0	
	💽 Microsoft Edge		Microsoft Corporation	2/19/2021		88.0.705.74	
	💿 Google Chrome		Google LLC	2/18/2021	531 MB	88.0.4324.182	
	Microsoft OneDrive		Microsoft Corporation	2/18/2021	151 MB	21.016.0124.0003	
	Lenovo Vantage Service		Lenovo Group Ltd.	2/7/2021	29.8 MB	3.5.27.0	
	🜍 Oracle VM VirtualBox 6.1.18		Oracle Corporation	1/29/2021	217 MB	6.1.18	
	🕌 Java 8 Update 281 (64-bit)		Oracle Corporation	1/26/2021	125 MB	8.0.2810.9	
	🍅 Mozilla Firefox 84.0.2 (x64 en-US)		Mozilla	1/13/2021	206 MB	84.0.2	
	🗙 Malwarebytes version 4.3.0.98		Malwarebytes	12/17/2020		4.3.0.98	
	📓 Notepad++ (32-bit x86)		Notepad++ Team	11/20/2020	12.1 MB	7.9.1	
	ሺ PowerAlert External Battery Pack Ut	ility	TrippLite	8/27/2020	10.3 MB	12.6.64.17732	
	😸 Microsoft Visual C++ 2013 Redistrib	outable (x86) - 12.0.30501	Microsoft Corporation	8/12/2020	17.1 MB	12.0.30501.0	
	38 Intel [®] Graphics Driver		Intel Corporation	8/12/2020	74.2 MB	26.20.100.7925	
	Intel® PROSet/Wireless Software		Intel Corporation	8/12/2020	204 MB	18.12.0	
	Hicrosoft Visual C++ 2017 Redistrib	outable (x64) - 14.16.27029	Microsoft Corporation	8/12/2020	23.1 MB	14.16.27029.1	

Figure 3-2: Uninstall or Change a Program

 Select the Modify option (Figure 3-3), then follow the regular installation instructions as described in section 2 Installation, starting with Step 7.

AEM - InstallSh	ield Wizard
Welcome	
моату/кера	r or remove the program.
Welcome to t the current in	he PAEM Setup Maintenance program. This program lets you modify or uninstall stallation. Click one of the options below.
Modify/Re	pair
.	Select new program features to add or select currently installed features to remove.
OUninstall	
6	Uninstall all installed features.
stallShield ——	
	< Back Next > Cancel

Figure 3-3: Modify the Installation

3. PAEM Maintenance

4. At the User Account Control prompt (Figure 3-4), click Yes. When the installation has completed, click the Finish button.



Figure 3-4: User Account Control

Figure 3-5: Maintenance Complete

4. Upgrade PAEM

1. To install a newer version of PAEM, run the downloaded executable file as an administrator. In the Setup window (Figure 4-1), click **Yes** to start the PAEM upgrade.



Figure 4-1: Begin installation of PAEM upgrade

2. If the update entails installation of a new component, a message will appear (Figure 4-2). Click **Install** to proceed. When the installation has completed, click the **Finish** button.



Figure 4-2: Installing Required Components

Figure 4-3: Begin Installation



Figure 4-4: Update Complete

1. To uninstall PAEM, administrator privileges are required. Open the **Control Panel** and select the **Programs and Features** (or similar) item. For **Windows 10** and **Server 2019** environments, proceed to section **5.1 Uninstall PAEM for Windows 10 and Server 2019**.



Figure 5-1: Control Panel > Programs and Features

2. In the "Uninstall or change a program" window that opens, right-click on the **PAEM** item and select the **Uninstall** option (Figure 5-2).

Programs and Features						-		×
← → × ↑ 🖬 « All Contr	rol Panel Items > Programs and Features		✓ ♂ Search Programs and	Features				<i>م</i>
Control Panel Home	Uninstall or change a program	I.						
View installed updates	To uninstall a program, select it from the	e list and then click Ur	ninstall. Change, or Repair.					
Turn Windows features on or								
off	Organize 🔻 Uninstall Change						== -	?
	Name		Publisher	Installed On	Size	Version		
	🐇 Java 8 Update 202 (64-bit)		Oracle Corporation	2/23/2021	120 MB	8.0.2020.8		
	K PAEM		Tripp Lite	2/23/2021	507 MB	1.0.0.264		
	Erlang OTP 22 (10.4)	Uninstall	1	2/23/2021				
	OpenSSL 1.1.1d Light (64-bit)	Change)penSSL Win64 Installer Team	2/23/2021	9.84 MB			
	Microsoft Update Health Tools	5	Microsoft Corporation	2/19/2021	1.09 MB	2.75.0.0		
	C Microsoft Edge		Microsoft Corporation	2/19/2021		88.0.705.74		
	💿 Google Chrome		Google LLC	2/18/2021	531 MB	88.0.4324.182		
	Microsoft OneDrive		Microsoft Corporation	2/18/2021	151 MB	21.016.0124.0003		
	Lenovo Vantage Service		Lenovo Group Ltd.	2/7/2021	29.8 MB	3.5.27.0		
	🧊 Oracle VM VirtualBox 6.1.18		Oracle Corporation	1/29/2021	217 MB	6.1.18		
	🕌 Java 8 Update 281 (64-bit)		Oracle Corporation	1/26/2021	125 MB	8.0.2810.9		
	ڬ Mozilla Firefox 84.0.2 (x64 en-US)		Mozilla	1/13/2021	206 MB	84.0.2		
	衭 Malwarebytes version 4.3.0.98		Malwarebytes	12/17/2020		4.3.0.98		
	📓 Notepad++ (32-bit x86)		Notepad++ Team	11/20/2020	12.1 MB	7.9.1		
	ሺ PowerAlert External Battery Pack Utility		TrippLite	8/27/2020	10.3 MB	12.6.64.17732		
	😸 Microsoft Visual C++ 2013 Redistributabl	e (x86) - 12.0.30501	Microsoft Corporation	8/12/2020	17.1 MB	12.0.30501.0		
	👪 Intel® Graphics Driver		Intel Corporation	8/12/2020	74.2 MB	26.20.100.7925		
	Intel® PROSet/Wireless Software		Intel Corporation	8/12/2020	204 MB	18.12.0		
	😸 Microsoft Visual C++ 2017 Redistributabl	e (x64) - 14.16.27029	Microsoft Corporation	8/12/2020	23.1 MB	14.16.27029.1		

Figure 5-2: Uninstall or Change a Program

3. If prompted, click Yes (Figure 5-3).



Figure 5-3: Remove the Program

4. Click Yes in the next window to begin to uninstall the software (Figure 5-4). A window will display the progress.



Figure 5-4: Uninstall Confirmation

5. To complete the uninstall, click the **Finish** button (Figure 5-5).

AEM - InstallShield Wizard	Uninstall Complete InstallShield Wizard has finished uninstalling PAEM.
l	< Back Finish Cancel

Figure 5-5: Uninstall Complete

Note: PAEM will retain database information after it is uninstalled in order to facilitate a subsequent re-installation. This includes the most recent login password; re-installation of PAEM will use that most recent password. To revert to the default password, delete the **mongodb** folder prior to re-installing PAEM. The **mongodb** folder is located at C:\Program Files\TrippLite\PAEM or the location selected when PAEM was installed. To completely remove PAEM after uninstalling it, delete the PAEM folder.

📙 📝 📙 🖛 P	AEM					
File Home	Share View					
$\leftarrow \rightarrow \cdot \uparrow$, ≪ Windows (C:) → Program	n Files > TrippLite > PAEM >	5 V	🔎 Search PAEM		
> 📙 Synaptic	s ^	Name		Date modified	Туре	Size
✓ 🔤 TrippLite		eri10.4		4/3/2020 9:41 AM	File folder	
> 🔤 PAEM		firmwares		10/14/2020 10:12	File folder	
Uninstall	Information	📙 jasypt		3/2/2020 10:39 AM	File folder	
> UNP		🔜 java		3/2/2020 10:39 AM	File folder	
> Window	Defender	logs		10/20/2020 6:43 AM	File folder	
> Window	Defender Advanced Threat P	🔜 mongodb		2/20/2020 4:04 PM	File folder	
Vindow.		openssi		3/2/2020 10:39 AM	File folder	
Window	Firewall Configuration Provid	🔥 rabbitmq		3/2/2020 10:39 AM	File folder	
> Window	s Mail	scripts		3/2/2020 10:38 AM	File folder	
> Window	Media Player	yajsw		3/2/2020 10:38 AM	File folder	
Window	Multimedia Platform	hide.vbs		2/18/2020 9:46 AM	VBScript Script File	1 KB
> Window	NT	mongod.exe		2/18/2020 9:46 AM	Application	31,937 KB
> Window	Photo Viewer	mongodb_stop_service.bat		2/18/2020 9:46 AM	Windows Batch File	1 KB
Window	Portable Devices	mongodb_uninstall_service.bat		2/18/2020 9:46 AM	Windows Batch File	1 KB

5.1 Uninstall PAEM for Windows 10 and Server 2019

1. Open the Settings App and select Apps > Apps & features.



Figure 5-6: Settings > Apps

2. Scroll down to the PAEM item. Click the **Uninstall** button followed by the confirmation **Uninstall** button (Figure 5-7).

Settings		
ம் Home	Apps & features	
Find a setting	Sort by: Install date \checkmark Filter by:	All drives $\!$
Apps	141 apps found	
IΞ Apps & features	Erlang OTP 22 (10.4)	2/24/2021
i⊐r Default apps	Java 8 Update 202 (64-bit)	120 MB 2/24/2021
印 <u></u> Offline maps	OpenSSL 1.1.1d Light (64-bit)	9.85 MB
Apps for websites	PAEM	This app and its related info will be uninstalled.
□ Video playback	1.0.0.264	Uninstall
T Startup		Modify Uninstall
	Calculator Microsoft Corporation	144 KB 2/23/2021

Figure 5-7: Apps & Features

3. A "Preparing to remove" window will appear followed by a User Account Control window. Click "Yes" to proceed (Figure 5-8).



Figure 5-8: Uninstall or Change a Program

4. Click Yes in the next window to begin to uninstall the software (Figure 5-9). A window will display the progress.



Figure 5-9: Uninstall Confirmation

5. To complete the uninstall, click the **Finish** button (Figure 5-10).

PAEM - InstallShield Wizard	
	Uninstall Complete
	InstallShield Wizard has finished uninstalling PAEM.
	< Back Finish Cancel

Figure 5-10: Uninstall Complete

6. Launch PAEM

1. To launch PowerAlert Element Manager, open a supported web browser. In the address bar, enter the IP address of the server on which PAEM is installed, followed by the configured port, e.g. http://192.168.1.1:8080 (Figure 6-1).



Figure 6-1: Accessing PAEM from a Web Browser

2. In the PAEM Login page that opens, enter the required login credentials (Figure 6-2). The default Login and Password are both **localadmin**.



Figure 6-2: PAEM Login Screen

Refer to the PowerAlert Element Manager User Guide for information on using PAEM.

HTTP/HTTPS Port Conflict

Upon entering an HTTP/HTTPS port number in step 7 of the Installation procedure, a "Port is busy" error message may appear (Figure 7-1). This indicates that the entered port is in use by another application. To resolve this issue, choose another port number or uninstall the application that is using that port, then continue with PAEM installation.



Figure 7-1: "Port is busy" Error Message

PAEM MongoDB Port Conflict

During installation, if a "PAEM MongoDB port is busy" error message appears (Figure 7-2), this indicates that another application is using MongoDB. To resolve this issue, follow the steps below.



Figure 7-2: "PAEM MongoDB port is busy" Error Message

- 1. Stop the application's MongoDB service. Open the Services app on the host computer (enter "Services" in the Start menu search bar). Find the service bearing "MongoDB" in the name, and stop it by either clicking "Stop the service" in the left column.
- 2. Stop the PAEM MongoDB service. Enter "services" in the Start menu to open the Services app. Find "PAEM MongoDB" service and stop it.
- 3. Navigate to the PAEM installation folder (ex. C:\Program Files\Tripp Lite\PAEM) and edit "settings.yml" file using a text editor application, such as Notepad (Figure 7-3). Change the port number to 27018 or another desired value.

(C:) >	Program Files > Tripp Lite > PAEM	✓ U
	Program Files Inpp Lite PAEM Name scripts scripts yajsw Image: Signal Structure mongodb_stop_service.bat mongodb_stop_service.bat mongodb_uninstall_service.bat mongodb_uninstall_service.bat paem_del_firewall.bat paem_del_firewall.bat paem_del_firewall.ps1 rabbitmq_stop_service.bat rabbitmq_uninstall_service.bat	Date modified Type Date modified Type Settings.yml - Notepad File Edit Format View Help Server: port: 8080 ssl: enabled: false key-store: C:\Program Files\Tripp Lite\PAEM\-certificate key-store-password: ENC(7rkIvYCtgwTRUPaRIVQ95x1teAjwwAnFy9HFAs. spring: data: mongodb: port: 27017 rabbitmq: port: 5672
	TRIPP-LITE PAEM	

Figure 7-3: Editing the settings.yml File

4. Navigate to PAEM MongoDB installation folder (ex. C:\Program Files\Tripp Lite\PAEM\mongodb\Server\4.0) and edit "mongod. cfg" file using a text editor application, such as Notepad (Figure 7-4). Change the port number to 27018 or another desired value.



Figure 7-4: Editing the mongod.cfg File

5. Start PAEM MongoDB service. Open the Services app on the host computer (enter "Services" in the Start menu search bar). Find "PAEM MongoDB" and start it by clicking "Start the service" in the left column (Figure 7-5).

Services			
File Action View Help			
🗢 🃦 📰 🖾 🔯 🖬			
Services (Local)			
PAEM MongoDB	Name	Description	
Start the service	Network Store Interface Service Office Source Engine Offline Files	This service delivers network notifications (e.g. interf Saves installation files used for updates and repairs a The Offline Files service performs maintenance activi	
Description: PowerAlert Element Manager MongoDB Server	 OpenSSH Authentication Agent Optimize drives PAEM MongoDB 	Agent to hold private keys used for public key authe Helps the computer run more efficiently by optimizi PowerAlert Element Manager MongoDB Server	
	 PAEM RabbitMQ PAEM Service Parental Controls 	Multi-protocol open source messaging broker PowerAlert Element Manager Service Enforces parental controls for child accounts in Win	

Figure 7-5: Starting the PAEM MongoDB Service

PAEM RabbitMQ Port Conflict

During installation, if a "PAEM RabbitMQ port is busy" error message appears (Figure 7-6), follow the steps below:



Figure 7-6: "PAEM RabbitMQ port is busy" Error Message

1. Stop the RabbitMQ service. As Administrator, open a Command Prompt (e.g. enter 'cmd' in the Start menu search bar) and navigate to rabbitmq\sbin (ex. "cd C:\Program Files\Tripp Lite\PAEM\rabbitmq\sbin"). At the prompt, enter "rabbitmq-service.bat stop" (Figure 7-7).



Figure 7-7: Stopping the RabbitMQ Service

2. Using File Explorer or similar Window application, navigate to the PAEM\rabbitmq\sbin folder. For example: C:\Program Files\Tripp Lite\PAEM\rabbitmq\sbin.

Right-click the "rabbitmq-defaults.bat" file and select Edit to open the file in Notepad. Edit the 23rd and 40th lines (Figure 7-8) as instructed below.

Default 23rd line:	set RABBITMQ_BASE=!APPDATA!\RabbitMQ
Change to:	set RABBITMQ_BASE=!APPDATA!\ PAEMRabbitMQ

Default 40th line: Change to: set CONFIG_FILE=!RABBITMQ_BASE!\rabbitmq set RABBITMQ_CONFIG_FILE=!RABBITMQ_BASE!\rabbitmq

ſ	Manage	sbin	
Ар	plication Tools		
> Pi	rogram Files 🔉	Tripp Lite > PAEM > rabbitr	🗐 rabbitmq-defaults.bat - Notepad —
			File Edit Format View Help
	Nam ! C ® r	e RABBITMQ_BASE! cuttlefish rabbitmqctl.bat rabbitmq-defaults bat	REM ## Set default values if "!RABBITMQ_BASE!"==""(set RABBITMQ_BASE=!APPDATA!\RabbitMQ
	r () () () () () () () () () () () () ()	rabbitmq-diagnostics.bat rabbitmq-echopid.bat rabbitmq-env.bat rabbitmq-plugins.bat rabbitmq-server.bat rabbitmq-service.bat	REM Make sure \$RABBITMQ_BASE contains no non-ASCII characters. We creat REM the directory first so we don't end up creating it later in its "short REM filename" version. if not exist "!RABBITMQ_BASE!" (mkdir "!RABBITMQ_BASE!") for /f "delims=" %%F in ("!RABBITMQ_BASE!") do set RABBITMQ_BASE=%%~
	~ <		REM BOOT_MODULE="rabbit" REM CONFIG_FILE=\${SYS_PREFIX}/etc/rabbitmq/rabbitmq REM LOG_BASE=\${SYS_PREFIX}/var/log/rabbitmq REM MNESIA_BASE=\${SYS_PREFIX}/var/lib/rabbitmq/mnesia REM ENABLED_PLUGINS_FILE=\${SYS_PREFIX}/etc/rabbitmq/enabled_plugins set BOOT_MODULE=rabbit set CONFIG_FILE=!RABBITMQ_BASE!\rabbitmq set LOG_BASE=!RABBITMQ_BASE!\log set MNESIA_BASE=!RABBITMQ_BASE!\log set SIA_BASE=!RABBITMQ_BASE!\log set GENERATED_CONFIG_DIR=!RABBITMQ_BASE!\config

Figure 7-8: Editing rabbitmq-defaults.bat

3. In the same "sbin" folder, right-click Edit the "rabbitmq-env.bat" file. Edit the 105th line (Figure 7-9) as well as the 151st line and 162nd lines (Figure 7-10) as instructed below.

Default 105th line:	set RABBITMQ_NODENAME=rabbit@!HOSTNAME!
Change to:	set RABBITMQ_NODENAME=PAEMrabbit@!HOSTNAME!
Default 151st line:	set RABBITMQ_NODE_PORT=5672
Change to:	set RABBITMQ_NODE_PORT=5673
Default 162nd line:	set RABBITMQ DIST PORT=25672

Change to:

set RABBITMQ_DIST_PORT=25672 set RABBITMQ_DIST_PORT=25673

ß	Manage	sbin	🛛 🗐 rabbitmq-env.bat - Notepad - 🗆 🕺
	Application To	ols	File Edit Format View Help
	Program Fil	es > Tripp Lite > PAEM > rabl	
	^	Name IRABBITMQ_BASE! IRABBITMQ_BASE! IRABBITMQ_BASE! IRABBITMQ_NODENAME!"=="" (If "!RABBITMQ_NODENAME!"=="" (If "!RABBITMQ_NODENAME!"=="" (If "!NODENAME!"=="" (If "!NODENAME!"] && "" (If "!NODENAME!	<pre>REM ["x" = "x\$RABBITMQ_NODENAME"] && RABBITMQ_NODENAME=\${NODENAME} if "!RABBITMQ_NODENAME!"=="" (if "!NODENAME!"=="" (REM We use Erlang to query the local hostname because REM !COMPUTERNAME! and Erlang may return different results. REM Start erl with -sname to make sure epmd is started. call "%ERLANG_HOME%\bin\erl.exe" -A0 -noinput -boot start_clean -sname rabbit- prelaunch-epmd -eval "init:stop()." >nul 2>&1 for /f "delims=" %%F in ('call "%ERLANG_HOME%\bin\erl.exe" -A0 -noinput -boot start_clean -eval "net_kernel:start('list_to_atom('''rabbit-gethostname-''' ++ os:getpid()).</pre>
		s rabbitmq-env.bat	%NAMETYPE%]), [_, H] = string:tokens(atom_to_list(node()), ""@""), io:format(""~s~n"",
		sabbitmq-server.bat	set RABBITMQ_NODENAME=rabbit@!HOSTNAME!
		🖲 rabbitmq-service.bat	set HOSTNAME=) else (set RABBITMQ_NODENAME=!NODENAME!

Figure 7-9: Editing line 105 of rabbitmq-env.bat

Manage sbin	🗐 rabbitmq-env.bat - Notepad — 🗌 🕅
Application Tools	File Edit Format View Help
> Program Files > Tripp Lite > PAEM > rabl	if "!RABBITMQ_NODE_IP_ADDRESS!"=="" (if not "!RABBITMQ_NODE_PORT!"=="" (
^ Name	set RABBITMQ_NODE_IP_ADDRESS=auto
RABBITMQ_BASE!) else (if "!RABBITMQ_NODE_PORT!"=="" (
cuttlefish	set RABBITMQ_NODE_PORT=5672
🔊 rabbitmqctl.bat	
🔊 rabbitmq-defaults.bat)
🔊 rabbitmq-diagnostics.bat	REM ["x" = "x\$RABBITMQ_DIST_PORT"] && RABBITMQ_DIST_PORT=\${DIST_PORT}
🔊 rabbitmq-echopid.bat	REM ["x" = "x\$RABBITMQ_DIST_PORT"] && ["x" = "x\$RABBITMQ_NODE_PORT"] &&
💿 rabbitmq-env.bat	RABBIIMQ_DISI_PORI=\$((\${DEFAULI_NODE_PORI}+20000)) REM["Y" = "Y\$RABBITMO_DIST_PORT"] &&["Y" I= "Y\$RABBITMO_NODE_PORT"] &&_
🔊 rabbitmq-plugins.bat	RABBITMQ DIST PORT=\$((\${RABBITMQ NODE PORT} + 20000))
🔊 rabbitmq-server.bat	
service.bat	<pre>if "!RABBITMQ_DIST_PORT!"=="" (if "!DIST_PORT!"=="" (if "!RABBITMQ_NODE_PORT!"=="" (set RABBITMQ_DIST_PORT=25672) else (set /a RABBITMQ_DIST_PORT=20000+!RABBITMQ_NODE_PORT!)) else (</pre>
	set RABBITMQ_DIST_PORT=!DIST_PORT!

Figure 7-10: Editing Lines 151 and 162 of rabbitmq-env.bat

4. Install the Management Plugin. In the same rabbitmq\sbin prompt location as Step 1, enter "rabbitmq-plugins.bat enable rabbitmq_management".

5. Change the AMQP and HTTP ports. Using Notepad, create a file named "rabbitmq.config" and copy the code below (matching the port change made in Step 3)

```
[
{rabbit, [
{tcp_listeners, [5673]}
]
}
].
```

Place the file in the %APPDATA%\PAEMRabbitMQ folder For example: C:\Users\Admin\AppData\Roaming\RabbitMQPAEM

- 6. At the rabbitmq\sbin prompt, enter the following sequence of commands:
 - rabbitmq-service.bat remove (this removes the PAEM RabbitMQ service)
 - rabbitmq-service.bat install (this installs the PAEM RabbitMQ service)
 - rabbitmq-service.bat start (this starts the PAEM RabbitMQ service)
- 7. Navigate to PAEM installation folder (ex. C:\Program Files\Tripp Lite\PAEM) and edit "settings.yml" file (Figure 7-11). Change rabbitmq port to 5673 or the value set in Step 3 and 5, above.

(C:) Program Files > Trip	p Lite » PAEM	・びクSearch PAEM			
^ Name	~	Date modified	Туре ^		
ja scripts	File Edit Format Vie	epad w Help	—		
 ide.vbs mongod.exe 	server: port: 8080				
mongodb_stop_s mongodb_uninsta	ervice.bat ssl: all_service.bat key-store: C:\Pri	ssl: enabled: false key-store: C:\Program Files\Tripp Lite\PAEM\-certificate			
💿 openssl_light_unir 🔬 PAEM.jar	nstall.bat key-store-passw	key-store-password: ENC(7rklvYCtgwTRUPaRIVQ95x1teAjwwAnFy9HFA			
paem_del_firewall	I.bat spring: data:				
paem_del_firewall 🔊 rabbitmq_stop_se	ervice.bat mongodb: port: 27017				
settings.vml	Ill_service.bat rabbitmq: port: 5672				
TRIPP-LITE PAEM					

Figure 7-11: Editing settings.yml

 Start PAEM service. Open the Services app on the host computer (enter "Services" in the Start menu search bar). Find and select "PAEM Service", then click "Start the service" in the left column (Figure 7-12). Check the application log for any errors (ex. C:\Program Files\Tripp Lite\PAEM\logs\application.log).

Services File Action View Help						
Services (Local)						
PAEM Service	Name	Description	Status			
Start the service	 Network Store Interface Service Office Source Engine Offline Files OpenSSH Authentication Agent Optimize drives PAEM MongoDB 	This service delivers network notifications (e.g. interf Saves installation files used for updates and repairs a The Offline Files service performs maintenance activi Agent to hold private keys used for public key authe Helps the computer run more efficiently by optimizi PowerAlert Element Manager MongoDB Server	Running			
	AEM RabbitMQ	Multi-protocol open source messaging broker	Running			
-	PAEM Service Parental Controls Payments and NFC/SE Manager	PowerAlert Element Manager Service Enforces parental controls for child accounts in Win Manages payments and Near Field Communication				

Figure 7-12: Starting the PAEM Service



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