

EtherneTV VOD-W Video on Demand Server

VBrick v4.4 VOD-W Server Admin Guide



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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 DVDquality 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.

Contents

VOD-W v4.4 Admin Guide

Organization	7 ii
Getting Help	7 ii
Font Conventions	 111
Related Publications	 111
Printer-Friendly	 111

1. Server Overview

Server Description
Server Models
Server Compatibility
System Requirements
External Storage2
Server Software
VOD-W Product CD4
Technical Support

2. Getting Started

Installing the VOD-W Server
Step 1. Unpack the Server7
Step 2. Connect the Server
Step 3. Configure the IP Address
Step 4. Configure the ETV Portal Server10
Step 5. Verify the Installation11
Configuring Secure Communications11
Basic Authentication
SSL Encryption
Post Configuration Steps

3. Server Administration

Overview	15
Using a Remote Desktop Connection	15
Using a Direct Connection	16
Configuring the Server	16
Launching the Configuration Utility	16
Using HTTP Tunneling	17
Changing the Web Service Communication Port	18
Advanced Options	19
Adding External Storage	19
Using Secure URL Password Protection	20
Manually Ingesting Content	21

Monitoring the Server
Backup and Restore
Database Backup
Database Restore
Server Restore
Best Practices

4. Monitoring the Server

Starting the QVOD Server Service
Using the QVOD Server Console
Sessions
Contents
Network
Storage
Media
Log Options
Events

5. Ingesting Content

Overview	37
Ingestion Considerations	37
Content Ingestion	37
Content Backup and Recovery	38
Best Practices	39

6. Troubleshooting

VOD-W Event Manager
Generating Custom Reports
Windows Event Viewer
VOD-W License Diagnostics

7. Reinstalling the Software

Overview
Installation Prerequisites
Reinstalling the VOD-W Software
Reinstalling the License File
Viewing License Status
Uninstalling the Software

8. Adding Storage to 1850/2850 Servers

Overview	
Monitoring Performance	53
Adding Storage to 1850 Servers (VOD 50W)	54
Adding Storage to 2850 Servers (VOD 125/300W)	58

9. Adding Storage to 1950/2950 Servers

Overview	
Adding Storage to VOD 50/125/300W Servers	

VOD-W v4.4 Admin Guide

This VOD-W Admin Guide is written for anyone who will be using a VBrick EtherneTV 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 perform initial admin tasks, and how to add storage. For most common tasks like ingesting content, use the ETV Portal Server and refer to the ETV Portal Server Administrator 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. EtherneTV VOD-W servers are a key component in VBrick's EtherneTV Media Distribution System. The EtherneTV VOD-W server provides all standard video-on-demand (VOD) features including support for MPEG-1, MPEG-2, MPEG-4, and H.264 content.

Server Overview	provides a brief introduction to the features and functionality of the VOD-W server and explains the differences between server models.
Getting Started	explains how to unpack, connect, and configure the server.
Server Administration	explains how to use the configuration utility in case you need to reconfigure server parameters or reboot the system.
Monitoring the Server	explains how to use the monitoring utility to view performance characteristics and set log levels.
Ingesting Content	explains the concepts of ingesting content. It also describes important considerations and best practices.
Troubleshooting	explains how to do basic troubleshooting when you run into problems.
Reinstalling the Software	explains how to reinstall all VOD-W software in the unlikely event that it becomes necessary.
Adding Storage to 1850/ 2850 Servers	explains how to connect and configure external storage devices to 1850/1950 servers when you need more memory.
Adding Storage to 1950/ 2950 Servers	explains how to connect and configure external storage devices to 1950/2950 servers when you need more memory.

Organization

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 <u>www.vbrick.com/support/documentation</u>. If you can't find the information you need from the online help, the VBrick documentation, or your certified

VBrick reseller, you can contact VBrick <u>Support Services</u> 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 <u>documentation@vbrick.com</u> 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 emphasise 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

VBrick ETV Portal Server Admin Guide

Dell PowerEdge 1850 Systems User's Guide

Dell PowerEdge 2850 Systems User's Guide

Dell PowerEdge 1950 Product Documentation

Dell PowerEdge 2950 Systems Product Documentation

Dell PowerVault 220S Systems Service Manual

Dell PowerVault MD1000 Product Documentation

Printer-Friendly

VOD-W Server Release Notes

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.



Chapter 1

Server Overview

VBrick's EtherneTV VOD-W Server has been integrated with the EtherneTV family of products including the EtherneTV Portal Server, MPEG and H.264 streaming encoders, and the EtherneTV STB. The EtherneTV VOD-W delivers stored MPEG and H.264 assets as unicast streams across an Ethernet network. The EtherneTV 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 EtherneTV Portal Server is required to gain the full benefits of the EtherneTV VOD-W server and is sold separately.

In order to set up the EtherneTV Portal Server, follow the directions in the *EtherneTV Portal Server Admin Guide*. Once the ETV portal server is setup and configured, you can access video on the EtherneTV VOD-W server through the ETV 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 EtherneTV Portal Server automatically downloads components to your desktop PC the first time you access to the system.

Topics in this chapter

Server Description	
Server Software	
Technical Support	

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 EtherneTV solution and work seamlessly with the EtherneTV Portal Server. They ingest and stream unicast and multicast streams in the following formats:

- MPEG-1, MPEG-2, MPEG-4 (part 2), H.264 RTSP unicast
- MPEG-1, MPEG-2, MPEG-4 (part 2), H.264 multicast

Server Models

Although VBrick currently supports all of the server models shown in shown in Table 1, VBrick has transitioned to Dell 1950/2950 servers and all new systems shipped after the date of this publication will be either 1950 or 2950 devices. VBrick will continue to provide support for all 1850/2850 series models. Contact VBrick <u>Support Services</u> or your authorized reseller for more information about upgrade options.

Table 1. VOD-W Server Models

Model	Hardware	Max Throughput	Max Users
VOD-50W	Dell PowerEdge 1850	50 Mbps	50
	Dell PowerEdge 1950		
VOD-125W	Dell PowerEdge 2850	125 Mbps	125
	Dell PowerEdge 2950		
VOD-300W	Dell PowerEdge 2850	300 Mbps	300
	Dell PowerEdge 2950		

Table 2. VOD-W Server Specifications

Model	Operating System	O/S Drives	Internal Content Drives
VOD-50W	Win Server 2003 Web Edition	1 Drive	1 Drive
VOD-125W	Win Server 2003 Web Edition	2 Drives RAID1	4 Drive Hardware RAID5
VOD 300-W	Win Server 2003 Web Edition	2 Drives RAID1	4 Drive Hardware RAID5

Server Compatibility

The VOD-W servers are compatible with the following VBrick devices:

- VBrick EtherneTV Portal Server v3.1.0 or later (see note below).
- VBrick Set Top Box v3.7.2 or later.
- VBrick Decoders MPEG-1/MPEG-2 via Multicast; MPEG-4 via RTSP.

Note The secure web interface to the Portal Server and the secure URL features 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.

External Storage

Although VBrick currently supports all of the external storage devices shown in shown in Table 3, VBrick has transitioned to PowerVault MD1000 storage devices and all storage shipped with servers after the date of this publication will be MD1000 devices. VBrick will

continue to provide support for all PowerVault 220S models. Contact VBrick <u>Support</u>. <u>Services</u> or your authorized reseller for more information about upgrade options.

The external storage arrays shown in Table 3 are compatible with VOD-W servers to increase video storage or to backup existing content. If the VOD-W server you purchased from VBrick included external storage, the storage array was installed *and* configured before delivery to your site. As shown below, each external storage array has 5–15 drives and provides up to 4.5 TB of storage. You can add additional storage as necessary; if you are adding storage to an existing system, see <u>Adding Storage to 1850/2850 Servers</u> on page 53 or <u>Adding Storage to 1950/2950 Servers</u> on page 65.

Model	Hardware	Servers	Interface	Raw Capacity	Drives
ES3	Dell PowerVault 220S	1850/2850	SCSI	1 TB	7
ES4	Dell PowerVault 220S	1850/2850	SCSI	2 TB	14
ES5	Dell PowerVault MD1000	1950/2950	SAS	1.5 TB	5
ES10	Dell PowerVault MD1000	1950/2950	SAS	3 TB	10
ES15	Dell PowerVault MD1000	1950/2950	SAS	4.5 TB	15

Table 3. VOD-W External Storage Device Specifications

Table 4. VOD-W External Storage RAID Type

Model	Hardware	RAID Type
VOD-50W	Dell PowerEdge 1850	Software Striped
	Dell PowerEdge 1950	Hardware RAID5
VOD-125W	Dell PowerEdge 2850	Hardware RAID5
	Dell PowerEdge 2950	Hardware RAID5
VOD-300W	Dell PowerEdge 2850	Hardware RAID5
	Dell PowerEdge 2950	Hardware RAID5

Server Software

All server software and licenses are pre-installed by VBrick. If, for some reason, you ever need to reinstall the software, use the Dell recovery CDs to reinstall the Windows Server 2003 Web Edition operating system and the VOD-W Server Software CD to restore the VOD-W content server and other components (see <u>Reinstalling the VOD-W Software</u> on page 45 for details). Each VOD-W server has the following software pre-installed.

- Windows Server 2003 Web Edition with Service Pack 2.
- Microsoft Desktop Engine (MSDE).
- 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.

rjek Etherne	TV VOD-W Server Product CD
Home About VBrick VOD-W Servers VOD-W Software Documentation	VOD-W Server v4.4 Product CD Welcome to the VBrick VOD-W Server Product CD. Use this CD if you ever need to reinstall the VOD-W software or to view the documentation. The VOD-W Server is available in the following models which are numbered by throughput and the maximum number of simultaneous users allowed. The license file you received (on a sepatate CD-ROM) corresponds to one of the following models.
Commitment to	EtherneTV VOD-50W EtherneTV VOD-125W EtherneTV VOD-300W
Brick Systems is the leading rowider of digital video solutions reducation, government, usiness, and healthcare objections. VBrick products are ead for distance learning, TV and ww. distribution, surveillance, vent broadcasts, and training. Brick's video delivery solutions	Thank you for selecting VBrick Systems. This CD contains the files and information necessary if you ever need to reinstall the VOD-W server. It also contains the VOD-W server product documentation. To reinstall the server, select the setup file and follow the detailed instructions in the <u>VOD-W Admin Guide</u> . All of the documentation is created in online format and requires Internet Explorer. It is also available in Adobe Acrobat format. To install the Adobe Acrobat software, <u>dick here</u> .
fer many beeffs including proved education, higher roductivity, emergency response esparedness, and lower mmunications casts. With ouxands of video appliances statistic world-widey. Vorick is the cognized leader in reliable, high- rformance, esp-to-use tworked video subtions	Troubleshooting If you have trouble loading the software or the documentation, you can access the files directly from Windows Explorer. Open My Computer, right-click on your CD-ROM drive, and choose Explore. The documentation is located in the "documentation" folder, and the software is located in the "software" folder. To install the software, simply click on the link to launch the setup program.

Technical Support

If you can't find the information you need from the documentation or your reseller, you can contact VBrick <u>Support Services</u> 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.

ome Education Corporate Government Products Suppo	t Training Resellers Media Room	About
Support Overview Services On-Line Support Documentation	Downloads FAQ Resources	
/Brick On-Line Support	On-Line Support Form	
/Brick products are sold and supported by our resellers. For	Name	
mmediate support, you should first contact your local VBrick reseller.		
eseller.	Company	
You may also contact VBrick support services via email by illing out the form below with your question. VBrick support services will make every effort to reply within one business day. If you need immediate help please call VBrick support services at 203-303-0222.	E-mail address Reply to E-mail address Country	
	United States	
	Phone Number	
	Issue Concerns General information	
	Order Number	

Chapter 2

Getting Started

Topics in this chapter

Installing the VOD-W Server	14
Configuring Secure Communications	11
Post Configuration Steps	14

Installing the VOD-W Server

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 yo	our l	ocation

Step 1. Unpack the Server		. 7
Step 2. Connect the Server		. 7
Step 3. Configure the IP Address	• •	. 9
Step 4. Configure the ETV Portal Server	.1	10
Step 5. Verify the Installation	. 1	1

Step 1. Unpack the Server

Each shipment comes with:

- A complete EtherneTV VOD-W (including external storage if purchased).
- All power cords and cables.
- Rack mount kit.
- This EtherneTV 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).

Step 2. Connect the Server

- ▼ To set up the VOD-W server
- 1. Connect the monitor, keyboard, mouse, and network cables as described below.

Note The following steps explain how to connect Dell PowerEdge 1950/2950 servers. To connect 1850/2850 servers, refer to the previous version of this manual that was shipped with those servers. To view all VBrick product documentation, go to www.vbrick.com/support/documentation



Figure 1. VOD 50W (Dell 1950 – Rear View)



Figure 2. VOD 125/300W (Dell 2950 – Rear View)

- 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.
- 4. Connect the monitor cable to the blue 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..

- 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 3. VOD 50W (Dell 1950 – Front View)



Figure 4. VOD 125/300W (Dell 2950 – Front View)

9. 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.

Step 3. Configure the IP Address

You need to configure the IP address as explained below on both the server machine and in the QVCS application. When done, be sure to reboot the machine before configuring the server in the ETV Portal Server. VBrick strongly recommends that you use a static IP address rather than a dynamically-configured DHCP. The use of a DHCP server creates a number of issues when the IP address changes. For example clients configured to point to the VOD-W server's IP address may need to be re-configured. Also, the ETV Portal Server is configured to use the IP address of the VOD-W server so the Portal Server configuration will have to change. You

can configure the IP address by connecting a monitor to the VGA port on the server or by using a remote connection (see <u>Using a Remote Desktop Connection</u> on page 15).

- ▼ To configure the static IP address of the server machine in Windows
- 1. Go to Start > Control Panel > Network Connections > Local Area Connection.
- 2. Then click on Properties and double-click on Internet Protocol (TCP/IP).
- 3. Click on Use the following IP address and enter the values provided by your system administrator for IP address, Subnet mask, and Default gateway.
- 4. Click **OK** when done.
- 5. Optional. If you wish to configure secure communications between the Portal Server and the VOD-W, see <u>Configuring Secure Communications</u> on page 11.

Step 4. Configure the ETV Portal Server

The VOD-W server must be configured in VBrick's ETV Portal Server before it is recognized as part of the ETV system

- ▼ To configure the VOD-W server in ETV Portal Server
- 1. Launch ETV Portal Server and login as an administrator.
- 2. Go to Global Settings > Servers and select VOD W from the dropdown list.

					VBric
Getting Started	Add/Modify Vo	D/FTP Servers			
-Global Settings	IP or Domain	Server Description	FTP User Name	Server Type	
Global Assignments	172.22.119.123	nxg1-1850	vbrickuser	NXG	
Custom Fields	172.22.2.158	mets	vbrickuser	VOD-W	
Stream Restrictions	172.22.2.23	GOLD	vbrickuser	VOD-WM-ENTERPRISE	
Servers					
VBricks			vbrickuser	VOD-W	·]
Control Devices	FTP F	assword:		nable URL Password Prote	ection:
IP Receivers	Confirm F	Password:		Confirm Pass	word:
Recorders	Publishing Lo	cal Path: E:/StagingArea			
Script Devices	Publishing [Directory: /		Web Service Port (H	ITTP): 8080
Scripts	Streaming Alias (IP or	Domain):			
URLs	HTTP Tunne	ling Port: 80	R 2	upports HTTP Tunneling?	
Priority Alert	Secondary Server	Address:	(IP or Domain of secor		
Program Names	Secondary Server				
Manage Playlists		Add Modify Delete	Clear		
Access Logging					
Channels	Add/Modify Vie	deo On-Demand Content Fol	ders		
Modify VOD Content					
Diagnostics					

- 3. Enter the IP or Domain, Server Description (optional), FTP User Name (default = vbrickuser) and FTP Password (default = vbrickuser).
- 4. Accept the default Publishing Point parameters and click Add when done.

This completes the Portal Server Configuration. However in order to verify the installation as explained below, you must sync the VOD-W server with the ETV Portal server as follows:

- ▼ To manually sync the VOD-W server with the ETV Portal Server
- 1. Launch the ETV Portal Server admin tool and go to Global Settings > Global Assignments > Assign VOD Polling Interval.

2. Click Sync Now. Do not change anything else and exit when done.

Step 5. Verify the Installation

Use the following sequence of steps to verify the VOD-W server is installed properly and can communicate with the ETV Portal Server. If you can use the ETV Portal Server to launch a video stored on the VOD-W Server, you have tested connectivity and verified the installation. For more information about ETV Portal Server, see the *ETV 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 an ETV Portal Server client. (Open a browser and enter the ETV Portal Server hostname or IP address (e.g. http://portalserveripaddr) in the address bar.
- 3. Go to **Browse Video Library** 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 > Program > QuickVideo OnDemand Server > Monitor QVOD Server to launch the QVOD Server Console.
- 5. In the navigation pane on the console, click on <u>Sessions</u> 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 ETV Portal server.

Eile View Help	erver Console	2					
Sessions Co	antents	Networ	'kS	torage	 Media	1 Log Options	Events
QVOD Server Sessions Contents Storage Storage Log Options		ssions : 🛛			anual Refresh	 rval: 30	secs
Events	No. Hos	t Name	User Name	File Nam	e	DataRate	Туре
	Detail of 3	Session No) DN	12	NP#	UF#	
	Start		DT	#	NT#		
				,	,		' <u> </u>
Ready							NUM /

Configuring Secure Communications

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. Starting with Portal Server v4.2.1, there are two ways to protect communication between the Portal Server and VOD-W:

- **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. Right-click the default web site and click Properties.
- 4. Select the **Directory Security** tab.
- 5. Click the Edit... button under Authentication and access control.
- 6. Make sure Enable anonymous access is not checked.
- 7. Under Authenticated access, check Basic authentication (password is sent in clear text) and uncheck other boxes.

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. Expand the server name and select the Default Web Site.
- 3. Right-click the default web site and click Properties.
- 4. Select the Directory Security tab.
- 5. Click on the Server Certificate... button to launch the Server Certificate Wizard.
- 6. Click Next on the Welcome dialog box.
- 7. Select Assign an existing certificate and click Next.
- 8. 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.
- 9. Then click Edit... under Secure communications.

- 10. Check Require secure channel (SSL). For more secure encryption, also check Require 128-bit encryption. Click OK.
- 11. Click **Apply** and **OK** and you are done configuring SSL encryption with an existing certificate.

2. Getting a New Certificate

- ▼ To get a new certificate
- 1. Click **< Back** to choose a different method of obtaining a certificate.
- 2. Select Create a New Certificate and then select Next. (If Create a New Certificate is unavailable, the certificate has probably been installed already. If that is the case, skip the rest of these steps, and go to <u>4</u>. Installing a New Certificate from a Certificate Authority. If you want to create new certificate for the VOD-W, select Remove the current certificate to remove the certificate first, and then restart the procedure.)
- 3. Select Prepare the request now, but send it later and then select Next.
- 4. Type a descriptive name for the certificate in the **Name** field, type a bit length for the key in the **Bit length** field, and then select **Next**.
- 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, and select Next. (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.)
- 6. 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.)
- 7. Enter the appropriate information in the Country/Region, State/Province, and City/ locality fields, and then select Next.
- 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 Certificate Verification Request

If a CA-signed Certificate from a trusted Certificate Authority (such as <u>VeriSign</u> or <u>Thawte</u>) is going to be purchased, the certificate request 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. You can also generate your own certificate rather than using a certificate authority.

4. Installing a New Certificate from a Certificate Authority

- ▼ To install the certificate on the VOD-W
- 1. Start the Microsoft Internet Information Service (IIS) Manager.

- 2. Expand the server name and select the web site for which the certificate will be installed.
- 3. Right-click the web site and then select Properties.
- 4. Select the Directory Security tab
- 5. Select Server Certificate to launch the Web Server Certificate Wizard
- 6. Select Process the pending request and install the certificate and then click Next.
- 7. Enter the path and file name of the file that contains the response from the CA, and then click **Next**.
- 8. Examine the certificate overview, click **Next**, and then click **Finish**. A certificate is now installed on the VOD-W.
- 9. Click Edit... under Secure communications.
- 10. Check Require secure channel (SSL). For more secure encryption, also check Require 128-bit encryption. Click OK.
- 11. Click **Apply** and **OK**.

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.

Post Configuration Steps

No additional configuration is required after installation and once you have completed the steps up to this point you are good to go. However, if you subsequently need to change the IP address or default storage path for example, use the server configuration utility (see <u>Configuring the Server</u> on page 16). 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.

Chapter 3

Server Administration

Topics in this chapter

Overview	. 15
Configuring the Server	. 16
Manually Ingesting Content	. 21
Monitoring the Server	. 22
Backup and Restore	. 23
Best Practices	. 24

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	Access Method
Server Configuration	Used for initial configuration or when adding storage. You must reboot the server after any configuration changes. See <u>Configuring the Server</u> on page 16.	Local or with Remote Desktop Connection.
Ingest Content	For use by VBrick Support Services only. All VOD-W users should use ETV Portal Server to add content to the server. (See <u>Ingesting Content</u> on page 37.)	
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 > Communications > 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 > QuickVideo OnDemand Server > Monitor QVOD Server.
- 3. To launch the *configuration* utility, go to Start > Control Panel > InfoValue Quick Video.
- 4. To launch the *ingestion* utility, go to Start > All Programs > QuickVideo OnDemand Server > Ingest 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 > Shutdown > Restart**.
- ▼ To launch the server configuration utility
- 1. Go to Start > Control Panel > InfoValue Quick Video.

Management IP	1		
in a system of the	Auto		*
		-	
	_		
.Content			Browse
Add S	Storage Path	1	
or & Content Server))		
am Files\InfoValue\	QuickVideo	OnDemand Se	Browse
Maximum Size (on KB)	2048	Log Level	100
		-	
	Tunneling using po Content Add 3 tor & Content Server ram Files UnfoValue\ – Maximum Size	Add Storage Path tor & Content Server) ram Files\InfoValue\QuickVideo - Maximum Size [2014	Tunneling using port 8000 Content Add Storage Path tor & Content Server) tam Files UnfoValue Quick Video OnDemand Se - Maximum Size 2009 Lon Level

Streaming IP	IP address of the Content Server. Use the drop down menu to select
	the appropriate IP address or use Auto.

Management IP	Always select Auto. 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 D:\Content. Use the Browse 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 Add Storage Path to launch the Add Storage Path window. Click Browse to select the additional storage to be added. Click Add to add the new storage.
File Path	Location of the content server log files. If not specified, the default log path C:\Program Files\InfoValue\QuickVideo Content Server\Logs 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.
- 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 <u>Changing the Web</u> <u>Service Communication Port</u> on page 18).
- 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
- 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.

					VBrickEthernetV
Getting Started	Add/Modify Vo	D/FTP Servers			
-Global Settings	IP or Domain	Server Description	FTP User Name	Server Type	
Global Assignments	172.22.119.123	nxg1-1850	vbrickuser	NXG	1
Custom Fields	172.22.2.158	mets	vbrickuser	VOD-W	
Stream Restrictions	172.22.2.23	GOLD	vbrickuser	VOD-WM-ENTERPRISE	
Servers			vbrickuser	VOD-W	_ 1
VBricks			1	10011	J
Control Devices	FTPF	Password:		nable URL Password Prote	ction:
IP Receivers	Confirm F	assword:		Confirm Pass	word:
Recorders	Publishing Lo	cal Path: E:/StagingArea			
Script Devices	Publishing [Directory: /		Web Service Port (H	ITTP): 8080
Scripts	Streaming Alias (IP or	Domain):			
URLs		ling Port: 80	⊠ si	upports HTTP Tunneling?	
Priority Alert	Secondary Server	Address:	(IP or Domain of secon	d NIC or NAT)	
Program Names				,	
Manage Playlists		Add Modify Delete	Clear		
Access Logging					
Channels	Add/Modify Vie	deo On-Demand Content Fol	lers		
Modify VOD Content					
Diagnostics	1				
	-				

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
- Open IIS (go to Start > Administrative Tools > Internet Information Services (IIS) Manager).
- 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

Advanced Options	K	<
Ingest Sessions Maximum Sessions Session TimeOut (in Sec)	Copy/Move Image: Copy/Move	
File Transfer Block Size fin KB1 Transfer Rate (in Kbps)	128 Time To Live 31 10000 31 31	
CPU usage during In	gest	
50		
	OK Cancel	

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 <u>Reinstalling the</u> <u>Software</u> on page 45.

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, see <u>Adding Storage to 1850/2850 Servers</u> on page 53 or <u>Adding Storage to 1950/2950 Servers</u> on page 65 for instructions.

dd Storage Path New Storage Path	×
C:\QVStorage	Browse Add Remove
Storage Paths	
D:\Content G:\Content2	
	OK Cancel

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**.

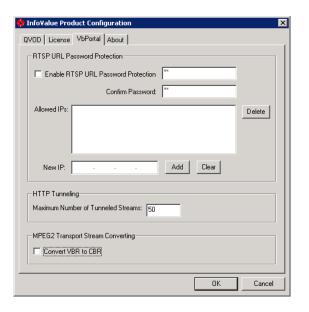
VOD-W Configuration

- ▼ To enable URL password protection on the VOD-W Server
- Open the VOD-W control panel application (go to Start > Control Panel > Infovalue QuickVideo).
- 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
- 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 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.)
Convert VBR to CBR	Default = Unchecked. If MPEG-2 VBR content does not ingest properly, check this box to automatically convert variable bit rate (VBR) content to constant bit rate (CBR).

Manually Ingesting Content

VBrick strongly recommends that you use the EtherneTV Portal Server exclusively to ingest all VOD-W content. The ETV Portal Server Admin Guide explains in detail how to automate content ingestion. With the ETV Portal Server you can add individual files or you can FTP or copy pre-recorded content to the ETV Portal Server for easy ingestion to the VOD-W server. The ETV 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 predefined 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 37.) Content can also be added by using the Add Video function in ETV 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 ETV Portal Server to ingest content.

- ▼ To ingest content from the QVCS application
- 1. Go to Start > All Programs > QuickVideo OnDemand Server > Ingest Content.
- 2. Use the QuickVideo Ingest interface to ingest content. Click the **More >>** button to see all options.

Quick¥ideo Ingest	
QuickVideo Ingest	infovalue *
Content Import Location	
Content File C Meta File C Batch File	e
	Browse
Progress	
Ready To Ingest Last Status : Application Started	
Less << <u>S</u> tart <u>Cancel</u>	Cļose Ab <u>o</u> ut
Content Name [Optional]	
Storage Location - If default is not used [Optional]	
	Browse
Misc. Options	
Use content from current location	process content

Content Import Location	 Location path of the content to be ingested. Content File – directly from the content file. Meta File – not supported. Batch File – not supported.
Content Name	Required. This is the title seen by users. All content titles must begin with a forward slash (/).
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 25 for complete details.

Backup and Restore

Database Backup

The VOD-W server automatically runs a daily script at 03:00 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 > Control Panel > Scheduled Tasks.
- 2. Right-click on dbbackup and select Run.
- 3. When done, right-click on **dbdelete** and select **Run**.
- 4. (You can also modify the backup schedule as desired. Left-click on **dbbackup** and click on the **Schedule** tab to modify the backup schedule.)

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 <u>Server Restore</u>), including the database.

- ▼ To restore the database
- 1. Go to C:\Database_Scripts and double-click on Restore_Database.bat. This will restore the most recent database backup file (QVIDB_1.dat_bak). To restore a different backup file, edit Restore_Database.sql and then run the restore script.
- 2. Wait for the restore to complete, then go to C:\Database_Scripts and double-click on Remove_Add_QVIDBUser.bat. After this file runs, the database restore is complete.

Server Restore

VBrick and Dell installation CDs are shipped with the server in case the software ever needs to be restored (see <u>Reinstalling the Software</u> on page 45 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 5. Installation CD Contents

CD-ROM	What it does
Dell Recovery CDs	Restore the Windows 2003 Server Web Edition operating system.

CD-ROM	What it does
VOD-W Server Product CD	 Installs the following software: QuickVideo Content Server application. Multicast joiner service and SQL redistribution. Database backup utility. Configures IIS with ASP.NET, FTP, and creates an FTP account with a home directory in e:\StagingArea Demo content available. If restoring the server, you must use the manual ingestion utility to ingest this content (see <u>Manually</u> <u>Ingesting Content</u> on page 21 for details)
VOD-W License CD	Contains a license file that you will need when reinstalling the VOD-W software.

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.
- StreamPlayerPlus 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 EtherneTV VOD-W server for playback. Make sure the "hinting" option is checked when recording 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 EtherneTV 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.

Chapter 4

Monitoring the Server

Topics in this chapter

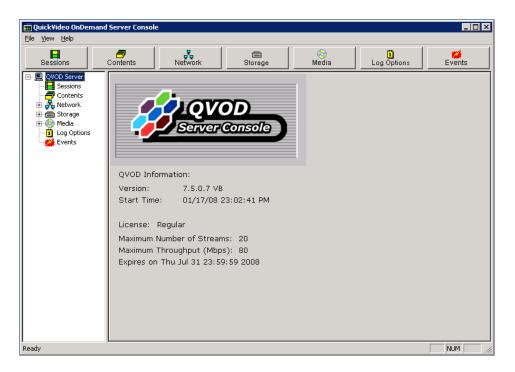
Starting the QVOD Server Service	25
Using the QVOD Server Console	25

Starting the QVOD Server Service

The QVOD Server Service is automatically started when the server machine is started and it may take several seconds. During this time, a crossed QVOD Server icon will appear in the system tray. The crossed icon will change when the service has successfully started. Mousing over the system tray icon will display the text **QVOD Server is running**. If the QVOD Server Service does not start as expected, check to see if the QVOD license file is installed. The QVOD Server Service depends heavily on the system clock for scheduling time-critical tasks. Adjusting the local clock while QVOD is running could disrupt the QVOD Server Service or totally stop it. If you need to change the local time, first stop the QVOD Server Service. Go to **Start > Settings > Control Panel > Services > QuickVideo OnDemand Service**.

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 QVOD Server.



▼ To launch the QVOD Server Console

1. Go to Start > Programs > QuickVideo OnDemand Server > 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	 	 	 	
Contents	 	 	 	
Network	 	 	 	
Storage	 	 	 	
Media	 	 	 	
Log Options	 	 	 	
Events	 	 	 	

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.

QuickVideo OnDemand S	Server Cons	ole				_ 🗆 X
	7 Contents	Networ	k Što	rage Media	Log Options E	vents
QWOD Server Sessions Contents Sessions Sorage Media Ug Options		Sessions : 🛛 Data Rate : 🕅		Refresh C Manual Refresh C Auto Refresh Int		
Events	No. H	ost Name	User Name	File Name	DataRate Type	
		of Session No				
	IP [or Session NC	DN#		UF#	
	Start		DT#	NT#	LP#	
Ready					1	JUM //.

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. Manual – the session list must be refreshed manually. Refresh – use to refresh the page if Manual refresh is selected. The session will not be manually refreshed unless you click this button. Auto – the session list will be refreshed automatically at the refresh interval. Refresh Interval – specifies the refresh period, in seconds, for auto refresh.
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 Kill Session. 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.				
Туре	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 Detail of Session No .				
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.

QuickVideo OnDeman File View Help	d Server Console					
Sessions	Contents	Network	Storage	📎 Media	Log Options	Events
OVOD Server OVOD Server Sessions Ontents Network One Storage	Content Lis Number of	Contents: 5		1		Refresh
🕀 🌍 Media	ContentID	ContentName		ContentPath		
Log Options	1857	/sktest2			iyMP4_100k0.	
Events	1856	/sktest1			iyp_MP4_100k.	
	1855		Edu_MP4_1Mbp		iyMP4_1Mbps	
	1853		Edu_MP2_5Mbp		ryMP2_5Mbps	
	1852	/ADayInTheLife	Edu_MP1_2Mbp	D:\Content\ADa	iyMP1_2Mbps	.mpg
	Detail of 0 Ingestion Time Duration (hh:mm:s	00:06:39	:02:37 Size	17.074(MB) 1168231105(Kb	Type Mpega	4
J						_
Ready						NUM ///

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.

🗰 Quick¥ideo OnDemand Se	rver Console	2				
<u>File View H</u> elp						
	an ntents	Network	Storage	(S) Media	Log Options	Events
Usessions Color Sessions Contents Contents T2:22:2:10 Storage Media Color Storage Media Difference Events Events	This is every 2 The sta	an overview of the	e usage of the net percent utilizatio card.	work resources. T	he data is updated	
Ready						NUM //.

The following information is displayed and updated every two second:

- 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.

🗒 QuickYideo OnDemand Server Console						
<u>F</u> ile ⊻iew <u>H</u> elp						
Sessions	Contents	Network	Storage	📀 Media	Log Options	Events
QWOD Server Sessions Contents Wetwork Wetwork Storage Goda Godona Codota Codota		6 ress: 172.22.2.102	Set Pct. Allowe	d Max	ork Speed: 100. K. Allowed: 100.1 Pct. Allowed ss: 00-B0-D0-CE	D Mbps I: 100%
	Performation 100				Utilizatio	
	No. Ho	st Name User M	Name 🛛 File Nan	ne	DataRate	Туре
•						-
Ready						NUM ///

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.

QuickVideo OnDemand Ser File View	rver Console	2				
Sessions Cor	5 ntents	Network	Storage	🔗 Media	Log Options	Events
QVOD Server Sessions Ontents Network T7.22.2.10 Government Storage Media Government Log Options Events	every 2 The sta	tus bar shows the	e percentage throu	ıghput utilizatio	he data will be upda nn. (Note: No status as not tested for spo	bar
		Drive: C:\ (not te	ested) Th	nroughput: 0.0	0 Mbps	
		Dri∨e: D:\ (not te	ested) Th	roughput: 0.0	0 Mbps	
		Drive: E:\ (not te	ested) Th	roughput: 0.0	0 Mbps	
						_
Ready						NUM ///

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.

QuickVideo OnDemand File View Help	Server Consol	2				_ 🗆 🗙
Sessions	Contents	Network	Storage	(S) Media	Log Options	Events
■ QWOD Server ■ Sessions - Contents ■ Network ■ Storage - ■ ■ Storage - ■	- Drive: C - 0%		Set Pct. Allo	100%	Drive Speed: Max. Allowed: Pct. Allowed: 1	N/A
└── E:\ ₽-ŵ Media - û Log options - ₩ Events	Performan	nce http://www.second http://w	00 Mbps		Utilization:	0%
	No. Hos	t Name 🛛 User	Name File Na	IME	DataRate	Туре
Ready						

Set Pct. Allowed	Always set to 100 per cent.
Performance	 This window in the individual drive view displays more detailed information for the drive. A running graph plotting the most recent utilization history (updated every second). Current Data Rate (MBytes/sec). Utilization of the drive as a percentage of the total drive speed. List of the individual video streams going through this drive. An administrator can also terminate a session by right-clicking on it.

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.

🗰 Quick¥ideo OnDemand 9	ierver Console					
<u>File ⊻iew H</u> elp						
Session Manager Netw	ork Manager Disk Manager N	1 edia Manager Logging Manager Event Manager				
QVOD Server Session Manager Wetwork Manager T72.22.130.2C Sisk Manager Gisk Manager Gisk Manager		tegory. Log messages of level equal to or below eck the Categories that need to be logged.				
← 🚭 E:\ ⊕ - 🛟 Media Manager ← 🙀 Logging Manager ⊷ 🙀 Event Manager	3					
	Log Category					
	☑ Disk I/O	✓ License				
	🗹 Management	✓ Network				
	Performance	Protocol				
	🗹 Session	☑ System				
I	Apply					

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 <u>Generating Custom Reports</u> on page 41.

	ntents Network		orage Media Log Options Events
QVOD Server Sessions Contents Contents Inf2.22.2.10; Storage C() Contents	Product Name : QuickVideo C Create Time : 2008/01/17 23	OnDemand Serve	Close Time : ;
	Total Log Entries : 38	Func	Displayed Log Entries : 38
الله avi مو المراجع مو المراحم مو المراجع مو المو المراجع مو المراجع مو المراحم مو المراحم مو المراحم مو المراحم مو المراجع مو المراجع مو المراجمع مو المو المراحم مو المراحم مو المراجع مو المراجع مو المراجع مو المراجع مو المراجع مو المراجع مو المراجع مو المراجع مو المو المو المو المو المو مو المو المو	2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56 2008/01/17 23:02:41.56	31 Qdriver 31 Adm 31 Image: Constraint of the second secon	QVOD-Server Caching IP 0.0.0.0 Setting: Network throughput limit for 172.22.2.102 to 95 Mbps. Creating Global QVSTP5 DosDevices QVOD-Server Driver V7.5.2.2 loaded. QVOD-Server Driver V7.5.2.2 loaded. QVOD-Server Driver Parameter IncrementalPush=0 MaxNumOfInboundCmd= QVOD-Server Driver Parameter ClientIdleTime=86400 ClientPauseTime=86400 QVOD-Server Driver Parameter ClientIdleTime=86400 ClientPauseTime=86400 QVOD-Server Driver Parameter WriteOption=0 WriteErrorFree=0 BufferedWr Settina: Network throughput limit for 172.22.2.102 to 100 Mbos.
Log Options	 2008/01/17 23:02:41.55 	91 Adm	Setting: Data rate for "avi" files: minRate=2500 kbps, initRate=2500 kbps, Setting: Data rate for "h20" files: minRate=2000 kbps, initRate=2500 kbps Setting: Data rate for "mov" files: minRate=2000 kbps, initRate=2000 kbps, Setting: Data rate for "mp2" files: minRate=3000 kbps, initRate=4000 kbps, Setting: Data rate for "mp2" files: minRate=1500 kbps, initRate=4000 kbps, Setting: Data rate for "mp3" files: minRate=12000 kbps, initRate=21000 kbps, Setting: Data rate for "mt3" files: minRate=12000 kbps, initRate=12000 kbps,
	System Info Columns	s Filter	r Export Remove Bookmarks

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
- 1. Click on System Info.

5	vstem Information
	Hostname = QAINFOVALUE;
	Wrap Around = 0
	OS = Microsoft Windows Server 2003 family, Standard Edition Service
	CPU#1 = Intel(R)Xeon(TM) CPU 2.80GHz CPU#2 = Intel(R)Xeon(TM) CPU 2.80GHz CPU#3 = Intel(R)Xeon(TM) CPU 2.80GHz CPU#4 = Intel(R)Xeon(TM) CPU 2.80GHz
	Total physical memory = 2146713600 bytes Available physical memory = 1627095040 bytes Total virtual memory = 2147352576 bytes Available virtual memory = 2098274304 bytes
	NIC#1 = 172.22.130.20

- \bullet To change the column types that are displayed
- 1. Click on Columns.

Columns		×
Fields	Display Columns	
Host LogCategory LogLevel LogTevel RtspID User	LogTime Function IP File LogDesc	Save OK Cancel

- ▼ To manipulate the way log events are displayed
- 1. 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.

Filter	×
Log Level <all></all>	T
LOG Category Session Diskl0 Network Protocol SystemInfo Performance License	LOG Component SDK QVOD QWATCH QCONSOLE QVSTPAPI
Show all categories	Show all components
Field name Operator	Value
LogTime LogComponer LogCategory LogLevel LogText == LogText ==	
Session contains IP is present Host User File I	And Or Clear
Filter string	
Bookmark	Filter Cancel

Chapter 5

Ingesting Content

Topics in this chapter

Overview	37
Content Ingestion	37
Best Practices	39

Overview

VBrick strongly recommends that you use the EtherneTV Portal Server exclusively to ingest all VOD-W content. With the ETV Portal Server you can add individual files or you can FTP or copy pre-recorded content to the ETV Portal Server for easy ingestion to the VOD-W server. The ETV 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 ETV Portal Server or by recording a live stream.

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 ETV 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.

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 EtherneTV Portal Server. In a typical scenario, after recording a piece of video content, the ETV 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-1 or 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-1	6	41%
MPEG-2	6	42%
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-1 or 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 32 for more about log files.
- After adding a new video to the EtherneTV 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 <u>Step 4. Configure the ETV Portal Server</u> on page 10).
- 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.

Chapter 6

Troubleshooting

Topics in this chapter

VOD-W Event Manager4	1
Windows Event Viewer	2
VOD-W License Diagnostics4	3

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 the <u>Events</u> on page 33 for more details about this utility.

- ▼ To launch the VOD-W Event Manager
- 1. Go to Start > Programs > QuickVideo OnDemand Server > Monitor QVOD Server.
- 2. Click on **Event Manager** to display the event log. Select a log file from the drop down list and click **Refresh** to update the page.

	tents Network			Stora		(Section Media	Log Options	Events
QVOD Server Sessions Contents Network Ways T2.22.2.10(Sorage C:\ D:\ D:\ E.\	Refresh [Product Name : QuickVideo Create Time : 2008/01/17 2 Total Log Entries : 38	OnDem	and Ser		7-23023	Product \ Close Tim	Version : 7.5.0.7 VB; e : ; I Log Entries : 38	<u>-</u> •
🖃 🛞 Media	LogTime	Fu	inc		LogDesc	:		
	2008/01/17 23:02:41.5	581 Qa	driver		QVOD-S	erver Caching IP 0.0.0	.0	
	1 2008/01/17 23:02:41.5	581 Ac	im		Setting:	Network throughput lin	nit for 172.22.2.102 to 95	5 Mbps.
mov	3 2008/01/17 23:02:41.5	581				Global QVSTPS DosDe		
mp2	0 2008/01/17 23:02:41.5	581 Qa	driver		QVOD-S	erver Driver V7.5.2.2 k	baded.	
npg mts	0 2008/01/17 23:02:41.	581 Qo	driver	QVOD-Server license: Max Streams=20 (created 20), Max Throughput=80 Mt				
mty	0 2008/01/17 23:02:41.	581 Qo	driver		QVOD-S	erver Driver Parameter	IncrementalPush=0 Max	NumOfInboundCmd=
sd4	0 2008/01/17 23:02:41.5	581 Qo	driver		QVOD-S	erver Driver Parameter	ClientIdleTime=86400 Cl	ientPauseTime=8640
sd8	2008/01/17 23:02:41.5	581 Qo	driver		QVOD-S	erver Driver Parameter	WriteOption=0 WriteErro	orFree=0 BufferedWr
vob	2008/01/17 23:02:41.5		im		Setting:	Network throughput lir	nit for 172.22.2.102 to 10	0 Mbps.
🗓 Log Options	0 2008/01/17 23:02:41.		im				:: minRate=2500 Kbps, in	
Events	0 2008/01/17 23:02:41.		im				s: minRate=20000 Kbps,	
	2008/01/17 23:02:41.				-		es: minRate=2000 Kbps, i	
	2008/01/17 23:02:41.				-		es: minRate=3000 Kbps, i	
	2008/01/17 23:02:41.				~	1.2	es: minRate=1500 Kbps, i	1.7
	 2008/01/17 23:02:41. 	591 Ac	im		Setting:	Data rate for "mts" file	s: minRate=12000 Kbps,	initRate=12000 Kbps
	System Info Column	ns	Fil	ter	E	xport Remove	Bookmarks	

Generating Custom Reports

The VOD-W server automatically generates the following log files during normal operation. If necessary, you can use <u>Crystal Reports</u> 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 2003 Web Edition 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 Application to populate the viewer with messages.

🙀 Event Viewer									
File Action View Help									
🔃 Event Viewer (Local)	Application 1,23	31 event(s)							
Application	Туре	Date	Time	Source	Category	Event	User 🔺		
Security	Information	12/19/2005	8:47:00 AM	Ci	CI Service	4137	N/A		
System	Information	12/19/2005	8:46:58 AM	Ci	CI Service	4137	N/A		
	Information	12/19/2005	8:39:42 AM	SceCli	None	1704	N/A		
	Information	12/19/2005	8:39:31 AM	SecurityCenter	None	1807	N/A		
	🔥 Warning	12/16/2005	5:25:21 PM	Userenv	None	1517	SYSTEM		
	Information	12/16/2005	8:52:40 AM	Ci	CI Service	4137	N/A		
	Information	12/16/2005	8:52:39 AM	Ci	CI Service	4137	N/A		
	Information	12/16/2005	8:45:17 AM	SceCli	None	1704	N/A		
	Information	12/16/2005	8:45:07 AM	SecurityCenter	None	1807	N/A		
	Error	12/16/2005	8:41:52 AM	AutoEnrollment	None	15	N/A		
	Error	12/16/2005	8:41:41 AM	Userenv	None	1054	SYSTEM		
	Information	12/15/2005	5:25:42 PM	Ci	CI Service	4137	N/A		
	Information	12/15/2005	5:25:41 PM	Ci	CI Service	4137	N/A		
	Information	12/15/2005	5:18:07 PM	SecurityCenter	None	1807	N/A		
	🔥 Warning	12/15/2005	5:17:03 PM	Userenv	None	1517	SYSTEM		
	Information	12/15/2005	4:17:24 PM	MsiInstaller	None	11728	stana		
	Information	12/15/2005	4:17:08 PM	MsiInstaller	None	11707	stana		
	Information	12/15/2005	4:17:01 PM	MsiInstaller	None	11707	stana		
	Information	12/15/2005	4:16:46 PM	IDriverT	None	0	N/A		
	Information	12/15/2005	4:16:34 PM	MsiInstaller	None	11707	stana		
	Information	12/15/2005	4:16:19 PM	MsiInstaller	None	11724	stana		
	Information	12/15/2005	4:16:16 PM	MsiInstaller	None	11728	stana		
	Information	12/15/2005	4:16:04 PM	IDriverT	None	0	N/A		
	Information	12/15/2005	4:12:59 PM	MsiInstaller	None	11728	stana		
	Error	12/15/2005	4:12:58 PM	MsiInstaller	None	11316	stana 🗾		
l	<u> </u>					_			

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.

E٩	vent Prope	rties				<u>? ×</u>
	Event					
	Date: Time: Type: User: Computer:	12/16/2005 8:41:52 AM Error N/A STANAXPNE	Category: Event ID:			+ +
	Description					
	directory (requested Enrollme	0x8007003a). operation. nt will not be p	The specif erformed. e Help and	ocal system faile ied server canno Support Center (<u>nts.asp</u> .	ot perform the	he active
	Data: 💿	Bytes 🔿 Wo	nds			
						×
			0	K Ca	ancel	Apply

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 > Control > Panel > InfoValue QuickVideo.
- 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.

License Diagnostics		×
System Time is: Wed	Jan 23 22:05:02 2008	<u> </u>
System information: - Computer name: User name: System directory: Operating System: OS version OS Service Pack Active NIC: Default IP:	INFOVALUEWEB INFOVALUEWEB C:\WINDOWS\system32	
1	API Version: '3.0.0.3'.	

3. Click **OK** to exit.

Chapter 7

Reinstalling the Software

Topics in this chapter

Overview	45
Reinstalling the VOD-W Software	45
Reinstalling the License File	51
Uninstalling the Software	51

Overview

The VBrick EtherneTV VOD-W server is shipped with Windows 2003 Server Web Edition and the VOD-W software already installed. Installation instructions are provided here only in the unlikely event that you need to reinstall the software. These instructions explain how to install the VOD-W software on a system that already has Windows 2003 Server Web Edition 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 <u>Database Restore</u> on page 23).

Installation Prerequisites

Before installing the VOD-W software from the EtherneTV VOD-W Server Software CD, make sure that Windows 2003 Server Web Edition is already installed. This software is included with the Dell recovery CDs that are shipped with the server (see <u>Server Restore</u> on page 23 for more information). Also make sure there are no previous versions of the QuickVideo Content Server installed.

- ▼ To manually check for previous versions
- 1. Go to Start > Settings >Control Panel > Administrative Tools > Services.
- 2. The services QuickVideo Content Server, QuickVideo OnDemand Server and QuickVideo Stream Redirector) should not be listed. If they are, refer to <u>Uninstalling the Software</u> on page 51.
- 3. The services **IIS Admin Service** and **World Wide Web Publishing Service** should be present and started.
- 4. The service ASP.NET State Service should be present and started.

Reinstalling the VOD-W Software

- ▼ To install the VOD-W software on a system with Windows 2003 Server Web Edition already present:
- 1. Insert the EtherneTV VOD-W Server Product CD in the CD-ROM drive on the server.
- 2. Navigate to MSDERedistribution.exe and double-click to launch the program.
- 3. In the **MSDE Redistribution** window select **Continue** to accept the default.
- 4. Click **Yes** to create a folder.
- 5. Wait until the process completes and reboot when done.

- 6. Install the InfoValue QuickVideo OnDemand Server by double-clicking on SetupVOD-W_x_x_x_x.exe.
- 7. In the Edit Data window, enter your serial number and click Next.

therneTV-VOD W - InstallShield Wizard	-	2
Edit Data Enter requested data.		
Entor requested data.		
Please enter your serial number:		
123456789		
istallShield		11-2-2-1
	< <u>B</u> ack <u>N</u> ext>	Cancel

8. Review your serial number and confirm.

?)	Please review the Serial Number you entered and verify that it is correct: 1234567 Select "No" to change it, or "Yes" to continue	89
- a		

9. Click Next on Welcome to the InstallShield Wizard for EtherneTV-VOD-W.



- 10. In the Choose Destination Location window select Next to accept the default.
- 11. If prompted, you may need to insert the Windows 2003 Web Edition CD in the drive.



12. When prompted, insert the EtherneTV VOD-W Server Software CD in the drive.

Setup needs	i disk EtherneTV-VOD ₩	×
-	Please insert disk labelled EtherneTV-VDD W	
Path:		
Z:V		Browse
InstallShield	OK	Cancel

- 13. Click Next on the Welcome to the QuickVideo OnDemand Server page.
- 14. Click Yes on the License Agreement.
- 15. Click Next on the Readme File.
- 16. Click Next on Choose Destination Location page to accept the default.
- 17. Click Next on Setup Type.
- 18. Click Next on Select Program Folder to accept the default.
- 19. Click Next on the Start Copying Files window.
- 20. Click OK to skip the License Registration screen.

ense Registration	
License Registration	
Company: Contact eMail Phone:	VBrick needs this 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:	
ataliëlinevi	

21. Click Next on the Configuration Completed page.



22. When the InfoValue Product Configuration page is displayed, select your **Server IP** address from the drop down list and click **OK**.

IP Assignment				
TF Assignment	Streaming IP	Auto		•
	Management IP	Auto		-
RTSP Streams			-	
Support RT	SP Interleaved using p	iort	554	4
Support HT	TP Tunneling using po	rt	800	00
Störage	D:\Content			Browse
Storage Path			1	DIOWSE
	Adds	Storage Pal	h	
.og (Stream Redin	ector & Content Server	1		_
File Path C:\Pri	ogram Files\InfoValue\	QuickVide	o OnDemand Se	Browse
Number of Files 7	- Maximum Size (on KB)	2048	Log Level	100
and In	(on white)			1
				anced
			Lannananan	

- 23. When the first Installation QuickVideo OnDemand Complete page is displayed, click **Finish**.
- 24. When the second Installation Complete page is displayed saying the EtherneTV VOD-W has finished installing, click **Finish** to restart your computer.



25. Wait for the computer to restart and then login. Then go to Start > Control Panel > InfoValue Quick Video.

VOD Licer License Pr	nse VbPortal About		
License Pr	and the second se		
	ocessing		_
	Registration Form	Load License File	
Troublesho	and the second sec		_
*	Run Diagnostics	Adv. Troubleshooting	
	Load Dongle Driver	Unload Dongle Driver	
		Adv. Configuration	
		and the second s	
-		<u>ок са</u>	ncel

- 26. On the License tab, click Load License File and then navigate to the file, select it and click **Open**. (The license file is included with the VOD-W server software on a separate VOD-W Server License CD.)
- 27. Click OK and OK again when the license file has been successfully loaded.



- 28. Launch the configuration utility: Go to Start > Control Panel > InfoValue QuickVideo.
- 29. Change **Storage Path 1** to **D:** \Content to store video. The total amount of storage capacity on the D: drive depends on your VOD-W server:

Model	Platform	Total Storage
VOD 50W	PowerEdge 1850/1950	136 GB
VOD 125W	PowerEdge 2850/2950	409 GB
VOD 300W	PowerEdge 2850/2950	836 GB

- 30. Reboot the server, wait for reboot to complete, and then login.
- 31. If external storage is configured, click Add Storage Path, browse to the content directory on the external storage volume. Then click Add and click OK.

Storage Path		
New Storage Path		
D:\Content	Browse Add	Remove
Storage Paths		
D:\Content		
	OK.	

- 32. Repeat the step above for each external storage volume.
- 33. When done click **OK** to exit the configuration utility and reboot the server: Go to **Start > Shutdown > Restart**.

IP Assignment		De la com		
	Streaming IP	Auto		
	Management IP	Auto		-
RTSP Streams			-	
Support RT	SP Interleaved using p	iort	554	4
Support HT	TP Tunneling using po	rt	80	00
Storage	D:\Content			Browse
Storage Path	J: VContent			Browse
	Add	Storage Pa	ath	
Log (Stream Redin	ector & Content Server)——		
File Path C:\Pri	ogram Files\InfoValue\	QuickVide	eo OnDemand Se	Browse
Number of Files 7	— Maximum Size (on KB)	2048	Log Level	100
-				anced

- 34. After the reboot, ingest the demo content as follows. There are seven demo files to ingest and they must be ingested one at a time.
- $35.~Go\ to\ {\rm Start}$ > All Programs > Video OnDemand Server > Ingest Content.

	deo Ingest		👫 info	/alue®
Content Import Loo	cation		_	
 Content File 	C Meta File	C Batch File	C Restore	e Ingetion
E:\StagingArea	ADayInTheLifeCorp_M	IP4_100k.mp4		Browse
Progress Last Status : App		dy To Ingest		
Less << Content Name [0]	Start	Dancel	Close	Ab <u>o</u> ut
/Demo/ADayIn1	TheLifeCorp_MP4_100	k.mp4		
Storage Location	- If default is not used [Optional]		
-				Browse
1				

- 36. In the Content Import Location field click Browse and navigate to E:\StagingArea.
- 37. Highlight the first demo file and in the **Content Title** field enter the title that will be seen by users in the format:

/Demo/< Name of Demo file >

38. Click Start. When done repeat these steps for the other six files.

Reinstalling the License File

The license file corresponding to maximum streams and bandwidth you purchased is preinstalled on the server by VBrick. Under normal circumstances you will never have to reinstall 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.

Viewing License Status

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

Uninstalling the 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.

- ▼ To uninstall the VOD-W software
- 1. Go to Start > Programs > QuickVideo OnDemand Server > Uninstall QVOD Server to uninstall the QuickVideo OnDemand Server.

- For a cleaner un-install, you should also uninstall the database components. To un-install database components, go to Start > Settings > Control Panel > Add or Remove Programs and un-install Microsoft SQL Server Desktop Engine.
- 3. Go to the file system and delete the folder C:\Program Files\Microsoft SQL Server.
- 4. To un-install the remaining VBrick VOD-W components, go to Start > Settings > Control Panel > Add or Remove Programs and un-install EtherneTV-VOD-W.
- 5. Reboot the host after un-installing these items.

If you are planning to reinstall the VOD-W software, delete the following folders in C:\Program Files:

- Infovalue
- Microsoft SQL Server
- MSDE Redistribution
- VBrick

The license file will remain in C:\Windows\System. If you are reinstalling the VOD-W software, there is no need to reload the license file.

Chapter 8

Adding Storage to 1850/2850 Servers

Topics in this chapter

Overview	. 53
Adding Storage to 1850 Servers (VOD 50W)	. 54
Adding Storage to 2850 Servers (VOD 125/300W)	. 58

Overview

VBrick's SCSI-attached ES3 and ES4 external storage arrays are available to Dell 1850/2850 VOD-W customers to increase video storage or to backup existing content. The VOD 125W and 300W servers use RAID5 technology for speed, performance, and to protect against the failure of a single drive. Data is written across three or more drives to protect drive the content. If the VOD-W server you purchased from VBrick included external storage, the storage array was installed *and* configured before delivery to your site. Use the steps in this chapter only if you are adding external storage at a later date.

Model	Hardware	Interface	Raw Capacity	Drives
ES3	Dell PowerVault 2208	SCSI	1 TB	7
ES4	Dell PowerVault 2208	SCSI	2 TB	14

Table 6. 1850/2850 VOD-W External Storage Devices †

⁺ For detailed technical information, LED descriptions, troubleshooting procedures, etc. refer to the Dell PowerVault manuals listed in <u>Related Publications</u> on page viii.

Monitoring Performance

To verify that the external file system is working properly, launch the QVOD Server Console (see <u>Monitoring the Server</u> on page 25), and open the **Disk Manager**. Click on any drive to view detailed performance characteristics. You can also check the status LEDs on the each the drive. They should all be illuminated steady green. If not, refer to the appropriate Dell documentation. (The Dell PowerVault documentation is online and the manuals are in <u>Related Publications</u> on page viii.) If any of the LEDs show a failure, contact VBrick <u>Support</u>. <u>Services</u>. They will explain the warranty process and arrange for a replacement. All drives are hot swappable but it will take several hours or more to rebuild an array and you may want to rebuild at night or during off-peak hours.

Note There is no way to specify where content is saved. If you add additional storage, newly ingested content may be saved on any available drive (internal or external) as determined by the VOD-W software.

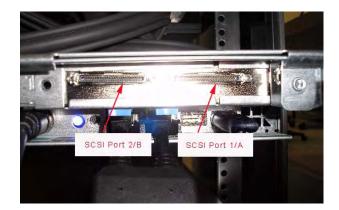
Adding Storage to 1850 Servers (VOD 50W)

Use the following procedure to add external storage to VOD 50W servers. The procedure is the same for ES3 (1 TB) and ES4 (2 TB) devices.

- 1. Power everything down.
- 2. ES3/ES4 setup.
 - a. Connect both power cords on ES3/4.
 - b. Connect SCSI cable to the VOD 50W.
 - c. SCSI termination is internal; no terminator is necessary.



- 3. EtherneTV VOD-50W (VBrick VOD 50W Dell 1850) setup.
 - a. Connect the SCSI cable from the ES3/4 to SCSI 1/A port connector on the EtherneTV VOD-50W; this is on the back of the 1850 on the right and the connector on the two ports SCSI card (as shown below). If you are connecting two external ES3/4 arrays, then connect the SCSI cable from the second storage array to the SCSI 2/B port connector on the EtherneTV VOD-50W.



- 4. Power up ES3/4.
- 5. Power up Dell 1850.
- 6. After the system reboots, logon as Administrator.
- 7. Click Start > Administrator Tools > Computer Management.
- 8. Select **Disk Management** under Storage. In the Initial and Convert Disk Wizard Welcome Windows select **Next**.



- 9. In the Select Disks to Initialize window, select all disk(s) displayed and Next.
- 10. In the Select Disks to Convert window, select all disk(s) displayed and Next.
- 11. In the Completing the Initialize and Convert window, click Finish.
- 12. In the Computer Management window, right-click on the Basic disk and select Convert to Dynamic Disk. (The 1850 uses Dynamic Disks.) Do this for all 14 drives if they are not Dynamic and click OK when done.

Computer Management (Local)	Volume Layout		File System		Capacity	Free Space		Fault Tolerance		
System Tools		n Basic		Healthy (EISA Configuration)		94 MB	100 %	No	0%	
Event Viewer Shared Folders	C:) Partition			Healthy (System)	12.00 GB	8.49 G8	70 %	No	0%	
Local Users and Groups	(D:) Partition			Healthy Healthy	409.86 GB		99 %	No	0%	
Performance Logs and Alert	(E:) Partition	s Basic	NIFS	Healthy	56.14 GB	55.66 GB	99 %	No	0%	
B Device Manager										
Storage										
Removable Storage										
Disk Management										
Services and Applications	-	-				_				
	Basic 0			(C:)		(E:)				
	68.24 G8	94 M		12.00 GB NTFS		56.14 G	8 NTPS			
	Online	Heat	thy (EISA Con	Healthy (System)		Healthy	-		_	
	@Disk 1		_							
	Basic 409.86 GB	(D:)							
	Online	Heat	86 GB NTFS thy							
	@Disk 2									
	Basic	127		New Partition	1137797					
	819.72 GB Online		72 GB							
	Crimie	Una	ocated ///	Broperties	aaaaa	10111111				0.602310.00
	@Disk 3			Help						
	Basic 819.72 GB	0.00	72 G8							
	Online		ocated							
	0	-								
	CD-ROM 0 CD-ROM (F:)									
	1000									
	No Media									

13. Right click on **Disk0** and select **Create New Volume**. In the **New Volume Wizard Welcome** page, click **Next**.



14. In the Select Volume Type page, select **Striped** and click **Next**.

Select the volume you want to	create:
C Simple	C Mirrored
C Spanned	
Striped	
	in stripes on two or more dynamic disks. A striped ess to your data than a simple or spanned volume.

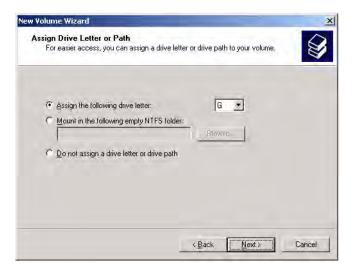
15. In the Select Disks page, select Disk0. Then click Remove and Next.

ise, and then	Select		
Add >	Disk	and the second se	
<u>R</u> emove Re <u>m</u> ove All) 140012 N	4B
lume size in r	negabytes (MB):	140012
140012	P		
			olume size in megabytes (MB):

16. In Select Disks page, highlight disks 0–6. Then click Add then Next.

Select the dynamic disks y	ou want to use, and then c	lick Add.		
Ayailable:		Selected:		
	Add	and the second	40012 MB 40012 MB	
	< <u>R</u> emove	Disk 2 1	40012 MB	1
_	< Remove All	Disk 4 1	40012 MB 40012 MB	
1	Total volume size in m		40012 MB	80084
		egabytes (MD).	1 3	50084
Maximum available space ir	n MB: 140012			
Maximum available space in S <u>e</u> lect the amount of space				

17. In the Assign Drive Letter or Path page, click Next.



18. In the Format Volume page, click Next.

Format Volume To store data on this volume, you	ou must format it first.
Choose whether you want to form	mat this volume, and if so, what settings you want to use.
C Do not format this volume	8
Format this volume with the second	he following settings:
<u>File</u> system:	NTFS
Allocation unit size:	Default
<u>⊻</u> olume label:	New Volume
E Perform a quick for	mat
\Box Enable file and fold	ler compression

- 19. When the New Volume Wizard is complete, click Finish.
- 20. Repeat Steps 13–19 for the second TeraByte: Disks 7-13.

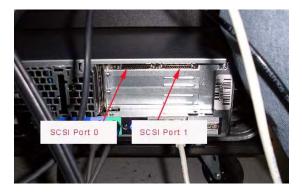
Adding Storage to 2850 Servers (VOD 125/300W)

Use the following procedure to add storage to *both* VOD 125W and VOD 300W servers. The procedure is the same for ES3 (1 TB) and ES4 (2 TB) devices. Note that the 2850 uses Basic Disks.)

- 1. Power everything down.
- 2. ES3/ES4 setup.
 - a. Connect both power cords on ES3/4.
 - b. SCSI termination is internal; no terminator is necessary.



- 3. EtherneTV VOD-125W (VBrick VOD125 Dell 2850) setup.
 - a. Connect the SCSI cable from the ES3/4 to SCSI 0 port connector on the EtherneTV VOD-125W; this is bottom left connector on the two port SCSI card (as shown below). If you are connecting two external ES3/4 arrays, then connect the SCSI cable from the second storage array to the SCSI 1 port connector on the EtherneTV VOD-125W.



- 4. Power up the ES3/4.
- 5. Power up Dell Server (VOD-125W).
- 6. During Dell boot up:
 - a. Do not type **Ctrl-A** to enter the Adaptec SCSI BIOS.
 - b. Watch for message **PowerEdge RAID controller BIOS** then press **Ctrl-M** to go to RAID controller configuration. It takes several minutes to enter the config utility.

- 7. In PERC RAID BIOS screens:
 - a. Perform Configure > View/Add Configuration scans all channels.
 - b. You should see one logical drive on RAID Ch-0, IDs=0 and 1; this is the first drive in the system and is used to store the operating system, the VOD server software, and database
 - c. You should see the remaining four internal drives configured as a RAID 5 array. These drives are used to store the video content on the system. These drives are configured on Ch-0, ID=1 and Ch-1, IDs: 2, 3, & 4. The RAID 5 array ensures that no video content is lost if a single drive fails.
 - d. Select Adapter then Adapter-1 (Bus=09, Dev=04, Slot=003) Perc 4/DC.
 - e. Perform Configure > View/Add Configuration scans all channels.
 - f. On channel 0 of the RAID BIOS configuration screen, you should see all 14 drives of the ES3/4 storage array. These are ID's 0 through 5, and 8 and ID's 9 through 15. Use the arrow keys on the keyboard to move to the Channel 0, ID=0 drive and use the space bar to select this drive. Repeat this procedure for the first seven drives (IDs 0 through 5 and 8) on Channel 0. When you have completed this process, press F10 Space F10 to enter the RAID 5 configuration and then arrow down to the Advanced menu section. Set the RAID 5 configuration as follows:

Stripe = 128k

Write policy = wrback

Read policy = Adaptive

Cache policy = Direct I/O

Press Esc then Enter.

Select Initialize. Use Space bar to select the logical drive(s) then Yes.

For an ES4, repeat this procedure for IDs 9 through 15 to create a second logical drive.

If you are installing a second ES3/4 2TB storage array, repeat all of the above steps in Section d, but configure all the drives in the second 2TB storage array to use Channel 1. Set the parameters in the **Advanced** menu to be the same as Section d, then press **Esc** and then **Enter** when finished.

Save config? = yes

Exit and reboot the system.

- 8. After the system reboots, login as Administrator.
- 9. Click Start > Administrator Tools > Computer Management.
- 10. Select **Disk Management** under Storage. In the Initial and Convert Disk Wizard Welcome Windows select **Next**.



- 11. In the Select Disks to Initialize window, select all disk(s) displayed and Next.
- 12. In the Select Disks to Convert window, select all disk(s) displayed and Next.
- 13. In the Completing the Initialize and Convert window, click Finish.
- 14. In the Welcome to the New Volume Wizard page click Next.



15. In the Select Volume Type page, select Simple and click Next.

lect Volume Type There are five types of volume	s: simple, spanned, striped, mirrored, and RAID-5.
Select the volume you want t	o create:
Simple	C Minared.
C Spanned	 <u>Бі</u>ΔіБ-6.
C Striped	
Description	
simple volume if you have a) of free space on a single dynamic disk. Create a mough tree disk space for your volume on one disk, alume by adding free space from the same disk or

16. In the Select Disks window click Next.

You can select the disks and s	et the disł	< size for this	volume.
Select the dynamic disk you wa	ant to use	, and then cli	ck Add.
Ayailable;			Selected:
	1	edd >	Disk 2 839396 MB
	< <u>F</u>	emove	
	< R	emove All	
1	Total volu	me size in me	egabytes (MB): 8393
Maximum available space in ME	t:	839396	
Select the amount of space in N	1B:	839396	3

17. In the Assign Drive Letter or Path window click Next.

w Volume Wizard Assign Drive Letter or Path For easier access, you can assign a drive lette	r or drive path to your volume.
 Assign the following drive letter: Mount in the following empty NTFS folder: Do not assign a drive letter or drive path 	G I
	< <u>B</u> ack Next> Cancel

18. In the Format Volume window, select Perform a quick format to speed up the format, then click Next. This option will complete the format in 5–10 minutes.

Format Volume To store data on this volume, you	ı must format it first.		
Choose whether you want to form	nat this volume, and if s	o, what settings you v	want to use.
C Do not format this volume			
• Format this volume with th	e following settings:		
<u>File system</u> :	NTFS	*	
Allocation unit size:	Default	•	
⊻olume label:	New Volume		
Perform a quick form	nat		
Enable file and folde	er compression		

- 19. When the New Volume Wizard is complete, click Finish.
- 20. Repeat steps 14–19 for the second Terabyte. The external storage will not be available until the format is complete. You can monitor the progress of the format from the Computer Management page.
- ▼ To monitor the progress of the format
- 1. Go to Start > Control Panel > Administrative Tools > Computer Management.
- 2. Double-click **Storage** in the left pane to expand the tree.
- 3. Then click **Disk Management** and you can monitor the progress of the format from the following window.

						-					
System Tools	Volume Layout Partition		File System	Status Healthy (EISA Configuration)	Capacity 94 MB	Free Space 94 MB	% Free 100 %	Fault Tolerance No	Overhead 0%		
Event Viewer Shared Folders	(C:) Partition			Healthy (System)	12,00 GB	8,49 G8	70 %	No	0%		
Local Users and Groups Performance Logs and Alert:	 (D:) Partition (E:) Partition 			Healthy Healthy	409.86 GB 56.14 GB	409.11 GB 55.66 GB	99 % 99 %	No No	0% 0%		
Device Manager Sorage Sorage Disk Defragmenter Disk Management											
E Services and Applications	@Disk 0										
	Basic 68.24 GB Online	94 ME Healt) hy (EISA Conl	(C:) 12.00 GB NTFS Healthy (System)		(E:) 56.14 G Healthy	B NTPS				
	@Disk 1 Basic										
	409.86 GB Online	409.8	(0-) 400.86 GB NTP5 Healthy								
	CDisk 2 Basic										
	819.72 GB Online	819.7 Unalic	r2 GB scated	New Partition Broperties							
	CDisk 3 Basic	1		Help							
	819.72 GB Online	819.7 Unalk	2 GB scated								
	CD-ROM 0 CD-ROM (F:)										
	Unallocated	Primary	partition 📕 E	xtended partition 📘 Logical dri	ve						
	Unallocated	Primary	partition 📕 E	xtended partition E Logical dri	ve						

Chapter 9

Adding Storage to 1950/2950 Servers

Topics in this chapter

Overview
Adding Storage to VOD 50/125/300W Servers

Overview

If you purchased a system with external storage, the storage is configured and shipped with the VOD-W server—no additional configuration is required. Use the steps in this chapter only if you are adding external storage at a later date. The procedure is the same for VOD 50/125/300 servers. The direct-attached ES5/10/15 external storage arrays shown in Table 7 are available to Dell 1950/2950 VOD-W customers.

Table 7.	1950/2950	VOD-W	External	Storage	Devices	t
----------	-----------	-------	----------	---------	---------	---

Model	Hardware	Interface	Raw Capacity	Drives
ES5	Dell PowerVault MD1000	SAS	1.5 TB	5
ES10	Dell PowerVault MD1000	SAS	3 TB	10
ES15	Dell PowerVault MD1000	SAS	4.5 TB	15

⁺ For detailed technical information, LED descriptions, troubleshooting procedures, etc. refer to the Dell PowerVault manuals listed in <u>Related Publications</u> on page viii.

Adding Storage to VOD 50/125/300W Servers

Use the following procedure to add storage to an existing VOD-W 50/125/300 server. This procedure includes the installation of a Perc 5/E External RAID Controller card.

- ▼ To add external storage
- 1. Power everything down.
- 2. Remove bracket shown here:



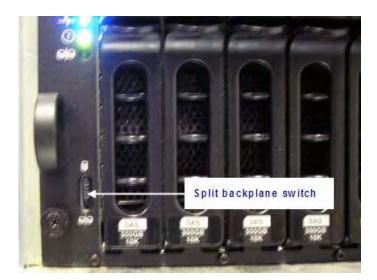
3. The next photo shows the Dell 1950 with the top cover off.



4. The next photo shows the Dell 2950 with the top cover off.



As shown in the next photo, make sure the split backplane switch is in the upward position for "single disk."



5. Insert the Perc 5/E External RAID Controller shown below into the Dell 1950/2950.



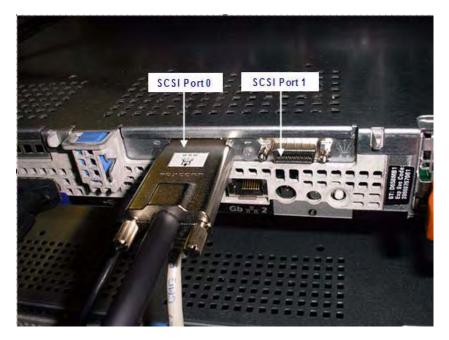
6. The next photo shows Dell 1950 top cover off with PERC 5/E external RAID inserted.



7. The next photo shows the Dell 2950 top cover off with PERC 5/E external RAID inserted.



8. The next photo shows Dell 1950 back view with PERC 5/E external RAID connected.



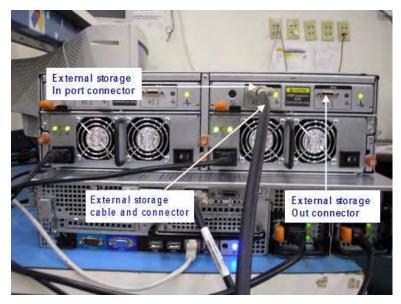
9. The next photo shows MD1000 back view with PERC 5/E external RAID connected.



10. VOD-W setup for both Dell 1950 and 2950 Servers.

Connect the SCSI cable from the DM1000 to SCSI 0 port connector on the 1950/2950; this is bottom left connector on the two-port SCSI card (shown below). If you are connecting a second external DM1000 array, then connect the SCSI cable from the Out port of the first external to the In port of the second external on the right from the back storage array. If you are connecting a third external DM1000 array, then connect the SCSI cable from the Out port of the second external to the In port of the second external on the right from the back storage array. If you are connecting a third external to the In port of the third external on the right from the back storage array.

11. The next photo shows the back view of 2950/MD1000 with PERC 5/E external RAID connected.



12. Dell 2950 back view PERC 5/E external RAID ports.



- 13. MD1000 setup.
 - a. Connect both power cords on DM1000.
 - b. CSI termination is internal; so no terminator is needed.
- 14. Power up the MD1000.
- 15. Power up the 1950/2950 Dell Server.
- During Dell boot up watch for the message PowerEdge RAID controller BIOS then press Ctrl-R to go to RAID controller config (this takes several minutes to enter the config utility).
- 17. In the PERC RAID BIOS screens:
 - a. Use Arrow Up/Down to select Controller 1: Perc 5/E adapter Bus 0x0F Device 0x0E Function 0x00 then Enter.
 - b. Hit F2 use Tab or Up/Down arrow key to select Create New VD then Enter.

- c. Use Tab or Arrow Up/Down key to highlight on **Raid Level** and **Enter** to select RAID-5 then **Enter**.
- d. To select the drives use the Tab to Physical Disks then Space to select drive ID 01:00-01:04 for 5 drives (300 GBs each). The approximate size is about 1142272 MB. (First 1.5 TB)
- e. Use the Tab or Up/Down key to select OK then hit Enter.
- f. Hit OK
- g. Hit F2 on Virtual Disk 0 and select Initialization > Fast Init then enter and OK.
- h. If there are 5 disks in the enclosure being configured skip to step v.
- i. Use Tab or Arrow Up/Down key to highlight on **Raid Level** and Enter to select RAID-5 then **Enter**.
- j. To select the drives use the Tab to Physical Disks then Space to select drive ID 01:05-01:09 for 5 drives (300 GB each). The approximate size is about 1142272 MB. (Second 1.5 TB)
- k. Use the Tab or Up/Down key to select OK then hit Enter.
- l. Hit **ok**.
- m. Use Tab or Arrow Up/Down key to highlight Virtual Disk 1.
- n. Hit F2 on Virtual Disk 1 and select Initialization > Fast Init then enter on OK.
- o. If there are 10 disks in the enclosure then skip to step v.
- p. Use Tab or Arrow Up/Down key to highlight **Raid Level** and **Enter** to select RAID-5 then **Enter**.
- q. To select the drives use the Tab to Physical Disks then Space to select drive ID 01:10–01:14 for 5 drives (300 GB each). The approximate size is about 1142272 MB. (Third 1.5 TB)
- r. Use the Tab or Up/Down key to select OK then hit Enter.
- s. Hit **OK**.
- t. Use Tab or Arrow Up/Down key to highlight on Virtual Disk 2.
- u. Hit F2 on Virtual Disk 2 and select Initialization > Fast Init then enter on OK.
- v. Hit **Esc** to exit.
- w. Hit **OK**.
- x. Simultaneously hit Ctrl-Alt-Del key to reboot the server.
- 18. Repeat step 17 for each additional enclosure. The drive IDs will be different in the second enclosure and in the third enclosure in the system.
- 19. After the system reboots, logon as Administrator.
- $20. \ Go \ to \ {\rm Start}$ > Administrator Tools > Computer Management.

Eomputer Management File Action View Window F	lelp	_ D ×
Computer Management (Local) System Tools Event Viewer Sohared Folders Local Users and Groups Performance Logs and Alerts Device Manager Storage Storage Disk Defragmenter Disk Defragment Services and Applications	Name System Tools Storage Services and Applications	
<u>× </u>		

21. Go to Storage > Disk Management. In the Initialize and Convert Disk Wizard welcome window select Next.

Initialize and Convert Disk ¥	Vizard	×
	Welcome to the Initialize and Convert Disk Wizard This wizard helps you to initialize new disks and to convert empty basic disks to dynamic disks. You can use dynamic disks to create software-based volumes that can be mirrored, or they can be stiped or spanned across multiple disks. You can also expand single-disk and spanned volumes without having to restart the computer. After you convert a disk to dynamic, you can only use Windows 2000 and later versions of Windows on any volume of that disk.	
	Cancel Cancel	el

22. In the Select Disks to Initialize window, click **Next**. As an example, the following window is shown for ES5 1.5 TB devices. The window you see will vary depending on the capacity of the devices you are actually configuring.

Select one or more of Disks:	disks to initialize.		
Disk 2			-

Note The windows you see from this point on will vary depending on the capacity of the devices you are actually configuring. As shown in Table 8 on page 80, you may be configuring arrays with 1.5–13.5 TB of storage. The windows for arrays other than 1.5 and 3 TB are similar to the screens shown here but are not identical.

As another example, the following window is shown for ES10 3 TB devices.

Select one or	rmore disks to initi	alize.		
Disks:			 	
Disk 2			 	

23. In the Initialize and Convert Disk Wizard screen, leave all disks unchecked and click Next.

Note Two or more disk arrays may appear if you have 10 or more physical disks since each group of 5 disks were configured as a single RAID5 array in step 22.

As an example, the following window is shown for ES5 1.5 TB devices.

elect Disks to Convert The disks you select will be co	nverted to dynamic	disk.s.		1
Select one or more disks to cor	weit:			
Disks:			-	
1				

As an example, the following window is shown for ES5 3 TB devices.

				-
Selectione of Disks:	or more disks to cor	nvert:		
Disk 2			 	
Disk 3				

Note Two or more logical disks may appear if you have 10 or more physical disks since each group of 5 disks were configured as a single RAID 5 array in step 22.

24. When the Completing the Initialize and Convert Disk Wizard window is displayed, click **Finish**. As noted the data in the window will vary depending on the amount of storage you are adding. For ES5 1.5 TB devices, only Disk 2 will be displayed.



For ES10 3 TB devices, Disk 2 and Disk 3 will displayed.

Initialize and Convert Disk V	Vizard	×
	Completing the Initialize and Convert Disk Wizard You have successfully completed the Initialize and Convert Disk Wizard. You selected the following settings: Initialize to MBR: Disk 2, Disk 3 Convert: None	
2	To close this wizard, click Finish. < <u>B</u> ack Finish Cance	4

25. In the Computer Management window, right-click on Disk 2 and select New Partition.

omputer Management (Local)	Volume Layout	Type File System	Status	Capacity	Free Space	% Free	Fault Tolerance	Overhead	
System Tools Image: System Tools Image: Shared Folders Image: Shared Folders Image: Storage Image: Storage Storage	Partition (C:) Partition (D:) Partition (E:) Partition	Basic NTFS Basic NTFS	Healthy (EISA Configuration) Healthy (System) Healthy Healthy	94 MB 12.00 GB 409.86 G8 56.14 GB	94 M8 8.49 GB 409.11 G8 55.66 G8	100 % 70 % 99 % 99 %	No No No	0% 0% 0%	
Removable Storage Disk Defragmenter Disk Nerfagmenter Disk Nerfagment Disk Nerfagment Disk Services and Applications		t-							
	Conline	94 MB Healthy (EISA Coni	(C:) 12.00 GB NTFS Healthy (System)		(E:) 56.14 G Healthy	B NTFS			
	CPDisk 1 Basic 409.86 GB Online	(D:) 409.86 GB NTFS Healthy							
	CPDisk 2 Basic 819.72 GB Online	819.72 GB Unallocated	New Partition						
	CPDisk 3 Basic 819.72 GB Online	819.72 GB Unallocated	Help						
	CD-ROM 0 CD-ROM (F:) No Media								

The example above is for 10 external disks. Disk 3 would not be present if only 5 disks are deployed. Likewise, Disk 4, Disk 5, etc. may be present for larger external configurations.

26. In the Welcome to the New Partition Wizard window select Next.

New Partition Wizard		×
	Welcome to the New Partition Wizard This wizard helps you create a partition on a basic disk. A basic disk is a physical disk that contains primary partitions, extended partitions, and logical drives. Partitions created on Master Boot Record (MBR) disks can be accessed from any version of Windows or MS-DOS. Partitions created on GUID Partition Table (GPT) disks can only be accessed from Windows Server 2003 Service Pack: 1 or later, or from any 64-bit version of Windows. To continue, click Next.	
	Back Next > Cancel	

27. In the Select Partition Type window select Next.

elect Partition Type There are three types of partitions: prin	hary, extended, and logical.
Select the partition you want to create:	
Primary partition	
C Extended partition	
C Logical drive	
Description	
Windows and other operating syste create up to 128 primary partitions of	reate using free space on a basic disk. m: can start from a primary partition. You can n a GPT basic disk. On a Marster Boot create up to four primary partitions or three partition.
	<back next=""> Cance</back>

28. In the Specify Partition Size window select Next.

Maxium disk space in megabytes (MB):	1142270
Maxium disk space in megabytes (MB): Minimum disk space in MB;	8
Partition size in MB:	1142270
	-

29. In the Assign Drive Letter or Path window select Next.

Assign Drive Letter or Path For easier access, you can assign a drive letter	or drive path to your volume.	
Assign the following drive letter: Mount in the following empty NTFS folder: Do not assign a drive letter or drive path	G 💌	
	<back next=""></back>	Cancel

30. In the Format Partition window select Next.

To store data on this partition, yo	ou must format it first.		1
Choose whether you want to for	mat this partition, and if	so, what settings you w	ant to use.
C Do not format this partition	n		
 Format this partition with t 	he following settings:		
Eile system:	NTFS	*	
Allocation unit size:	Default	*	
Direction of in size.			
⊻olume labet	New Volume		
-	1		
_ ⊻olume labet	mat		

31. In the Completing the New Volume Wizard window select Finish.

New Partition Wizard	A CONTRACTOR OF A CONTRACTOR OFTA CONTRACTOR O	X
	Completing the New Partition Wizard You have successfully completed the New Partition Wizard.	
	You selected the following settings:	
	Pertition type: Primary pathtion Disk selected: Disk 2 Partition size: 1142270 MB Drive letter or path: G: File system: NTFS Allocation unit size: Default Volume black: New Volume Dirick: format: Yes To close this wizard, click Finish.	
	< Back Finish Cance	el

- 32. Repeat steps 26–31 for drives H and I if necessary. If there is more than one disk enclosure, repeat for drives J through O (as many as present).
- 33. Open Windows Explorer.
- 34. Select G drive and create Content2 by right-clicking and selecting New > Folder. Then create Content3 on the H: drive and Content4 on the I: drive if necessary. If there is more than one disk enclosure, repeat for drives J through O as necessary.
- 35. Go to Control Panel > InfoValue QuickVideo.

IP Assignment				
TP Assignment	Streaming IP	Auto		•
	Management IP	Auto	-	-
RTSP Streams			-	
Support RT	SP Interleaved using p	ort	55	4
Support HT	TP Tunneling using po	ort	80	00
Storage				
	D:\Content	_		Browse
prorage main 1	bba	Storage Pa	ath	1
(C) D (_
	ector & Content Server ogram Files\InfoValue\		eo OnDemand Se	Browse
Number		-		DIOWSE
of Files 7	 Maximum Size (on KB) 	2048	Log Level	100
		-	[]	
200			Adv	anced
			AO	

36. Click on Add Storage Path.

D:\Content	Browse	Add	Remove
Storage Paths			×
D:\Content			_

37. Click on Browse and select G:\Content2. Then click Add. Repeat for Content3 and Content4 on drives H and I if necessary. If second or third enclosure is present, repeat for drives I through O as necessary. Your results should appear as follows. Then click OK.

:\Content	Browse	Add	Remove
Storage Paths			
D:\Content G:\Content2			
H:\Content3			

- 38. Then click **OK** to close InfoValue QuickVideo.
- 39. When complete, the drive letters and folder names should correspond to the number of drives according to the following table.

Disks	Capacity (TB)	Drive Letter for Last Logical Disk	Content Folder for Last Logical Disk
5	1.5	G	/Content2
10	3	Н	/Content3
15	4.5	Ι	/Content4
20	6	J	/Content5
25	7.5	К	/Content6
30	9	L	/Content7
35	10.5	М	/Content8
40	12	Ν	/Content9
45	13.5	0	/Content10

Table 8. Disk Number and Capacity



VBrick Systems, Inc. 12 Beaumont Road Wallingford, Connecticut 06492, USA