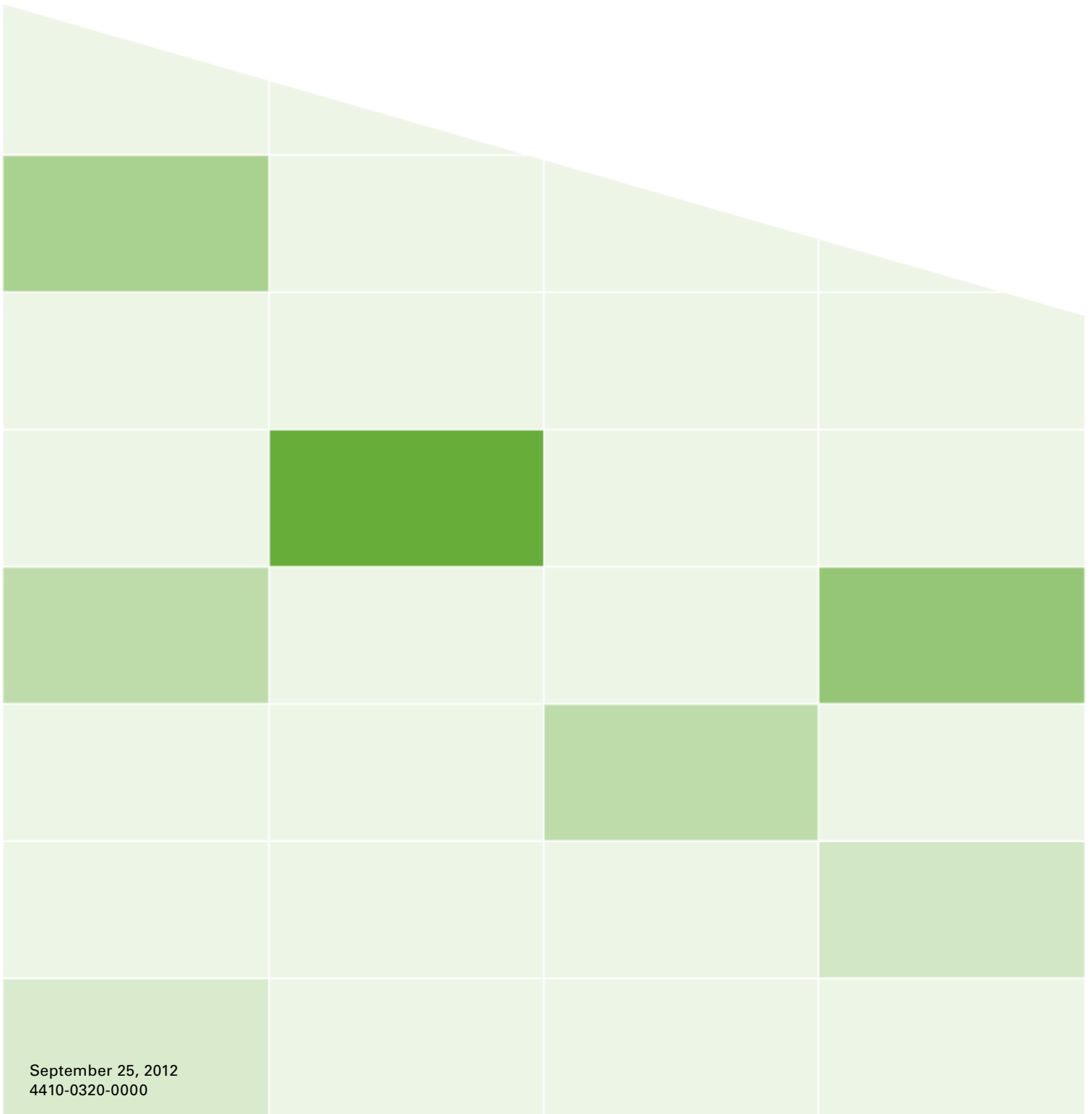




# VBrick Video On Demand Server

VOD-W 50/125/300 Server v6.0

Admin Guide



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## About VBrick Systems

Founded in 1997, VBrick Systems, an ISO 9001 certified vendor, is a privately held company that has enjoyed rapid growth by helping our customers successfully introduce mission critical video applications across their enterprise networks. Since our founding, VBrick has been setting the standard for quality, performance and innovation in the delivery of live and stored video over IP networks—LANs, WANs and the Internet. With thousands of video appliances installed world-wide, VBrick is the recognized leader in reliable, high-performance, easy-to-use networked video solutions.

VBrick is an active participant in the development of industry standards and continues to play an influential role in the Internet Streaming Media Alliance (ISMA), the MPEG Industry Forum, and Internet2. In 1998 VBrick invented and shipped the world's first MPEG Video Network Appliance designed to provide affordable DVD-quality video across the network. Since then, VBrick's video solutions have grown to include Video on Demand, Management, Security and Access Control, Scheduling, and Rich Media Integration. VBrick solutions are successfully supporting a broad variety of applications including distance learning and training, conferencing and remote office communications, security, process monitoring, traffic monitoring, business and news feeds to the desktop, webcasting, corporate communications, collaboration, command and control, and telemedicine. VBrick serves customers in education, government, healthcare, and financial services markets among others.

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# VOD-W Server v6.0 Admin Guide

This *VOD-W Admin Guide* is written for anyone who will be using a VBrick VEMS VOD-W Video on Demand Server. This includes system administrators, network technicians, and others. This document explains how to set up and configure the VOD-W server, how to install the VOD-W software (if the hardware was not purchased from VBrick), how to perform initial admin tasks, and how to add storage. For most common tasks like ingesting content, use the VEMS Portal Server and refer to the *VEMS Portal Server Admin Guide* for details. You can perform most administration tasks using the Portal Server and it is unlikely you will ever need to access the VOD-W interface. VEMS VOD-W servers are a key component in VBrick's Enterprise Media System. The VEMS VOD-W server provides all standard video-on-demand (VOD) features including support for MPEG-2, MPEG-4, and H.264 content.

## Organization

|  |   |
|--|---|
| 1. Server Overview                         | provides a brief introduction to the features and functionality of the VOD-W server and explains the differences between server models. |
| 2. Hardware Installation                   | explains how to unpack, connect, and configure secure communications on the server.   |
| 3. Software Installation                   | explains how to install the VOD-W software on a server not purchased from VBrick.   |
| 4. Server Administration                   | explains how to use the configuration utility in case you need to reconfigure server parameters or reboot the system.                   |
| 5. Monitoring the Server                   | explains how to use the monitoring utility to view performance characteristics and set log levels.                                      |
| 6. Ingesting Content                       | explains the concepts of ingesting content. It also describes important considerations and best practices.                              |
| 7. Troubleshooting                         | explains how to do basic troubleshooting when you run into problems.  |
| 8. Upgrading to SQL Server 2008 R2 Express | explains how to upgrade from SQL Server 2000 to SQL Server 2008 Express.  |

## Getting Help

**If you need help, or more information about any topic, use the online help system.** Use the book icons in the left pane to open documents and the up and down arrows in the right pane to page through them. *Use the Search box to find specific information.* Simply enter one or more words in the box and press **Enter**. The search results will return pages that have all of the words you entered highlighted in yellow (Internet Explorer only). The Search box is not case-sensitive and does not recognize articles (a, an, or the), operators (+ and -), or quotation marks. You can narrow the search by *adding* words. To view all VBrick documentation, including the latest updates, go to [www.vbrick.com/documentation](http://www.vbrick.com/documentation) If you can't find the information you need from the online help, the VBrick documentation, or your certified

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VBrick reseller, you can contact VBrick [Support Services](#) on the web. Support Services will make every effort to answer your technical questions in 24 business hours or less. VBrick is committed to accurate and reliable documentation. If you find errors or omissions in any of our documents, please send e-mail to [documentation@vbrick.com](mailto:documentation@vbrick.com) and let us know.

## Font Conventions

**Arial bold** is used to describe dialog boxes and menu choices, for example: **Start > All Programs > VBrick**

`Courier fixed-width font` is used for scripts, code examples, or keyboard commands.

**Courier bold fixed-width font** is used for user input in scripts, code examples, or keyboard commands.

**This bold black font** is used to strongly emphasize important words or phrases.

Folder names and user examples in text are displayed in this sans serif font.

User input in text is displayed in this bold sans serif font.

*Italics are used in text* to emphasize specific words or phrases.

## Related Publications

[Dell PowerEdge 620 Technical Guidebook](#)

[Dell PowerVaultMD1000 Product Documentation](#)

## Printer-Friendly

[VOD-W Server Admin Guide](#)

▼ To save or **print** a PDF document:

1. Click once to open the PDF document in Acrobat Reader.
2. To save or print a PDF document, right-click and select **Save Target As** or **Print Target**.



## Server Overview

VBrick's VEMS VOD-W Server has been integrated with the VEMS family of products including the VEMS Mysrto™ Portal Server, and Windows Media and H.264 streaming encoders. The VEMS VOD-W delivers stored MPEG and H.264 assets as unicast streams across an Ethernet network. The VEMS VOD-W is built on a Dell hardware platform as detailed in the following tables. Other features include the ability to schedule asset playback, asset searching, user and system statistics, and more. The VEMS Portal Server is required to gain the full benefits of the VEMS VOD-W server and is sold separately.

In order to set up the VEMS Portal Server, follow the directions in the *VEMS Portal Server Admin Guide*. Once the VEMS Portal Server is setup and configured, you can access video on the VEMS VOD-W server through the VEMS Portal Server web interface. VBrick uses its own software-based components to decode streams on the desktop. There is no client-side software to install. The VEMS Portal Server automatically downloads components to your desktop PC the first time you access to the system.

---

**Note** VOD-W 6.0 runs on a 64-bit operating system machine and works with VEMS Mysrto 6.2 and above only—it does not work with earlier versions of VEMS or VEMS Mysrto. VOD-W 5.4 and 5.4.1 (which are 32-bit) continue to operate with VEMS 5.4.x and all previous versions of VEMS Mysrto.

---



**Figure 1.** VBrick VOD-W Server

### Topics in this chapter

|                              |   |
|------------------------------|---|
| Server Description . . . . . | 1 |
| Server Hardware . . . . .    | 2 |
| Server Software . . . . .    | 4 |
| Technical Support . . . . .  | 4 |

## Server Description

The VBrick VOD-W servers provide interactive, on-demand playback of standards-based, high-quality video that is stored on the server with a variety of methods. The VOD-W servers are a basic component in the VBrick's VEMS solution and work seamlessly with the VEMS Portal Server. They ingest and stream unicast and multicast streams in the following formats:

- MPEG-2, MPEG-4 (part 2), H.264 RTSP unicast
- MPEG-2, MPEG-4 (part 2), H.264 multicast

## Server Models

VBrick currently supports the server models shown in shown in Table 1 and will continue to provide legacy support for 1850/2850, 1950/2950 series models. Contact VBrick [Support Services](#) or your authorized reseller for more information about upgrade options.

**Table 1.** VOD-W Server Models

| Model    | Hardware           | Windows Server 2008 R2 | Max Throughput |
|----------|--------------------|------------------------|----------------|
| VOD-50W  | Dell PowerEdge 620 | Standard Edition       | 50 Mbps        |
| VOD-125W | Dell PowerEdge 620 | Standard Edition       | 125 Mbps       |
| VOD-300W | Dell PowerEdge 620 | Standard Edition       | 300 Mbps       |

**Note** The secure web interface to the Portal Server (see [Configuring Secure Communications](#) on page 10) and the secure URL features (see [Using Secure URL Password Protection](#) on page 44) require Portal Server 4.2.1 or higher, as does automatic streaming to Internet clients over HTTP.

## System Requirements

The VOD-W server has been tested to provide the specified performance (50, 125, or 300 Mbps) with no additional software installed. *Be aware that the installation of virus scanners or security software that consume system I/O resources may have an adverse impact on streaming performance.* These components are not tested by VBrick and you should test the VOD-W for performance and reliability after installing them. If additional programs are installed, it may be necessary to re-install the VOD software and the database in order to restore proper operation. Contact VBrick Support Services for more information.

## Server Hardware

### VBrick VOD Servers

VBrick VOD servers use the latest PowerEdge hardware from Dell. Be aware that VBrick is currently transitioning from legacy PowerEdge 610/710 models to current 620 PowerEdge models. As a result your site may have 610/710 models, 620 models, or a combination of both models. If purchasing your own hardware, use server hardware that meets or exceeds the recommendations for the PowerEdge 620 models used by VBrick as shown in shown in Table 2.

If purchasing your own server hardware, VBrick requires that you use a dedicated server that meets or exceeds the following hardware specifications. The use of a less capable system may adversely affect system performance and will likely impact the streams viewed VEMS end users.



**Table 2.** VOD-W Server Recommended Specifications

| Server   | Item              | Description  |
|----------|-------------------|--|
| VOD-50W  | Base Unit         | Dell PowerEdge R620 XL,TPM   |
|          | Network Interface | Broadcom 5720 QP 1Gb Network Daughter Card   |
|          | RAID Type         | RAID 1 for H710P/H710/H310 (2 HDDs)  |
|          | RAID Controller   | PERC H310 Integrated RAID Controller   |
|          | Processor         | Intel Xeon E5-2603 1.80GHz, 10M Cache, 6.4GT/s QPI, No Turbo, 4C, 80W, Max Mem 1066MHz   |
|          | Memory            | 4GB RDIMM, 1600 MHz, Standard Volt, Dual Rank, x8 - Quantity 4   |
|          | Hard Drive        | 500GB 7.2K RPM Near-Line SAS 6Gbps 2.5in HotPlug Hard Drive - Quantity 2   |
|          | Operating System  | Windows Server 2008 R2 SP x86  |
| VOD-125W | Base Unit         | Dell PowerEdge R620 XL,TPM   |
|          | Network Interface | Broadcom 5720 QP 1Gb Network Daughter Card   |
|          | RAID Type         | RAID 5 for H710P/H710/H310 (3-10 HDDs)   |
|          | RAID Controller   | PERC H310 Integrated RAID Controller   |
|          | Processor         | Intel Xeon E5-2603 1.80GHz,10M Cache,6.4GT/s QPI, No Turbo, 4C,80W, Max Mem 1066MHz  |
|          | Memory            | 4GB RDIMM, 1600 MHz, Standard Volt, Dual Rank, x8 - Quantity 4   |
|          | Hard Drive        | 500GB 7.2K RPM Near-Line SAS 6Gbps 2.5in HotPlug Hard Drive - Quantity 6   |
|          | Operating System  | Windows Server 2008 R2 SP1 x86   |
| VOD-300W | Base Unit         | Dell PowerEdge R620 XL,TPM   |
|          | Network Interface | Broadcom 5720 QP 1Gb Network Daughter Card   |
|          | RAID Type         | RAID 1+RAID 5 for H710P/H710/H310 (2 + 3-8 HDDs)   |
|          | RAID Controller   | PERC H310 Integrated RAID Controller   |
|          | Processor         | Intel Xeon E5-2603 1.80GHz,10M Cache,6.4GT/s QPI,No Turbo,4C, 80W, Max Mem 1066MHz   |
|          | Memory            | 4GB RDIMM, 1600 MHz, Standard Volt, Dual Rank, x8 - Quantity 8   |
|          | Hard Drive        | 1TB 7.2K RPM Near-Line SAS 6Gbps 2.5in Hotplug Hard Drive - Quantity 6<br>500GB 7.2K RPM Near-Line SAS 6Gbps 2.5in HotPlug Hard Drive - Quantity 2 |
|          | Operating System  | Windows Server 2008 R2 SP1 x86   |

## Required Server Disk Partitions

**Note** If you are installing the VOD-W software on your own server (not purchased from VBrick) you will need to partition the logical disks as explained below. **This partition configuration is absolutely required for successful VOD operation.**

---

On the VOD 50W the following logical disks must be present on the server. Drive C must contain the operating system. Drive D will contain VOD content. On the VOD 125W and VOD 300W, drive D must be on a RAID5 file system containing at least four disks. The physical disks in this RAID array must be dedicated to VOD content and not shared with any other applications. Drive E is the staging area for content about to be ingested and should be large enough for this purpose. VBrick recommends partitioning the first physical drive in the system to contain both drives C and E. Other logical drives in addition to drive D can be added to the system to store content. Each of these logical drives must be a RAID5 with at least four physical disks dedicated to VOD content and not shared with other applications.

**Table 3.** Approximate Partition Sizes (GB)

|          |    |                  |
|----------|----|------------------|
| VOD-50W  | C: | 60               |
|          | E: | 100              |
|          | D: | 300 + remainder  |
| VOD-125W | C: | 60               |
|          | E: | 100              |
|          | D: | 2160 + remainder |
| VOD-300W | C: | 100              |
|          | E: | 200 + remainder  |
|          | D: | 4656 + remainder |

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**Note** If you need additional storage capacity, various external storage options are available from Dell and other vendors. If you purchased your server from VBrick, contact VBrick [Support Services](#) or your certified VBrick reseller for help.

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## Server Software

**If you purchased your server from VBrick, all server software and licenses are pre-installed by VBrick.** If you did not purchase your server from VBrick, you will need to obtain a license from VBrick and install the VOD-W software as explained in [Software Installation](#) on page 17. If, for some reason, you ever need to *reinstall* the software, use the Dell Recovery CDs to reinstall the Windows Server 2008 R2 operating system; use the VOD-W Server Software CD to restore the VOD-W content server and other components. Each VOD-W server purchased from VBrick has the following software pre-installed.

- Windows Server 2008 R2 Web or Enterprise Edition
- Microsoft SQL Server 2008 R2 Express
- Internet Information Services (IIS)
- ASP.NET.
- QuickVideo Content Server application

### VOD-W Product CD

Use the VOD-W Server Product CD if you ever need to reinstall the content server and other components. It also includes this *VOD-W Server Admin Guide* in searchable HTML format.

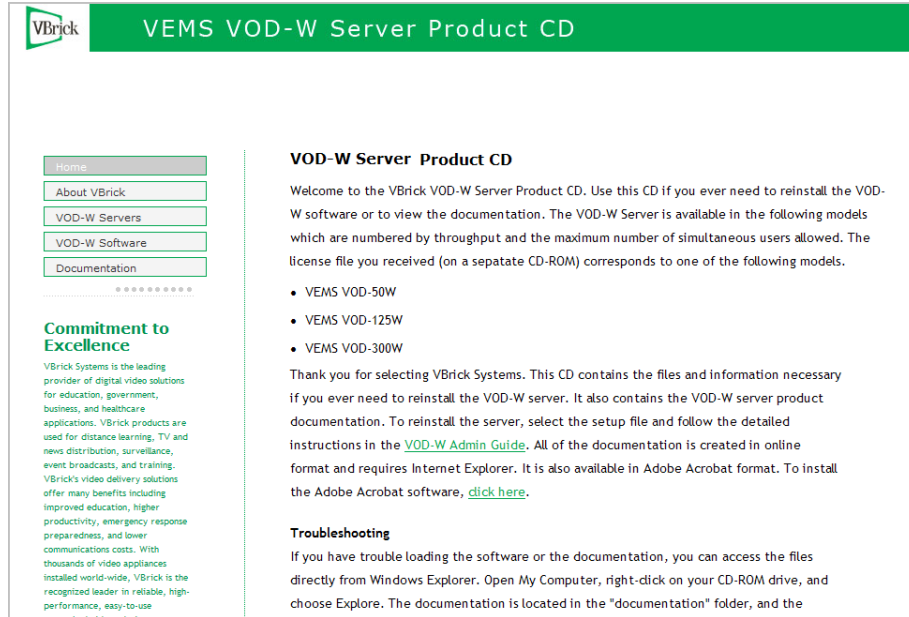


Figure 2. VOD-W Product CD

## Technical Support

If you can't find the information you need from the documentation or your reseller, you can contact VBrick [Support Services](#) on the web. The Support Services website has downloads, FAQs, documentation, support guidelines, and an on-line form you can use to submit questions. VBrick will make every effort to answer your technical questions in 24 business hours or less.

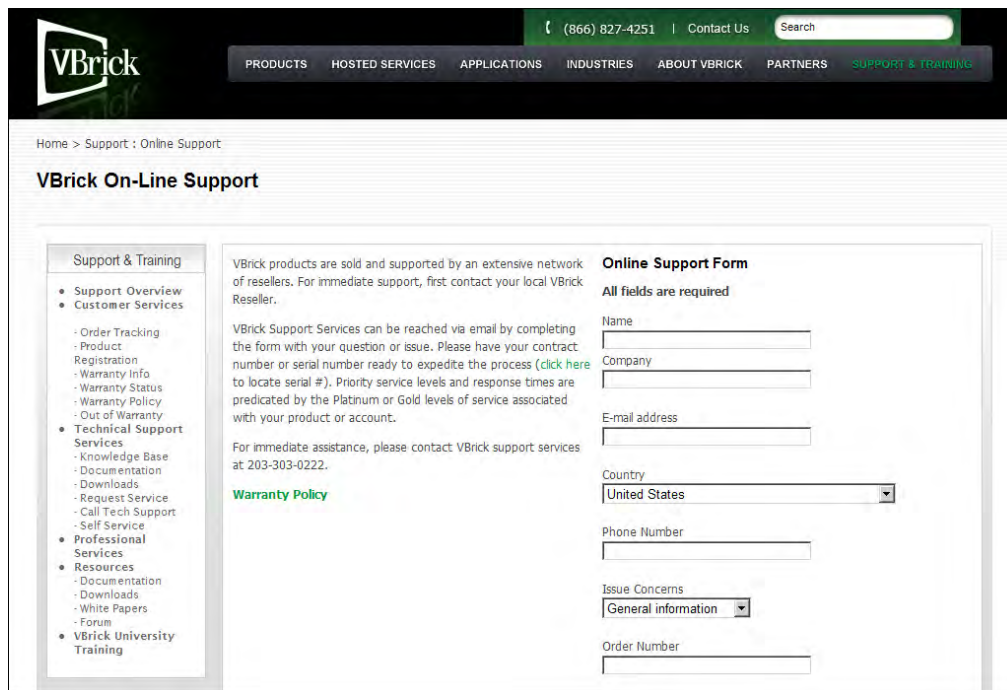


Figure 3. VBrick On-Line Support Web Page



# Hardware Installation

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**Note** If you purchased your server from VBrick, install the server hardware as explained below. If you did not purchase your server from VBrick, install the server according to the manufacturer's instructions. Then go to [Software Installation](#) on page 17 and install the VOD-W software.

---

### Topics in this chapter

|   |    |
|---|----|
| Installing VOD-W Server Hardware .....  | 7  |
| Configuring Secure Communications ..... | 10 |

## Installing VOD-W Server Hardware

The installation of the QVOD server is straightforward. When you purchase a QuickVideo OnDemand Server and a corresponding license file with the proper settings are included in your package. The license file regulates the maximum video streaming throughput and the maximum number of simultaneous video streams. For example, if you purchase a 125 Mbps license key, the maximum video throughput from the server will be limited to 125 Mbps and the maximum number of simultaneous users accessing the server will be limited to 125. Unpack the server and connect the cables as described below. As noted, all software and licenses are pre-installed.

▼ To install the server onsite at your location:

|                                       |   |
|---------------------------------------|---|
| 1. Unpack the Server .....            | 7 |
| 2. Connect the Server .....           | 8 |
| 3. Configure the Server in VEMS ..... | 8 |
| 4. Verify the Installation .....      | 9 |

### Unpack the Server

Each shipment comes with:

- A complete VEMS VOD-W (including external storage if purchased).
- All power cords and cables.
- Rack mount kit.
- This *VEMS VOD-W Server Admin Guide*.
- Product CD case with these items:
  - VBrick VOD-W Server Software CD.
  - VBrick VOD-W Server License CD.
  - EULA (End User License Agreement).

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## Connect the Server

▼ To set up the VOD-W server:

1. Connect the monitor, keyboard, mouse, and network cables as described below.
2. If rack mounting the unit, mount the VOD-W server in the rack, using the rack mount kit provided.
3. Connect the VOD-W server to the network by plugging the 10/100/1000 BaseT Ethernet cable into the Ethernet port 1 on the rear of the unit.



**Figure 4.** Dell 620 – Rear View

4. Connect the monitor cable to the video port (front or rear) on the VOD-W server. Turn the monitor on.
5. Connect a mouse and keyboard to any available USB ports (front or rear) on the VOD-W server.



**Figure 5.** Dell 620 – Front View (without bezel)

6. Plug the VOD-W server into a power source, using the power cords provided. (All VOD servers have redundant power supplies, each with its own cord.)
7. Turn the VOD-W server's main power on by pressing the power switch at the front of the unit.



**Figure 6.** Dell 620 – LCD Control Panel

8. The VOD-W server will boot and automatically load using the default settings. Wait 5–8 minutes for the unit to fully power up. As new hardware is attached (for example a keyboard and mouse) the operating system will automatically find and install the drivers.

## Configure the Server in VEMS

The VOD-W server must be configured in VBrick's VEMS Portal Server before it is recognized as part of the VEMS system. The VOD-W 6.0 software is compatible with VEMS Mystro 6.2 or higher only.

▼ To configure the VOD-W server to work with a VEMS Mystro 6.x Portal Server:

1. Launch VEMS Portal Server and login as an administrator.
2. Go to **Devices > Stored Servers** and click **Add New Server**.
  - a. On the **Server Information** page, enter a user-friendly name, a brief description, and click Submit.
  - b. On the **Entry Points** tab, enter the Hostname or IP address.
  - c. On the **Publishing Points** tab, click **Add New Publishing Point**.

**Figure 7.** Add VOD Server (VEMS Mystro 6.x)

3. From the **Type** dropdown select VODW.
4. Fill in the remaining fields as appropriate and click **Submit** when done. In most cases you can use the defaults. For more information see the *Mystro Portal Server Admin Guide*.

### Refresh Stored Content on Portal Server

This completes the Portal Server Configuration. However in order to verify the installation as explained below, you must refresh (auto-discover) the demo content on the VOD-W server as follows:

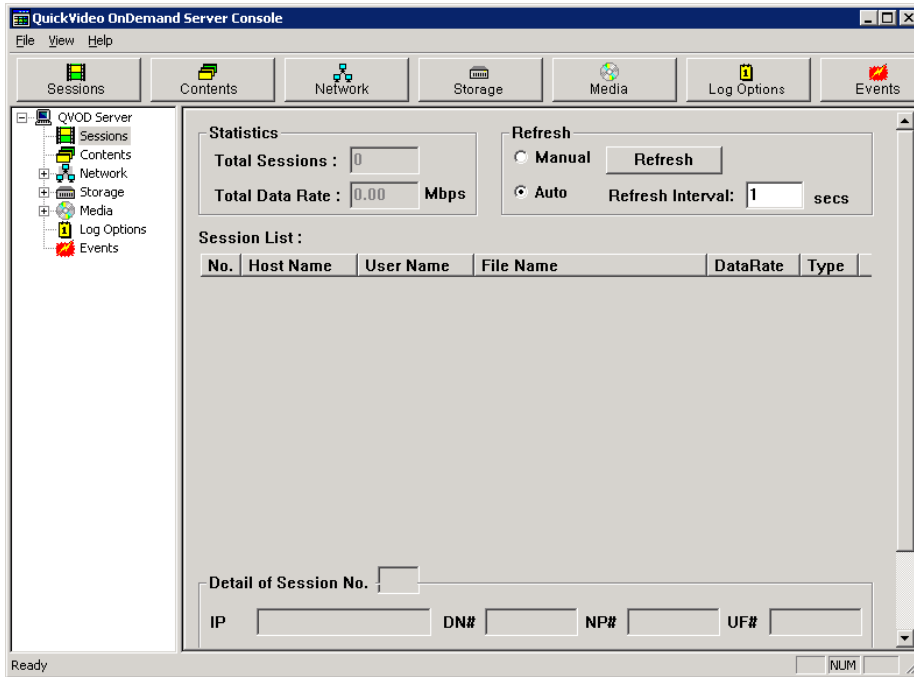
- ▼ To refresh the stored (demo) content on the Portal Server:
  1. Launch the VEMS Portal Server admin pages and go to **System Settings > Task Scheduler**.
  2. Find **Refresh Stored Content** on the Current Tasks page and click **Run**.

### Verify the Installation

Use the following sequence of steps to verify the VOD-W server is installed properly and can communicate with the VEMS Portal Server. If you can use the VEMS Portal Server to launch a video stored on the VOD-W Server, you have tested connectivity and verified the installation. For more information about VEMS Portal Server, see the *VEMS Portal Server Admin Guide*.

- ▼ To verify the installation:
  1. Ping the IP address of the VOD-W server from any PC in the same network.
  2. Launch a VEMS Portal Server client. (Open a browser and enter the VEMS Portal Server hostname or IP address (e.g. <http://portalserveripaddr>) in the address bar.
  3. Go to the **Stored Video** page in VEMS 6.x and launch any video in the Demo folder. The video should display in the preview window.

4. On the VOD-W server, go to **Start > All Programs > InfoValue > Administer > Monitor QVOD Server** to launch the QuickVideo OnDemand Server Console (Figure 8).
5. In the navigation pane on the console, click on **Sessions** to view playback data for the video you just launched. **Important:** You must view the Session Manager while playback is in progress. If the video ends, no data will be shown.
6. Verify that the **Host Name** IP address matches the computer from which you launched the video. If the IP address matches and a **DataRate** is shown, you have verified connectivity between the VOD-W server and the VEMS Portal Server.



**Figure 8.** QuickVideo OnDemand Server Console

Once you have completed the steps to this point you are good to go and no further software configuration is required, unless you wish to configure secure communications (see below). If you subsequently need to change the IP address or default storage path for example, use the server's Product Configuration utility (see [Configuring the Server](#) on page 40). The supported configurable parameters include the following and others:

- Server IP address.
- Storage path.
- Log file configuration parameters.
- Maximum number of simultaneous ingestion sessions.
- Ingestion process timeout period.
- Secure RTSP URL enable and password.
- HTTP tunneling enable and port.

## Configuring Secure Communications

Optional. Use this optional functionality to protect communication between the Portal Server and VOD-W. The Portal Server controls the VOD-W over a web service communications interface. There are two ways to protect communication between the Portal Server and VOD-W Server:



- **Basic authentication** – this method uses the FTP username and password configured on the VOD-W. See "Changing the Default FTP Password" in the *VOD-W Release Notes* for instructions on how to configure this user name and password on the VOD-W and on the Portal Server. The VOD-W challenges the Portal Server for login information and the Portal Server responds.
- **SSL encryption** – communication between the VOD-W and Portal Server is encrypted using a certificate installed on the VOD-W.

## Basic Authentication

Basic authentication (without SSL encryption) passes passwords in an easily discovered format. SSL encryption is recommended if you wish to protect communications between the Portal Server and VOD-W.

- ▼ To enable basic authentication:
  1. From the VOD-W Server, start the Microsoft Internet Information Services (IIS) Manager.
  2. Expand the server name and select the **Default Web Site**.
  3. Double-click on **Authentication** in the pane on the right side.
  4. Make sure **Anonymous Authentication** is not enabled.
  5. If enabled, right-click and select DisableF.

## SSL Encryption

Since you are managing both the VOD-W and the Portal Server, you know you can trust the VOD-W and you can use any certificate to encrypt communications. You may already have a certificate installed that you can use.

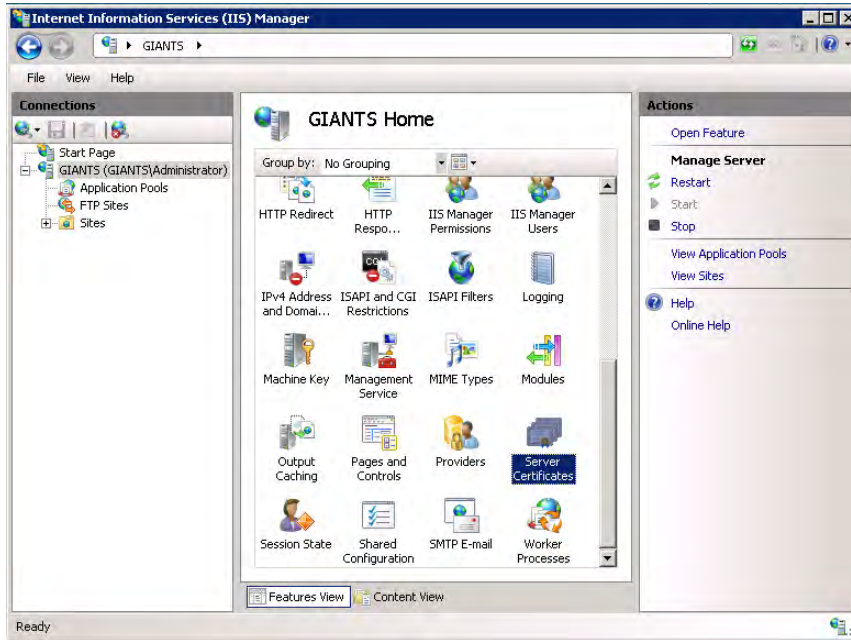
### 1. Checking for an Installed Certificate

- ▼ To check for an installed certificate:
  1. From the VOD-W Server, start the Microsoft Internet Information Services (IIS) Manager.
  2. Select the server name and click on **Server Certificates** in the right pane.
  3. Click on the **Server Certificate** button to launch the Server Certificate Wizard.
  4. Click **Next** on the Welcome dialog box.
  5. Select **Assign an existing certificate** and click **Next**.
  6. If the **Select a certificate** list is not empty, there is a certificate on the VOD-W you can use (you can use this one or you can get a new a certificate as explained below.) Select a certificate, and click **Next** three times and **Finish** to install.
  7. Then click **Edit...** under **Secure communications**.
  8. Check **Require secure channel (SSL)**. For more secure encryption, also check **Require 128-bit encryption**. Click **OK**.
  9. Click **Apply** and **OK** and you are done configuring SSL encryption with an existing certificate.

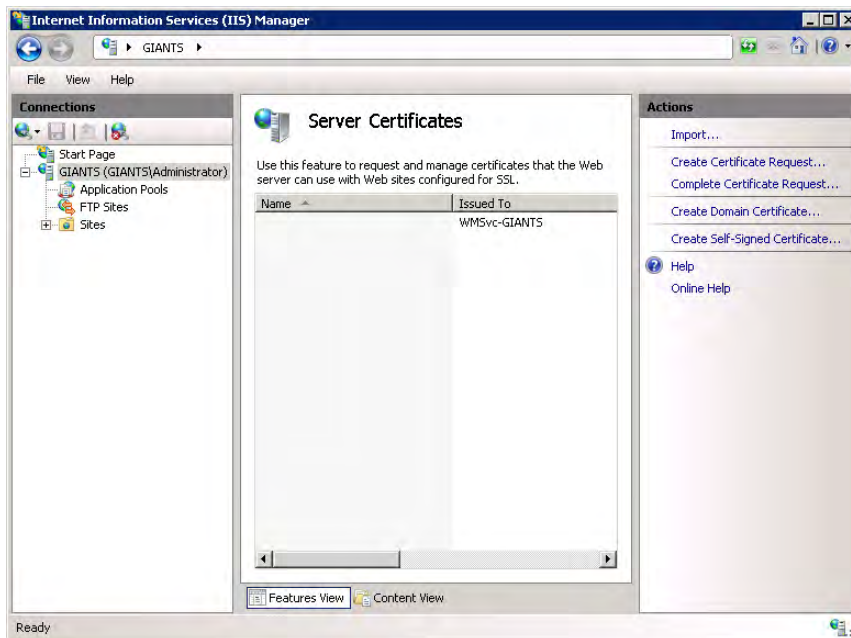
### 2. Generating a New Certificate Request

If your company does not have a X.509 certificate, or does not have one for the VOD-W Server, a new certificate request must first be created.

- ▼ To generate a certificate request:
  1. From the VOD-W Server, start the Microsoft Internet Information Services (IIS) Manager.
  2. Click the server name and double-click **Server Certificates** in the pane on the right side.



3. In the Actions column on the right, click **Create Certificate Request**.



4. Type an organization name (e.g. VBrick) in the **Organization** field and type an organizational unit (such as Sales Department) in the **Organizational unit** field. (This information will be placed in the certificate request, so make sure it is accurate. The Certificate Authority will verify this information and will place it in the certificate. A user browsing the VOD-W Server will want to see this information in order to decide if they should accept the certificate.)

5. In the **Common name** field, type a common name, and then select **Next**. (**Important:** The common name is one of the most significant pieces of information that ends up in the certificate.)
6. Enter the appropriate information in the **Country/Region**, **State/Province**, and **City/locality** fields, and then select **Next**.

The screenshot shows the 'Request Certificate' wizard window with the title 'Distinguished Name Properties'. The window contains the following text and fields:

Specify the required information for the certificate. State/province and City/locality must be specified as official names and they cannot contain abbreviations.

Common name:

Organization:

Organizational unit:

City/locality:

State/province:

Country/region:

At the bottom of the window are four buttons: 'Previous', 'Next', 'Finish', and 'Cancel'.

7. Select a **Cryptographic Service Provider** and **Bit Length** and click **Next**.

The screenshot shows the 'Request Certificate' wizard window with the title 'Cryptographic Service Provider Properties'. The window contains the following text and fields:

Select a cryptographic service provider and a bit length. The bit length of the encryption key determines the certificate's encryption strength. The greater the bit length, the stronger the security. However, a greater bit length may decrease performance.

Cryptographic service provider:

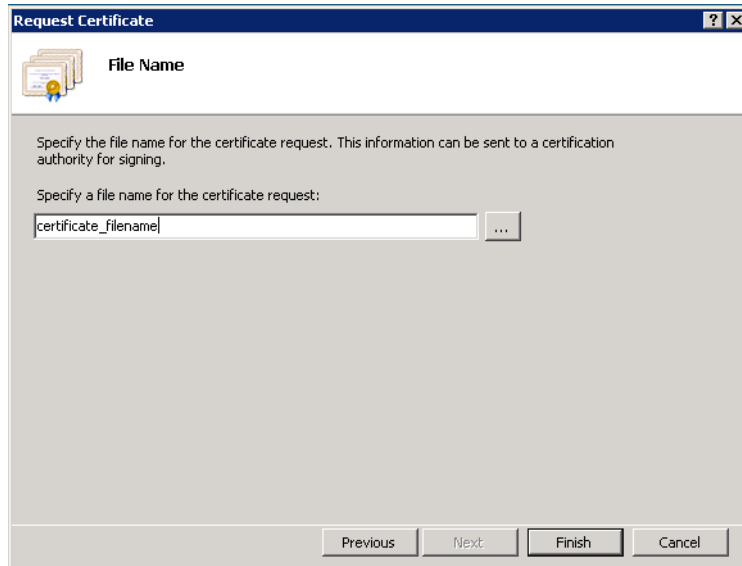
Bit length:

At the bottom of the window are four buttons: 'Previous', 'Next', 'Finish', and 'Cancel'.

8. Enter a file name for the certificate request. The file contains information similar to the following:

```
-----BEGIN NEW CERTIFICATE REQUEST -----
MIIDZjCCAs.....
-----END NEW CERTIFICATE REQUEST -----
```

This is a Base 64 encoded representation of the certificate request. The request contains the information entered into the wizard and also your public key and information signed with your private key.



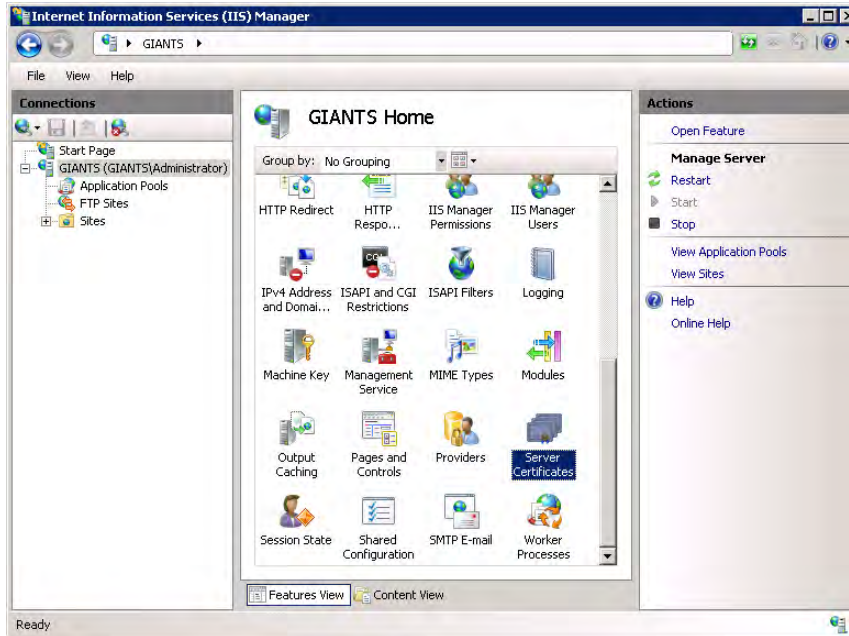
9. Select **Next**. The wizard displays a summary of the information contained in the certificate request.
10. Select **Next** and select **Finish** to complete the request process.

### 3. Submitting a New Certificate Request

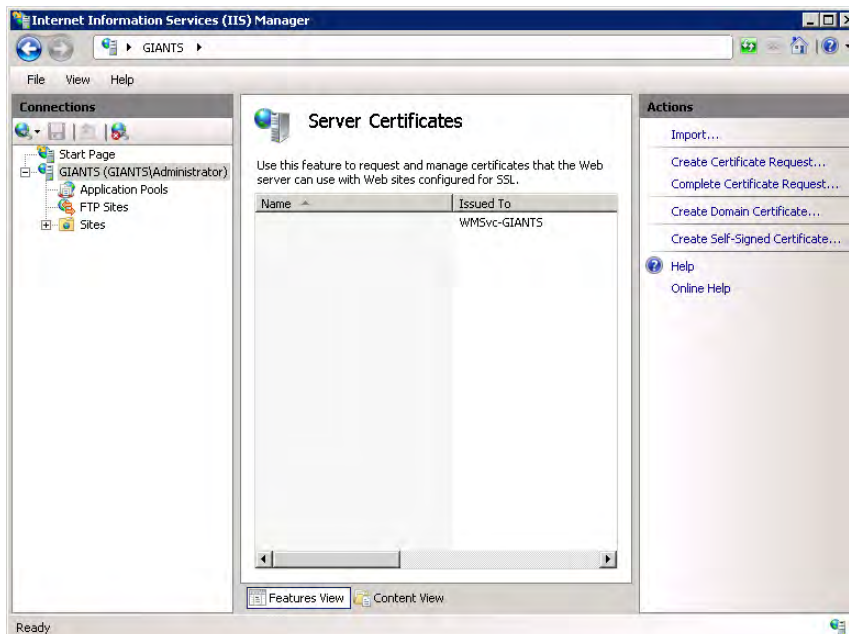
If a CA-signed Certificate from a trusted Certificate Authority (such as [VeriSign](#) or [Thawte](#)) is going to be purchased, the certificate can now be sent to a CA for verification and processing. After the certificate response is received from the CA, the installation process can continue on the VOD-W Server. Purchasing a CA-signed certificate will cause a security alert in the browser upon access to the server.

### 4. Installing the New Certificate

- ▼ To install the certificate on the VOD-W Server:
  1. Click on **Start > Administrative Tools > Internet Information Services (IIS) Manager**.
  2. Click on the server name in the **Connections** column on the left. Double-click on **Server Certificates**.



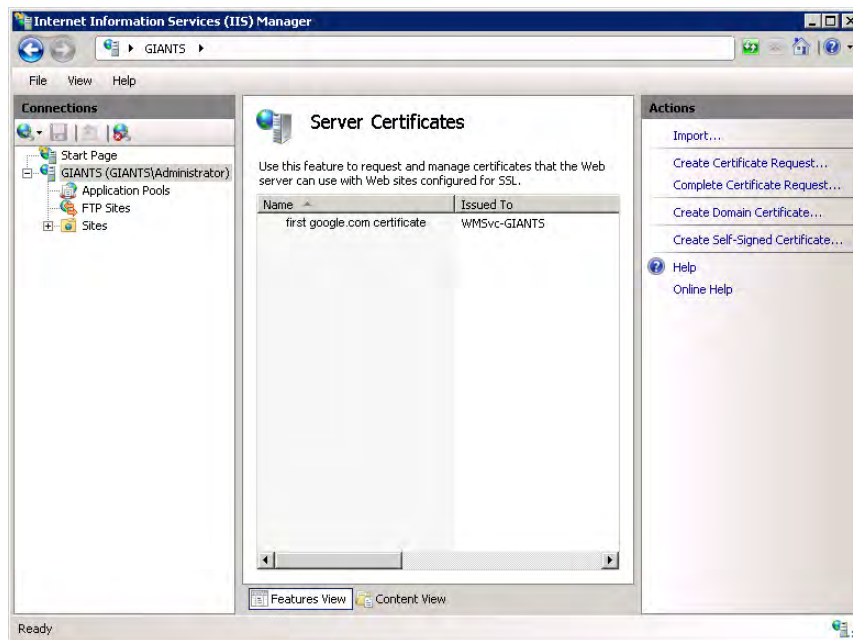
3. In the Actions column on the right, click on **Complete Certificate Request**.



4. Click the button with the three dots and select the server certificate you received from the certificate authority. If the certificate does not have a .cer file extension, select to view all types. Enter a user-friendly name in order to track the certificate on this server. Click **OK** when done.



5. If successful, you will see your newly installed certificate in the list. If you receive an error stating that the request or private key cannot be found, make sure you are using the correct certificate and that you are installing it to the same server that you generated the CSR on. If you are sure of those two things, you may just need to create a new Certificate Request and reissue/replace the certificate. Contact your certificate authority if you have problems.



Examine the certificate overview, click **Next**, and then click **Finish**. A certificate is now installed on the VOD-W Server.

**Note** The default FTP server also transmits user names and passwords in an easily discovered form. The topic "Using Secure FTP" in the *Portal Server Admin Guide* explains how to install and configure secure FTP.

# Software Installation

### Topics in this chapter

|  |    |
|--|----|
| Installation Overview. . . . .                       | 17 |
| Installing SQL Server 2008 Express Software. . . . . | 18 |
| Installing the VOD-W Software. . . . .               | 26 |
| Additional Steps. . . . .                            | 36 |

---

**Note** If you purchased a VOD-W server from VBrick, you can skip this section. A VBrick server is shipped with Windows Server 2008 R2 (64-bit) and with VOD-W software already installed.

---

**Software installation instructions are provided here if you did not purchase your server from VBrick or if you ever need to reinstall the software.** *These instructions explain how to install the VOD-W software on a system that already has Windows Server 2008 R2 installed.* Keep in mind that if you reinstall the software as explained here, you will also need to restore the database and video content (see [Database Restore](#) on page 48).

- ▼ To reinstall the VOD-W software or to install the software on a server not purchased from VBrick:
  1. Verify that your server has the required disk partitions. See [Required Server Disk Partitions](#) on page 3.
  2. Get a license file from VBrick. You must do this after you have started installing the software. See [Getting a License](#) on page 18.
  3. Install the SQL Server and VOD-W software from the VOD-W Product CD. See [Installing the VOD-W Software](#) on page 26.
  4. Add the VOD-W Server to the VEMS Portal Server configuration. See [Configure the Server in VEMS](#) on page 8.
  5. Optional. To protect communications between the Portal Server and VOD-W, see [Configuring Secure Communications](#) on page 10.

## Installation Overview

The installation of the VOD server is straightforward. The license file regulates the maximum video streaming throughput and the maximum number of simultaneous video streams. For example, if you purchase a 125 Mbps license key, the maximum video throughput from the server will be limited to 125 Mbps and the maximum number of simultaneous users accessing the server will be limited to 125.

- 
- Notes**
- Before you install the VOD-W software on a machine with Windows Server 2008 R2, you must check for and install all of the latest Windows Updates (including optional updates). To check for updates, go to **Control Panel > Windows Update**.
  - Domain policies can cause the VOD-W software installation to fail. Consequently the machine on which you are installing the VOD-W software must be a fresh installation of Windows that has not been joined to a domain.
- 

## Getting a License

After software installation, it will be necessary to install a license file provided by VBrick. Getting and installing the license are separate steps as explained in detail on the following pages.

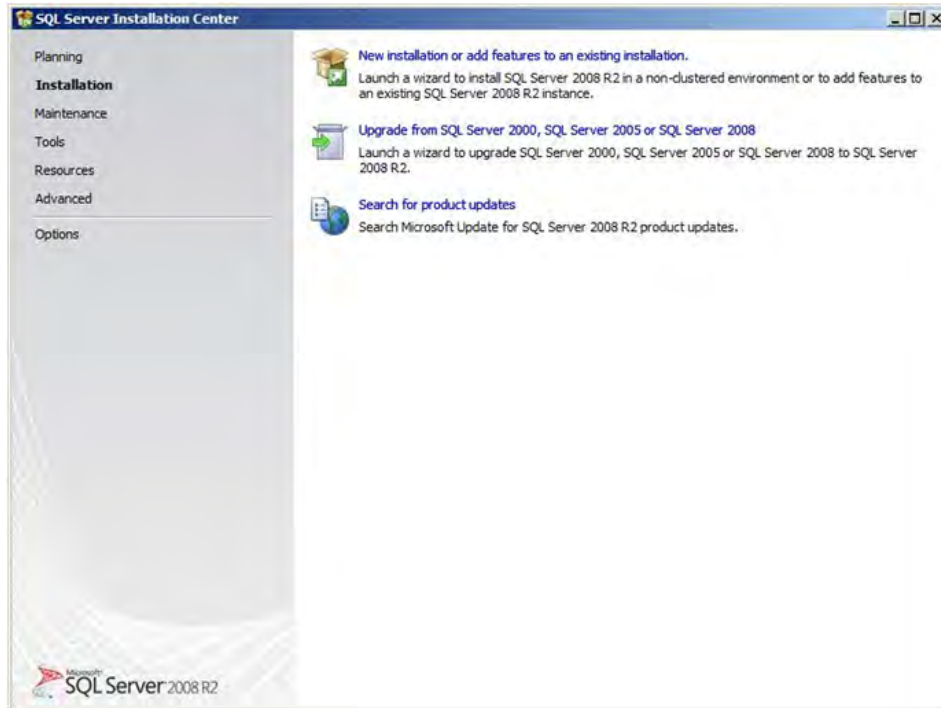
- ▼ To get a license file:
1. Install the VOD-W software; see [Installing the VOD-W Software](#). After software installation you will complete the License Registration page.
  2. Then go to C:\Program Files\Common Files\InfoValue and copy the file `InfoValueReg.form`
  3. E-mail this file to [licenses@vbrick.com](mailto:licenses@vbrick.com) along with the following *required* information and wait for a response from VBrick. **This will generally take one business day or less.**
    - VBrick sales order number.
    - Reseller name.
    - Reseller contact name, contact e-mail address, and contact phone number.
    - End user contact name, contact e-mail address, and contact phone number.
    - Send license to (select one): End user contact/Reseller contact.
  4. Once you receive a license, back it up in a safe location. Then install the license and complete the installation.

## Installing SQL Server 2008 Express Software

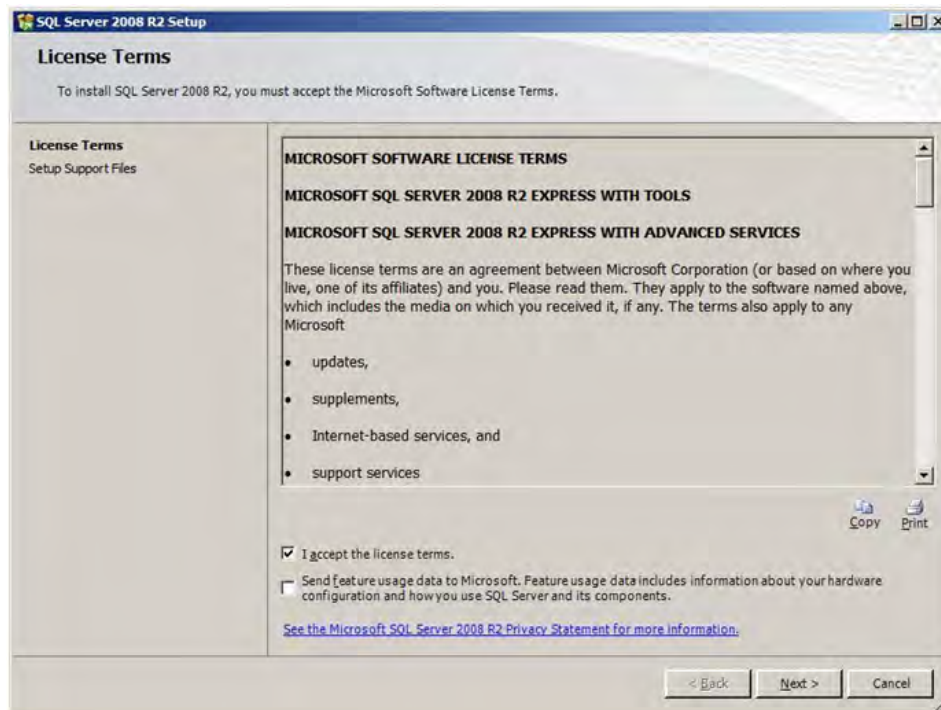
As explained below, installing the VOD-W is a two-step process. First you install the SQL Server 2008 Express software, then you install the VOD-W software. Insert the VEMS VOD-W Server Product CD into the CD-ROM drive on the server. Then open Windows Explorer and navigate to the "software" folder on the CD.

- ▼ To install SQL Server 2008 Express:
1. Run `SQLEXPRT_x86_ENU.exe` by double-clicking on it.
  2. Click on "New installation or add features to existing installation."

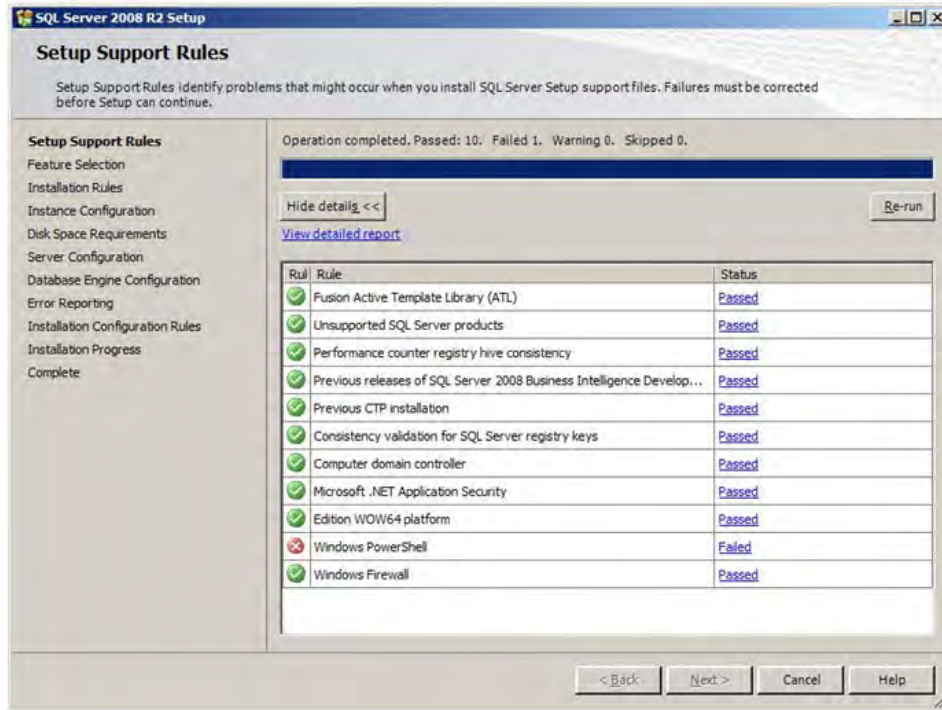




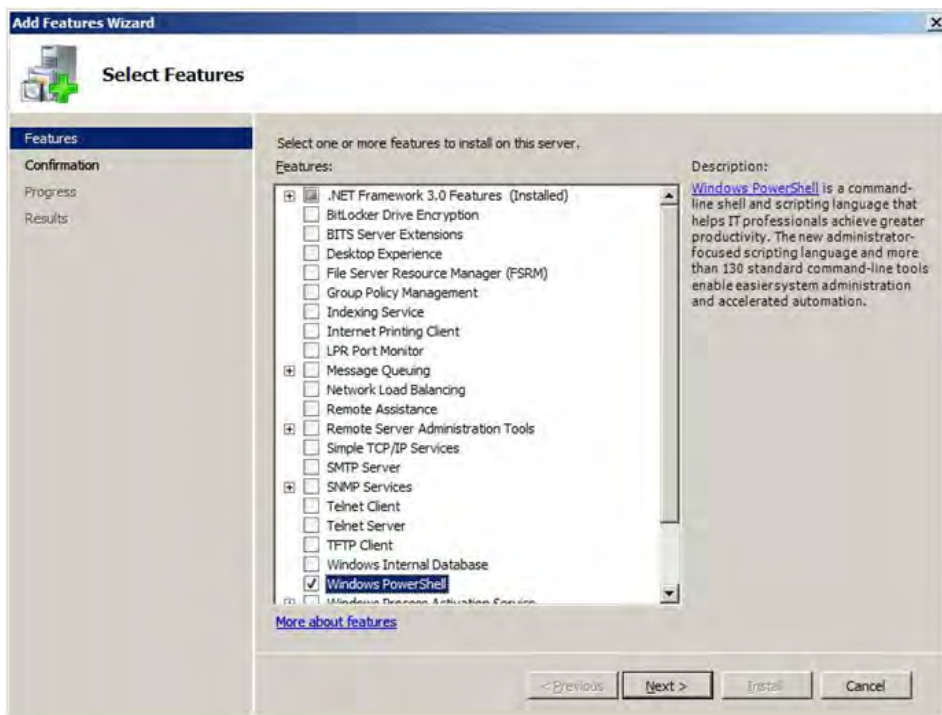
3. Select on "I accept the license terms" the click **Next**.



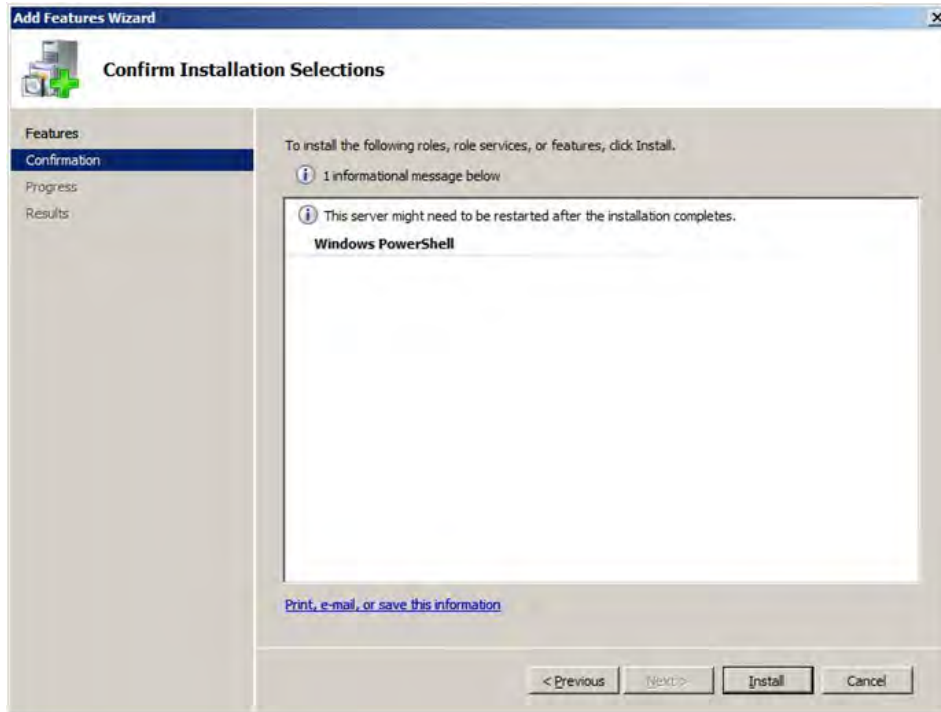
4. Click Next on Setup Support Rules; if everything passes click **Next** again.



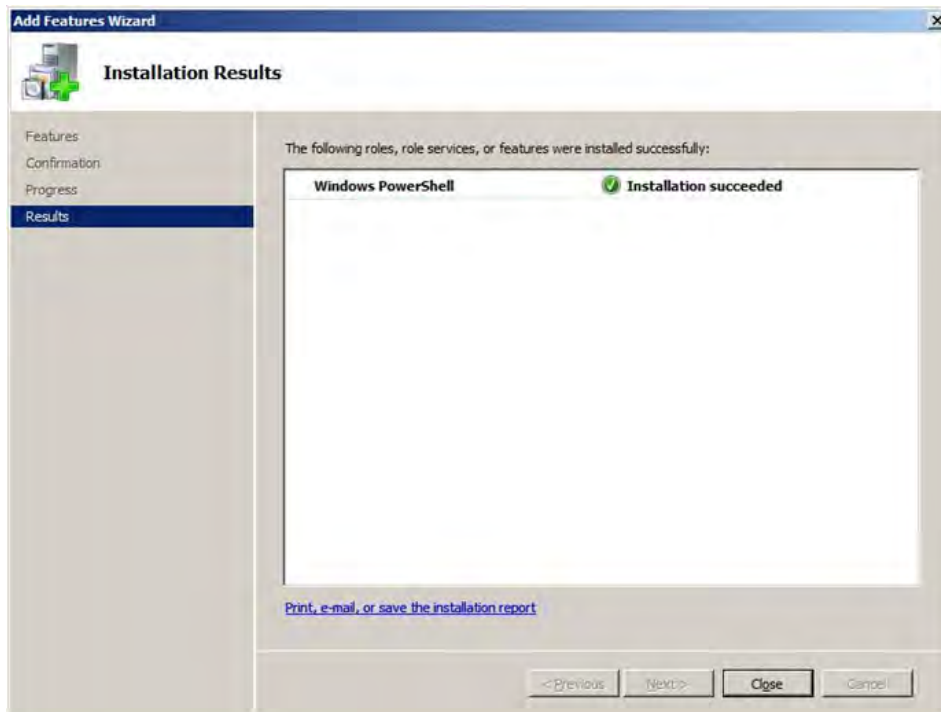
- If Windows PowerShell fails, open Control Panel and select "Program and Features" then Features to add Windows PowerShell. Select "Windows PowerShell" then click **Next**.



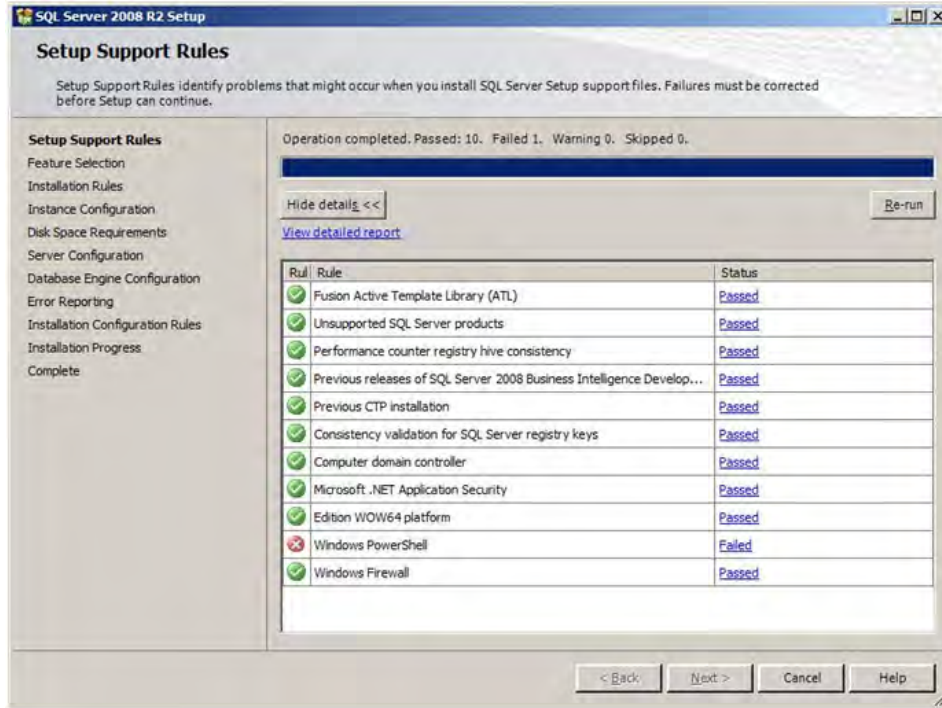
- Click "Install" to add the Windows PowerShell feature.



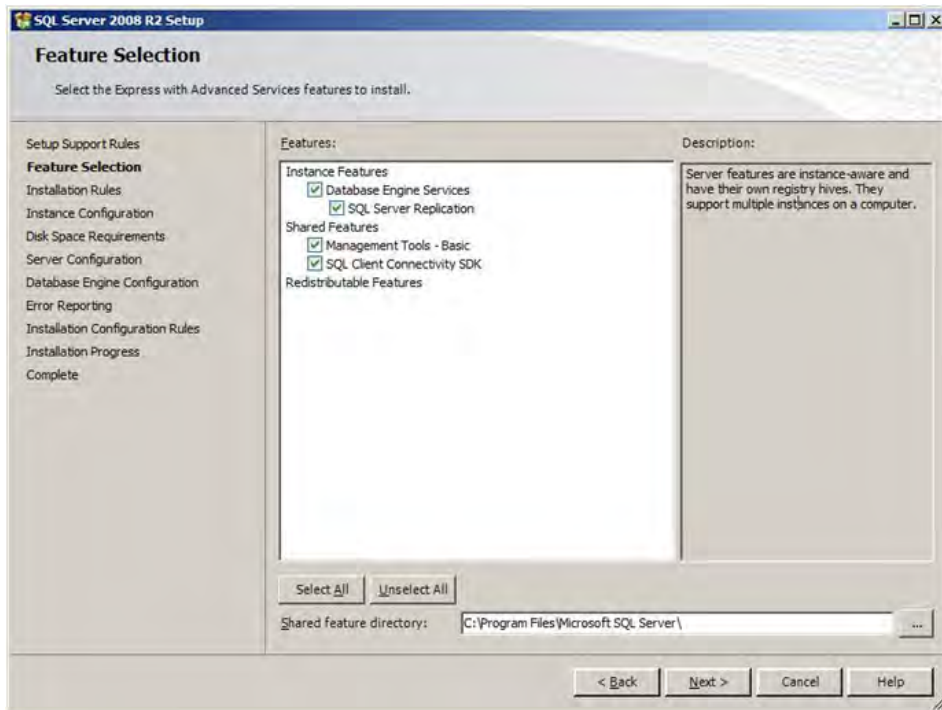
7. Click **Close** on "Installation Results" window.



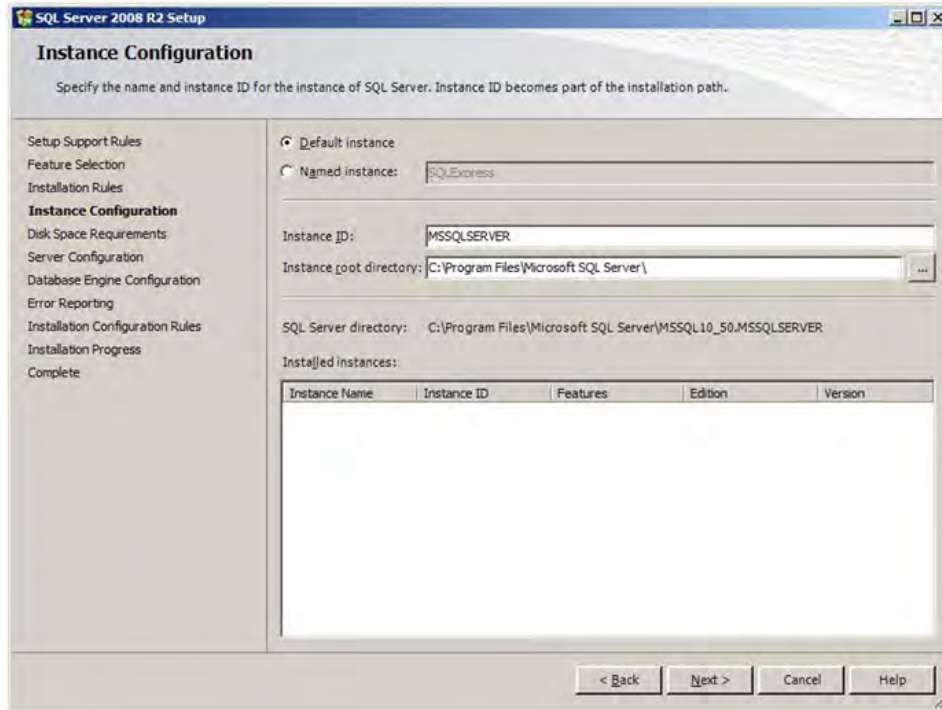
8. After the operation is completed, click "Rerun."



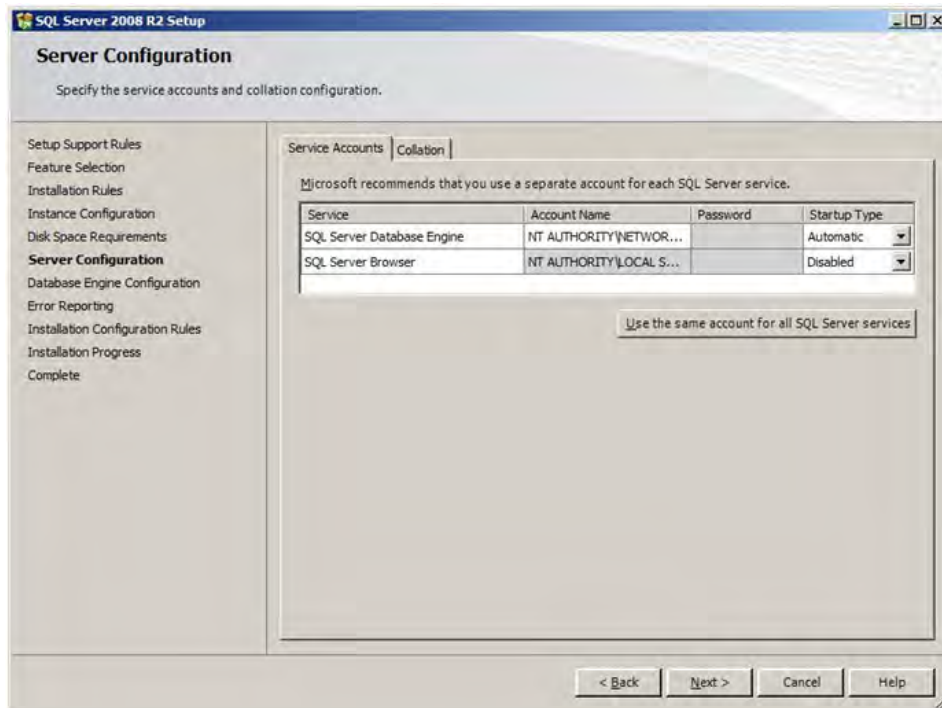
9. Click **Next** on "Feature Selection" window.



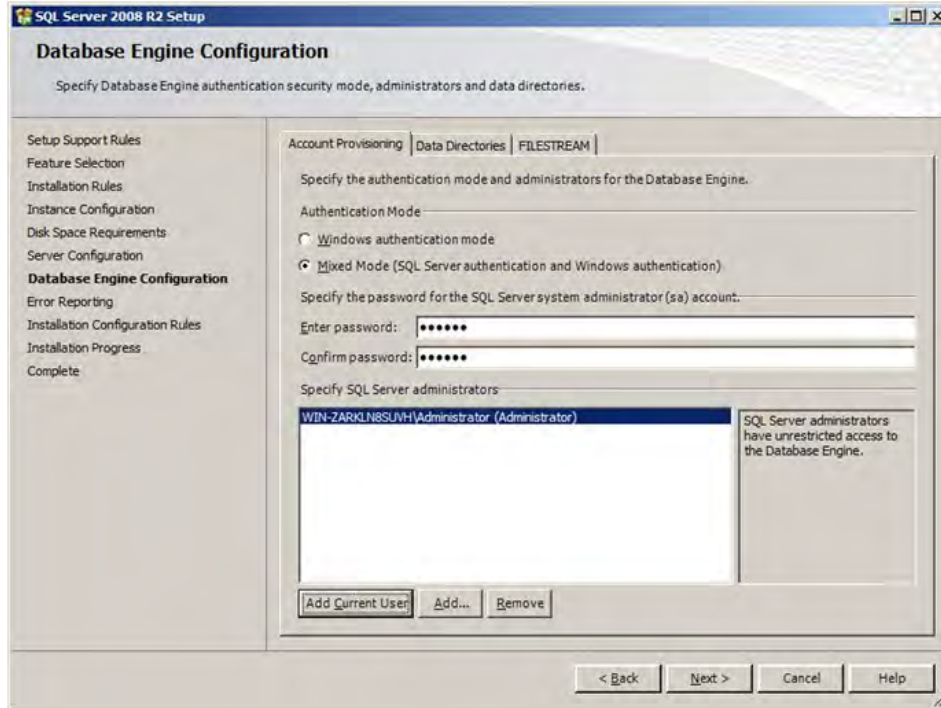
10. Select "Default instance" then click **Next** on "Instance Configuration" window.



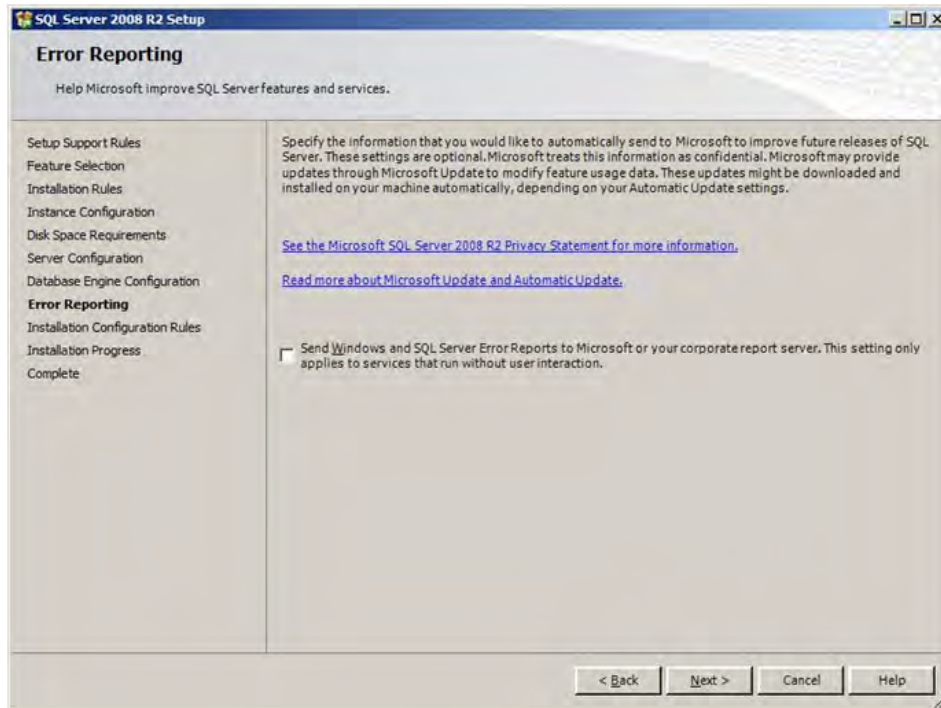
11. Click **Next** on "Server Configuration" window.



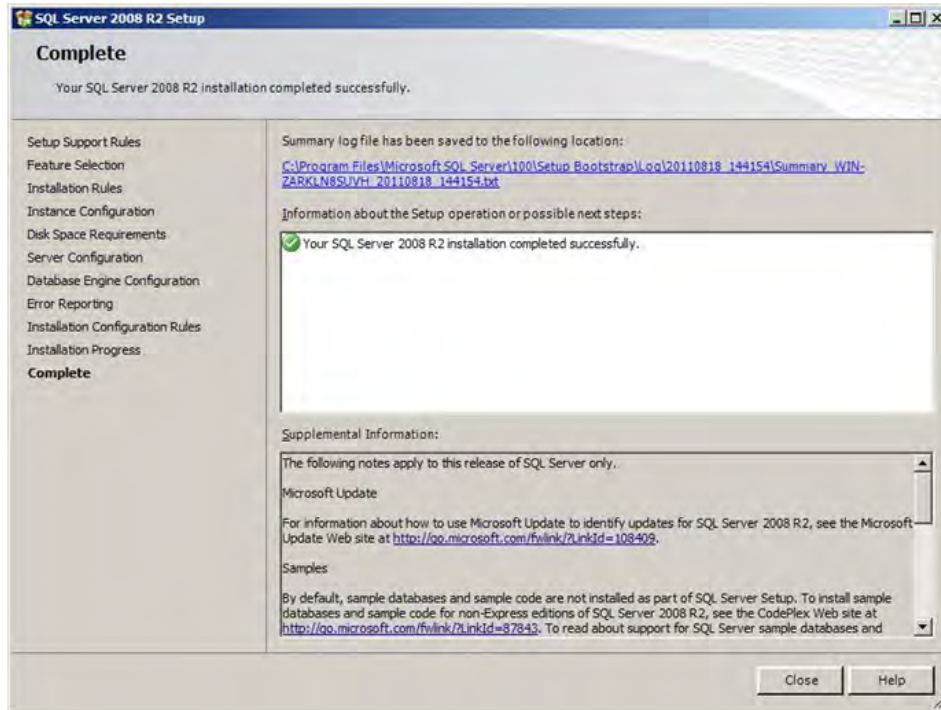
12. Select "Mix Mode (SQL server authentication and Windows authentication)," enter vbrick for password and confirm, then click on "Add current User" and **Next**.



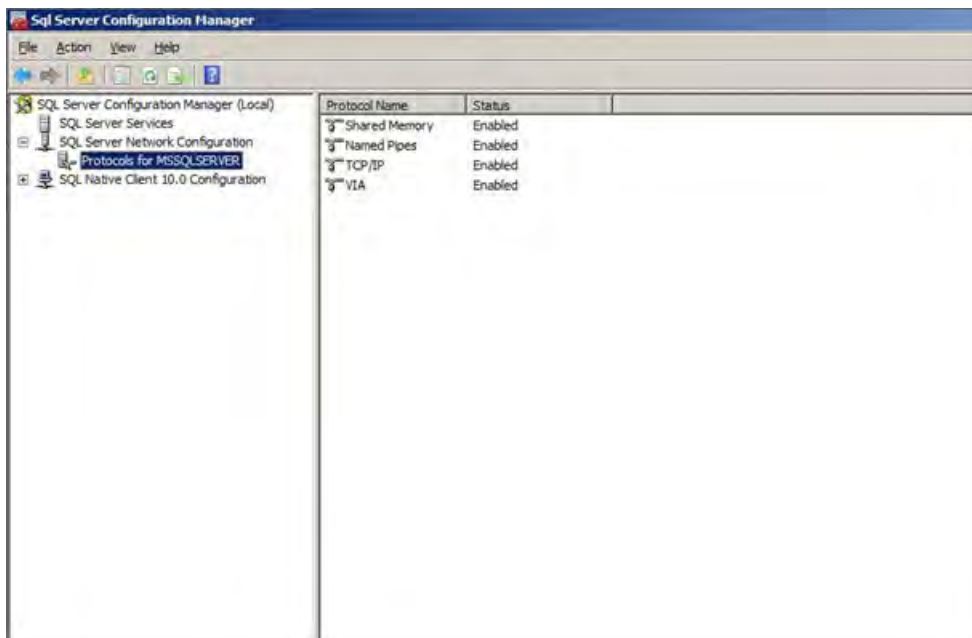
13. Click **Next** on "Error Reporting" window.

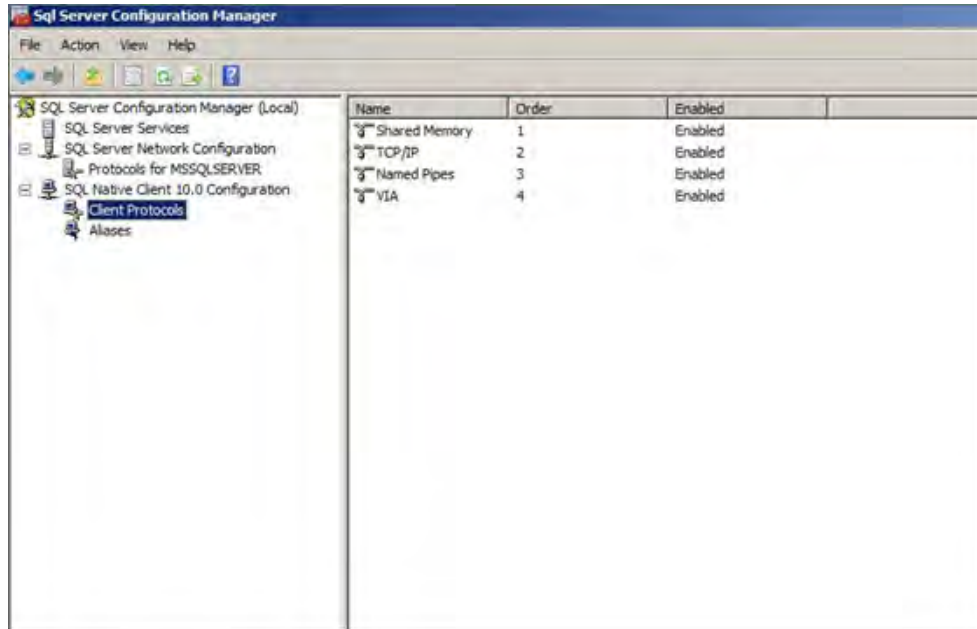


14. Click **Close**.



15. Open SQL Server Configuration Manager and right-click to Enable all for both.



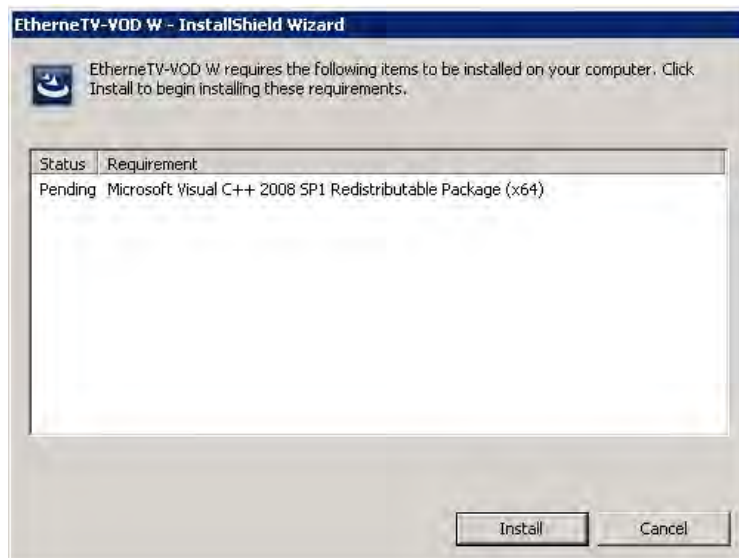


16. Reboot the server.

## Installing the VOD-W Software

The VBrick VOD-W server comes from the factory with Windows Server 2008 R2 and the VOD-W software already installed.

- ▼ To install on a system with Windows Server 2008 R2 already present:
  1. Insert Product CD into CD drive.
  2. Open Windows Explorer then browse to CD-ROM.
  3. Install SQL 2008 R2 refer to topic "Installing SQL Server 2008 Express Software."
  4. Install InfoValue Quickvideo OnDemand Server by double clicking on `SetupVODW_6_X_X_X.exe`
  5. Click Install on Visual C++ 2008 SP1 Redistribution.





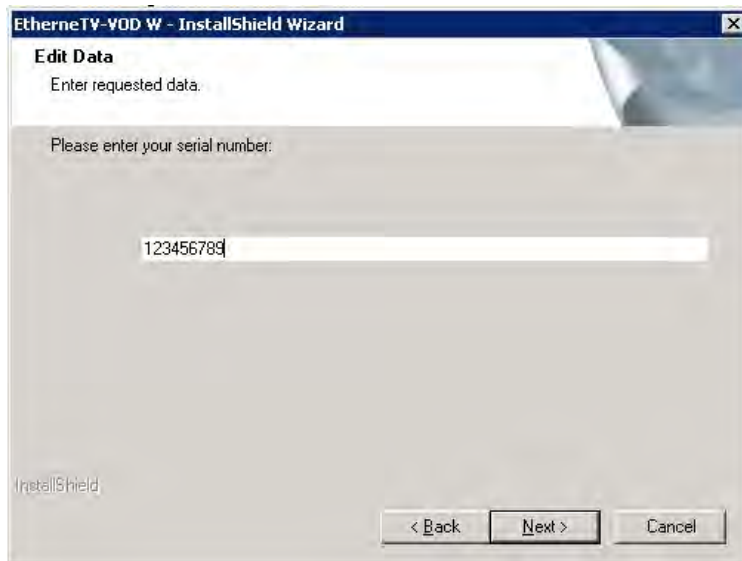
- Click **OK** for reboot if the message pops up.



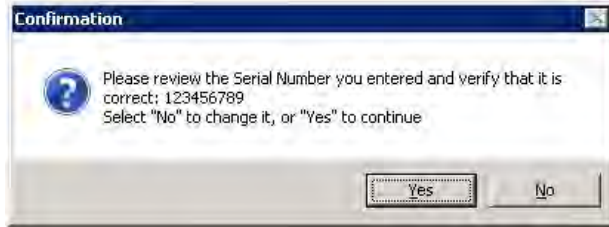
- Click Install on Visual C++ 2008 SP1 Redistribution.



- Enter a 9 digit serial number and click **Next**.



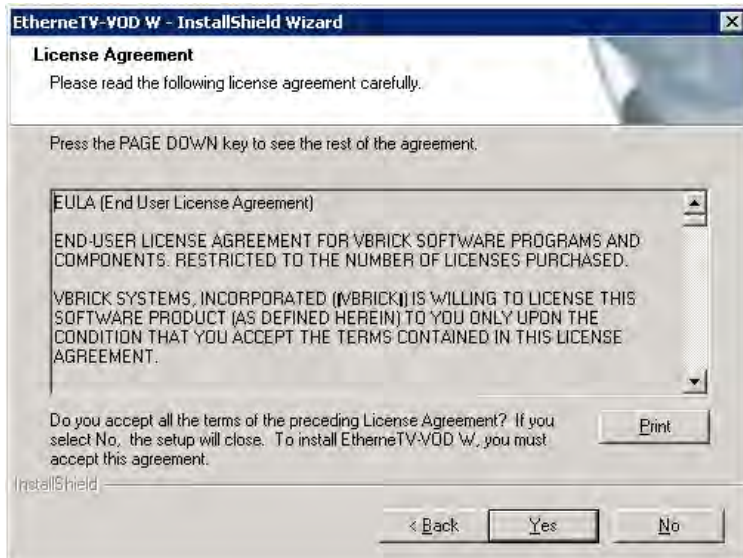
- Click **Yes** to confirm the serial number.



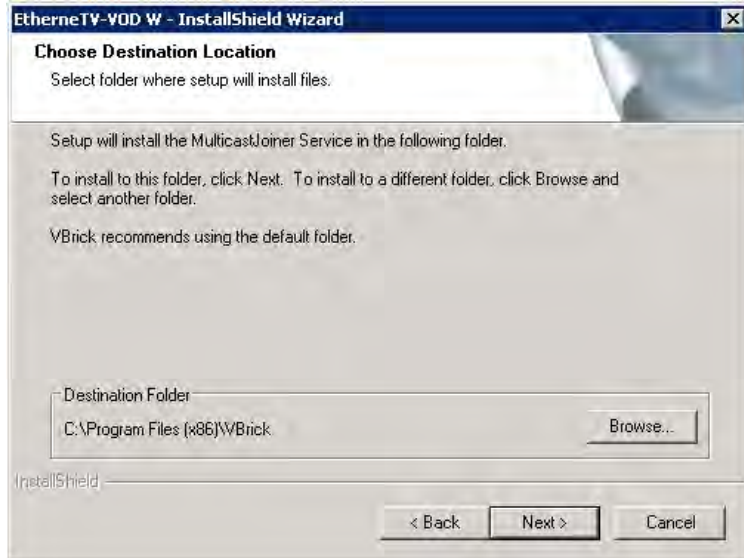
10. Click **Next** on Welcome for QuickVideo OnDemand Server.



11. Click **Yes** on "License Agreement."



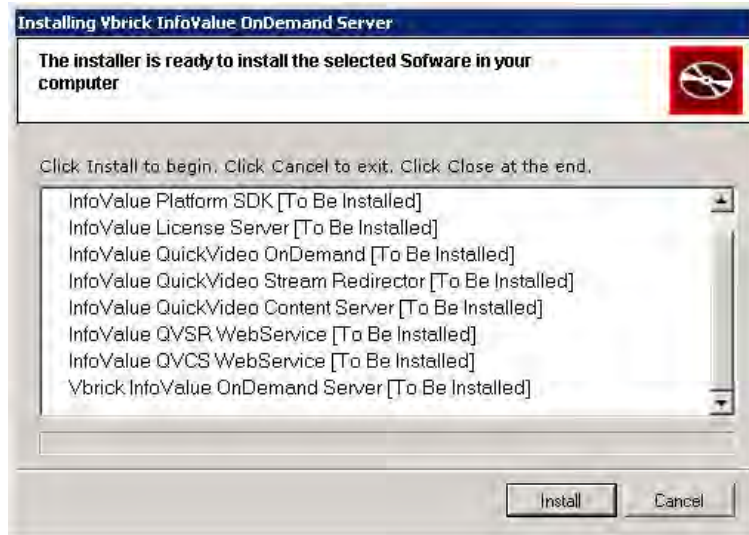
12. Click **Next** on "Choose Destination Location."



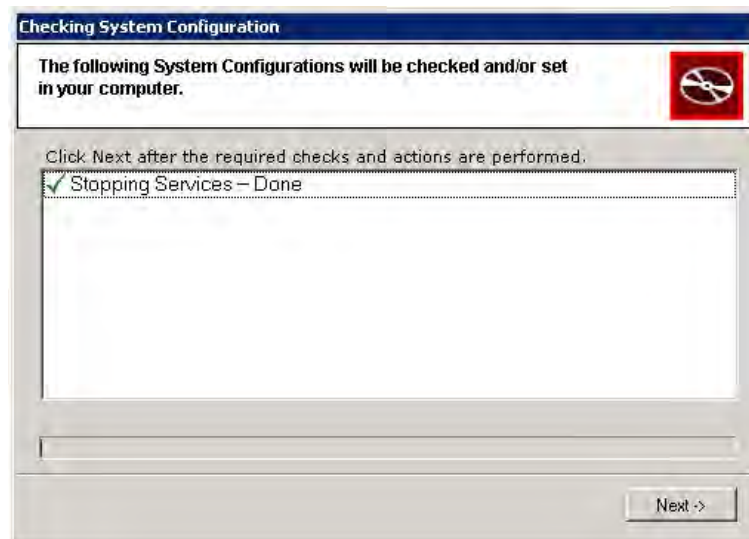
13. Click **Next** on "Welcome to VBrick InfoValue OnDemand Server."



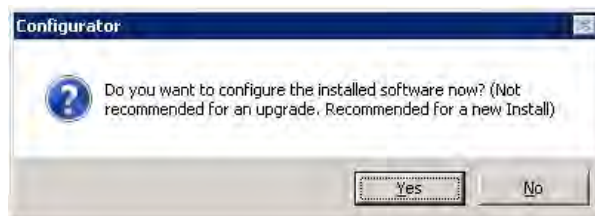
14. Click **Install** on "Installing VBrick InfoValue OnDemand Server."



15. Click **Next** on "Check System Configuration."



16. Click **Yes** on "Configurator."



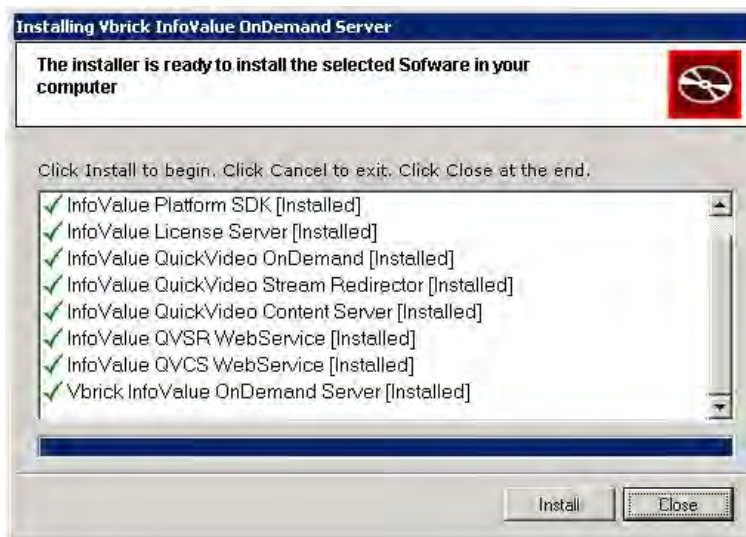
17. Click **Done** on "Quick Configuration."



18. Click **OK**.



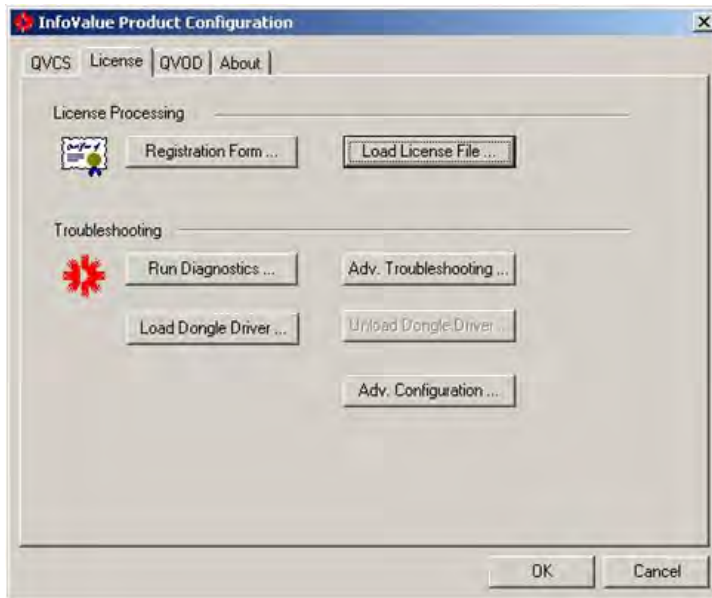
19. Click **Close**.



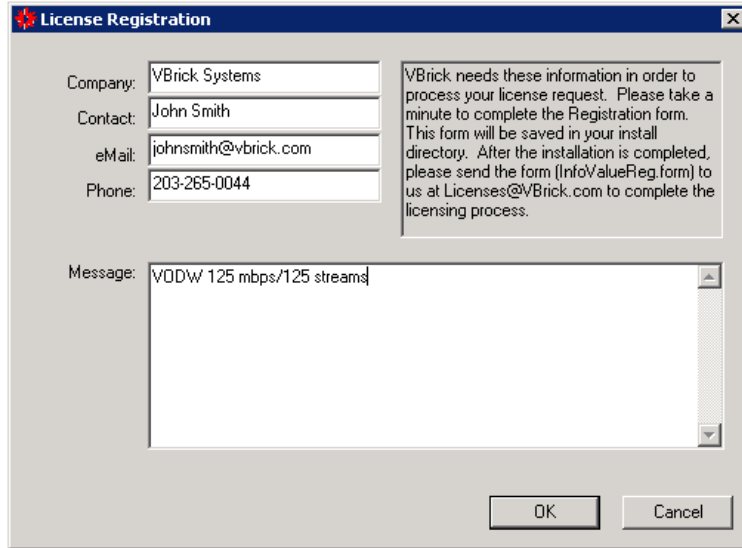
20. Click **Finish** to reboot.



21. Wait for reboot to complete then login to the server.
22. Go to **Start > All Programs > InfoValue > Administer > Configure InfoValue Services**. Click on License tab and then click **Registration Form**.



23. Complete the Registration Form and click **OK**.



**License Registration**

Company: VBrick Systems

Contact: John Smith

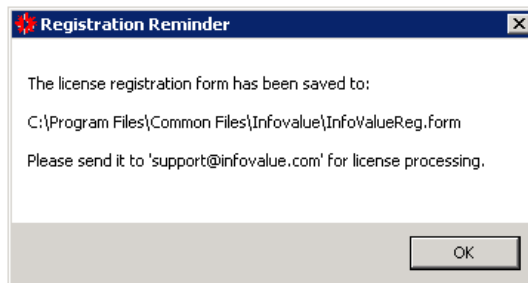
eMail: johnsmith@vbrick.com

Phone: 203-265-0044

VBrick needs these information in order to process your license request. Please take a minute to complete the Registration form. This form will be saved in your install directory. After the installation is completed, please send the form (InfoValueReg.form) to us at Licenses@VBrick.com to complete the licensing process.

Message: VODW 125 mbps/125 streams

OK Cancel



**Registration Reminder**

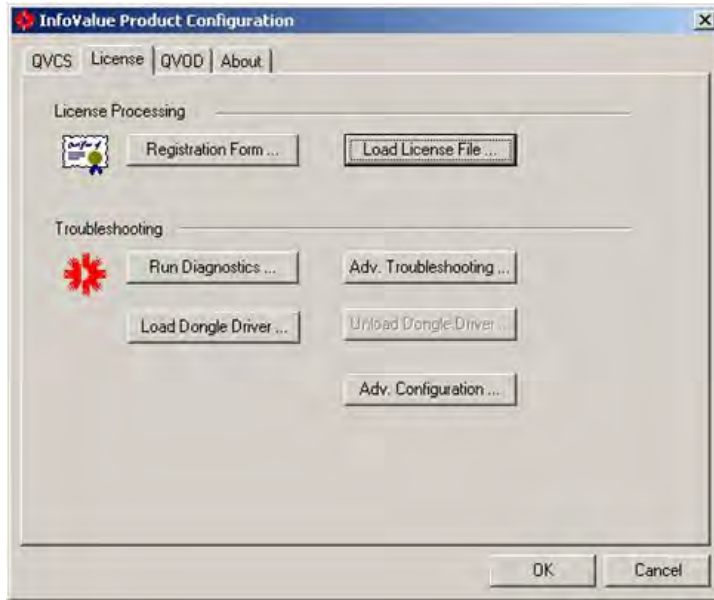
The license registration form has been saved to:

C:\Program Files\Common Files\InfoValue\InfoValueReg.form

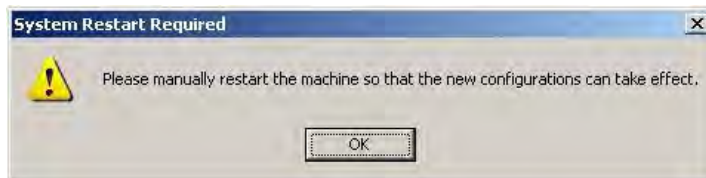
Please send it to 'support@infovalue.com' for license processing.

OK

24. When done, go to `C:\Program Files\Common Files\InfoValue` and copy the file `InfoValueReg.form`. (If reinstalling the VOD-W software you will already have a license file. Skip Steps 24 and 25 and click **Next** to go to the InfoValue Product Configuration page.)
25. **E-mail the registration file to licenses@vbrick.com.** *Be sure to include in your e-mail all of the required information described in [Getting a License](#) on page 18.* VBrick will return a license file typically in four business days or less. Complete the remaining steps in this procedure *after* you receive a license file from VBrick.
26. Insert license CD into CDROM drive.
27. Go to **Start > All Programs > InfoValue > Administer > Configure InfoValue Services**. Click on License tab to load license file. Note: If license file needs to be reloaded open Windows Explorer and browse to `C:\windows\system32` and delete `infovalue*.lic` file.



28. Click **OK**.



29. Click **OK**.



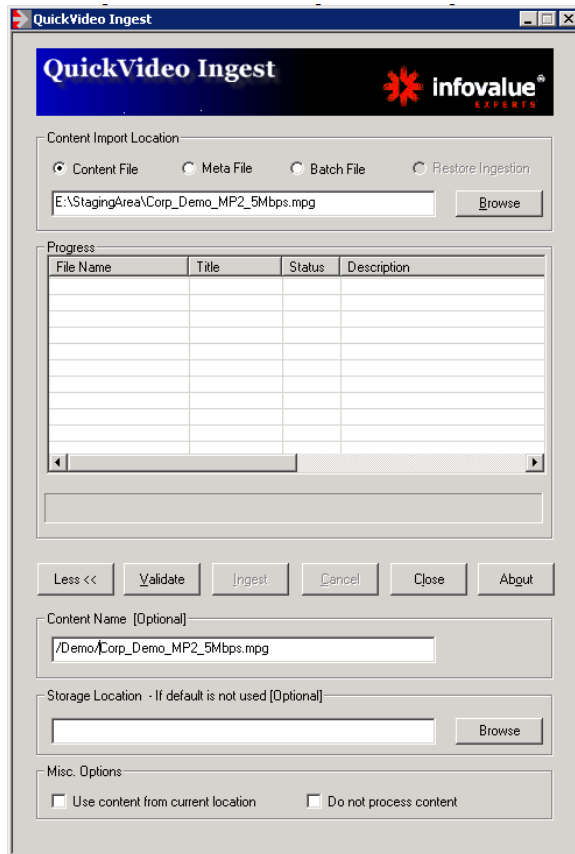
30. Click **Restart** from Start menu.
31. Wait for reboot to complete then login to the server.
32. Go to **Start > All Programs > InfoValue > Administer > Configure InfoValue Services**.
33. The "InfoValue Product Configuration" screen will display. For VOD-W 50, the D drive is approx: 136 Gbytes; for VOD-W 125W, the D drive is approx: 409GBbytes; for VOD-W 300, the D drive is approx: 838Gbytes.
34. If external storage is configured, click **Add Storage Path**, create and browse to the "Content2" directory on the external storage volume, click **Add** and click **OK**.
35. Repeat step above for each external storage volume.
36. Click **OK** on "QuickVideo Configuration."





37. Click **Restart** from Start menu.

38. **Start > All Programs > InfoValue > Content > Ingest Content.** To ingest all demo contents.



---

## Additional Steps

### Viewing License Status

The license file corresponding to maximum streams and bandwidth you purchased is pre-installed on the server by VBrick. Under normal circumstances you will never have to re-install the license. The license file regulates the maximum video streaming throughput and the maximum number of simultaneous video streams. The license file is pre-installed on the VOD-W server in the `\system32` folder.

- ▼ To view the current license status:
  1. Launch the QVOD Server Console.
  2. Review the information of the splash page for current status: **Maximum Number of Streams** and **Maximum Throughput**.

### Uninstalling the VOD-W Software

**This procedure does not delete or remove any content that has already been ingested.** To remove ingested content, use the content deletion procedures before or after installation. The following procedure explains how to uninstall the software and remove the database. The folders you will be instructed to delete contain the database; to save a copy of this database, see [Database Backup](#) on page 47.

- ▼ To uninstall the VOD-W software:
  1. Go to **Start > All Programs > InfoValue > Uninstall InfoValue Software** to uninstall the QuickVideo OnDemand Server.
  2. For a cleaner uninstall, you should also uninstall the database components. To uninstall database components, go to **Start > Control Panel > Program features** and uninstall **All Microsoft SQL Server**.
  3. To uninstall the remaining VBrick VOD-W components, go to **Start > Control Panel > Program features** and uninstall **EtherneTV VOD-W**.
  4. Reboot the host after uninstalling these items.
  5. Save the database if necessary to `D:\Database_Backup` as explained in [Database Backup](#) on page 47.
  6. Log back in and manually remove the following folders from `C:\Program Files`:

```
InfoValue
Microsoft SQL Server
VBrick
```

### VEMS Configuration

Before you are done, you will still need to configure the Portal Server and (optionally) secure communications as explained below.

|                             |  |
|-----------------------------|--|
| Configure the Portal Server | The VOD-W server must be configured in VBrick's VEMS Portal Server before it is recognized as part of the VEMS system. See <a href="#">Configure the Server in VEMS</a> on page 8. |
|-----------------------------|--|

|                                 |   |
|---------------------------------|---|
| Configure Secure Communications | Optional. You can also configure additional security on the server using basic authentication or SSL encryption. Use this functionality to protect communication between the Portal Server and VOD-W. See <a href="#">Configuring Secure Communications</a> on page 10. |
|---------------------------------|---|



## Server Administration

### Topics in this chapter

|                                 |    |
|---------------------------------|----|
| Overview .....                  | 39 |
| Configuring the Server.....     | 40 |
| Manually Ingesting Content..... | 45 |
| Monitoring the Server .....     | 46 |
| Backup and Restore .....        | 47 |
| Best Practices.....             | 49 |

### Overview

There are three utility applications on the VOD-W server. As explained below, you can access these utilities locally by connecting a monitor to the VGA port or with a Remote Desktop Connection.

| Utility              | Description   |
|----------------------|---|
| Server Configuration | Used for initial configuration or when adding storage. You must reboot the server after any configuration changes. See <a href="#">Configuring the Server</a> on page 40. |
| Ingest Content       | For use by VBrick Support Services only. All VOD-W users should use VEMS Portal Server to add content to the server. (See <a href="#">Ingesting Content</a> on page 63.)  |
| Monitor QVOD Server  | Use to view status of various server functions.   |

### Using a Remote Desktop Connection

To connect to the VOD-W server you can attach a monitor directly to the VGA port on the server or you can use the Windows **Remote Desktop Connection** utility.

▼ To launch a Remote Desktop Connection:

1. From a remote computer, go to **Start > All Programs > Accessories > Remote Desktop Connection**.
2. Enter an IP address or select from the dropdown list and click **Connect**.
3. Enter a valid **User name** and **Password** and click **OK**. This launches a Remote Desktop window.
4. The procedure to launch each utility is explained below in [Using a Direct Connection](#).

### Using a Direct Connection

You can access the three utilities described above by connecting a standard monitor to the VGA port on the VOD-W server.

- ▼ To launch the utilities using a direct connection:
  1. Connect a monitor to the VGA port on the VOD-W server.
  2. To launch the *monitor* utility, go to **Start > All Programs > InfoValue > Administer > Monitor QVOD Server.**
  3. To launch the *configuration* utility, go to **Start > All Programs > InfoValue > Administer > Configure Infolvalue Services.**
  4. To launch the *ingestion* utility, go to **Start > All Programs > InfoValue > Content > Add or Ingest OnDemand Content.**

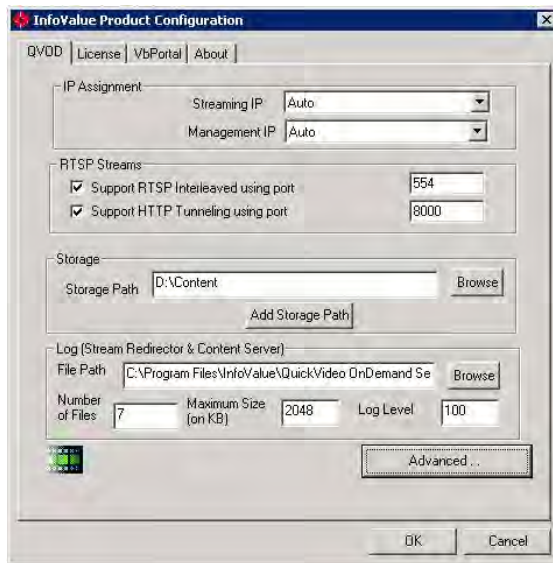
## Configuring the Server

This section is provided as an overview of the **Product Configuration** utility. Once the server is up and running you will seldom need to make configuration changes. However in the event that you *do* need to make a change, you must reboot the server before the changes are applied.

### Launching the Configuration Utility

**Note** All changes to the **QVOD** page on the Configuration Utility (including, for example, changes to the Storage Path) require a reboot before the changes are applied. To reboot, go to **Start > Restart.**

- ▼ To launch the server configuration utility:
  1. Go to **Start > All Programs > InfoValue > Administer > Configure Infolvalue Services.**



**Figure 9.** InfoValue Product Configuration Utility

|              |  |
|--------------|--|
| Streaming IP | IP address of the Content Server. Use the drop down menu to select the appropriate IP address or use <b>Auto</b> . |
|--------------|--|

|                                     |   |
|-------------------------------------|---|
| Management IP                       | Always select <b>Auto</b> . Management IP address of the VOD Server. For a single host VOD Server, the Management IP is the same as the Streaming IP.   |
| Support RTSP Interleaved using port | The port used for RTSP interleaving. Default = 554. Do not change.  |
| Support HTTP Tunneling using port   | The port used for HTTP tunneling. Default = 8000. Must not conflict with port used for web service communication. See note below.   |
| Storage Path                        | Always set to <code>D:\Content</code> . Use the <b>Browse</b> button to change the path. If the new folder does not exist, it will be created for you.  |
| Add Storage Path                    | The system can support multiple storage locations. Click <b>Add Storage Path</b> to launch the <b>Add Storage Path</b> window. Click <b>Browse</b> to select the additional storage to be added. Click <b>Add</b> to add the new storage. |
| File Path                           | Location of the content server log files. If not specified, the default log path <code>C:\Program Files\InfoValue\QuickVideo Content Server\Logs</code> will be used.   |
| Number of Files                     | Default = 7.  |
| Maximum Size                        | Size of each file size. Default = 1024 KB.  |
| Log Level                           | Content Server log level. Default = 99.   |

## Using HTTP Tunneling

HTTP tunneling is often used as a means for communicating from network locations with restricted connectivity, for example behind firewalls or proxy servers. To enable HTTP tunneling on the VOD-W you must specify the port that will be used for tunneling and the maximum number of tunneled streams allowed. *HTTP tunneling must be configured on both the VOD-W Server and on the Portal Server.*

▼ To configure for HTTP tunneling on the VOD-W Server:

1. In the Configuration Utility, go to the **QVOD** tab and check **Support HTTP Tunneling using port**.
2. Configure the tunneling port on the VOD-W. Default = 8000. In typical application, port 80 is used for HTTP tunneling. By default, the Portal Server and the VOD-W communicate over port 80. Therefore if you select port 80 as the tunneling port you must also reconfigure the web service communications port (see [Changing the Web Service Communication Port](#) on page 42).
3. Click on the **VbPortal** tab and configure the maximum number of tunneled streams. VBrick recommends a maximum of 50 streams for all servers.

▼ To configure for HTTP tunneling on the Portal Server:

1. Open the Portal Server Admin console, go to **Global Settings > Servers > Add/Modify VoD/FTP Servers**, and select the VOD-W server you wish to configure.
2. Configure the same **HTTP Tunneling Port** (see screenshot below) used on the VOD-W. Default = 8000. This port must match the port configured in Step 2 above.
3. Check **Supports HTTP Tunneling?** (see following screenshot).

**Note** The Portal Server and the VOD-W communicate using a web service configured to use port 80 by default. If you choose to tunnel over port 80, you must use a different port for the web service communication. To specify a different port for the web service communication (for example 8080), configure the **Web Service Port (HTTP)** on the Portal Server with the specified port number. Then configure the VOD-W to use this same port for the web service as described below.

The screenshot shows the 'Add/Modify VoD/FTP Servers' configuration page in the VBrick EthernetTV Suite. On the left is a navigation menu with options like 'Getting Started', 'Global Settings', 'Servers', and 'Channels'. The main area features a table of existing servers and a form for adding a new one.

| IP or Domain   | Server Description | FTP User Name | Server Type       |
|----------------|--------------------|---------------|-------------------|
| 172.22.119.123 | nxg1-1850          | vbrickuser    | NXG               |
| 172.22.2.158   | mets               | vbrickuser    | VOD-W             |
| 172.22.2.23    | GOLD               | vbrickuser    | VOD-WM-ENTERPRISE |

Below the table is a form for adding a new server. The 'FTP User Name' is set to 'vbrickuser' and the 'Server Type' is 'VOD-W'. The 'FTP Password' and 'Confirm Password' fields are masked with dots. The 'Publishing Local Path' is 'E:/StagingArea', and the 'Publishing Directory' is '/'. The 'Web Service Port (HTTP)' is set to '8080'. The 'HTTP Tunneling Port' is '80' and the 'Supports HTTP Tunneling?' checkbox is checked. The 'Secondary Server Address' field is empty.

## Configuring a Macintosh for Tunneled Streams

You may need to perform certain configuration steps on a Macintosh before you can use QuickTime to view streams tunneled over HTTP from a VOD-W server.

- ▼ To configure QuickTime for tunneled streams:
  1. Launch QuickTime on a Macintosh and click on the **Apple QuickTime** player to set focus on the task bar at the top of the screen.
  2. Click **QuickTime Player** in the task bar and go to **QuickTime Preferences**.
  3. On the **Advanced** tab, click on **Transport Setup** and then **Custom**.
  4. Check the **Port ID** used for the HTTP **Transport Protocol**. The **Port ID** must match the **HTTP Tunneling Port** set on the Portal Server for the VOD-W server (default = 8000). If necessary, get this port number from your system administrator. See the *Portal Server Admin Guide* for more information.

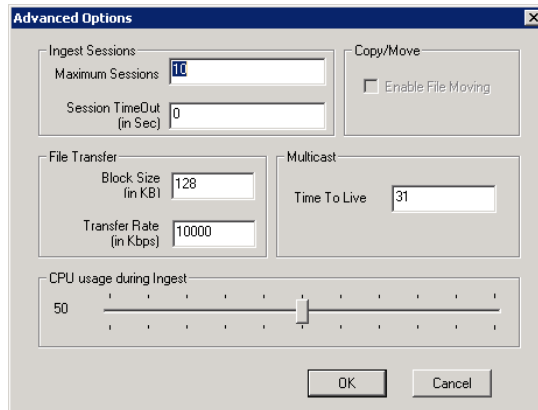
## Changing the Web Service Communication Port

The Portal Server and the VOD-W communicate using a web service configured to use port 80 by default. If you choose to tunnel over port 80, you must use a different port for the web service communication.



- ▼ To change the port used for web service communication between the Portal Server and VOD-W:
  1. Open IIS (go to **Start > Administrative Tools > Internet Information Services (IIS) Manager**).
  2. Select the web site for the web service from the tree on the left (go to **ComputerName > Web Sites > Default Web Site**).
  3. Right-click on **Default Web Site** and select **Properties**.
  4. On the **Web Site** tab, change the **TCP port** to match the port configured on the Portal Server (80 in the example above).

## Advanced Options

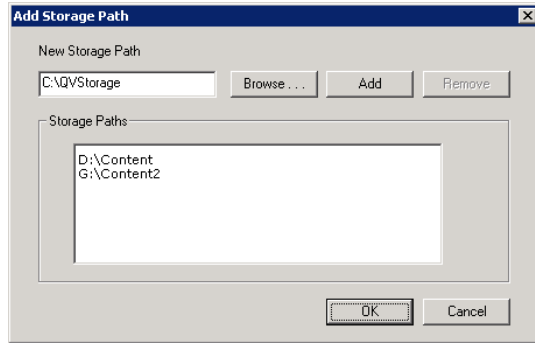


|                         |  |
|-------------------------|--|
| Maximum Sessions        | Do not change except as directed.  |
| Session Timeout         | Do not change except as directed.  |
| Block Size              | Do not change except as directed.  |
| Transfer Rate           | Do not change except as directed.  |
| CPU usage during Ingest | This setting can speed ingestion time. Do not change except as directed.   |
| Time To Live            | Default = 31. Use the default except as directed. The QuickVideo OnDemand Server can also be used as a multicast source. |

**Note** The VOD-W Server requires a license file. If the license is missing, you will get a popup error message after a reboot. To reinstall the license file, see [Software Installation](#) on page 17.

## Adding External Storage

If you purchased a system with external storage, the storage is configured and shipped with the VOD-W server—no additional configuration is required. If you are adding external storage at a later date, contact [VBrick Support Services](#) or your authorized reseller for more information about purchasing or upgrading external storage.



## Using Secure URL Password Protection

Use the **VbPortal** tab on the Configuration Utility to configure secure URL password protection. Secure URL protection prevents users from bypassing Portal Server authentication and playing back VOD content directly from VOD-W servers. Requests from player software and devices (for example STBs, IPRs, and PCs) include a key that is generated by the Portal Server and validated by the VOD-W server. *This key is valid for a limited time and is generated using a password configured on both the VOD-W Server and the Portal Server. These passwords must match.*

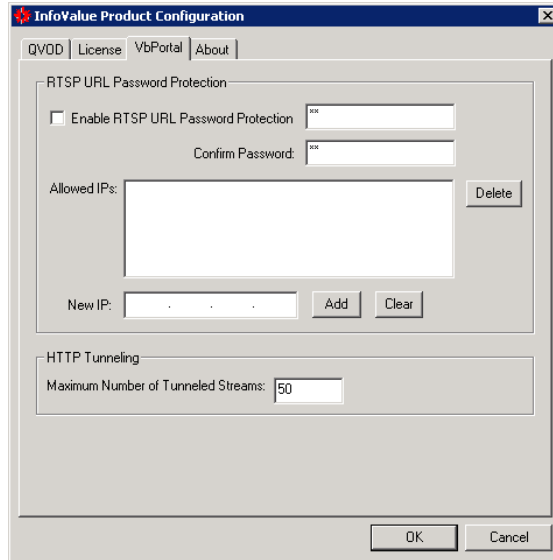
### VOD-W Configuration

- ▼ To enable URL password protection on the VOD-W Server:
  1. Open the VOD-W control panel application (go to **Start > All Programs > InfoValue > Administer > Configure InfoValue Services**).
  2. Select the **VbPortal** tab
  3. Check **Enable RTSP URL Password Protection** and enter and confirm the password. (The default password is **vbrickkey**.) This password must match the VOD-W Server.
  4. Click **OK** to save and exit the control panel application.
  5. Reboot the server when done to apply changes.

### Portal Server Configuration

- ▼ To enable URL password protection on the Portal Server:
  1. Open the Portal Server Admin console, go to **Global Settings > Servers > Add/Modify VoD/FTP Servers**, and select the VOD-W server you wish to configure.
  2. Check **Enable RTSP URL Password Protection** and enter and confirm the password. (The default password is **vbrickkey**.) This password must match the Portal Server.
  3. Click **Modify** to save your changes.

If you wish to enable URL protection but also have some devices that are not connected to the Portal Server, you can enable VOD requests to these devices by adding their IP addresses to the list of **Allowed IPs**. Simply enter the IP address of a device in the **New IP** field and click **Add**. Devices that access VOD content through the Portal Server do not need to be configured in this manner. Only those devices that communicate with the VOD server directly—without going through a Portal Server—require this configuration.



|                                     |  |
|-------------------------------------|--|
| Enable RTSP URL Password Protection | Enables secure URL password protection on the VOD-W server.  |
| Allowed IPs                         | Enables URL protection on devices not directly connected to the Portal Server.   |
| New IP                              | Use to populate the list of Allowed IPs.   |
| Maximum Number of Tunneled Streams  | Sets the maximum number of tunneled streams allowed. Default = 50. VBrick recommends a maximum of 50 tunneled streams for all VOD-W servers. The VOD servers have been qualified to tunnel 50 simultaneous streams at 1Mbps each. If you are tunneling at a lower bitrate, you can increase the number of tunneled streams. (On Dell 2850 servers, the maximum number of tunneled H.264 streams may be significantly reduced if using the Very High Quality template.) |

## Manually Ingesting Content

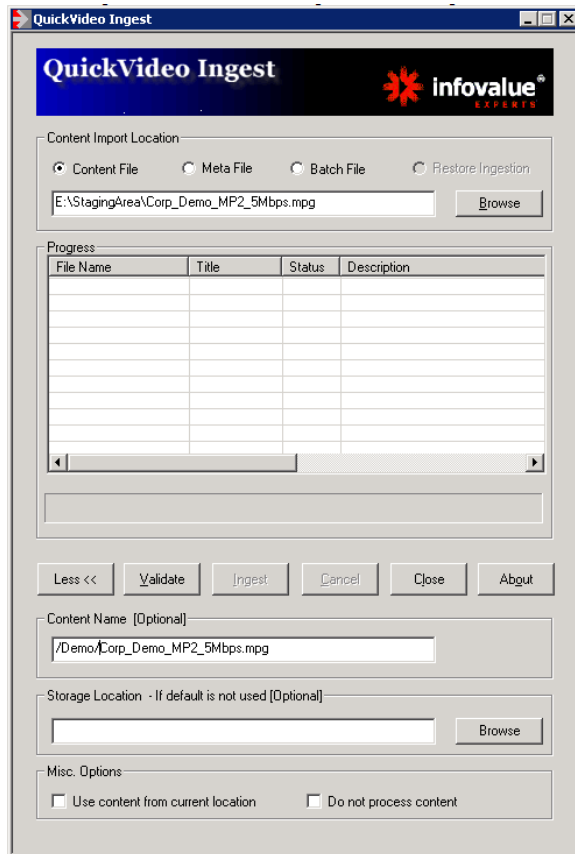
*VBrick strongly recommends that you use the VEMS Portal Server exclusively to ingest all VOD-W content.* The *VEMS Portal Server Admin Guide* explains in detail how to automate content ingestion. With the VEMS Portal Server you can add individual files or you can FTP or copy pre-recorded content to the VEMS Portal Server for easy ingestion to the VOD-W server. The VEMS server periodically (every 5 minutes) polls certain folders for presence of content and if found ingests the content onto multiple VOD-W servers. This process is called Automatic Content Ingestion or simply auto-ingestion. The content is placed in a pre-defined sub-folder under the FTP root folder. This pre-defined folder is called the auto-ingest root folder. (For more information, see [Ingesting Content](#) on page 63.) Content can also be added by using the **Add Video** function in VEMS Portal Server or by recording a live stream.

In some exceptional cases you may need to ingest content from the QuickVideo Ingest application. Use this application as explained below only when directed. For best results always use the VEMS Portal Server to ingest content.

▼ To ingest content from the QVCS application:

1. Go to **Start > All Programs > InfoValue > Content > Add or Ingest OnDemand Content.**

- Use the QuickVideo Ingest interface to ingest content. Click the **More >>** button to see all options.



|                                   |  |
|-----------------------------------|--|
| Content Import Location           | Location path of the content to be ingested. <ul style="list-style-type: none"> <li>Content File – directly from the content file.</li> <li>Meta File – not supported.</li> <li>Batch File – not supported.</li> </ul> |
| Content Name                      | Required. This is the title seen by users. <i>All content titles must begin with a forward slash (/).</i>  |
| Storage Location                  | Must be blank.   |
| Use content from current location | Not recommended. Content will not be copied/moved but will be processed in its current location.   |
| Do not process content            | Check this box when ingesting MPEG-2 audio-only content. The content will not be pre-processed but ingested as is. Used for pre-processed content i.e. content with trick mode files already generated.                |

## Monitoring the Server

See [Monitoring the Server](#) on page 51 for complete details.

## Backup and Restore

### Database Backup

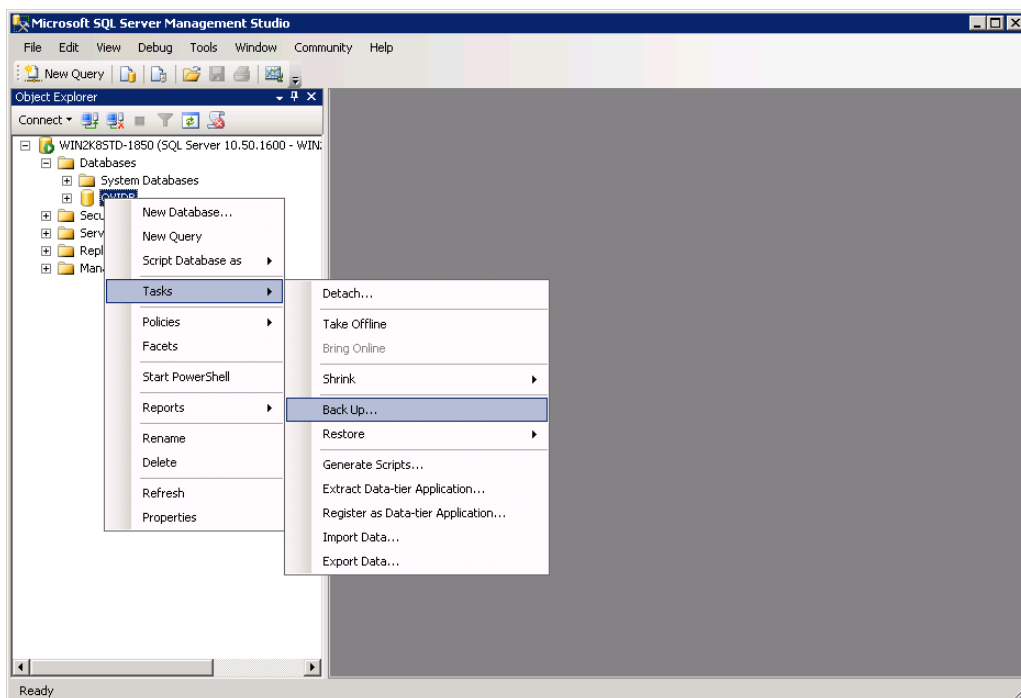
The VOD-W server automatically runs a daily script at 03:30 that backs up the SQL database. to D:\DataBase\_Backup. The server keeps backup files for the last five days and QVIDB\_1.dat\_bak is always the most recent backup file. Note that this daily backup procedure backs up the database (authentication data, passwords, metadata, etc.) only. *It does not back up any content.* In order to back up content, you need a separate backup strategy and a robust storage capability.

▼ To run an on-demand database backup:

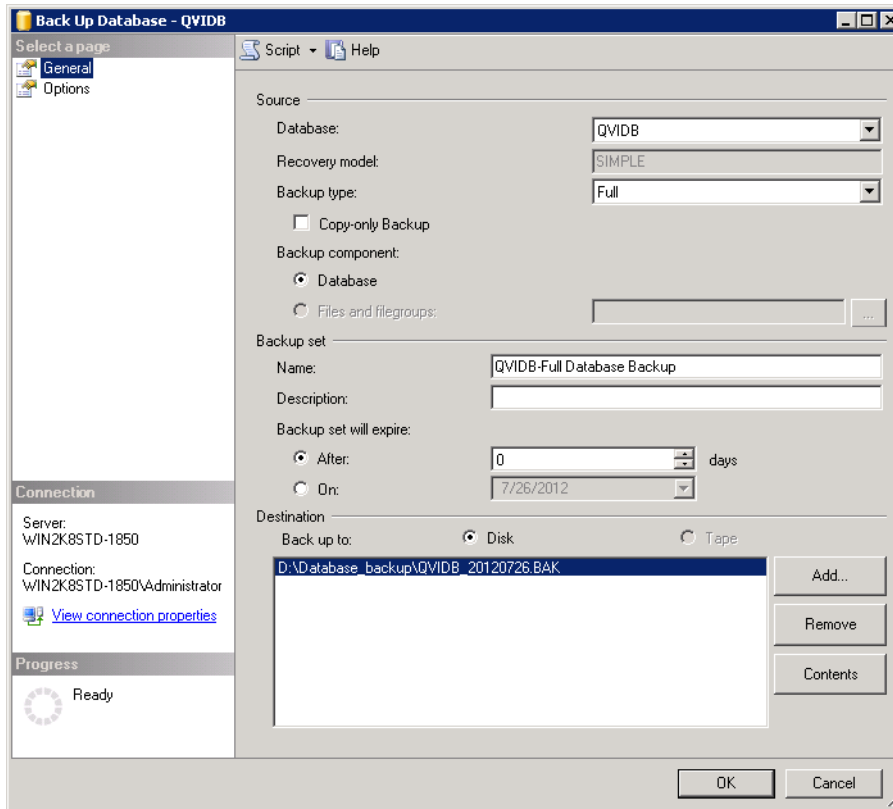
1. Go to **Start > Microsoft SQL Server 2008 R2 > SQL Server Management Studio** and click **Connect**.



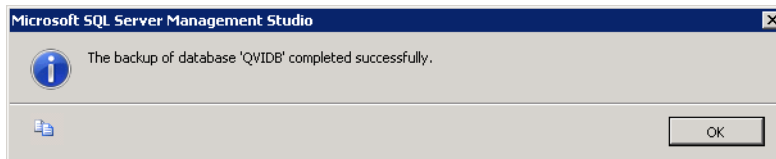
2. Click on **Databases** and then right-click on **QVIDB** and select **Tasks > Back Up**.



3. On the **General** tab, select a backup Destination (or use the default).



4. Configure any other options as necessary and click **OK**. This will automatically backup the database.



## Database Restore

It is unlikely you will ever need to restore the database except in the context of a system crash in which case you will need to restore the entire server (see [Server Restore](#)), including the database. To restore the database go to [Upgrading to SQL Server 2008 R2 Express \(32-Bit Only\)](#) on page 71 and complete Steps 5–7.

## Server Restore

VBrick and Dell installation CDs are shipped with the server in case the software ever needs to be restored (see [Software Installation](#) on page 17 for complete details). Note that this "Server Restore" refers to the server and operating system software only—not to the database or to any content on the server.

**Table 4.** Installation CD Contents

| CD-ROM                  | What it does  |
|-------------------------|---|
| Dell Recovery CDs       | Restore the Windows 2008 Server (Web or Enterprise Edition) operating system.   |
| VOD-W Server Product CD | Installs the following software: <ul style="list-style-type: none"> <li>• QuickVideo Content Server application.</li> <li>• Multicast joiner service and SQL redistribution.</li> <li>• Database backup utility.</li> <li>• Configures IIS with ASP.NET, FTP, and creates an FTP account with a home directory in <code>e:\StagingArea</code></li> <li>• Demo content available. If restoring the server, you must use the manual ingestion utility to ingest this content (see <a href="#">Manually Ingesting Content</a> on page 45 for details)</li> </ul> |
| VOD-W License CD        | Contains a license file that you will need when reinstalling the VOD-W software.  |
| SQL_Server 2008 R2      | Contains the software you will need when reinstalling the database.   |

## Best Practices

- All video assets stored on the server should have backup copies available in the event of disk corruption. This will allow for an easy restoral.
- StreamPlayer Plus allows the recording of live streams to MPEG-1, MPEG-2 and MPEG-4 files. Once saved the files can then be installed on the VEMS VOD-W server for playback. Make sure the "hinting" option is checked when recording H.264 or MPEG-4 files.
- When recording MPEG-4 and MPEG-2 files using StreamPlayer Plus software, it is advisable to keep the length of the record to under 50 minutes to facilitate creating playlists and keep viewing time manageable.
- As the disks become full, the performance of head-seek times diminishes and streaming performance may be affected. Purge unnecessary files and defragment as appropriate.
- Do not use spaces in filenames. Use underscores; for example: `my_history_class.mp4`.
- Apple QuickTime 6.5 or higher, with native MPEG-4 support, is the recommended MAC desktop player for accessing MPEG-4 files from the VEMS VOD-W. QuickTime supports the Seek feature (accessed through a slider-bar) for MPEG-4 streams. Make sure **Edit > Preferences > QuickTime Settings > Streaming Transport** option is set to **Automatically determine the best protocol and port ID** or to **Use UDP, RTSP Port ID 554**.
- Over time, frequent asset additions and deletions may fragment the hard drive and degrade VOD-W performance. To work around this issue and optimize performance, you should periodically defragment the disk using the standard Windows defrag utility on the **Accessories > System Tools** menu.





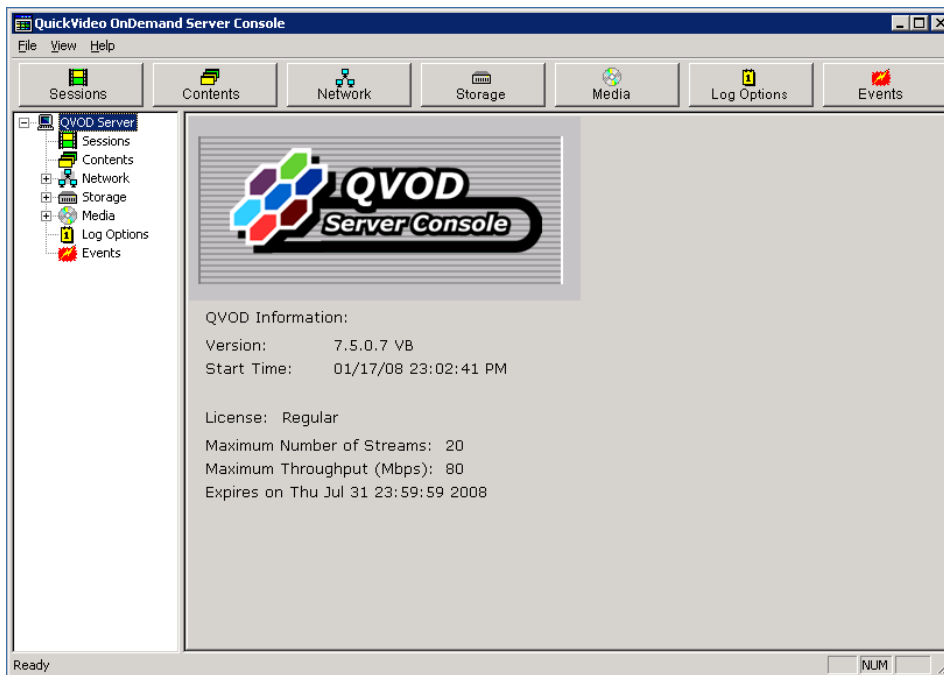
## Monitoring the Server

### Topics in this chapter

Using the QVOD Server Console ..... 51

### Using the QVOD Server Console

The QVOD Server Console is used to manage streams and to access administrative functions. The QVOD Server Console serves as the main back-end interface to the server. From this interface, you can view and manage video sessions streamed with the server.



**Figure 10.** QuickVideo On Demand Server Console

▼ To launch the QVOD Server Console:

1. Go to **Start > All Programs > InfoValue > Administer > Monitor QVOD Server.**

The QVOD Server Console will not be started if the QVOD Server Service is not running. When the QVOD Server Service is running, there will be a small icon in the system tray, and the tool tip will show **QVOD Server is running.**

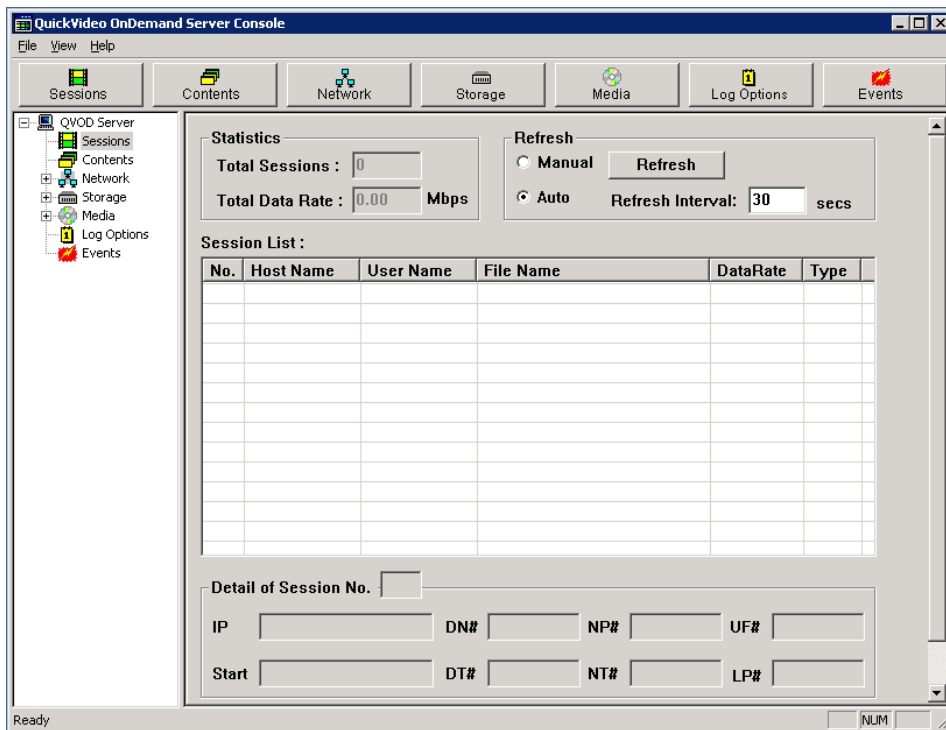
When you first open the console, you will see a tree view in the left pane, with a window in the right pane showing the version number and license (the license will be the license key you should have attached to the server's USB port). If the QVOD Server subtree is collapsed, double-click on the QVOD Server, or click on the + sign that appears to the left of QVOD Server to expand the subtree. To display a different view in the right pane, simply select and click on the desired tree node from the tree view in the left pane or choose among the six

management radio button options provided. Each of the views listed below is explained in detail on the following pages:

|                   |    |
|-------------------|----|
| Sessions .....    | 52 |
| Contents .....    | 54 |
| Network .....     | 54 |
| Storage .....     | 56 |
| Media .....       | 58 |
| Log Options ..... | 58 |
| Events .....      | 59 |

## Sessions

The Sessions view displays all the actively streaming sessions. The **Sessions** window is divided into four areas: the **Statistics** section, the **Refresh** section, the **Session List** section, and the **Detail of Session No.** section. Each field is explained below.



|                |   |
|----------------|---|
| Statistics     | This section displays the statistical information about the QVOD Server. The statistics displayed in this section include Total Sessions and Total Data Rate.   |
| Total Sessions | The total number of sessions or independent video streams currently being played from the QVOD Server. If the current bandwidth and number of streams are less than the licensed maximums, the next stream requested will be allowed regardless of bitrate. |

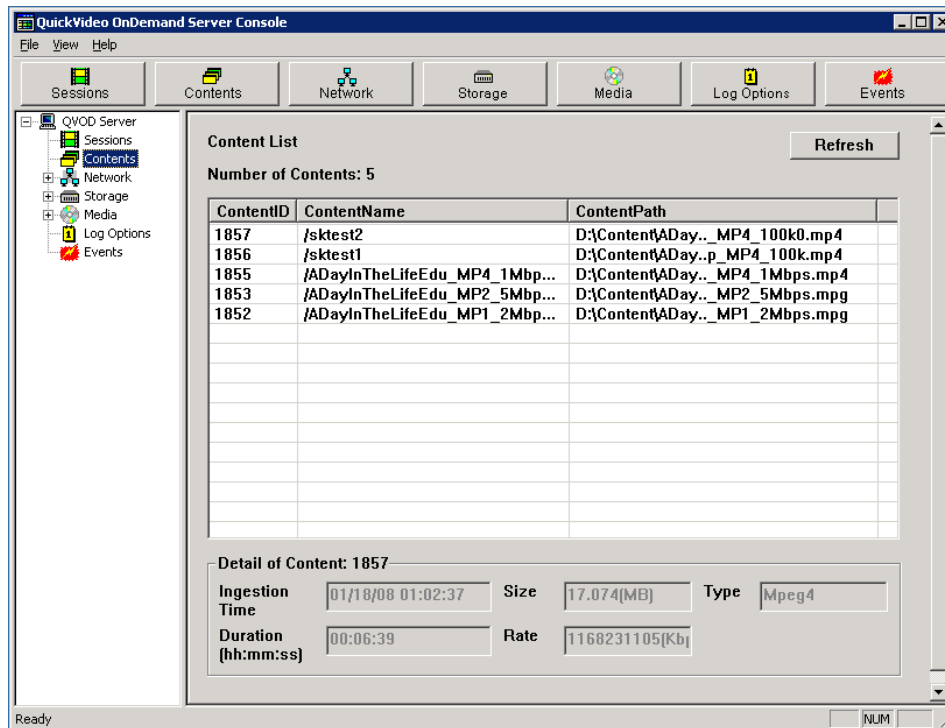
|                       |   |
|-----------------------|---|
| Total Data Rate       | The aggregate data rate of all active streaming videos from the QVOD Server. The unit of measure is the Mbps (Megabit per second). If the current bandwidth and number of streams are less than the licensed maximums, the next stream requested will be allowed regardless of bitrate.   |
| Refresh               | This section lets you set the Refresh to manual or auto. <ul style="list-style-type: none"> <li>Manual – the session list must be refreshed manually.</li> <li>Refresh – use to refresh the page if Manual refresh is selected. The session will not be manually refreshed unless you click this button.</li> <li>Auto – the session list will be refreshed automatically at the refresh interval.</li> <li>Refresh Interval – specifies the refresh period, in seconds, for auto refresh.</li> </ul> |
| Session List          | Each actively playing session is listed in its own row. To terminate a session, right-click on a row in the Session List group and select <b>Kill Session</b> . When confirmed, the session is removed from the server.   |
| No.                   | A unique internal session number assigned to each actively playing session.   |
| Host Name             | The host machine name (or IP Address) of the client machine which is playing the video stream.  |
| User Name             | The user name of the person logged on to the client machine playing the video file (blank for RTSP clients).  |
| File Name             | The full path name of the video file that is being played back.   |
| Data Rate             | The average data rate, computed over four-second intervals. The number displayed is the dynamic data rate which may be different from the encoded data rate.  |
| Type                  | The type of the session. M2U means an RTSP session.   |
| Detail of Session No. | Shows additional information for a particular session. To display the detail of a session, go to a row in the Session List group and double-click on any cell in the row. The details will be displayed in the Detail of Session No. group. The session number of session being displayed is listed in the small box right after the text <b>Detail of Session No.</b>  |
| Client IP Address     | The IP address of the corresponding client machine. The port number being used by the client machine is displayed after the IP address.   |
| Start Time            | The time (QVOD Server time clock) when the video file was opened by the client machine.   |
| DN                    | A count showing the number of times when data was not ready to be sent.   |
| NP                    | Average number of packets sent.   |
| UF                    | Underflow (count).  |
| DT                    | Disk Time (Avg time).   |
| NT                    | Network send time.  |

LP

In RTSP streaming, LP represents number of times the scheduler was called.

## Contents

The **Contents** page shows all VOD content on the server. The information includes **Ingestion Time**, **Size**, **Type**, **Duration**, and the **Rate** at which it was encoded.



The screenshot shows the QuickVideo OnDemand Server Console interface. The navigation tree on the left includes Sessions, Contents, Network, Storage, Media, Log Options, and Events. The main content area displays the 'Content List' with a 'Refresh' button and a table of content items. Below the table is a 'Detail of Content: 1857' section with fields for Ingestion Time, Duration, Size, Rate, and Type.

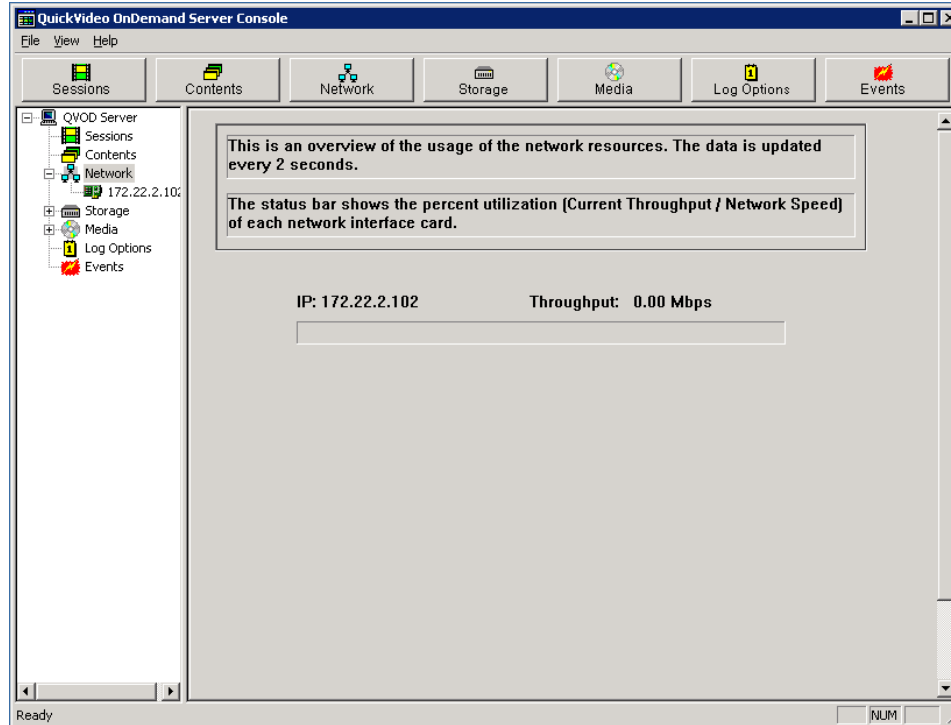
| ContentID | ContentName                   | ContentPath                     |
|-----------|-------------------------------|---------------------------------|
| 1857      | /sktest2                      | D:\Content\ADay.._MP4_100k0.mp4 |
| 1856      | /sktest1                      | D:\Content\ADay..p_MP4_100k.mp4 |
| 1855      | /ADayInTheLifeEdu_MP4_1Mbp... | D:\Content\ADay.._MP4_1Mbps.mp4 |
| 1853      | /ADayInTheLifeEdu_MP2_5Mbp... | D:\Content\ADay.._MP2_5Mbps.mpg |
| 1852      | /ADayInTheLifeEdu_MP1_2Mbp... | D:\Content\ADay.._MP1_2Mbps.mpg |

Detail of Content: 1857

|                     |                   |      |                  |      |       |
|---------------------|-------------------|------|------------------|------|-------|
| Ingestion Time      | 01/18/08 01:02:37 | Size | 17.074(MB)       | Type | Mpeg4 |
| Duration (hh:mm:ss) | 00:06:39          | Rate | 1168231105(Kb/s) |      |       |

## Network

In the navigation tree on the left side of the QVOD Server Console, click on **Network**. The right-hand side of the QVOD Server Console will display the network utilization.

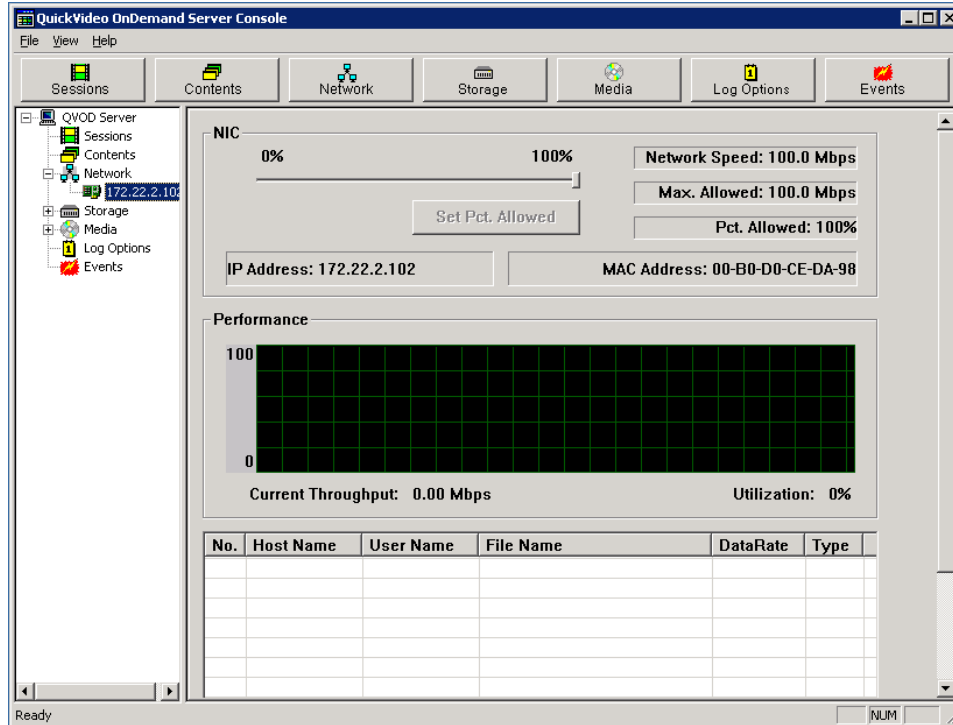


The following information is displayed and updated every two seconds:

- IP Address.
- Current Data Rate (Mbps).
- Utilization (current data rate/network speed) shown as a status bar.

### Individual Network Interface Card

Network Manager View is a good place to see an overview of all network activity. From the left side of the QVOD Server Console, if the Network Manager sub-tree branch is collapsed, double-click on **Network Manager** or click on the plus sign **+** that appears to the left of Network Manager, to expand the subtree. After the branch is expanded, you will see a tree node showing the IP address of the server NIC. Click on the IP address of your server and the right-hand side will display the individual network interface card view. This view has the **NIC** section and the **Performance** sections.



|             |  |
|-------------|--|
| IP Address  | IP address of the selected NIC.  |
| MAC Address | MAC address of the selected NIC.   |
| Slider bar  | Allows you to set a limit on the usage of the selected NIC. To limit the usage, move the slider bar to select the maximum throughput allowed (Max. Allowed Mbps) for streaming through the NIC (as a percentage (Pct. Allowed) of the total NIC speed (Network Speed Mbps), then click on the Set Pct. Allowed button to activate the setting. |

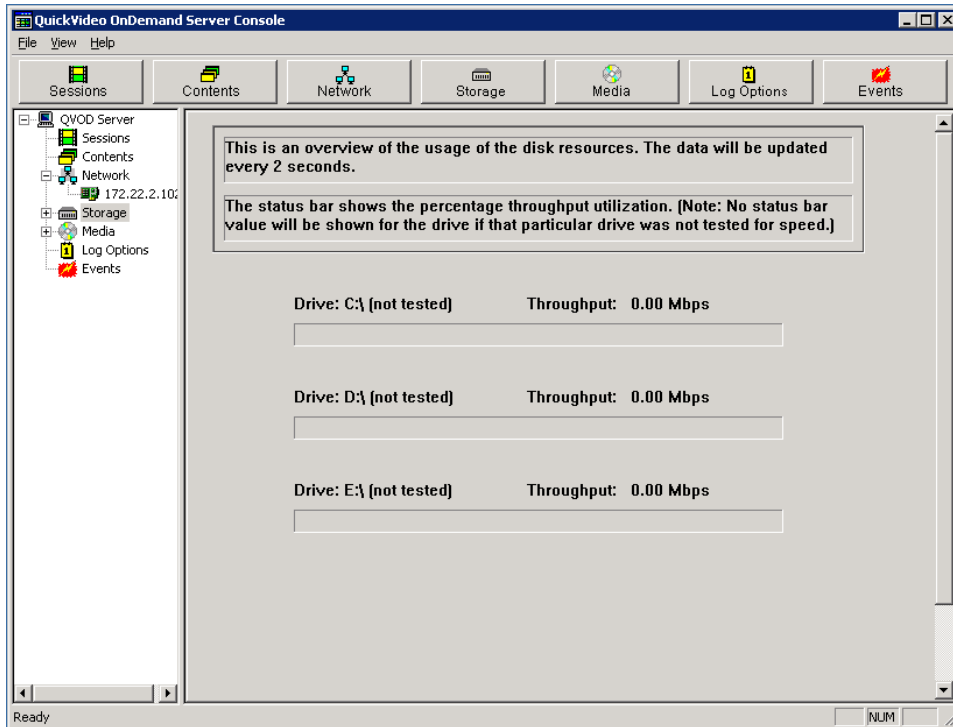
The NIC speed setting function allows an administrator to limit the amount of video data that is streamed over a network segment by a QVOD Server. If, for example, the IT group in a company only allows a portion of its network to be used for video streaming, an administrator can use this feature to define a limit that complies with this restriction. The **Performance** window in the individual NIC view, displays more detailed information of the NIC.

- A running graph plotting the most recent utilization history.
- Current Data Rate (Mbps).
- Utilization of the interface card as a percentage of the total NIC speed.
- List of the individual video streams going through the network card. An administrator can terminate a session by right-clicking on a session.

## Storage

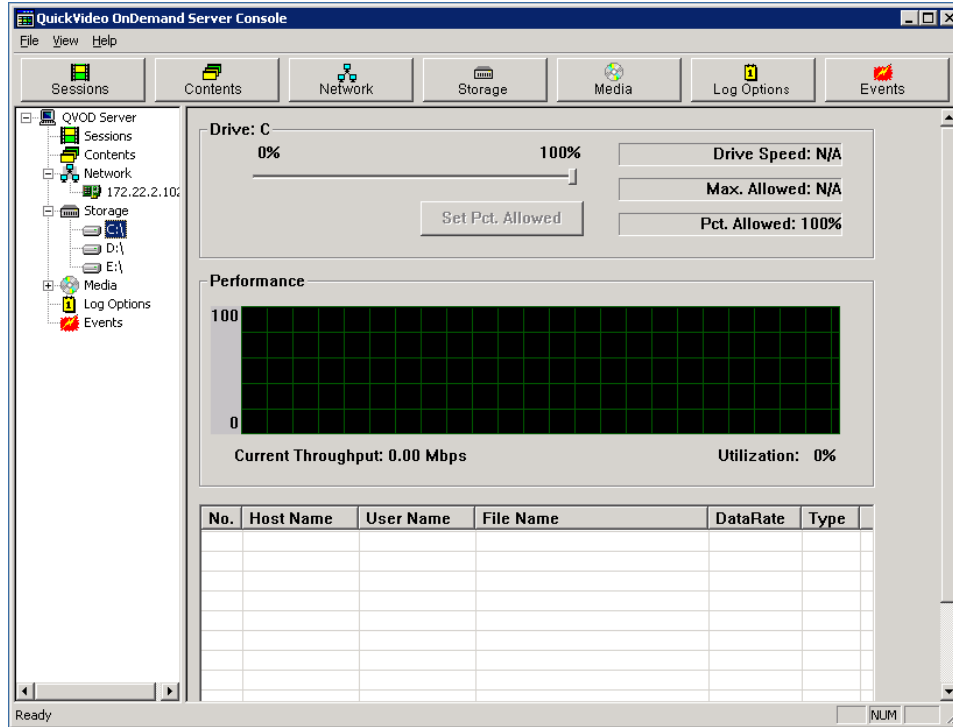
From the left side of the QVOD Server Console, click on the tree item that says **Disk Manager**. The right-hand side of the QVOD Server Console will display utilization statistics for each drive in the system. For each drive, the following information will be shown and updated every two seconds:

- Current Data Rate (Mbytes/sec).
- Utilization (current data rate/drive speed) shown as a status bar.



### Individual Drive

From the left side of the QVOD Server Console, if the Disk Manager subtree branch is collapsed, double-click on **Disk Manager** or click on the plus sign (+) to expand the tree branch. After the branch is expanded, you will see the tree nodes displaying drive letters of each logical drives in the system. To view or edit the settings of a particular drive, click on that tree node, and the right-hand side will display the individual drive view. The individual drive view has two sections in it. They are the **Drive: x** (where x is the corresponding drive letter) section and the **Performance** section.



|                  |  |
|------------------|--|
| Set Pct. Allowed | Always set to 100 per cent.  |
| Performance      | <p>This window in the individual drive view displays more detailed information for the drive.</p> <ul style="list-style-type: none"> <li>• A running graph plotting the most recent utilization history (updated every second).</li> <li>• Current Data Rate (MBytes/sec).</li> <li>• Utilization of the drive as a percentage of the total drive speed.</li> <li>• List of the individual video streams going through this drive. An administrator can also terminate a session by right-clicking on it.</li> </ul> |

## Media

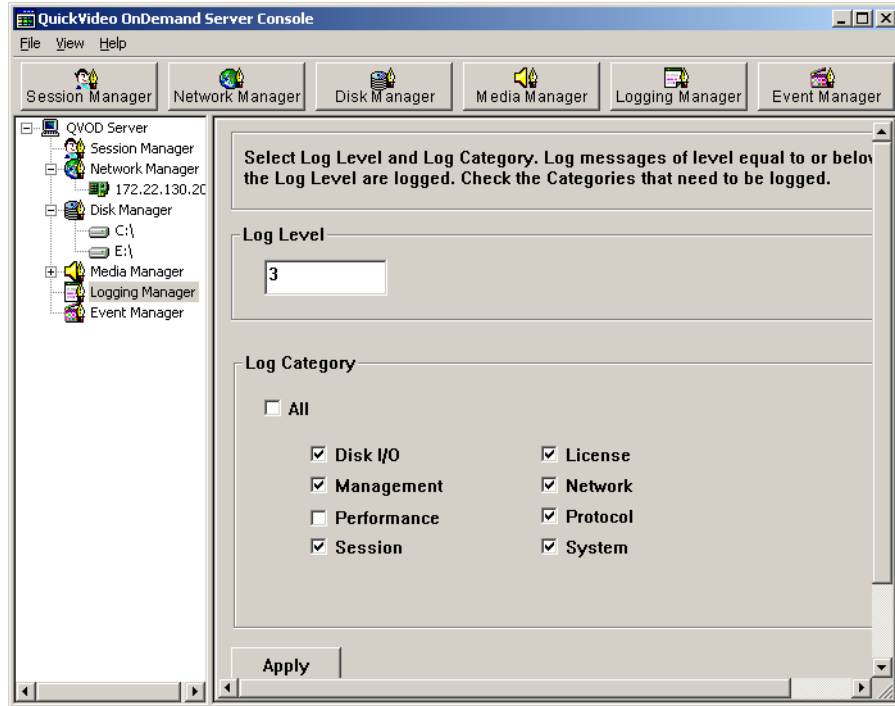
This page is not used or supported with any VOD-W features or functions.

## Log Options

From the left side of the QVOD Server Console, click on **Log Options**. The right-hand side of the QVOD Server Console will change to the **Log Options** view. This view lets you specify the event types you want to see. Only the selected events will be saved to the log file and displayed in the Event Viewer. The supported events include, Disk I/O, Management, Performance, Session, License, Network, Protocol and System based. Select the desired settings and click the **Apply** for the settings to take effect.

**Note** Use the Logging Manager to set the **Log Level** and **Log Category**. These are the only configurable parameters on the QVOD Server Console.

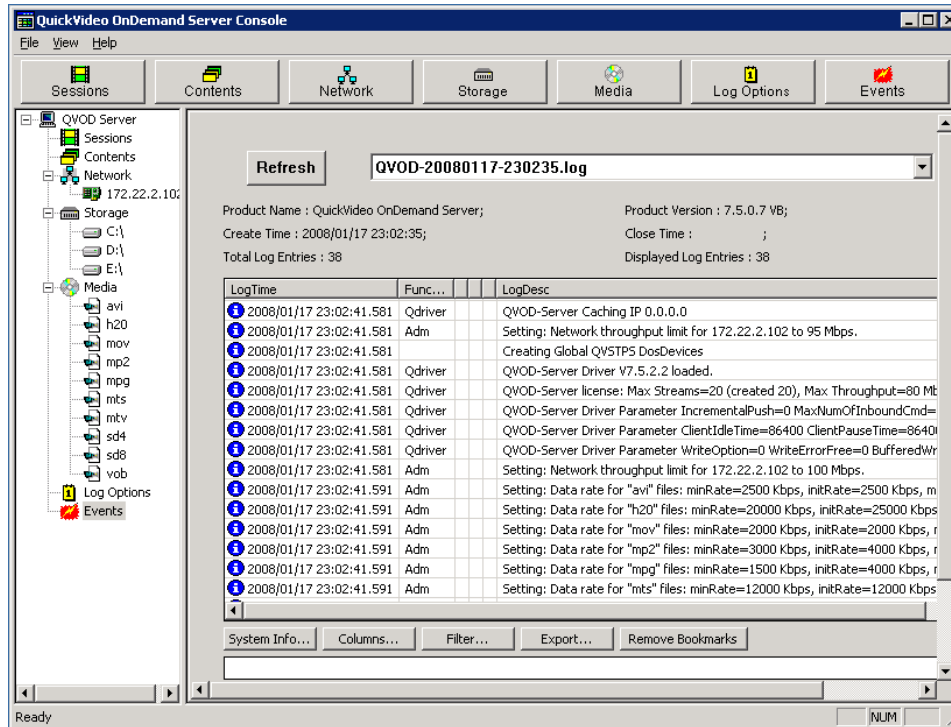




|              |   |
|--------------|---|
| Log Level    | Select a Log Level from 1–5. The Log Level determines the verbosity of messages in the Event Log. |
| Log Category | Select some or all categories. These are the items that will be written to the log.               |

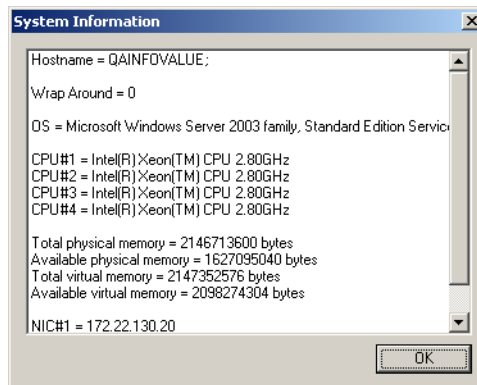
## Events

The **Events** page lets you view the most recent events that were logged by QVOD Server. The logged events correspond to the **Log Level** and **Log Category** you selected in **Log Options**. You can select different logs from the drop down list box. To create custom reports from log data, see [Generating Custom Reports](#) on page 67.

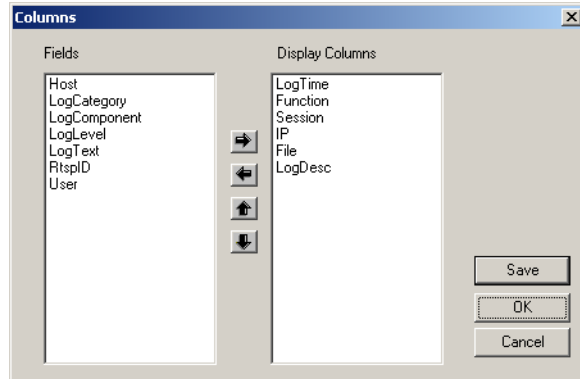


From the left side of the QVOD Server Console, click on **Events**. The right-hand side of the QVOD Server Console will display events in the most recent log file. Use the drop down menu to select other log files. The **Events** page also lets you manipulate the view by changing the type of columns displayed, filtering log events, bookmarking, etc. For example,

- ▼ To get server host system information, click on **System Info**.

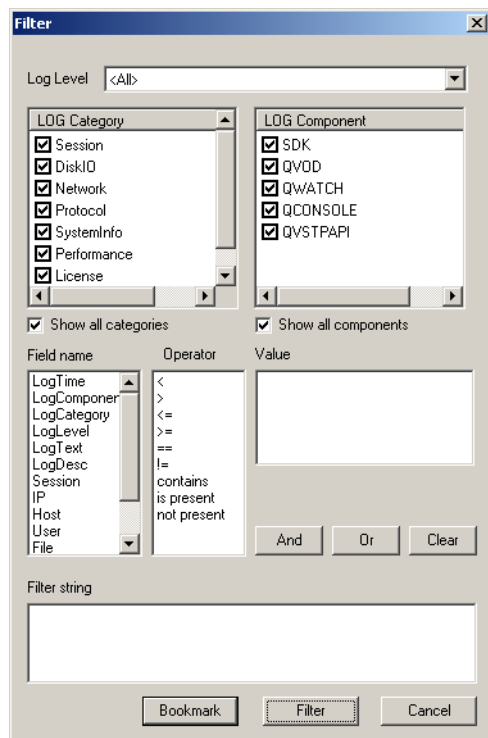


- ▼ To change the column types that are displayed, click on **Columns**.



- ▼ To modify the way log events are displayed, click **Filter**.

For example, if you select **IP** as the Field Name, **contains** as the operator and type **172.30.10.32** as the **Value**, then select the **And** operator, clicking on **Filter** will display only the log lines with the IP address 172.30.10.32.





## Ingesting Content

### Topics in this chapter

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| Content Ingestion ..... | 64 |
| Best Practices .....    | 65 |

### Overview

The content ingestion procedure is described in [Manually Ingesting Content](#) on page 45. However VBrick strongly recommends that you use the VEMS Portal Server exclusively to ingest all VOD-W content. With the VEMS Portal Server you can add individual files or you can FTP or copy pre-recorded content to the VEMS Portal Server for easy ingestion to the VOD-W server. The VEMS server periodically (every 5 minutes) polls certain folders for presence of content and if found ingests the content onto multiple VOD-W servers. This process is called Automatic Content Ingestion or Auto-ingestion. The content is placed in a pre-defined subfolder under the FTP root folder. This pre-defined folder is called the auto-ingest root folder. Content can also be added by using the **Add Video** function in VEMS Portal Server or by recording a live stream.

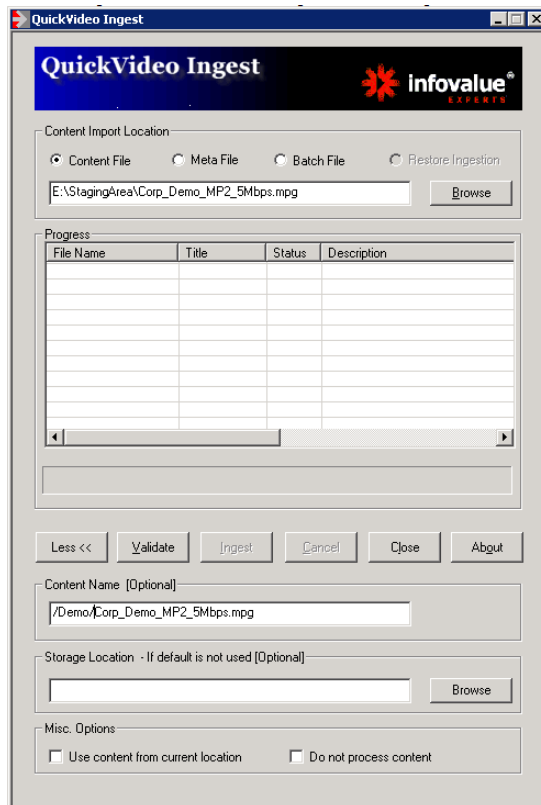


Figure 11. QuickVideo Ingest Content Page

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Video content added to a VOD-W server goes through a transformation process known as ingestion. This process takes the original source MPEG video file and generates additional "trick" files which are used for indexing, fast forward, and rewind. These files are managed by an internal SQL database on the VOD-W which is used to keep track of all the trick files associated with a single piece of video content. This chapter describes the process of ingestion and its impact on data storage, content backup and recovery.

## Ingestion Considerations

- Extra space in the server file system is required during ingestion. The space required is approximately three times the size of the file being ingested. Make sure you have enough free space available before performing an ingestion.
- You should also understand that ingestion time is a function of (1) the configured ingestion rate and (2) the file size (or file duration and bit rate).
- The maximum number of simultaneous ingestions on the VEMS Portal Server is two. If the number of attempted ingestions exceeds two, they will be queued up.
- All content titles must begin with a forward slash (/) and apostrophes are not allowed.
- In VOD-W 6.x, H.264 Transport Stream VBR (variable bit rate) files are automatically ingested as VBR streams.

## Content Ingestion

Before the ingestion process begins, the video content must physically reside on the VOD-W server. In most cases, this file transfer is handled automatically by the VEMS Portal Server. In a typical scenario, after recording a piece of video content, the VEMS Portal Server automatically FTPs the video to a temporary staging area on the VOD-W and launches the ingestion process. Ingestion is a software process that runs in the background on the VOD-W server and may take place even while the VOD-W is serving up a large number of simultaneous video streams. Depending on the size of the video asset and overall VOD-W server load, the ingestion process may only take a few minutes or more than an hour. Once the Portal Server driven ingestion is complete, the original source video file held in the VOD-W disk staging area is deleted.

For MPEG-2 content, a total of 6 supplemental trick files are generated in addition to the main or original video asset. During normal playback, the actual file streamed by the VOD server is the main MPEG asset. However, when the remote client hits the Fast Forward (or Rewind) button on his player or Set Top Box, the VOD server gets the FF command and uses the accompanying Fast Forward index, map, and main files to locate the proper position in the video and begin a Fast Forward stream. Rewind works in a similar fashion. *Without these supplement trick files, viewers would be limited to basic play, pause, and stop commands.*

Ingested video content on the VOD-W is stored in the `d:\content` directory on the server. When additional external storage is added to the VOD-W, the content resides here as well under directory names such as `G:\content2`, `H:\content3`, `I:\content4`, or `J:\content5`. Note that some additional storage overhead is incurred as a result of the file ingestion process. The following table shows the total number of stored files and added overhead for each type of MPEG video asset.

| MPEG Type | Total Files | Disk Storage Overhead |
|-----------|-------------|-----------------------|
| MPEG-2    | 6           | 42%                   |

| MPEG Type | Total Files | Disk Storage Overhead |
|-----------|-------------|-----------------------|
| MPEG-4    | 6           | 122%                  |

## Content Backup and Recovery

The ingestion process has implications related to content backup and recovery that system administrators need to keep in mind. VBrick strongly recommends that all stored VOD-W video content be backed up to an external storage system, a Storage Area Network (SAN), or a tape backup system. Backing up the ingested video content onto an external system is insurance against the failure of one or more of the VOD-W disk drives. Since the backed up content is stored in "post-ingested" form (the main asset plus all associated trick files), content recovery is rapid and straightforward. The VOD-W database is backed up each evening, so that recovery from disk failure is a relatively straightforward process of restoring the backup file.

If a system administrator does not have a disk backup system in place, the video content restoration is a more time consuming and labor intensive process. Each piece of video content must be re-ingested from its original source file. If a customer has loaded several hundred hours of video content on their VOD-W system over the course of a year, then this manual recovery process could take many hours or even days to complete. As described above, it is possible to replicate the original piece of MPEG-2 video content from the stored Main Asset, although locating and copying the proper file can be time consuming if more than a few files are involved.

## Best Practices

- If you encounter problems during file ingestion, the likely cause is a faulty or corrupted source file. All MPEG-2 source files must be recorded and saved as transport streams—not program streams. Suspected problem files can be checked with a standalone player like StreamPlayer.
- The VOD-W server maintains a log file of all successful or attempted file ingestions. If a file ingestion fails, the log file can be examined for hints as to why the file ingestion failed. See the [Log Options](#) on page 58 for more about log files.
- After adding a new video to the VEMS system using the Portal Server, it may take up to 120 minutes after ingestion before new video appears in the Portal Server content directory. Use the **Sync Now** function to make the content available immediately (see [Configure the Server in VEMS](#) on page 8).
- Over time, frequent asset additions and deletions may fragment the hard drive and degrade VOD-W performance. To work around this issue and optimize performance, you should periodically defragment the disk using the standard Windows defrag utility.





## Troubleshooting

### Topics in this chapter

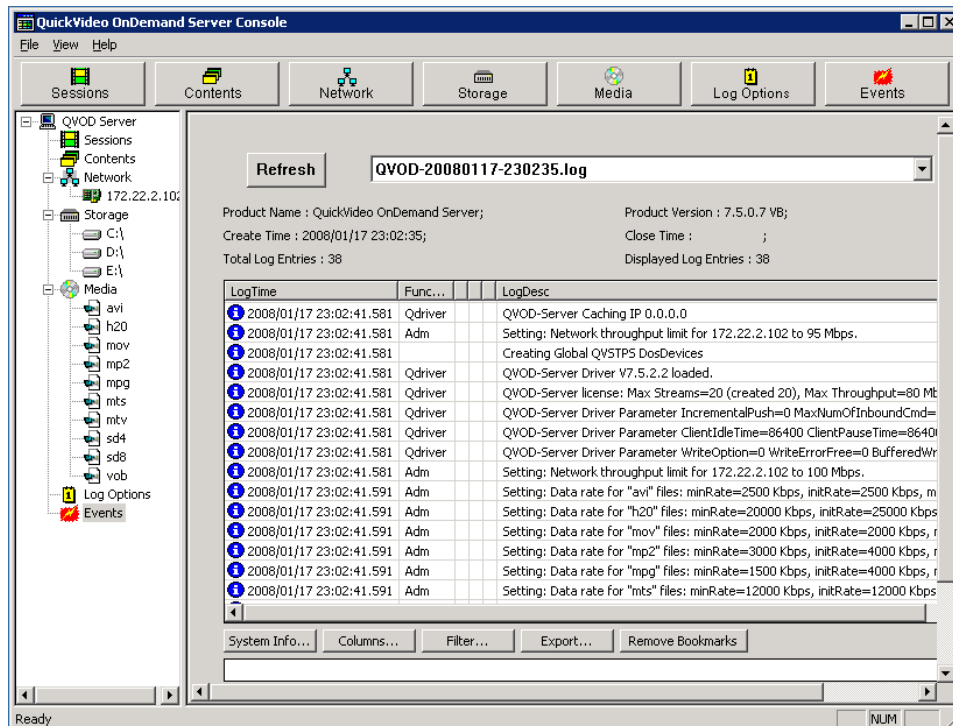
|                                 |    |
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## VOD-W Event Manager

The Event Manager lets you view the most recent events that were logged by the VOD-W server. The logged events correspond to the **Log Level** and **Log Category** you selected in the Logging Manager. See [Events](#) on page 59 for more details about this utility.

▼ To launch the VOD-W Event Manager:

1. Go to **Start > All Programs > InfoValue > Administer > Monitor QVOD Server**.
2. Click on **Events** to display the event log. Select a log file from the drop down list and click **Refresh** to update the page.



## Generating Custom Reports

The VOD-W server automatically generates the following log files during normal operation. If necessary, you can use [Crystal Reports](#) or a similar reporting tool to create customized reports. The `qvSR` log, for example, can be used to generate access reports by individual user.

The log files are saved by default in the Log folder at: `C:\Program Files\InfoValue\QuickVideo OnDemand Server\Log`.

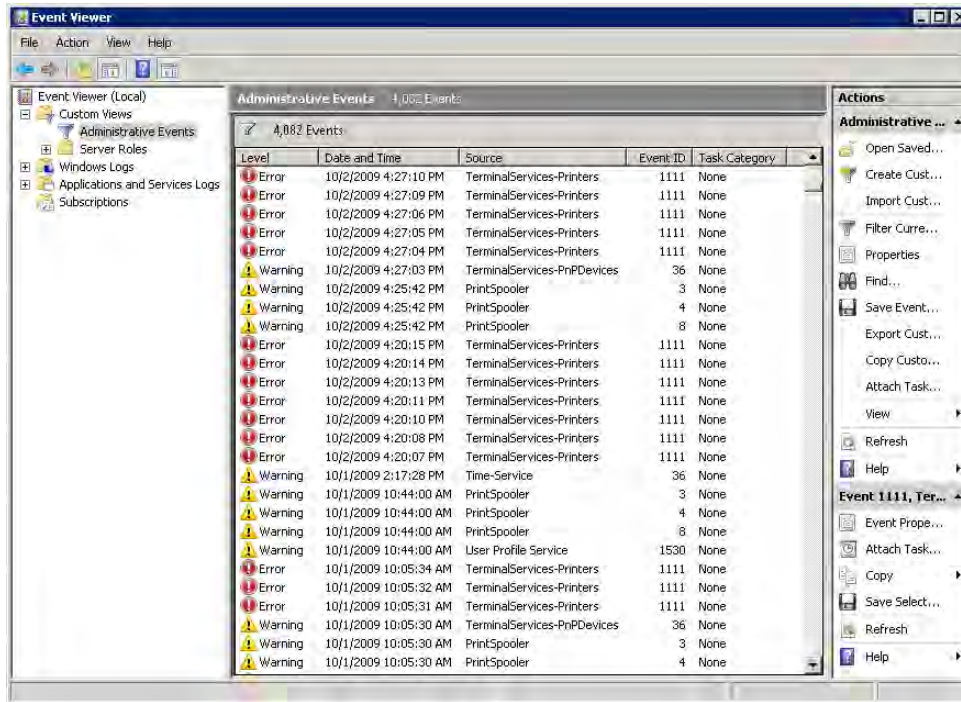
- `QVSR-xxx-xxx.log` – usage data including user name, video type, and duration.
- `QVOD-xxx-xxx.log` – usage data including video duration, and video type.
- `QVCS-xxx-xxx.log` – system-level command executions and errors.

## Windows Event Viewer

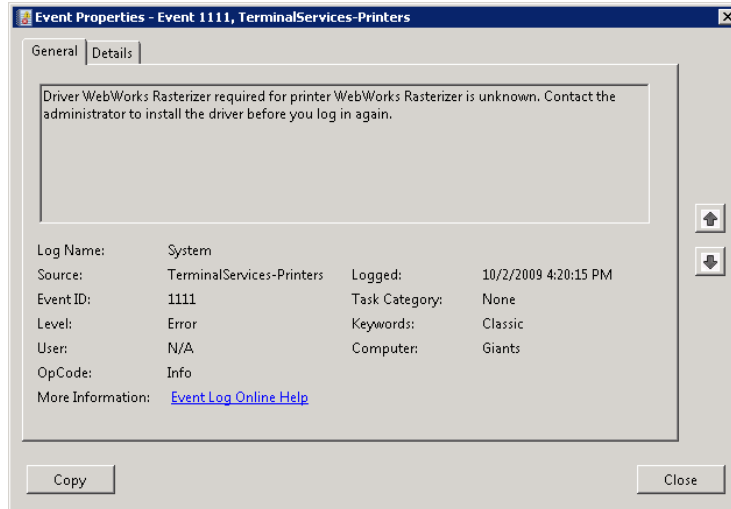
The Windows **Event Viewer** is available on Windows Server 2008 and other operating systems. Use this tool to review any system-level messages written to the Windows system event log.

▼ To launch the Windows Event Viewer:

1. Go to **Start > Control Panel > Administrative Tools > Event Viewer** and click on **Custom Views > Administrative Events** to populate the viewer with messages.



2. For more details, double-click on any event to launch the **Event Properties** window. Use the arrows buttons on this window to page through the log.

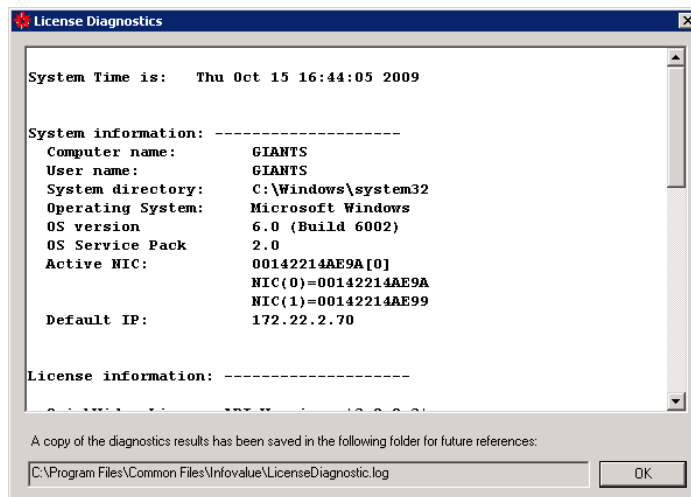


## VOD-W License Diagnostics

License diagnostics will show the number of licensed seats and the total licensed throughput in megabytes per second.

▼ To run VOD-W server license diagnostics:

1. Go to **Start > All Programs > InfoValue > Administer > Configure InfoValue Services**.
2. On the Product Configuration window, click the **License** tab and then click **Run Diagnostics**. The diagnostic results are saved to a log file in `C:\Program Files\Common Files\infovalue\LicenseDiagnostic.log`.



3. Click **OK** to exit.



## Upgrading to SQL Server 2008 R2 Express

### Topics in this chapter

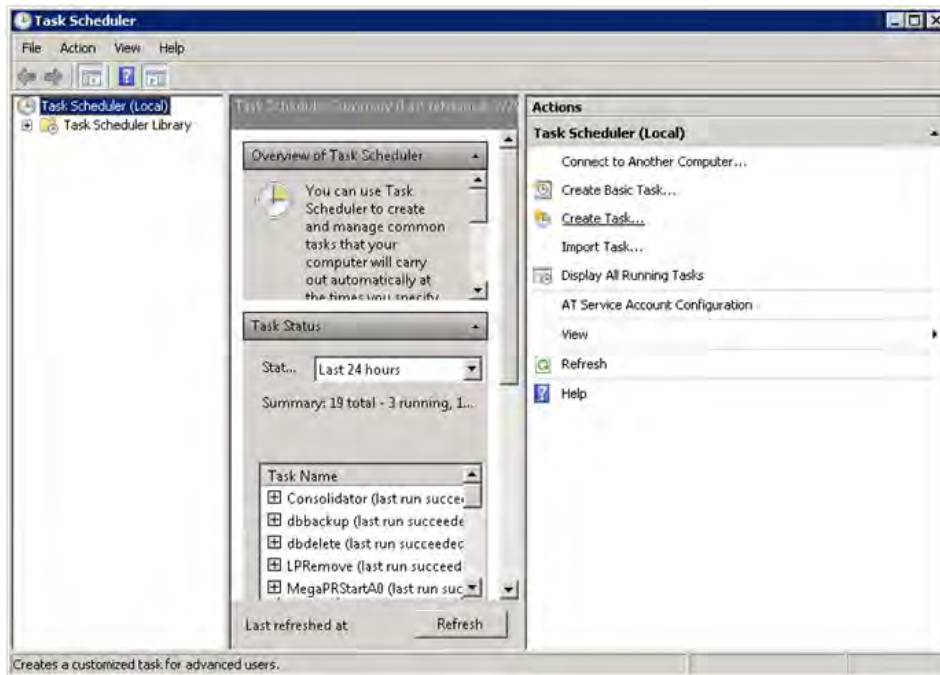
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| Upgrading to SQL Server 2008 R2 Express (32-Bit Only) ..... | 71 |

### Overview

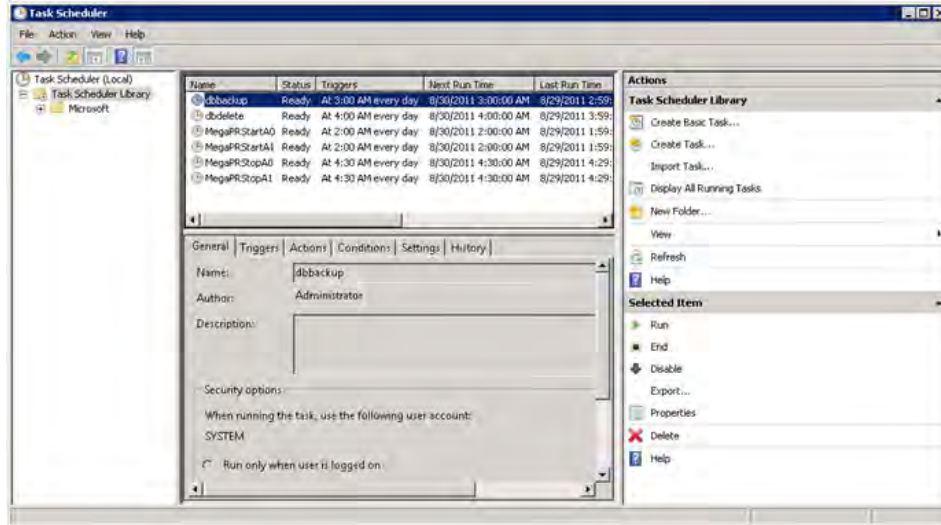
This topic explains how to upgrade an existing Microsoft SQL Server 2000 to SQL Server 2008 R2 Express for 32-bit systems.

### Upgrading to SQL Server 2008 R2 Express (32-Bit Only)

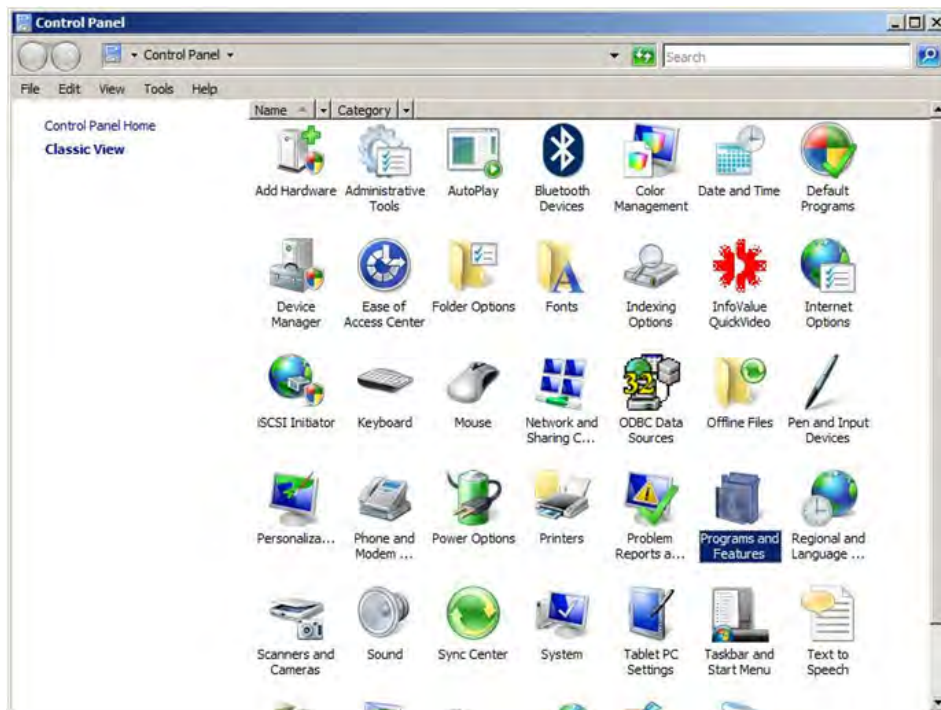
- ▼ To upgrade to SQL Server 2008 R2 Express:
  1. Before the upgrade backup your database by running the two schedule jobs in Windows Task Scheduler. To open Task Scheduler, go to All Programs > Administrative Tools > Task Scheduler.

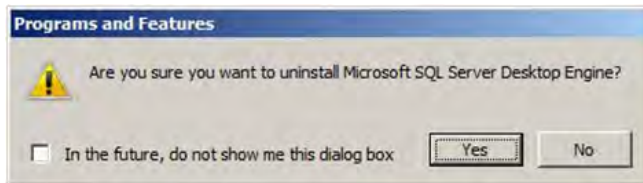
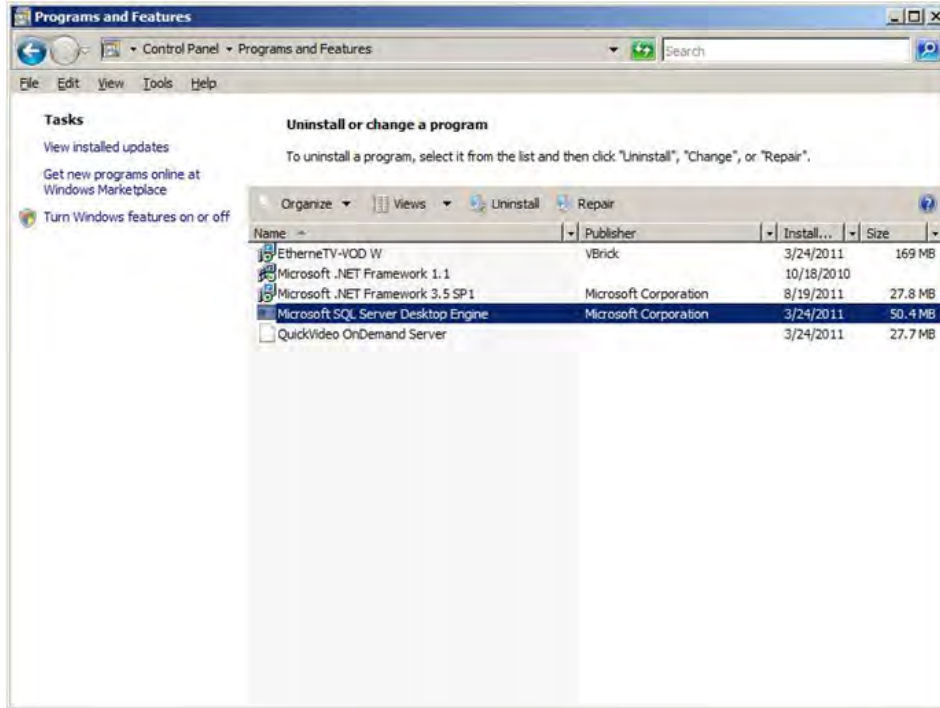


2. Right-click on **dbbackup** and select **Run**; when complete run **dbdelete**.



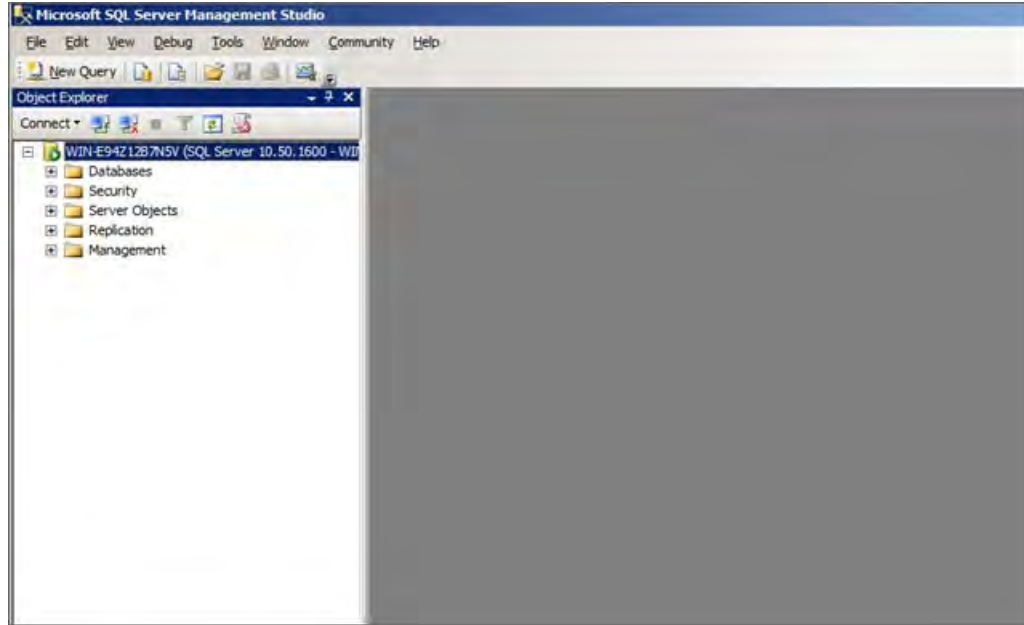
3. Uninstall SQL2000. Go to Start > Control Panel > Programs and Features then select "Microsoft SQL Desktop Engine" and click "Uninstall" or double-click on "Microsoft SQL Desktop Engine" and click "Yes"



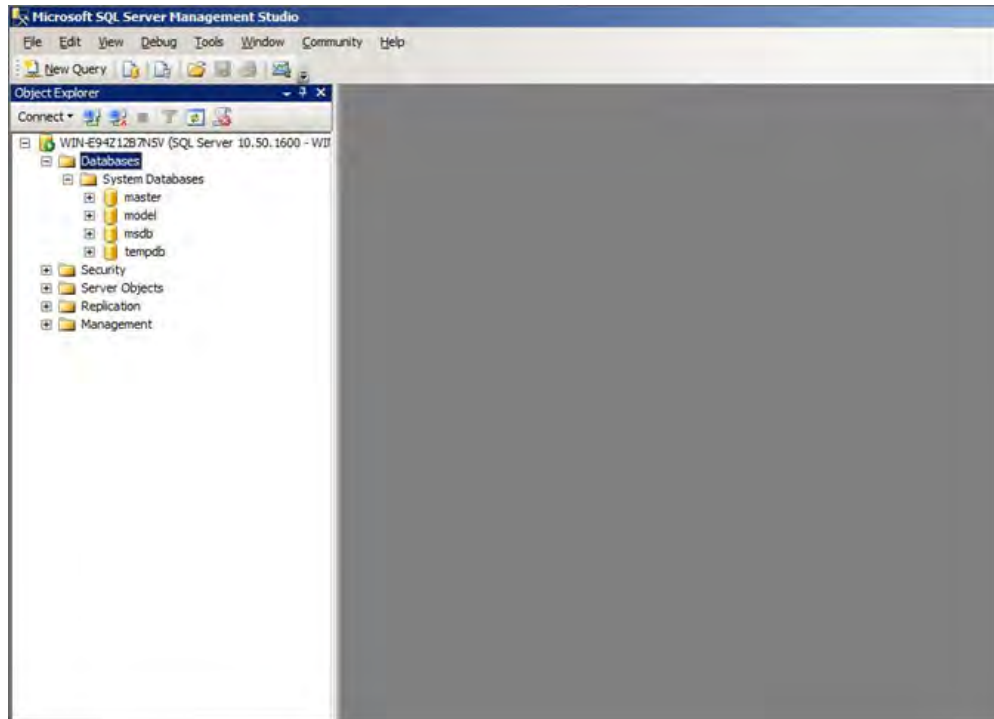


4. Now go to [Installing SQL Server 2008 Express Software](#) on page 18 and install SQL Server 2008 Express R2 following the instructions.
5. When done, go to **Start > Microsoft SQL Server 2008 R2 > SQL Server Management Studio** and click **Connect**.



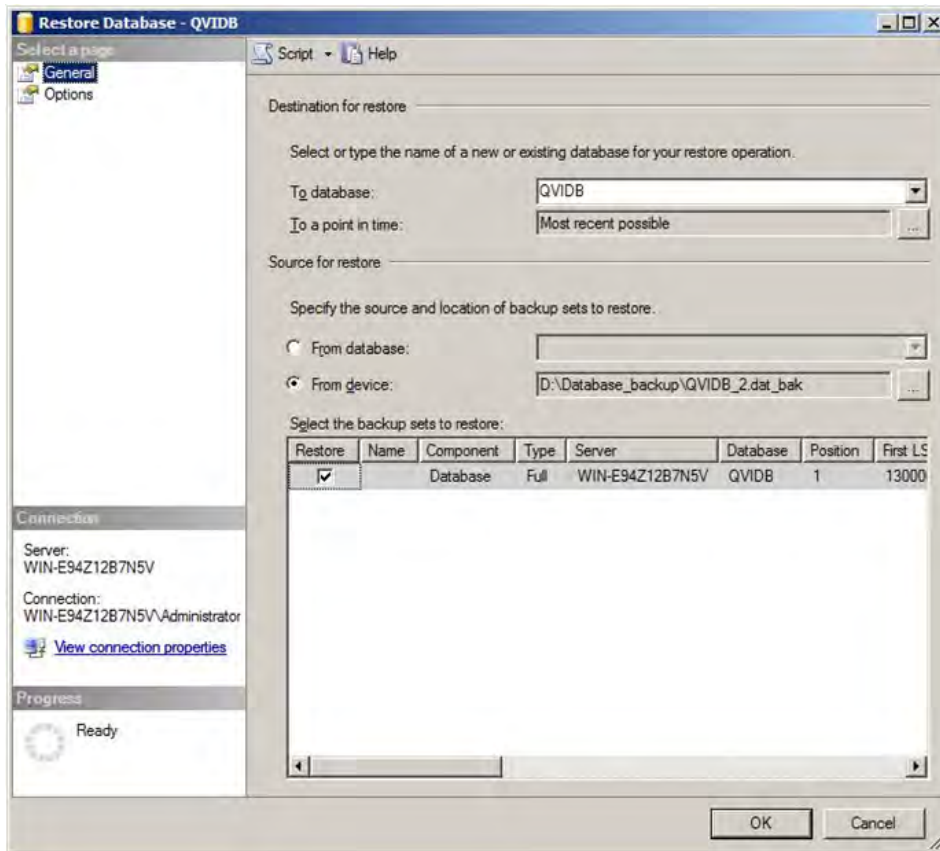
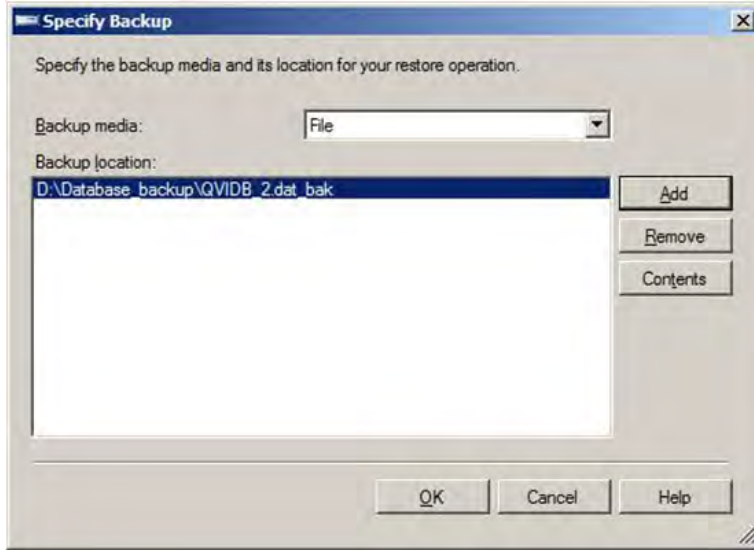


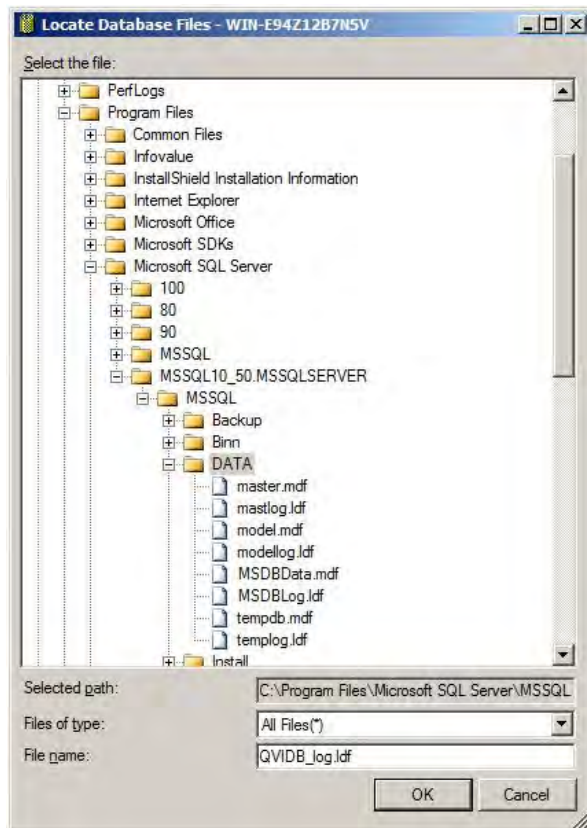
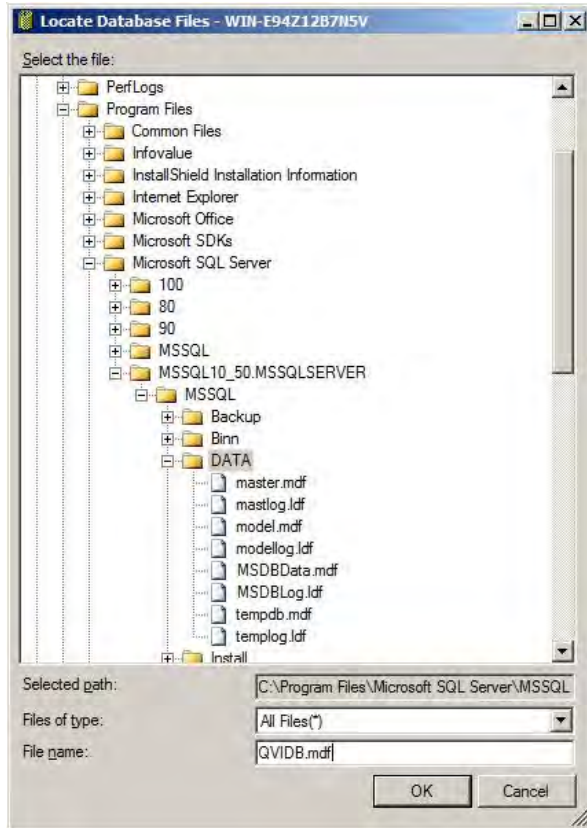
6. Select the Databases folder on the left panel and right-click to select "Restore Database."

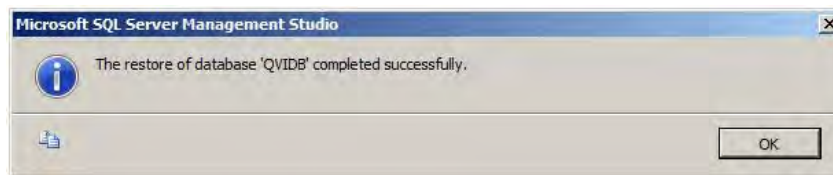
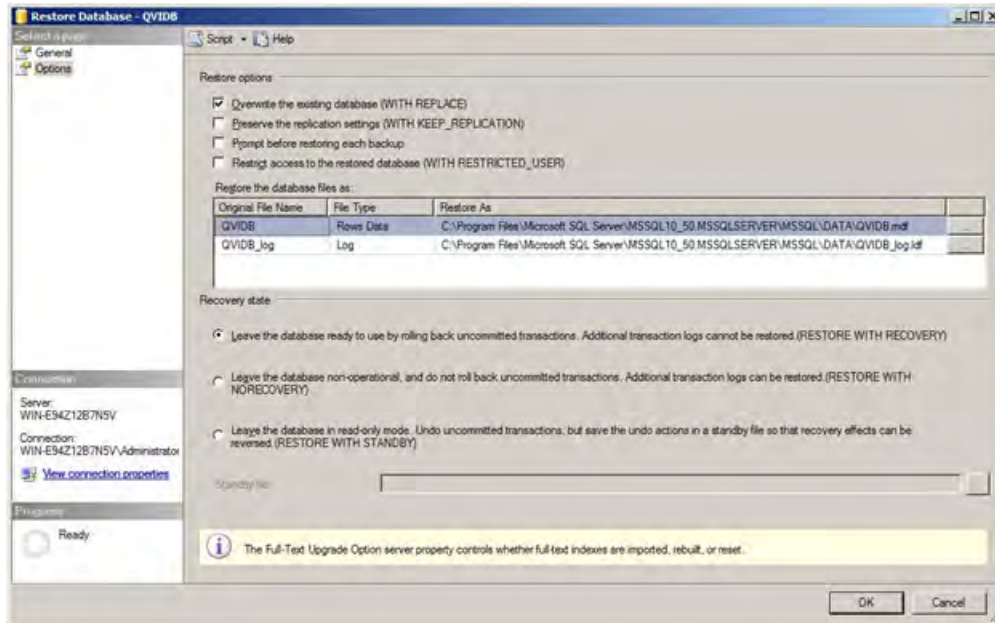


7. Select the radio button "From Device" and use the dropdown to select database "QVIDB." Then browse to the database backup file on `D:\Database_backup\QVIDB_1.dat_bak` and click "Add" then OK to select the file and check "Restore" all under "General." Now select Options on the left panel and check on "Override the existing database (WITH REPLACE)" and browse to correct place for MDF and LDF then click OK to restore the database.

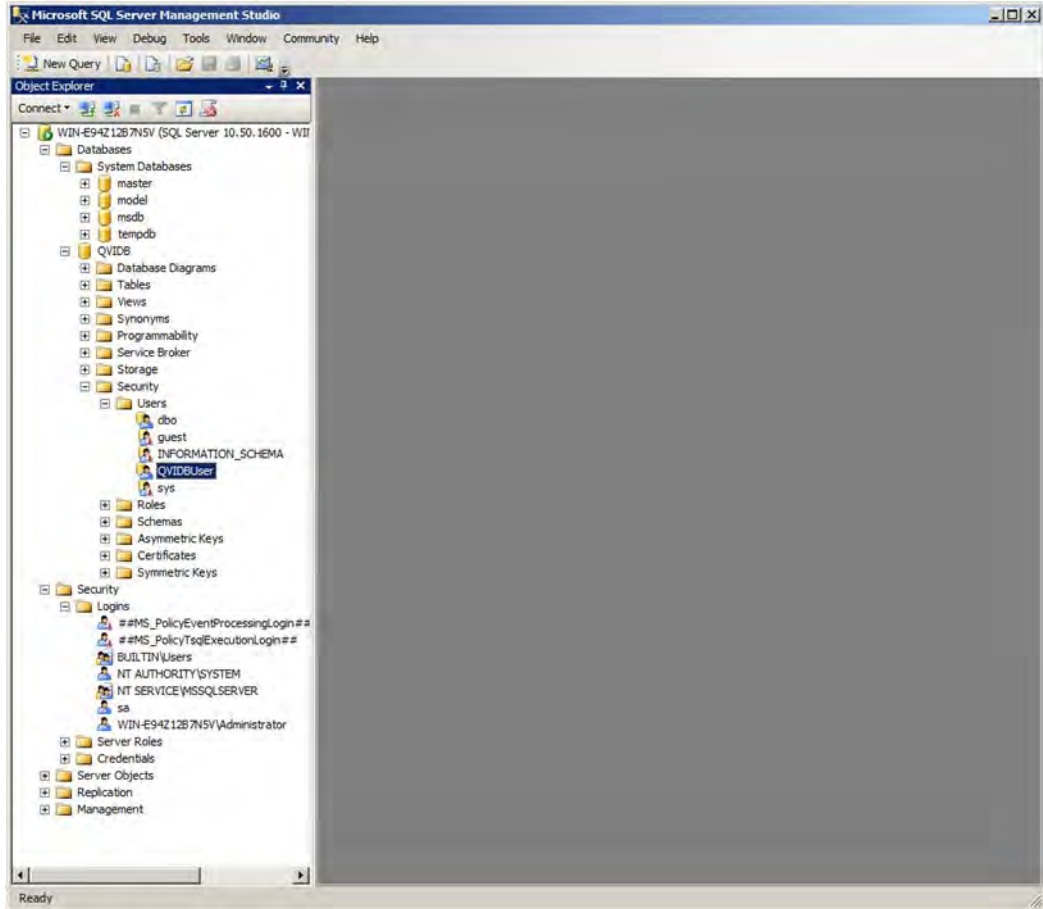


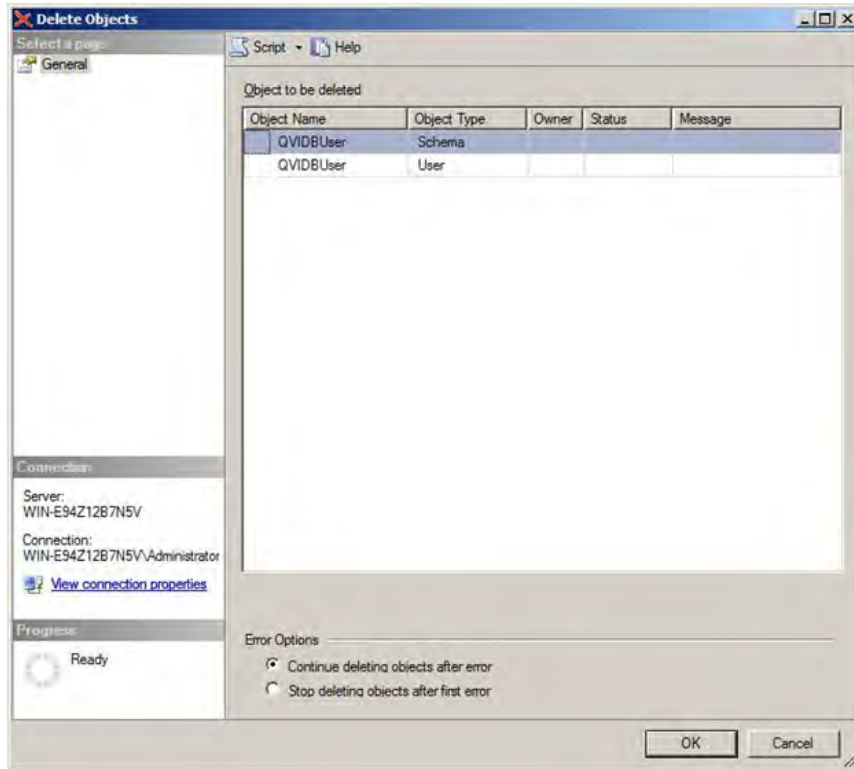




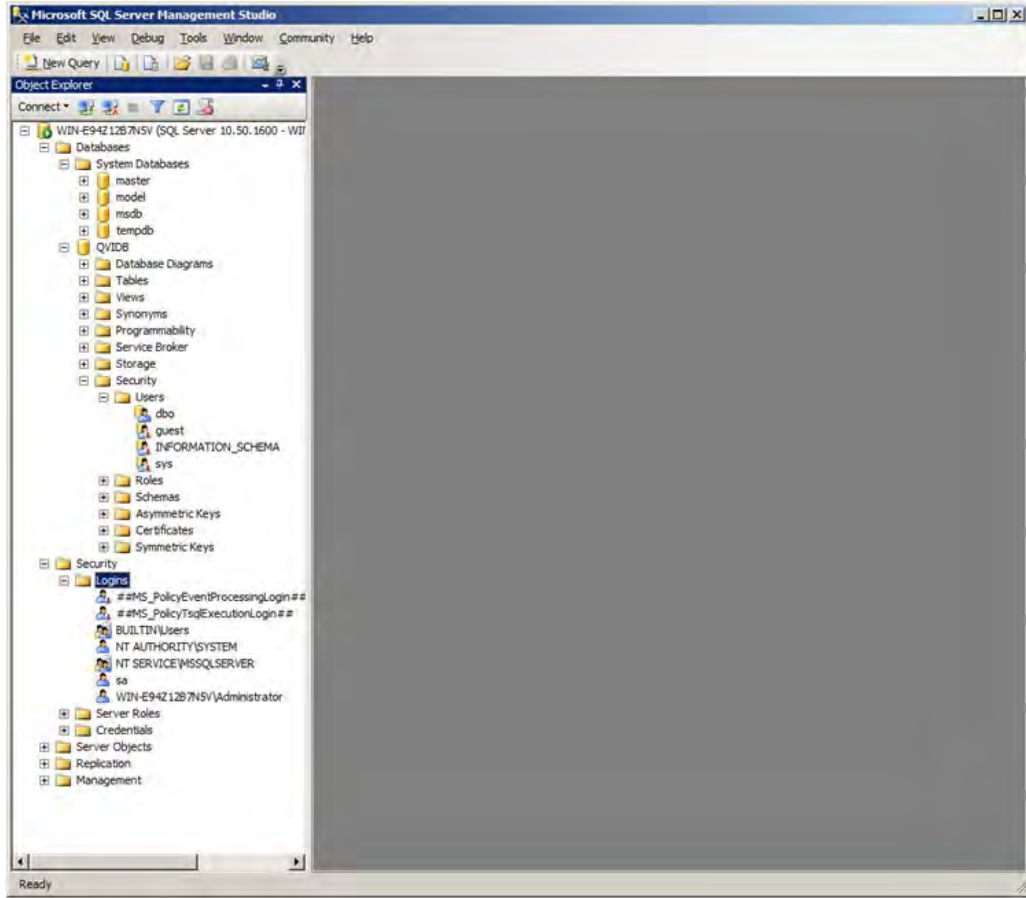


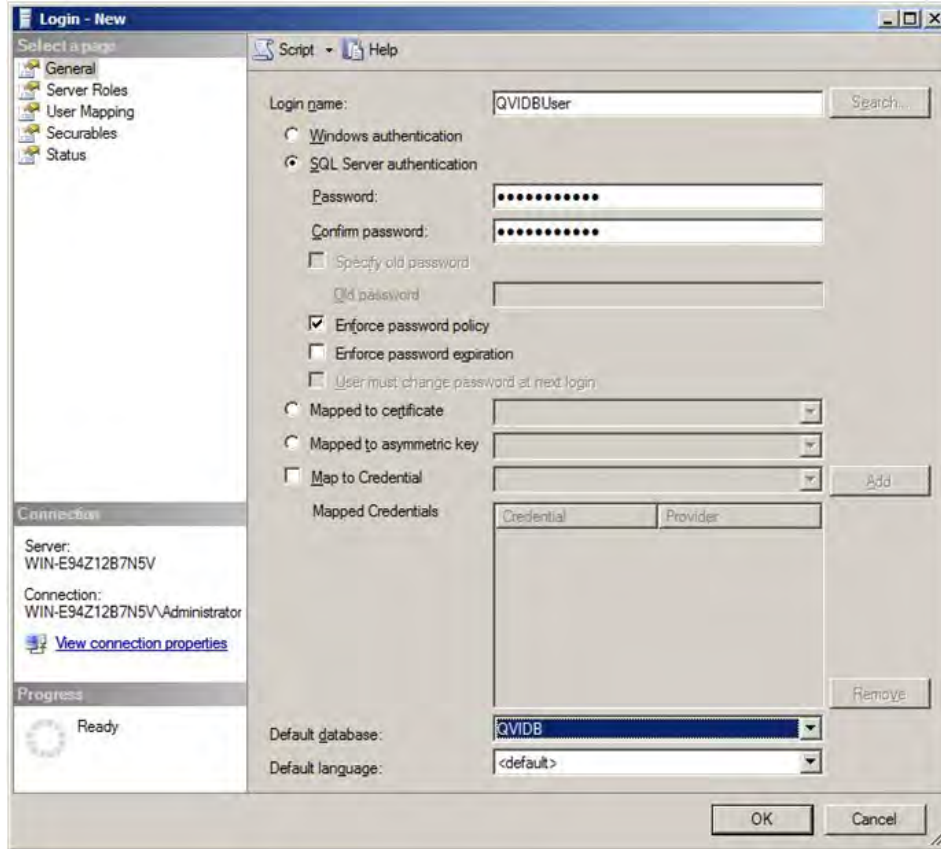
- Go to Security > Users, expand the QVIDB database, and right-click and select delete "QVIDBUser." Then click Yes and OK.



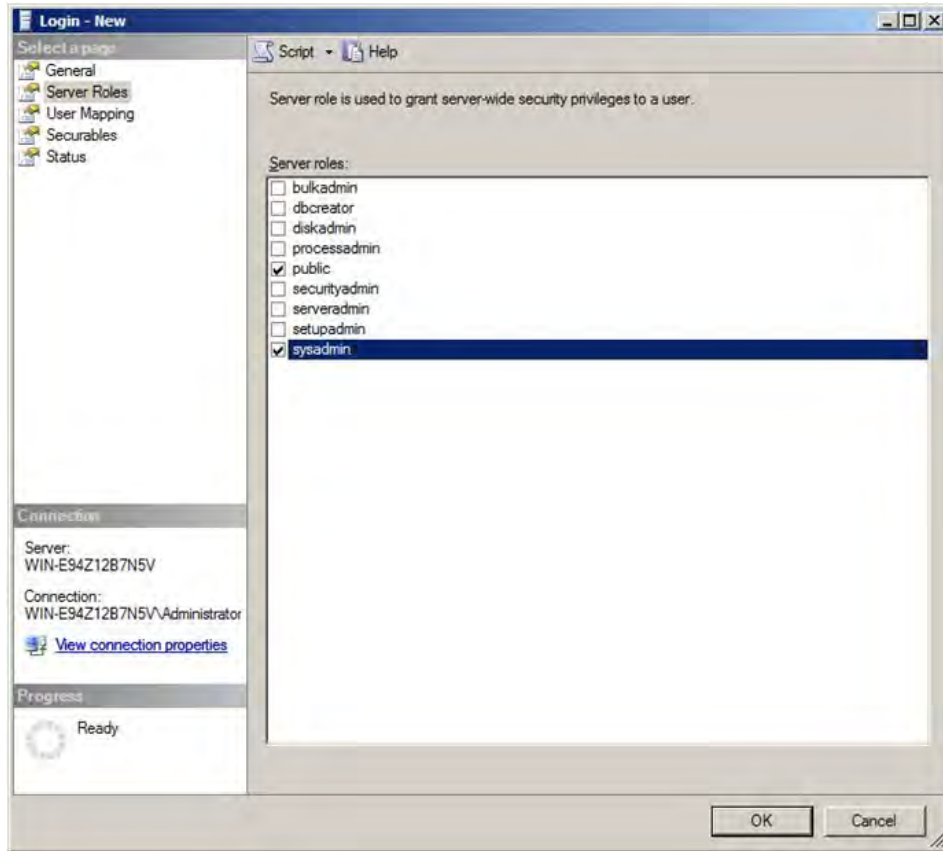


- Under Security > Logins, right-click and select Login to create "New Login...." On the Login - New page select General and radio button "SQL Server authentication." Enter password "welcomeuser" (all lower case), unselect "Enforce password Expiration," and from the dropdown select "Default database" QVIDB.





10. Under "Server Roles" of the Login-New page select "sysadmin."



11. Under "User Mapping" of the Login page select "QVIDB."



