

Section II - How to Install Perspective VMS Version 2.7 (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 provided here. For each instance there are software pre-requisites which 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.

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Software Prerequisites

Operating Systems

Perspective VMS' services platform may be installed onto Windows 2012 Server R2, Windows 2012 Server, Windows 2008 Server R2, Windows 2008 Server, Windows 10, Windows 8.1, and Windows 7 Professional Operating Systems. Virtual Machines running the aforementioned operating systems are also supported.

Windows 2003 Server is currently supported but additional steps are necessary to enable proper administration of IIS. These steps are not included in this manual and an installer must contact LENSEC for additional support. It is also advised to note the published life-cycle support by Microsoft for Windows 2003 Server (<http://support.microsoft.com/lifecycle/?p1=3198>) as LENSEC may be unable to support this operating system in the future.

Home or Basic versions of Windows 7, Windows 8 or 8.1 are able to be utilized for installation and operation but lack features such as Remote Desktop hinder general support and troubleshooting, thus are not recommended. Other legacy versions of Windows (Windows XP, 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.

Installers of Perspective 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](#)



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Database: Microsoft SQL Server 2008/2012/2014 (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, and 2014 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 is available.

LENSEC provides a copy of **SQL Express** edition in a pre-requisites folder on our download page (www.lensec.com/download) within the Current Release Package folder, as well as a copy of SQL Management Studio for database management. *Both 64-bit and 32-bit editions are available, check with your Server or PC to verify which edition is correct for your installation.

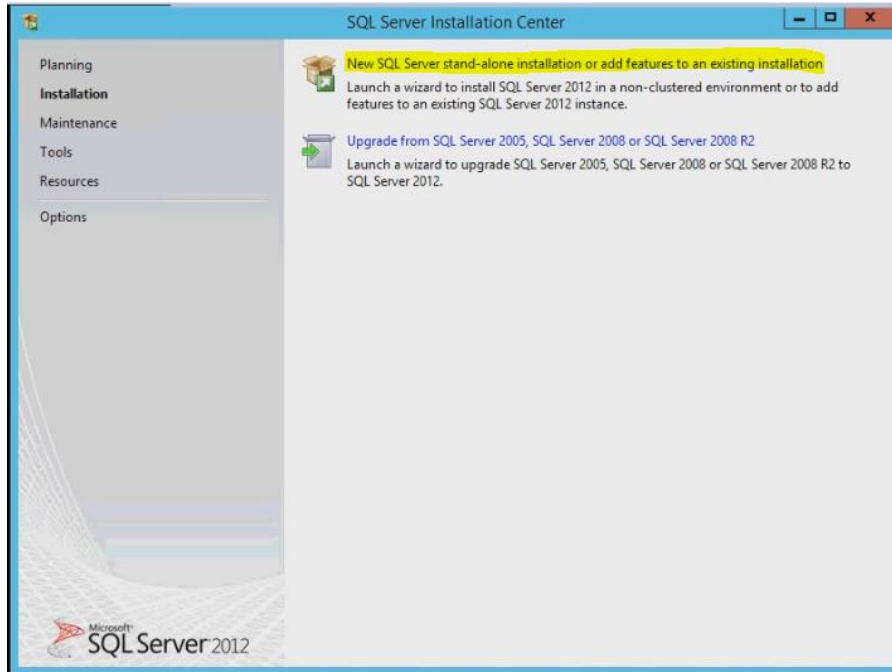
Name	Size	Date Modified
[parent directory]		
SQLEXPRESS_x64_ENU.exe	132 MB	3/8/14, 12:00:00 AM
SQLEXPRESS_x86_ENU.exe	117 MB	3/8/14, 12:00:00 AM
SQLManagementStudio_x64_ENU.exe	600 MB	3/8/14, 12:00:00 AM
Silverlight_x64 (1).exe	12.5 MB	7/11/14, 2:43:00 AM



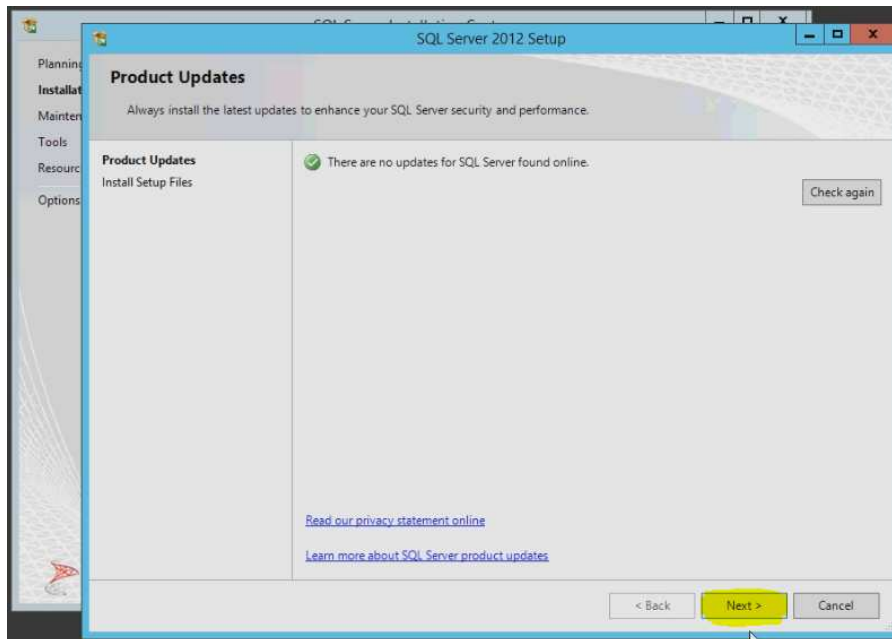
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SQL Server Express 2012: Installation Wizard

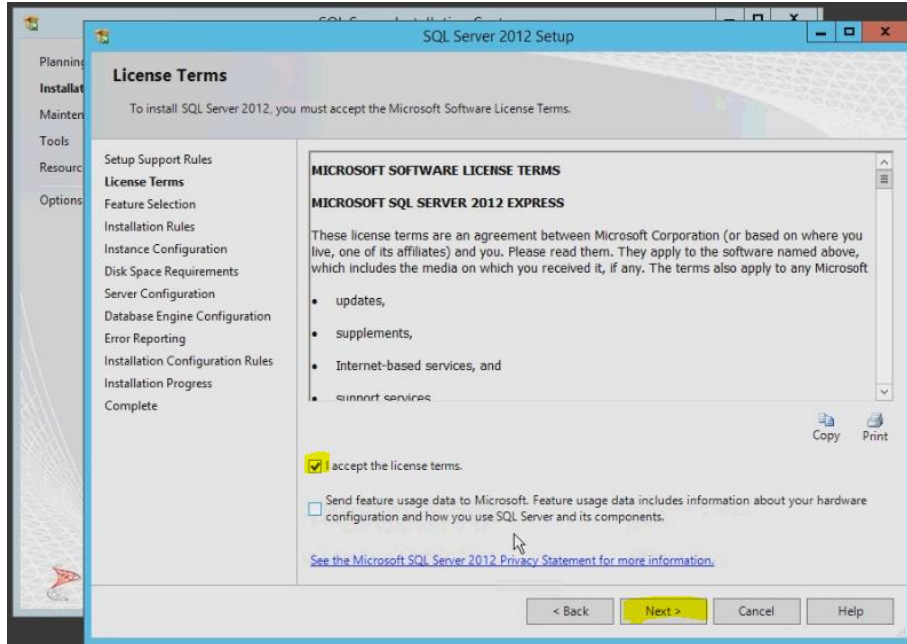
- 1) Select "New SQL Server..."



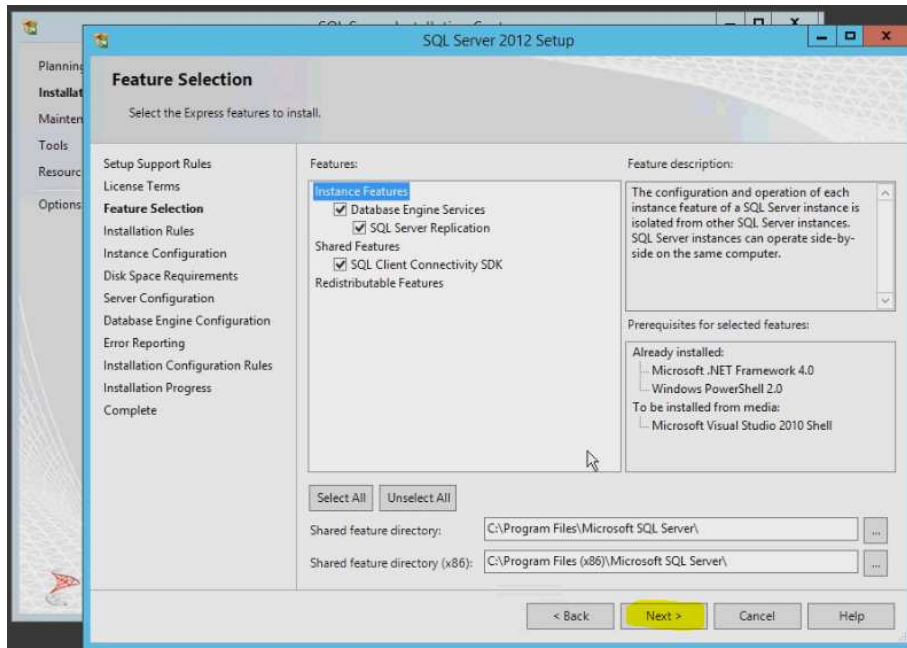
- 2) Install Product Updates or Select Next if updates installed



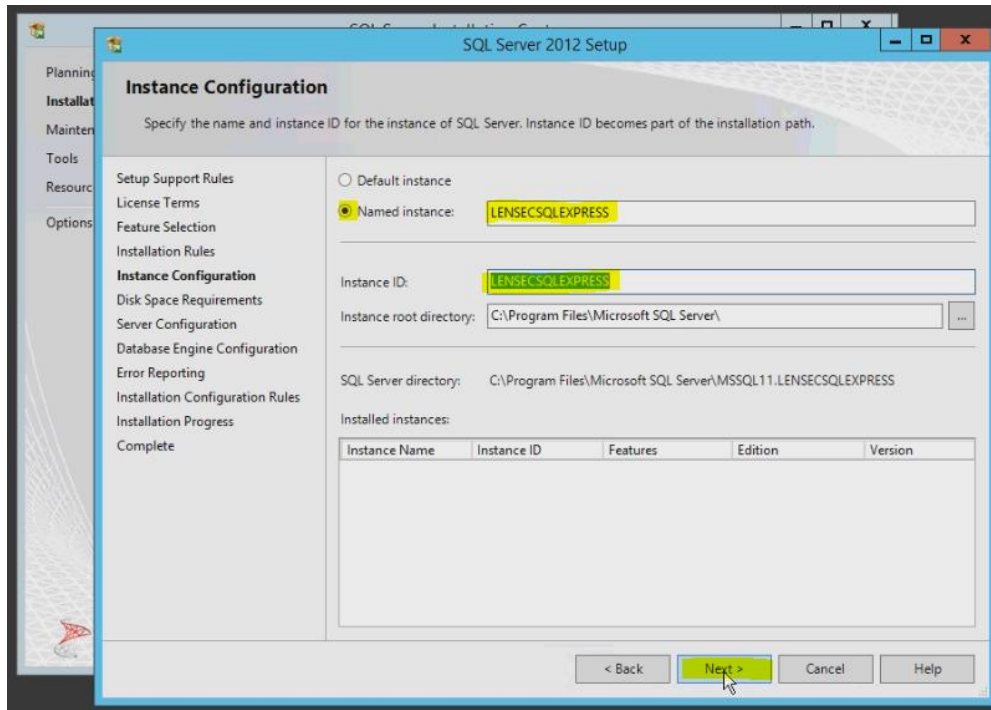
3) Accept license terms



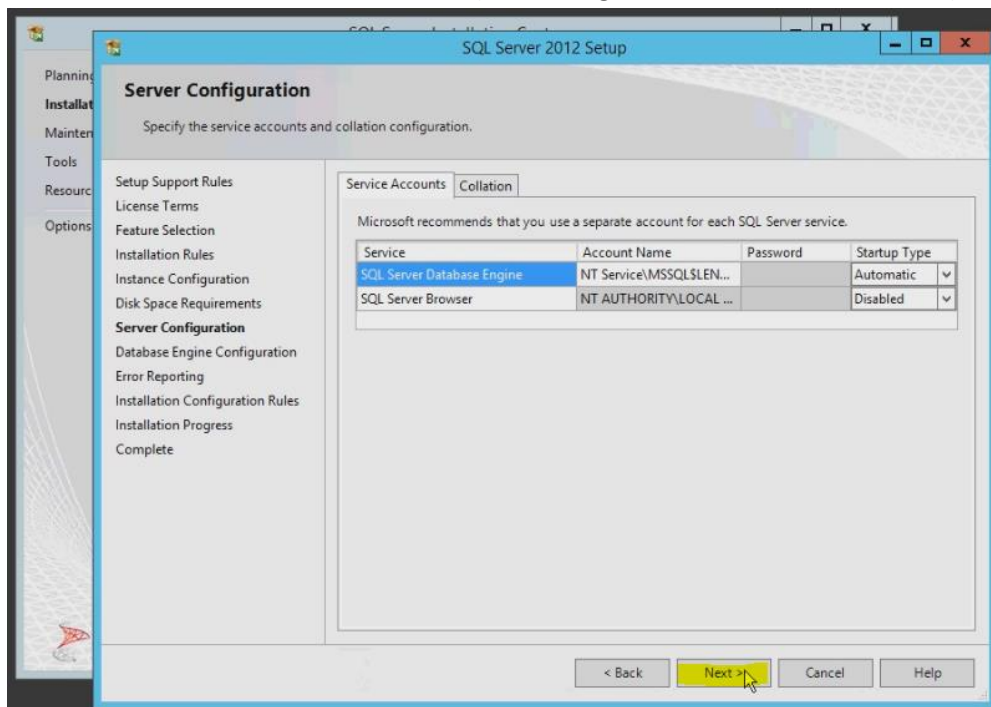
4) Default location(s) and selections are recommended



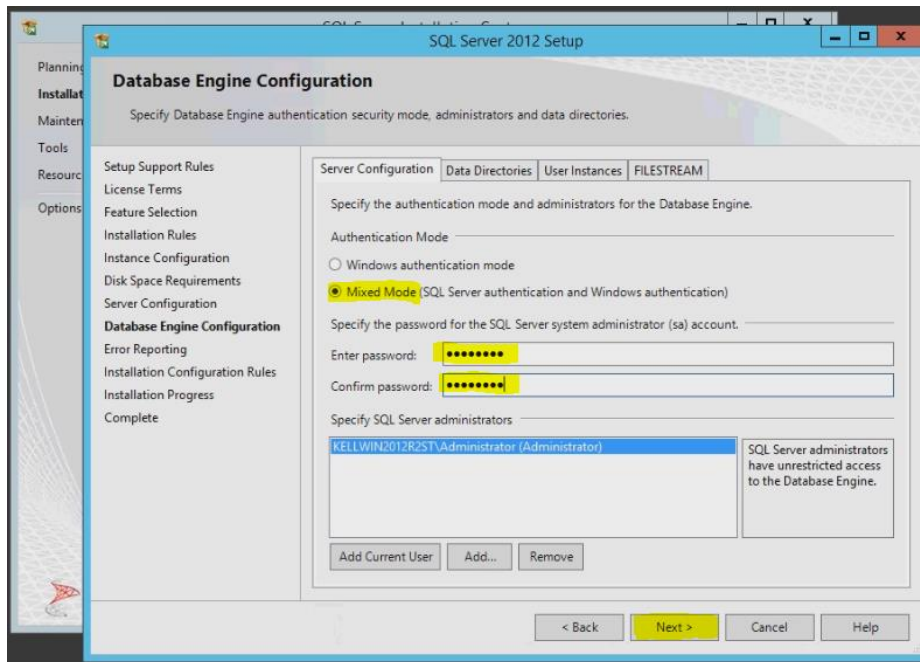
- 5) Name Instance of SQL Express: Using a unique “Named Instance” is a good best-practice, however you will need to remember (annotate) this instance for use during the Perspective VMS Install wizard. At LENSEC we typically will use “LENSECSQLEXPRESS”



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

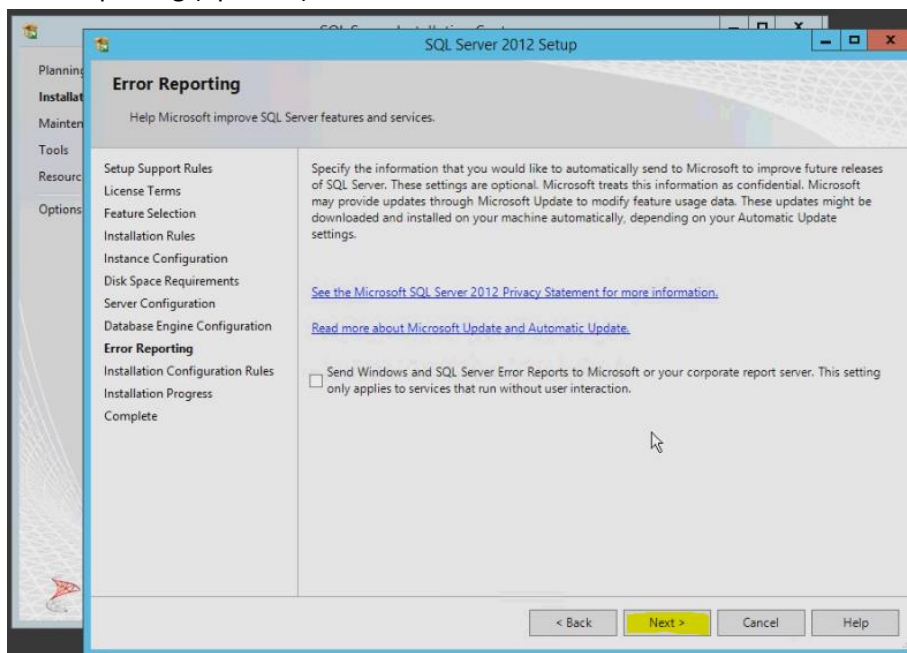


- 7) Server Authentication: Using Mixed Mode for authentication does help to mitigate potential permissions issues if users are likely to modify permissions via a domain controller without managing this instance of SQL. Please ensure to **note your password choice** for the “sa” user as you will want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

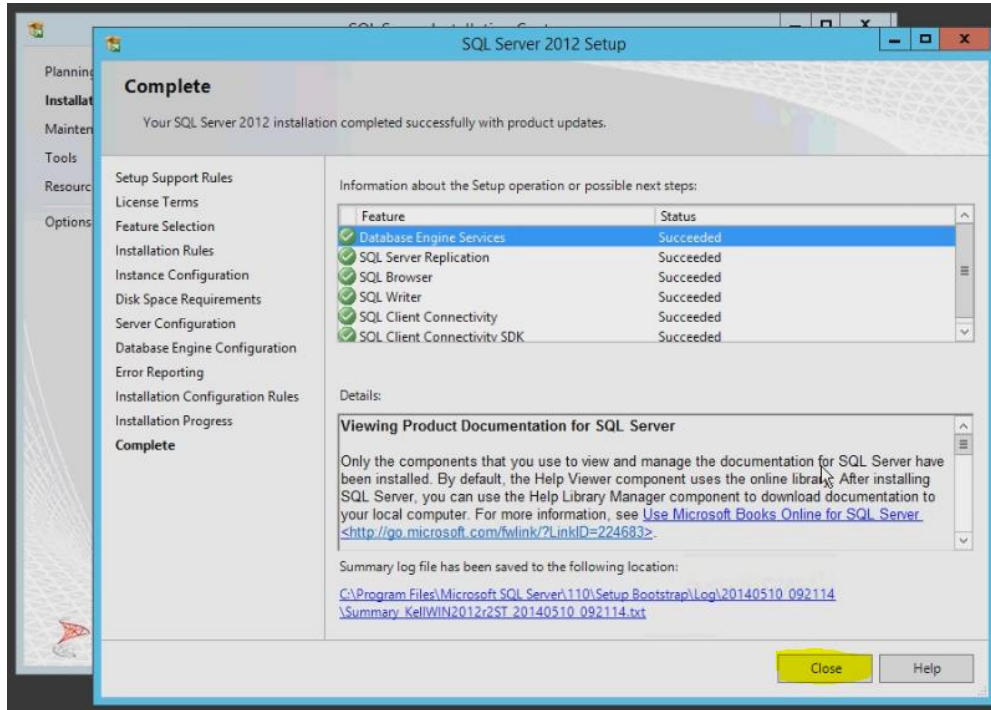


Microsoft technote on authentication: (<http://technet.microsoft.com/en-us/library/ms144284.aspx>)

- 8) Error reporting (optional)



9) 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 www.lensec.com/download 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.



Microsoft Silverlight

Microsoft Silverlight 5.x is required to run the browser application from the server or client PCs.

Verification of your PC/Server's current version can be accessed at (www.Microsoft.com/GetSilverlight).

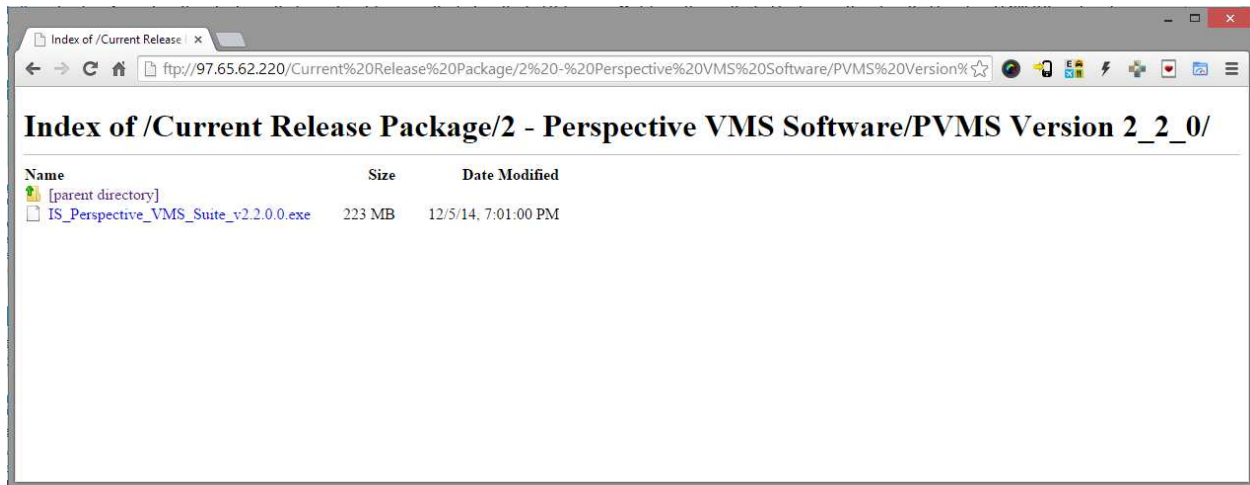
Upon launching Perspective VMS for the first time on any PC a check for Silverlight will be performed and a link to install Silverlight will be provided.

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

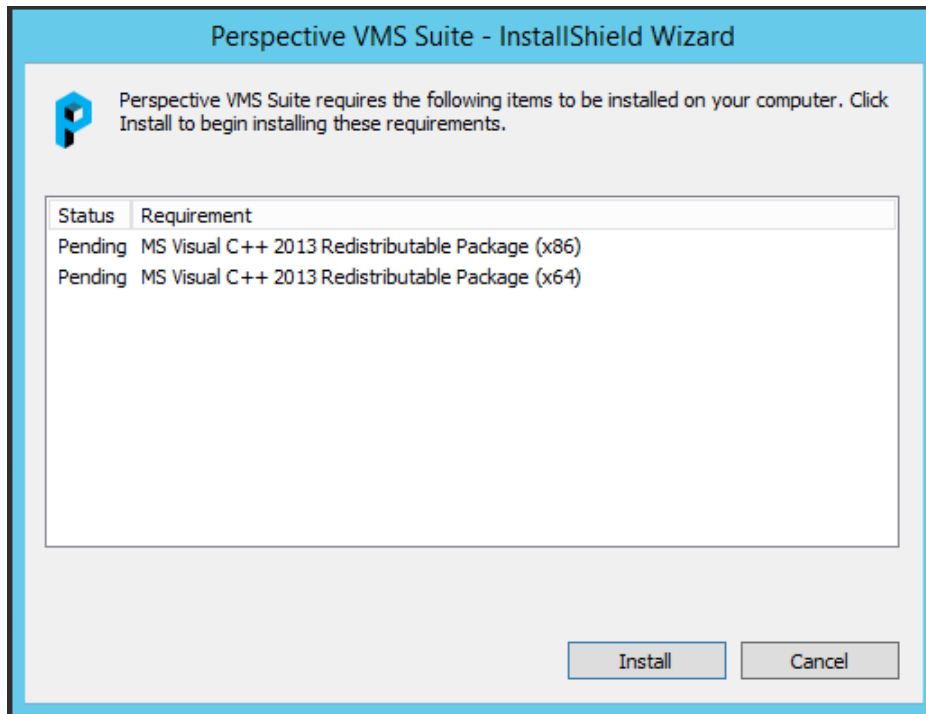


For reference a **Video Tutorial** ([web link](#)) for installing Perspective VMS from the installation wizard is available.

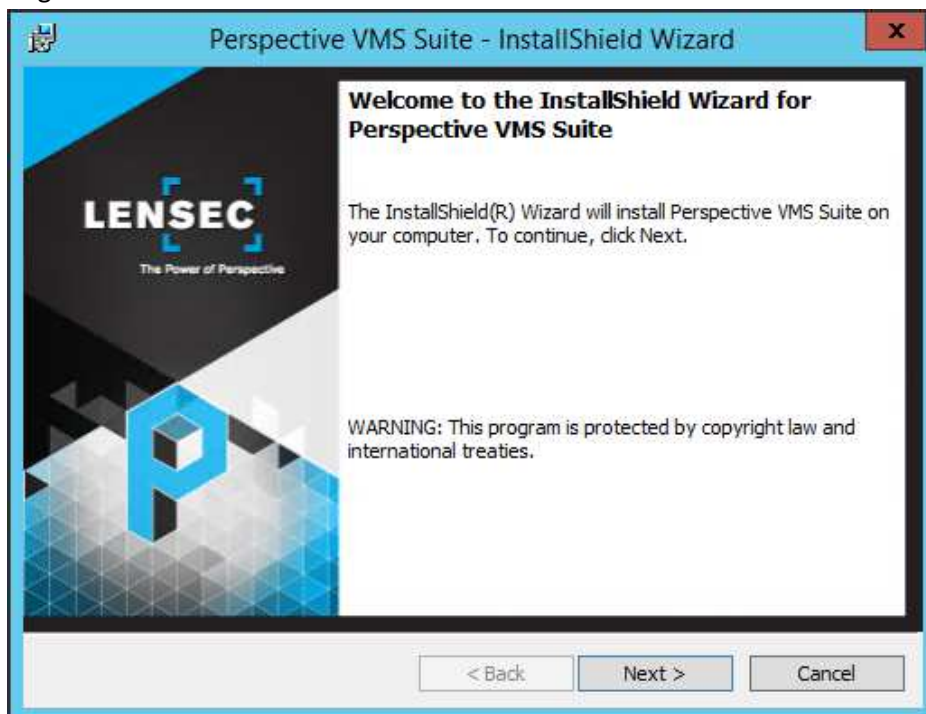


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- 1) Environment Pre-requisites: Depending on your environment/server some files may need to be installed upon launch. You will need to accept this installation to continue (local administration rights are required).



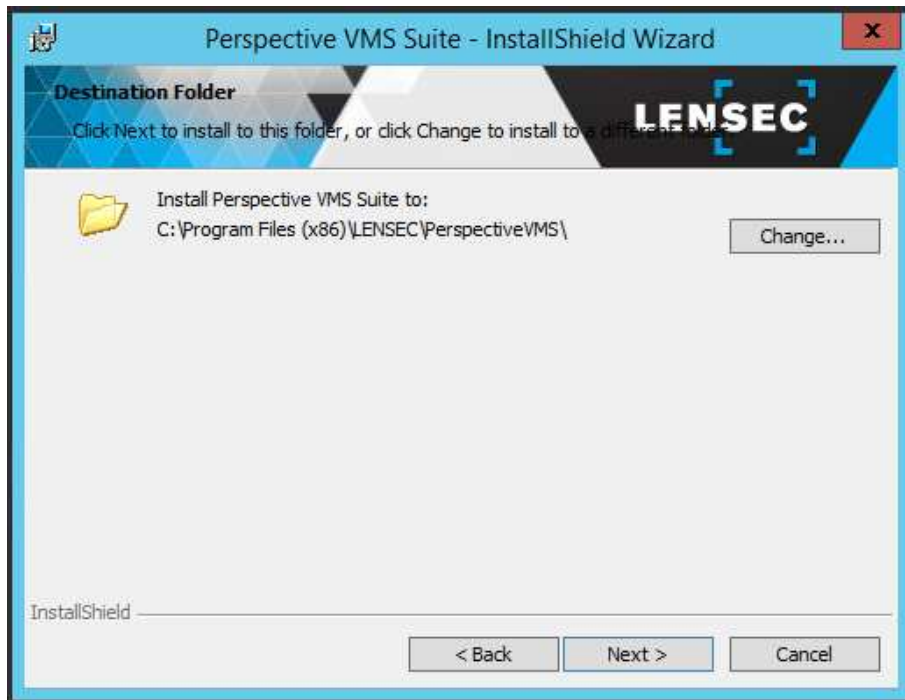
- 2) Begin Wizard



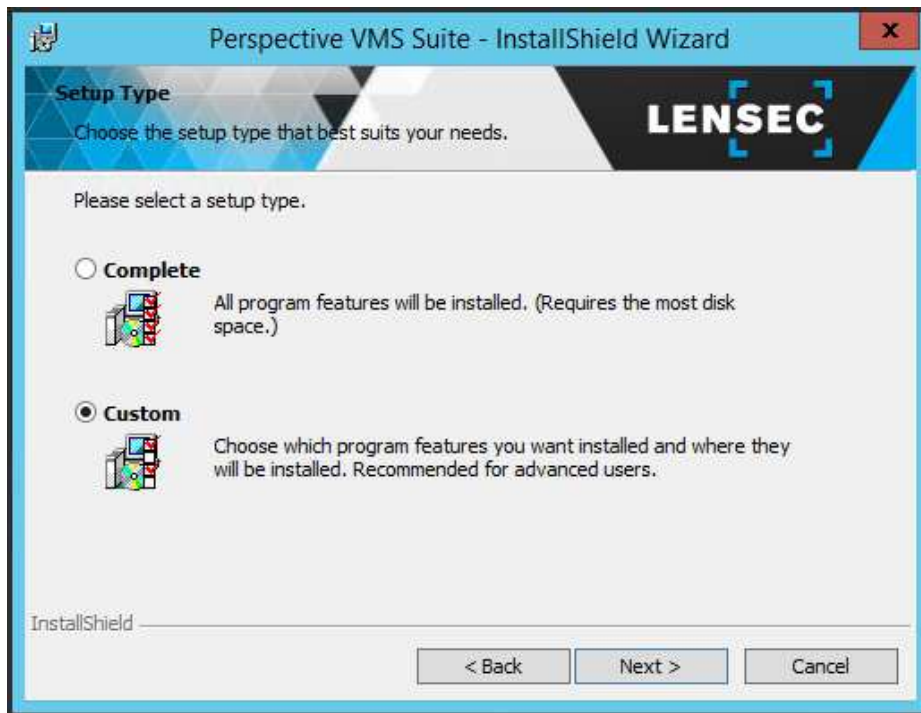


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3) Accept (or modify) default path location



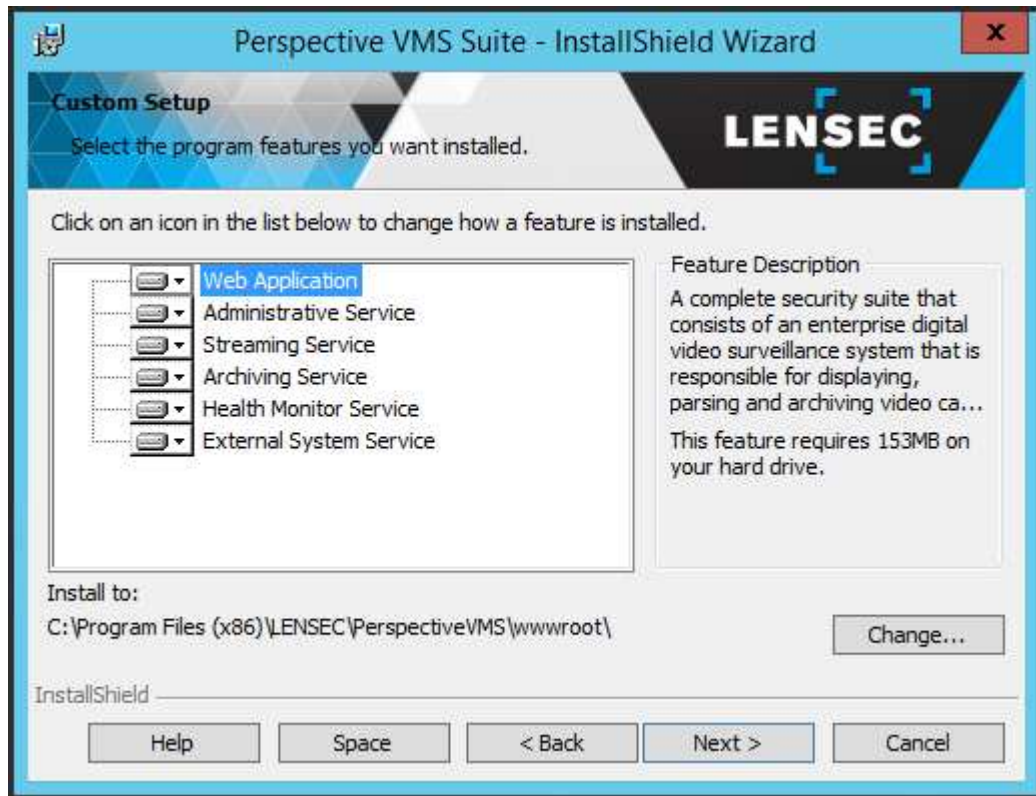
4) The installation wizard is a self-guided installation shield package that enables the user to install individual components (custom-installation) or the standard stand-alone package.





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



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 <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.

The screenshot shows the 'Database Server' step of the 'Perspective VMS Suite - InstallShield Wizard'. The window title is 'Perspective VMS Suite - InstallShield Wizard'. The main heading is 'Database Server' with the subtitle 'Select database server and authentication method'. The LENSEC logo is in the top right. The 'Database server that you are installing to:' dropdown is set to '(local)\LENSECSQLEXPRESS' with a 'Browse...' button. Under 'Connect using:', the 'Server authentication using the Login ID and password below' option is selected. The 'Login ID:' field contains 'sa' and the 'Password:' field is masked with dots. The 'Name of database catalog:' field contains 'PerspectiveVMS'. At the bottom are '< Back', 'Next >', and 'Cancel' buttons. The 'InstallShield' logo is in the bottom left.

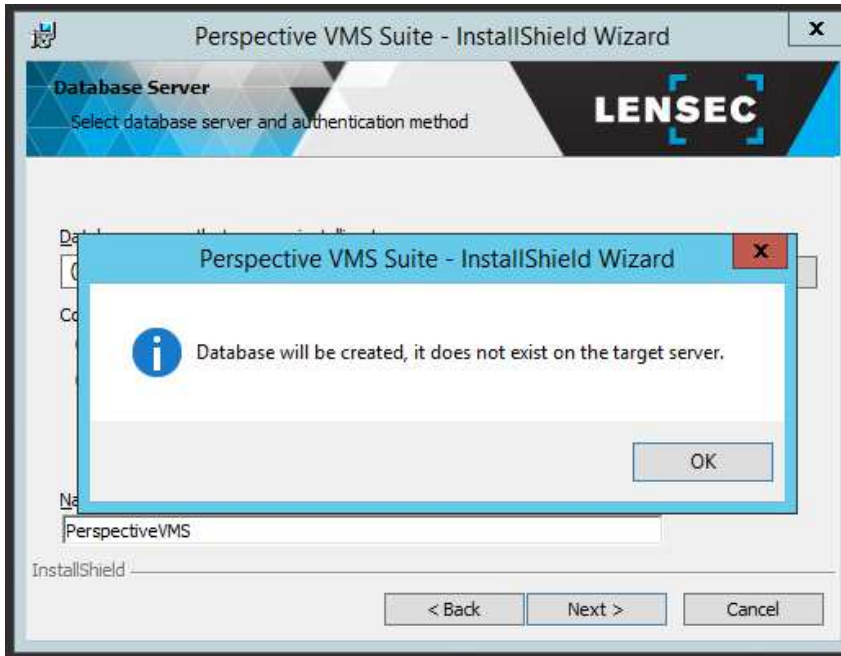
Note the Database Server instance name and password will need to match the instance name provided by the customer or created when installing SQL.

The Database catalog name should remain "Perspective VMS"

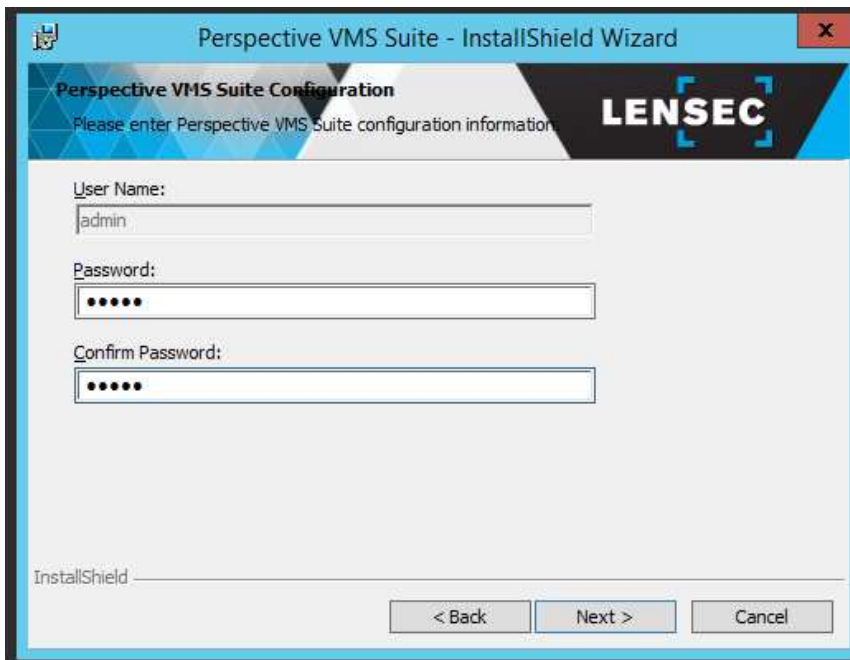


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- 7) Create Database (dialog box): If installing on a new instance a prompt will display for acknowledgement that a new (blank) database will be created.



- 8) 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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- 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).

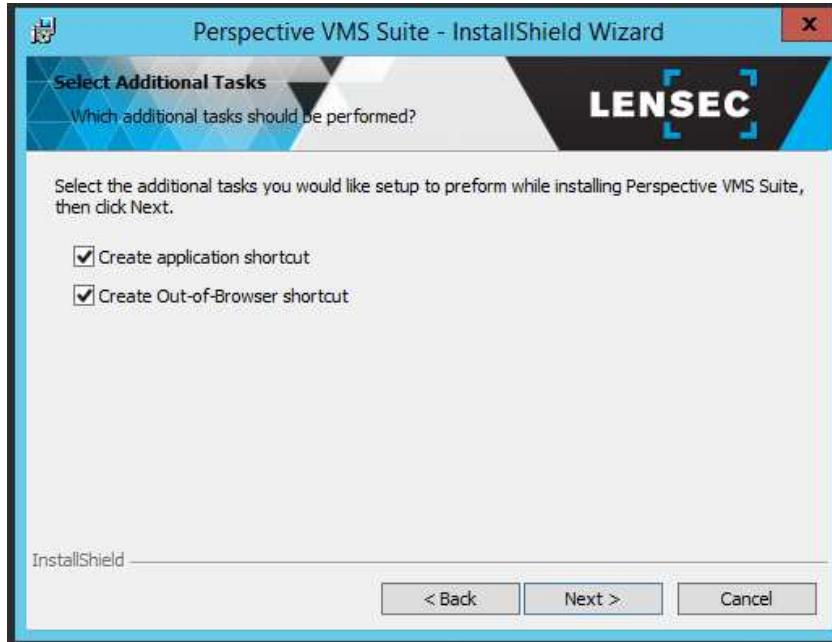
Note the choice of user accounts, refers to local or domain accounts for Windows. The account selected (or local system) must have ability to start/stop services on the Windows machine. A password of that account is also required.

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

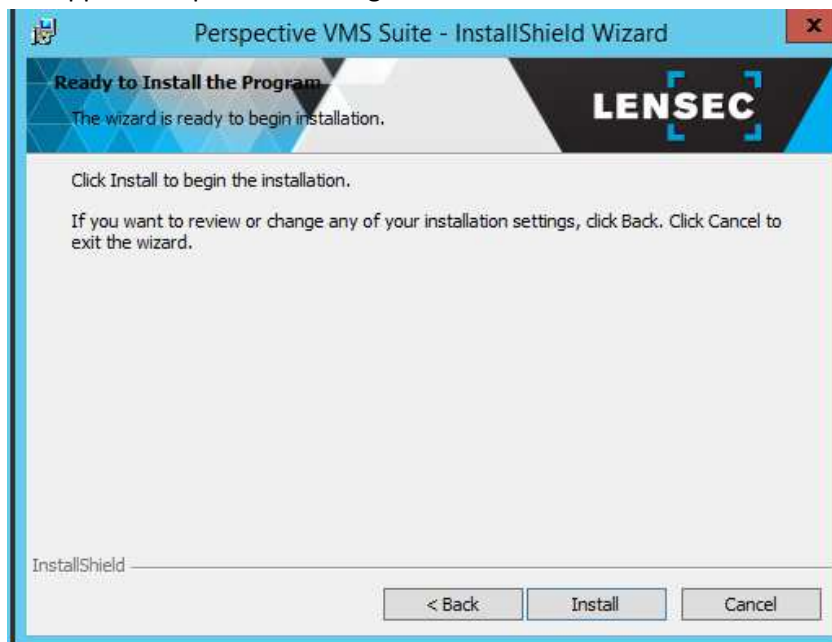


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11) Create shortcuts (optional):



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



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: (<http://<ServerName>/PerspectiveVMS>), 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".

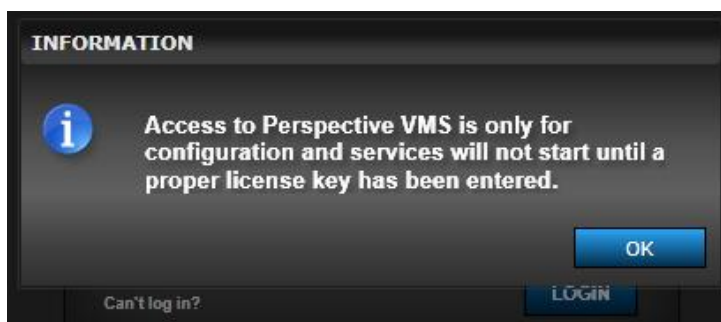
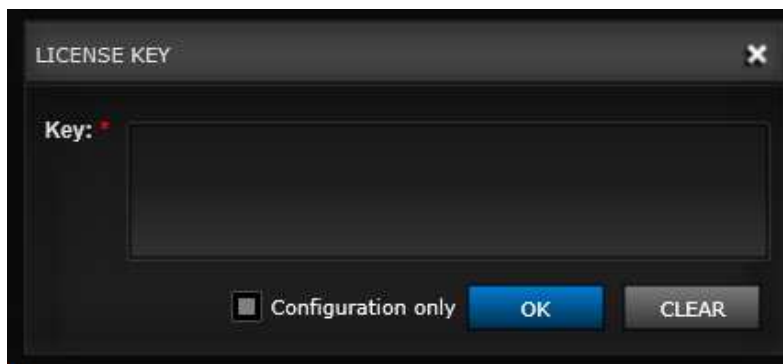


Application Shortcut (above)

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.

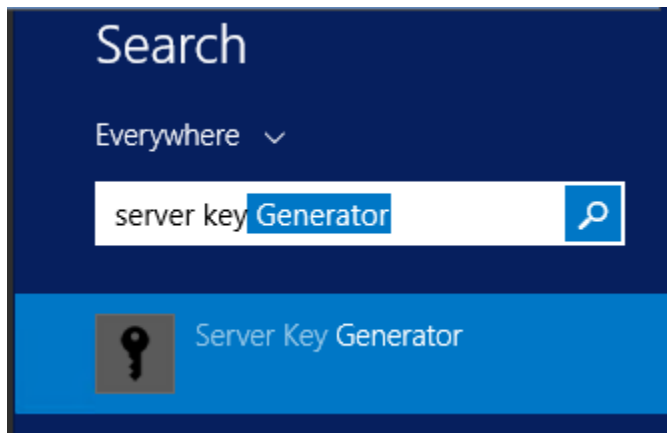
An alternative option is to select "Configuration only" which allows Perspective to be opened for administration design and system configuration but will not allow for the starting of streaming or archiving services until a full license is issued.



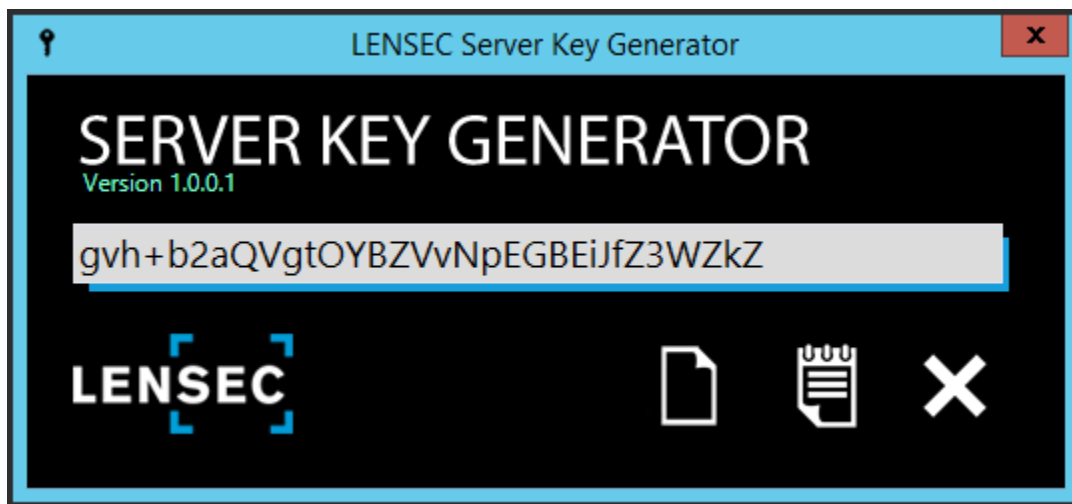
Note regarding Camera Licenses, Perspective VMS is generally sold by the number of cameras or devices associated to the overall solution. The License Key will represent the purchase order of these licenses. That said, if a camera is replaced or exchanged a new software license **DOES NOT** need to be 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. 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.

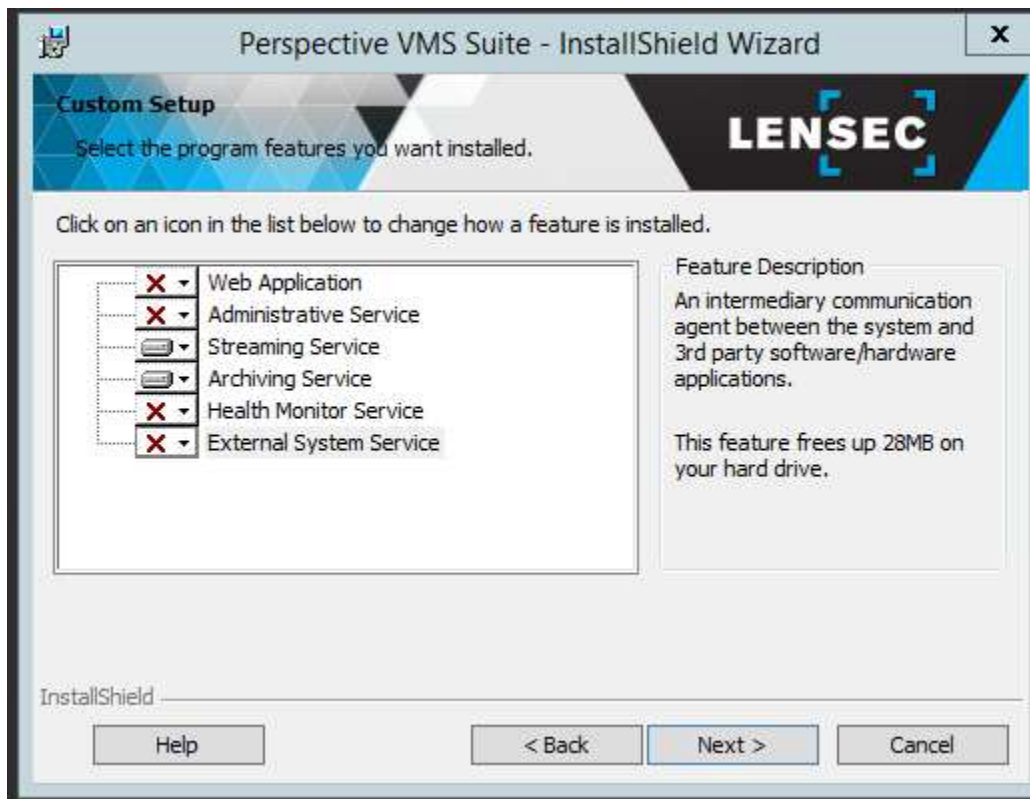


*note on Windows 8.1 or Windows 2012 R2 machines the PC search (shown above) can be initiated by holding down the **Windows** and **S** keys simultaneously (**⊞+S**).



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.

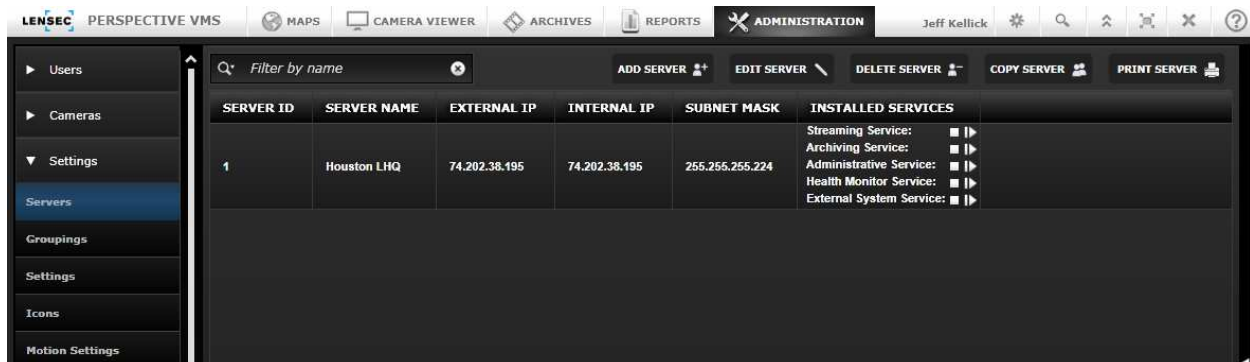




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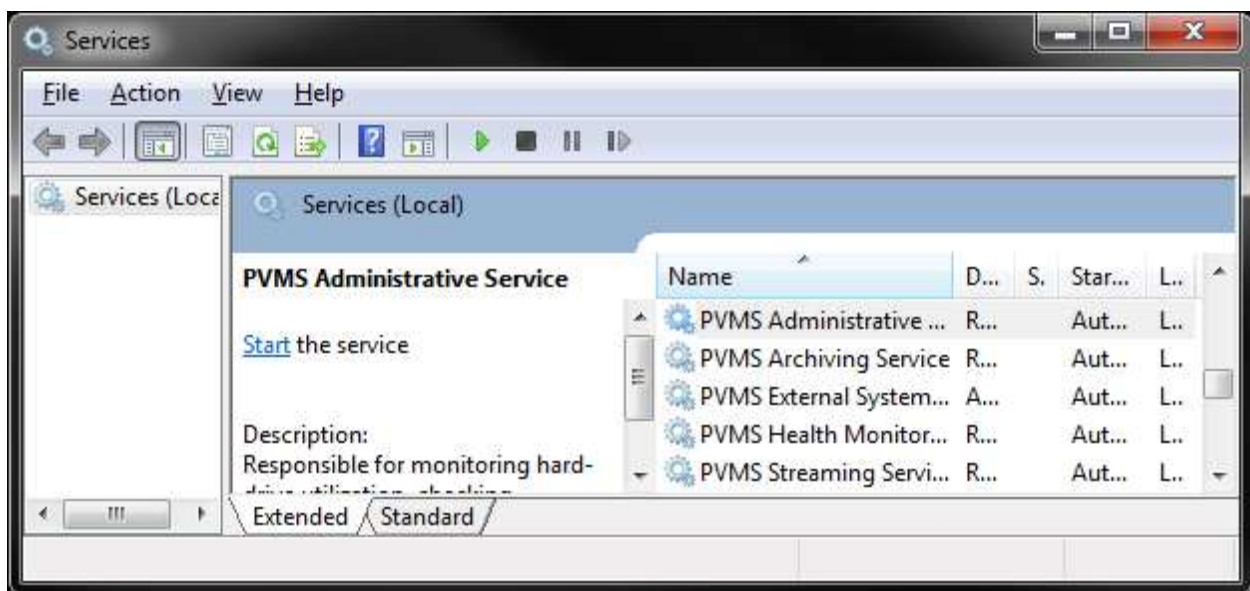
Managing Services within Perspective VMS

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 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.

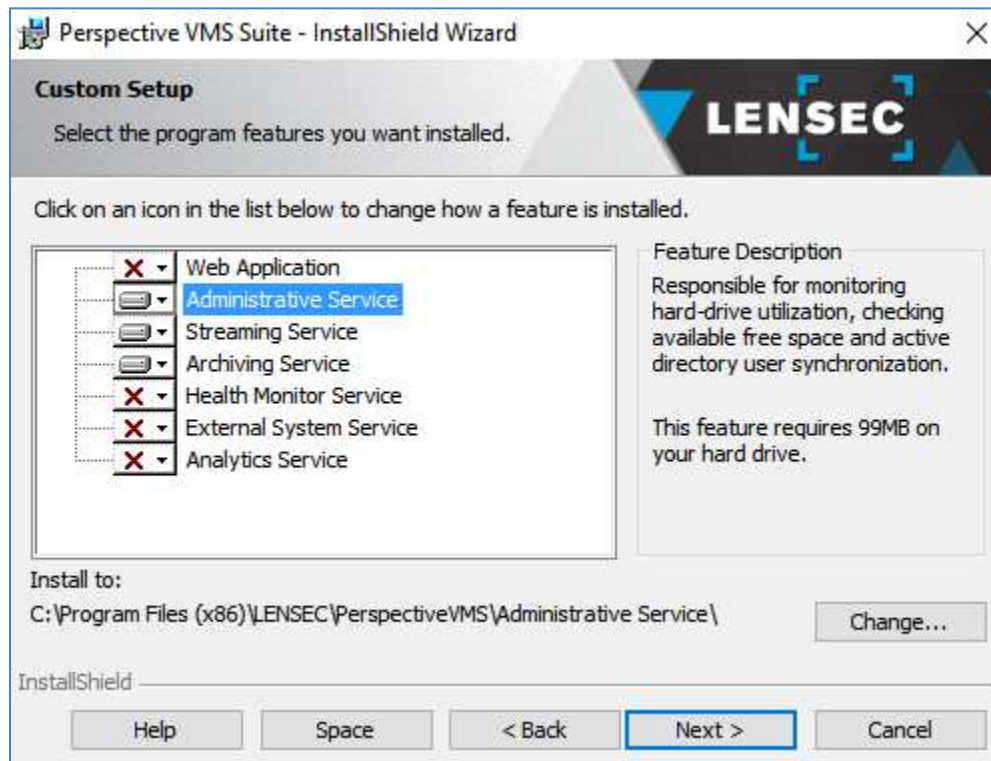


Autonomous Distributed Archive Management (Configuration)

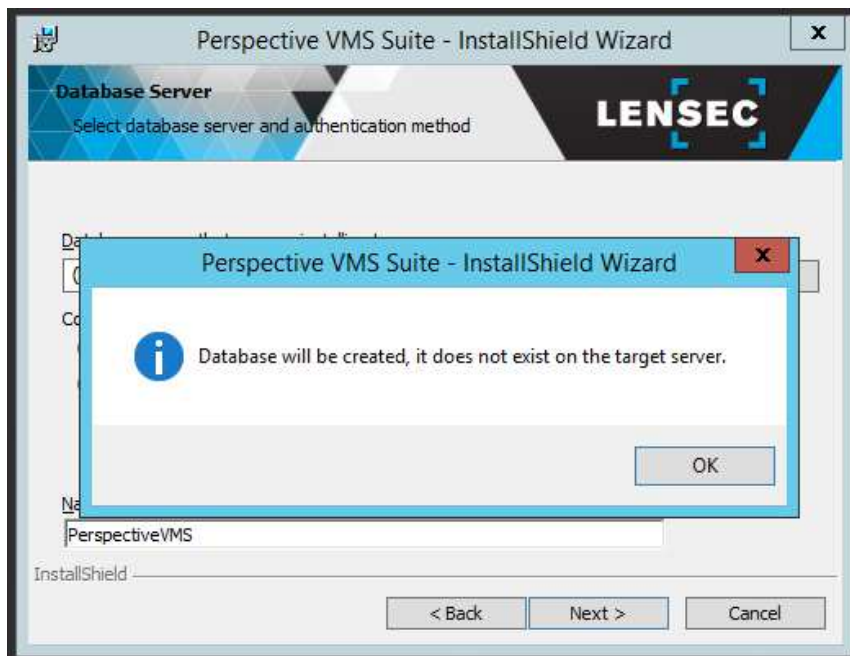
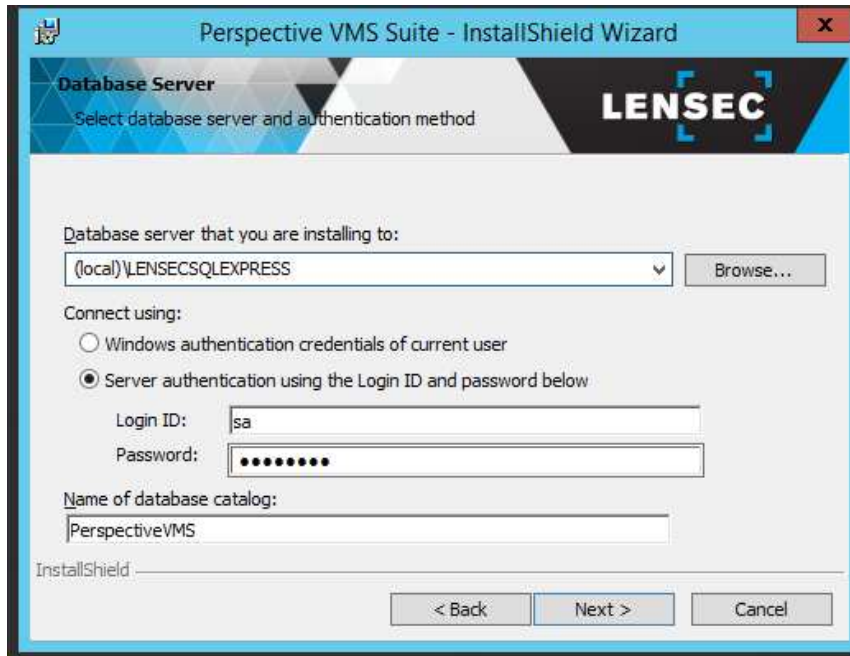
Autonomous Distributed Archive Management (ADAM) is a new feature set available in Perspective VMS Version 2.7 for Enterprise edition customers who wish to ensure continuous uptime of distributed archive servers even when the primary database/administration server is inaccessible via the network. ADAM 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)



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.



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.

The screenshot shows the 'Perspective VMS Suite - InstallShield Wizard' window. The title bar includes the Lensec logo. The main heading is 'Windows Service(s) Configuration' with a sub-instruction: 'Please enter windows service configuration information.' The Lensec logo is also present in the top right corner of the dialog area. The 'Server ID:' dropdown menu is set to 'Demo Server (127.0.0.1)'. Under 'Log on as:', the 'Local System account' radio button is unselected, and the 'This account' radio button is selected. Below this, the 'User Name:' field contains '.\pvms' and the 'Password:' field is masked with dots. The 'Startup Type:' dropdown menu is set to 'Automatic (Delayed Start)'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a blue border. The 'InstallShield' logo is visible in the bottom left corner of the dialog.

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.