

Section II - How to Install Perspective VMS Version 3.2 (Typical 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 pre-requisites which may include enabling select server roles and installing an instance of Microsoft SQL Server. Based on a particular installation these pre-requisites may already be installed or installed automatically by the Installer Wizard.

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Software Prerequisites

Operating Systems

Perspective VMS' services platform may be installed onto <u>Windows Server 2016</u>, <u>Windows Server 2012-R2</u>, <u>Windows Server 2012-R2</u>, <u>Windows Server 2012-R2</u>, <u>Windows 10 Pro</u>, and <u>Windows 8.1 Pro</u> Operating Systems. Virtual Machines running the aforementioned operating systems are also supported.

Home, Basic, or IoT versions of Windows 10, Windows 8.1 are able to be utilized for installation and operation but lack features such as Remote Desktop or pre-loaded IIS which hinder general support and troubleshooting, thus are not recommended. Other legacy versions of Windows (Windows 7, Windows XP, Windows Server 2008, Windows Server 2003, Windows Server 2000, NT, etc...) and Linux are **not supported** as a server platform for Perspective VMS. If necessary, please contact LENSEC technical support for further details.

Those installing Perspective VMS services should have **Administration rights** to the workstation/server they are working on in order to ensure proper installation and functionality of the services.

In this guide, detailed screenshots and instructions are provided for the below installation wizards:

- Microsoft SQL Server Express 2012
- Perspective VMS Installation Wizard



Database: Microsoft SQL Server 2008/2012/2014/2016 (Express/Standard/Enterprise Editions)

Microsoft SQL Server is the relational database which Perspective VMS relies on to store/retrieve needed information for its operations. Perspective VMS currently supports SQL 2008, 2012, 2014, and 2016 with its various editions: Express, Standard, and Enterprise.

An installation of Perspective VMS can be run if SQL is already installed and an SQL user (windows or SQL authenticated) is provided to the installer along with the network path location. If these are not available a new instance of SQL is recommended to be installed either on the web server itself or another network accessible computer.



For reference a Video Tutorial (web link) for installing SQL Express 2012 is available.

LENSEC provides a copy of SQL Express edition in a tools folder on our download page (http://lensec.com/downloads/Tools/). Downloads for 2014 and 2016 versions are available. The 2014 version is pre-packaged with SQL Management Studio for database management while the 2016 version requires 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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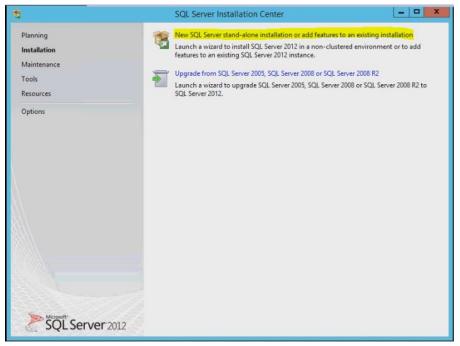
- Parent Directory
- MSSQLExpress2014/
- MSSQLExpress2016/



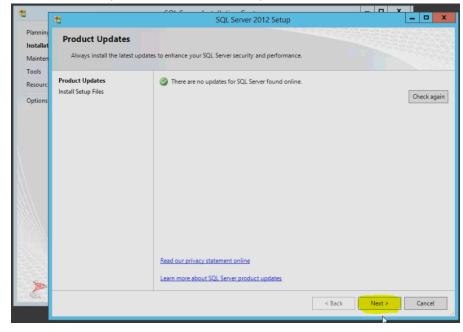
3)

SQL Server Express 2012/2014: Installation Wizard

1) Select "New SQL Server..."

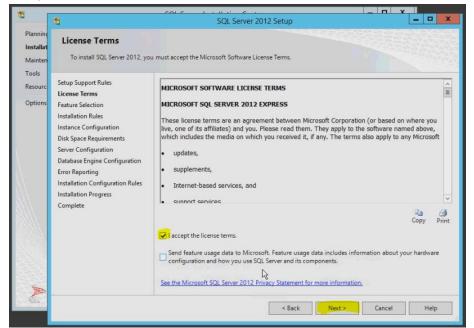


2) Install Product Updates or Select Next if updates installed





4) Accept license terms



5) Default location(s) and selections are recommended

	1	SQL Server 2012 Setup	
Planning Installat Mainten	Feature Selection Select the Express features to in	stall.	
Tools Resourc Options	Setup Support Rules License Terms Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress Complete	Features: Instance Features I Database Engine Services I SQL Server Replication Shared Features I SQL Client Connectivity SDK Redistributable Features	Feature description: The configuration and operation of each instance feature of a SQL Server instances is isolated from other SQL Server instances. SQL Server instances: an operate side-by- side on the same computer. Vertex Prerequisites for selected features: Already installed: Mindows PowerShell 2.0 To be installed from media: Microsoft Visual Studio 2010 Shell
A		Select All Unselect All Shared feature directory: C:\Program Files\Micro: Shared feature directory (x86): C:\Program Files (x86)\N < Back	



6) Name Instance of SQL Express: Using a unique "Named Instance" is a good best-practice, however you will need to remember (annotate) this instance for use during the Perspective VMS Install wizard. At LENSEC we typically will use "LENSECSQLEXPRESS"

13 -							
	1	S	QL Server 201	2 Setup		_ 0	X
Planninç Installat Mainten	Instance Configuration Specify the name and instance)L Server. Instance	ID becomes part of t	he installation path.		
Tools Resourc Options	Setup Support Rules License Terms Feature Selection	O Default instance		PRESS			
	Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress	Instance ID: Instance root directory	LENSECSOLEX /: C:\Program Fil	es\Microsoft SQL Sen	ver\		
		SQL Server directory: Installed instances:	C:\Program File	es\Microsoft SQL Serv	er\MSSQL11.LENSECS(QLEXPRESS	
	Complete	Instance Name	Instance ID	Features	Edition	Version	_
C.			0	< Back	Next > Cano	el Help	

7) Default Service Accounts and Collation (if installing from LENSEC Download FTP)



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	1		SQL Server	2012 Setup		- 6	3
Planninç Installat Mainten	Server Configuration Specify the service accounts an	d collation configurat	tion.				16,0,0
Tools Resourc Options	Setup Support Rules License Terms	Service Accounts		use a separate account for each	SQL Server serv	ice	
options	Feature Selection	Service		Account Name	Password	Startup Type	e.
	Instance Configuration	SQL Server Data	abase Engine	NT Service\MSSQL\$LEN		Automatic	~
	Disk Space Requirements	SQL Server Brow	wser	NT AUTHORITY\LOCAL		Disabled	~
	Installation Progress Complete						
A				< Back Next	Can	icel Hi	elp

8) Server Authentication: Using Mixed Mode for authentication does help to mitigate potential permissions issues if users are likely to modify permissions via a domain controller without managing this instance of SQL. Please ensure to **note your password choice** for the "sa" user as you will want to utilize it during the Perspective VMS installation.

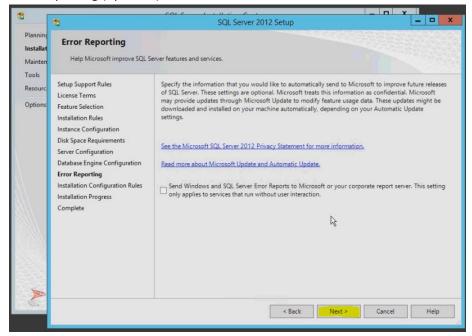
S	13	SQL Server 2012 Setup	
Planning Installat Mainten Tools Resourc Options	Database Engine Confi	guration ntication security mode, administrators and data directories. Server Configuration Data Directories User Instances FILESTREA Specify the authentication mode and administrators for the Data Authentication Mode Windows authentication mode Mixed Mode ISQL Server authentication and Windows authent Specify the password for the SQL Server system administrator (sa) Enter password: Confirm password: Specify SQL Server administrators	AM
		KELLWIN2012R2ST\Administrator (Administrator) Add Current User Add Remove	SQL Server administrators have unrestricted access to the Dotabase Engine.
2		< Back Next	> Cancel Help

Microsoft technote on authentication: (<u>http://technet.microsoft.com/en-us/library/ms144284.aspx</u>)

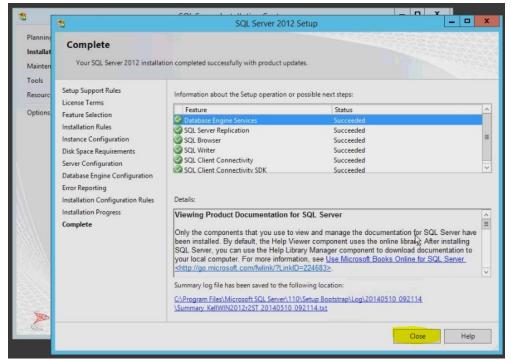


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9) Error reporting (optional)



10) Complete setup, close windows





Microsoft SQL Management Studio

Microsoft SQL Management Studio is an **optional** tool for managing SQL databases (Backup/Restore). A copy of this software tool is available from <u>www.lensec.com/download</u> in the latest release version folder.

***IMPORTANT Technical Note *** (Windows Server 2012 Pre-requisite):

On Windows Server 2012 users may face an installation issue with SQL Management Studio which requires the pre-requisite of .NET Framework 3.5. This can be added from Server Manager (Add Roles and Features) specifically in the Web Server (IIS) category under Application Development.



For reference a Video Tutorial (web link) for installing SQL Management Studio is available.

Note: All pre-requisites (Operating system permissions and Microsoft SQL Server) must be installed prior to running the Perspective VMS Installation.



Perspective VMS Installation Wizard

After installing the Pre-requisites it is time to install the Perspective VMS Suite. The most up-to-date installation package can be found at www.LENSEC.com/download

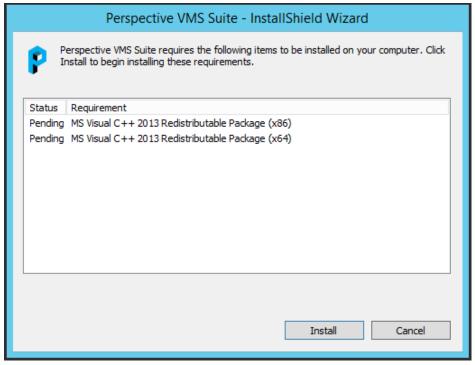
$\begin{array}{c c} \hline \vdots & \\ \hline & \\ & \\$
Index of /downloads
 Parent Directory IS Perspective VMS Suite v2.7.3.0.exe IS Perspective VMS Suite v3.0.0.0.exe IS Perspective VMS Suite v3.0.1.0.exe IS Perspective VMS Suite v3.1.0.0.exe IS Perspective VMS Suite v3.1.0.1.exe Tools/

For reference a Video Tutorial (web link) for installing Perspective VMS from the installation wizard is available.





1) Environment Pre-requisites: 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).



2) Begin Wizard

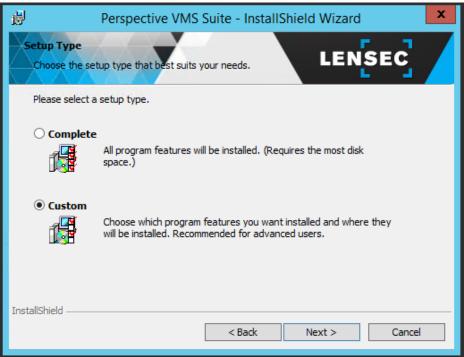




3) Accept (or modify) default path location

뤙	Perspective VMS Suite - InstallShield Wizard	
Destinat Click Ne	tion Folder ext to install to this folder, or click Change to install to a different Fold SEC	
	Install Perspective VMS Suite to: C:\Program Files (x86)\LENSEC\PerspectiveVMS\ Change	
InstallShield	< Back Next > Cancel	-

4) The installation wizard is a self-guided installation shield package that enables the user to install individual components (custom-installation) or the standard stand-alone package.





5) The Suite consists of the following components (all of which are necessary for a stand-alone installation):

Perspective VMS Suite - InstallShie	Id Wizard X
Custom Setup Select the program features you want installed.	
Image: Web Application A Image: Web Application A Image: Administrative Service Co Image: View Application View Application Image: View Application View Application	d. eature Description complete security suite that nsists of an enterprise digital deo surveillance system that is sponsible for displaying, arsing and archiving video ca his feature requires 153MB on our hard drive.
Install to: C:\Program Files (x86)\LENSEC\PerspectiveVMS\wwwroot\ InstallShield Help Space < Back	Change Next > Cancel

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; checks how much free space on the drive(s), and subsequently purge old archives or move them to a different offsite location. It is also responsible for importing and ensuring user synchronization between Active Directory and PVMS.

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 PVMS Archiving Service. The service also provide web-based troubleshooting module which enable system administration to examine active/inactive streams more closely and with the ability to terminate if necessary. Web troubleshooting module can be accessed on the same machine the service is running by navigating to <a href="http://<ServerName>:8090/">http://<ServerName>:8090/.



PVMS Archiving Service: The service is mainly responsible for the following: Archiving image and video streams from system cameras. Handle image extractions requests from PVMS users and create archives/extractions accordingly. Handle 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: The service is mainly responsible for the following: Check if system cameras defined in PVMS are up and running. If not, the service will notify the user about the offline status of the camera in question. Generate health report 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.

6) Database Server: Upon installation you will be prompted to select your existing Database Server location. The installation wizard will write the PerspectiveVMS database to this location. It is optional whether to use Windows Authentication or Mixed-mode.

Perspective VMS Suite - InstallShield Wizard	Note the Database
Database Server	Server instance name
Select database server and authentication method LENSEC	and password will need
	to match the instance
	name provided by the
Database server that you are installing to:	customer or created
(local)/LENSECSQLEXPRESS V Browse	when installing SQL.
Connect using:	
 Windows authentication credentials of current user 	The Database catalog
Server authentication using the Login ID and password below	name should remain
Login ID: sa	"Perspective VMS"
Password:	
Name of database catalog:	
PerspectiveVMS	
InstallShield	
< Back Next > Cancel	



7) Create Database (dialog box): If installing on a new instance a prompt will display for acknowledgement that a new (blank) database will be created.

Perspective VMS Suite - InstallShield Wizard
Database Server Select database server and authentication method
Perspective VMS Suite - InstallShield Wizard
Cc Database will be created, it does not exist on the target server.
ОК
PerspectiveVMS
InstallShield
< Back Next > Cancel

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.

Perspective VMS Suite - InstallShield	d Wizard 🛛 🗙
Perspective VMS Suite Configuration Please enter Perspective VMS Suite configuration information	
User Name:	_
admin	
Password:	=
•••••	
Confirm Password:	_
•••••	
TestellObiold	
InstallShield ————————————————————————————————————	Next > Cancel



9) Services Administration: As mentioned above during the services installation Perspective VMS relies on Windows Services run 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. They may also be configured to be started manually or automatically on boot. Services may be managed via the Administration module of Perspective VMS if Internet Information Services (IIS) are also configured with this user (see below).

岁 Perspective VMS Suite - InstallShield Wizard	x
Windows Service(s) Configuration LENSEC Please enter windows service configuration information. LENSEC	
Server ID:	
1	
Log on as:	
Local System account	
○ This account	
User Name:	
Password:	
Sartup Type: Automatic (Delayed Start)	
InstallShield	_
< Back Next > Cancel	

Note the choice of user accounts, refers to local or domain accounts for Windows. The account selected (or local system) must have ability to start/stop services on the Windows machine. A password of that account is also required.

Application Pool Configuration: Along with administering the services with a specific windows user, during
installation the ability to administer the IIS Application Pool is also an option. The default choice is Application
Pool Identity or the more senior Local System authority. To be able to administer the services within the web-



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application itself these user accounts between the services and Application Pool should match.

閿	Perspective VMS Suite - InstallShield Wizard
	ation Pool Configuration LENSEC
Identity:	Local System V
User Name:	, \pvms
Password:	•••••
InstallShield —	
	< Back Next > Cancel

11) Create shortcuts (optional):

岁 Perspective VMS Suite - InstallShield Wizard	x
Select Additional Tasks Which additional tasks should be performed?	
Select the additional tasks you would like setup to preform while installing Perspective VMS Sui then dick Next.	ite,
✓ Create application shortcut	
✓ Create Out-of-Browser shortcut	
InstallShield	
< Back Next > Cancel	

12) Install and Finish: No writing action will be taken to this point in the wizard. By clicking install the application process will begin.

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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. Click Cancel to exit the wizard.
InstallShield
< Back Install Cancel



Launching Perspective VMS for the first time

Perspective VMS is a web application thus must be opened from a web-browser or the installed Out-of-Browser shortcut (if installed during installation wizard). 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**".

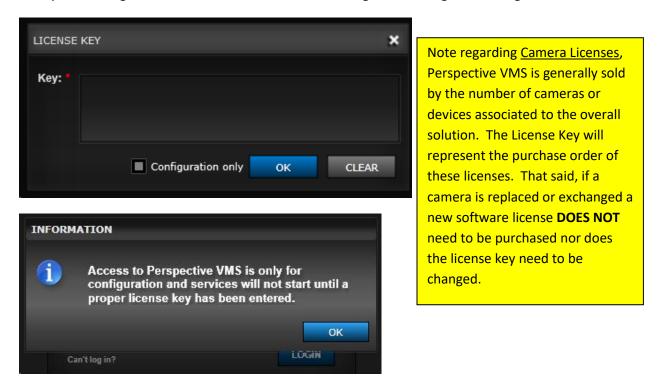


Application Shortcut (above)

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. Your purchase order for the Perspective VMS application will be verified and a license key will be issued via e-mail.

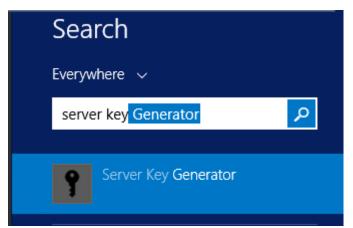
An alternative option is to select "Configuration only" which allows Perspective to be opened for administration design and system configuration but will not allow for the starting of streaming or archiving services until a full license is issued.



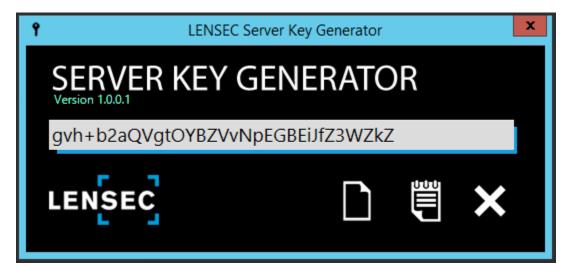


Server Key Generator

To obtain a license a specific Server Key must be generated and submitted to LENSEC. When PVMS is installed an applet named "Server Key Generator" is also installed. 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.



*note on Windows 8.1 or Windows 2012 R2 machines the PC search (shown above) can be initiated by holding down the **Windows** and **S** keys simultaneously (**#+S**).





Distributed Architecture

When installing Perspective across multiple servers, it may be necessary to run the installation wizard in Custom mode in order to install only the Streaming and Archiving Services at the remote site locations. A domain account or matching local accounts (for workgroup connected computers) is necessary to use during the above Services Configuration step.

Perspective VMS Suite - InstallS	Shield Wizard X
Custom Setup Select the program features you want installed.	
Click on an icon in the list below to change how a feature is ins Web Application Administrative Service Streaming Service Archiving Service Health Monitor Service External System Service	stalled. Feature Description An intermediary communication agent between the system and 3rd party software/hardware applications. This feature frees up 28MB on your hard drive.
InstallShield	Next > Cancel





Managing Services within Perspective VMS

Services may be managed from within the Perspective VMS Administration module but 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

LENSEC PERSPECTIVE		camera v	TEWER ARC	CHIVES	ORTS 🗙 ADMIN	ISTRATION Jeff Kellic	k 杂 Q	* X ?
► Users	Q. Filter by i	name	8	ADD SER	VER 💒 🕂 EDIT SERV	er 🔪 delete server 💒	COPY SERVER 🚆	PRINT SERVER 🚔
► Cameras	SERVER ID	SERVER NAME	EXTERNAL IP	INTERNAL IP	SUBNET MASK	INSTALLED SERVICES		
▼ Settings	1	Houston LHQ	74.202.38.195	74.202.38.195	255.255.255.224	Streaming Service:		
Servers						External System Service:		
Groupings								
Settings								
Icons								
application:								

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.

O ₆ Services					 >	•
<u>F</u> ile <u>A</u> ction <u>V</u> i	ew <u>H</u> elp					
(= -) 🔲 🗐	0 🗟 🚺 🖬 🕨 🖬 🕪					
🤹 Services (Loca	Services (Local)					
	PVMS Administrative Service	Name	D	S. Star	L.,	*
	· · · · · · · · ·	🗠 端 PVMS Administ	rative R	Aut	L.,	
	Start the service	🔍 PVMS Archiving	g Service R	Aut	L.,	
	-	🔍 PVMS External S	System A	Aut	L.,	
	Description:	🔍 PVMS Health N	lonitor R	Aut	L.,	
	Responsible for monitoring hard-	PVMS Streamin	g Servi R	Aut	L.,	Ŧ
< <u> </u>	Extended Standard					



Autonomous Distributed Archive Management (Configuration)

Autonomous Distributed Archive Management (ADAM) is a feature set 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.

To enable this feature a few additional steps must be managed from the installation site. As a pre-requisite SQL or SQLExpress does need to be installed on the local (distributed) server prior to the PVMS installation.

First, during the remote installation the user will choose the Administration service along with the Archive service. (*note the streaming service is still optional depending on which server(s) will host the streaming service)

Perspective VMS Suite - InstallShield Wizard	×
Custom Setup Select the program features you want installed.	
Click on an icon in the list below to change how a feature is in Web Application Administrative Service Streaming Service Archiving Service X • Health Monitor Service External System Service X • Analytics Service	Istalled. Feature Description Responsible for monitoring hard-drive utilization, checking available free space and active directory user synchronization. This feature requires 99MB on your hard drive.
Install to: C:\Program Files (x86)\LENSEC\PerspectiveVMS\Administrativ	e Service \ Change
Help Space < Back	Next > Cancel



Second, when selecting a database connection, you will need to install the local (distributed) server as standalone as opposed to point to the central server. This means that SQL Express would need to be installed on the distributed server as well as the primary database server. The reason is that this server will need to be self-operating or autonomous should the connection be lost.

授 Pe	erspective VMS Suite - InstallShield Wizard	x
Database Server Select database s	erver and authentication method	
Database server th	at you are installing to:	
(local) \LENSECSQL	EXPRESS Y Browse	
Connect using:		
 Windows auth 	entication credentials of current user	
 Server auther 	itication using the Login ID and password below	
Login ID:	sa	
Password:		
Name of database	catalog:	
PerspectiveVMS		
InstallShield		
	< Back Next > Cancel	

₿	Perspective VMS Suite - InstallShield Wizard	x
Database Ser Select databa	ver LENSEC	
Dat t		
[Perspective VMS Suite - InstallShield Wizard	
G I	Database will be created, it does not exist on the target server.	
Na	ОК	
PerspectiveVM	IS	_
InstallShield		
	< Back Next > Cancel	



The remaining dialog boxes will be similar to a standalone installation. You will pick a default admin password and you will select the Demo Server as the server you are connecting the services to.

Perspective VMS Suite - InstallShield Wizard	×
Windows Service(s) Configuration Please enter windows service configuration information.	
Server ID:	
Demo Server (127.0.0.1) V	
Log on as: O Local System account This account User Name: .\pvms Password:	
Sartup Type: Automatic (Delayed Start) ~ InstallShield	

Upon completion of the wizard, the final step to enabling ADAM is to modify the service config file. This can be accomplished using the ADAM enabling tool.