

Installation Guide

for Velocity 3.6 SP1



MAN004-1115

Velocity Version 3.6 SP1 Installation Guide

MAN004-1115, November 24, 2015

Velocity 3.6 SP1 release

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Getting Help

If you encounter a problem that is not discussed in this guide and you need technical support, do the following:

1. Contact your local dealer or the provider of this product.
2. If your dealer is not available, contact Technical Support directly. This can be done in a number of ways:

Mail: Identiv
1900-B Carnegie Avenue
Santa Ana, CA 92705-5520

Attn: Technical Support

Phone: 877-447-7249 toll-free

Fax: (949) 250-7362

Email: support@identiv.com

WWW: www.identiv.com

Whenever you call your local dealer or Identiv, be sure to have your registration material, serial number, and software version number available.

For future reference, record these numbers here.

Serial Number: _____

Version Number: _____

Dealer: _____

Dealer Phone #: _____

CCM Rev/Version #: _____

UL Requirements

UL is an independent safety science company that develops safety-related standards, and tests products to determine whether they meet a specific standard so they can be certified as UL-listed. There are various UL standards related to security systems or their components, such as UL 1076, the Standard of Safety for Proprietary Alarm Units.

Velocity is flexible software that can control a wide variety of hardware components, enabling you to design a custom system that meets your particular security needs. This topic provides information about designing a security system using Velocity software and DIGI*TRAC hardware that meets certain UL standards.

GENERAL INFORMATION

The UL-listed Velocity System may be comprised of the following components: Central Supervisory Station, XBox, M1N, M2, M8, M16, Mx, DS47L, DS47L-HI, DS47L-SPX, DS47L-SPX-HI, Power Limitation Board (CL2), PS2, DTLM1, DTLM2, DTLM3, MELM1, MELM2, and MELM3. The M2, M8, M16, and Mx may employ the following expansion boards: MEB/BE, AEB, REB8, SNIB, and SNIB2.

UL 1076 compliance requires use of a listed reader. Currently listed readers are the Dorado Models 540 and 640, and the Sensor Engineering Models 30387, 31880, and 32005.

Wiring methods shall be in accordance with the National Electrical Code (ANSI/NFPA70), Canadian Electrical Code (C22.1), local codes, and the authorities having jurisdiction. All cabling and wire used must be Listed or Recognized AWM wire, suitable for the application. Class 2 or 3 conductors must be segregated from electric light, power, Class 1 conductors, non-Class 2 or 3 signaling conductors, battery backup, and medium-power network-powered broadband communications-circuit conductors.

The system shall not be installed in the fail-secure mode unless permitted by the local authority having jurisdiction, and it shall not interfere with the operation of Listed panic hardware. The use of panic hardware has not been evaluated by UL.

UL terms that are applicable to this application can be found in Appendix B, "Glossary" of the *DIGI*TRAC Systems Design & Installation Guide* (MAN001).

Summary of UL 294 Performance Levels for Access Control Features:

Feature	Level I	Level II	Level III	Level IV
Destructive Attack	No attack test	Withstand attack test for 2 minutes	Withstand attack test for 5 minutes, or generate an alarm event in 2 minutes	Withstand attack test for 5 minutes, or generate an alarm in 2 minutes which cannot be silenced for 2 minutes
Line Security	No line security	Standard line security	Encrypted line security 128 bits	Encrypted line security 256 bits
Endurance	1,000 cycles	25,000 cycles	50,000 cycles	100,000 cycles
Standby Power	No secondary power source	Can maintain normal operations for a minimum of 30 minutes	Can maintain normal operation for a minimum of 2 hours	Can maintain normal operation for a minimum of 4 hours

UL 294 Rating Achieved by the Different Models of the Mx Controller:

Feature	Mx-2 Rating	Mx-4 Rating	Mx-8 Rating
Destructive Attack	Level I	Level I	Level I
Line Security	Level III	Level III	Level III
Endurance	Level IV	Level IV	Level IV
Standby Power	Level II with 1.3 Ah battery; Level IV with 7.2 Ah battery	Level IV	Level IV

Standby Power Requirements for Various UL Standards:

UL Standard	UL 294	UL 1076	CAN/ULC-S319-05
Required Duration of Standby Power	30 minutes for Access Control Performance Level II; 4 hours for Access Control Performance Level IV	24 hours	30 minutes for Class I equipment

When the available controller power is insufficient, an external power supply can be used to power attached devices such as a ScramblePad or MATCH2 interface. That power supply must be a UL-listed low-voltage Class 2 power limited power supply, which is capable of providing standby power for the duration required by the UL standard your physical access control system must meet:

- UL 294 Access Control Performance Level I: not applicable
- UL 294 Access Control Performance Level II: 30 minutes
- UL 294 Access Control Performance Level III: 2 hours
- UL 294 Access Control Performance Level IV: 4 hours
- UL 1076: 24 hours
- CAN/ULC-S319-05: 30 minutes (for Class I equipment)

A Velocity system with Mx controllers meets the requirements of CAN/ULC-S319-05 Equipment Class I.

VELOCITY

1. For the software requirements and minimum hardware requirements of Velocity servers, clients, and standalone workstations, see "System Requirements" starting on page 5.
2. If Alarm Priority levels are assigned by the user, then the following priority must be assigned for UL applications:
 - a. Fire alarm and industrial supervision where a risk of injury to persons, or damage to or destruction of property may be involved.
 - b. Hold-up or panic alarm.
 - c. Burglar alarm.
 - d. Watchman tour.
 - e. Fire-alarm supervision.
 - f. Burglar-alarm supervision.

g. Industrial supervision where a risk of injury to persons, or damage to or destruction of property will not be involved.

h. Other supervisory services.

Items (b) and (c) may have equal priority; items (e) and (f) may have equal priority; and items (g) and (h) may have equal priority.

3. The Alarm Stacking feature is not to be used for UL applications.
4. The Return to Normal feature is not to be used for UL applications.
5. The Video capability of the Velocity 3.6 software has not been evaluated by UL.

CENTRAL SUPERVISORY STATION

1. The data processing equipment and office appliance and business equipment used as central supervisory station equipment shall be Listed under Office Appliances and Business Equipment (UL 114), or Information Processing and Business Equipment (UL 478), or Part 1: General Requirements of Information Technology Equipment (UL 60950-1).
2. A redundant server configuration should be employed, where the servers and workstations are networked via a dedicated Ethernet LAN. The network interfaces the protected premise units through an Xbox.
3. A "panel logged off" event may be a compromise attempt on the system.
4. Supply line transient protection complying with the Standard for Transient Voltage Surge Suppressors (UL 1449), with a maximum marked rating of 330 V shall be used on Central Monitoring Station equipment.
5. If the Xbox is not installed in the Central Monitoring Station, signal line transient protection complying with the Standard for Protectors for Data communications and Fire Alarm Circuits (UL 497B) with a maximum marked rating of 50 V shall be used on communication circuits extending more than 25 feet from the computing systems.

6. Communication circuits and network components connected to the telecommunications network shall be protected by secondary protectors for communication circuits. These protectors shall comply with the Standard for Secondary Protectors for Communication Circuits, UL 497A. These protectors shall be used only in the protected side of the telecommunications network.
7. The Central Monitoring Station Equipment shall be installed in a temperature-controlled environment. A temperature-controlled environment is defined as one that can be maintained between 13–35°C (55–95°F) by the HVAC system. Twenty-four hours of standby power shall be provided for the HVAC system. The standby power for the HVAC system may be supplied by an engine-driven generator alone; a standby battery is not required to be used.
8. In addition to the main power supply and secondary power supply that are required to be provided at the central supervisory station, the system shall be provided with an uninterruptible power supply (UPS) with sufficient capacity to operate the computer equipment for a minimum of 15 minutes. If more than 15 minutes is required for the secondary power supply to supply the UPS input power, the UPS shall be capable of providing input power for at least that amount of time.
9. The UPS shall comply with the Standard for Uninterruptible Power Supply Equipment (UL 1778) or the Standard for Fire Protective signaling Devices (UL 1481).
10. To perform maintenance and repair service, a means for disconnecting the input to the UPS while maintaining continuity of power to the automation system shall be provided.
11. The alarm system's network settings shall be designed such that the maximum time lapse from the initiation of an initiating device circuit until it is annunciated at the central supervising station shall not exceed 90 seconds.
12. The alarm system's network settings shall be designed such that the maximum time for the central supervising station to annunciate a single break, single ground, wire-to-wire short, loss of signal, or any combination of these, shall not exceed 200 seconds.

13. The alarm system configuration shall be designed such that the number of signals on a single channel shall be limited to 1000.

UL-Listed DIGI*TRAC Components

The following DIGI*TRAC components are UL-listed:

M1N

1. Input rating of the M1N is 120 VAC, 50/60 Hz, 500 mA.
2. The Alarm/Control Relay contact rating is 24 VDC, 1 A, resistive.

M2

1. UL has verified compatibility of the Hirsch DS47L, DS47L-HI, DS47L-SPX, and DS47L-SPX-HI with the M2.
2. The Alarm/Control Relay contact rating is 24 VDC, 1 A, resistive.

M8

1. UL has verified compatibility of the Hirsch DS47L, DS47L-HI, DS47L-SPX, and DS47L-SPX-HI with the M8.
2. The Alarm/Control Relay contact rating is 24 VDC, 1 A, resistive.

M16

1. Input rating of the M16 is 120 VAC, 50/60 Hz, 1 A.
2. UL has verified compatibility of the Hirsch DS47L-SPX with the M16.
3. The Alarm/Control Relay contact rating is 24 VDC, 1 A, resistive.

Mx

1. UL has verified compatibility of the Hirsch DS47L, DS47L-HI, DS47L-SPX, and DS47L-SPX-HI with the Mx.
2. The Alarm/Control Relay contact rating is 24 VDC, 1 A, resistive.
3. The Ethernet cable connecting the SNIB2 communications port to an external network must be shielded.

XBOX

This device was only required for use with MOMENTUM systems.

1. Xbox configuration and installation are addressed in the "XBox Installation" topic of the *DIGI*TRAC Systems Design & Installation Guide* (MAN001).

2. UL has not verified the XBox hookup for a remote dialup controller or the modem loop configuration.
3. The alarm relay contact is rated 24 VDC, 2 A, resistive.
4. Wiring to the RS-232 circuit is limited to the same room (25 feet).
5. Shielded cable must be used on the RS-232 circuit.

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Introduction

Velocity is a database-driven security management software system with a server-client architecture, which runs on the Microsoft Windows family of operating systems. It was designed to use the DIGI*TRAC controller or Mx controller in an integrated environment.

Besides providing the ability to upgrade an existing Velocity 3.5 installation to 3.6, the Velocity Installer provides installation options for the Server, Data, standalone Workstation, and Client computer roles. These options enable you to implement access control systems with varying degrees of complexity, to suit a variety of needs:

- If you have a small facility that only requires one client (or if you want to set up a system for testing or training), you only need a single installation of Velocity on a standalone Workstation.
- If you have a larger facility that requires multiple clients, you need to first install a Velocity Server, and then install the Velocity Clients.
- If you wish to use a separate computer for the Velocity database, you need to first install a licensed edition of a supported version (2008 R2, 2012, or 2014) of Microsoft's SQL Server on that computer, and then choose the Data installation option (on the Install Options screen during the Velocity 3.6 installation process) to install the Velocity database on that computer. Next you can install a Velocity Server, and then install the Velocity Clients. (Make sure that the SQL Server Browser service is running, so the Velocity Server and Velocity Client installations can locate the separate database server.)

The primary purpose of the initial Velocity 3.6 release is to support newer releases of the Microsoft Windows operating system and the Microsoft SQL Server database. The following table shows which versions of Windows are supported by Velocity 3.5 versus Velocity 3.6, for the different computer roles.

Computer role:	Versions of Windows supported by Velocity 3.5:	Versions of Windows supported by Velocity 3.6:
Velocity Server or Data Server	<ul style="list-style-type: none">• Windows Server 2008 R2	<ul style="list-style-type: none">• Windows Server 2008 R2 SP1• Windows Server 2012• Windows Server 2012 R2
Velocity standalone Workstation	<ul style="list-style-type: none">• Windows Server 2008 R2• Windows 7 SP1	<ul style="list-style-type: none">• Windows Server 2008 R2 SP1• Windows Server 2012• Windows Server 2012 R2• Windows 7 SP1• Windows 8.1
Velocity Client	<ul style="list-style-type: none">• Windows XP SP3• Windows 7 SP1	<ul style="list-style-type: none">• Windows 7 SP1• Windows 8.1

Your organization's IT department's policies might determine which versions of the Windows operating system are available to you, and whether you can manage your own SQL Server database for Velocity or must run the Velocity database on an existing SQL Server managed by IT. For an organization that needed only an entry-level database, Velocity 3.5 provided the ability to install the free Microsoft SQL Server 2008 R2 Express edition.

Velocity 3.6 provides the ability to install the free Microsoft SQL Server 2014 Express edition. The only versions of SQL Server that can be upgraded to SQL Server 2014 Express during a Velocity 3.6 installation are:

- SQL Server 2008 R2 SP2 or later (any edition), or
- SQL Server 2012 SP1 or later (any edition).

If you already have SQL Server 2008 R2 SP3, 2012 SP2, or 2014 installed on your server, Velocity detects and uses your full edition of SQL Server (instead of the SQL Server 2014 Express edition) for the Velocity database. For more information about Windows and SQL Server compatibilities, refer to “Software Requirements” on page 7.

Note that this manual only covers basic hardware configuration guidelines and initial software installation procedures.



Instructions for operating Velocity are contained in the online help file which is available after you’ve installed and started Velocity.

This manual covers these major topics:

- Hardware and software requirements: see “System Requirements” starting on page 5.
- Installing all supported Windows operating systems: see “Installing the Operating System” starting on page 12.
- Deciding whether to install the free SQL Server 2014 Express edition provided with Velocity 3.6, or your own licensed edition of SQL Server: see “SQL Server Installation” starting on page 42.
- Installing Velocity software: see “Velocity Installation” starting on page 48.
- Upgrading Velocity: see “Upgrading Velocity” starting on page 94.
- Starting Velocity: see “Starting Velocity” starting on page 117.

For information about configuring and using Velocity after it has been installed, refer to Velocity’s online help system.

Pre-Installation

This section explains how to prepare to install Velocity 3.6:

- Make sure your computers have the required hardware, software, and firmware, as described in “System Requirements” starting on page 5.
- Connect any other hardware devices, as described in “Connecting Other Hardware Devices” starting on page 10.
- You must enable version 3.5 of the .NET Framework before you can successfully perform any new installation of Velocity 3.6 on these newer versions of Windows: Windows 8.1, Windows Server 2008 R2 SP1, Windows Server 2012, or Windows Server 2012 R2. (A Velocity 3.5 system already includes version 3.5 of the .NET Framework, so there should not be an issue if you upgrade that existing system to Velocity 3.6.)

For more information, see “Enabling the .NET Framework 3.5” starting on page 23.

- If you will be installing the optional Velocity Web Services Client, you must first install Microsoft’s Internet Information Services (IIS), as described in “Installing IIS to Support the Velocity Web Services Client” starting on page 34.
- Velocity 3.6 provides the option to install the free SQL Server 2014 Express edition. If you wish to use a licensed edition of SQL Server, you must install it first. For more information, see “SQL Server Installation” starting on page 42.

System Requirements

Before installing Velocity, make sure your server, workstation, or client computer meets these requirements.

Hardware Requirements

For Velocity servers (or Data servers):

- Intel Xeon® E3-1220 3.10 GHz Turbo Quad Core/4T processor with 8MB cache (or equivalent)
- 4GB DDR3 SDRAM (1333MHz)
- 300GB 15K RPM SAS hard drive
- 16X DVD+/- RW drive
- Mouse
- Keyboard
- 20-inch LCD monitor
- 1GB video card
- Sound card/chip and speakers
- 1 Ethernet RJ-45 port

For Velocity workstations or clients:

- Intel Core i7 Quad Core 3.4GHz processor with 8MB cache (or equivalent)
- 4GB DDR3 SDRAM (1333MHz)
- 250GB 6.0Gb/s SATA hard drive
- 16X DVD+/- RW drive
- Mouse
- Keyboard
- 20-inch LCD monitor
- 1GB video card
- Sound card/chip and speakers
- 1 serial port
- 1 Ethernet RJ-45 port

Hint: More RAM, a faster processor, and a faster video card with more video RAM are recommended and will improve performance for most applications; it will also help ensure long-term compatibility with system expansion and upgrades to Velocity, the Windows operating system, and the SQL Server database.

These system requirements are our estimation of what will be required for satisfactory performance; however, your particular needs may differ or exceed the requirements noted. Your specific needs are dependent on several factors including number of users on the system, applications running, connected devices, and level of usage.

Therefore, please follow this general guideline: ensure you have enough processing power, RAM (including video card RAM), and hard disk space in your system to adequately address ALL of your applications and services. Then, going forward, please ensure your system performance keeps up-to-date with any expanding requirements.

Software Requirements

- Velocity[®] version 3.6 installation DVD (or equivalent downloaded files)
- Microsoft Windows[®] operating system, according to the Velocity role that will be performed by each computer:

Computer role:	Versions of Windows supported by Velocity 3.6:
Velocity Server or Data Server	<ul style="list-style-type: none"> • Windows Server 2008 R2 SP1 • Windows Server 2012 • Windows Server 2012 R2
Velocity standalone Workstation	<ul style="list-style-type: none"> • Windows Server 2008 R2 SP1 • Windows Server 2012 • Windows Server 2012 R2 • Windows 7 SP1 • Windows 8.1
Velocity Client	<ul style="list-style-type: none"> • Windows 7 SP1 • Windows 8.1

NOTE: Your organization's IT department's policies might determine which versions of the Windows operating system are available to you.

- Microsoft® SQL Server database

Your organization's IT department's policies might determine whether you can manage your own SQL Server database for Velocity or must run the Velocity database on an existing SQL Server managed by IT. For an organization that needed only an entry-level database, Velocity 3.5 provided the ability to install the free Microsoft SQL Server 2008 R2 Express edition. Velocity 3.6 provides the ability to install the free Microsoft SQL Server 2014 Express edition (or upgrade to it when upgrading an existing Velocity 3.5 system).

If you already have SQL Server 2008 R2 SP3, 2012 SP2, or 2014 installed on your server, Velocity detects and uses your full edition of SQL Server (instead of the SQL Server 2014 Express edition) for the Velocity database.

NOTE: Velocity 3.6 SP1 does not support SQL Server 7.0, SQL Server 2000, SQL Server 2005, or MSDE.

Firmware Requirements

- To utilize all the features of Velocity 3.6 requires CCM firmware version 7.5.28 or later.
- To utilize the PIV-I/128-bit GUID support (first provided in CCM firmware version 7.4.58) also requires MATCH2 firmware version 130127 or later. (ScramblePad model numbers starting with DS47L-SSP include a MATCH2 board.)
- SNIB2 firmware version 5.99 or later. (The most recent version which is available is 6.42.)

Compatible Versions of Integrations

If you have the Edge EVO Controller Integration or a Video Integration plug-in installed on your existing Velocity 3.5 system, then you must obtain the newer version of those integrations which have been updated to run with the Velocity 3.6 SP1 release. The newer version must be installed after you have upgraded from Velocity 3.5 to Velocity 3.6 SP1.

The following table shows the compatible versions of integrations or optional components for Velocity 3.5 SP2.1 versus 3.6 SP1.

Component:	Compatible version for Velocity 3.5 SP2.1:	Compatible version for Velocity 3.6 SP1:
Edge EVO Controller Integration	1.0.1.53	1.0.2.1
Hirsch Video Integration framework	1.1.1	1.1.3
plug-in for Aventura	1.1.1.12	1.1.3.1
plug-in for unified American Dynamics	1.1.1.12	1.1.3.4
Velocity Web Services Client	3.5.1.67	3.6.3.5

Then load any required printer drivers – particularly for your badge and report printers. Set the default orientation for the badges you plan to print. Although it isn't required to do this before you install Velocity, it can save you time later during the configuration process.

For more information about these topics, refer to the user and installation guides for each of your devices.

Installing the Operating System

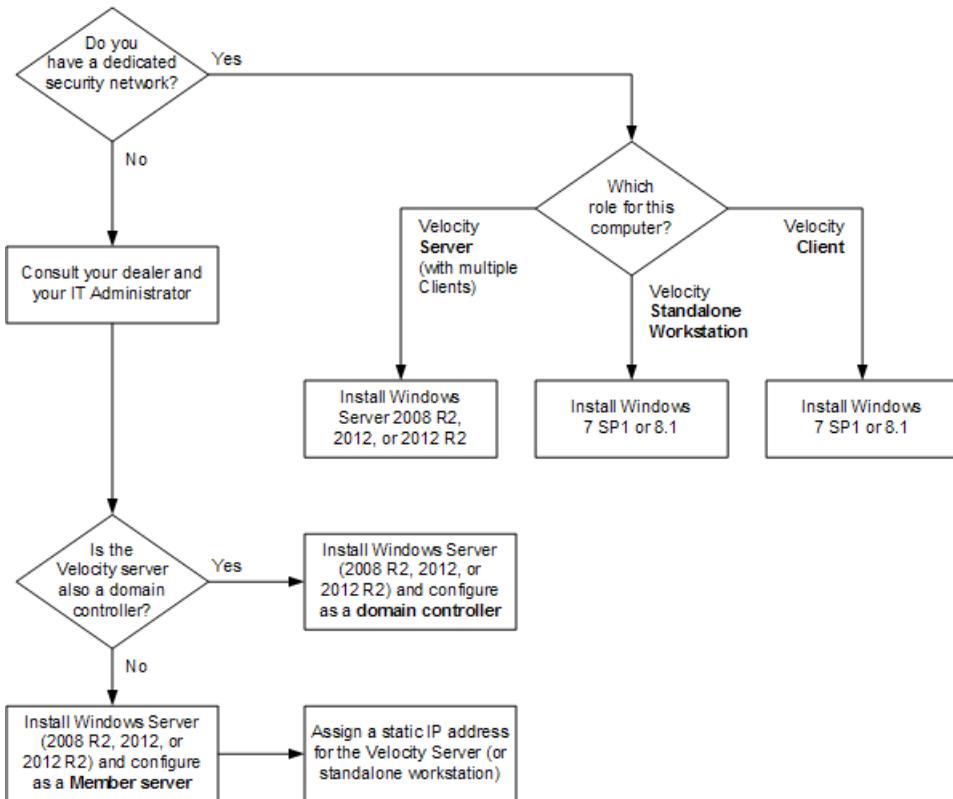


If you will be installing Velocity on a shared network, please consult your IT manager and dealer before continuing.

This section covers the installation and initial configuration of:

- Windows Server 2008 R2 SP1, 2012, or 2012 R2 for a server with multiple clients, or
- Windows 7 SP1 or 8.1 for clients or standalone workstations.

The installation procedures assume that you are setting up your Windows operating system on a *dedicated* security network, because this is the arrangement most customers traditionally used. However, some customers need to install Velocity on a shared network. If this is the case, several of the assumptions made in the following sections do not apply. In general, use this flowchart to identify your options:



Typically, a computer's operating system will be installed by the manufacturer, and then configured by your IT department (especially if the computer will be part of a shared network instead of a dedicated security network).

NOTE: This manual does not provide detailed instructions for each supported version of the Windows operating system.

- For a server with multiple clients, this manual explains how to install and configure Windows Server 2008 R2. The procedure should be very similar for Windows Server 2012 or Windows Server 2012 R2.
- For clients or standalone workstations, this manual briefly explains how to install Windows 7 or 8.1, which typically only needs to be configured with an available IP address.

Installing Windows Server 2008 R2

The quickest path to installing Windows Server 2008 R2 is to read the *Quick Start* and *Getting Started* guides that come with the Windows Server 2008 R2 software, as well as the release notes located in the root directory of the Windows Server 2008 R2 DVD. Follow the prompts that appear on the screen during the installation process.

However, Windows Server 2008 R2 is a complex program and installing it correctly often requires knowledge not only of your computer, but also of the network it will control. For this reason, consider preparing yourself for any eventuality by purchasing one of the many books about Windows Server 2008.

To install Windows Server 2008 R2:

1. Turn on your computer and insert the Windows Server 2008 R2 DVD into your DVD drive.
2. Restart the computer.
To restart the computer, press **Ctrl + Alt + Del**, or turn it off once and then turn it on again.
The DVD drive starts.
3. Press any key, booting the computer from the DVD.
The computer boots up and setup loads from the DVD. The graphic interface appears.

Your computer must be able to boot from the DVD to install the operating system. The computer boots into the new Windows boot screen.

After a few moments, the Windows Server 2008 localization screen appears.



4. Perform the following operations:

For this question: Do this:

Windows Server localization	Select a value for the Language and for the other options, then click Next .
-----------------------------	---

Install Windows	Click Install Now .
-----------------	----------------------------

Do you want to enter your product key?	Click Yes .
--	--------------------

Type your product key for activation	Type the product key, then click Next .
--------------------------------------	--

License Terms	Check the "I accept the license terms" box, then click Next .
---------------	--

For this question: Do this:

Which type of installation do you want?

Select **Custom (Advanced)**.

Where do you want to install Windows?

Click to select the first disk (which is usually Disk 0), then click **Next**.

Installing Windows

This could take 20 minutes or more. After this task is finished, the installer automatically reboots the computer and the new desktop appears.

User's password must be changed.

Click **OK**.

Password

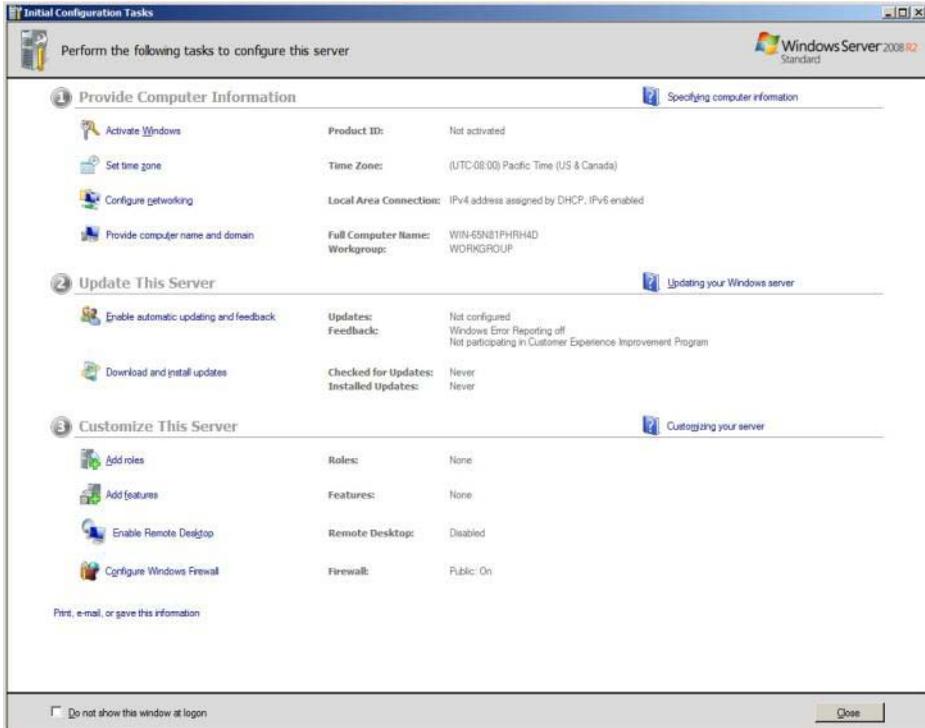
Enter and confirm a new password, then click **OK**.

Note: Passwords must have at least eight alphanumeric characters. At least one of these must be a number, and the others must be a combination of uppercase and lowercase letters.

Your password has been changed

Click **OK**.

The first time you log onto the computer, Windows creates your profile and prepares your desktop. After this is complete, your desktop will load and the Initial Configuration Tasks wizard appears:



5. Use the Initial Configuration Tasks wizard to provide various information such as time zone, network configuration, and computer name. Be sure to perform these important configuration tasks:



Velocity 3.6 servers and workstations require static IP addresses, to communicate with the DIGI*TRAC controllers.

To:	Do this:
Set IP Address	<ol style="list-style-type: none"> 1. Click Configure Networking. 2. Click the icon representing your network card. 3. Click Change Settings of this connection. 4. Click to highlight 'Internet Protocol Version 4', then click Properties. 5. Click the 'Use the following IP Address' radio button. 6. Type in the appropriate IP address and subnet mask, then click OK. 7. Click Close. 8. Click  in the upper right hand corner to close the window and return to the Initial Configuration Tasks wizard.
Change the computer name	<ol style="list-style-type: none"> 1. Click Provide Computer Name and Domain. 2. Click the Change button. 3. In the 'Computer Name' text box, enter an appropriate computer name. An example of a computer name is VELOCITYSERVER. (The computer name must be 15 characters or less.) 4. Click OK twice, then click Close. 5. Click Restart Now. <p>The computer reboots, and returns to the Initial Configuration Tasks wizard (after you login).</p>



Velocity 3.6 cannot recognize this computer as a domain controller without installation of these Active Directory domain services.

To:

Add Active Directory & DNS

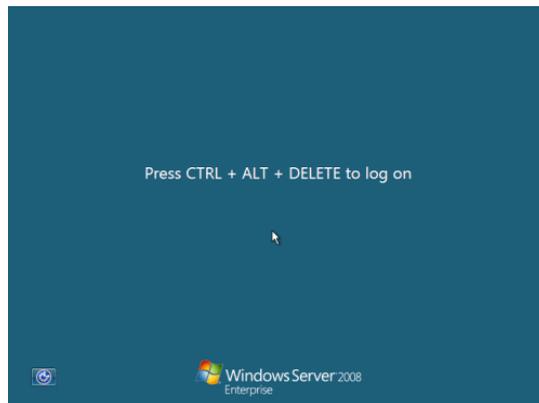
Do this:

1. Click **Add Roles**.
 2. Click **Next**.
 3. Click **Active Directory Domain Services**.
 4. Click **Add Required Features**.
 5. Make sure the 'Active Directory Domain Services' box is checked.
 6. Click **Next** twice.
 7. Click **Install**.
The wizard installs the necessary Active Directory files. This could take a few minutes.
 8. Click **Close**.
 9. Click the Windows PowerShell icon on the task bar: .
The PowerShell screen appears.
 10. Type **dcpromo.exe** and press **Enter**.
The Active Directory Domain Services Installation wizard appears.
 11. Click **Next** twice.
 12. Click the 'Create a new domain in a new forest' radio button, then click **Next**.
 13. At the 'FQDN of the forest root domain' text box, enter the fully qualified domain name of this server, and then click **Next**.
 14. Accept the default NetBIOS name by clicking **Next**.
 15. At the 'Forest functional level' pick list, select **Windows 2008 R2**, then click **Next**.
 16. Make sure the 'DNS server' box is checked, then click **Next**.
 17. Click **Yes**.
 18. Click **Next**.
-

To:**Do this:**

19. Type the desired password in the 'Password' and 'Confirm Password' text boxes, and then click **Next** twice.
The domain services are installed and configured. This could take a few moments.
20. Click **Finish**, then click **Restart Now**.

The computer reboots. When Windows returns, a screen like this appears:



6. Press **CTRL + ALT + DEL** to log in.
The login screen appears.
7. Enter your password, then click **OK**.

The Windows desktop now appears.



If you are allowed to connect your computer to the Internet, we recommend that you install all relevant Windows updates at this time. Go to the Microsoft website, download all applicable updates, and then install them as required.

Enabling Network Discovery

Before installing Velocity on a client PC, you must enable network discovery on your server. This will enable your Velocity Clients to find and communicate with the Velocity Server.

To enable Network Discovery:

1. In Control Panel, open **Network and Internet**, click **Network and Sharing Center**, and then click **Change advanced sharing settings**.
2. Under the domain Network Discovery options, click **Turn on network discovery**.
3. Click **Save Changes**.
4. Make sure that the following Windows services are started (and their Startup Type is set to Automatic):
 - **DNS Client**
 - **Function Discovery Resource Publication**
 - **SSDP Discovery**
 - **UPnP Device Host**



Appropriate ports must also be open on the Windows firewall to allow network discovery to take place. For more about this, refer to “Configuring Your Firewalls” starting on page 113.

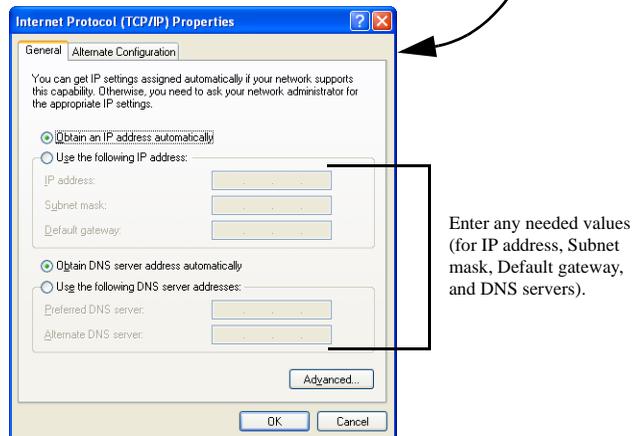
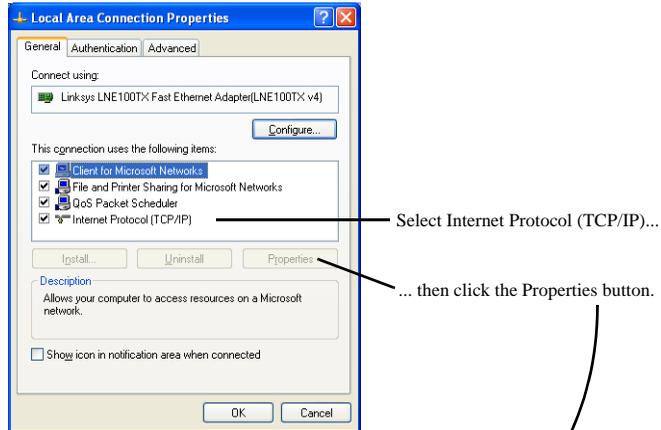
Installing Windows 7 SP1 or Windows 8.1

You can use either Windows 7 SP1 or Windows 8.1 for performing either Velocity’s client or standalone workstation role.

The quickest path to installing the Windows 7 or Windows 8.1 operating system is to read the *Quick Start* and *Getting Started* guides that come with the Windows package, as well as the release notes located in the root directory of the Windows DVD.

1. Follow the installation instructions provided by Microsoft.

- After you have installed the operating system, you must specify the TCP/IP address for this computer, which includes the subnet mask and default gateway of the LAN on which the Velocity server resides.



For information about which address and other values to specify, consult your IT supervisor.

- Windows 7 also requires the installation of Service Pack 1, which you can obtain from the Microsoft Download Center and install on this computer.

4. After the reboot is completed, return to the Windows desktop.



This is a good time to install your video, audio, and device drivers for this workstation or client, and to configure them. These drivers are usually contained on a Drivers and Utilities CD that comes with your system.

Turning Off the Windows Firewall

After you have installed the version of Windows you require, you must temporarily turn off the Windows Firewall before continuing with a Velocity Client/Server installation. (This is not necessary for a Velocity standalone Workstation installation.)

This is necessary because there are times during the course of installing SQL Server or Velocity 3.6, when the firewall may conflict with various installation steps. To avoid a conflict condition, do this:

1. From Windows desktop, select **Start ► Control Panel**.
The Control Panel appears.
2. Select **Security Center**.
The Security Center appears.
3. Turn off the Firewall.

You will turn the Firewall back on after you have finished installing Velocity 3.6 and opened the appropriate ports. For more about this, refer to “Configuring Your Firewalls” on page 113.

Enabling the .NET Framework 3.5

Microsoft's .NET Framework provides common functionality for many applications running on the various versions and editions of the Windows operating system. Any new version of Windows includes the most recent version of the .NET Framework, and traditionally Microsoft provided a mechanism for an application which required a previous version of the .NET Framework to programmatically install that version during the application's installation process.

But that installation mechanism is no longer available in recent versions of Windows, starting with Windows 8 and Windows Server 2008 R2. Instead, you must enable older versions of the .NET Framework (as a client feature or a server role) so it can be installed through the Windows Update mechanism, which requires an Internet connection.

A Velocity 3.5 system already includes version 3.5 of the .NET Framework, so there should not be an issue if you upgrade that existing system to Velocity 3.6. There also should not be an issue if you perform a new installation of a Velocity 3.6 Client or standalone Workstation on Windows 7 SP1.

But you will have to enable version 3.5 of the .NET Framework before you can successfully perform any new installation of Velocity 3.6 on these newer versions of Windows:

- Windows 8.1
- Windows Server 2008 R2 SP1
- Windows Server 2012
- Windows Server 2012 R2

If version 3.5 of the .NET Framework has not been enabled, the Velocity 3.6 installation will fail and an error dialog like the following will be displayed:



Note that the procedure for enabling version 3.5 of the .NET Framework varies depending on the version of Windows, so make sure you are performing the correct procedure for each computer where you are installing Velocity 3.6.

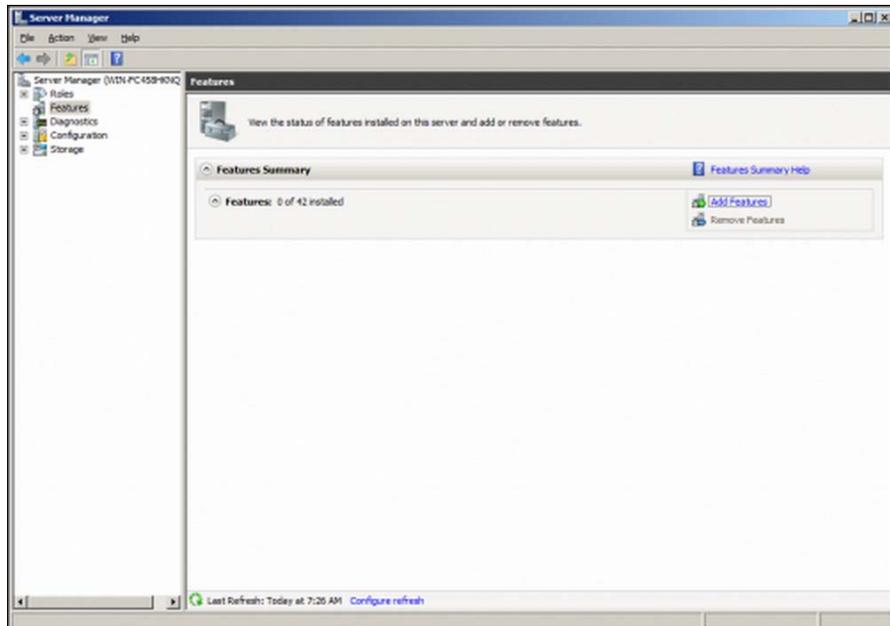
Enabling the .NET Framework 3.5 on Windows 8.1

1. Open the Windows **Control Panel**, click on the **Programs** item, and then click on **Turn Windows features on or off** under Programs and Features.
2. Select the **.NET Framework 3.5 (includes .NET 2.0 and 3.0)** option, and click **OK**. (You do not need to select the child items for "Windows Communication Foundation (WCF) HTTP activation".)
3. If prompted to do so, restart your computer.

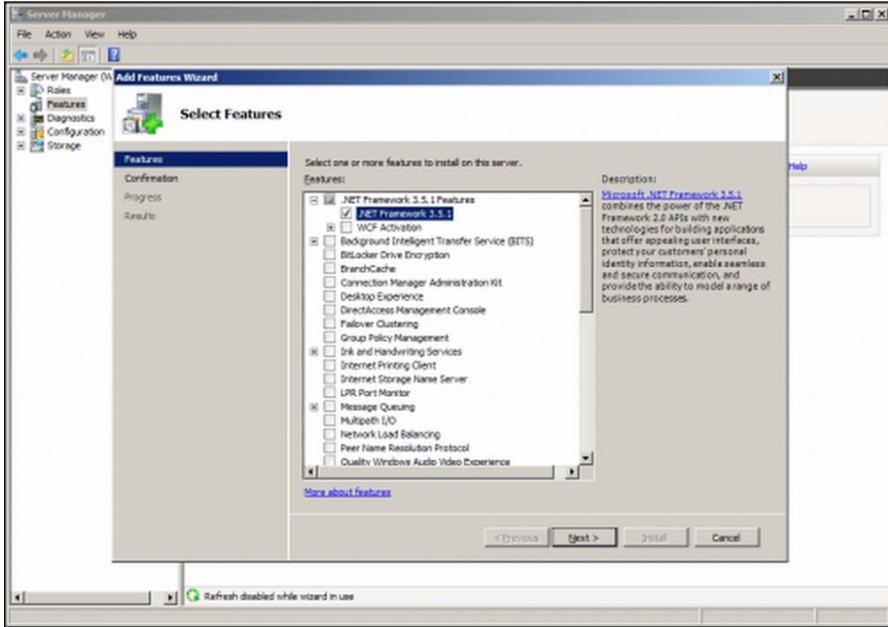
Enabling the .NET Framework 3.5 on Windows Server 2008 R2

Microsoft's .NET Framework 3.5 SP1 comes with Windows Server 2008 R2, but it has to be added as a Feature through the Server Manager.

1. From the Windows desktop, right-click on the **Computer** icon and choose **Manage** from the pop-up menu.
2. In the left pane of the resulting Server Manager window, click on **Features**.
3. In the right pane, click on **Add Features**.

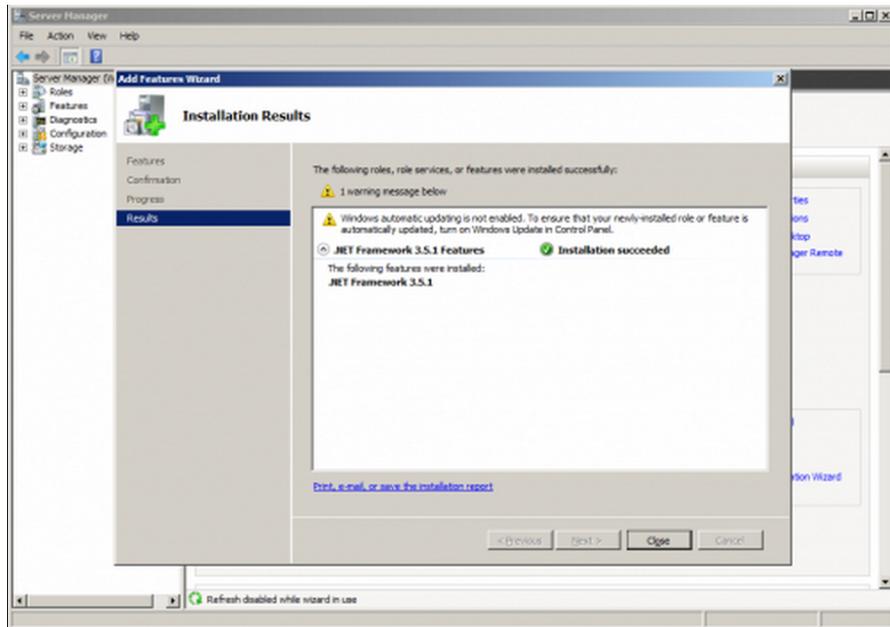


4. On the Select Features page of the resulting Add Features Wizard, expand the **“.NET Framework 3.5.1 Features”** item (in the central pane), select the **“.NET Framework 3.5.1”** feature, and click **Next**.



5. On the resulting Confirmation page, click the **Install** button. Progress messages are displayed on the resulting Progress page.

6. After the Installation Results page appears, verify that the installation succeeded, and click **Close**.



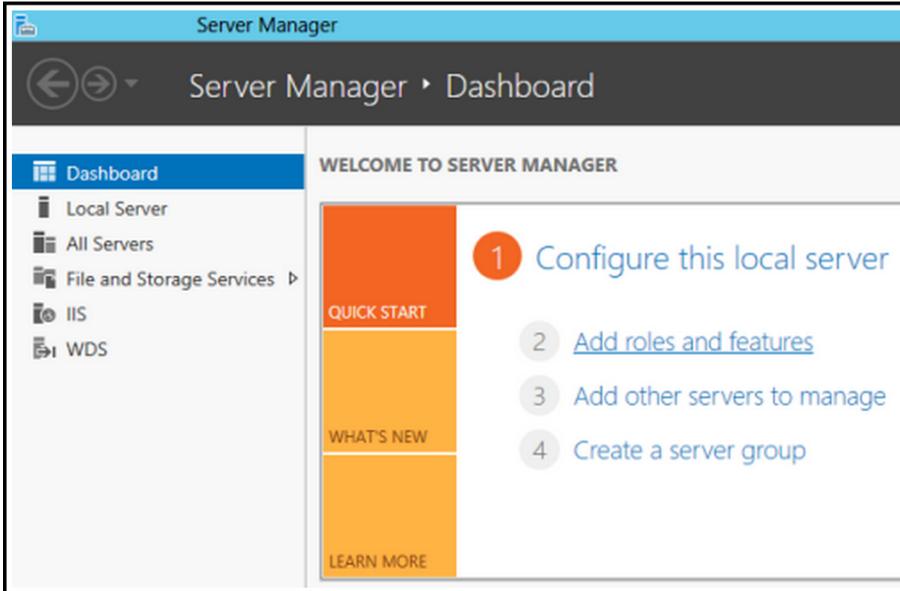
7. If prompted to do so, restart your computer.

Enabling the .NET Framework 3.5 on Windows Server 2012

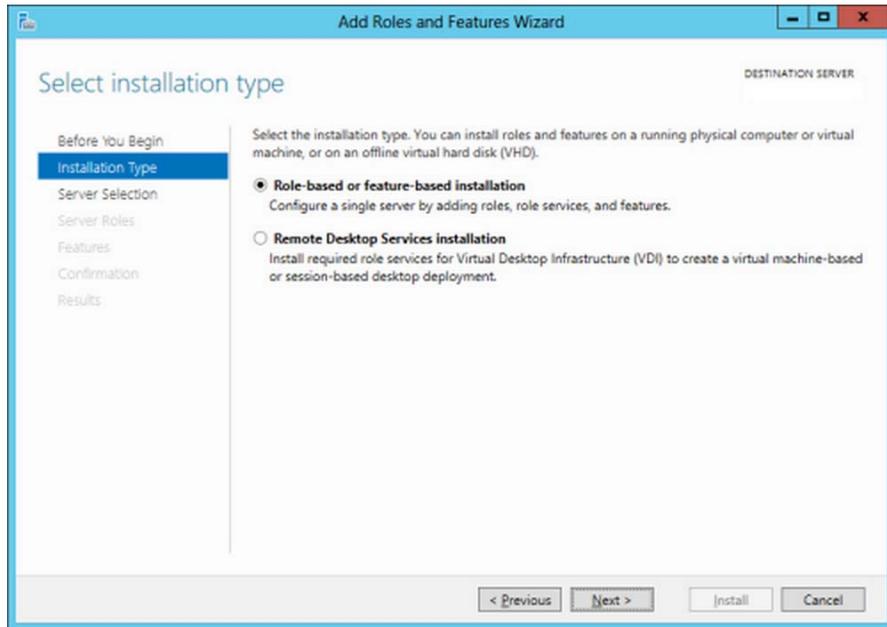
Like Windows Server 2008 R2, Windows Server 2012 requires you to add the .NET Framework 3.5 SP1 as a Feature through the Server Manager. The following procedure explains how to do this using the Server Manager's Dashboard. (The procedure should be similar for Windows Server 2012 R2.)

1. Open the Server Manager, using its icon on the Windows taskbar.

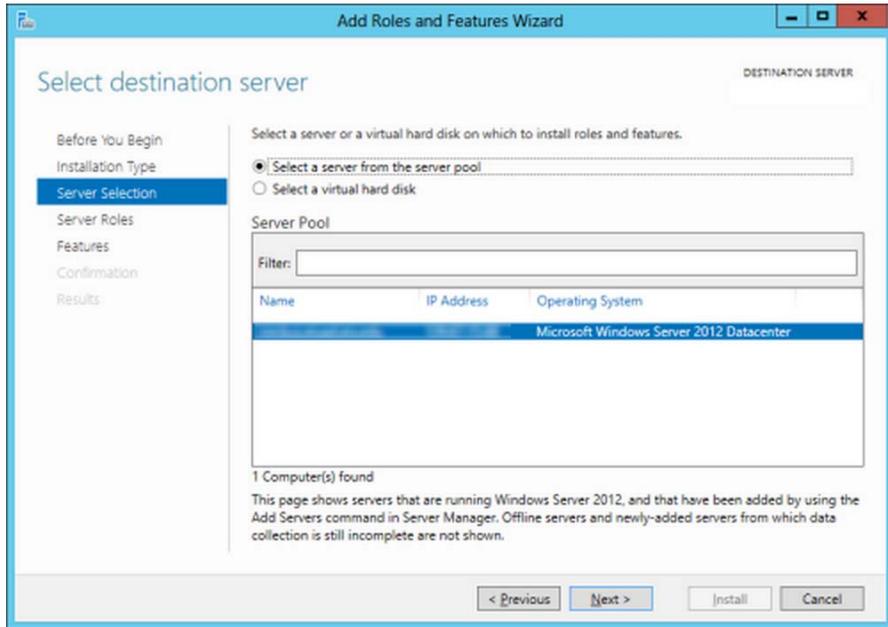
2. In the left pane of the Server Manager window, click on **Dashboard**, and in the right pane, click on (2) **Add roles and features**.



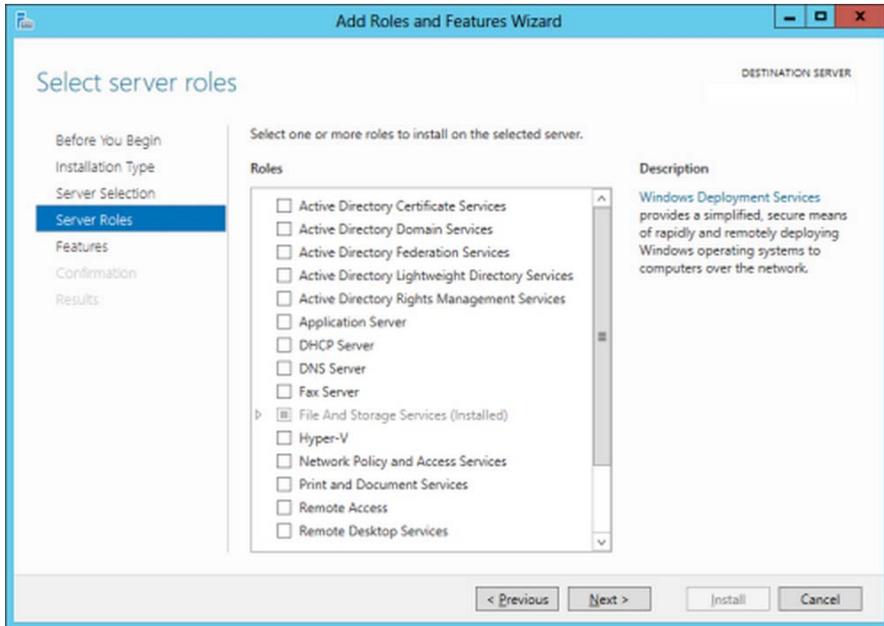
3. On the “Select installation type” page of the resulting Add Features Wizard, select the **Role-based or feature-based installation** option, and click **Next**.



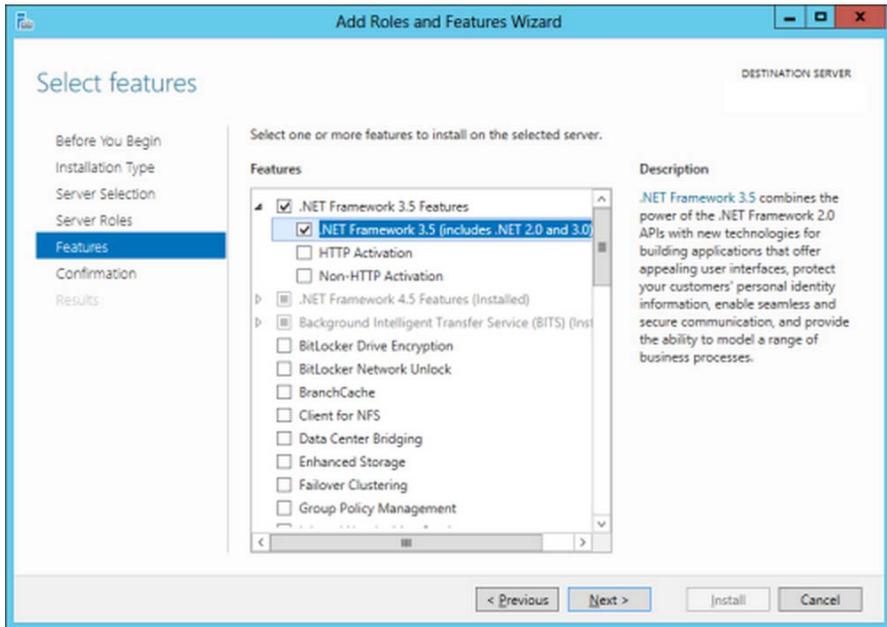
4. On the resulting “Select destination server” page, select the computer where you will be installing this software feature, and click **Next**.



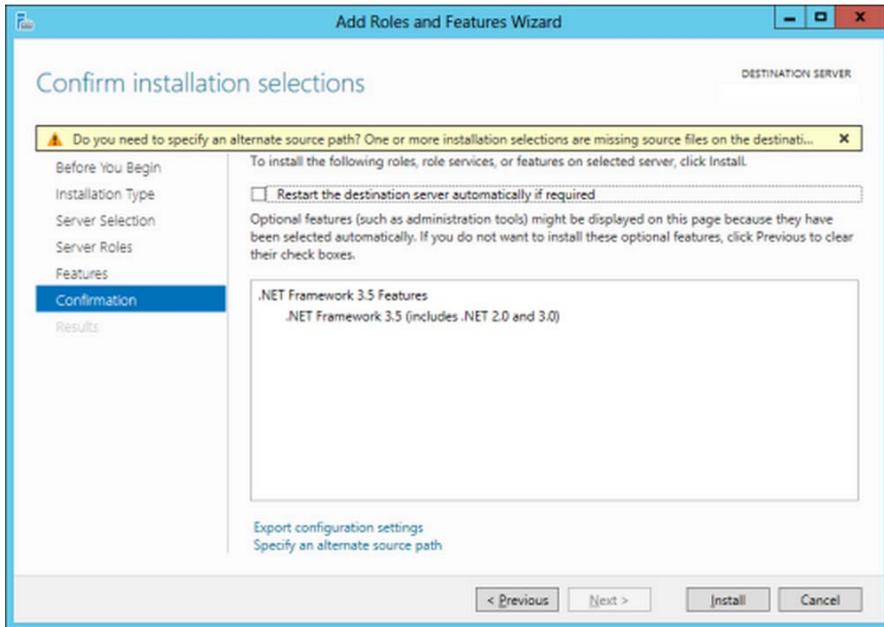
5. On the resulting “Select server roles” page, just click **Next**.



- On the resulting “Select features” page, expand the **.NET Framework 3.5 Features** item (in the central pane), select it and the subordinate **.NET Framework 3.5 (includes .NET 2.0 and 3.0)** item, and click **Next**.



7. On the resulting “Confirm installation selections” page, review your choices (and if necessary click on the link to **Specify an alternate source path**), and click **Install**.



Note that if you don't have the source files locally, the installer will attempt to download them from Windows Updates servers.

Installing IIS to Support the Velocity Web Services Client

Starting with the Velocity 3.5 SP2 release, there is a new optional browser-based Velocity Web Services Client that supercedes the previous optional Velocity Web Console (provided in earlier releases of Velocity 3.5). A major advantage of the new Velocity Web Services Client (compared to the previous Velocity Web Console) is that it uses the same Velocity database.

Note that the browser-based Velocity Web Services Client provides access to just a limited subset of Velocity's functionality; only the traditional Windows-based Velocity Client provides access to all of Velocity's extensive functionality.

Before you can install and use the Velocity Web Services Client, you must first install Microsoft's Internet Information Services (IIS) on the same computer where the Velocity Server (or Velocity standalone workstation) is installed.



The Velocity Web Services Client is an optional feature. If your organization is not comfortable providing remote access to your access control system, do not install IIS or the Velocity Web Services Client.

System Requirements for the Velocity Web Services Client

The Velocity Web Services Client requires the following components:

- A physical access control system with various hardware components controlled by the Velocity security management system software (version 3.5 SP2 or later)
- The optional Velocity Web Services Client component for your Velocity Server, which can be installed either as part of a full Velocity (version 3.5 SP2 or later) installation, or installed separately later

- A Web server running Microsoft's Internet Information Services (IIS) (version 6.0 or later), which must be installed on the same computer where the Velocity Server is installed (or will be installed)
- A personal computer, tablet computer, or smartphone running a relatively current Web browser such as Google's Chrome (version 39.0 or later), Microsoft's Internet Explorer (version 11 or later), or Apple's Safari (version 6.2 or later). We recommend using Google's Chrome browser.

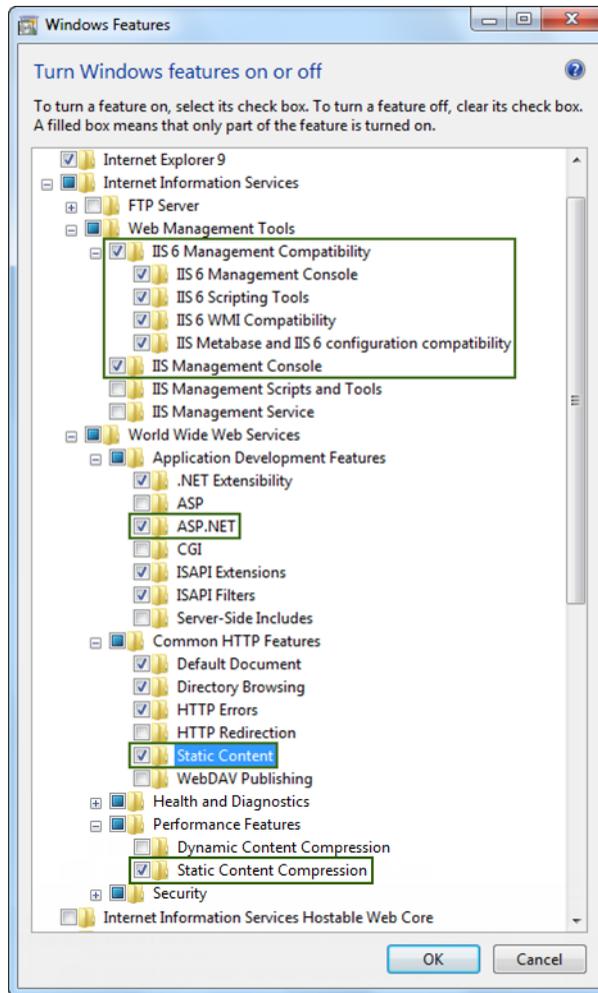
Note that when we use the term "Velocity Server", we are using it in the general sense to also include a Velocity standalone Workstation (which includes the Server component). This means that IIS could be installed on various versions of the Microsoft Windows operating system, depending on which of the supported versions you are running for your Velocity Server or Velocity standalone Workstation. For information about which versions of Windows are supported by Velocity (for the computer roles of Server, standalone Workstation, or Client), see the table on page 2.

Note that this document explains how to install IIS on either Windows 7 or Windows Server 2008. The installation for Windows 8.1 should be similar to that for Windows 7, and the installation for newer versions of Windows Server should be similar to that for Windows Server 2008.

To install IIS on Windows 7:

1. From your Windows 7 Start menu, launch **Control Panel**.
2. If you are viewing by Category: click the **Programs** link, and then click the '**Turn Windows Features on or off**' link (in the Programs and Features category).
If you are viewing by Small Icons or Large Icons: click **Programs and Features**, and then click the '**Turn Windows Features on or off**' link (in the left pane).
3. In the resulting Windows Features dialog, expand the **Internet Information Services** folder to reveal the available options.

4. Check the options highlighted in the boxes below, and click **OK**.



A progress dialog informs you that Windows is making the requested feature changes. When Windows has finished making the changes, it closes the progress dialog and the Windows Features dialog.

5. Close the Control Panel.

After IIS has been installed, you can choose to install the Velocity Web Services Client during a Velocity server or workstation installation. If you choose not to enable the Velocity Web Services Client at that time, you can run the **vwc2install.exe** file later to install the Velocity Web Services Client after Velocity has been installed. (This file is located in the folder where you installed Velocity. For an upgrade of an existing Velocity 3.5 system, the default folder is C:\Program Files (x86)\Hirsch Electronics\Velocity. For a new installation of Velocity 3.6, the default folder is C:\Program Files (x86)\Identiv\Velocity.)

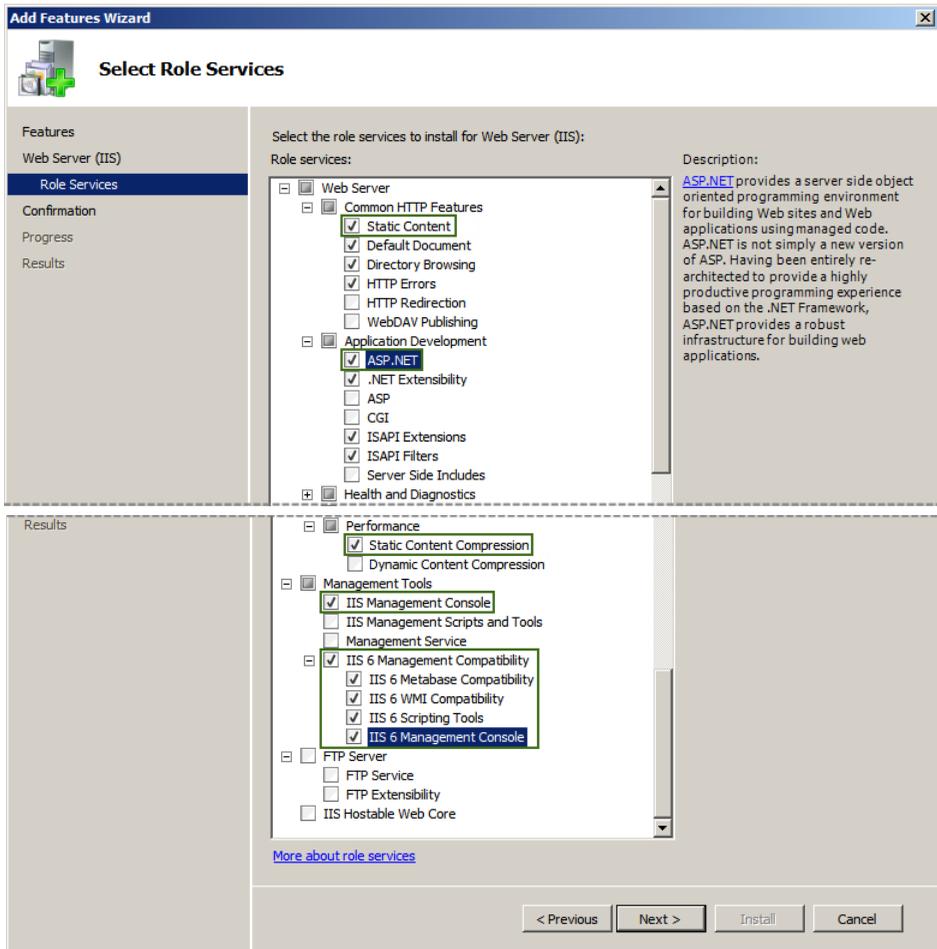
To install IIS on Windows Server 2008:

1. From your Windows Server 2008 Start menu, launch **Control Panel**.
2. If you are viewing by Category: click the **'Turn Windows Features on or off'** link (at the bottom of the left column).
If you are viewing by Small Icons or Large Icons: click **Programs and Features**, and then click the **'Turn Windows Features on or off'** link (in the left pane).
3. In the resulting Server Manager window, click the **Features** item (in the left pane), and then click the **Add Features** link.
4. In the resulting Add Features Wizard, scroll down and check the **'SMTP Server'** box.
5. In the resulting dialog that asks 'Add role services and features required for SMTP Server?', click the **Add Required Role Services** button.
6. In the Add Features Wizard, click **Next**.
7. On the Web Server (IIS) page of the Add Features Wizard, click **Next**.
8. If necessary, on the Select Role Services page of the Add Features Wizard, expand the **Web Server** folder and the **Management Tools** folder to display the available options.
9. Under Web Server, select these options:
 - the Common HTTP Features option of **Static Content**
 - the Application Development option of **ASP.NET**. (If you receive a dialog that asks 'Add role services required for ASP.NET?', click the **Add Required Role Services** button.)
 - the Performance option of **Static Content Compression**

10. Scroll down, and under Management Tools, select these options:

- **IIS Management Console**
- **IIS 6 Metabase Compatibility**
- **IIS 6 WMI Compatibility**
- **IIS 6 Scripting Tools**
- **IIS 6 Management Console**

11. Verify that you have selected all the options highlighted in the boxes below, then click **Next**.



12. On the Confirm Installation Selections page of the Add Features Wizard, click **Install**.
On the Installation Progress page of the Add Features Wizard, progress messages are displayed until the installation is complete.
13. On the Installation Results page of the Add Features Wizard, verify that the installation succeeded, and click **Close**.
14. In the Server Manager window, verify that the **Web Server (IIS)** role was installed. You can then close the Server Manager window and the Control Panel.

After IIS has been installed, you can choose to install the Velocity Web Services Client during a Velocity server or workstation installation. If you choose not to enable the Velocity Web Services Client at that time, you can run the **vwc2install.exe** file later to install the Velocity Web Services Client after Velocity has been installed. (This file is located in the folder where you installed Velocity. For an upgrade of an existing Velocity 3.5 system, the default folder is C:\Program Files (x86)\Hirsch Electronics\Velocity. For a new installation of Velocity 3.6, the default folder is C:\Program Files (x86)\Identiv\Velocity.)

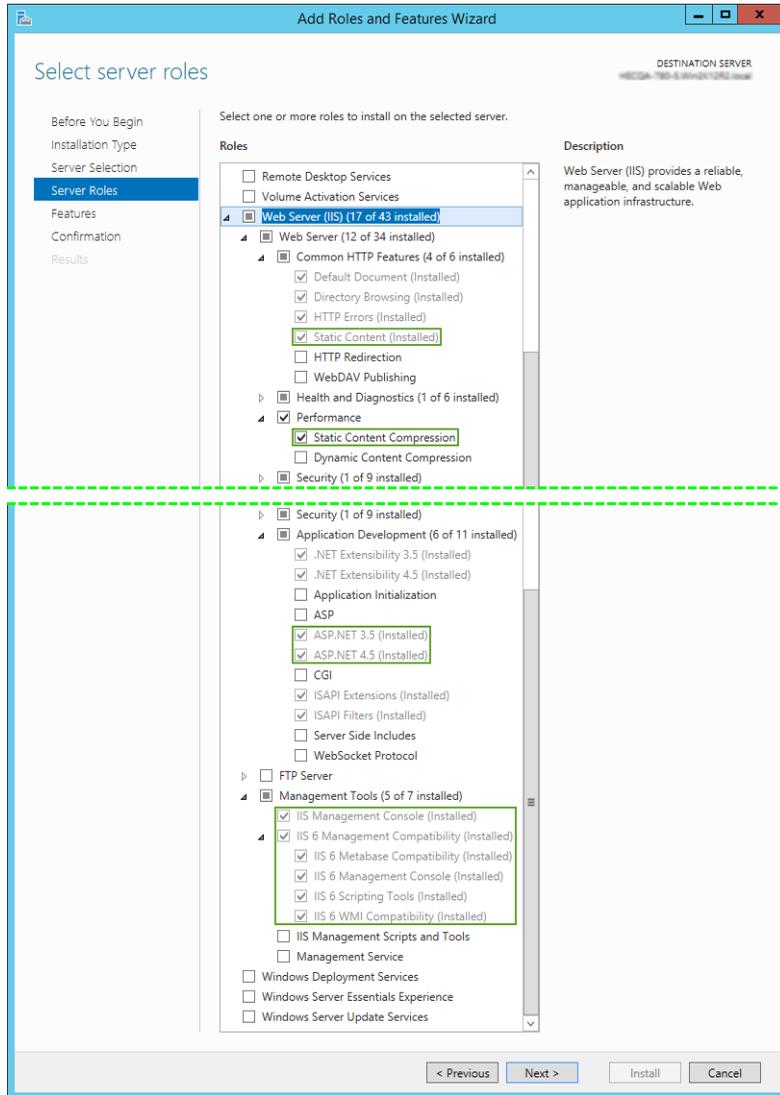
IIS Options for the Velocity Web Services Client on Windows Server 2012 R2

The procedure for installing IIS on Windows Server 2012 R2 is very similar to the procedure for installing IIS on Windows Server 2008, with the primary difference being which set of role services must be selected.

On Windows Server 2012 R2, verify that you have selected all of the following options:

- Web Server (IIS) ► Web Server ► Common HTTP Features ► **Static Content**
- Web Server (IIS) ► Web Server ► Performance ► **Static Content Compression**
- Web Server (IIS) ► Web Server ► Application Development ► **ASP.NET 3.5**
- Web Server (IIS) ► Web Server ► Application Development ► **ASP.NET 4.5**
- Web Server (IIS) ► Management Tools ► **IIS Management Console**
- Web Server (IIS) ► Management Tools ► **IIS 6 Management Compatibility**
- Web Server (IIS) ► Management Tools ► IIS 6 Management Compatibility ► **IIS 6 Metabase Compatibility**
- Web Server (IIS) ► Management Tools ► IIS 6 Management Compatibility ► **IIS 6 Management Console**
- Web Server (IIS) ► Management Tools ► IIS 6 Management Compatibility ► **IIS 6 Scripting Tools**
- Web Server (IIS) ► Management Tools ► IIS 6 Management Compatibility ► **IIS 6 WMI Compatibility**

These options are highlighted in the following screen captures, by being enclosed in green boxes.



SQL Server Installation

You can use the free SQL Server 2014 Express edition which can be installed automatically with Velocity 3.6. Before you decide to do so, refer to the next section which describes the limitations inherent in SQL Server 2014 Express.

If the Express edition is not adequate for your needs, you can install and use a licensed edition of a supported version (2008 R2 SP3, 2012 SP2, or 2014) of SQL Server. For example, see “Installing SQL Server 2008 R2” starting on page 42.

Limitations of SQL Server 2014 Express

SQL Server 2014 Express has some limitations; however, they are reasonable. The basic limitations are:

- 1 GB of RAM.
SQL Server 2014 Express uses a maximum of 1 GB of RAM, even if more RAM is available.
- 10 GB per database.
Each database can be a maximum of 10 GB in size.
- 1 CPU (including multiple cores).
SQL Server 2014 Express only uses one CPU, even on a multi-processor computer.
- Basic reporting services.

Installing SQL Server 2008 R2

As an example of installing a licensed edition of SQL Server, here are the installation instructions for SQL Server 2008 R2.

To install SQL Server 2008 R2:

1. Insert the SQL Server 2008 R2 Installation DVD into your DVD drive.
If your computer is set to auto-start, the installation program should begin automatically. If it doesn't, open Windows Explorer and navigate to the inserted DVD's root directory and select **setup.exe**.

2. Follow this procedure:

From:	Do this:
Program Compatibility	Click Run Program .
SQL Server Installation Center	Click Installation in the left pane. Click the New installation... option in the right pane.
Product Key	Enter your product key and click Next .
License Terms	Check 'I accept...' and click Next .
Setup Support Files	Click OK . The Setup Support files are installed.
Setup Support Rules	Click Next .
Feature Selection	Select: <ul style="list-style-type: none"> • Database Engine Services • Client Tools Connectivity • Client Tools Backward Compatibility • SQL Server Books Online • Management Tools – Basic • Management Tools – Complete Click Next .
Instance Configuration	Enter the SQL Server network name. This is the name that will be available on the network for the clients. This varies depending on whether you select the default or a named instance. (By default, the instance name is Hirsch . Both the default instance name and instance ID are set as MSSQLSERVER . To use a non-default instance ID, select the 'Instance ID' box and specify a value.) Click Next continue to with the installation.



From:	Do this:
Disk Space Requirement	Make sure you have enough space on your local disks to install SQL Server 2008 R2, then click Next .
Server Configuration	<p>Click 'Use the Same Account For All Server Services'.</p> <p>In the 'Use the Same Account For All Server Services' dialog box, click on the Browse button. The 'Select User, Computer or Group' window appears.</p> <p>In the 'Enter the object name to select' text box, type the name of a Windows user. For example: Administrator.</p> <p>Click the Check Names button. The user name is displayed in the 'Enter the object name to select' box. Click OK to return to the 'Use the Same Account For All Server Services' dialog box. The Domain Name\Administrator is displayed in the 'Account Name' drop-down box.</p> <p>In the Password text box, enter the password. Click OK to continue.</p> <p>Select Automatic as the 'Startup type' to start the SQL Server Browser Service.</p> <p>Click Next to continue.</p>
Installation Configuration Rule	Click Next .
Ready to Install	Click Install .
Installation Progress	<p>The installer proceeds to install SQL Server. This could take more than 15 minutes.</p> <p>When it is finished, click Next.</p>
Complete	Click Finish .

You are returned to the Windows Server desktop.

3. If necessary, download and install the latest SQL Server 2008 R2 service pack.

Installation



This section explains how to install Velocity according to the role that will be performed by a particular computer:

- Data Server (starting on page 51)
- Velocity Server (starting on page 60)
- Velocity standalone Workstation (starting on page 72)
- Velocity Client (starting on page 82)

It also explains how to upgrade an existing Velocity 3.5 system to Velocity 3.6 (instead of installing a new Velocity system). For more information about this option, see “Upgrading Velocity” starting on page 94.

Velocity Installation

Follow the instructions below to install Velocity 3.6.



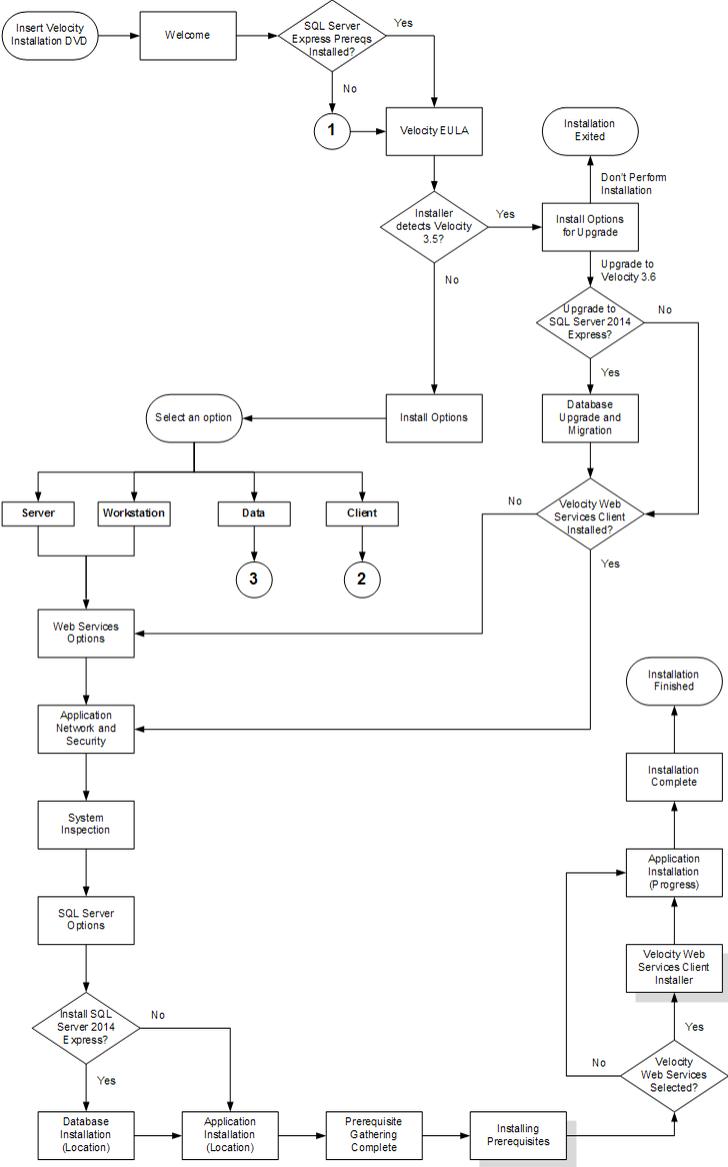
If you already have Velocity 3.5 installed on your computers and want to upgrade it to Velocity 3.6, refer to “Upgrading Velocity” starting on page 94.

The Velocity Installation Process

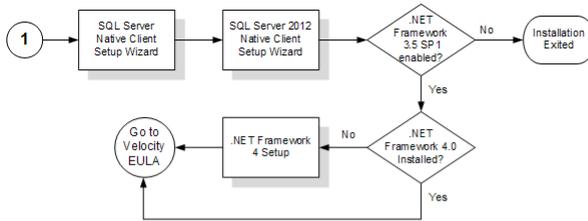
Besides providing the ability to upgrade a Velocity 3.5 installation to 3.6, the Velocity Installer provides installation options for the Server, Data, standalone Workstation, and Client roles. These options enable you to implement access control systems with varying degrees of complexity, to suit a variety of needs:

- If you have a small facility that only requires one client (or you are setting up a test system), you only need a single installation of Velocity on a standalone Workstation.
- If you have a larger facility that requires multiple clients, you need to first install a Velocity Server, and then install the Velocity Clients.
- If you wish to use a separate computer for the Velocity database, you need to first install a full edition of a supported version of SQL Server on that computer, and then choose the Data installation option (on the Install Options screen during the Velocity 3.6 installation process) to install the Velocity database on that computer. Next you can install a Velocity Server, and then install the Velocity Clients. (Make sure that the **SQL Server Browser** service is running, so the Velocity Server and Velocity Client installations can locate the separate database server.)

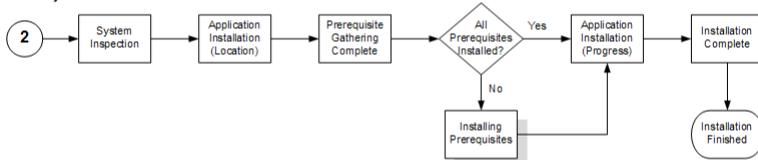
The following diagrams illustrate the Velocity installation process:



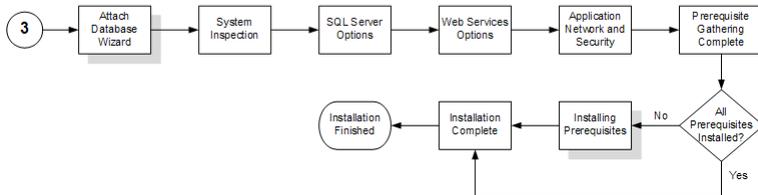
Prerequisites for SQL Server Express:



Velocity Client installation:



Velocity Data installation:



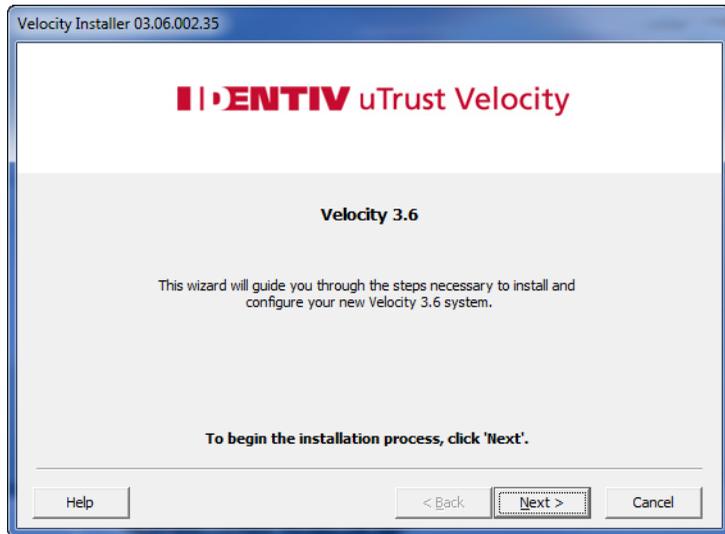
Performing a Velocity Data Installation

If you need to use a separate computer for the Velocity database, you must first install a licensed edition of a supported version of SQL Server on that computer, and then choose the **Data** installation option (on the **Install Options** screen during the Velocity 3.6 installation process) to install the Velocity database on that computer.

NOTE: The Data server installation must be performed on the computer where you want the Velocity database installed, because the Velocity Installer cannot recognize a remote computer during this installation.

1. Make sure you are logged onto Windows as an administrator.
2. Run the **Setup.exe** file for the Velocity 3.6 installation:
 - If you have a Velocity 3.6 installation DVD, insert it into your DVD drive, and the auto-start feature should automatically start the Velocity Installer.
 - If you downloaded the files to install Velocity 3.6, use Windows Explorer to navigate to the folder containing those files, and double-click on **Setup.exe**.

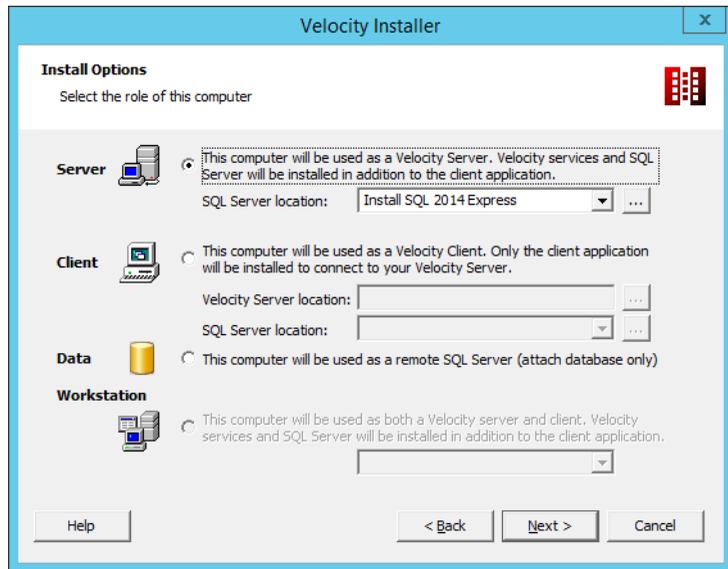
3. After the Velocity Installer's Welcome (or splash) screen appears, click **Next**.



4. On the resulting End-User License Agreement page, select the **"I agree to the terms in the License Agreement"** option, and click **Next**.

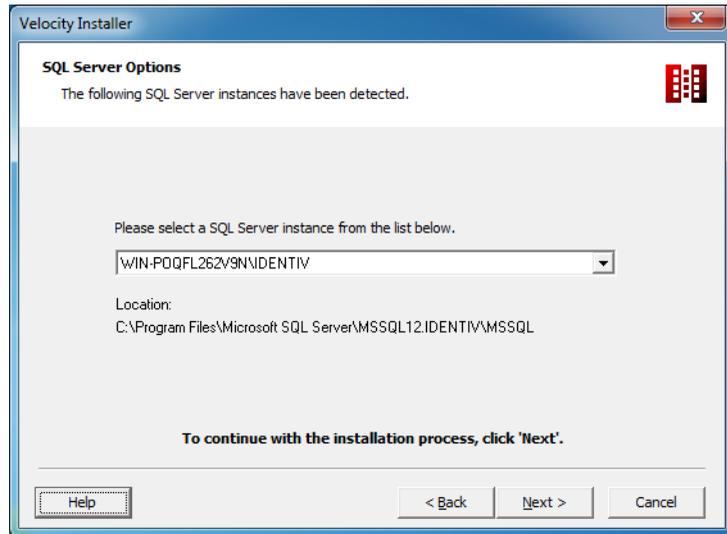


5. On the Install Options screen, select the **Data** option, then click **Next**.

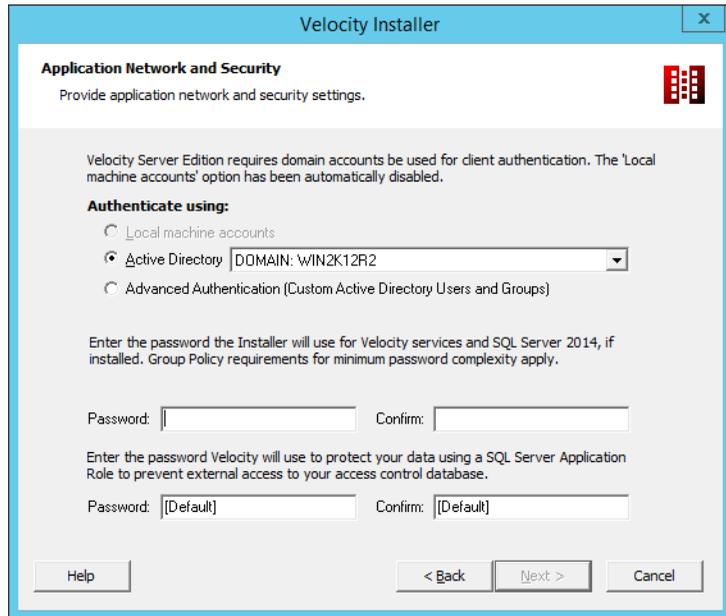


6. On the resulting Welcome page of the Attach Database wizard, click **Next**.
NOTE: The Attach Database wizard is tightly integrated with the Velocity Installer, so its pages appear within the Velocity Installer window.
7. On the resulting End User License Agreement page of the Attach Database wizard, select the **I Agree...** option, then click **Next**.
8. On the resulting System Inspection screen, click **Next** (after that button is enabled).

9. On the resulting SQL Server Options screen, select the existing SQL Server instance that you will be using to manage the Velocity database, then click **Next**.

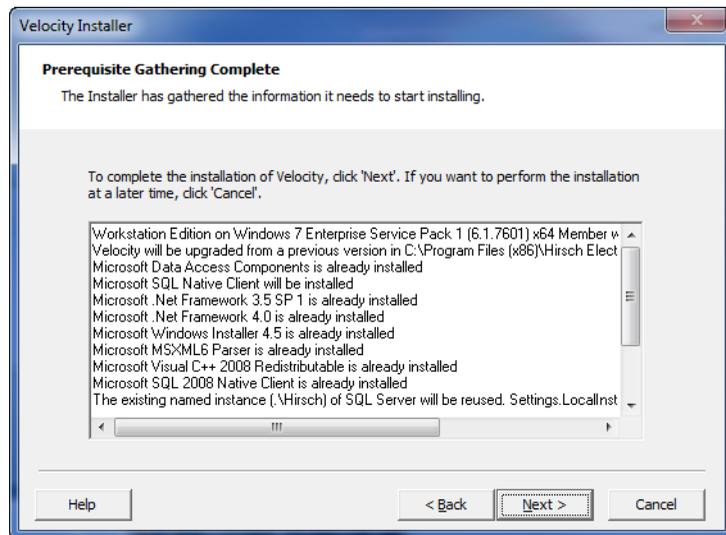


10. On the resulting Application Network and Security screen, the Velocity Installer detects whether this computer is a member of an Active Directory domain or is a local server, and selects the correct authentication option.



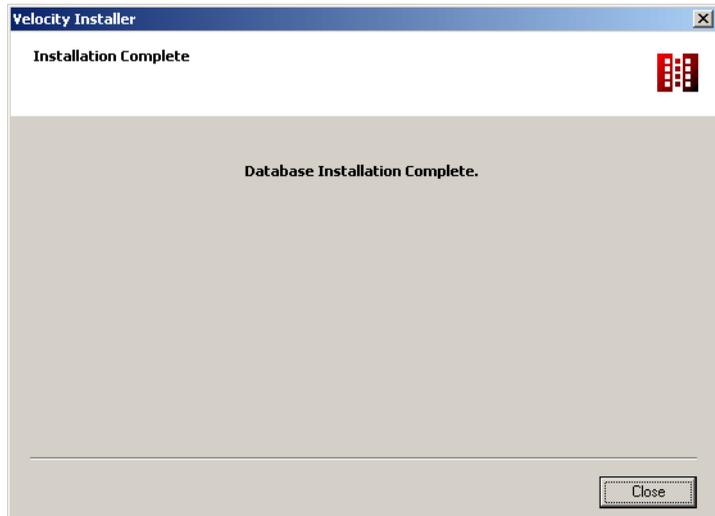
- If the **Local machine accounts** option is selected, go to Step 12.
 - If the **Active Directory** option is selected, select the domain or organization unit (OU) whose accounts Velocity can use, and continue to the next step in this procedure.
11. Enter a password in the first 'Password' field and repeat it in the first 'Confirm' field.
 12. Unless you require a different SQL Server password, accept the [Default] password in the second 'Password' and 'Confirm' fields.
NOTE: If you change this password, all Velocity clients connecting to this server must have this same password to access the Velocity database.

13. The Velocity Installer detects whether this computer has multiple network interface cards.
 - If there is only one network interface card, go to the next step in this procedure.
 - If there are multiple network interface cards, select the network you will use from the 'Device Network' drop-down list, and continue to the next step in this procedure.
14. Click **Next**.
15. When the Prerequisite Gathering Complete screen appears, review the displayed information about the various program components that either will be installed or are already installed, then click **Next**.



16. If necessary, the Installing Prerequisites screen appears and the installation of the required database software proceeds. Follow the onscreen prompts.

After all the prerequisites are installed, the Installation Complete screen appears like in this example:

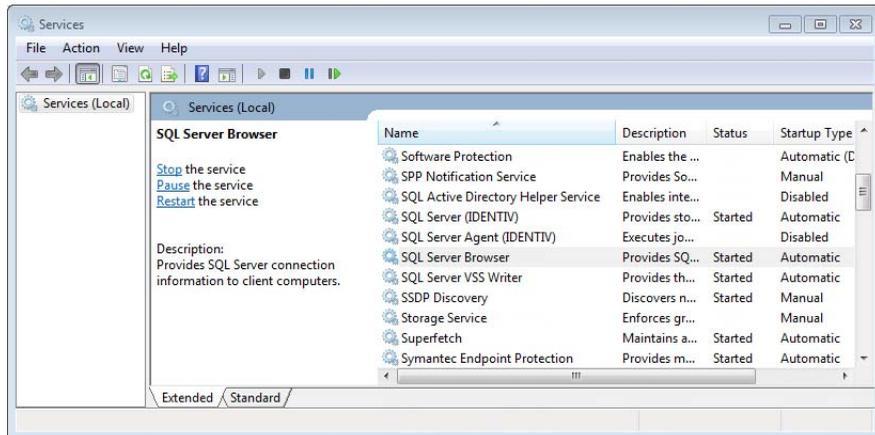


If you changed the **[Default]** password for the SQL Server (on the Application Network and Security screen as specified in Step 12), a message appears on this screen reminding you of this fact.

17. Click **Close**.

The Velocity Data server installation is now complete, so you can proceed to install a Velocity Server on a different computer, and then install the Velocity Clients on other computers.

18. Make sure that the **SQL Server Browser** service is running on the Velocity Data server, so the Velocity Server and Velocity Client installations can locate the separate database server.



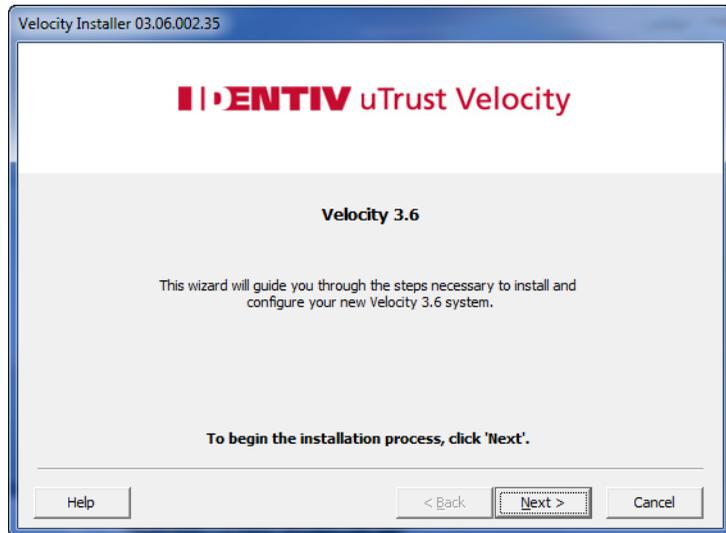
Performing a Velocity Server Installation

If you have a larger facility that requires multiple clients, you need to first install a Velocity Server, and then install the Velocity Clients.

NOTE: If you need to use a separate computer for the Velocity database, you must first install a licensed edition of a supported version of SQL Server on that computer, and then choose the **Data** installation option (on the **Install Options** screen during the Velocity 3.6 installation process) to install the Velocity database on that computer. For details, see “Performing a Velocity Data Installation” starting on page 51.

1. Make sure you are logged onto Windows as an administrator.
2. Run the **Setup.exe** file for the Velocity 3.6 installation:
 - If you have a Velocity 3.6 installation DVD, insert it into your DVD drive, and the auto-start feature should automatically start the Velocity Installer.
 - If you downloaded the files to install Velocity 3.6, use Windows Explorer to navigate to the folder containing those files, and double-click on **Setup.exe**.

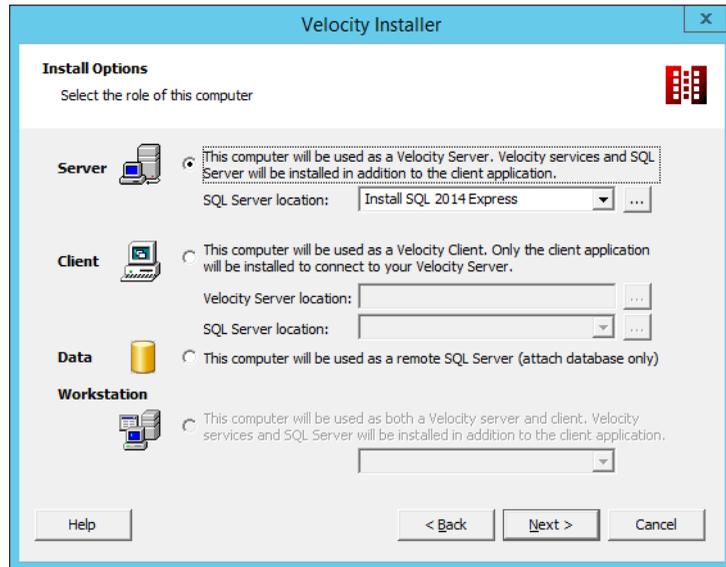
3. After the Velocity Installer's Welcome (or splash) screen appears, click **Next**.



4. On the resulting End-User License Agreement page, select the **"I agree to the terms in the License Agreement"** option, and click **Next**.



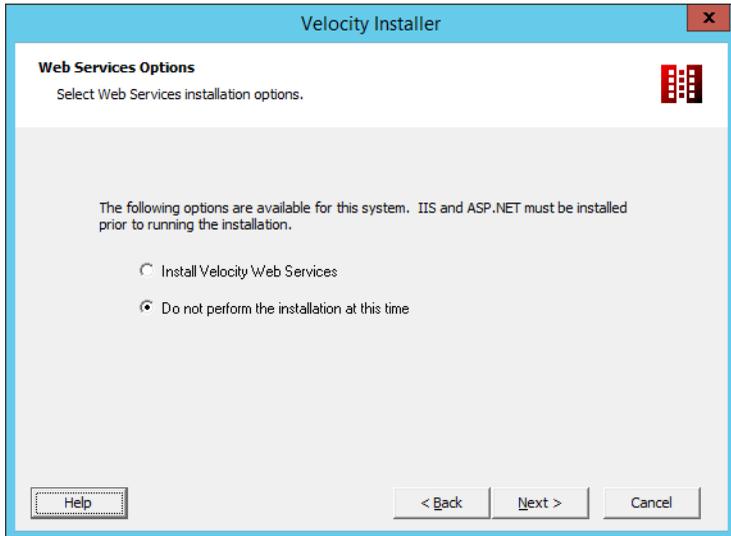
- On the resulting Install Options screen, select the **Server** option and either accept the currently displayed SQL server or select a different one, then click **Next**.



NOTE: If the **SQL Server Browser** service is not running, the following dialog is displayed, which enables you to remedy the problem:



6. On the resulting Web Services Options screen, select whether or not to also install the optional Velocity Web Services Client (which supersedes the previous Velocity Web Console), then click **Next**.

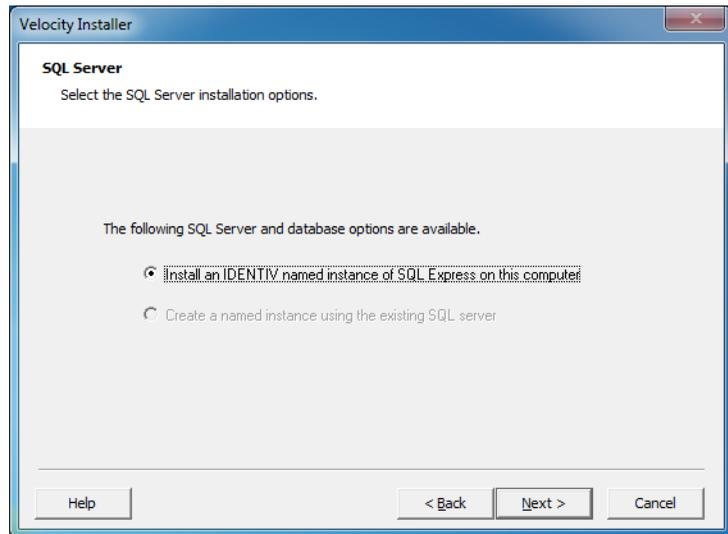


NOTE: Before you can install and use the Velocity Web Services Client, you must first install Microsoft’s Internet Information Services (IIS), as explained in “Installing IIS to Support the Velocity Web Services Client” starting on page 34.

- On the resulting Application Network and Security screen, the Velocity Installer detects whether this computer is a member of an Active Directory domain or is a local server, and selects the correct authentication option.

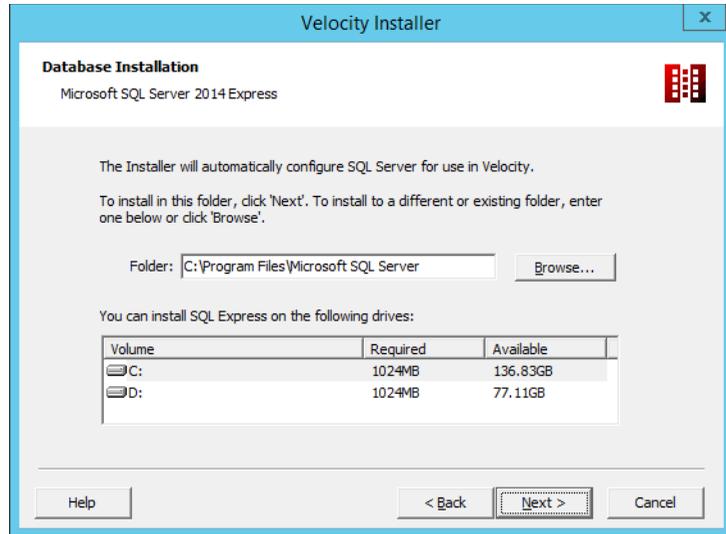
- If the **Local machine accounts** option is selected, go to the next step in this procedure.
 - If the **Active Directory** option is selected, select the domain or organization unit (OU) whose accounts Velocity can use, and continue to the next step in this procedure.
- Enter a password in the first 'Password' field and repeat it in the first 'Confirm' field.
 - Unless you require a different SQL Server password, accept the [Default] password in the second 'Password' and 'Confirm' fields.
NOTE: If you change this password, all Velocity clients connecting to this server must have this same password to access the Velocity database.

10. The Velocity Installer detects whether this computer has multiple network interface cards.
 - If there is only one network interface card, go to the next step in this procedure.
 - If there are multiple network interface cards, select the network you will use from the 'Device Network' drop-down list, and continue to the next step in this procedure.
11. Click **Next**.
12. On the resulting System Inspection screen, click **Next**.
13. On the resulting SQL Server options screen, the Velocity Installer detects whether there are any existing instances of SQL Server, and displays the available options. Select the SQL Server option you require, then click **Next**.

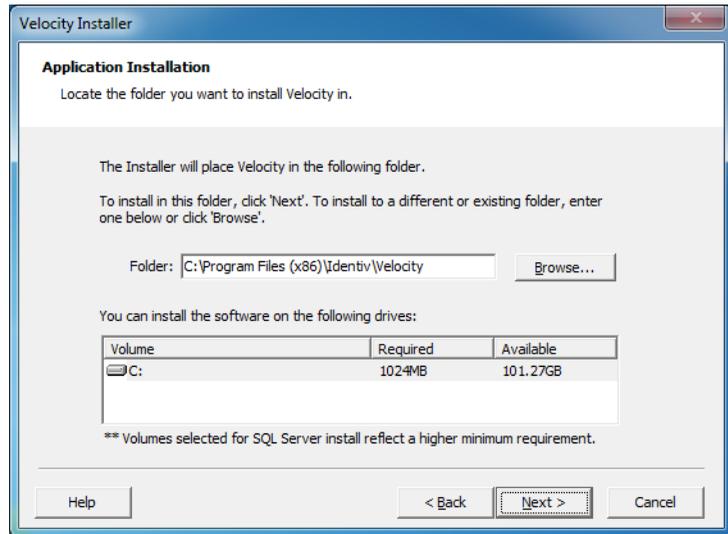


- If the Velocity Installer detects that a licensed edition of a supported version (2008 R2, 2012, or 2014) of Microsoft's SQL Server already exists on this computer, you can select the "Create a named instance using the existing SQL server" option. Go to Step 15.

- If you want Velocity to install the free SQL Server 2014 Express edition, accept the default “Install an Identiv named instance of SQL Express on this computer” option, and continue to the next step in this procedure.
14. On the Database Installation (Location) screen, specify the location where the database will be installed, then click **Next**.

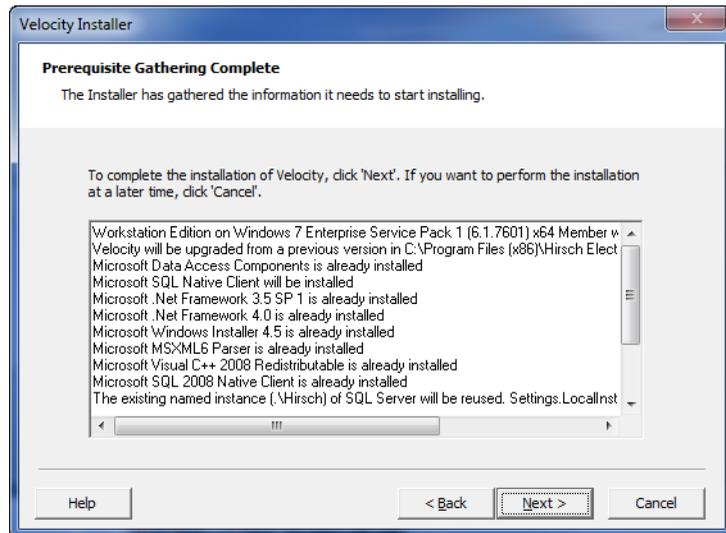


15. On the resulting Application Installation (Location) screen, either accept the default location where Velocity will be installed or specify a different location, then click **Next**.



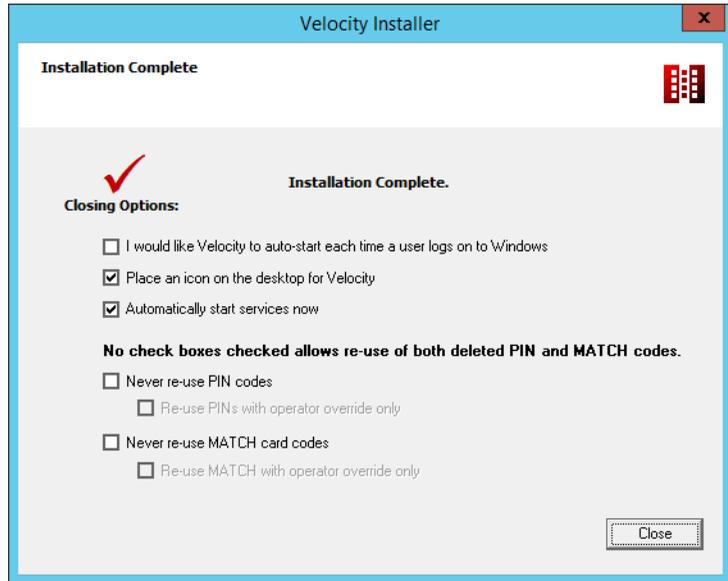
The Prerequisite Gathering screen appears. After a few minutes, the Prerequisite Gathering Complete screen appears.

16. When the Prerequisite Gathering Complete screen appears, review the displayed information about the various program components that either will be installed or are already installed, then click **Next**.



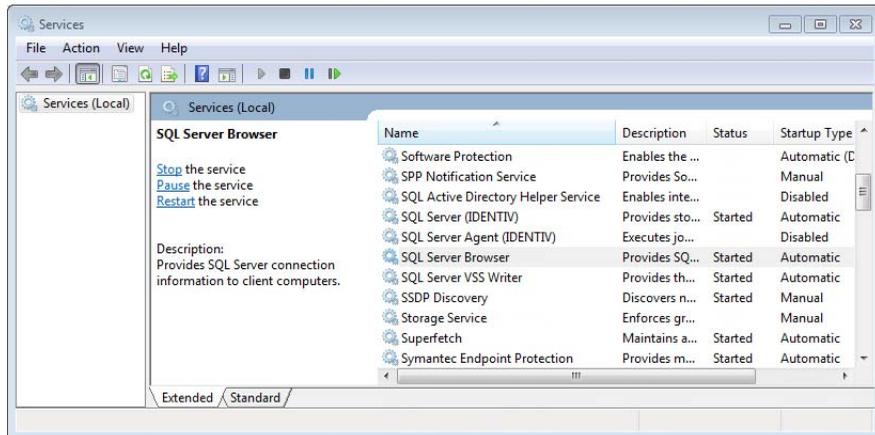
17. The Installing Prerequisites screen appears intermittently throughout the installation process, indicating when another stage of the installation process is complete. Follow the onscreen prompts.
18. If you chose (at the Web Services Options screen) to install the optional Velocity Web Services Client, it is installed now. On the Velocity Web Services Client Installation screens: ensure all the prerequisites are met and click **Next**; enter the necessary service account information and port number and click **Next**. After all the prerequisites are installed, the Application Installation (Progress) screen appears.

19. When the installation of Velocity is completed and the Installation Complete screen appears, select the desired closing options, then click **Close**.



For more information, see “The Velocity Installer’s Closing Options” starting on page 91.

20. Make sure that the **SQL Server Browser** service is running, so the Velocity Client installations can locate the SQL Server for Velocity's database.



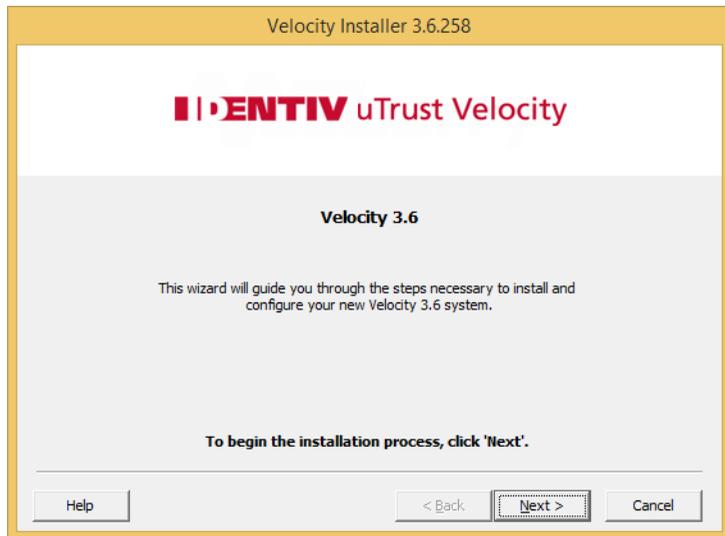
The installation of a Velocity Server is now complete, but you still have to install Velocity clients on other computers. Before you attempt the client installations, verify that you have performed the following prerequisite tasks (which configure the server to support the installation of Velocity clients on other computers):

- “Enabling Network Discovery” starting on page 20.
- “Turning Off the Windows Firewall” starting on page 22.

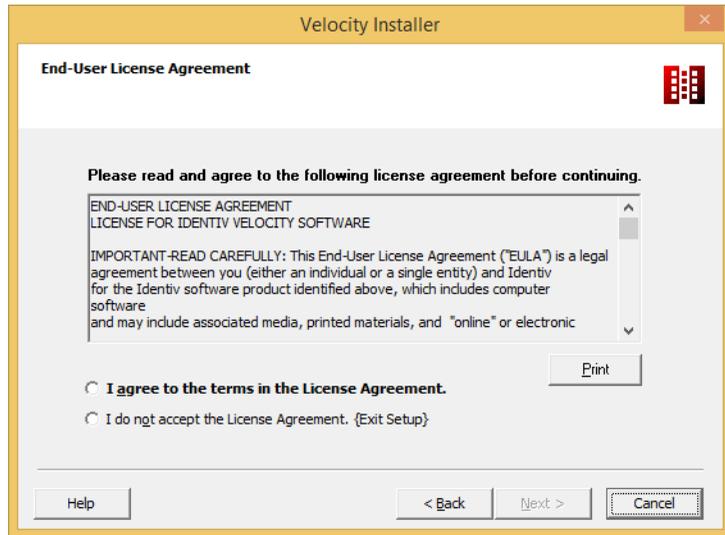
Performing a Velocity Workstation Installation

If you have a small facility that only requires one client (or you are setting up a test system), you only need a single Workstation installation of Velocity on one computer.

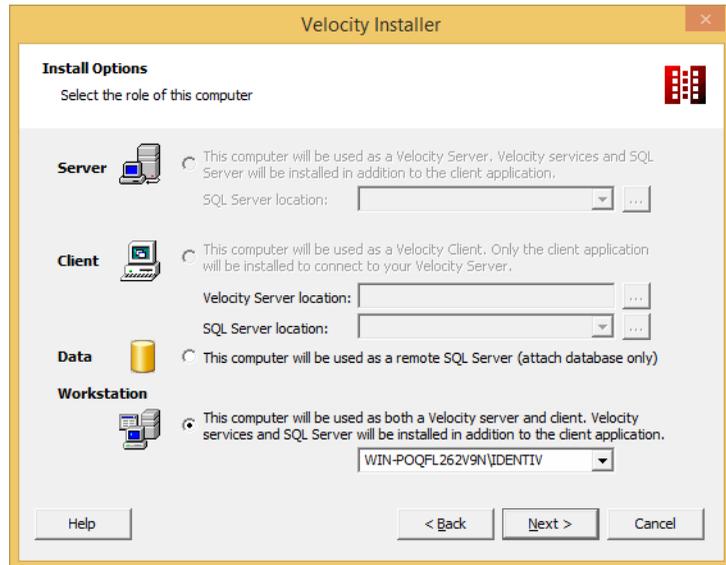
1. Make sure you are logged onto Windows as an administrator.
2. Run the **Setup.exe** file for the Velocity 3.6 installation:
 - If you have a Velocity 3.6 installation DVD, insert it into your DVD drive, and the auto-start feature should automatically start the Velocity Installer.
 - If you downloaded the files to install Velocity 3.6, use Windows Explorer to navigate to the folder containing those files, and double-click on **Setup.exe**.
3. After the Velocity Installer's Welcome (or splash) screen appears, click **Next**.



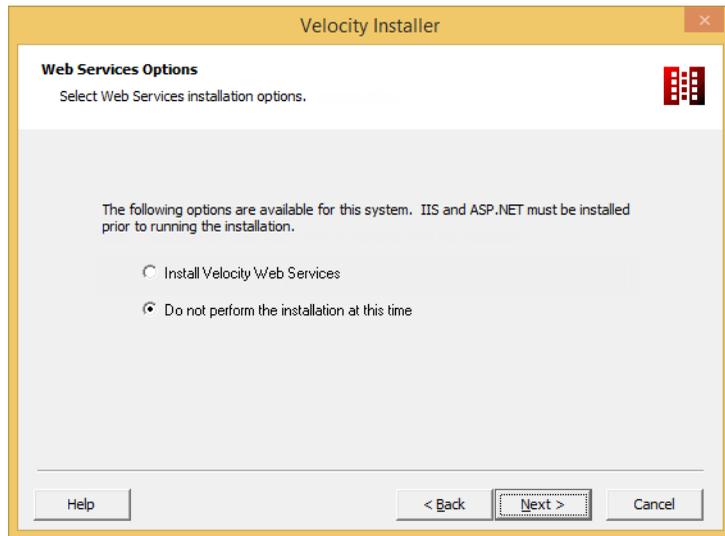
4. On the resulting End-User License Agreement page, select the **"I agree to the terms in the License Agreement"** option, and click **Next**.



5. On the Install Options screen, select the **Workstation** option and either accept the currently displayed SQL server or select a different one, then click **Next**.

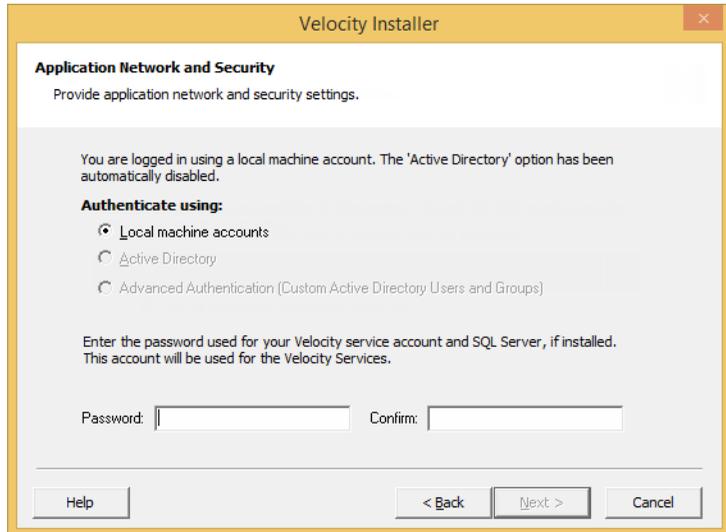


- On the resulting Web Services Options screen, select whether or not to also install the optional Velocity Web Services Client (which supersedes the previous Velocity Web Console), then click **Next**.



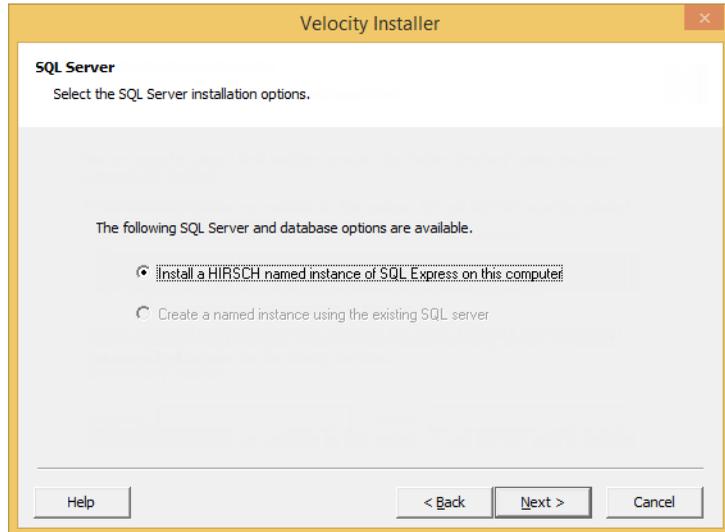
NOTE: Before you can install and use the Velocity Web Services Client, you must first install Microsoft’s Internet Information Services (IIS), as explained in “Installing IIS to Support the Velocity Web Services Client” starting on page 34.

7. On the resulting Application Network and Security screen, select the **Local machine accounts** option for authentication.



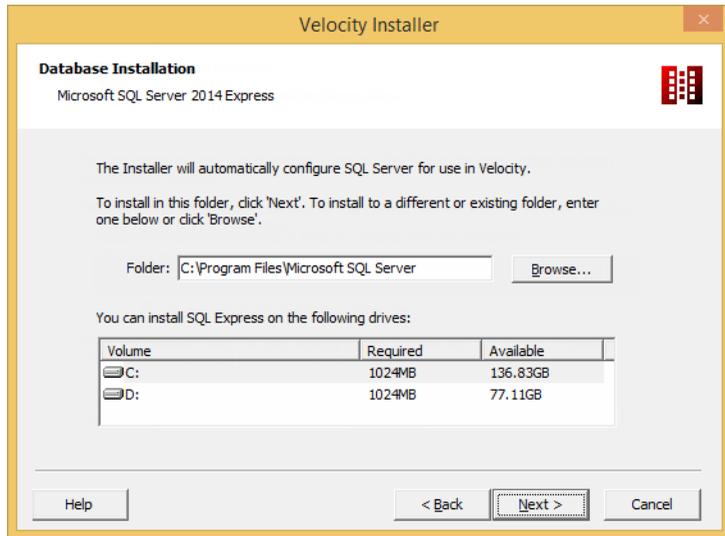
8. Then enter a password in the **Password** field, and repeat it in the **Confirm** field.
9. Click **Next**.
10. On the resulting System Inspection screen, click **Next**.

11. On the resulting SQL Server options screen, the Velocity Installer detects whether there are any existing instances of SQL Server, and displays the available options. Select the SQL Server option you require, then click **Next**.

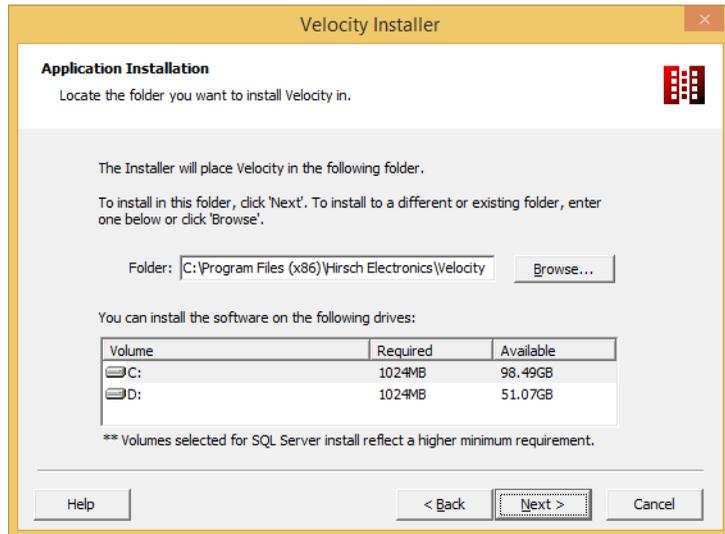


- If the Velocity Installer detects that a licensed edition of a supported version (2008 R2, 2012, or 2014) of Microsoft's SQL Server already exists on this computer, you can select the "Create a named instance using the existing SQL server" option. Go to Step 13.
- If you want Velocity to install the free SQL Server 2014 Express edition, accept the default "Install an Identiv named instance of SQL Express on this computer" option, and continue to the next step in this procedure. (This is the typical choice for a new installation of a standalone Velocity Workstation.)

12. On the Database Installation (Location) screen, specify the location where the database will be installed, then click **Next**.

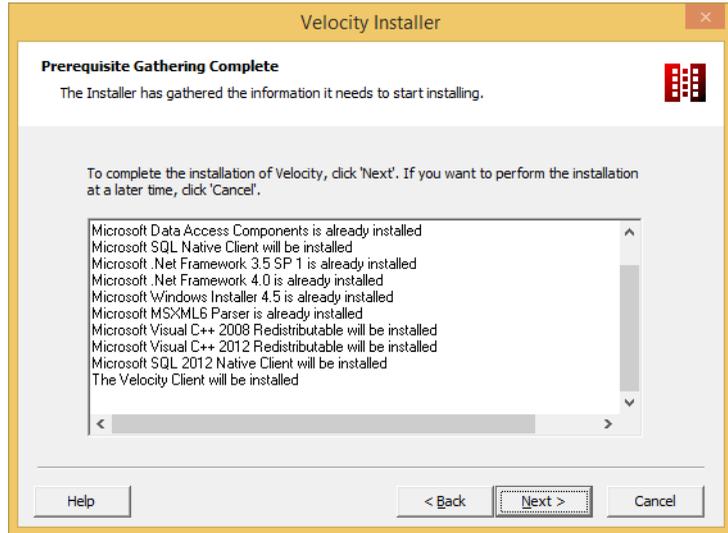


- On the resulting Application Installation (Location) screen, either accept the default location where Velocity will be installed or specify a different location, then click **Next**.



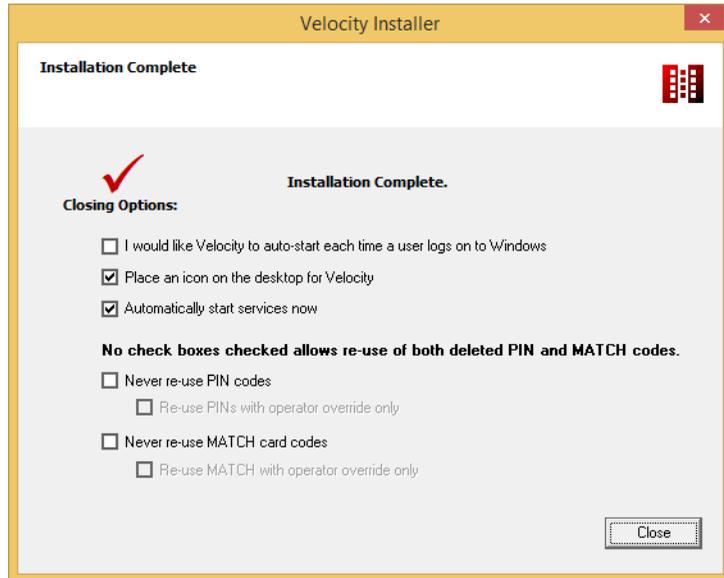
The Prerequisite Gathering screen appears. After a few minutes, the Prerequisite Gathering Complete screen appears.

- When the Prerequisite Gathering Complete screen appears, review the displayed information about the various program components that either will be installed or are already installed, then click **Next**.



- The Installing Prerequisites screen appears intermittently throughout the installation process, indicating when another stage of the installation process is complete. Follow the onscreen prompts.
- If you chose (at the Web Services Options screen) to install the optional Velocity Web Services Client, it is installed now. On the Velocity Web Services Client Installation screens: ensure all the prerequisites are met and click **Next**; enter the necessary service account information and port number and click **Next**. After all the prerequisites are installed, the Application Installation (Progress) screen appears.

17. When the installation of Velocity is completed and the Installation Complete screen appears, select the desired closing options, then click **Close**.



For more information, see “The Velocity Installer’s Closing Options” starting on page 91.

The installation of a Velocity standalone Workstation is now complete.

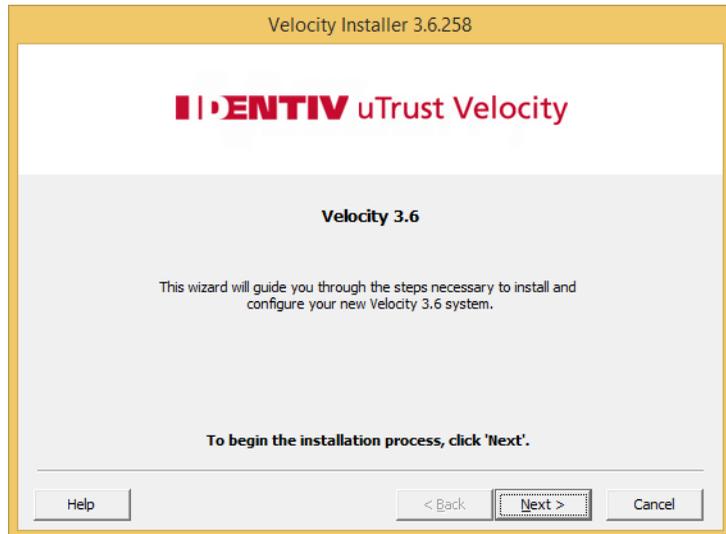
Performing a Velocity Client Installation

If you have a larger facility that requires multiple clients, after installing the Velocity Server, you need to install the Velocity Clients on the necessary computers.

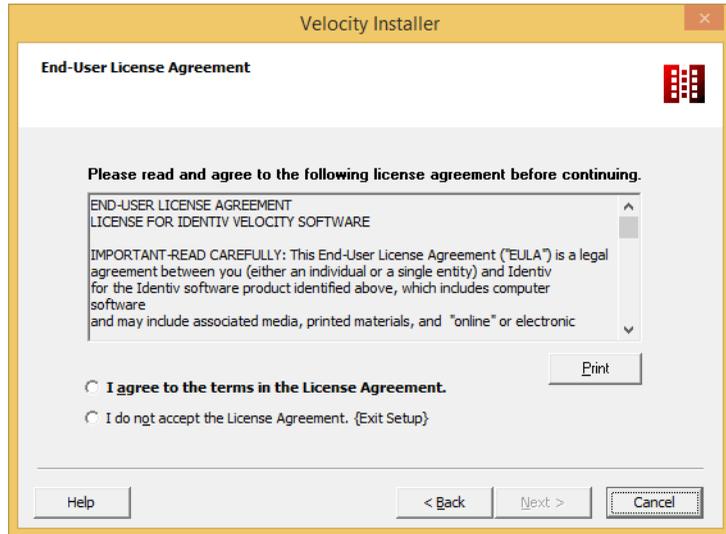
Before you attempt the client installations, verify that you have performed the following prerequisite tasks (which configure the server to support the installation of Velocity clients on other computers):

- “Enabling Network Discovery” starting on page 20.
 - “Turning Off the Windows Firewall” starting on page 22.
1. Make sure you are logged onto Windows as a Velocity Operator who belongs to the Administrator role and who also has Local Administrator privileges.
 2. Run the **Setup.exe** file for the Velocity 3.6 installation:
 - If you have a Velocity 3.6 installation DVD, insert it into your DVD drive, and the auto-start feature should automatically start the Velocity Installer.
 - If you downloaded the files to install Velocity 3.6, use Windows Explorer to navigate to the folder containing those files, and double-click on **Setup.exe**.

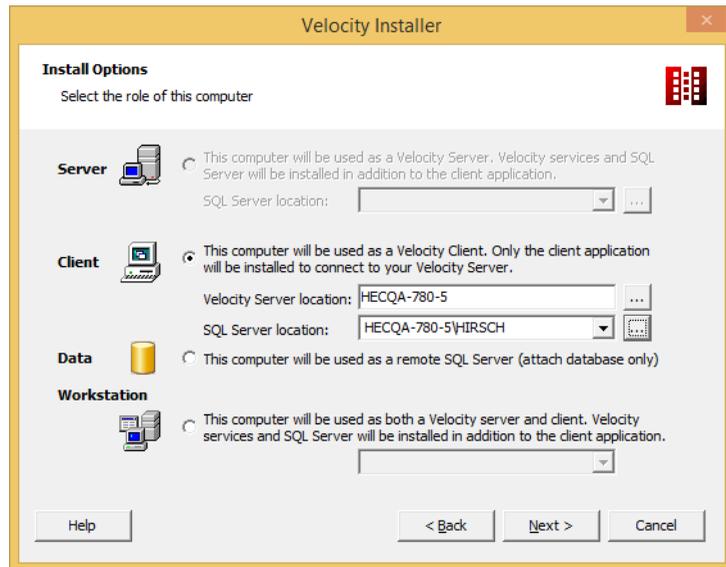
3. After the Velocity Installer's Welcome (or splash) screen appears, click **Next**.



4. On the resulting End-User License Agreement page, select the **"I agree to the terms in the License Agreement"** option, and click **Next**.



5. On the Install Options screen, select the **Client** option, either accept the currently displayed Velocity Server or select a different one, either accept the currently displayed SQL Server or select a different one, and then click **Next**.

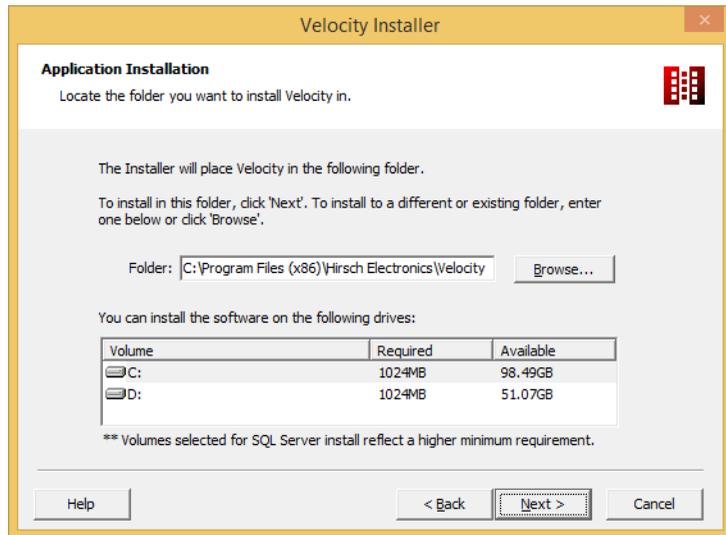


Note that the Velocity client cannot function properly unless you have specified the correct location for both the Velocity Server and the Velocity database.

NOTE: If the **SQL Server Browser** service is not running, the following dialog is displayed, which enables you to remedy the problem:

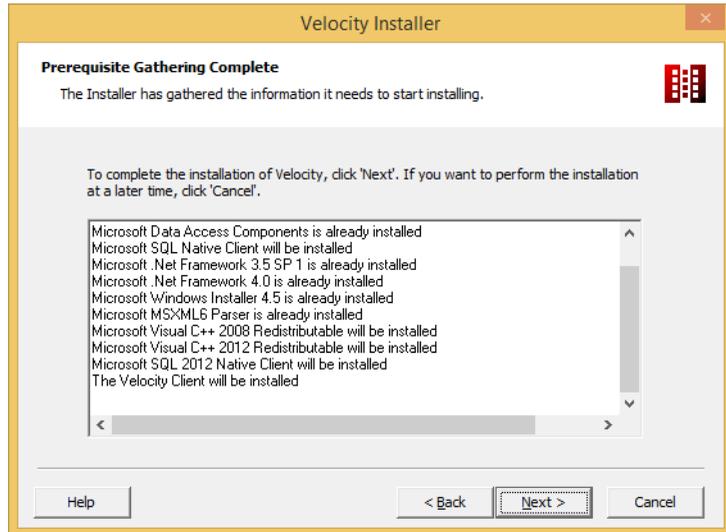


6. On the resulting System Inspection screen, click **Next**.
7. On the resulting Application Installation (Location) screen, either accept the default location where Velocity will be installed or specify a different location, then click **Next**.



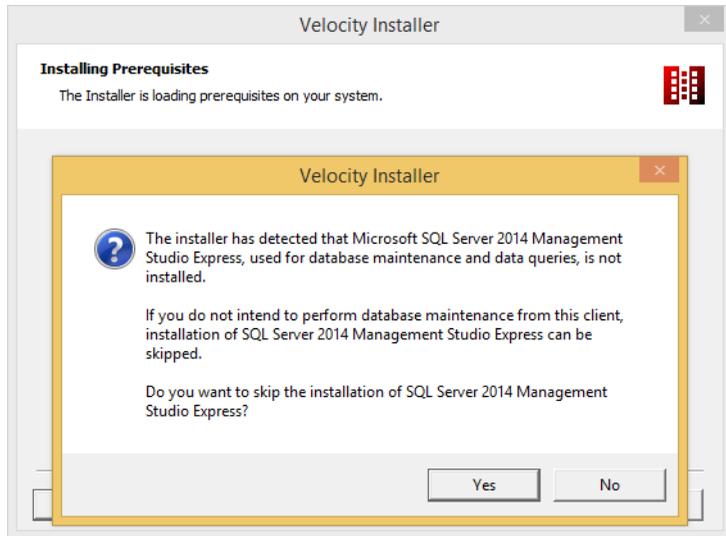
The Prerequisite Gathering screen appears. After a few minutes, the Prerequisite Gathering Complete screen appears.

8. When the Prerequisite Gathering Complete screen appears, review the displayed information about the various program components that either will be installed or are already installed, then click **Next**.



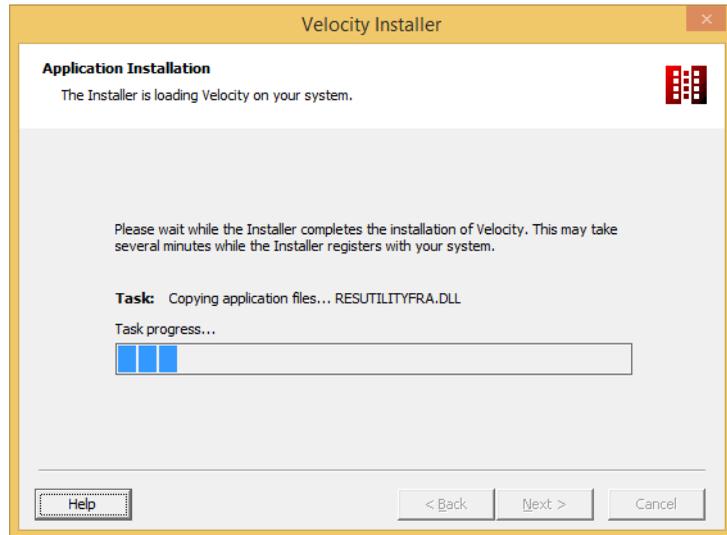
9. If necessary, the Installing Prerequisites screen appears. Follow the onscreen prompts to install software such as the Microsoft SQL Server 2012 Native Client, the Microsoft SQL Server 2014 Management Studio Express, and the Microsoft SQL Server 2014 Express with Tools.

10. For example, a message like this might appear:

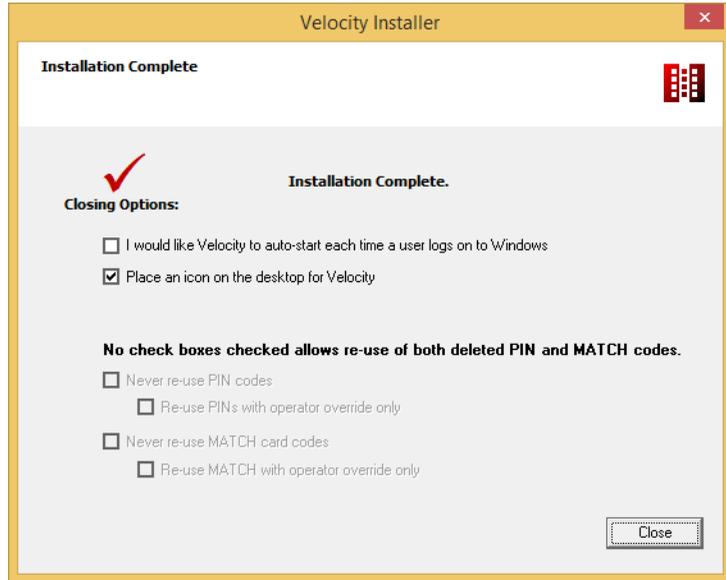


- If you want to **skip** the installation of SQL Server 2014 Management Studio Express on this computer, click **Yes**.
- If you do want to **install** SQL Server 2014 Management Studio Express on this computer, click **No**.

11. After all the prerequisites are installed, the Application Installation (Progress) screen appears, and keeps you informed as the Velocity Installer installs all of the files required for the Velocity program. When the navigation buttons are enabled, click **Next**.



12. When the installation of Velocity is completed and the Installation Complete screen appears, select the desired closing options, then click **Close**.



For more information, see “The Velocity Installer’s Closing Options” starting on page 91.

The installation of a Velocity Client on this computer is now complete. If necessary, repeat this installation on other computers which will also be Velocity clients.

After you have installed all the Velocity clients, you will also have to perform the following procedures:

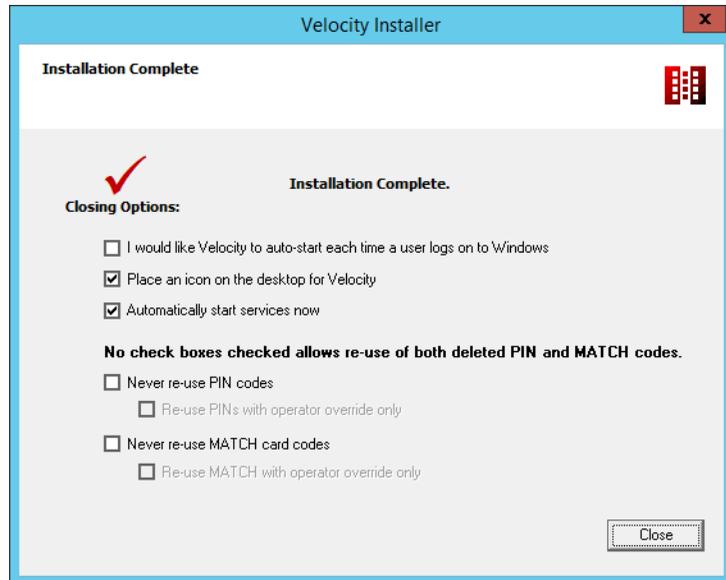
- Configure the Windows Firewall
- Assign a TCP/IP port to the Velocity polling engine
- Assign a TCP/IP port to the SQL Server Database Engine
- Start an instance of SQL Server

For details about these procedures, see “Configuring the Windows Firewall” starting on page 113.

The Velocity Installer's Closing Options

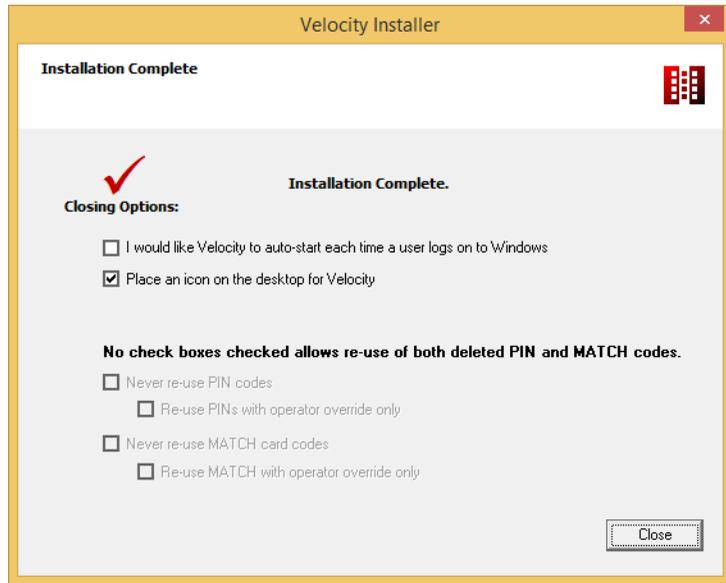
There are several Closing Options which appear on the Installation Complete screen at the end of a Velocity Server, Workstation, or Client installation. (A Data installation has no Closing Options.)

The Installation Complete screen for a **Server** or a **Workstation** installation looks like this:



The first three options also appear when you are upgrading an existing Velocity system.

The Installation Complete screen for a **Client** installation looks like this:



The following table briefly explains the possible Closing Options.

Closing Options for a Server, a standalone Workstation, or a Client:

I would like Velocity to auto-start each time a user logs on to Windows	Select this option if you want Velocity to automatically start each time you log onto Windows. This is a good idea if you plan to use this computer only for Velocity. If this is a multi-use computer, you might leave this option unchecked.
---	--

WARNING: Be careful when you select this option. After installation, you can't change this setting without editing the Windows Registry.

Place an icon on the desktop for Velocity	Select this option to place a Velocity icon on your Windows desktop. This enables an operator to quickly start Velocity without going through the Start menu.
---	---

Closing Options for only a Server or a standalone Workstation:

Automatically start services now	Select this option to start the Velocity services now (after you click Close).
Never re-use PIN codes	Select this option if you never want to reuse PIN codes. Note that if you have a large number of employees, you might need to recycle PIN codes or risk running out. If you select this option, you can also select the Re-use PINs with operator override only option, to further specify that only those operators with override authority can reassign PIN codes.
Never re-use MATCH card codes	Select this option if you never want to reuse MATCH card codes. Although this option eliminates the possibility of an unauthorized person stealing and using a card, it requires a new card for each new person, which can be expensive. If you select this option, you can also select the Re-use MATCH with operator override only option, to further specify that only those operators with override authority can reassign cards.

Upgrading Velocity

If you have an existing installation of Velocity, you can upgrade it instead of performing the new install described previously in this guide.

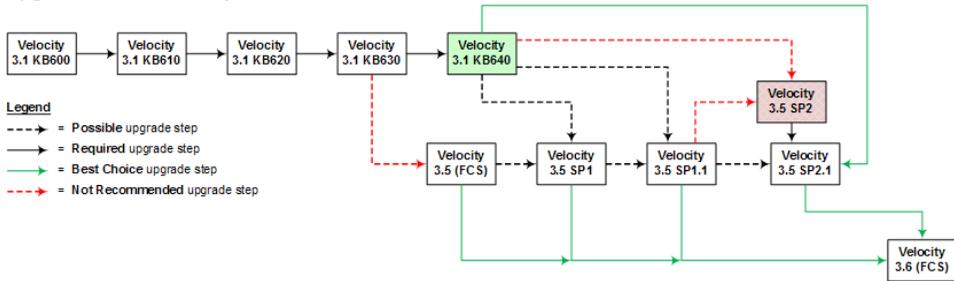
Because the initial release of Velocity 3.5 introduced licensing, some customers decided to remain on a release of Velocity 3.1. But you cannot upgrade directly from 3.1 to 3.6; you must first upgrade from 3.1 to 3.5, and then upgrade from 3.5 to 3.6.

TIP: To avoid taking down a live system during the upgrade from Velocity 3.1 to 3.5, you can backup and restore your system on a separate computer, and then perform the upgrade on that computer. If you decide to use this approach, you must perform some additional steps (including editing some tables in the Velocity database) which are documented in the **SQL Database Manager > Restoring the Velocity Database to a Different Computer** topic in the Velocity online help system.

Upgrade Paths

There are specific upgrade paths you can choose. The following diagram shows the upgrade paths from the supported versions of Velocity to the 3.6 release. Locate your existing version of Velocity, then follow the best available upgrade path to Velocity 3.6:

Upgrade Paths to Velocity 3.6:



Here is a summary of the highlights in each of the recent releases of Velocity (listed in chronological order):

- **3.5 (FCS):** Introduced licensing and the optional Velocity Web Console. (The Velocity Web Console was replaced by the Velocity Web Services Client in the 3.5 SP2 release.)
- **3.1 KB640:** Introduced support for newer PIV cards which use the updated FIPS201 data layout and PIV-I cards with a UUID (128-bit GUID).
- **3.5 SP1:** Introduced support for the Mx controller and for a new video integration framework with separately licensed plug-ins, starting with one for the Aventura Technologies hybrid NVR. It also included the relevant bug fixes, enhancements, and new features of the 3.1 KB640 release (such as support for the UUID in PIV-I cards).
- **3.5 SP1.1:** Simplified the licensing scheme for Velocity from four editions to two editions, and changed the pricing model so that the price of Velocity software is included in the system purchase.
- **3.5 SP2:** Introduced support for a separately licensed video integration plug-in for the American Dynamics Intellex DVR and VideoEdge NVR, and for the optional Velocity Web Services Client (which replaced the previous Velocity Web Console).
- **3.5 SP2.1:** Replaced 3.5 SP2 and introduced support for the separately installed Edge EVO Controller Integration to one or more Edge single-door controllers.
- **3.6 (FCS):** Introduced support for newer versions of Microsoft's Windows operating system (including Windows 8.1, Windows Server 2012, and Windows Server 2012 R2) and newer versions of Microsoft's SQL Server database management software (including SQL Server 2012 and SQL Server 2014).

Preparing to Upgrade

Before you start the upgrade process, you must perform these required steps:

- Backup your system before attempting any upgrade. Doing so enables you to get back to an earlier working state if a mistake is made somewhere in the upgrade process.

- If you are using the Express edition of SQL Express, make sure that the size of the Velocity database is less than half of the required maximum. If you have SQL Express 2005, the limit is 4 GB. If you have SQL Express 2008, the limit is 10 GB. Archiving older Alarms and Events is an effective way to reduce the size of your Velocity database.
- Make sure the available Hard Disk free space is at least twice the size of your Velocity database. This requirement applies regardless of whether you have an Express version of SQL or a full version.
- Make sure that you are logged in with an appropriate administrator account. You must be a Domain Administrator for a networked Domain account, or a Local Administrator account for a stand-alone workstation installation.

Upgrading from Velocity 3.5 to Velocity 3.6

The overall process for upgrading your existing Velocity system is determined by its architecture:

- If it uses a separate computer for the Velocity database, you need to first upgrade that Data server. Then you will upgrade the Velocity Server. Finally, you must upgrade each Velocity Client.
- If your Velocity Server also performs the Data server role, you need to first upgrade that computer. Then you must upgrade each Velocity Client. (Note that minor updates of a Velocity Client are pushed down automatically from an updated Velocity Server, but upgrades between major versions of Velocity require you to install the new version on both the server and the clients.)
- If you have only a standalone Velocity Workstation which performs all the roles (Data server, Velocity Server, and Velocity Client), then you only need to upgrade that one computer.

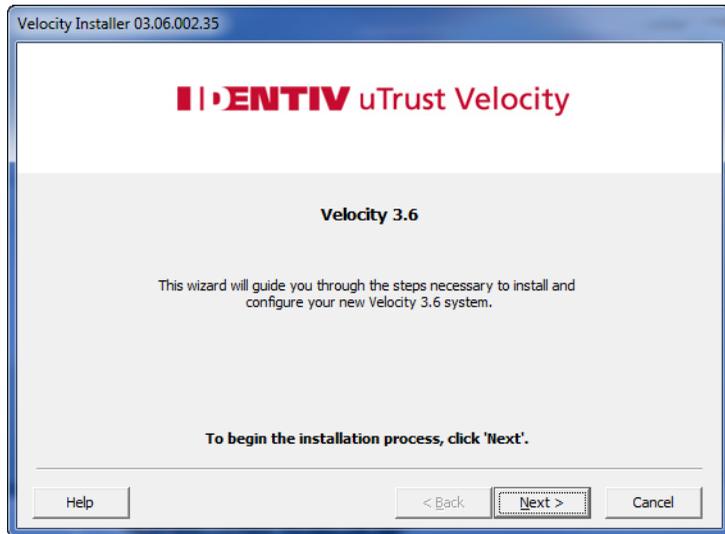


Because Microsoft no longer supports Windows XP, Velocity 3.6 no longer supports that version of Windows. If you have a Velocity 3.5 Client running on Windows XP, you will have to either upgrade the operating system on that computer before upgrading the Velocity Client from 3.5 to 3.6, or replace that computer with one that has a supported version of Windows and then perform a new installation of the Velocity 3.6 Client.

The following procedure demonstrates how to upgrade an existing Velocity 3.5 standalone Workstation (on Windows 7) to Velocity 3.6, and also upgrade the database to SQL Server 2014 Express:

1. Make sure you are logged onto Windows as an administrator.
2. Run the **Setup.exe** file for the Velocity 3.6 installation:
 - If you have a Velocity 3.6 installation DVD, insert it into your DVD drive, and the auto-start feature should automatically start the Velocity Installer.
 - If you downloaded the files to install Velocity 3.6, use Windows Explorer to navigate to the folder containing those files, and double-click on **Setup.exe**.

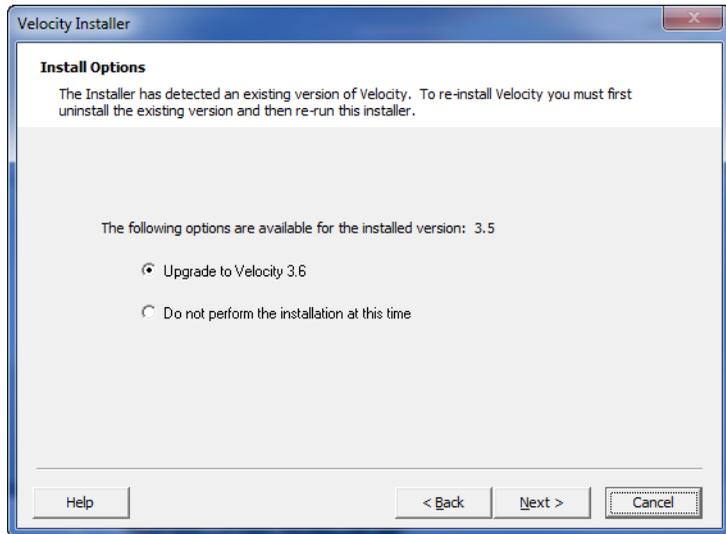
3. After the Velocity Installer's Welcome (or splash) screen appears, click **Next**.



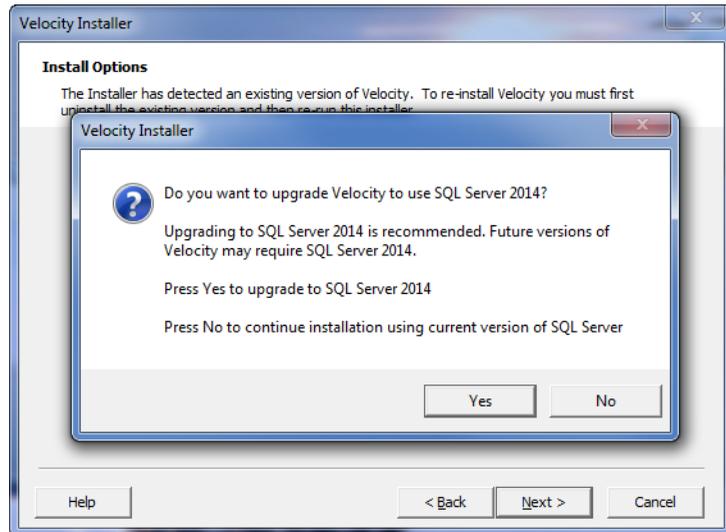
4. On the resulting End-User License Agreement page, select the **"I agree to the terms in the License Agreement"** option, and click **Next**.



5. On the resulting Install Options page, accept the default option to **“Upgrade to Velocity 3.6”**, and click **Next**.

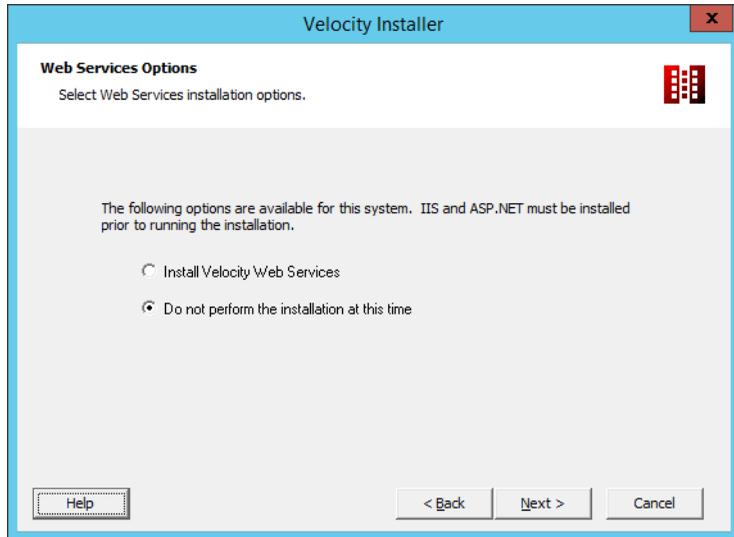


6. If your Velocity 3.5 system has its database running on the free SQL Server 2008 Express or SQL Server 2008 R2 Express, a dialog asks whether you want to upgrade to the free SQL Server 2014 Express.



- Click **Yes** to install the free SQL Server 2014 Express. (Your existing SQL Server 2008 Express or SQL Server 2008 R2 Express remains installed.)
If you are choosing this option, continue on to the next step in this procedure.
 - Click **No** to continue using your existing SQL Server 2008 Express or SQL Server 2008 R2 Express.
If you are choosing this option, go to Step 10 in this procedure.
7. If you are using SQL Server 2008 Express, follow the onscreen prompts to first upgrade to SQL Server 2008 R2 Express. When you are asked to restart your computer, do so, and then repeat steps 3 through 6 of this procedure.
 8. Follow the onscreen prompts to install SQL Server 2014 Express.

9. When you are asked to restart your computer, do so, and then repeat steps 3 through 6 of this procedure.
10. If the optional Velocity Web Services Client is currently installed on your Velocity 3.5 SP2.1 system, it is automatically upgraded (without asking). Otherwise, the following screen appears:



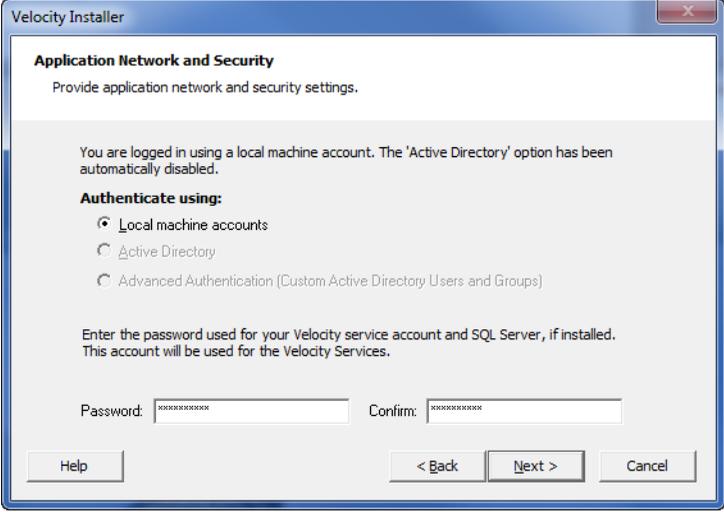
NOTE: Before you can install and use the Velocity Web Services Client, you must first install Microsoft's Internet Information Services. See "Installing IIS to Support the Velocity Web Services Client" on page 34.

Select an option to indicate whether or not you wish to install the Velocity Web Services, and then click **Next**.

- Select **Install Velocity Web Services** to install the Velocity Web Services.
- Select **Do not perform the installation at this time** to skip the installation of the optional Velocity Web Services.

NOTE: After Velocity has been installed and you have had a chance to install IIS, you can run the **vw2install.exe** file to install the Velocity Web Services Client. (This file is located in the folder where you installed Velocity. For an upgrade of an existing Velocity system, the default folder is C:\Program Files (x86)\Hirsch Electronics\Velocity. For a new installation of Velocity 3.6 SP1, the default folder is C:\Program Files (x86)\Identiv\Velocity.)

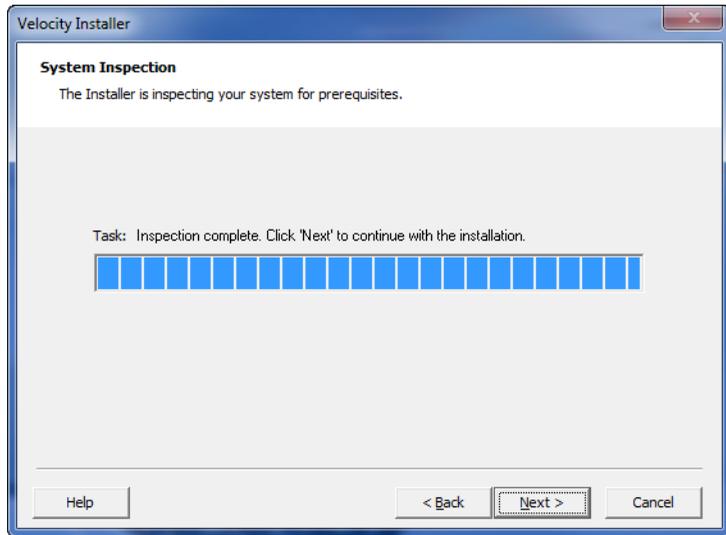
11. Because this example is for a standalone Velocity Workstation, the only available option on the resulting Application Network and Security page is to authenticate using **Local machine accounts**.



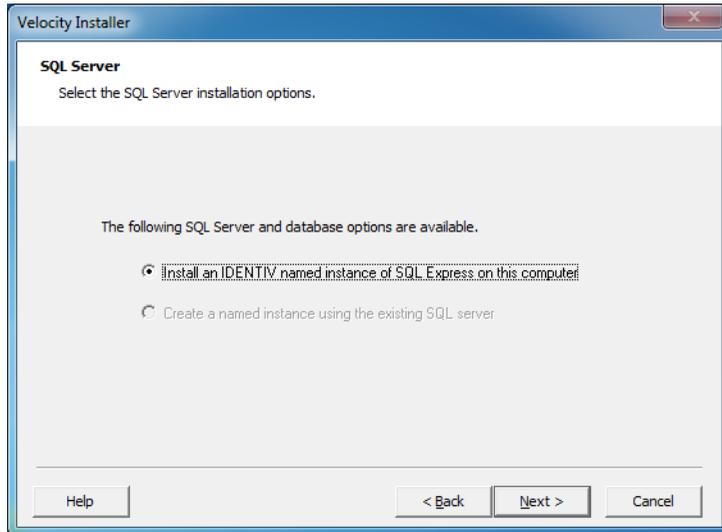
The screenshot shows a window titled "Velocity Installer" with a sub-header "Application Network and Security". The text inside reads: "Provide application network and security settings." Below this, it states: "You are logged in using a local machine account. The 'Active Directory' option has been automatically disabled." Under the heading "Authenticate using:", there are three radio button options: "Local machine accounts" (which is selected), "Active Directory", and "Advanced Authentication (Custom Active Directory Users and Groups)". Below the options, it says: "Enter the password used for your Velocity service account and SQL Server, if installed. This account will be used for the Velocity Services." There are two input fields: "Password:" and "Confirm:", both containing masked characters (dots). At the bottom, there are three buttons: "Help", "< Back", and "Next >", and a "Cancel" button on the far right.

Accept this option, enter the password for this computer's Velocity Services user account (in both the **Password** field and the **Confirm** field), and click **Next**.

12. On the resulting System Inspection page, click **Next** (after that button is enabled).



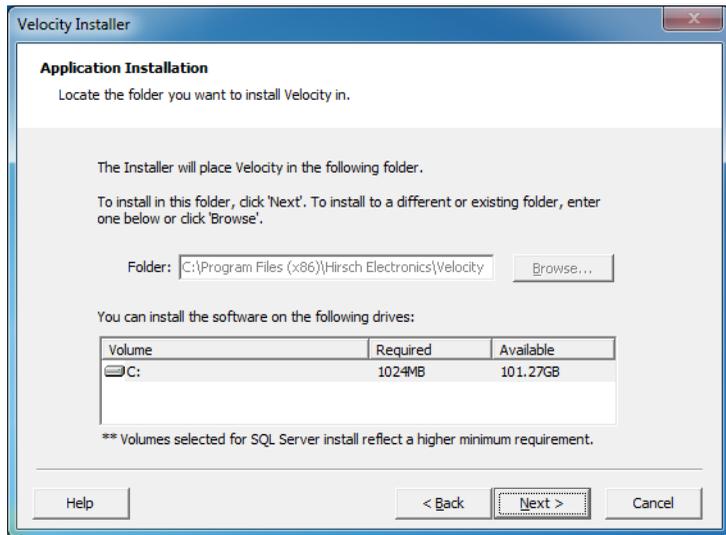
- On the resulting SQL Server page, only one option is available because in this example we chose to upgrade to SQL Server 2014 Express.



Click **Next**.

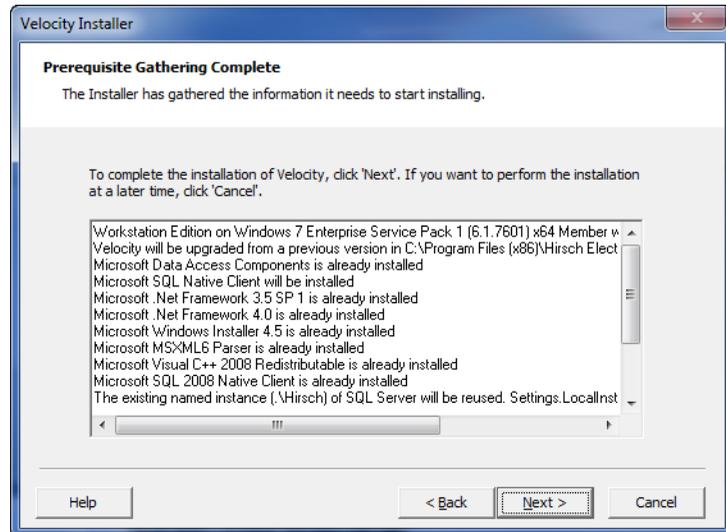
- On the resulting Database Installation (Location) screen, specify the location where the database will be installed, then click **Next**.

15. On the resulting Application Installation (Location) screen, click **Next**. (Because you are upgrading an existing installation of Velocity, the Browse button is disabled so you cannot change the value shown in the Folder field.)



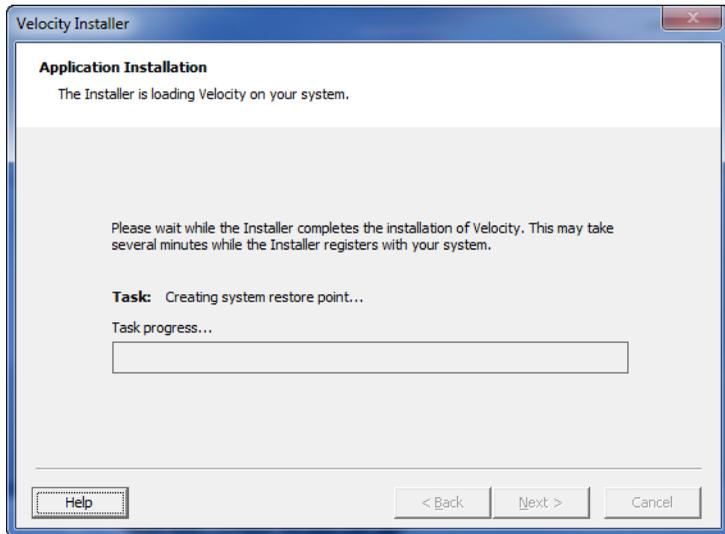
The Prerequisite Gathering screen appears. After a few minutes, the Prerequisite Gathering Complete screen appears.

16. On the Prerequisite Gathering Complete page, optionally review the displayed information, and click **Next**.

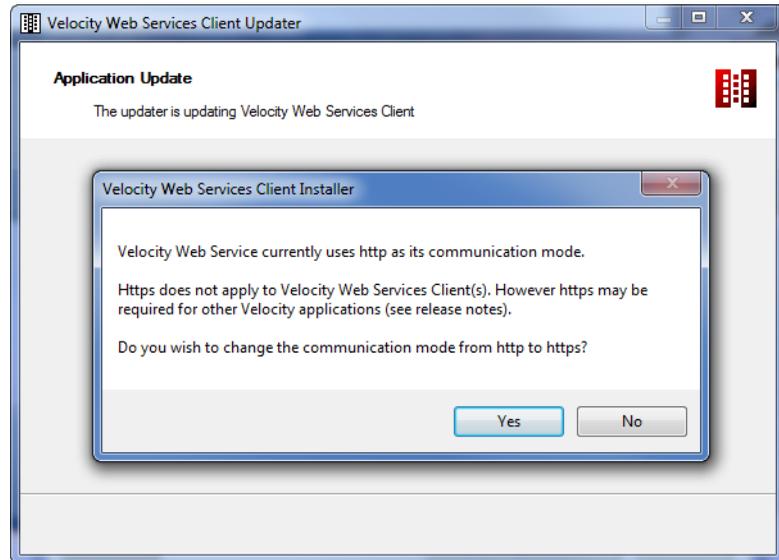


17. If there are any prerequisites that need to be installed, progress information is displayed on the Installing Prerequisites page. This could take several minutes. If necessary, follow the onscreen prompts.

18. The primary Velocity installation begins, and progress information is displayed on the Application Installation page.



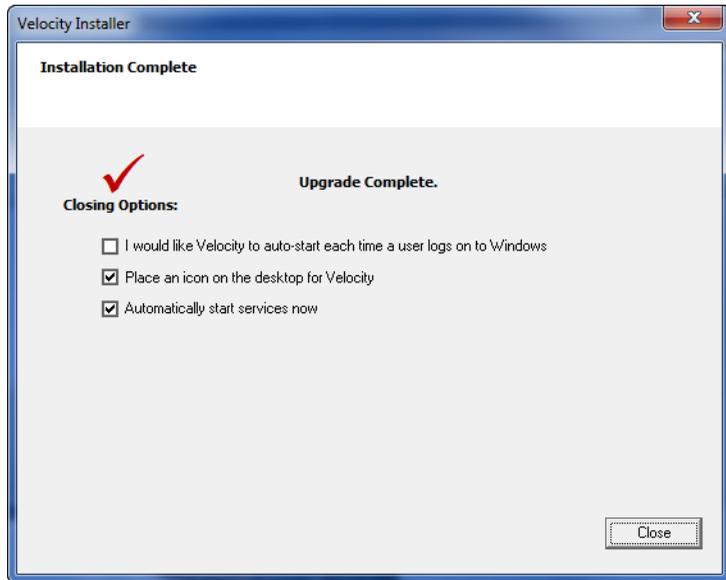
19. If the optional Velocity Web Services Client is installed (on your existing Velocity 3.5 SP2.1 system), then the Velocity Web Services Client Updater window appears, with a dialog asking whether you want the Velocity Web Service to use the secured HTTPS communications protocol.



- Click **Yes** to have the Velocity Web Service start using the secured HTTPS communications protocol.
- Click **No** to have the Velocity Web Service continue using the existing HTTP communications protocol.

NOTE: HTTPS will be required for the FICAM Integration being introduced in the Velocity 3.6 SP1 release.

20. When the Installation Complete page is displayed, review the Closing Options and change them if necessary, then click **Close**.



For more information, see “The Velocity Installer’s Closing Options” starting on page 91.

When you open Velocity again, the new version of Velocity should appear.

NOTE: If you had the Edge EVO Controller Integration or a Video Integration plug-in installed on your existing Velocity 3.5 system, then remember to obtain and install the newer version of those integrations which have been updated to run with the Velocity 3.6 SP1 release. The following table shows the compatible versions of integrations or optional components for Velocity 3.5 SP2.1 versus Velocity 3.6 SP1.

Component:	Compatible version for Velocity 3.5 SP2.1:	Compatible version for Velocity 3.6 SP1:
Edge EVO Controller Integration	1.0.1.53	1.0.2.1
Hirsch Video Integration framework	1.1.1	1.1.3
plug-in for Aventura	1.1.1.12	1.1.3.1
plug-in for unified American Dynamics	1.1.1.12	1.1.3.4
Velocity Web Services Client	3.5.1.67	3.6.3.5

Post-Installation

Configuring Your Firewalls

After you have installed Velocity 3.6, you can turn the Windows Firewall back ON and configure the firewall to accommodate access to the required SQL Server and Velocity ports. (This is required for a Velocity Client/Server installation, but is not necessary for a Velocity standalone Workstation installation where all the roles are performed by a single computer.)



If you are unfamiliar with firewall port configuration, contact your IT department for more information about doing this.

In many circumstances, you will have to perform the following procedures:

- Configure the Windows Firewall
- Assign a TCP/IP port to the Velocity polling engine
- Assign a TCP/IP port to the SQL Server Database Engine
- Start an instance of SQL Server

Configuring the Windows Firewall

Windows Firewall helps prevent unauthorized access to computers in a network. By default, the Windows Firewall is turned ON after the operating system is installed. If a firewall is turned ON but it is not configured correctly, attempts by users to connect to SQL Server and Velocity are blocked. To access an instance of SQL Server which is behind a firewall, the database administrator needs to configure the firewall on the computer that is running SQL Server to allow users access.



Opening ports in your firewall can leave your server exposed to malicious attacks. Make sure that you understand firewall systems before you open ports.

The following procedures will guide you through the steps that you need to configure the Windows Firewall in Windows Server 2008 R2 to allow users access to SQL Server.

1. Click **Start ► All Programs ► Administrative Tools ► Server Manager**. The Server Manager appears.
2. In Server Manager, expand the **Configurations** tab and then expand **Windows Firewall with Advanced Security**.
3. Right-click **Inbound Rules** and click **New Rule**.
The New Inbound Rule Wizard appears.
4. On the New Inbound Rule Wizard's Rule Type page, select the **Port** option to control connections for a TCP or UDP Port. Click **Next** to continue with the wizard.
The Protocol and Ports page appears.
5. On the Protocol and Ports page, specify the protocols and ports to which this rule applies.
Because SQL Server, when installed as a default instance, uses port **1433** as the default port, choose the TCP option and then specify a specific port number.
Click **Next** to continue with the wizard.



Registered Ports are those from **1024 through 49151**, and **Dynamic and/or Private Ports** are those from **49152 through 65535**. The registered ports number range should not be used for named SQL Server instances because a future conflict is possible. Consult your IT department for assistance regarding port assignment.

6. On the Action page, specify the action to be taken when a connection matches the conditions specified in this rule. In this case, choose **Allow the connection** and click **Next**.
The Profile page appears.

7. On the Profile page, select **Domain**, and click **Next**.
The Name page appears.
8. Provide a meaningful name and description. For example:
Name:
SQL Server 2008 default Port 1433

Description (Optional):
Enable SQL Server 2008 Default Port (1433) for user connectivity.
9. Click **Finish** to complete the wizard.
After the wizard configuration is complete, you will be able to see the new rule available under Inbound Rules.
10. Repeat Steps 3 through 9 to set the UDP Port to **1434**.
11. Repeat Steps 3 through 9 to set the TCP Port to **2025**, to enable connection from remote workstations.

Assigning a TCP/IP Port Number to the SQL Server Database Engine

If enabled, the default instance of the SQL Server database engine listens on TCP port 1433. Named instances of the SQL Server database engine are configured for dynamic ports, which means they select an available port when the SQL Server service is started.

When connecting to a named instance through a firewall, configure the database engine to listen on a specific port so that the appropriate port can be opened in the firewall.

To assign a TCP/IP port number to the SQL Server Database Engine, perform these steps:

1. From the Windows desktop, click **Start ► All Programs ► Microsoft SQL Server 2008 ► Configuration Tools ► SQL Server Configuration Manager**.
The SQL Server Configuration Manager appears.
2. On the console pane, expand **SQL Server Network Configuration** then **Protocols for <instance name>**, and then double-click **TCP/IP**.

The TCP/IP Properties dialog box appears.

3. Select the **IP Addresses** tab.
4. Scroll down and find the **IPAll**.
5. In the IPAll box, select the **TCP Port** option and enter the port number on which you want this IP address to listen, then click **OK**.

For example: enter 1433, then click **OK**.

6. Restart the SQL Server instance, as explained in “Starting an Instance of SQL Server (from the SQL Server Configuration Manager)” on page 116.

Starting an Instance of SQL Server (from the SQL Server Configuration Manager)

To stop or start an instance of SQL Server from the SQL Server Configuration Manager:

1. From the Windows desktop, click **Start ► All Programs ► Microsoft SQL Server 2008 ► Configuration Tools ► SQL Server Configuration Manager**.

The SQL Server Configuration Manager appears.

2. In the console pane, expand **SQL Server Services**.
3. In the details pane, right-click the named instance of SQL Server then click **Start**.

For example: SQL Server (MSSQLSERVER)



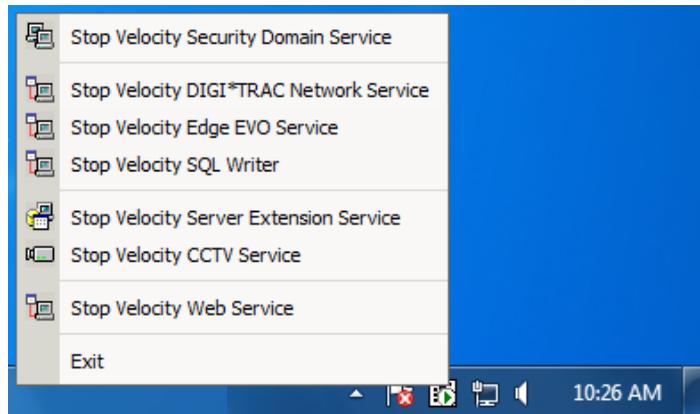
A green arrow on the icon next to the server name and on the toolbar indicates that the server started successfully.

4. Click **OK** to close the SQL Server Configuration Manager.

Starting Velocity

1. If you have not already logged into Windows, start Windows now.
2. At the Log On screen, log on to Windows initially as 'Administrator' or as the person who installed Velocity.
3. Enter the administrator password specified when setting up the administrator for Windows (see page 15), then click **OK**. The Windows desktop appears.

The Velocity Service Control Manager (SCM) icon should appear in the desktop tray at the lower right corner of the screen. Right-clicking on the SCM icon pops up a menu that includes commands to start or stop each service. For example:



The Velocity required services (which affect the SCM icon's appearance) are:

- Velocity Security Domain Service
- Velocity DIGI*TRAC Network Service
- Velocity SQL Writer (added in the Velocity 3.5 SP2 release to offload database logging tasks)

The following additional services are required if you install optional software components or integrations:

- Velocity Web Service (for the optional Velocity Web Services Client)
- Velocity Edge EVO Service (for the Edge EVO integration)

The appearance of the SCM icon indicates which of the required services for your system are currently running:

This icon:	Indicates:
	All of the required services for your system are running. A green arrow appears.
	The Security Domain Service is running, but one or more of the other required services for your system is stopped. A red circle appears around a green arrow.
	All of the required services for your system are stopped. A red square dot appears in place of the green arrow.

Wait until the arrow turns green before proceeding. This can take 30 seconds or more after a reboot or manual restart.

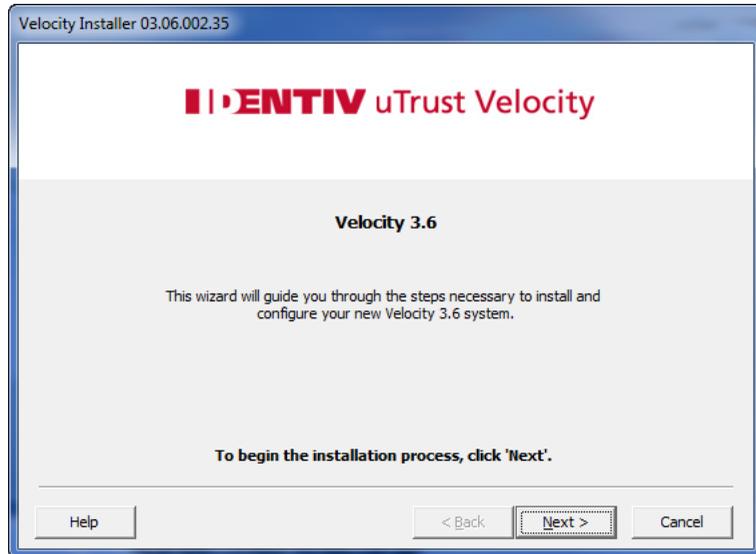
If the Velocity SCM does not start automatically, click on the Windows Start button and select either **All Programs ► Hirsch Electronics Velocity ► Service Control Manager** (for an upgraded installation) or **All Programs ► Identiv uTrust Velocity ► Service Control Manager** (for a new installation). The Velocity services should restart automatically.

4. Do one of these:



- If you indicated during the installation that you wanted the Velocity shortcut icon to appear on the Windows desktop, you can double-click this icon.
- For an upgraded installation, click on the Windows Start button and select **Start ► Programs ► Hirsch Electronics Velocity ► Velocity**.
- For a new installation, click on the Windows Start button and select **Start ► Programs ► Identiv uTrust Velocity ► Velocity**.

The Velocity splash screen appears:



Velocity Licensing

Licensing of Velocity software was introduced in the 3.5 release. In response to customer feedback, the licensing scheme has been simplified from four editions to two editions, and the pricing model has been changed so that the price of the Velocity software is now included in the system purchase. Starting with the 3.5 SP1.1 release, the process of installing and managing Velocity has been further simplified by eliminating the need to obtain a license key for the Unlimited Edition of Velocity.

Velocity is now offered in two editions: Unlimited Edition (for commercial customers), and FED Unlimited Edition (for federal / government customers). The following table shows the features of these editions.

Feature	Unlimited Edition	FED Unlimited Edition
Expiration	Never	Never
Number of Doors	Unlimited	Unlimited
Number of Clients	Unlimited	Unlimited
DVR Interface	Yes	Yes
CCTV Interface	Yes	Yes
CSRI Interface	Yes	Yes
Badging	Yes	Yes
Graphics	Yes	Yes
Email Writer	Yes	Yes
Serial Writer	Yes	Yes
Message Queue Writer	No	Yes
Velocity Certificate Service	Not applicable	Available separately

Mapping of the Previous Licensing Options to the New Licensing Options

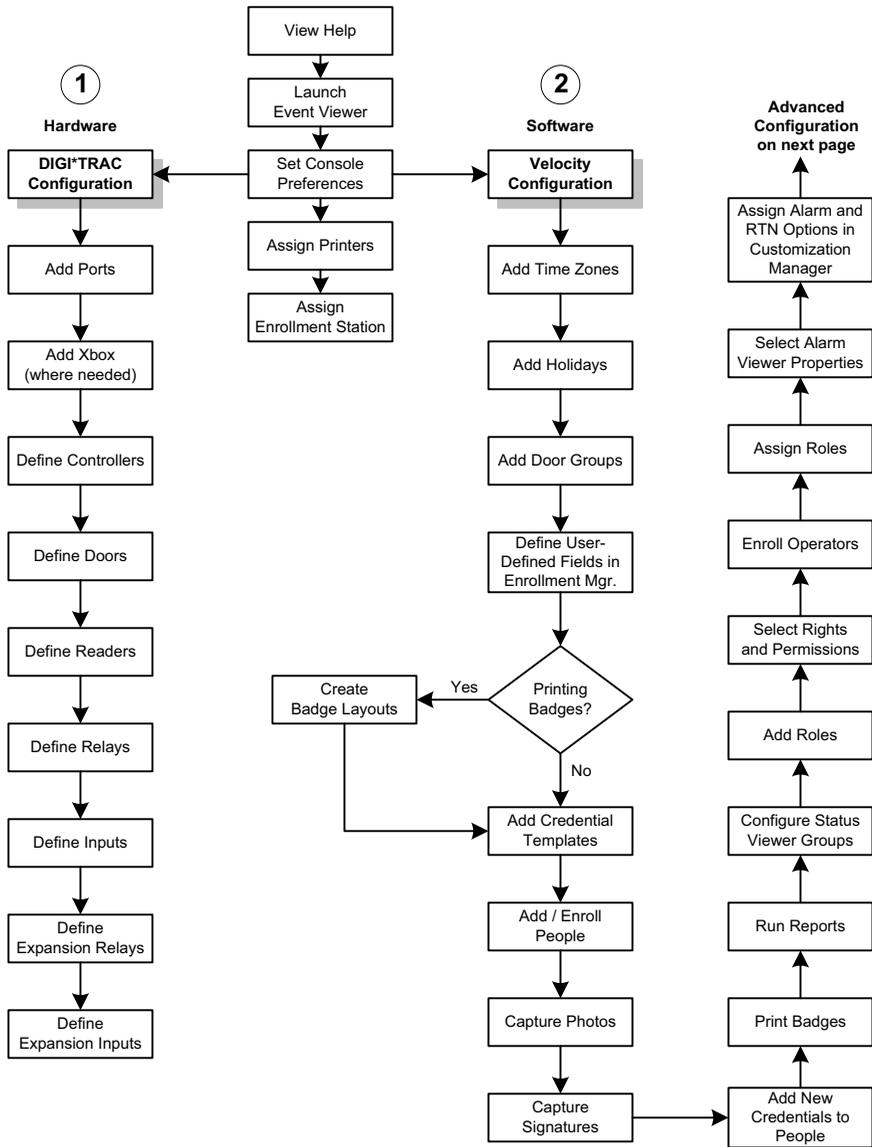
The following table shows the mapping of the original 3.5 licensing options to the two new editions of Velocity, which occurs when the Velocity 3.5 SP 1.1 or 3.6 SP1 release is applied to an existing installation of Velocity 3.5.

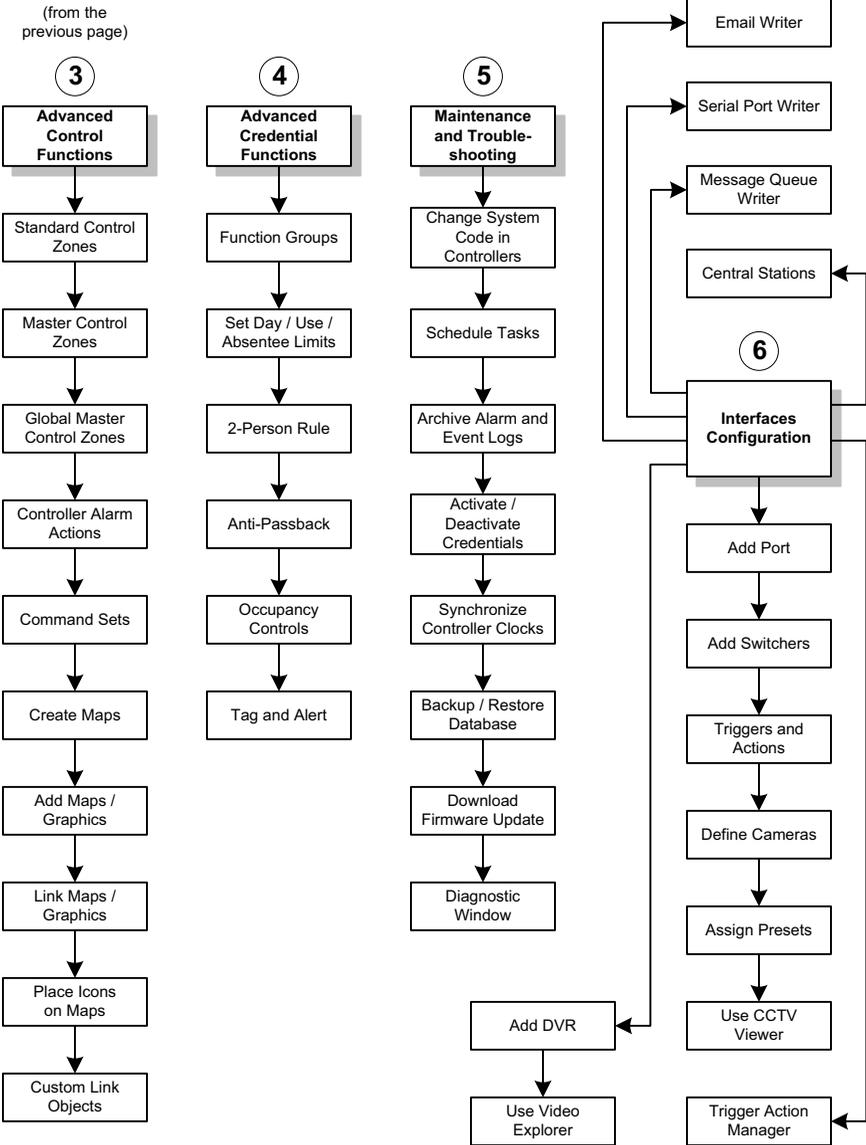
Previous Licensing Option maps to:
Velocity Workstation License	
Velocity Workstation (WS8) Expandable	
Velocity Corporate License	
Velocity Corporate (CORP32) Expandable	Velocity Unlimited Edition
Velocity Enterprise Level 1	
Velocity Enterprise Level 2	
Velocity Enterprise Level 3	
Velocity Demo License	
Velocity Federal License	Velocity FED Unlimited Edition

What's Next

After installing Velocity, you will need to configure it to define your particular physical access system. The general instructions for doing so are provided in Velocity's online help system.

The following two pages provide a flowchart of the most useful procedures for configuring and defining Velocity.





Custom Active Directory User & Group Names Setup

Velocity by default uses specific Windows User Groups and User names for application and SQL authentication. The two Active Directory group names it uses are: "Velocity Users" and "Velocity Services". There is also one Active Directory user: "VelocityServices".

Depending on the installation, this user and groups will either be in Active Directory on your domain controller, or they will be local to your Velocity server. Where the user and groups reside depends on whether:

- Velocity and SQL are installed on the same computer, or
- Velocity and SQL are installed on separate computers.

When Velocity and SQL are installed on the same computer, the only group that is created on the domain controller is the Velocity Users group. The Velocity Services group and the VelocityServices user are local to the Velocity server.

When Velocity and SQL are installed on separate computers, both groups and the user are all located on the domain controller.

There are instances when you will not want to use the default Velocity Users group, Velocity Services group, or VelocityServices user names. Government organizations in particular often require the assignment of unique user group names for every unit or department within the organization.



This procedure should be performed by an IT professional thoroughly familiar with the intricacies of SQL Server database management and Windows Active Directory.

Customizing a user group and user names is accomplished in several stages:

1. Create a new custom users group to replace the “Velocity Users” group, then assign members to it on the domain controller (page 127).
2. Create a new user to replace the VelocityServices accounts (page 132).
3. Assign SQL Logins for the new users group (page 135).
4. Assign new users group permissions to Velocity (page 139).
5. Enable Velocity operators to use the new users group (page 142).
6. Define login rights for Velocity services (page 144).
7. Enable the new users group to use Velocity services (page 150).
8. Install this custom version of Velocity on all relevant clients.
9. Assign permissions to folders and files that the new custom service uses (page 156).

The remainder of this guide explains this multi-step procedure.

Hint: The purpose of custom user and groups is to replace the defaults. Making sure the new groups work before deleting the defaults is strongly recommended. Because every installation is different, make sure you review your existing default accounts to guarantee that the new accounts have equivalent rights and permissions.

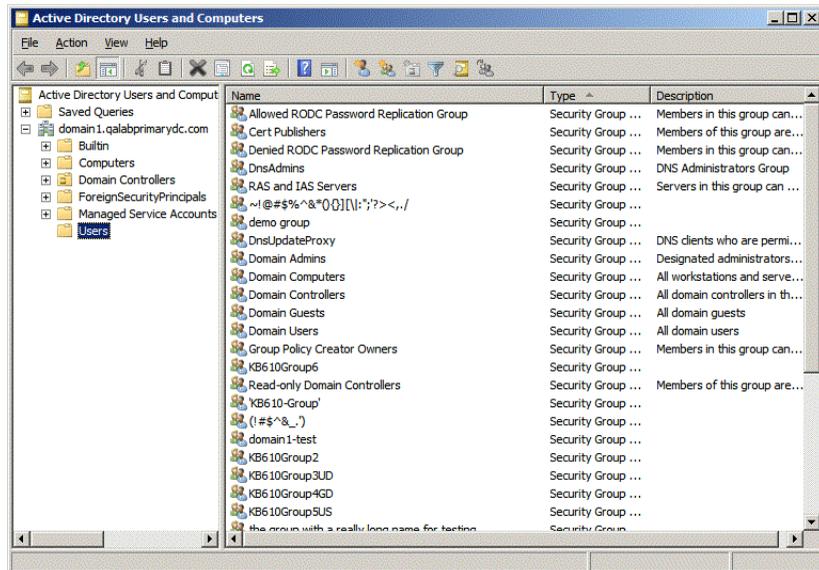
Creating a New Users Group and Assigning Members on the Domain

This section explains how to create a new users group and assign members to it on the domain controller.

To create a non-Velocity named services group and assign users:

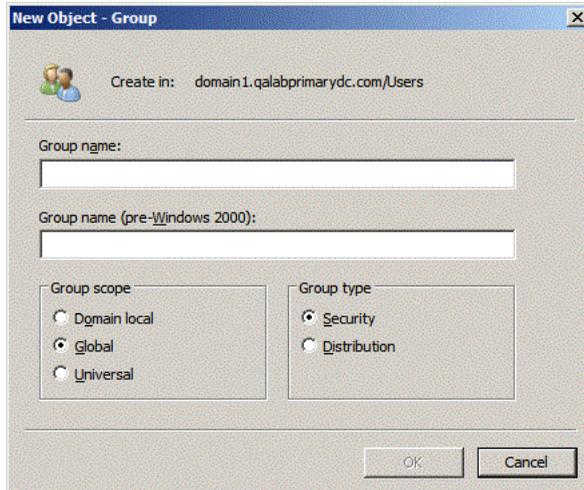
1. In Administrative Tools, select **Computer Management**.

The Active Directory Users and Computers window appears:



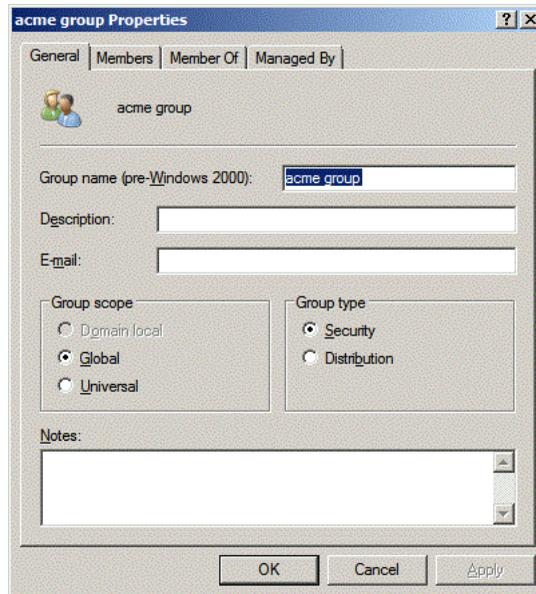
2. Right-click the **Users** folder (in the left pane) and select **New ► Group**.

The New Object - Group dialog box appears:



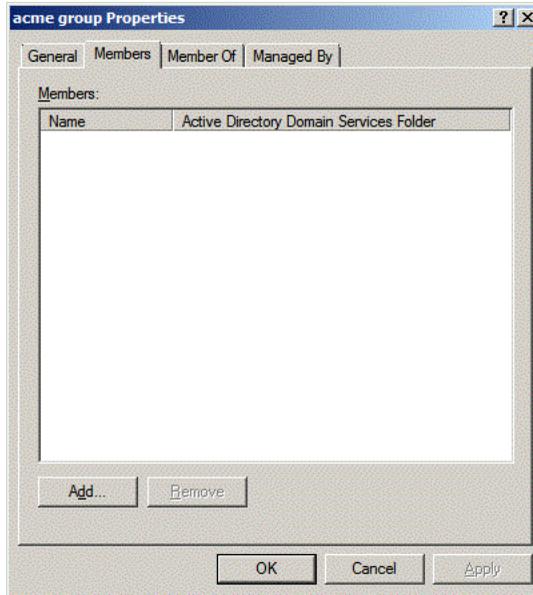
3. Enter the name of the group you want to use (instead of the Velocity Users group), then click:
 - Group scope: Global
 - Group type: Security

The dialog box now resembles this example:



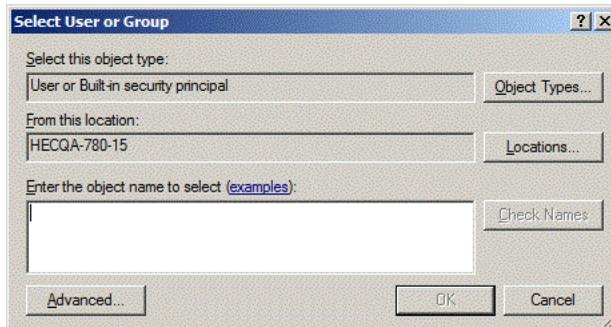
4. Click **OK**.
The new users group appears in the Users folder.
5. Right-click the new users group and select **Properties**, then click the **Members** tab.

The Members tab is displayed:



6. Click the **Add** button.

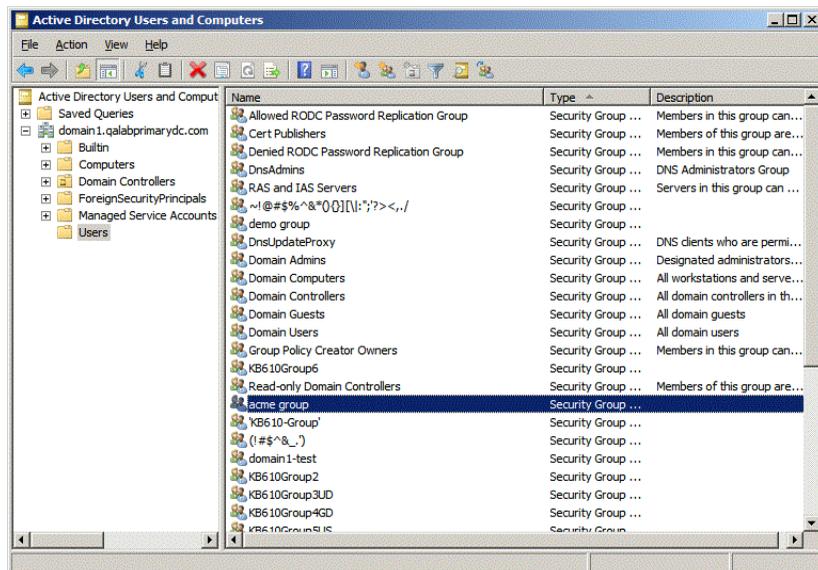
The Select Users, Contacts, Service Accounts, or Groups dialog box appears:



7. Click **Locations** and select this domain server's location.

8. Do one of these:
 - Enter the name of the object you are seeking and click **Check Names**. If the name is correctly entered, the name is underlined.
 - Click **Advanced** and in the Common Queues section, select a text string to find the required members. Click **Find Now**. All relevant users appear in the search results. Select one or more users.
9. Click **OK** twice.

The new users group with associated users appears in the Users folder.



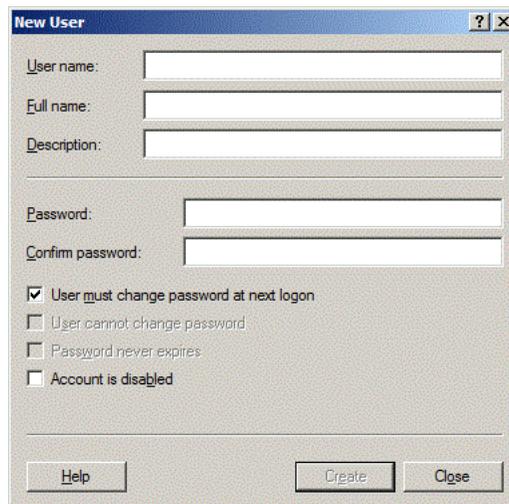
Creating a New Services Account

This section explains how to create a new services account and assign permissions to it on the local Velocity server.

To create a new services account on the local Velocity server:

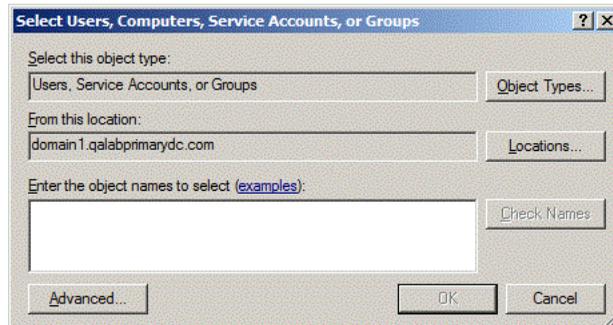
1. Right-click on **My Computer** (or Computer) and select **Manage**.
The Server Management screen appears.
2. Expand **Configuration** to reveal **Local Users and Groups**.
3. Right-click on Users and select **New User**.

The New User dialog appears:



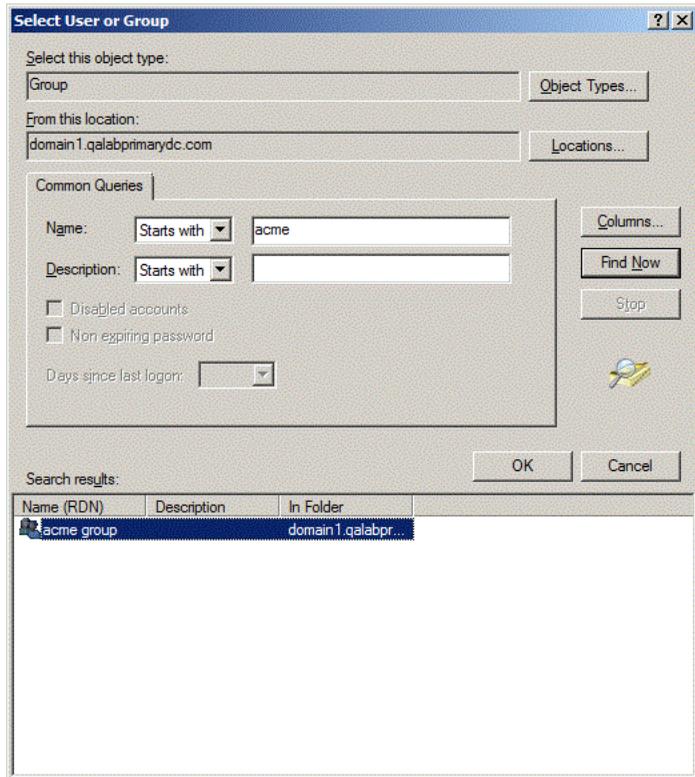
4. Enter the new user name and the password.
5. Make this user a member of the administrator group on the Velocity server (not a domain administrator).
6. Click **Create**, then click **Close**.
7. Right-click on the user you just created and select **Properties**.
The Properties dialog appears.
8. Click on the **Member of** tab, then click the **Add...** button.

The Select Users, Computers, Service Accounts, and Groups dialog appears:



9. Click **Locations** and specify the local server, then click OK.
10. For the 'Enter the object names to select' field, do one of these:
 - Enter Administrators and click **Check Names**. If the name is correctly entered, the name is underlined. Click **OK** twice.

- Click **Advanced...** and in the Common Queries section, select a text string to find the administrators group. Click **Find Now**. All relevant groups appear in the 'Search results' window. Select the user you require. Click **OK** twice.



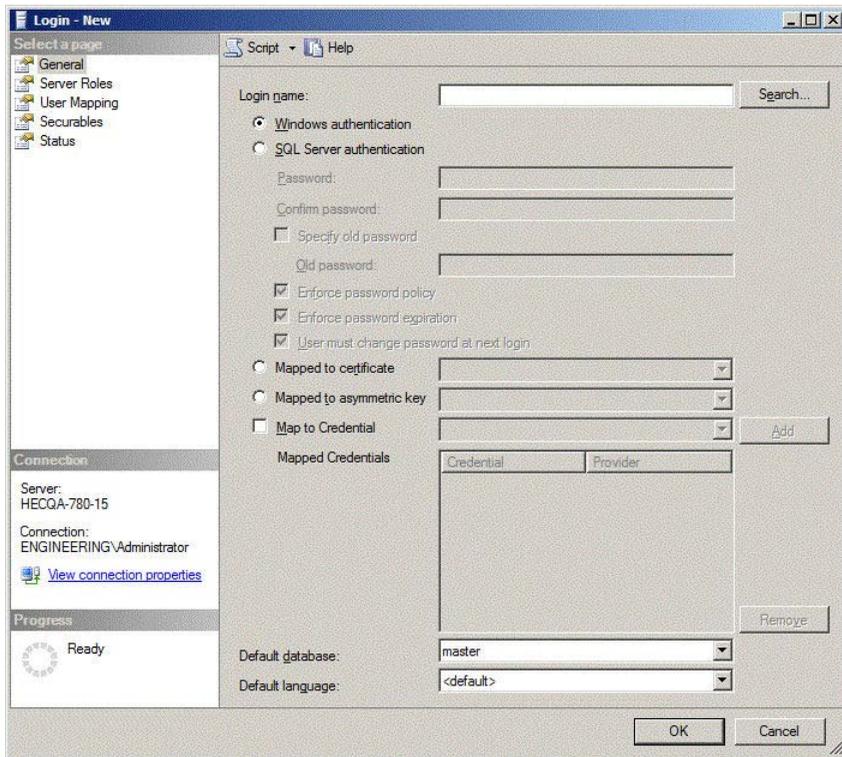
Assigning SQL Logins for the New Users Group

This section explains how to assign the necessary SQL logins, from the computer on your system that contains SQL Server and the Velocity database.

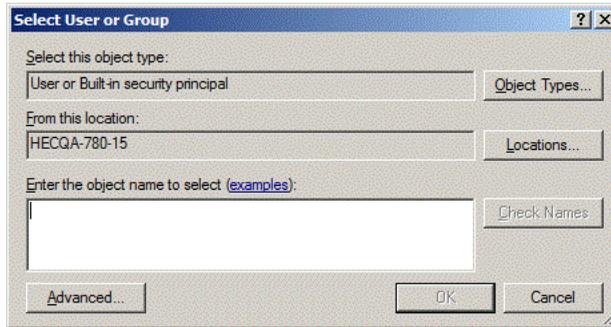
To assign a login for this new users group:

1. Open SQL Server.
The Microsoft SQL Server Management Studio appears.
2. Expand the **Security** folder, then right-click the **Login** folder and select **New Login...**

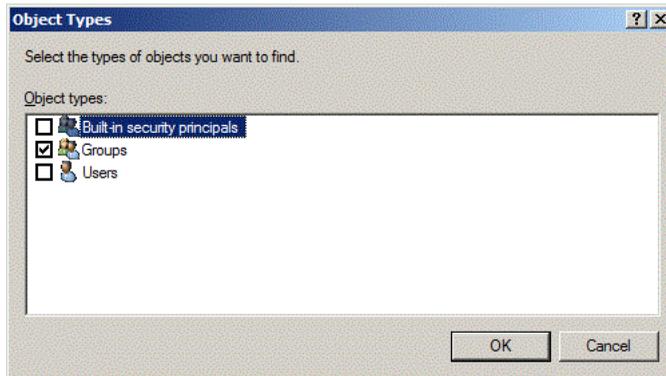
The Login - New dialog appears:



- For the Login name, click **Search**.
The Select User or Group dialog box appears.

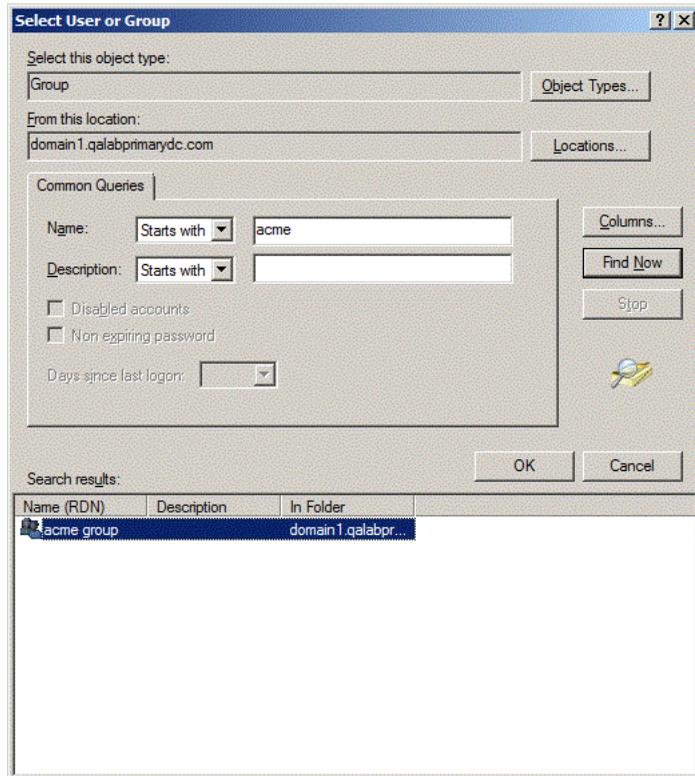


- Click **Object Types**, select the **Groups** check box, and then click **OK**.



- Click **Locations** and select the domain server where the newly defined users group resides, then click **OK**.
- Do one of these:
 - Enter the users group name you are seeking and click **Check Names**. If the name is correctly entered, the name is underlined. Click **OK**.

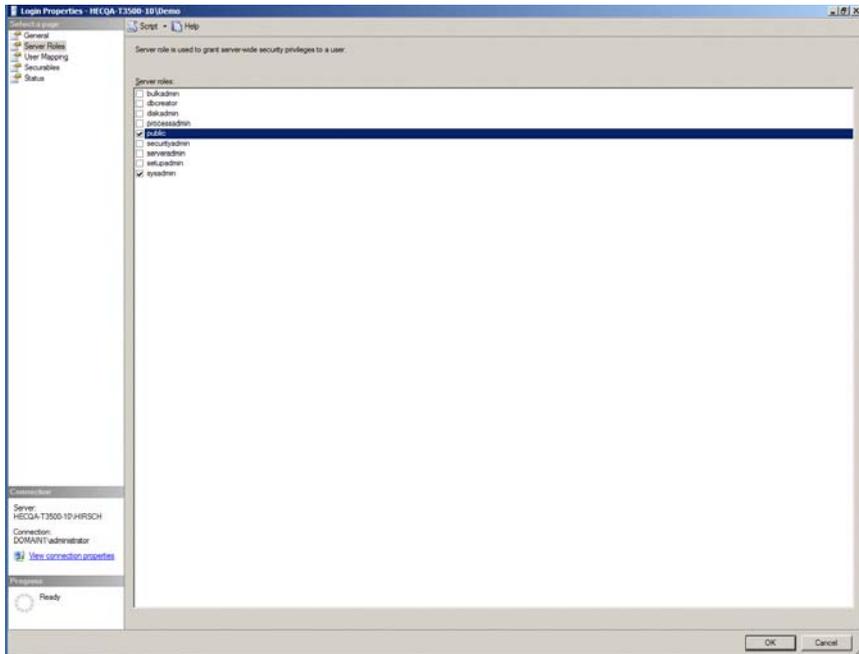
- Click **Advanced** and in the Common Queries section, select a text string to find the required group. Click **Find Now**. All relevant users groups appear in the 'Search results' pane. Select the one you want. Click **OK**.



The users group appears in the 'Login name' field.

- Click **Server Roles** in the left pane.
The Server Roles page appears.

8. Select the **public** and **sysadmin** check boxes, as shown in this example:



9. Click **User Mapping** in the left pane.
The User Mappings page appears.
10. Select the **Velocity** check box in the top pane.
11. Click **OK**.
12. Click **Create**, then **Close**.

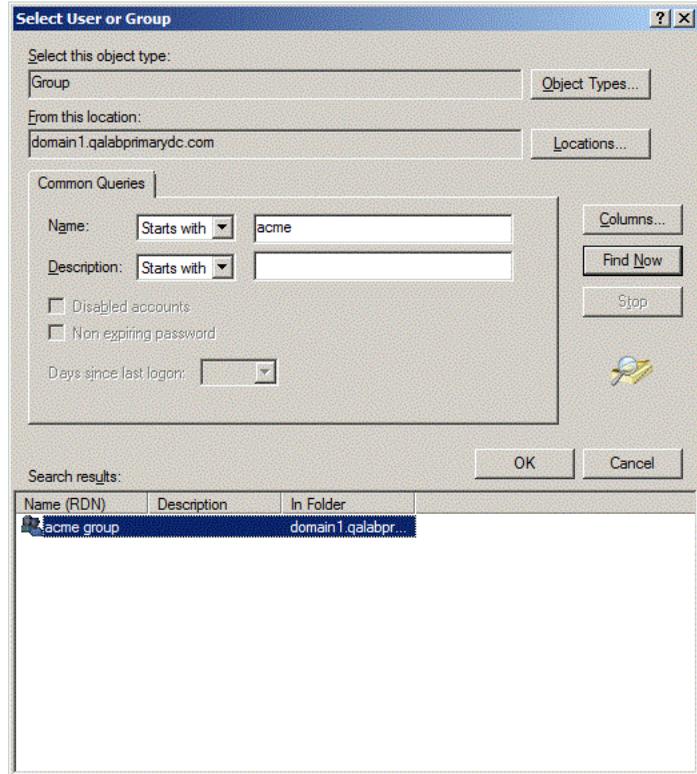
Assigning the New Users Group Permissions to Velocity

This section explains how to assign the new users group permissions to the Velocity directory.

To assign the new users group permissions to Velocity:

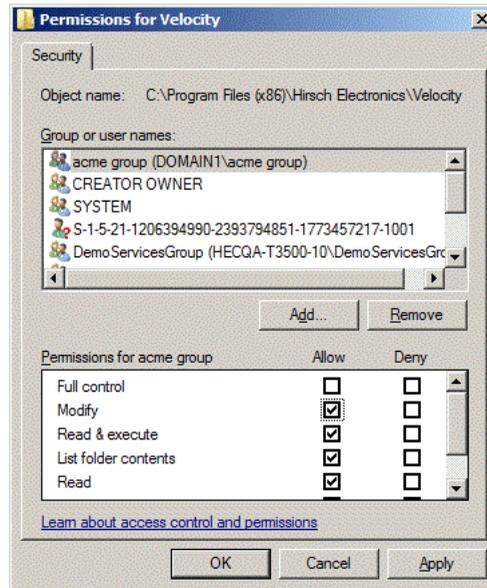
1. On the Velocity server, open Windows Explorer.
2. From the **Program Files (x86)** folder, select **Identiv** and then **Velocity**.
3. Right-click the Velocity folder and select **Properties**.
The Velocity Properties dialog box appears.
4. Select the **Security** tab, then click **Edit**.
5. In the 'Permissions for Velocity' dialog box, click **Add**.
The 'Select Users, Computers, Service Accounts, and Groups' dialog box appears.
6. If required, click **Locations** and select the domain server, then click **OK**.
7. At the 'Enter the object names to select' dialog box, do one of these:
 - Enter the users group name you are seeking and click **Check Names**. If the name is correctly entered, the name is underlined.

- Click **Advanced** and in the 'Common Queries' section, select a text string to find the required group. Click **Find Now**. All relevant users groups appear in the search results. Select the previously-defined users group.



8. Click **OK**.
The 'Permissions for Velocity' dialog box reappears, with the selected users group highlighted.

9. In the 'Permissions' area at the bottom of the page, select every 'Allow' check box except for the 'Full control' permission, as shown in this example:



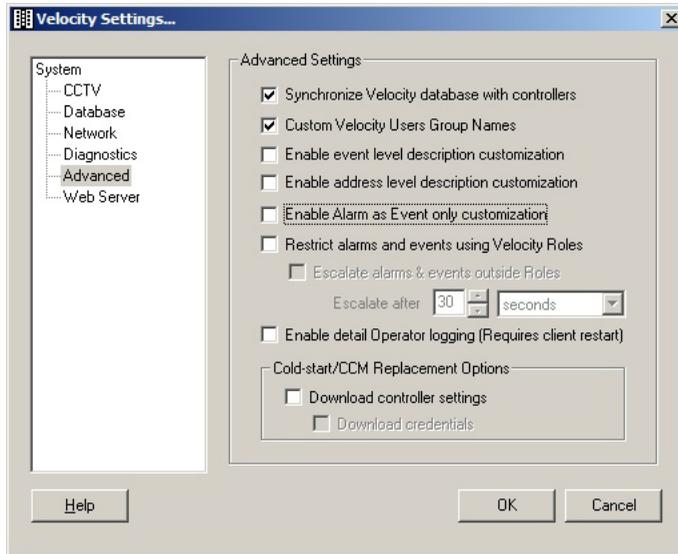
10. Click **OK**.

Enabling Velocity Operators to Use the New Users Group

This section explains how to enable Velocity operators to use the new users group.

To enable Velocity operators to use the new users group:

1. At the Velocity server's desktop, right-click on the Velocity Service Control Manager icon in the tray and select **Properties**.
The Velocity Settings dialog box appears.
2. Select the **Advanced** option in the left pane, then select the 'Custom Velocity Users Group Names' check box:



A warning message asks if you want to proceed.

3. Click **Yes**, then click **OK** twice.
4. Open Velocity.
5. From the Administrator pane, select **Velocity Configuration** then **Operators**.

Because you have ceded control for creating operators to Active Directory by selecting Custom Velocity User Group Names in the Velocity settings, you must use an existing operator previously created in Active Directory.

6. In the right pane, double-click an existing operator name. This operator name must already be resident in Active Directory.
The Operator Properties dialog box appears.
7. In the 'Name' box, enter a name for this operator.
8. In the 'Domain' list, select the domain where the newly-defined users group resides.
9. Fill out all other fields and roles as required.
10. Click **OK**.
11. Add other operators to this domain as required.

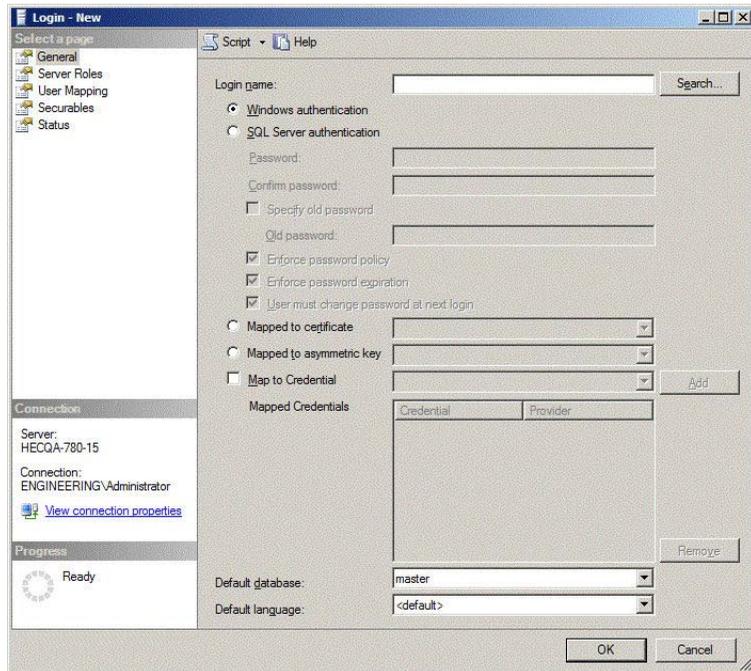
Defining SQL Login Rights for Velocity Services

This section explains how to define SQL login rights for Velocity services.

To define the SQL login rights for Velocity services:

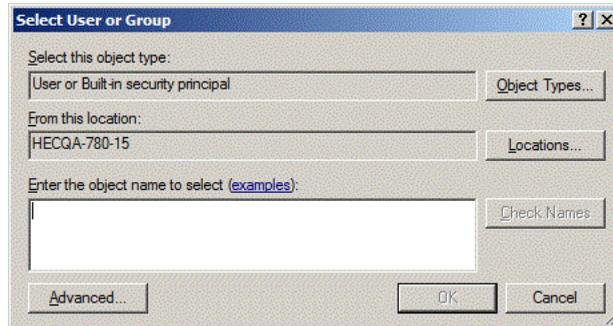
1. From the computer on your system that contains SQL Server and the Velocity database, open SQL Server.
The Microsoft SQL Server Management Studio appears.
2. Expand the **Security** folder, then right-click the **Login** folder and select **New Login...**

The Login - New dialog box appears:

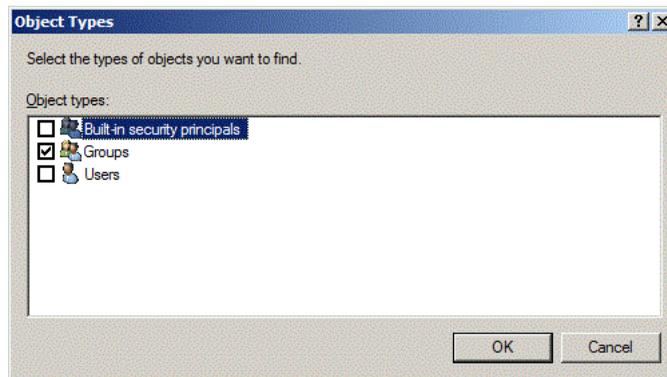


3. For the Login name, click **Search**.

The Select User or Group dialog box appears.

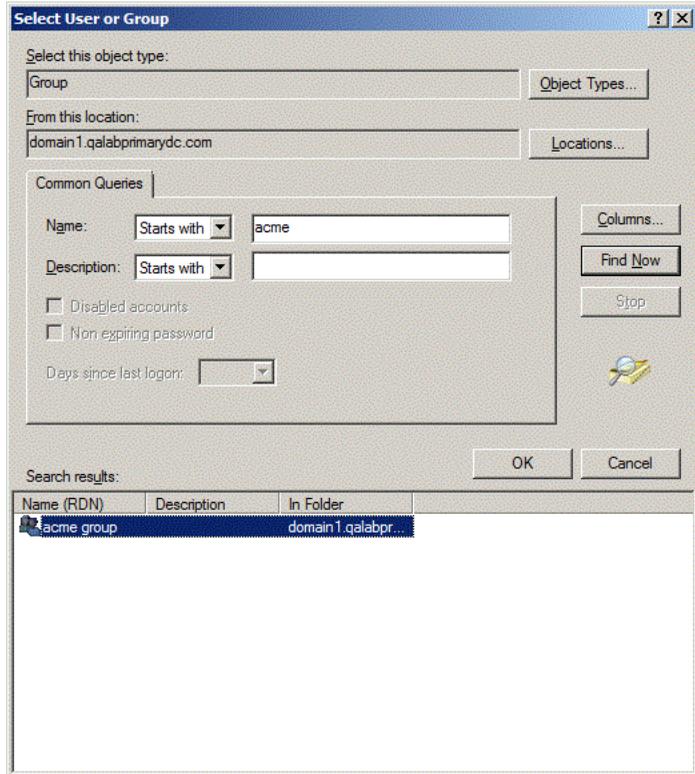


4. Click **Object Types**, select the 'Groups' check box, and then click **OK**.



5. Click **Locations** and select the local Velocity account, then click **OK**.
6. Do one of these:
 - Enter the users group name you are seeking and click **Check Names**. If the name is correctly entered, the name is underlined. Click **OK**.

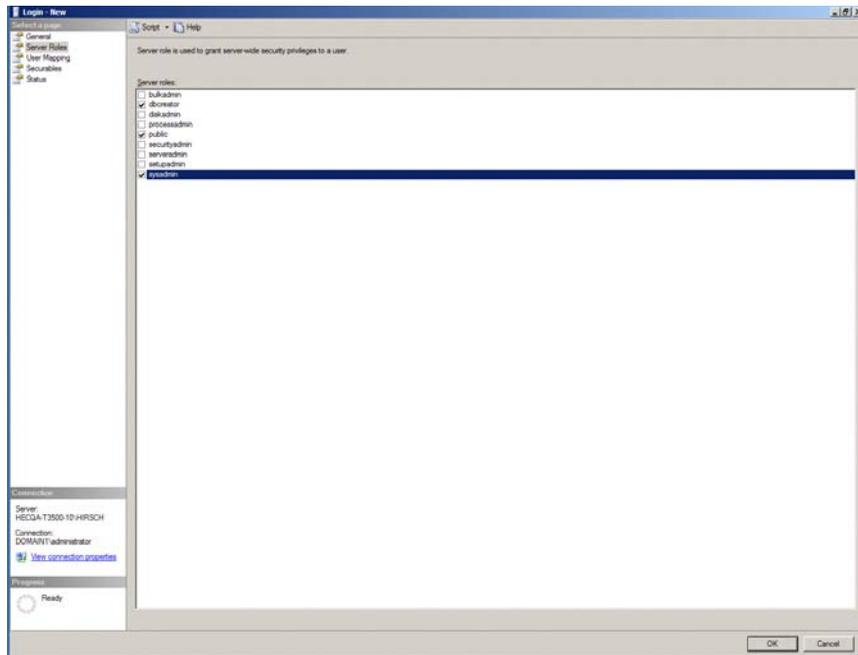
- Click **Advanced** and in the 'Common Queues' section, select a text string to find the required group. Click **Find Now**. All relevant users groups appear in the search results. Select the one you want. Click **OK**.



The users group appears in the 'Login name' field.

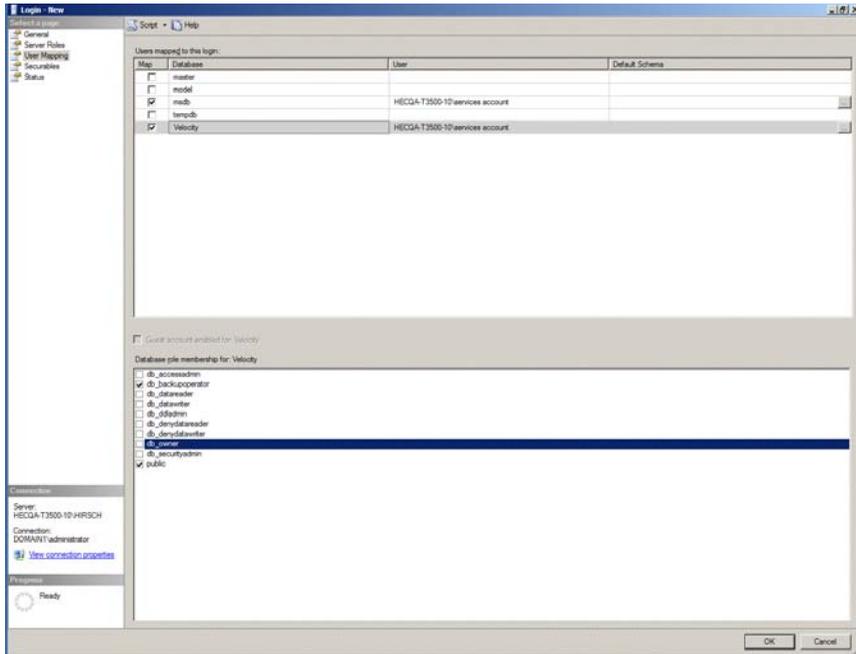
7. Click **Server Roles** in the left pane.
The Server Roles page appears.

8. Select the **dbcreator**, **public**, and **sysadmin** check boxes, as shown in this example:

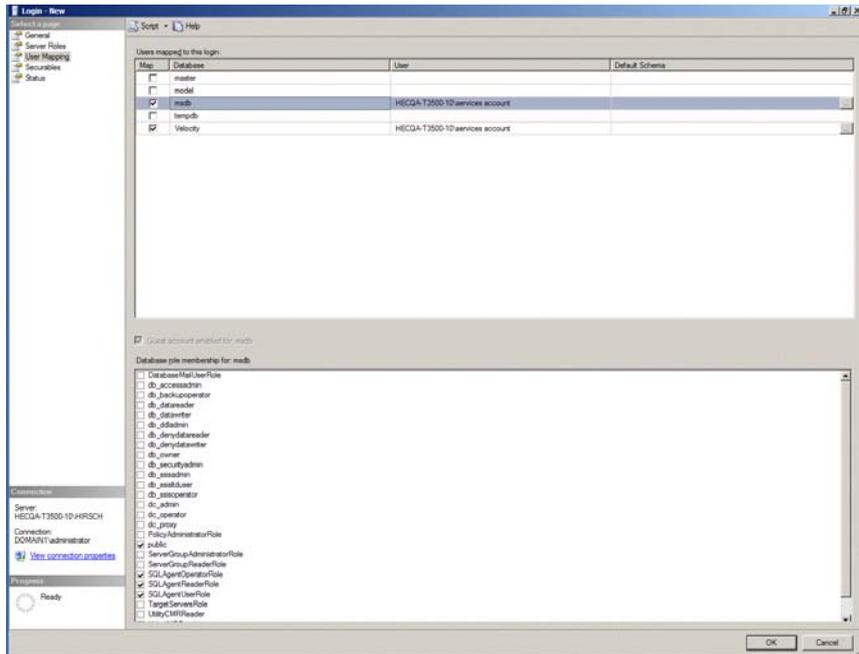


9. Click **User Mapping** in the left pane.
The User Mappings page appears.
10. Select the **Velocity** and **msdb** check boxes in the top pane.

11. In the Database role membership pane, check these members:
- For Velocity: **db_backupoperator** and **public**, as shown in this example:



- For msdb: **public**, **SQLAgentOperatorRole**, **SQLAgentReaderRole**, and **SQLAgentUserRole**, as shown in this example:



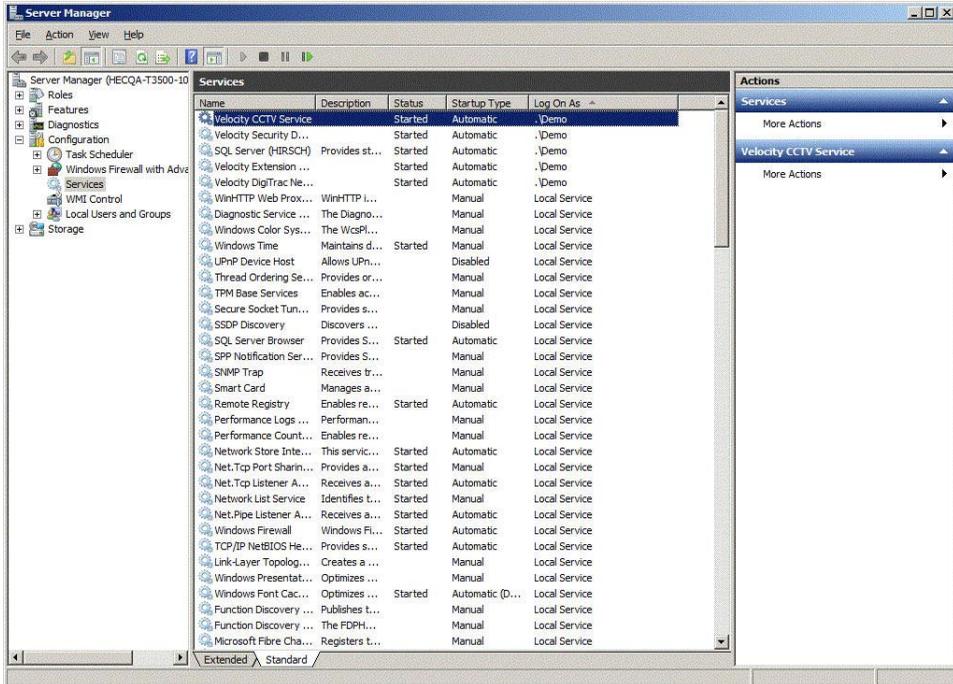
12. Click **OK**.
13. Click **Create**, then click **Close**.

Enabling the New Users Group to Use Velocity Services

This section explains how to enable the new users group to use Velocity services on the Velocity server.

To enable the new users group to use Velocity services from the Velocity server:

1. Right-click My Computer (or Computer) and select Manage. The Server Manager appears.
2. Expand the Configuration object and highlight **Services**. The Services that are running on this computer appear:



Depending on whether your Velocity system includes optional software components or integrations, the following Velocity-specific services could be running on this computer:

- Velocity CCTV Service
- Velocity DigiTrac Network Service
- Velocity Edge EVO Service
- Velocity Extension Service
- Velocity Security Domain Service
- Velocity SQL Writer
- Velocity Web Service
- SQL Server (Hirsch)

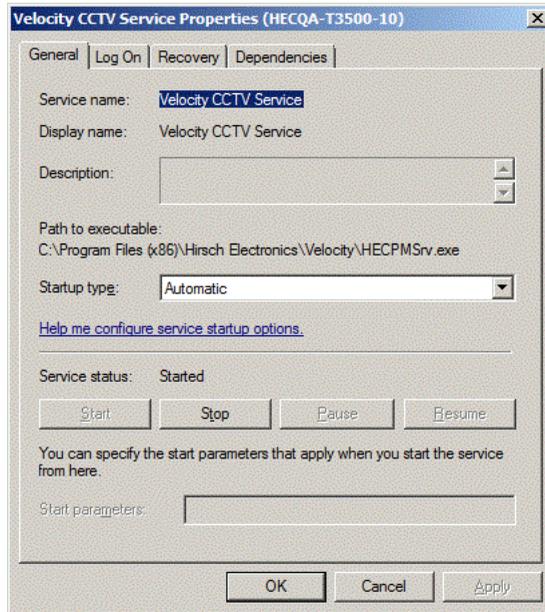
For each of these services, perform Steps 3 through 9.



This procedure applies to installations where SQL Server 2008 R2 Express is being used, and might not apply to full installations of SQL Server 2008.

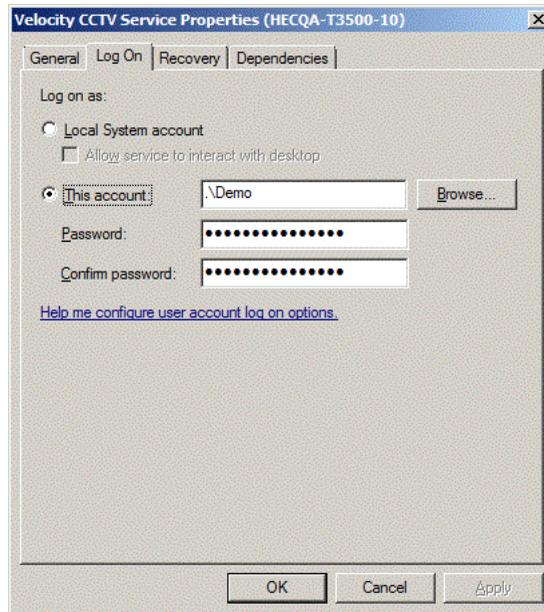
3. Right-click on the service and select **Properties**.

The Service Properties dialog box for the specific service appears, like in this example:



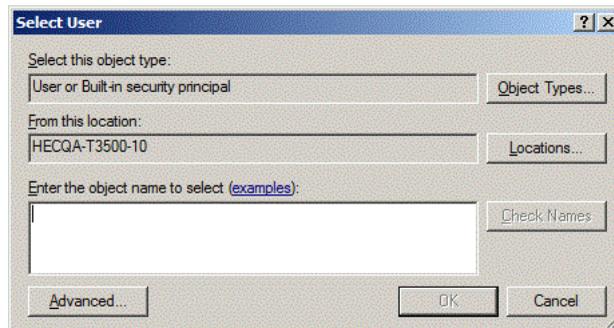
4. Click the **Log On** tab.

The Log On tab is displayed:



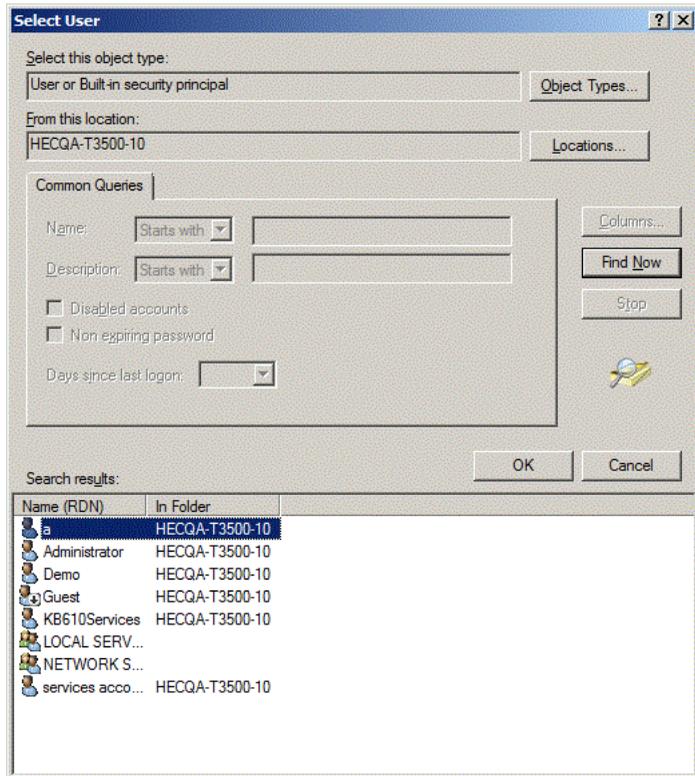
5. Click **This account**, then click **Browse**.

The Select User dialog box appears:



6. For the 'Enter object name to select' field, do one of these:
 - Enter the user's name you created and click **Check Names**. If the name is correctly entered, the name is underlined.

- Click **Advanced** and in the 'Common Queues' section, select a text string to find the required user. Click **Find Now**. All relevant users appear in the 'Search results' pane. Select the new user.



Only one user can start a service. You cannot define more than one user per service.

7. Click **OK**.
8. Enter and confirm the password for this account.
9. Click **Apply**.

A message may appear for the first service. If it does, simply click **OK** to proceed.

10. For each Velocity-related service listed in Step 2, perform Steps 3 through 9 to make the same modification.
11. Return to the Server Manager Services page.
12. Stop and restart each of the Velocity-specific services running on this computer, in the following order:
 - SQL Server
 - Velocity Security Domain Service
 - Velocity DigiTrac Network Service
 - Velocity SQL Writer
 - Velocity Extension Service
 - Velocity CCTV Service
 - Velocity Web Service
 - Velocity Edge EVO Service

To stop each service, right-click on the service and select the **Stop** option.

To restart each service, right-click on the stopped service and select the **Start** option.

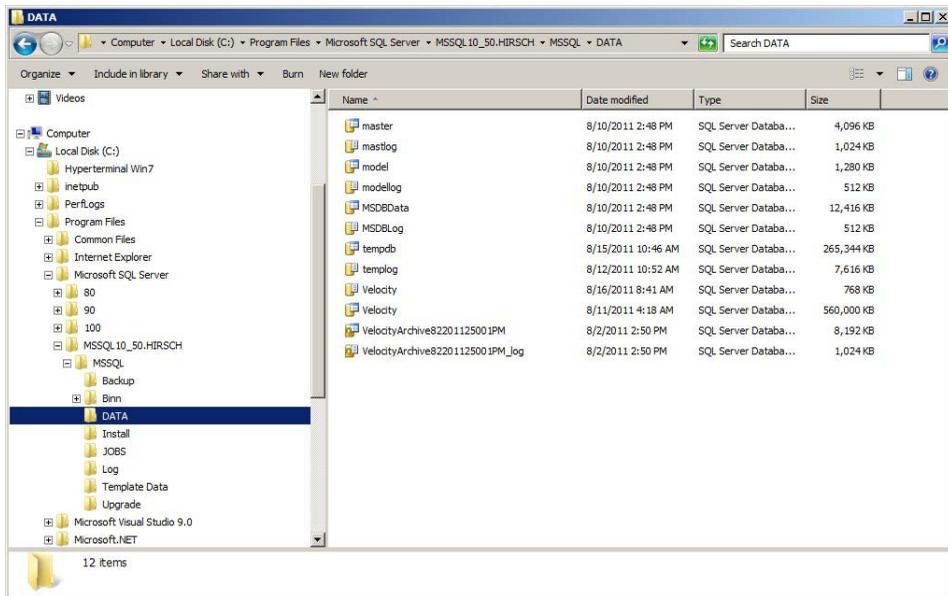
The services will now start with the new users group account.

Checking File and Folder Permissions

This section explains how to verify the permissions of the new account that starts the Velocity services. In particular, it enables access to the Velocity database archive files.

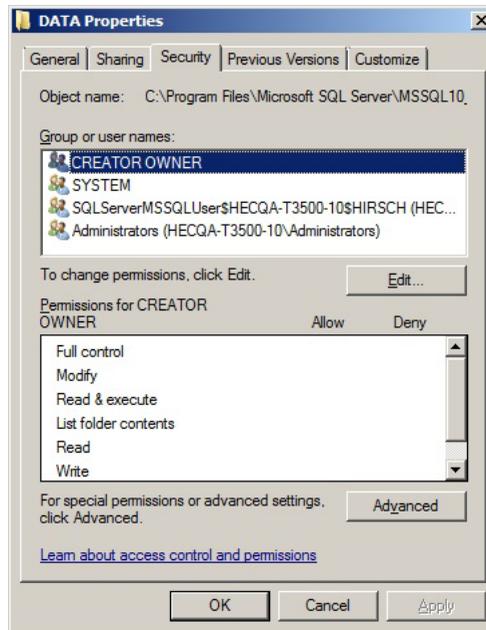
To check that the relevant files and folders include the required permissions:

1. On the client computer, open Windows Explorer.
2. Expand the root drive (normally C:) to reveal **Program Files** then **Microsoft SQL Server** then **MSSQL10.50.Hirsch** then **MSSQL** then **DATA**.



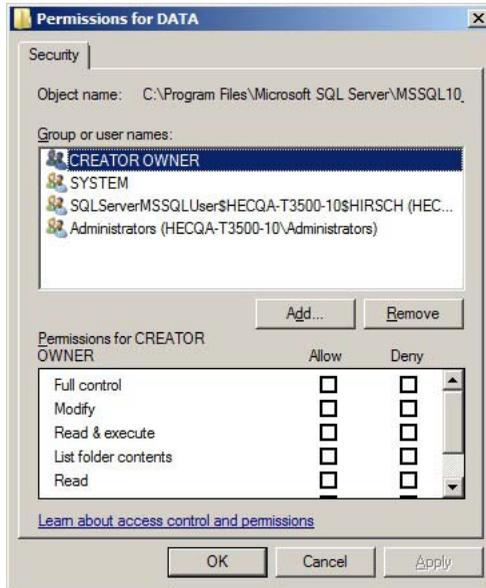
3. Identify those folders and files that the custom users account will employ. For each one, perform Steps 4 through 8.
4. Right-click on a folder or file and select **Properties**.
5. In the **Properties** dialog, click the **Security** tab.

A dialog box like this example appears:



6. Select to highlight each user and users group assigned to the custom users group. In the Permissions pane, inspect the permissions assigned to each user or group. All relevant entities should have all permissions except 'Full control' checked.
7. If all permissions (except 'Full control') are not checked, click **Edit**.

A dialog box like this example appears:



8. Select each check box (except 'Full control') in the Allow column of the Permissions pane, then click **OK**.

Repeat Steps 4 through 8 for each required folder and file.