SeaChange VOD System

Software Installation and Configuration Guide

SeaChange International Inc.
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Revision 10

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Preface

The Purpose of This Book

This book presents an overview of the SeaChange® VOD System software elements that are installed on the VOD Command Center servers, VOD MediaCluster servers, and VOD Management Stations configured in a VOD site.

This book also provides detailed, step-by-step instructions on how to perform the following software installation and configuration tasks:

- Installing VOD System services
- Installing a VOD development system
- Applying release-specific VOD System service configuration changes introduced in earlier VOD releases

NOTE

Configuration changes for all releases are located in the version-specific release notes.

This book does not cover the initial VOD System installation and configuration procedures performed by SeaChange manufacturing technicians prior to product delivery.

Audience

The information and advice in this book is intended for SeaChange field service and technical support representatives, cable operator technicians at VOD customer sites, or any people who need to monitor and, when necessary, restore, re-configure, or upgrade ‘live’ deployments of VOD System software in the field.

Revision Information

This book has been updated for VOD Release 1.8. This book contains the following changes. New or changed text is marked with change bars.

- Appendixes containing release-specific configuration information have been removed. This information is available in the releases notes, which can be found on the *VOD Service Disk*, Disk 1 of 2.
- Name change from Interactive Television (ITV) System to VOD System. These changes are not marked with change bars.
- For installing a Development System, the instructions now specify SQL 2000 Service Pack 3 rather than Service Pack 2.

What's in This Book

This book contains the following chapters:

- Chapter 1, "Overview of VOD System Software Configurations" provides a review of VOD System service names, followed by a detailed account of where these services are installed for each of the currently-supported base Command Center configurations. Descriptions of Command Center clustering and MediaCluster and Management Station software configurations are also provided.
- Chapter 2, "Upgrading a VOD Site" contains a notice describing the new location for the upgrade instructions.
- Chapter 3, "Installing a VOD Service" lists the types of the service-specific information that you will need to gather before you can install a VOD service. A generic, step-by-step procedure for installing VOD services is also provided.
- Chapter 4, "Installing a VOD Development System" explains how to install a VOD Development System.
- Chapter 5, "Installing IIS" explains how to install IIS, which is the web server for the VOD Subscriber Utility and the VOD Data Warehouse Report Generator.
- Appendix A, "VOD System Service Configuration Changes" explains where to find information about release-specific service configuration changes.

Related Books

The documentation for the SeaChange VOD System includes the following books:

- *SeaChange VOD System Management and Operations Guide*
- *SeaChange VOD System Asset Manager User's Guide*
- *SeaChange VOD System Asset Management Administrator's Guide*
- *SeaChange VOD System Movies-on-Demand Administrator's Guide*
- *SeaChange VOD System Alarms Handbook*
- *SeaChange VOD System Hardware Installation Guide*
- *SeaChange VOD System Software Installation and Configuration Guide*
- *SeaChange VOD System Delivery Network Integration Guide*
- *SeaChange VOD System Subscriber Data Guide*
- *SeaChange VOD System Data Warehouse Report Generator User's Guide*

For release-specific information, see the VOD Release Notes for the SeaChange VOD release that is installed on your Command Center. The release notes are located in the root directory on the Command Center release CD.

How to View This Book Online

On-line versions of SeaChange books are available in Adobe™ Acrobat™ (PDF) format on the release CD. For complete information on how to access these books, see the *VOD Release Notes*.

Technical Notes

Viruses can be introduced into your system from outside sources, such as removable diskettes. Before you use any removable medium with your SeaChange system equipment, scan the medium for viruses.

WARNING

Viruses introduced into your system can cause your system to fail.

WARNING

On SeaChange VOD Command Center servers, VOD MediaCluster servers, and PC-based VOD Management Stations, install only the software that SeaChange provides on the release CD for a VOD upgrade. Do NOT install any additional software, such as anti-virus software. Installing software that SeaChange does not provide can have serious or fatal consequences to the operation of the SeaChange VOD System.

Customer Support

SeaChange Customer Services offer 24-hour, 7-day Hot-Line and Remote Diagnosis support for problems you cannot solve on your own. This support is covered under your service contract with SeaChange. SeaChange also offers system reconfiguration services, on a fee-for-service basis. This section explains how to use the Customer Support Hot-Line and the system reconfiguration services, and how to use our Return Merchandise Authorization (RMA) process.

Problem Calls

After initial training, you should be able to locate and identify all the components of the SeaChange system, monitor the system performance, and identify major failures. In case of a system failure, determine whether the system has been properly operated and verify that all system components are operational. If the problem persists, call:

SeaChange Technical Support Hot-Line
+1-978-897-7300.

The Technical Support Hot-Line is an automated telephone call distribution system. At the beginning of the call, a voice menu asks you to select the product for which you need support. For some products, you can make additional menu selections that more specifically define the kind of support you need. Based on the options you select, the Hot-Line connects you with a member of the SeaChange Technical Support team that is specifically trained for the type of product and problem you specified.

Our goal is to ensure that your call is quickly routed to a member of the SeaChange Technical Support team who has the expertise to diagnose and resolve your problem, and who will speak directly to you without your waiting for someone to return your call. During peak call hours, it may be necessary to wait a short time on hold while we are helping other callers. If we cannot answer your call within a few minutes, you have the following two options:

- Remain on the line for the next available Technical Support representative, or
- Leave a message for a Technical Support representative to return your call as soon as possible.

To help us diagnose and resolve the problem more quickly, please have the following information available before you call the SeaChange Technical Support Hot-Line:

- The case number, if you are calling about a previous problem
- Your name, and if someone else will be the contact person for the problem, the contact person's name
- Your company name and location (city, state or province, and country)
- The telephone number at which you or the contact person can be reached for the next **two hours**
- The telephone number that can be used to dial into your SeaChange system for Remote Access Service (RAS) dial-in connections, or the connection parameters for Virtual Private Network (VPN) connections, to remotely diagnose and repair the problem
- A detailed problem description:
  - Describe the symptom and the activities that preceded it.
  - Be as specific as possible.
  - Briefly describe your trouble-shooting steps and observations.

Prior to the remote diagnosis and repair process, ensure that:

- RAS or VPN connectivity is operational and available.
- Technical or operations personnel are available on site to do any diagnostic or repair tasks that cannot be done remotely.

Often, problems can be diagnosed and resolved quickly by SeaChange Technical Support representatives. However, there are some situations where it is necessary for you to assist the support representative in diagnosing and resolving the problem.

If you would like to receive information from SeaChange Customer Services by email, please send your email address to techsupport@schange.com.

System Reconfiguration

If you need SeaChange system reconfiguration support to change your system configuration, please call the SeaChange Technical Support Hot-Line (**+1-978-897-7300)**. You must schedule this support at least five business days in advance of the date on which you need SeaChange support, so that we can schedule the necessary resources. SeaChange charges remote installation fees for this service.

Return Merchandise Authorization (RMA) Process

If you have a failed component, please call the SeaChange Technical Support Hot-Line (**+1-978-897-7300)**. Technical Support will determine, using remote diagnosis tools and techniques, what FRU (Field Replaceable Unit) or component(s) have failed and are in need of repair or replacement.

Technical Support will determine the course of action to remedy the situation as quickly as possible. These actions may include replacing the failing component with an on-site spare, or continuing to operate the system in a redundant backup or degraded mode (depending on failure and system configuration) to allow time for the replacement component to arrive on site.

In either case, SeaChange issues an RMA Number with instructions on how to tag and return the defective part. SeaChange will send replacement parts as quickly as possible, using an appropriate express carrier. Replacement time may vary in some locations and outside North America.

SeaChange operates under the policy that all RMA parts must be returned to SeaChange Logistics within two business weeks of receiving the hardware component. To facilitate the return of material, SeaChange will supply Customers with RMA return kits for every hardware shipment. RMA return kits consist of a box for return, packing materials, RMA identification forms, and a self-addressed packing slip for return at SeaChange's expense. All RMA materials must be returned using SeaChange packing slips for tracking purposes.

NOTE

Failure to comply with the two-week return policy could result in a service interruption until all materials are returned.

Keep a record of the shipping carrier's tracking number for the returned shipment. This is your proof of return.

How to Comment on This Book

At SeaChange International, our goal is to provide the highest quality products and services to our customers. We value customer feedback and encourage users of SeaChange systems to send their comments on the product, service, and documentation to our Customer Service Department, so that we can continue to improve.

Please send your comments and suggestions, including features you would like to see in future releases, to the following address:

Customer Service Department
SeaChange International, Inc.
124 Acton Street
Maynard, Massachusetts 01754 USA

Chapter 1
Overview of VOD System Software Configurations

This chapter contains information on the following topics:

Read Me First

If you are unfamiliar with the VOD System, SeaChange strongly recommends that you read the introductory chapter of the *SeaChange VOD System Management and Operations Guide*. It provides a comprehensive, high-level overview of how the VOD System works, describes the various VOD services and components, and defines many of the basic concepts and terms referred to throughout this guide.

Before you perform any of the procedures explained in this guide, be sure to read the most current version of the *VOD Release Notes*.

SeaChange also suggests that you keep a copy of the *VOD Site Survey* for your particular site on hand during the VOD software installation and configuration process. The *VOD Site Survey*, which is provided and maintained by the SeaChange VOD Program Manager assigned to your site, contains the most up-to-date information about the VOD System software currently installed on your VOD machines.

NOTE

Be aware that certain elements of your VOD System software configuration may differ from the standard, base configurations documented in this guide. For the most up-to-date information on VOD System software configurations, refer to the *VOD Release Notes* or contact your SeaChange technical support representative.

SeaChange VOD System Services

During a software upgrade, you replace the currently installed SeaChange VOD services and other software components, such as Dynamically Linked Library (DLL) files, with the VOD services and other software components for a new VOD release. For VOD Command Center services, the specific server on which a service is installed depends on the Command Center hardware configurations, which are explained later in this chapter.

For descriptions of the SeaChange VOD core services, see the book *SeaChange VOD System Management and Operations Guide*. For descriptions of the SeaChange Movies on Demand services, see the book *SeaChange VOD System Movies-on-Demand Administrator's Guide*.

Table 1-1 lists the abbreviated names of the SeaChange VOD System services that run on VOD MediaCluster or Command Center servers, specifies whether the service runs on a MediaCluster or Command Center server, and provides the expanded display name of the service. Table 1-2 provides the same information for SeaChange Movies on Demand (MOD) Application services.

Services are listed in alphabetic order by the service name as it is specified in the Registry key:

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services`

Table 1-1: SeaChange VOD System Services

Service	Location	Description
ADIS	Command Center	Asset Distribution Interface service.
AlarmAna	Command Center	Alarm Analyzer service
AlarmCol	Command Center and MediaClusters	Alarm Collector service
ETF	Command Center (VOD Management Station)	Encryption and Trick File service
IAD	Command Center	Application Database service
IAM	Command Center	Asset Manager service
ICM	Command Center	Connection Manager service
IDS	Command Center	Directory service

Table 1-1: SeaChange VOD System Services *(Continued)*

Service	Location	Description
IPS	Command Center	Propagation service
ISRM	Command Center	Session and Resource Manager service
MCAServer	MediaClusters	MediaCluster Agent (MCA) Server service
Pager	Command Center	Pager service
SCSetup	Command Center and MediaClusters	SeaChange Setup service
SCTP	Command Center	SeaChange Transfer Protocol service
SMSSync	Command Center	Subscriber Management System (SMS) Synchronization service
SysMon	Command Center	System Monitor service

Table 1-2: SeaChange VOD Application Services

Service	Location	Description
MOD	Command Center	SeaChange Movies on Demand Server service
MODBilling	Command Center	SeaChange Movies on Demand Billing service

VOD Command Center Configurations

This section provides a brief introduction to Command Center server clustering and describes where the VOD System services and databases are installed on each of the currently- supported Command Center configurations. For information on VOD machine naming conventions, see the *SeaChange VOD System Hardware Installation Guide*.

A *Command Center server* is a rack-mounted computer that has been configured to provide a particular set of services or management applications. A front view of an Command Center server is shown in Figure 1-1.

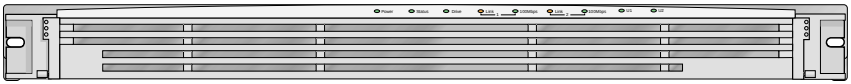

Figure 1-1: Command Center Server – View of Front Panel

Most Command Center servers are configured as members of twin-server *Command Center clusters* running Legato® Systems' CoStandby™ Server for Windows NT software to provide a bi-directional failover mechanism. Both servers in a Command Center cluster are pre-configured with an identical subset of VOD services. Each service instance is **active** on only one cluster member at a time[1] while its backup instance remains in a passive **standby** state on the companion cluster member. In the event of an individual server failure, the surviving member of the cluster (while continuing to perform its own tasks) automatically assumes the tasks and the identity of the failed server. This permits continuous, uninterrupted service to VOD subscribers, even after a server loss.

Command Center clusters are rack-mounted together in the same rack and typically arrive at the customer site fully cabled and configured. The number of Command Center clusters can vary.

As of this writing, Command Centers are available in the following base configurations:

- **"Four-Cluster Command Center Configuration"** – Consists of 4 twin-server Command Center clusters (8 servers), 1 non-clustered Data Warehouse server, and 1 non-clustered Management Station
- **"Two-Cluster Command Center Configuration"** – Consists of 2 twin-server Command Center clusters (4 servers) 1 non-clustered Data Warehouse server, and 1 non-clustered Management Station
- **"Single-Server Configuration"** – Consists of a single, non-clustered Command Center server on which all VOD services and management utilities are configured

[1] The Alarms Collector and the SeaChange Setup service (SCSetup) are always active on both members of a Command Center Cluster.

The following sections describe how VOD System services are distributed across the Command Center servers provided in each of these configurations.

Four-Cluster Command Center Configuration

Most Command Center configurations deployed in production-scale environments consist of ten server machines:

- Four twin-server Command Center clusters, including:
  - a Directory cluster
  - a Propagation cluster
  - a Connection Manager cluster
  - an Application cluster[2]
- One non-clustered Data Warehouse server
- One non-clustered Management Station[3]

Each Command Center cluster in the four-cluster configuration is characterized by the particular primary VOD service that its two servers are collectively configured to provide. Table 1-3 describes the primary VOD services provided by each of the four Command Center clusters, and defines the generic machine names assigned to each machine.

Table 1-3: Command Center Cluster Functions (4-Cluster Configuration)

Command Center Cluster Name	Primary Function Provided	Generic Machine Names of Cluster Members
Master Directory	Master Directory Service (IDS)	MDS1 and MDS2
Propagation	Propagation Service (IPS)	PS1 and PS2
Connection Manager	Connection Manager Service (ICM)	CM1 and CM2
Application	Movies-On-Demand Server Service (MOD)	APP1 and APP2

In the field, these generic machine names are pre-pended with additional information designating customer name, site location, and other site-specific identifiers. See the *SeaChange*

[2] To support increased capacity, additional Connection Manager and Application clusters can be configured.

[3] The Management Station is available either as a rack-mounted Command Center server or a stand-alone PC for use at a remote location. See the *SeaChange VOD System Hardware Installation Guide* for more information.

VOD System Hardware Installation Guide for complete information on how to interpret Command Center server names.

Although both servers in a Command Center cluster are configured with identical VOD services, each service is only actively running on one server at a time. For example, an instance of IDS is configured on both servers (**MDS1** and **MDS2**) of the Master Directory cluster but, by default, only the instance configured on the MDS1 machine is **active**. The instance of IDS configured on the MDS2 machine remains in a **standby** state, ready to take over the IDS function in the event of a problem on the MDS1 machine.

The following tables describe the VOD services configured on each of the Command Center clusters in a standard four-cluster Command Center deployment:

- See Table 1-4 for a description of VOD services configured on the Master Directory cluster in a four-cluster Command Center.
- See Table 1-5 for a description of VOD services configured on the Propagation cluster in a four-cluster Command Center.
- See Table 1-6 for a description of VOD services configured on the Connection Manager cluster in a four-cluster Command Center.
- See Table 1-7 for a description of VOD services configured on the Application cluster in a four-cluster Command Center.

For a more comprehensive description of the VOD services, see the *SeaChange VOD System Management and Operations Guide*.

Table 1-4: Master Directory Cluster Services (4-Cluster Configuration)

Name of VOD Service	MDS1	MDS2
Alarm Analyzer	Standby	Active
IAM (Asset Manager Service)	Active	Standby
IDS (Directory Service)	Active	Standby
Pager	Standby	Active
SeaChange System Monitor Service	Standby	Active
Alarm Collector	Active on Both Machines	
ScSetup	Active on Both Machines	

Table 1-5: Propagation Cluster Services (4-Cluster Configuration)

Name of VOD Service	PS1	PS2
IAD (Application Database Service)**	Active	Standby
IPS (Propagation Service)	Standby	Active
MOD Billing Service*	Active	Standby
SMSSync (Subscriber Management System Synchronization service)	Active	Standby
Alarm Collector	Active on Both Machines	
ScSetup	Active on Both Machines	

***** – Indicates an optional service for VOD customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application. See ‘‘Optional VOD Services’’ (page 1-12) for more information.
****** – Indicates an optional service for VOD customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application or the VOD System’s underlying application-level infrastructure services. See ‘‘Optional VOD Services’’ (page 1-12) for more information.

Table 1-6: Connection Manager Cluster Services (4-Cluster Configuration)

Name of VOD Service	CM1	CM2
ISRM (Session and Resource Manager service)	Active	Standby
ISRM2 (2nd instance)	Standby	Active
ICM (Connection Manager Service)	Active	Standby
ICM2 (2nd instance)	Standby	Active
Alarm Collector	Active on Both Machines	
ScSetup	Active on Both Machines	

Table 1-7: Application Cluster Services (4-Cluster Configuration)

Name of VOD Service	APP1	APP2
MOD (Movies-On-Demand Server Service)*	Active	Standby
MOD2 (2nd instance*)	Standby	Active
SCTP (SeaChange Transfer Protocol Service)**	Active	Standby
SCTP2 (2nd instance**)	Standby	Active
Alarm Collector	Active on Both Machines	
ScSetup	Active on Both Machines	

***** – Indicates an optional service for VOD customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application. See ''Optional VOD Services'' (page 1-12) for more information.

****** – Indicates an optional service for VOD customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application or the VOD System's underlying application-level infrastructure services. See ''Optional VOD Services'' (page 1-12) for more information.

Two-Cluster Command Center Configuration

For customers with lower video-stream generation requirements, Command Centers are also available in a two-cluster configuration: two twin-server Command Center clusters (a Directory cluster and a Connection Manager cluster), one non-clustered Data Warehouse server, and one non-clustered Management Station, for a total of six machines.

In this configuration, the VOD services normally configured on the Propagation cluster are running on the Directory cluster. Similarly, the VOD services normally configured on the Application cluster are running on the Connection Manager cluster.

The following tables describe the VOD services configured on each of the Command Center clusters in a standard two-cluster Command Center deployment:

- See Table 1-8 for a description of VOD services configured on the Master Directory cluster two-cluster Command Center.
- See Table 1-9 for a description of VOD services configured on the Connection Manager cluster in a two-cluster Command Center.

Table 1-8: Master Directory Cluster Services (2-Cluster Configuration)

Name of Installed Service	MDS1	MDS2
Alarm Analyzer	Standby	Active
IAD (Application Database Service)**	Active	Standby
IAM (Asset Manager Service)	Active	Standby
IDS (Directory Service)	Active	Standby
IPS (Propagation Service)	Standby	Active
MOD Billing Service*	Active	Standby
Pager	Standby	Active
SeaChange System Monitor Service	Standby	Active
SMSSync (Subscriber Management System Synchronization service)	Active	Standby
Alarm Collector	Active on Both Machines	
ScSetup	Active on Both Machines	

***** – Indicates an optional service for customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application. See "Optional VOD Services" (page 1-12) for more information.
****** – Indicates an optional service for customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application or the VOD System's underlying application-level infrastructure services. See "Optional VOD Services" (page 1-12) for more information.

Table 1-9: Connection Manager Cluster Services (2-Cluster Configuration)

Name of Installed Service	CM1	CM2
ISRM (Session and Resource Manager service)	Active	Standby
ISRM2 (2nd instance)	Standby	Active
ICM (Connection Manager Service)	Active	Standby
ICM2 (2nd instance)	Standby	Active
MOD (Movies-On-Demand Server Service)*	Active	Standby
MOD2 (2nd instance*)	Standby	Active
SCTP (SeaChange Transfer Protocol service)**	Active	Standby
SCTP2 (2nd instance**)	Standby	Active
Alarm Collector	Active on Both Machines	
ScSetup	Active on Both Machines	

***** – Indicates an optional service for customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application. See "Optional VOD Services" (page 1-12) for more information.
****** – Indicates an optional service for customers who do not intend to use the SeaChange Movies-On-Demand (MOD) client application or the VOD System's underlying application-level infrastructure services. See "Optional VOD Services" (page 1-12) for more information.

Single-Server Configuration

In addition to the four-cluster and two-cluster Command Center base configurations, the Command Center is available as a single (non-clustered) Command Center server configured with all VOD System services.

This configuration is typically used only for VOD Demonstration systems or VOD Development systems configured for no MediaCluster Agent (**NOMCA**) to enable streaming without a MediaCluster.

A Command-Center-only database server is a single-server Command Center that does not have a VOD MediaCluster. If the site is configured for NOMCA, you can start and stop streams without actually streaming video files from a MediaCluster. The NOMCA configuration has an MCA Emulator, which consists of directories and files that represent one or more MediaClusters, with assigned bandwidths. In a NOMCA configuration, the Propagation service and Connection Manager service must be configured specifically for NOMCA operations.

VOD Management Station Configuration

Table 1-10 lists the services that run on the Management Station.

Table 1-10: Services on an Management Station

Name of Installed Service	Comments
ADIS	Non-ISA environments
AlarmCol	All environments.
ETF	Optional.
IsaDownload	ISA environment only
ScSetup	All environments.

Optional VOD Services

The open architecture of the SeaChange VOD System enables third-party software developers to create their own VOD-compliant client-server applications. Consequently, some cable operators and other customers have chosen to deploy their own custom-designed VOD applications in addition to (or in place of) the SeaChange Movies-On-Demand (MOD) application.

Developers can integrate their applications with the VOD System at several levels. As of this writing, most third-party applications are being implemented to take advantage of the underlying VOD application-level infrastructure services (IAD and SCTP) and to interface with the VOD command/control and video-delivery services in generally the same way as that currently used by the SeaChange MOD application. Other third-party applications, however, are being implemented to use alternative proprietary application-level services that do not require the use of IAD or SCTP.

Cable operators who choose not to deploy the SeaChange MOD application *but still intend to use* the VOD application-level infrastructure (IAD and SCTP) to support other third-party VOD-compliant applications can optionally omit the following VOD services from their Command Center configurations:

- SeaChange MOD Server Service
- SeaChange MOD Billing Service

Cable operators who choose not to deploy the SeaChange MOD application *and do not want to use* the VOD application-level infrastructure (IAD and SCTP) to support other third-party VOD-compliant applications can optionally omit the following VOD services from their Command Center configurations:

- SeaChange MOD Server Service
- SeaChange MOD Billing Service
- IAD (Application Database Service)
- SCTP (SeaChange Transfer Protocol Service)

VOD System deployments that omit these services typically do not include an Application cluster in their Command Center configuration. See Table 1-3 for more information.

Location of VOD SQL Databases

The SeaChange VOD System currently uses the following SQL databases:

Table 1-11: SeaChange VOD SQL Databases

Database	Description
DnpConfig	Connection Manager Configuration database
IadData	Application database
IamData	Asset Manager database
IcmData	Connection Manager Request Log database
IdsData	Directory database
IdwData	Data Warehouse database
SubscriberData	Subscriber database

For descriptions of these databases, see the book *SeaChange VOD System Management and Operations Guide*.

Depending on your Command Center configuration, these databases are installed on the shared drive of one or more of your Command Center clusters. In the case of a single-server configuration, these databases are installed on drive `D:\` of the single Command Center server.

The Data Warehouse database (IdwData) is always installed on the Data Warehouse server. Table 1-12 shows the machine location(s) of the other VOD SQL databases in each of the currently-supported Command Center base configurations.

Table 1-12: Machine Locations of VOD SQL Databases

Command Cluster Configuration	Cluster(s) with SQL Installed	Installed Databases
Four-Cluster Configuration	Master Directory cluster	IamData IcmData IdsData DnpConfig
	Propagation cluster	IadData SubscriberData
Two-Cluster Configuration	Master Directory cluster	IadData IamData IcmData IdsData DnpConfig SubscriberData
Single-Server Configuration	Drive D:\ on the MDS1 machine	IadData IamData IcmData IdsData DnpConfig SubscriberData

For a complete description of the purpose of each of the databases and the various VOD services that maintain and use them, see the *SeaChange VOD System Management and Operations Guide*.

Understanding Command Center Server Clustering

To help ensure that the VOD services running on your Command Center remain continuously available in the event of a server failure, all Command Center servers (with the exception of the single Command Center servers configured in VOD Demo or Development systems and Command Center servers configured as Data Warehouse servers or Management Stations) are paired together in twin-server Command Center clusters[4] running Legato Corporation's Co-StandbyServer for Windows NT clustering software.

Co-StandbyServer provides a bi-directional failover mechanism so that, in the event of a hardware or software failure on one Command Center cluster member, the surviving member (in addition to maintaining its own services) automatically assumes the tasks and the identity of the failed member, permitting continuous operation of all VOD services ordinarily provided by both members of the Command Center cluster.

How Bi-Directional Failover Works

To achieve bi-directional failover between Command Center cluster members, Co-StandbyServer maintains a sort of 'virtual server' called a *Failover Group* on each of the two servers in a cluster. After the Co-StandbyServer software is installed on both cluster members, SeaChange manufacturing (via the Co-StandbyServer Management interface) creates and populates a Failover Group on each server. The Failover Group on Server 1 is populated with a copy of all the resources required to provide the VOD services currently configured on Server 2. Similarly, the Failover Group on Server 2 is populated with an inactive copy of the resources required to provide the VOD services currently configured on Server 1.

In addition to the connections maintained on the Client-to-Server and Sever-to Server subnets, each server in an Command Center cluster maintains a dedicated, high-speed Ethernet link to its partner cluster member (via a dedicated port) over which the instances of Co-StandbyServer software running on each machine communicate with each other and monitor their mutual status.

When Co-StandbyServer detects and verifies that a failure has occurred on one of the cluster members, it automatically moves the failed server's Failover Group from its 'home' location to its 'away' location on the surviving cluster member, which immediately begins performing the work of the failed member.

To support the Co-StandbyServer failover mechanism, both members of an Command Center cluster must always maintain identical Windows NT Registry configurations and identical file sets on their respective `C:\` drives. VOD-related files reside exclusively on drive `C:\` of each cluster member.

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[4] Command Center clusters should not be confused with VOD MediaClusters, which are composed of MediaCluster servers and used in a VOD System to generate video output streams over a digital broadband network for delivery of video content to digital set-top boxes.

VOD MediaCluster Configurations

This section provides a brief overview of VOD MediaClustering technology.

A *VOD MediaCluster server* is a computer system used in the VOD System to store and retrieve pre-encoded digital video content and to deliver that content to a pre-determined group of target subscribers.

A front view of a rack-mounted MediaCluster server is shown in Figure 1-2.

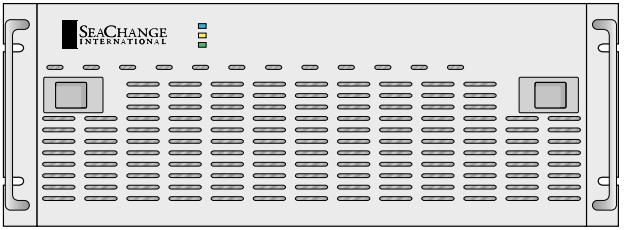

Figure 1-2: VOD MediaCluster Server – View of Front Panel

Each MediaCluster server used in the VOD System is configured as a member of a *VOD MediaCluster* – a group of independent MediaCluster servers that work together as a single fault-resilient video storage and retrieval system for video files. MediaCluster servers in a MediaCluster employ a unique SeaChange file system which is optimized for video storage and retrieval, as well as unique SeaChange Virtual Streaming software (**VStrm**) which makes it possible to play video content in real time.

MediaClusters are available in 3, 4, 5, 6, and 7-server configurations, as well as a single-server configuration for use in VOD Demonstration or Development systems, or at cable hub locations servicing a limited VOD subscriber base where the higher stream capacity and fault-tolerance provided by multiple MediaCluster servers is not required.

For detailed information on MediaCluster server hardware components and required connections, see the *SeaChange VOD System Hardware Installation Guide*. For complete internal component specifications, and information on how to maintain and troubleshoot MediaCluster servers (based on the SeaChange VS440B enclosure) see the *SeaChange VOD MediaCluster 4000 Guide*.

VOD Management Station Configurations

This section provides a brief introduction to Management Station configurations.

A *VOD Management Station* is a computer that has been specifically configured to run the **VOD Asset Manager** software application as well as other VOD-related management utilities. VOD operators use the Asset Manager to define and manage the collection of assets (including encoded video files, audio files, image files, text fonts, etc.) that a particular VOD client application (such as Movies-On-Demand) can advertise and deliver to subscribers.

As of this writing, Management Stations are available as free-standing (non-rack-mounted) PCs or as non-clustered, rack-mounted Command Center servers.

A front view of a PC-based Management Station is shown in Figure 1-3. (For a view of a Command Center server, see Figure 1-3.)

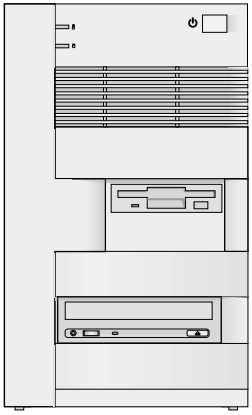

Figure 1-3: PC-Based VOD Management Station – View of Front Panel

All VOD sites include at least one Management Station. Command Center server-based Management stations are typically rack-mounted in the same rack with the Command Center clusters. PC-based Management Stations are typically configured at a remote location (away from the primary headend or hub) where the operator can perform asset-management tasks in a quieter, more comfortable setting.

Chapter 2
Upgrading a VOD Site

NOTE

Upgrade instructions have been removed from this guide. They are now contained in a separate Upgrade Instructions document which can be found on the *VOD Service Disk*, Disk 1 of 2, at the root of the CD (the same location as the release notes).

Chapter 3
Installing a VOD Service

This chapter contains information on the following topics:

Gathering VOD Service Installation and Configuration Data

Before you can install a VOD service, you need to gather certain installation and configuration data specific to that service. For each VOD service that you intend to install, you will need the service-specific values for the installation and configuration data described in Table 3-1.

CAUTION

Ensure you accurately capture all of the values below. Entering incorrect values for your site can render your VOD system inoperative.

Table 3-1: Required Service Installation and Configuration Data

Data	Description
service name	The name that identifies the service to the Windows NT Service Manager. This name also identifies the service in the Registry. For example, IDS is the service name for the Directory service.
exe location	The file path for the executable that the Windows NT Service Manager launches to start the service. All VOD services run under the service shell executable, `srvshell.exe`. Typically, the file path is: `%ITVROOT%\exe\srvshell.exe`
account	The login account for the service. The login account for a VOD service is either **SeaChange** or **LocalSystem**. If you do not know the password for these accounts, contact your SeaChange technical support representative.
display name	The name that appears in the Windows NT Services dialog box. The naming convention for SeaChange VOD services is: `SeaChange <descriptive name>` where `<descriptive name>` typically spells out the abbreviated name that identifies the service in the Registry. For example, for the service name IDS, the display name is SeaChange Directory Service.

product name	The name that specifies the SeaChange product for which the service is a component. The product name identifies the Registry branch that contains the software configuration keys and values for the service.
	For SeaChange Command Center services, the product name is ITV, and the software configuration keys and values are under the following Registry branch:
	`HKEY_LOCAL_MACHINE\SOFTWARE\SeaChange\ITV`
	For SeaChange VOD applications, the product name is ITV Applications, and the software configuration keys and values are under the following Registry branch:
	`HKEY_LOCAL_MACHINE\SOFTWARE\SeaChange\ITV Applications`

Table 3-1: Required Service Installation and Configuration Data *(Continued)*

Data	Description
event message DLL	The file path of the DLL that the Windows NT Event Viewer uses to locate the event messages that appear in the Windows NT Application Log. For example: • service shell - `ShellMsgs.dll` • Command Center - `ItvMessages.dll` • SeaChange Movies on Demand - `ModMsgs.dll`
event types supported	The types of events that the Windows NT Event Viewer will display if they occur. Typically this is `0x7`.
service management port number	The port number that the Service Management Utility (ManUtil) uses to communicate with the service. Each service has a unique management port.
service shell management port number	The port number that the Service Management Utility (ManUtil) uses to communicate with the service shell for the service. The service shell for each service has a unique management port.
image path	The file path of the executable file that the service shell launches to start the service. Typically, the file path for a VOD service executable is: `%ITVROOT%\exe\<executable_filename>`
required service configuration entries	The Registry entries for which the service requires a value, and for which there is no default value.

NOTE

For descriptions and configuration information on new VOD services introduced in the current VOD release, see the section entitled *New Features and Enhancements* in the latest version of the *VOD Release Notes*. For information about configuration changes for VOD System services introduced in earlier VOD releases, see the Appendices at the end of this book.

VOD Service Installation Procedure

This section explains how to install a new VOD service on a Command Center server or a Management Station on the local system (the machine to which you are logged in and on which you intend to install the VOD service).

The following procedure assumes that VOD System release in which SeaChange introduced the new service (or a later VOD System release) has already been installed on the local system. In this case, the Windows NT environment has already been correctly configured for the SeaChange VOD System. For example, the system variable `%ITVROOT%` has already been defined and added to the `%PATH%` variable, the SeaChange account has been configured, and the SeaChange VOD System files are located on the system.

To install a VOD service on a local system that is a Command Center server or Management Station:

1. Install and configure the service as a Windows NT service, which means that the Windows NT Service Manager can manage it. Enter the following command:

   `instserv <service name> <exe location> local [<account> <password>] manual own`

   where:

- `<service name>` is the name that identifies the service in the Registry.
- `<exe location>` is the location of the service shell, which in most cases is `%ITVROOT%\exe\srvshell.exe`.
- `local` instructs instserv to install the service on the local machine.
- `<account> <password>` are the optional login account and password for the service. For example, for a service that requires access to external components, such as a database on another Command Center server, specify the login account `SeaChange` and the password. For a service that does not require access to external components, do not specify a login account and password, or optionally specify “LocalSystem password”.
- `auto` configures the service to start automatically during a reboot operation. If you specify the manual option for this argument (as shown above), someone must restart the service manually whenever a reboot operation occurs.
- `own` configures the service to run a unique instance of the service shell.

  Note: Do not specify the share option for this argument, which configures the service to run an instance of the service shell that is shared among the SeaChange services on the same machine.

The `instserv` command installs the service, adds the following key to the Registry, and adds entries for the configuration values that you specified in the command arguments:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\
<service name>
```

2. Configure the display name that appears in the Windows NT Services dialog box.

   To configure the display name, enter the following command:

   ```
   instserv <service name> displayname= "<new display name>"
   ```

   where `<service name>` is the service name that identifies the service in the Registry, and `<new display name>` is the name that you want to appear in the Services dialog box.

3. Configure the product name for the service. In the Registry, add the following key and entry:

   Key: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\<service name>`

   Name: ProductName
   Type: REG_SZ
   Value:
   ITV – if the service is a Command Center core service.
   ITV Applications – if the service is an application service, such as SeaChange MOD Server service or SeaChange MOD Billing service.

4. Configure the Windows NT Event Viewer to log events for the service and its service shell. In the Registry, add the following keys and entries:

   a. **Key:** `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\Application\<service name>`

      Name: EventMessageFile
      Type: REG_EXPAND_SZ
      Value: `%ITVROOT%\Exe\<message DLL file name>`
      Example: `%ITVROOT%\Exe\ItvMessages.dll`

      Name: Typessupported
      Type: REG_DWORD
      Value: `<event level>` (Typically, the event level is `0x7`.)

b. *Key:* `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\Application\<service name>_shell` (For example, `IDS_shell`)

Name: EventMessageFile
Type: REG_EXPAND_SZ
Value: `%ITVROOT%\Exe\<message DLL file name>`
Example: `%ITVROOT%\Exe\ShellMsgs.dll`

Name: Typessupported
Type: REG_DWORD
Value: <*event level*> (Typically, the event level is `0x7`.)

5. Configure the management port for the service and its service shell. In the Registry, add the following keys and entries:

   a. **Key:** `HKEY_LOCAL_MACHINE\SOFTWARE\SeaChange\Management\CurrentVersion\Services\<service name>`

   Name: MgmtPortNumber
   Type: REG_DWORD
   Value: <*port number*> – the service management port number

   b. **Key:** `HKEY_LOCAL_MACHINE\SOFTWARE\SeaChange\Management\CurrentVersion\Services\<service name>_shell`

   Name: MgmtPortNumber
   Type: REG_DWORD
   Value: <*port number*> – the service shell management port number

6. Configure the image path, which is the file path of the executable file that the service shell launches to start the service. Also configure the management port for the service shell, which is the same management port that you configured for the service shell in a previous step. In the Registry, add the following key and entries, where <product name> is the product name for the service (typically ITV or ITV Applications):

   Key: `HKEY_LOCAL_MACHINE\SOFTWARE\SeaChange\<product name>\CurrentVersion\Services\<service name>_shell`

   Name: ImagePath
   Type: REG_EXPAND_SZ
   Value: `%ITVROOT%\exe\<file name>`
   Example: `%ITVROOT%\exe\ids.exe`

   Name: MgmtPortNumber
   Type: REG_DWORD
   Value: <*port number*>

(This is the same port number that you specified for the MgmtPortNumber entry under the key `HKEY_LOCAL_MACHINE\SOFTWARE\SeaChange\Management\CurrentVersion\Services\<service name>_shell` in a previous step.)

7. Configure the required Registry entries for the service, and any additional Registry entries that are optional, or for which you do not want to use the default value

NOTE

For descriptions and configuration information on new VOD services introduced in the current VOD release, see the section titled *New Features and Enhancements* in the latest version of the *VOD Release Notes*. For information about configuration changes for VOD System services introduced in earlier VOD releases, see the Appendices at the end of this book.

Chapter 4
Installing a VOD Development System

This chapter explains how to install a VOD Development System. It contains the following sections:

Before installing a VOD Development System, you should be familiar with at least the introductory chapters of the following guides:

- *SeaChange VOD System Management and Operations Guide*
- *SeaChange VOD System Asset Manager User’s Guide*
- *SeaChange VOD System Movies-on-Demand Administrator’s Guide*

What is a VOD Development System?

A VOD Development System is an installation of SeaChange VOD software that runs on a single machine. A VOD Development System includes only Command Center components and uses a MediaCluster emulator. It cannot access a VOD MediaCluster or a set-top box.

VOD Development System Components

A VOD Development System includes the following components and configuration:

- All VOD Command Center services
- The Command Center components of the SeaChange Movies on Demand (SeaChange MOD) application (for example, the SeaChange MOD Server service, the SeaChange MOD Browser DLL, and SMIL-page files, but not the SeaChange MOD set-top client)
- The Propagation, Streaming, and Connection Manager services, configured for no MediaCluster (NOMCA)
- A MediaCluster emulator that enables the NOMCA configuration. The MediaCluster emulator consists of a data file and directories that represent one or more MediaClusters with assigned bandwidths.

What is the NOMCA Configuration?

The NOMCA configuration allows you to start and stop streams without actually streaming video files from a MediaCluster. In the NOMCA configuration, the Propagation service (IPS) calls a stubbed MediaCluster Agent (MCA) API DLL, and the Connection Manager service (ICM) does not make any MCA API calls.

What is the VOD SDK?

The VOD SDK includes software and documentation that third-party developers can use to write software to integrate with the SeaChange VOD System. The VOD SDK is not included with the SeaChange *VOD Service Disk*. To obtain a copy of the VOD SDK, contact your SeaChange account representative.

The VOD SDK includes two scripts required to perform procedures described in this chapter. These are the ItvSetup utility (`itvsetup.bat`), which installs and configures VOD software on a VOD Development System, and the ITV utility (`itv.bat`), which manages VOD services from the command line.

Installing a VOD Development System

This section explains how to install a VOD Development System. It includes the following sections:

This section describes how to perform a clean install. It does not describe how to upgrade or install VOD on a system on which VOD components have been previously installed. If you want to upgrade VOD components or install VOD on a system on which VOD components have been installed previously, contact your SeaChange support representative for assistance.

Verifying System Requirements

Table 4-1 describes the requirements for a VOD Development System. Ensure that each requirement is met before beginning the installation procedures that follow.

Table 4-1: System Requirements

Done	Requirement	Description
❑	Operating System	Windows NT 4.0 with Service Pack 6a or greater, or Windows 2000 with Service Pack 2 or greater. To check this, right-click My Computer and view Properties. If you need to upgrade your Windows NT 4.0 system to SP 6a, you can run the service pack installation program in *VOD Service Disk*, Disk 2, `\NT Support` directory. When the installation is complete, reboot the machine.
❑	Disk Space	At least 1 GB of available disk space.
❑	VOD must NOT be installed.	Ensure the SeaChange VOD Command Center has not been previously installed on the Development System machine. **Note:** You can use the VOD Setup utility (included with the VOD SDK) to change the configuration of an installed VOD Development system; however, explaining how to do this is beyond the scope of this document.
❑	Microsoft SQL Server (any version) must NOT be installed.	Ensure that any previous installation of Microsoft SQL Server is completely removed. To remove a previous SQL Server installation: 1. Uninstall SQL Server. 2. If the SQL Server installation directory is still present, delete it. The installation directory path is typically `C:\Program Files\Microsoft SQL Server` or `C:\MSSQL`. 3. If the Registry key HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer is still present, delete it.

Installing ActivePerl

The VOD Development System must have ActivePerl version 5.6 or later installed.

To install ActivePerl:

1. Determine the version of the Windows Installer installed on the Development System. To view the version, navigate to `C:\WINNT\SYSTEM32`, right-click `MSIEXEC.EXE`, select Properties, then select the Version tab.
2. If the Windows Installer is not at version 1.1 or later, obtain and install the latest version. You can obtain it at:

   ```
   www.microsoft.com/downloads/release.asp?releaseid=32832&
   NewList=1
   ```

3. Obtain the download of ActivePerl available on:

   ```
   http://www.activestate.com/Products/ActivePerl
   ```

   When you navigate through the download options, select the Windows MSI package.

4. Install ActivePerl. Accept all the defaults presented by the Installer. It is important that you let it add Perl to the PATH environment variable.

Modifying System Variables

You need to define the system variable ITVROOT, which tells the VOD installation script where to install the VOD System files. Typically, the value of ITVROOT is `C:\itv`.

To define ITVROOT:

1. Open the Control Panel.
2. Launch the System applet.
3. *Windows NT*: Select the Environment tab.

   Windows 2000: Select the Advanced tab and then click the Environment Variables button.

4. Add a new System Variable with name ITVROOT and value `C:\itv`.
5. Click Set. Leave the System applet open for the next step.
6. Select the PATH System Variable and click Edit.
7. In the Variable Value field, add `%ITVROOT%\exe`. For example:

   ```
   C:%SystemRoot%\system32;%SystemRoot%;\Perl\bin\;
   %ITVROOT%\Exe;
   ```

8. Reboot.

Configuring the Windows NT Event Viewer

You need to configure the Windows NT Event Viewer to overwrite events as needed in the Application and System logs.

1. Open the Event Viewer.
2. In the tree view, right-click the Application Log and select Properties.
3. In the Properties, under Log Size, select ‘Overwrite evens as needed’.
4. Repeat for the System log.

Creating the SeaChange Local User

You need to create a local user named “SeaChange” with the following characteristics:

- Password “SeaChange”. Case matters.
- User Cannot Change Password selected.
- User Must Change Password at Next Logon *not* selected
- Right to Log On as a Service granted

Creating the SeaChange Local User under Windows 2000

1. Launch the Computer Management applet: Control Panel > Administrative Tools > Computer Management.
2. In the tree view of the Computer Management applet, expand Local Users and Groups and select the Users folder. This displays a list of the current users in the applet’s data pane (right hand pane).
3. Select Action > New User. This opens a dialog that lets you enter all of the characteristics listed above except the Right to Log on as a Service.
4. Create the local user SeaChange with the appropriate selections.
5. Close the Computer Management applet.
6. Launch the Local Security Policy applet: Control Panel > Administrative Tools > Local Security Policy.
7. In the tree view of the Local Security Policy applet, expand Local Policies and select the User Rights Assignment folder. This displays a list of policies in the data pane.
8. In the data pane, double-click the Log on as a Service policy. This displays a dialog listing the users currently granted this right.
9. Click Add to add a user. This opens a dialog that lets you select a user or group from a list of local users and groups.

10. Add the local SeaChange user. The Local Policy Setting check box should be checked. The Effective Policy Setting check box may not appear as checked until you close and re-open the Local Security Policy applet.
11. Close the Local Security Policy applet.

Creating the SeaChange Local User under Windows NT

1. Launch the User Manager for Domains: Start > Programs > Administrative Tools > User Manager for Domains.
2. In the User Manager for Domains, click User > New User. This opens a dialog that lets you enter all of the characteristics listed above except the Right to Log on as a Service.
3. Create the SeaChange user with the appropriate selections.
4. In the Policies menu, choose User Rights. This opens the User Rights Policy dialog.
5. In the User Rights Policy dialog, select the Show Advanced User Rights check box.
6. In the Right pull-down list, select Log On as a Service.
7. Click Add. This opens the Add Users and Groups dialog.
8. Click Show Users. User account names appear in the Names list.
9. In the Names list, double-click SeaChange. SeaChange appears in the Add Names list.
10. Click OK. This closes the Add Users and Groups dialog. SeaChange appears in the Grant To list in the Add Users and Groups dialog.
11. Click OK in the User Rights Policy dialog. The SeaChange user account now has the privilege to log on as a service.

Installing Microsoft SQL Server 2000

1. Obtain the correct version of Microsoft SQL Server 2000:
   - For machines running Windows NT Server, you can install Microsoft SQL Server 2000 Standard Edition.
   - For machines running Windows NT Workstation or Windows 2000 Professional, you must install Microsoft SQL Server 2000 Developer Edition.

   NOTE

   You may wish to copy the SQL installation files to a temporary directory to save time during installation.

2. Close all applications, including the Control Panel.
3. Start the SQL Server 2000 installer by running `AUTORUN.EXE` from the top folder of the SQL Server 2000 CD or temporary directory.
4. Follow the installer wizard steps. Accept or modify configuration settings as listed in Table 4-2.

   NOTE

   If the wizard asks for license information, enter site-appropriate license information.

Table 4-2: SQL Installation Configuration Settings

Screen	Settings
First screen (no title)	Select “SQL Server 2000 Components”.
Second screen (no title)	Select “Install Database Server”. In some cases, after you submit this selection nothing happens for a minute or two.
Computer Name	Local Computer
Installation Selection	Select “Create a new instance of SQL Server”.
User Information	Site-appropriate user name and organization
Software License Agreement	Accept.
CD Key	(Not all versions display this screen.) Enter the CD Key from the SQL 2000 license information
Installation Definition	Server and Client Tools
Instance Name	Default
Setup Type	Custom (Choosing Custom rather than Typical saves hard disk space.)
Select Components	Server Components: Select all except unselect Debug Symbols. Management Tools: Accept default. Client Connectivity: Accept default. Books Online: Unselect. Development Tools: Unselect. Code Samples: Accept default.
Services Account	Check “Use the same account for each service”. Under Service Settings, select “Use a domain user account”: user SeaChange; password SeaChange; domain local machine (blank).
Authentication Mode	Select Mixed Mode. User “sa”, check “blank password”.
Collation Designation	Select Collation Designator. Select Latin1_General. Sort Order: Binary. SQL Collations: Leave unselected.

Table 4-2: SQL Installation Configuration Settings *(Continued)*

Screen	Settings
Network Libraries	Select Named Pipes Named Pipe Name: \\.\pipe\sql\query Select TCP/IP Sockets TCP/IP Socket: 1433

5. Once the SQL Server 2000 installation is complete, install SQL Server 2000 Service Pack 3. You can find it on *VOD Service Disk*, Disk 2, folder `\SQL2kServicePacks\sp3`.
   a. Unpack `sql2ksp3.exe` into a temporary directory. The default of `C:\sql2ksp3` is OK.
   b. Run `setup.bat`.
   c. Accept defaults for all dialogs except the Connect to Server dialog. In this dialog, for the Select Authentication Mode option, select "The SQL Server system administrator login information (SQL Server Authentication)", and leave the password blank for the "sa" account.
   d. When the "You should now backup your master and msdb databases" message window appears, click OK.
6. Make sure SQL Server 2000 is installed correctly by starting and stopping the SQL Server.

Installing and Configuring VOD Software

1. Copy `itvsetup.bat` and `itv.bat` from the root of the *VOD Service Disk* to a temporary directory, such as `C:\ITVBAT`. Later, you will run these batch files from within this directory, so choose a directory that is easy to navigate to.
2. Determine the location of *VOD Service Disk*, Disk 1. If you are not installing from a CD, you need the path to the network share or local directory that contains the contents of *VOD Service Disk*, Disk 1.
3. Later in this procedure, you will be running the ItvSetup utility (`itvsetup.bat`) to install VOD on the system. Before running itvsetup.bat, you need to determine the appropriate command line arguments for your installation. Refer to Table 4-3 to make this determination.

Table 4-3: Commonly Supplied ItvSetup Arguments

Argument and Description
`--installall` This argument is required for new installations.
`--itvcd=<dir>` This argument is required. This argument supplies the path to *VOD Service Disk*, Disk 1 of 2, or a directory that contains the contents of that CD. For example: `--itvcd=D:` points to a CD drive mapped to D: `--itvcd=C:\temp\itvdisk1` points to a local directory containing the contents of *VOD Service Disk*, Disk 1 of 2.

`--mssqldir=<dir>`
This argument is optional.
This argument specifies the location of the Microsoft SQL Server installation directory. If this argument is not supplied, the ItvSetup utility uses the following default value:
`C:\SQL2000\MSSQL`
For example, the following argument specifies a different installation directory:
`--mssqldir="C:\Program Files\Microsoft SQL Server\MSSQL"`

`--sqltools=<dir>` This argument is optional. This argument specifies the location of the SQL2000 tools directory. If this argument is not supplied, the ItvSetup utility uses the following default value: `c:\Program Files\Microsoft SQL Server\80\Tools`

Table 4-3: Commonly Supplied ItvSetup Arguments *(Continued)*

Argument and Description
`--setupreg` This argument is optional. The `--installall` option includes it, so you won't need it if you are using `--installall`. This argument tells `itvsetup` to set up the Win32 registry. Use this if you are using `--sqluid` and `--sqlpw` (described below) without `--installall`.
`--sqluid=<SQL username>` This argument is optional. If you use this argument, you must also use `--installall` or `--setupreg` (described above). This argument specifies the SQL username VOD services should use to log into the SQL Server. If this argument is not supplied, VOD services will use 'sa' as their SQL username.
`--sqlpw=<SQL password>` This argument is optional. If you use this argument, you must also use `--installall` or `--setupreg` (described above). (described above). This argument specifies the SQL login password that VOD services should use. If this argument is not supplied, VOD services will use a blank SQL login password. **CAUTION:** Using a blank password for the 'sa' account is not recommended for security reasons.

The following example shows an `itvsetup` command with a typical set of arguments:

```
C:\ITVBAT>itvsetup --installall --itvcd=e: --mssqldir="\program
files\microsoft sql server\mssql" --sqluid="XYZ123"
--sqlpw="AucYrv33"
```

NOTE

Do not include trailing slashes in path names you enter on the `itvsetup` command line. Also, use double quotes to enclose path names that contains spaces.

4. In the next step you will launch the ItvSetup utility. Once launched, it will guide you through the rest of the VOD installation process. Keep the following points in mind:
   - Carefully read all text that the ItvSetup utility displays. If you supply a wrong response to a question or prompt, an incomplete or incorrect installation may result.
   - The ItvSetup utility performs the steps listed in Table 4-4 (not necessarily in the order presented). Follow along in this table for information to help you answer the questions that the ItvSetup utility asks.
   - If a step requires that you perform a task manually, the ItvSetup utility pauses until you complete the task and press Enter.

   NOTE

   The ItvSetup utility will ask you to check if the SQL Server Agent is started. If it is not, go to the Services panel, select SQL Server Agent properties, go to the Log On tab, and re-enter the password “SeaChange”. Try starting again. You may need to repeat these steps for the MSSQLServer service.

5. From a command prompt, run `itvsetup` using the command line arguments determined in Step 3. Remember that you must run the command from the directory where you copied `itvsetup.bat`.

Table 4-4: ItvSetup Utility Actions

Installation Step	Actions Performed by the ItvSetup Utility
Copy VOD files	Copies VOD executables and DLLs from *VOD Service Disk*, Disk 1, directory `ITV Command Center\Exe` to `%ITVROOT%\Exe`. Copies Microsoft debug DLLs (`MFC*D.DLL` and `MSVC*D.DLL`) from *VOD Service Disk*, Disk 1, directory `ITV Command Center\System32` to `WINNT\System32`.
Install SMIL pages	Copies SMIL page templates used by the Movies on Demand Browser DLL from *VOD Service Disk*, Disk 1, directory `\ITV Command Center\Applications\Templates` to `C:\MOD\Templates`.
Set up users and groups	Creates the ITVSupport group. At the ITVSupport group prompt, enter Yes. This instructs the ItvSetup utility to add the user who is currently logged in to the ITVSupport group. Members of the ITVSupport group have login privileges for the Asset Manager application. You will need these privileges later in this procedure.
Install VOD services	Installs the Command Center core services (such as IDS, IAM, and others) and extended services (such as AlarmAna, AlarmCol, Pager, the so forth).

Table 4-4: ItvSetup Utility Actions *(Continued)*

Installation Step	Actions Performed by the ItvSetup Utility
Modify SQL services	Configures the MSSQLServer and SQLServerAgent services to log on under the SeaChange account so they are able to perform operations such as breaking up files using UNC path names (not supported under the LocalSystem account).
Set up the registry	Configures the Command Center services in the registry.
Set up the NOMCA clusters	Creates directories and files that emulate MediaCluster servers.

Configure VOD databases	Creates and configures the VOD database devices and databases by running the following isql scripts:
	`iam_gen.sql`
	`iad_gen.sql`
	`dnp_gen.sql`
	`icm_gen.sql`
	`icm_gen.sql`
	`ids_gen.sql`
	`ids_genmaster.sql`
	`sdb_gen.sql`

Generate DNP tables	Creates Delivery Network Path (DNP) tables based on the MediaCluster emulator, and provide bandwidth and other MediaCluster configuration values.
Create shortcut icons for VOD applications	Creates shortcut icons on the Windows NT desktop for the Asset Manager, the Service Management Utility (ManUtil), and the Pager Editor.

6. Start the Directory service (IDS) and the Asset Manager service (IAM). These services must be running for the next step in this procedure, in which you use the Asset Manager. To start these services from the command line:

   ```
   instserv ids start
   instserv iam start
   ```

7. Start the Asset Manager application. This should be accessible through a shortcut on your desktop. If not, you can run `%ITVROOT%\Exe\AMApp.exe`.

   For information about using the Asset Manager to perform the tasks described in Step 8 and Step 9, refer to the *SeaChange VOD System Asset Manager User's Guide*.

8. In the Asset Manager, connect to the computer on which you installed the VOD Development System.
9. In the Asset Manager, set up the local VOD site.

10. Add the SeaChange MOD application.

    For more information, refer to the *SeaChange VOD System Movies-on-Demand Administrator's Guide*.

11. Start the remaining Command Center services. (The IDS and IAM services are already running, since you started them in a previous step.) Typically, in a VOD Development System, you want to run the VOD core services, which include IDS, IAM, and the VOD extended services, such as AlarmCol, AlarmAna, and Pager. You can use the ITV utility (`itv.bat`) to start and stop VOD services and check their current status. If you want to include the extended services when you run the ITV utility, edit the `itv.bat` file to set the $EXTENDED variable to 1 before you run the command.

    To start VOD services, enter the following command:

    ```
    itv start
    ```

12. Check the status of VOD Services. To check the status, enter the following command:

    ```
    itv status
    ```

    If the output shows all services started, the installation was successful. If any services did not start, check the Windows NT Application Log for information about errors that relate to those services that did not start (which are listed as stopped), and correct the errors.

13. If you want to stop VOD services, enter the following command:

    ```
    itv stop
    ```

Chapter 5
Installing IIS

This chapter explains how to install Microsoft® Internet Information Services (IIS) software on a VOD Command Center server. IIS is used as a web server for VOD applications such as the Data Warehouse Report Generator, and the Subscriber Utility.

This chapter contains the following sections:

IIS Installation Overview

Before installing Microsoft's Internet Information Services (IIS), you will need to verify the following:

- You are installing the software on the appropriate server. Typically, IIS is required on the servers where the Data Warehouse, Subscriber Utility, or XML DLL are installed. Note that two or more of these applications may be colocated on the same server.
- You are installing the software on a computer with the proper version of the operating system, namely Windows NT 4.0. The minimum Service Pack required is SP3. Command Center servers meet this requirement.

  NOTE

  If for some reason you need to you install NT4 on the server, do not select the IIS installation option during NT 4 setup.

- You are installing the software on the system drive (usually C:).

Installing IIS 4 on Windows NT 4

For more information on installing IIS, see the following web site:
`http://support.microsoft.com/support/iis/install/install_iis4.asp`

1. Ensure that Internet Explorer 5.5 or higher is installed on the system. Note that Internet Explorer Version 5.5, Service Pack 2, is included on *VOD Service Disk*, Disk 2, folder `ie55sp2`.

   If you choose to install Version 5.5, SP2, when installing, select a minimal installation, installing only the typical components. Reboot the server if requested.

2. Remove any previous versions of IIS using the Add/Remove Programs Control Panel applet. Reboot the server if requested.
3. If the following files exist in `C:\WINNT\SYSTEM32`, rename them by appending a `.BAK` extension:

   ```
   MMCNDMGR.DLL
   MMC.EXE
   CIC.DLL
   MMCSHEXT.DLL
   ```

4. Start the NT Option Pack installation procedure by navigating to *VOD Service Disk*, Disk 2, directory `Winnt.SRV.OptionPack`, and launching `setup.exe`.
5. If you are running on a service pack greater than SP3, a message displays indicating that the product has not been tested on SP4. Click Yes to proceed.
6. Select a Custom installation when prompted.
7. In the Select Components screen for the NT Option Pack, select the components indicated by Yes in the Selected? column in Table 5-1 and click Next.

Table 5-1: IIS Component Selections

Component	Selected?
Certificate Server	No
FrontPage 98 Server Extensions	No
Internet Connection Services for RAS	No

Table 5-1: IIS Component Selections *(Continued)*

Component	Selected?
Internet Information Server (IIS)	
• Documentation	• No
• File Transfer Protocol (FTP) Server	• No
• Internet NNTP Service	• No
• Internet Service Manager	• Yes
• Internet Service Manager (HTML)	• No
• SMTP Service	• No
• World Wide Web Sample Site	• No
• World Wide Web Server	• Yes
Microsoft Data Access Components 1.5	
• Data Sources	• Yes
• MDAC: ADO, ODBC and OLE DB	• Yes
• Remote Data Service (RDS/ADC)	• No
Microsoft Index Server	No
Microsoft Management Console	Yes
Microsoft Message Queue	No
Microsoft Script Debugger	No
Microsoft Site Server Express 2.0	No
NT Option Pack Common Files	Yes
Transaction Server	
• Transaction Server Core Components	• Yes
• Transaction Server Core Documentation	• Yes
• Transaction Server Development Tools	• No
Visual Interdev RAD Remote Deployment Support	No
Windows Scripting Host	Yes

8. In the Folders screen, accept the following default folders:
   - For the WWW Service, the default folder is `%SystemDrive%\Inetpub\wwwroot`
   - For the Application Installation Point, the default folder is `%SystemDrive%\Program Files`

   Then click Next.
9. In the Microsoft Transaction Server 2.0 screen, accept the default folder of `%SystemDrive%\Program Files\Mts`, and click Next.
10. On the Configure Administrative Account screen, select Local and click Next.
11. If prompted, do not overwrite newer files with files from the installation. (Click No To All.)
12. Complete the installation procedure, and reboot.
13. Install the NT service pack you want for Windows NT 4.0. Service Pack 6a is preferred. This service pack is located on *VOD Service Disk*, Disk 2, directory `\NT Support\NT4.0 Service Pack 6a (128bit)`.
14. When prompted, choose to back up files necessary to uninstall this service pack at a later time.
15. When the service pack installation is complete, allow the server to reboot.

Configuring IIS Security

Once the base web server software has been installed, it is important to “lock down” the server to prevent any of the widely publicized security issues that have been know to afflict IE and IIS.

IE and IIS Patches

Ensure that all patches located in *VOD Service Disk*, Disk 2, directory `OptionPackUtilsPatches` have been applied. A readme file located in that directory describes the included patches and service packs.

IIS Lockdown

For security, ensure you run the IIS lockdown as described below. For more information, see http://www.microsoft.com/Downloads/Release.asp?ReleaseID=33961.

1. Start the IIS Lockdown patch, located on *VOD Service Disk*, Disk 2, directory `OptionPackUtilsPatches`.
1. On the Select Server Template screen, select Dynamic Web Server, and check the View Template Settings box.
2. On the Internet Services screen, ensure that **only** the Web Service (HTTP) check box is selected. The FTP, SMTP, and NNTP check boxes should be unchecked.
3. On the Script Maps screen, select the Index Server Web Interface, Server Side Includes, Internet Data Connector, and HTR Scripting check boxes. The Active Server Pages check box should not be checked. Note that, on this screen, selecting an option disables it.
4. In the Additional Security screen, in the section Remove The Selected Virtual Directories, select the IIS Samples, MSADC, IIS Help, and Scripts check boxes. The IISAdmin box should be unchecked.
5. In the Set File Permissions section, select the Running System Utilities and the Writing to Content Directories options.
6. On the URLScan page, deselect the Install URLScan check box to remove the check there.
7. Finish the installation and reboot the server if needed.

Installing IIS after installing SQL 2000 SP2

If you install IIS 4.0 after installing SQL 2000 SP2 on a Windows NT machine, the following error occurs when starting SQL Enterprise Manager after the IIS install:

```
The selected file is not a Microsoft Management Console document.
```

To fix this problem, install MMC 1.2, which is available from Microsoft as a download. You can also find MMC 1.2 on *VOD Service Disk*, Disk 2, directory `\MMC12`.

Appendix A
VOD System Service Configuration Changes

Previous versions of this document contained appendixes that described VOD System service configuration changes that were introduced in past releases. Because these appendixes simply repeated information that is readily available elsewhere, they have been removed.

For information about service configuration changes for a particular release, refer to the Releases Notes for that release. Releases Notes are available on the *VOD Service Disk* (distribution CDs). Users with SeaChange internal access may browse the Release Note archive on the VOD Documentation web site.

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