

How to Install Perspective VMS Version 4.3 (Typical New Configuration)

Over the next few pages, we will review how to install Perspective VMS (Web Server and/or Distributed Services) on various operating systems. Subsequently, specific instructions on "upgrading" an existing Perspective VMS installation is also provided within this document. For each instance of Perspective VMS, there are software prerequisites which may include enabling select server roles and installing an instance of Microsoft SQL Server. Based on a particular installation, these prerequisites may already be installed or installed automatically by the Installer Wizard.

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Software Prerequisites

Operating Systems

The Perspective VMS services platform may be installed onto <u>Windows Server 2016</u>, <u>Windows Server 2019</u> and desktop versions of <u>Windows 10 Pro</u> Operating Systems. Virtual Machines running the aforementioned operating systems are also supported.

Home, Basic, or IoT versions of Windows 10 can be used for installation and operation but lack features such as Remote Desktop or pre-loaded Internet Information Services (IIS). These versions of Windows hinder general support and troubleshooting. Because of this, these are not recommended. Other legacy versions of Windows, such as Windows 7, Windows XP, Windows Server 2008, Windows Server 2003, Windows Server 2000, and Windows NT are **not supported**. Linux is **not supported** as a server platform for Perspective VMS. If necessary, please contact LENSEC technical support for further details.

People installing Perspective VMS services should have **Administration Rights** to the workstation/server on which they are working. This ensures proper installation and functionality of the services.

IMPORTANT: Make sure to install all pending Microsoft Windows updates. If the updates are not installed, the SQL and PVMS installation could fail.

Database: Microsoft SQL Server 2014/2016/2017/2019 (Express/Standard/Enterprise Editions)

Microsoft SQL Server is the relational database on which Perspective VMS relies to store/retrieve needed information for its operations. Perspective VMS currently supports SQL 2014, 2016, 2017, and 2019 with its various editions: Express, Standard, and Enterprise.

An installation of Perspective VMS can run if SQL is already installed and a Windows or SQL-authenticated user is entered into the installer along with the network path location. If these are not available, or if SQL has not been previously installed, a new instance of SQL is will be installed either on the web server itself or another network accessible computer.

LENSEC provides a copy of **SQL Express** edition in a tools folder on our download page (<u>https://lensec.com/download-tools/</u>). Downloads for 2014, 2016, 2017, and 2019 versions are available. The 2014 version is pre-packaged with SQL Management Studio for database management while later versions require a separate installation package. *Only 64-bit are available from this location, check with your Server or PC to verify which edition is correct for your installation.

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Note: All prerequisites, such as operating system permissions and Windows updates, must be installed prior to running the Perspective VMS Installation.

Perspective VMS Installation Wizard

After installing the prerequisites and Windows updates, it is time to install the Perspective VMS Suite. If your server was purchased through LENSEC, look for the PVMS install file **C:/Lensec_Install/**. Confirm it is the latest version by

checking our website at https://www.enstrument.com/download/.

 Environment Prerequisites: Depending on your environment/server, some files may need to be installed upon launch. You will need to accept this installation to continue (local administration rights are required). Please click 'Next >' on any of these prerequisite windows you may encounter.





2) Begin PVMS Install Wizard. Click 'Next >'.



3) Accept (or modify) default path location. Click 'Next >'.



4) The installation wizard is a self-guided installation shield package that enables the user to install the Complete, Distributed, or Distributed-ADAM packages for distributed servers. Custom installation is available for advanced users who want to install individual components. Select the setup type that is appropriate for your system. Beyond the first screen of the Custom installation, each subsequent screen is identical for these different setup types. Most common installations will be Complete (for a single server) or Distributed (for multiple networked servers). Select your setup type, then click 'Next >'.

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5) This screen is the Custom Setup for Advanced users. Here you can select which Perspective VMS services will be installed. Most of these services are necessary for a stand-alone installation. Click 'Next >'.



PVMS Web Application: The application server component of Perspective VMS. The Web application is responsible for generating the Graphical User Interface (GUI).

PVMS Administration Service: This service monitors and checks drives for the right utilization. It checks how much free space on the drive(s), and subsequently purges old archives or moves them to a different offsite location. It is also responsible for importing and ensuring user synchronization between Active Directory and PVMS.



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PVMS Streaming Service: This service acts as an intermediary agent between PVMS and system cameras. It is mainly responsible for handling the streams and passing them to the system. It is also responsible for streaming the archives that are created using the PVMS Archiving Service. The service also provides web-based troubleshooting module which enable system administration to examine active/inactive streams more closely. The troubleshooting module provides the ability to terminate if necessary. The web troubleshooting module can be accessed on the same machine which is running the service by navigating to :8090/">http://cserverName>:8090/.

PVMS Archiving Service: The service is mainly responsible for archiving image and video streams from system cameras. The Archiving Service handles image extractions requests from PVMS users and creates archives/extractions accordingly. It also handles live recording requests from PVMS users to capture camera video streams and encode them using H.264/MPEG-4 codec for optimal quality/size.

PVMS Health Monitor Service: This service checks if system cameras defined in PVMS are up and running. If not, the service will notify the user about the status of offline cameras. The service also generates health reports related to cameras, servers, and other system components.

PVMS External System Service: This service is installed using a stand-alone, independent package from the main PVMS setup. It acts as an intermediary communication agent between PVMS and 3rd party software/hardware applications.

PVMS Analytics Service: This service is installed if you are using server-side analytics, such as automatic license plate recognition or facial recognition.

PVMS SDK Service: This service allows the interconnectivity between 3rd party devices and PVMS through an API.





- 6) Main Database Server:
 - (1) If this is a new installation, leave the default "Use/Create default database" selected. Click 'Next >'.
 - (a) A SQL database instance will automatically be created with the default name: '.\LENSECMAIN'
 - (b) The default password for the Server Authentication 'sa' account is: L3nSec!@
 - (2) If you are upgrading PVMS and have an existing database,
 - (a) Select "Use existing database".
 - (b) Make sure the database server is pointing to the correct instance. Choose from the dropdown menu.
 - (c) Select "Server authentication using the Login ID and password below". Use the 'sa' account credentials. Click 'Next >'.

Perspective VMS Suite - InstallShield Wizard X	
Main Database Server Select database server and authentication method	
Use/Create default database	
O Use existing database	NOTE: The Database
Database server that you are installing to:	Server instance name
.\LENSECMAIN	and password will need
Connect using:	to match the instance
 Windows authentication credentials of current user Server authentication using the Login ID and password below 	name provided by the
Login ID: sa	customer or created
Password:	when installing SQL.
Name of database catalog:	
PerspectiveVMS	The Database catalog
InstallShield	name should remain
< Back Next > Cancel	"Perspective VMS"

 Add a default password for the "admin" user of Perspective VMS. This allows the installer to create an initial account with access to Perspective VMS. This is the default login account and should be remembered (annotated) for future login to Perspective VMS.

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riedse enter reispectiv	e VMS Suite configura	tion information.	L _
<u>U</u> ser Name:			
admin			
Password:			
•••••			
Confirm Password:			
•••••			

8) Services Administration: As mentioned above during the services installation, Perspective VMS relies on Windows Services running on the Primary, Archiving, or Streaming server(s). These services may be configured upon installation to run under a selected Windows account or the Local System account. Internet Information Services (IIS) are also configured with this user (see below). The PVMS services may be configured to start manually or automatically on boot. PVMS Services may be managed via the Administration module of Perspective VMS. We recommend creating a Windows user 'pvms' to be used to run these PVMS and Windows IIS services. This user must be added to the Windows administrator group to have administrative privileges. We also recommend selecting 'Automatic (Delayed Start)' for the 'Startup Type'. Click 'Next >'.

Perspective VMS Suite - Ins	allShield Wizard X
Perspective VMS Suite Servi Please enter service configura	tion information.
Server ID:	
Demo Server (127.0.0.1)	~
Account:	
Use default account This account User Name:	•••
<u>W</u> indows Service(s) Startup T	/pe: Automatic (Delayed Start)
Instanomena -	< Back Next > Cancel

9) Create shortcuts (optional). Click 'Next >'.

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10) Install and Finish: No writing action will take place at this point in the wizard. By clicking install the application process will begin. Click 'Install'.

Perspective VMS Suite - InstallShield Wizard	\times
Ready to Install the Program The wizard is ready to begin installation.	
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. Click Cancel to the wizard.	exit
InstallShield < Back Install Car	ncel

11) Click Finish to complete the PVMS installation.

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Rerspective VMS Suite - Insta	IIShield Wizard	\times
LENSEC De Deur of Derspective	InstallShield Wizard Completed The InstallShield Wizard has successfully installed Perspective VMS Suite. Click Finish to exit the wizard.	
	< Back Finish Cancel	

Launching Perspective VMS for the first time

Perspective VMS is a web application and must be opened in a web browser. To open from a web browser, the URL would be: (<u>http://<ServerName>/PerspectiveVMS</u>), where the <**ServerName**> may be the "hostname / computer name" of the PC, the "IP address", or if on the local machine itself it could be "localhost" or the loopback IP address "**127.0.0.1**".



Application Shortcut browser variations (above)

Licensing and Authorization

Upon successful installation of Perspective VMS, you will be prompted to enter a license key that can be obtained by contacting technical support: <u>licensing@lensec.com</u>. Your purchase order for the Perspective VMS application will be verified and a license key will be issued via e-mail.

An alternative option is to select "Configuration only," which allows PVMS to be opened for administration design and system configuration but will not allow for the starting of streaming or archiving services until a full license is issued.



Key: *											×
		• c	onfig	uratio	n only		ок			CLEAR	
									_		
INFORMATIC	DN										
INFORMATIC CO pr	DN CCES Dnfig Oper	s to urati r lice	Pers on a nse	pecti Ind si key l	ive VI ervice nas be	WSi esw een	s only rill not entere	for sta	rt u	ntil a	
INFORMATIC CO pr	ON CCES Onfig Oper	s to urati lice	Pers on a nse	pecti Ind si key l	ive VI ervice nas be	WSi esw een	s only rill not enter	for sta d.	rt u	ntil a OK	

Note regarding <u>Camera Licenses</u>, Perspective VMS is generally sold by the number of cameras or devices associated to the overall solution. The License Key will represent the purchase order of these licenses. That said, if a camera is replaced or exchanged a new software license **DOES NOT** need to be purchased nor does the license key need to be changed.

Server Key Generator

To obtain a license, a specific Server Key must be generated and submitted to LENSEC. This can be emailed to <u>licensing@lensec.com</u> or submitted by web form at <u>lensec.com/pvms-activation/</u>. When PVMS is installed, an applet named "Server Key Generator" is also installed. Locate the Server Key Generator by clicking on the Windows Start menu or search for the Server Key Generator in the Windows search field. Opening this applet will produce the Server Key necessary to generate a license. Alternatively, the PC's MAC address may also be submitted for license key generation.



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Upgrading Perspective VMS to a newer version

To upgrade to a newer version of Perspective VMS, you must first uninstall your current version of Perspective VMS. Before any action is taken, it is **highly recommended to back up your SQL database first!**

Back up the SQL database

- 1. The SQL database should be backed up every time a software upgrade in intended.
- 2. To back up the SQL database, go to the Administration module and locate the Backup Utility from the left sidebar: ADMINISTRATION>SETTINGS>Backup Utility



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	USERS	SET DATABASE BA	CKUP SETTING		
	Accounts	▲ Backup			
	Active Sessions	Parties distantions			
	User Connecters	Backup desunation:	C:\SQL\Backups\120	0320_PMVS.bak	
	CAMERAS	Backup type:"	Full		-
•	SETTINGS				BACK
	Servers				
	System Settings	 Backup on Schedule 			
	Active Directory				
	E-Mail Settings				
	Icons				
	Motion Settings				
	Ack. Responses				
	Events				
	Schedules				
	Welcome Messages				
	Backup Utility				
	Password Policy				
	John	-			

3. Expand 'Backup' (1) to reveal the backup destination field (2). You can list a folder in any location that is accessible from this server. You will name the backup destination file. If the folder has not been created yet, Perspective VMS will create it.

ENSEC PERSPECTIVE V	MS 🛞 MAP 🛄 CAMERA V	IEWER 🚫 ARCHIVES 🔝 REPORTS 🗙 ADMINISTRATION	
USERS	SET DATABASE BAC	KUP SETTING	
Accounts	~ 1		
Groups	A Backup	2	
Active Sessions			
User Connecters	Backup destination:*	C:\SQL\Backups\120320_PMVS.bak	
CAMERAS	Backup type:*	Full	
SETTINGS			BACKUP
Servers			
System Settings	Backup on Schedule		
Active Directory			
E-Mail Settings			
Icons			
Motion Settings			
Ack. Responses			
Events			
Schedules			
Welcome Messages			
Backup Utility			
Password Policy			
Jobs			

4. You can choose whether to have a Full backup or a Differential backup from the dropdown menu. A differential backup saves any changes made since the last full backup.



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USERS	SET DATABASE BAC	KUP SETTING		
	Enter database backup infor	mation		
Accounts	Record and the			
Groups	▲ Backup			
Active Sessions	CONTRACTOR AND			
User Connecters	Backup destination:*	C:\SQL\Backups\120	320_PVMS.bak	
CAMERAS	Backup type:*	Full		× •
Contraction of the second		Differential		
SETTINGS		Full		
Servers				
System Settings	Backup on Schedule			
Active Directory				
E-Mail Settings				
Icons				
Motion Settings				
Ack. Responses				
Events				
Schedules				
Welcome Messages				
Backup Utility				
Password Policy				

- 5. Once the backup is complete, you will receive a notification. Depending on the size of the database, the backup could complete in a few seconds or up to several minutes.
- 6. Now that the database is backed up, you can continue installing a newer version of Perspective VMS.

Remove Perspective VMS

- 1. Run the Perspective VMS installer file that you downloaded from lensec.com/download/.
- 2. When the InstallShield Wizard launches, click 'Next >'.
 - Note: Another option to remove Perspective VMS, is to go to Windows Add or Remove Programs in the System settings. Select Perspective VMS Suite and click 'Uninstall'. If you wish to uninstall Perspective VMS using this method, skip to step 7.



3. Select 'Remove' to remove Perspective VMS from your computer. Click 'Next >'.

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Perspective VN	IS Suite - InstallShield Wizard	×
Program Mainte Modify, repair,	or remove the program.	
O Modify	Change which program features are installed. This option displays the Custom Selection dialog in which you can change the way features are installed.	
) Repair	Repair installation errors in the program. This option fixes missing or corrupt files, shortcuts, and registry entries.	
Remove	Remove Perspective VMS Suite from your computer.	
InstallShield	< Back Next > Cancel	

4. Confirm that you wish to remove Perspective VMS. Click 'Remove'.



5. As a reminder, you will receive a pop-up notification to back up the database. Click 'OK' to continue, 'Cancel' to exit this InstallShield. If you need to back up the database, refer to <u>Back up the SQL database</u> above.

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6. Click 'Finish' to begin the removal of Perspective VMS.



- 7. To provide a clean installation for the new version of Perspective VMS, there are two folders that should be deleted. Navigate to these two locations and with Administrator rights, delete these two folders:
 - C:/Program Files (x86)/Common Files/Lensec Shared
 - C:/Program Files (x86)/Lensec



- 8. Perspective VMS is now successfully removed from your computer. Please reboot the computer before you begin to reinstall Perspective VMS.
- Once the computer has restarted, you can now launch the InstallShield Wizard. See section <u>Perspective VMS</u> <u>Installation Wizard</u> to begin the installation. Note: All of your configurations will remain intact. You will not need to retrieve a new license key. The license key is tied to the MAC address of this computer.

Managing Services within Perspective VMS

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Services may be managed from within the Perspective VMS Administration Module. To accomplish this feature, the installer must associate the IIS management authority with the user account managing the Windows-based services. During the installation, the installer was asked to provide a Windows user account or to select "Local System" for both the services administration and app pool configuration. If the user selected has permissions from Windows to administer both than services may be administered from the web-based application:



► Users	Q: Filter by	name	•	ADD SER	VER 1+ EDLT SERV	TER 🔪 DELETE SERVER 💒	COPY SERVER	PRINT SER
▶ Cameras	SERVER ID	SERVER NAME	EXTERNAL IP	INTERNAL IP	SUBNET MASK	INSTALLED SERVICES		
▼ Settings Servers	•	Houston LHQ	74,202,38,195	74,202.38.195	255,255,255,224	Streaming Service: Archiving Service: Administrative Service: Health Monitor Service: External System Service:		
Groupings								
Settings								
Icens								

Managing Services using Windows

To manage your installed services outside of Perspective VMS, use the Windows Management Console (Services) found in Administrative Tools of the Windows Control Panel.



Distributed Architecture

Before you begin installing PVMS on distributed servers, it is important to set up the servers in PVMS, on the primary web server first. The services will appear on the web server interface after PVMS is installed on the distributed server and those services are manually started. You may have to click the refresh icon on the webserver for those services to appear.

Primary/Web Server

 Navigate to ADMINISTRATION>SETTINGS>Servers. Click 'ADD' to create a new server. Complete the required information for your Distributed Server. Make sure to click 'Monitored'. This will allow the Health Monitor Service to monitor this server and alert you in the event of any issues. Click 'SAVE' to continue.

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Basic Information	SET SERVER	
Additional Information	Enter server basic informa	tion
Advanced Settings	Server name:*	Distributed Server
WebRTC Settings	External Hostname/IP:*	192.168.0.11
	Internal Hostname/IP:*	192.168.0.11
	Network subnet*	255.255.255.0
	Stream protocol port*	4530
	Stream web port:*	8090
	Archive control port*	8091
	Web server *	
		SAVE CREATE CANCEL

2) Now that you have the distributed server set up in PVMS on the primary server, you can now begin the installation of PVMS on the distributed server. **NOTE: if you are adding a distributed server to an already existing network, it is very important that you back up the SQL database on the primary server BEFORE starting the distributed server PVMS installation.**

LENSEC PERSPECTIVE	VMS 🛞 🖻	AAP CAMERA VIE	EWER ARCHIVES	REPORTS	lpha administration				Bryce C	apodieci (LENSEC) 🔅	e q x x	(× ()
▲ USERS	Q. 11	ter	8						START/STOP SERVICE	S C ADD 🛨 EDIT 🖉	DELETE 🙀 СОРУ D	
Accounts		SERVER ID †	WEB SERVER	SERVER NAME	EXTERNAL IP	INTERNAL IP	NETWORK SUBNET	MONITORED : A	DAM E NABLE SSL	INSTALLED SERVICES		1
Groups Active Sessions										Web Streaming Service	Þ	
User Connectors	1 C						255.255.255.0			Administrative service	Þ	
▼ CAMERAS										Health Monitor Service	Þ	
Servers												
System Settings	2 C						255 255 255 0					
Active Directory												
Icons												
Motion Settings												

Distributed Server

When installing Perspective VMS across multiple servers, it will be necessary to complete a couple of steps prior to the PVMS installation on those distributed servers.

- A domain account or matching local account name/password (for workgroup connected computers) is necessary to use when setting up the distributed servers. Servers purchased through LENSEC will have the local user 'pvms' pre-configured with Administrator rights.
- 2) On the distributed servers, you will need to update the Local Security Policy
 - a. Search for Windows Local Security Policy and run as administrator.

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Local Security Policy		
Apps Settings This PC	>	Local Security Policy App
Control Panel Weather Search work and web Cocal - See work and web results Settings (7+) Photos (1+)	>	C' Open Q Run as administrator Q Open file location +1 Pin to Start +2 Pin to taskbar

b. Expand the 'Local Policies' folder to view 'Security Option.

File Action View Help Image: Security Settings Image: Security Settings Description Image: Security Settings Audit Policy Audit Policy Image: Security Settings Image: Security Settings Security Settings Image: Security Settings Image: Security Settings Security Settings Image: Security Settings Image: Security Settings Security Settings Image: Security Settings Image: Security Settings Security Options Image: Security Settings Security Options Security Options Image: Security Settings Image: Security Settings Security Options Image: Security Settings Image: Security Settings Security Options Image: Security Settings Image: Security Settings Security Settings Image: Security Settings Image: Security Settings Security Settings Image: Security Settings Image: Security Settings Security Settings Image: Setting Settings Image: Settings Settings	here a contract to the security Policy		-	×
 Security Settings Addit Policy Security Options Windows Defender Firewall with Advar Network List Manager Policies Application Control Policies Application Control Policies Advanced Audit Policy Configuration 	File Action View Help			
Security Settings Security Settings Name Description Addit Policy User Rights Assignment Security Options Windows Defender Firewall with Advar Network List Manager Policies Security Options Public Key Policies Software Restriction Policies Security Policion on Loal Computer Advanced Audit Policy Configuration Advanced Audit Policy Configuration Security Policion	🗢 🔿 🙍 🖬 🗟 🖬			
	 Security Settings Account Beliefs Account Beliefs Audit Policy Audit Policy Security Options Windows Defender Firewall with Advant Beliefs Public Key Policies Software Restriction Policies Software Restriction Policies Application Control Policies Advanced Audit Policy Configuration 	Name Description Audit Policy Audit Policy User Rights Assignment User Rights Assignment Security Options	jnment	

c. Double click 'Security Options' and scroll to the bottom of the list to view the 'User Account Controls'. Make sure the Security Settings match what is displayed in the picture below.



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File Action View Help			
🔶 🄿 🙍 📷 🗟 🖬			
Centre Control Policies Control Policie	Policy Po	Security Setting Not Defined Not Defined Not Defined Disabled Disabled Enabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled	mpti_ als

d. If a Security Setting needs to be changed, simply double click the line item to view a configuration popup window. Select the appropriate setting and click 'OK'.

User Account Control: Detect application installations an	?	×
Local Security Setting Explain		
User Account Control: Detect application installations and for elevation	nd promp	t
⊛ Enabled ⊖ Disabled		
OK Cancel	Ap	oply

- 3) TCP/IP must be enabled for the SQL Server Network Configuration protocols for the LENSECMAIN database instance. This will be enabled on the database server
 - a. Open SQL Server Configuration Manager





b. Expand 'SQL Server Network Configuration'. Then click 'Protocols for LENSECMAIN' to view the protocols in the right panel.



- c. While the TCP/IP protocol is highlighted, right click and select "Properties"
- d. Select 'Enabled'. By default the value is set to 'No', from the dropdown menu, select 'Yes' to enable TCP/IP.



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General	No	
Keep Alive Listen All	Yes	
Enabled		

- e. Next, select the 'IP Addresses' tab.
- f. Scroll to the bottom to locate the section titled 'IPALL'. Configure static port 1433.

	TCP Dynamic Ports	0	1
	TCP Port		
Ξ	IP2		
	Active	Yes	
	Enabled	No	
	IP Address	::1	
	TCP Dynamic Ports	0	
	TCP Port		
Ξ	IP3		
	Active	Yes	
	Enabled	No	
	IP Address	127.0.0.1	
	TCP Dynamic Ports	0	
	TCP Port		
=	IPAII		
	TCP Dynamic Ports	\frown	
	TCP Port	1433	
Ac In	c tive dicates whether the select	ed IP Address is active.	

g. Click 'OK' when done.



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h. This parameter will not take effect until the SQL Service is stopped and restarted. Look for the SQL Server service running the SQL database instance. In this case, and in most cases, it is LENSECMAIN

i Services						- 0	×	
File Action View	Help							
	à 🗟 🛛 📷 🕨 🗰 🕕 🕩							
🔍 Services (Local)	Services (Local)							
	SQL Server (LENSECMAIN)	Name	Description	Status	Startup Type	Log On As	•	^
		🥋 Spatial Data Service	This service is used for Spa		Manual	Local Service	2	
	Stop the service	🆏 Spot Verifier	Verifies potential file syste		Manual (Trigger Start)	Local System	1	
	Restart the service	🧟 SQL Server (CRM) On-Demand Shutd	Manages the run state of t	Running	Automatic	Local System	1	
		🧠 SQL Server (GCSSQLEXPRESS)	Provides storage, processi	Running	Automatic	Network Ser	vice	
	Description	🖏 SQL Server (LENSECMAIN)	Provides storage, processi	Running	Automatic	NT Service\M	ASSQL\$L	
	Provides storage processing and	🧠 SQL Server Agent (GCSSQLEXPRESS)	Executes jobs, monitors S		Disabled	Network Ser	vice	
	controlled access of data, and rapid	🧟 SQL Server Agent (LENSECMAIN)	Executes jobs, monitors S		Disabled	Network Ser	vice	
	transaction processing.	SQL Server Browser	Provides SQL Server conne	Running	Automatic	Local Service	÷	
		SQL Server CEIP service (LENSECMAIN)	CEIP service for Sql server	Running	Automatic	NT Service\S	QLTELEN	
		🔍 SQL Server VSS Writer	Provides the interface to b	Running	Automatic	Local System	1	
		🔍 SSDP Discovery	Discovers networked devic	Running	Manual	Local Service	÷	
		🔍 State Repository Service	Provides required infrastru	Running	Manual	Local System	1	
		🔍 Still Image Acquisition Events	Launches applications ass		Manual	Local System	1	
		🔍 Storage Service	Provides enabling services	Running	Automatic (Delayed	Local System	1	
		🎑 Storage Tiers Management	Optimizes the placement		Manual	Local System	1	
		Sync Host_c6698	This service synchronizes	Running	Automatic (Delayed	Local System	1	
		🔄 SysMain	Maintains and improves s	Running	Automatic	Local System	1	
		System Event Notification Service	Monitors system events a	Running	Automatic	Local System	1	
		🔍 System Events Broker	Coordinates execution of	Running	Automatic (Trigger S	Local System	1	
		System Guard Runtime Monitor Broker	Monitors and attests to th	Running	Automatic (Delayed	Local System	1	
		🖓 Task Scheduler	Enables a user to configur	Running	Automatic	Local System	۱ I	4
		<					>	_
	Extended Standard							

- 4) Now the distributed server is ready for the PVMS installation.
- 5) Begin PVMS Install Wizard. Click 'Next >'.



6) Accept (or modify) default path location. Click 'Next >'.

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7) Select 'Distributed', click 'Next >'

🕼 Perspec	tive VMS Suite - InstallShield Wiz	ard	X
Setup Ty Choose	pe the setup type that best suits your nee	eds.	
Please sele	ect a setup type.		
O Comple	ete	🖲 Dist	tributed
A ir s	II applications and services will be istalled. (Requires the most disk pace.)	1 ⁴	All services related to Distributed will be installed.
🔿 Distrib	outed-ADAM	() Cust	tom
A A	II applications and services related to DAM will be installed.	1 ⁴	Choose which program features you want installed and where they will be installed. Recommended for advanced users.
InstallShield			
		< Back	K Next > Cancel

8) Select the SQL Database instance. From the 'Database server that you are installing to:', select the SQL database of the Primary webserver where the SQL database resides. This could be a domain name or in most cases the IP address of the Primary webserver. In this case, the Primary server IP address is 192.168.0.10. As with a standalone installation, it's best to choose server authentication using the 'sa' credentials.

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Perspective VMS Suite - InstallShield Wizard	×
Main Database Server Select database server and authentication method	SEC
Set Central database information <u>D</u> atabase server that you are installing to:	
192.168.0.10 ~ Connect using: Owindows authentication credentials of current user Server authentication using the Login ID and password below Login ID: sa Password: Server Name of database catalog: PerspectiveVMS PerspectiveVMS	Browse
InstallShield < Back Next >	Cancel

9) From the 'Server ID' dropdown menu, make sure the distributed server you are configuring appears in this list. If you did not set this up on the primary server first, you will not see the distributed server listed here. LENSEC recommends using the pvms user to run the PVMS servers. Any server purchased through LENSEC will have this user pre-configured with Administrator rights. It is important to use the same user on the primary server and all distributed servers. The user selected here will be the same user selected to run the Microsoft IIS service required in PVMS. In the example below, we are using the local user 'pvms'. The local computer is denoted by '.\' for the machine name prefix to the username. It is a good practice to use this method of denoting your local machine name, in case the machine name ever changes. Finally, make sure to select 'Automatic (Delayed Start)' from the 'Windows Service(s) Startup Type:' drop down menu. Click 'Next >' to continue.

	×
Perspective VMS Suite Service(s) Configuration Please enter service configuration information.	
Server ID:	
Distributed Server (192.168.0.11)	
Account:	
O Use default account	
Windows Service(s) Startup Type: Automatic (Delayed Start) ~ InstallShield < Back	

10) At this point in the PVMS installation, nothing has actually been installed on the server. Click 'Install' to finalize the PVMS installation configurations.

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😭 Perspective VMS Suite - InstallShield Wizard	×
Ready to Install the Program The wizard is ready to begin installation.	
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. the wizard.	Click Cancel to exit
InstallShield	
< Back Install	Cancel

11) It will take a few minutes for the installation to complete. Once it completes, click 'Finish'.

🕼 Perspective VMS Suite - Insta	IIShield Wizard	\times
LENSEC	InstallShield Wizard Completed The InstallShield Wizard has successfully installed Perspective VMS Suite. Click Finish to exit the wizard.	
The Power of Parapeche		
	< Back Finish Cancel	

12) Return to PVMS on the primary server and start the PVMS services for the distributed server. You may need to refresh the server to see the PVMS Web Streaming Service and PVMS Archiving Service.



13) If the Distributed services appear, you have successfully added the distributed server. Repeat this process for any additional distributed servers.

Autonomous Distributed Archive Management (Configuration)

Autonomous Distributed Archive Management (ADAM) is a feature for Enterprise edition customers who wish to ensure continuous uptime of distributed archive servers even when the primary database/administration server is inaccessible via the network. ADAM works by ensuring data transactions in relation to archive management are stored locally when connectivity to the primary database is interrupted.

Before you begin installing PVMS on distributed servers, it is important to set up the servers in PVMS, on the primary web server first. The services will appear on the web server interface after PVMS is installed on the distributed server and those services are manually started. You may have to click the refresh icon on the web server for those services to appear.

Primary/Web Server

 Navigate to ADMINISTRATION>SETTINGS>Servers. Click 'ADD' to create a new server. Complete the required information for your Distributed-ADAM Server. Make sure to click the box for 'ADAM' and 'Monitored'. 'Monitored' will allow the Health Monitor Service to monitor this server and alert you in the event of any issues. Click 'SAVE' to continue.

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Basic Information	SET SERVER	
Additional Information	Enter server basic informa	ation
Advanced Settings	Server name:*	ADAM Server
WebRTC Settings	External Hostname/IP:*	192.168.0.12
	Internal Hostname/IP:*	192.168.0.12
	Network subnet:*	255.255.255.0
	Stream protocol port.**	4530
	Stream web port:*	8090
	Archive control port*	8091
	Web server *	
		Monitored

2) Now that you have the Distributed-ADAM Server set up in PVMS on the primary server, you can now begin the installation of PVMS on the distributed server. NOTE: if you are adding a distributed server to an already existing network, it is very important that you back up the SQL database on the primary server BEFORE starting the distributed server PVMS installation.

unit POSPECTIV	VHS @ NA	CAHERA VIEN	HER ARCHIVES	ALFORTS	X Аснаналон					Bryce Ce	podieci (LDNSEC) 0	● ♀ × × ⊘
· USERS	Qr File		0							ULL STOP MINVELS	C +++ E +++ 2 +	
Accords		SERVER ID +	WEBSERVER 1	STRVET NAME		amane i	NETWORK SUBJECT	MONTORTO	ADAM E	INSINE ST. 1	INSTALLED SERVICES	L.
Graps												
Active Sensitives											Actining Service	•
User Cennecters	1.6						205.255.255.8					•
· CAMERAS											Really Musician Service	•
· SETTINGS	and the second											
Seren												
System Settings	, 0			-			255 255 255 0					
Adhe Destory												
kom												
Motion Settings												

Distributed Servers

When installing Perspective VMS across multiple servers, it will be necessary to complete a couple of steps prior to the PVMS installation on those distributed servers.

- A domain account or matching local account name/password for workgroup connected computers is necessary to use when setting up the distributed servers. Servers purchased through LENSEC will have the local user 'pvms' pre-configured with Administrator rights.
- 2) On the distributed servers, you will need to update the Local Security Policy
 - a. Search for Windows Local Security Policy and run as an Administrator.

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Local Security Policy App		
Apps Settings	>	Local Security Policy App
 This PC Control Panel Weather Search work and web local - See work and web results Settings (7+) Photos (1+) 	> > >	Open Run as administrator Open file location Pin to Start Pin to taskbar
₽ tocal		

b. Expand the 'Local Policies' folder to view 'Security Option.'

c. Double click 'Security Options' and scroll to the bottom of the list to view the 'User Account Controls'. Make sure the Security Settings match what is displayed in the picture below.



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File Action View Help			
<table-cell-rows> 🔿 📶 🗟 🔟</table-cell-rows>			
Security Settings Account Policies Account Policies Account Policies Audit Policy Guer Rights Assignment Network List Manager Policies Application Control Policies Application Control Policies Application Control Policies Advanced Audit Policy Configuration Advanced Audit Policy Configuration	Policy Network security: Restrict NTLM: NTLM authentication in this Network security: Restrict NTLM: NTLM authentication in this Recovery console: Allow automatic administrative logon Recovery console: Allow automatic administrative logon Shutdown: Allow system to be shut down without having to L. Shutdown: Allow system to be shut down without having to L. Shutdown: Slew representation of the system are consistent and system or protography. Force strong key protection for user ke System cyptography: De FIPS compliant algorithms for encr System objects: Require case insensitivity for non-Windows 5 System objects: Strengthen default permissions of internal system settings: Ube Certificate Rules on Windows Executable User Account Control: Behavior of the elevation prompt for a User Account Control: Behavior of the elevation prompt for a User Account Control: Detect application installations and pr User Account Control: Only elevate UlAccess applications that are signe User Account Control: Only elevate UlAccess applications that are signe User Account Control: Only elevate UlAccess applications that provide user Account Control: Only elevate UlAccess applications that are signe User Account Control: Nun all administrations in Admin Approval User Account Control: Switch to the secure desktop when prov User Account Control: Switch to the secure desktop when prov	Security Setting Not Defined Not Defined Not Defined Enabled Disabled Disabled Disabled Disabled Disabled Disabled Disabled Elevate without pr Prompt for creden Enabled Disabled Enabled Disabled Enabled Disabled Enabled Disabled Enabled	ompti tials

d. If a Security Setting needs to be changed, simply double-click the line item to view a configuration pop-up window. Select the appropriate setting and click 'OK'.

User Account Control: Detect application installations an ?	×
Local Security Setting Explain	
User Account Control: Detect application installations and prompt for elevation	
⊛ Enabled ⊜ Disabled	
-	
OK Cancel Apply	

- 3) TCP/IP must be enabled for the SQL Server Network Configuration protocols for the LENSECMAIN database instance. This will be enabled on the database server
 - a. Open SQL Server Configuration Manager





b. Expand 'SQL Server Network Configuration'. Then click 'Protocols for LENSECMAIN' to view the protocols in the right panel.



- c. While the TCP/IP protocol is highlighted, right click and select "Properties"
- d. Select 'Enabled'. By default the value is set to 'No', from the dropdown menu, select 'Yes' to enable TCP/IP.



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	operties				?	
Protocol	IP Addresses					
Gene	eral					
Enab	led		No			
Keep	Alive		Yes			
Liste	n All		No			
						_
Enabled						
Enabled	i or disable TCD/IP r		or this serv	arinstansa		
Enabled Enable	I or disable TCP/IP p	protocol f	or this serv	er instance		
Enabled Enable	I or disable TCP/IP p	protocol f	or this serv	er instance		
Enabled Enable	I or disable TCP/IP p	protocol f	or this serv	er instance		

- e. Next, select the 'IP Addresses' tab.
- f. Scroll to the bottom to locate the section titled 'IPALL'. Configure static port 1433.

	TCP Dynamic Ports	0	
	TCP Port	-	
Ξ	IP2		
	Active	Yes	
	Enabled	No	
	IP Address	::1	
	TCP Dynamic Ports	0	
	TCP Port		
Ξ	IP3		
	Active	Yes	
	Enabled	No	
	IP Address	127.0.0.1	
	TCP Dynamic Ports	0	
	TCP Port		
Ξ	IPAII		
	TCP Dynamic Ports	\sim	
	TCP Port	1433	
A	ctive	ed IP Address is active.	

g. Click 'OK' when done.



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h. This parameter will not take effect until the SQL Service is stopped and restarted. Look for the SQL Server service running the SQL database instance. In this case, and in most cases, it is LENSECMAIN

🍓 Services						- 0	×	_
File Action View	Help							
♦ ♦	à 🔒 🛛 🖬 🕨 🔳 💵 🕨							
Services (Local)	Services (Local)							
	SQL Server (LENSECMAIN)	Name	Description	Status	Startup Type	Log On As	1	^
		🆏 Spatial Data Service	This service is used for Spa		Manual	Local Service		
	Stop the service	🆏 Spot Verifier	Verifies potential file syste		Manual (Trigger Start)	Local System		
	Restart the service	🧟 SQL Server (CRM) On-Demand Shutd	Manages the run state of t	Running	Automatic	Local System		
		🧠 SQL Server (GCSSQLEXPRESS)	Provides storage, processi	Running	Automatic	Network Servi	ice	
	Description	SQL Server (LENSECMAIN)	Provides storage, processi	Running	Automatic	NT Service\M	SSQL\$L	
	Provides storage processing and	🧠 SQL Server Agent (GCSSQLEXPRESS)	Executes jobs, monitors S		Disabled	Network Servi	ice	
	controlled access of data, and rapid	🧠 SQL Server Agent (LENSECMAIN)	Executes jobs, monitors S		Disabled	Network Servi	ice	
	transaction processing.	🎑 SQL Server Browser	Provides SQL Server conne	Running	Automatic	Local Service		
		SQL Server CEIP service (LENSECMAIN)	CEIP service for Sql server	Running	Automatic	NT Service\SC	UTELEN	
		🖏 SQL Server VSS Writer	Provides the interface to b	Running	Automatic	Local System		
		🖏 SSDP Discovery	Discovers networked devic	Running	Manual	Local Service		
		🎑 State Repository Service	Provides required infrastru	Running	Manual	Local System		
		🆏 Still Image Acquisition Events	Launches applications ass		Manual	Local System		
		🎑 Storage Service	Provides enabling services	Running	Automatic (Delayed	Local System		
		🆏 Storage Tiers Management	Optimizes the placement		Manual	Local System		
		🆏 Sync Host_c6698	This service synchronizes	Running	Automatic (Delayed	Local System	- 1	
		🏩 SysMain	Maintains and improves s	Running	Automatic	Local System		
		System Event Notification Service	Monitors system events a	Running	Automatic	Local System		
		🏩 System Events Broker	Coordinates execution of	Running	Automatic (Trigger S	Local System		
		System Guard Runtime Monitor Broker	Monitors and attests to th	Running	Automatic (Delayed	Local System		
		🖳 Task Scheduler	Enables a user to configur	Running	Automatic	Local System		4
		<					>	
	\Extended \Standard \							

- 3) Now the distributed server is ready for the PVMS installation.
- 4) Begin PVMS Install Wizard. Click 'Next >'.



5) Accept (or modify) default path location. Click 'Next >'.

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6) Select 'Distributed-ADAM', click 'Next >'



7) Select the SQL Database instance. From the 'Database server that you are installing to', select the SQL database of the primary web server where the SQL database resides. This could be a domain name or in most cases the IP address of the primary web server. In this case, the primary server IP address is 192.168.0.10. As with a standalone installation, it's best to choose server authentication using the 'sa' credentials.

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🕼 Perspective VMS Suite - Insta	llShield Wizard	×
Main Database Server Select database server and auth	nentication method	พระด
Set Central database information Database server that you are inst	talling to:	
192.168.0.10		✓ Browse
Connect using:		
O Windows authentication cre	edentials of current user	
Server authentication using	g the Login ID and password below	
Login ID: sa		
Password:	•••	
Name of database catalog:		
PerspectiveVMS		
installShield		
	< Back Next >	Cancel

8) From the 'Server ID' dropdown menu, make sure the distributed server you are configuring appears in this list. If you did not set this up on the primary server first, you will not see the distributed server listed here. LENSEC recommends using the 'pvms' user to run the PVMS servers. Any server purchased through LENSEC will have this user pre-configured with administrator rights. It is important to use the same user on the primary server and all distributed servers. The user selected here will be the same user selected to run the Microsoft IIS service required in PVMS. In the example below, we are using the local user 'pvms'. The local computer should be denoted by '.\' for the machine name prefix to the username. It is a good practice to use this method of denoting your local machine name, in case the machine name ever changes. Finally, make sure to select 'Automatic (Delayed Start)' from the 'Windows Service(s) Startup Type:' drop down menu. Click 'Next >' to continue.

👘 Р	Perspective VMS Suite - InstallShield Wizard	×
Pe	erspective VMS Suite Service(s) Configuration	F 7
	Please enter service configuration information.	
	Server ID:	
	ADAM Server (192.168.0.12)	\sim
	Account:	
	Use default account This account User Name: .\pvms Password:	
Windows Service(s) Startup Type:		
	< Back Next >	Cancel

9) At this point in the PVMS installation, nothing has actually been installed on the server. Click 'Install' to finalize the PVMS installation configurations.

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- 10) It will take a few minutes for the installation to complete. You will see that the SQL database is installed first. This is the local SQL database. The default SQL instance name is 'LENSECLOCAL'. The 'sa' password for this instance is L3nSec!@
- 11) Once the installation completes, click 'Finish'.



12) Return to PVMS on the primary server and start the PVMS services for the Distributed-ADAM server. You may need to refresh the server to see the PVMS Web Streaming Service, PVMS Administrative Service and PVMS Archiving Service.



13) If the Distributed-ADAM services appear, you have successfully added the Distributed-ADAM server. Repeat this process for any additional distributed servers.