



STORAGETEK®

COURSE CATALOG

Course Catalog

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We welcome your feedback. Please contact the Global Learning Solutions Feedback System at:

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A Message from Our Director

Welcome to the StorageTek 2005 Education Training Catalog for the United States and Canada.

After human resources, information is arguably the greatest asset of modern organizations. Yet the growth in data—estimated at around 100 percent compound growth annually—is also one of businesses' biggest headaches. Storing vast quantities of data can prove costly—and managing that information is even costlier.

When StorageTek was established in Colorado in 1969 as an innovator in information storage, few could have imagined the changes in business processes that were to follow. Now, some 35 years later, organizations are deluged with a wealth of information that they somehow have to store, manage, and use. Customers are turning to StorageTek, a \$2.2 billion global leader in data storage services and solutions, for help in protecting and getting maximum value from their data resources.

To enhance our services and solutions portfolio, it is of vital importance that we support our customers with a professional training and education program that enables you to invest in your greatest asset, your employees. It is therefore with great pleasure that we welcome you to the 2004 customer course catalog, which provides you with a comprehensive range of technical training courses covering StorageTek products, complementary technical products, and solution-related products. This catalog is also available online at:
http://www.storagetek.com/support/product_training.html.

Through our team of dedicated training professionals and established relationships with major vendors, we ensure that the highest quality storage-related education is available to you.

Andy Amalfitano
Director, StorageTek Global Learning Solutions

Introduction

1

■ About StorageTek

StorageTek is a worldwide leading storage technology provider of data storage services and solutions expertise.

Global Leader

Established in Colorado in 1969, with over 7,000 employees worldwide, StorageTek has become a \$2.2 billion global leader in data storage services and solutions, designed for IT professionals. Today, StorageTek has more than 17,000 customer sites worldwide—in industries as diverse as finance, insurance, medicine, telecommunications, government, e-commerce, and manufacturing.

Solutions and Products

StorageTek helps companies meet their data storage needs. We offer storage solutions that are easy to manage, integrate well with existing infrastructures, and allow universal access to data across servers, media types and storage networks. Our product portfolio encompasses tape libraries, disk storage systems, storage software, and services.

Investing in Our Customers

StorageTek provides IT professionals with the tools to manage their entire storage management environment today and in the future. To ensure that our customers maximize their performance using our products, StorageTek has included educational services in its portfolio.

■ StorageTek's Global Learning Solutions

StorageTek is committed to ensuring that our customers stay competitive. Our learning solutions offer the right training to help our customers optimize their data storage environment and maximize their company productivity.

Broad Scope of Training

StorageTek offers a wide variety of training programs devoted to improving skills related to:

- Purchasing new products or adding significant upgrades
- Easing the transition from mainframe to open systems environments
- Providing continuity in a changing workforce environment
- Customizing to your specific data center environment

Training Wherever You Want It

StorageTek learning solutions can be delivered at one of our training centers or, in many cases, at your location.

Innovative and Practical Training

All of our courses are taught by experienced and dedicated instructors. The courses are taught in training facilities with state of the art technology. The instructor-led courses have been designed to be as hands-on as possible, in comfortable classrooms and labs.

■ How to Enroll in Our Courses

To enroll or get more information about StorageTek Educational Services, choose from these three enrollment/inquiry methods:

Option 1: Enroll online at: <http://www.storagetek.com>. Click on Support/Product Training; then use the Registration box at the right side of the Product Training page.

Option 2: E-mail StorageTek Global Learning Solutions at: traininghelp@louisville.stortek.com.

Option 3: Phone our registrar at 303.673.6262.

■ US Training Center Location

In the United States our primary training center location is:

StorageTek World Headquarters
Global Learning Solutions
One StorageTek Drive, Building 3
Louisville, CO 80028

Solution Courses

2

In this section, we are pleased to offer solution-related courses. These courses cover both StorageTek and industry-wide solutions. As more offerings are made available, we will update this catalog and our Web site at:

http://www.storagetek.com/support/product_training.html.

■ ASM for NT (100518)

Duration

2 days

Description

This course provides the fundamentals of installation, configuration, operation, and maintenance of the Windows NT version of ASM. ASM for NT is storage management software that allows you to easily save and retrieve files to and from its virtual file system. This virtual file system is presented in a user-friendly directory tree structure that displays media, stored files, and network shares. ASM for NT provides cost-effective unlimited storage management for data-intensive applications. At the completion of this training, the student should be able to:

- Explain the primary functions of ASM NT
- Install ASM NT
- Administer ASM NT locally and remotely
- Configure the database, hardware, cache, network, and system settings
- Maintain the virtual file system
- Perform various media and file management tasks
- Recognize the various diagnostic tools available for troubleshooting

Audience

System administrators, operators, data center managers

Prerequisites

Students should have a working knowledge of Windows NT.

Siebel Model Numbers

TRNASMN	For individuals attending a scheduled course at HQ
TRNASNC	For custom training provided at a customer site

■ **ASM for NT Advanced Troubleshooting (100485)**

Duration

1 day

Description

This course covers troubleshooting skills for ASM/NT installation, configuration, operation, and maintenance. Lecture time is minimal, with most of the class devoted to hands-on diagnostic exercises.

Audience

System administrators, operators, data center managers

Prerequisites

Students should have general knowledge of Windows NT/2000 System Administration. We recommend that students attend ASM for NT (100518).

Siebel Model Numbers

TRNACNT	For individuals attending a scheduled course at HQ
TRNASTC	For custom training provided at a customer site

■ ASM for UNIX (100519)

Duration

3 days

Description

This course provides the fundamentals of installation, configuration, operation, and maintenance for the UNIX version of ASM. ASM UNIX is multilevel, scalable data storage management software that automatically manages the copying and retrieval of files between two or more levels of storage hierarchy. ASM UNIX provides cost-effective file management, storage, archival, and retrieval services by means of a unique file system under Sun Solaris. At completion of this course, students should be able to:

- Define storage management terms
- Describe the ASM UNIX file system and how it works
- Explain and perform archival, releasing, and staging activities
- Install and configure ASM UNIX
- Identify and utilize system administration commands
- Describe and make use of GUI functions
- Describe ongoing maintenance functions
- Name key troubleshooting steps
- Describe the disaster recover process

Audience

System administrators, operators, data center managers

Prerequisites

Student should have a working competence in UNIX including vi editor, directory navigation, and UNIX system utilities, and basic UNIX system administration including NFS, NIS concepts, system startup and shutdown, file system concepts and StorageTek UNIX-based library control system (ACSL) or library station.

Siebel Model Numbers

TRNSMU	For individuals attending a scheduled course at HQ
TRNASUC	For custom training provided at a customer site

■ ASM for UNIX Advanced Troubleshooting (101484)

Duration

1 day

Description

This course covers troubleshooting skills for ASM/UNIX installation, configuration, operation, and maintenance. Lecture time is minimal, with most of the class devoted to hands-on diagnostic exercises. Diagnostic cases cover both software and hardware configuration.

Audience

System administrators, operators, data center managers

Prerequisites

Student should have a general knowledge of Solaris System Administration. We recommend that students complete ASM for UNIX (100519).

Siebel Model Numbers

TRNASUT	For individuals attending a scheduled course at HQ
TRNAUNC	For custom training provided at a customer site

■ ASM Medical Solutions for Archive Administrators (102205C)

Duration

5 days

Description

This class provides lectures and labs to allow those responsible for the Application Storage Manager (ASM) Medical solution to perform "care and feeding" tasks, as well as a basic system-level understanding of why these tasks are performed. This class provides the foundation for customers to be able to work with StorageTek support in troubleshooting environments.

Audience

Medical practitioners

Prerequisites

UNIX fundamentals is a plus.

Siebel Model Numbers

TRNMEDS	For individuals attending a scheduled course at HQ
TRNMEDC	For custom training provided at a customer site

■ Email Xcelerator ArchiveMaster Administration (101825)

Duration

5 days

Description

This course provides students with the skills to administer Email Xcelerator's ArchiveMaster efficiently and reliably. This includes learning:

- To configure the ArchiveMaster according to the needs of your enterprise
- To operate the server reliably
- To detect and solve common problems

Audience

Email Xcelerator administrators

Prerequisites

Students should have a general IT background, and experience in server administration is recommended.

Siebel Model Numbers

TRNEMAD For individuals attending a scheduled course at Ixos

■ Email Xcelerator ArchiveMaster Administration – Quick Start (101826)

Duration

2 days

Description

This course provides the fundamental skills necessary for reliable Email Xcelerator ArchiveMaster operation.

Audience

Email Xcelerator administrators

Prerequisites

Students should have general knowledge about operating server computers.

Siebel Model Numbers

TRNEMQS For individuals attending a scheduled course at Ixos

■ Email Xcelerator ArchiveMaster Administration for Lotus Notes (101827)

Duration

3 days

Description

This course provides the fundamentals of installation, configuration, operation, and administration of the Email Xcelerator's ArchiveMaster for Lotus Notes. The connection to an existing ArchiveMaster is established. (The installation of ArchiveMaster is not part of the course.)

Audience

- Email Xcelerator ArchiveMaster administrators
- Lotus Notes administrators
- Project managers and team members of ArchiveMaster for Lotus Notes projects

Prerequisites

Students should have a general IT background and experience in server administration is recommended.

Siebel Model Numbers

TRNEMLN For individuals attending a scheduled course at Ixos

Product Classes

3

In this section, you will find courses based around traditional StorageTek products in the areas of:

- Disk
- Storage Networks
- Tape and Tape Automation

■ ACSLS Systems Administration (100457)

Duration

3 days

Description

This course provides identification of the major ACSLS hardware and software components and describes the ACSLS Server processes. Students will gain an understanding of tape pool configuration, perform tape pool maintenance, describe the Access Control process, identify the ACSLS logs and their specific purposes, and identify and perform the ACSLS installation and configuration.

At the completion of this training, students should be able to:

- Identify the major hardware and software components
- Describe the ACSLS Server processes
- State and perform the ACSLS commands
- Describe and perform the backup and restore processes
- Explain the tape pool configuration
- Perform tape pool maintenance
- Describe the Access Control process
- Identify the ACSLS logs and their specific purposes
- Identify and perform the ACSLS installation and configuration
- Explain the troubleshooting and diagnostic programs
- Describe the ACSLS High Availability (HA) components and functions

Audience

This course is designed for users who operate, maintain, or administer the UNIX Automated Cartridge System Library Software (ACSLS).

Prerequisites

Students should have knowledge and understanding of both UNIX and the vi editor. Unix Skills for ACSLS (100456) is recommended.

Siebel Model Numbers

TRNACSA	For individuals attending a scheduled course at HQ
TRNACSC	For custom training provided at a customer site

■ ACSLS/HA Systems Administration (102187C)

Duration

4 days

Description

This course is designed for users who operate or administer the Automated Cartridge System Library Software (ACSLS) in a High Availability environment.

At the completion of this training, students should be able to:

- Identify major hardware/software components including the SL8500 and SL500
- Describe the ACSLS Server Processes
- Understand tape pool configuration
- Perform tape pool maintenance
- Describe the Access Control process
- Identify the ACSLS logs and their specific purposes
- Identify and perform the ACSLS Install and configuration
- Explain the troubleshooting and diagnostic programs
- Describe the ACSLS/High Availability (HA) components and functions

Audience

System administrators, operators, data center managers

Prerequisites

Students should have working knowledge of UNIX Skills for ACSLS (CRS-100456) and working knowledge of the VERITAS Cluster Server and Volume Manager.

Siebel Model Numbers

TRNACHA	For individuals attending a scheduled course at HQ
TRNACHC	For custom training provided at a customer site

■ Automated Tape Solutions Product Overview (100667)

Duration

3 days

Description

This course introduces all the software products that control the Automated Cartridge System (ACS) hardware.

Students learn the basic architecture and controlling mechanisms of Host System Component (HSC), Expert Library Manager (ExLM) LibraryStation (LS), Client Systems Component (MVS/CSC), Expert Performance Reporter (ExPR), and Virtual Storage Manager (VSM). In addition, Virtual Tape Subsystem (VTSS) clustering and VSM in Disaster Recovery are explained in depth.

At completion of the training, students will be able to:

- Identify the software and hardware components of ACS and VSM and understand their inter-relationship
- Apply the information provided by the software to manage systems on a daily basis
- Improve system performance
- Identify and correct a variety of anomalies

Audience

System administrators, operators, data center managers

Prerequisites

Students should have an understanding of MVS or OS/390 computing principles and general knowledge of mainframe tape processing.

Siebel Model Numbers

TRNATSO For individuals attending a scheduled course at HQ

■ ExLM MVS Systems Administration (100266)

Duration

1 day

Description

This course provides the skills necessary to use ExLM (Expert Library Manager) as a software tool to manage the contents of a Nearline ACS. (The GUI ExLM program is used in this class).

Upon completion of this course, students should be able to:

- Describe the implementation and operation of ExLM
- Develop a content management plan
- Write ExLM control statements
- Describe installation of ExLM

Audience

System administrators, operators, data center managers

Prerequisites

None

Siebel Model Numbers

TRNEXLA	For individuals attending a scheduled course at HQ
TRNEXLC	For custom training provided at a customer site

■ FlexLine 200/300 Disk Administration and Connectivity (102024C)

Duration

3 days

Description

This course covers administration, installation, and configuration of FlexLine 200 and 300 series disk. The class will discuss the FlexLine 200 and 300 hardware, SANtricity 9.1, and the Premium features: SANshare, RVM, Volume Copy, snapshot. This course also covers CLI and scripts and FlexLine 200/300 SAN connectivity.

At the completion of this training, students should be able to:

- Describe the FlexLine 200/300 hardware
- Demonstrate working knowledge of SANtricity 9.1
- Demonstrate working knowledge of the following Premium features:
 - SANShare
 - Internal Volume
 - SnapShot
 - RVM
- Demonstrate working knowledge of FlexLine 200/300 SAN Connectivity
- Demonstrate working knowledge of SANtricity CLI and scripting

Audience

System administrators, operators, data center managers

Prerequisites

Students should have a general knowledge of Windows and Solaris operating systems, SAN concepts and connectivity, and disk hardware and administration.

Siebel Model Numbers

TRNFLX2	For individuals attending a scheduled course at HQ
TRNFL2C	For custom training provided at a customer site

■ L20/L40/L80 Installation, Configuration, & Operation (100507C)

Duration

2-hour CD

Description

This two-CD set uses video, animation, and graphics to highlight basic installation, configuration, and operation of the L20, L40, and L80 Tape Libraries. Included in the set is a reference CD containing the user's manuals and other library documentation.

System requirements: An Intel Pentium-based 166 processor, Windows 95/98/NT/2000 or later, minimum of 128 MB installed RAM, Sound Blaster or compatible sound card and speakers, Acrobat Reader 4.0 or higher (available from www.adobe.com), QuickTime 4 or higher (available from www.apple.com/quicktime or the training CD), Internet browser (Internet Explorer 4.0 or Netscape 4.0 or higher), and a color monitor.

Audience

Operators, data center managers

Prerequisites

Students should have some conceptual knowledge of tape libraries, tape drives, and basic SCSI principles.

Siebel Model Numbers

TRNL20L For CD training

■ L5500 Operations (101787)

Duration

½ day

Description

This course provides an explanation and demonstration of StorageTek's L5500 Automated Cartridge System storage and retrieval system components. The L5500 ACS consists of:

- L5510 - Library Storage Module (LSM)
- L5511 - Library Control Unit (LCU)
- L5530 - Library Management Unit (LMU)
- 9741E - Drive cabinet
- L5520 - Pass-thru Port (PTP)

By the completion of this course, students will be able to identify the L5500 components and configurations.

Audience

Operators

Prerequisites

None

Siebel Model Numbers

TRNL550	For individuals attending a scheduled course at HQ
TRNL55C	For custom training provided at a customer site

■ L700/L180 Operations & Administration (101453)

Duration

2 days

Description

This course provides the necessary information, skill development, and practical hands-on training to enable data center personnel to operate, troubleshoot, and administer the L700e or L180 Tape library, which might contain a variety of tape drives. Approximately 50 percent of the course involves hands-on lab experience. Upon successful completion of this course, students should be able to:

- Locate needed information in the product documentation or on the web
- Locate and identify major library components
- Determine the applicability of requested connectivity configurations
- Explain the auto-clean feature
- Explain Fault Symptom Codes (FSCs)
- Describe the differences between the L700/L700e and L180 libraries
- Demonstrate how to load and invoke the StorageTek L-Series Library Admin software

Audience

Operators, data center managers

Prerequisites

Students should have knowledge in tape drives (DLT 7000/8000 and SDLT, StorageTek Model T9840/T9940, and LTO vendors), external interfaces (SCSI, RS423, Token Ring, TCP/IP), and basic troubleshooting techniques.

Siebel Model Numbers

TRNL700	For individuals attending a scheduled course at HQ
TRNLXXC	For custom training provided at a customer site

■ LibraryStation MVS Systems Administration (100271)

Duration

1 day

Description

This course covers the architecture, operations, and client support of LibraryStation. Topics include installation, operation, and product integration into an OS/390 environment.

Audience

System administrators, operators, data center managers

Prerequisites

Students should have general knowledge of HSC MVS Systems Administration or ACSLS Systems Administration.

Siebel Model Numbers

TRNLSSA	For individuals attending a scheduled course at HQ
TRNLSSC	For custom training provided at a customer site

■ Lifecycle Director (101919C)

Duration

1 day

Description

This course introduces new customers to the mainframe Lifecycle Director for IBM's DB2 with the information necessary to migrate inactive DB2 rows from their DB2 tables to the appropriate storage tier based on a user selected migration policy.

Upon completing this class students should be able to:

- Provide customers with sufficient information about Lifecycle Director Archive Manager and DB2 Manager that they understand how Lifecycle Director provides a good solution for their DB2 storage issues.
- Perform administration tasks required to archive DB2 rows to Archive Manager Databases.
- Perform administration tasks required to support DB2 tables for DB2 Manager.
- Become familiar with documentation and StorageTek support that is available for Lifecycle Director.

Notes:

- This class does not provide any information on Lifecycle Director OAM Manager.
- Lifecycle Director must be installed at the customer site if labs are to be performed in this class. Students must have PCs with 3270 emulation software installed also.

Audience

System administrator, operators, data center managers

Prerequisites

- Familiarity with MVS / OS/390 / z/OS operating system principles
- Ability to use JCL, TSO & ISPF
- Knowledge of StorageTek mainframe ATS products
- Knowledge of IBM DB2 Universal Database for OS/390 and z/OS fundamentals

Siebel Model Numbers

TRNLCDR For individuals attending a scheduled course at HQ

TRNLCDC For custom training provided at a customer site

Note: Lifecycle Director must be installed at the customer site if labs are to be performed.

■ MirrorStore Administration (101749)

Duration

4 days

Description

This course provides storage administrators with the skills to use the MirrorStore management console to manage storage resources, assign resources to clients, and apply services to client resources. The course also covers basic troubleshooting, informational commands, and the connectivity environment. Upon successful completion of this course, students should be able to:

- Explain the MirrorStore solution components
- Explain the functions and benefits of the services
- Describe the theory of operations for the application
- Describe the storage managements concepts
- Demonstrate how to set up resources and assign them to clients
- Demonstrate how to set up services for clients
- Describe the basic MirrorStore administration tasks
- Demonstrate familiarity with basic troubleshooting techniques

Audience

System administrators, operators, data center managers

Prerequisites

Students should have an understanding of basic Linux or UNIX administration skills enterprise disk management, Windows administration, Solaris administration, and SANtricity administration.

Siebel Model Numbers

TRNMIRST	For individuals attending a scheduled course at HQ
TRNMRSC	For custom training provided at a customer site

■ MirrorStore Replication Appliance Overview (101585)

Duration

1 hour, Web-based training

Description

This course provides a basic description of the MirrorStore Replication Appliance and how this product solves critical data management issues for customers. In addition to a thorough discussion of the core services, this overview describes some of the environmental requirements, such as supported operating systems, network, and Fibre Channel connectivity. The course also describes MirrorStore's high-availability (HA) feature and includes a detailed HA configuration diagram. Upon successful completion of this course, students should be able to:

- Explain what the MirrorStore Appliance is and what solutions it provides
- Describe MirrorStore features, benefits, and functions
- Describe the operating system, network, and connectivity requirements
- Describe MirrorStore architecture
- Describe the basic configuration options

Audience

System administrators, operators, data center managers

Prerequisites

None

Siebel Model Numbers

TRNMRRRA For WBT training

■ MVS/CSC MVS Systems Administration (101276)

Duration

1 day

Description

This course covers the architecture, operations and client support of the MVS/CSC software product. Topics include installation, configuration, operation, and product integration into an OS/390 environment. MVS/CSC allows a StorageTek library to be shared by IBM and non-IBM client systems.

Audience

System administrators, operators, data center managers

Prerequisites

Students should have general knowledge of HSC MVS systems administration. This can be provided by completing one of these classes:

- SMC/HSC/MVS Nearline Operations (100007)
- SMC/HSC/MVS Nearline Systems Administration (100265)
- ACSLS System Administration (100457)

Students should also be familiar with StorageTek ACS libraries (100667).

Siebel Model Numbers

TRNMVSA	For individuals attending a scheduled course at HQ
TRNMVSC	For custom training provided at a customer site

■ SAN Concepts & Connectivity (101454)

Duration

4 days

Description

This course covers how to install, setup, and configure basic tape and disk SAN, including the command line interface and file system hierarchy.

Upon successful completion of this training, the student will be able to:

- Define and explain what a storage area network (SAN) is and why a SAN is used
- Describe and discuss Fibre Channel and SCSI protocols used in a SAN
- Install, setup, and configure a basic tape and disk SAN
- Install, setup and configure the hubs, bridges, and switches used in a SAN
- Discuss SANs at a conversational level of knowledge and understand high-level SAN issues

Audience

System administrators, operators, data center managers

Prerequisites

Students should have familiarity with UNIX fundamentals.

Siebel Model Numbers

TRNSANC For individuals attending a scheduled course at HQ

■ SAN Concepts & Connectivity Implementation (101666)

Duration

4 days

Description

This class is the second week of the SAN Concepts & Connectivity series of courses and takes the knowledge and skills learned further. It covers tape and disk implementation, LUN masking at various levels, setting up disk and tape zones, various HBAs, and associated software and disk failover. SAN Concepts & Connectivity Implementation is 30% lecture and 70% lab. Upon successful completion of this course, the student should be able to:

- Explain and use various UNIX commands and logs to implement a SAN
- Describe the implementation of Fibre Channel topologies and connectivity concepts
- Explain and perform SAN zoning and LUN masking as they relate to SAN implementation
- Describe and discuss how software is used in a SAN to verify connectivity, failover, zoning, and LUN masking, including VERITAS, Legato, SANtricity, object manager, and RDAC
- Describe and Implement tape and disk devices in a SAN (T9840, T9940, and LTO tape drives, as well as 9176 and D178 RAID disk systems)

Audience

System administrators, operators, data center managers

Prerequisites

Students should have completed the SAN Concepts & Connectivity course (101454).

Siebel Model Numbers

TRNSANI For individuals attending a scheduled course at HQ

■ SDLT Product Training (101785C)

Duration

2-hour CD

Description

This computer-based training course presents information about Quantum Corporation's Super DLTtape (SDLT) technology and features. It also describes the similarities and differences of the SDLT tape drives that StorageTek offers for its tape libraries. Upon successful completion of this course, students should be able to:

- Identify the technologies that comprise Quantum's Laser Guided Magnetic Recording technology
- Describe the features of the Super DLT tape system
- Identify the five modules that comprise the Super DLT tape system
- Recall the connector locations for attaching cables to the Super DLTtape System
- Explain and troubleshoot the Power On Self Test (POST) of an SDLT drive
- Recall the firmware update procedure
- Describe the cartridges used in the SDLT drive and their features
- Recall troubleshooting procedures
- Describe the functional differences between the SDLT 220 and SDLT 320
- Interpret the LED sequences of the Front Panel Module
- Recall risks associated with SDLT 220- and 320-formatted cartridges

Audience

System administrators, operators, data center managers

Prerequisites

None

Siebel Model Numbers

TRNSDLT For CD training

■ SL8500 Operator Training (102023C)

Duration

1 day

Description

This course is designed to help customers maximize their investment by understanding the salient operational, safety, and interconnectivity issues.

At the completion of this training, students should be able to:

- Describe the function and operation of the SL8500 Modular Library System and associated tape drives
- Identify the functional components of the SL8500
- Explain the differences between the SL8500 operation to previous StorageTek libraries
- Define the key safety features of the SL8500
- Explain tape drive options for the SL8500 tape library
- Solve basic operational problems including:
 - Robot re-initialization
 - Tape drive resetting
 - Failed redundant component identification
- Demonstrate the proper procedure for entering the library
- Explain the StorageTek barcode labeling system
- Operate Streamline Library Console (SLC) for diagnostic and operational reporting
- Explain the operational differences between previous current versions of ACSLS software
- Explain the operational differences between previous and current versions of ACSLS software applied to the SL8500 tape library

Audience

System administrators, operators, data center managers

Prerequisites

None

Siebel Model Numbers

TRNSL85	For individuals attending a scheduled course at HQ
TRNSL8C	For custom training provided at a customer site

■ SMC/HSC MVS Nearline Operations (100007)

Duration

4 days

Description

This course provides the skills necessary to interface with and operate a Nearline system. After successful completion of this course, students should be able to:

- Describe the functions of a Nearline system in a production data processing environment
- Discuss PARMLIB control statements
- Issue HSC operator commands
- Run HSC utilities to control library functions
- Run a library in manual mode
- Discuss advanced topics in library operation

Audience

System administrators, operators, data center managers

Prerequisites

Students should have a functional understanding of an MVS or VM environment.

Siebel Model Numbers

TRNHSCO	For individuals attending a scheduled course at HQ
TRNHSOC	For custom training provided at a customer site

■ SMC/HSC/MVS Nearline System Administration (100265)

Duration

4 days

Description

This course provides the basic skills necessary to install, set up and operate a Nearline system. At completion of the course, students should be able to:

- Describe the functionality of the Nearline system in a production data processing environment
- Define and understand set up PARMLIB control statements
- Issue HSC operator commands
- Run HSC utilities to control library functions
- Describe and code LIBGEN macros
- Run HSC verification programs
- Describe the host installation process
- Describe HSC user exits
- Describe the programmatic interface

Audience

System administrators, operators, data center managers

Prerequisites

Students should have a functional understanding of an MVS or VM operating system environment.

Siebel Model Numbers

TRNHSCA	For individuals attending a scheduled course at HQ
TRNHSCC	For custom training provided at a customer site

■ SN6000 Operation & Administration (100392)

Duration

2 days

Description

This course covers how to create and maintain a working configuration of an SN6000. The student learns how to locate the system logs on the SN6000 and how to determine what log entries require a service call

At the completion of this course, students should be able to explain:

- How the SN6000 relates to a SAN
- How to physically setup an SN6000
- How to identify and replace failed FRUs with a total understanding of what is “hot” and “non-hot swappable”
- How to input and modify configuration files
- How to navigate and use the GUI menus
- How to perform code level updates
- How to perform “first-line” troubleshooting procedures

Audience

System administrators, operators, data center managers

Prerequisites

None

Siebel Model Numbers

TRNSN6O	For individuals attending a scheduled course at HQ
TRNSN6C	For custom training provided at a customer site

■ SVAA Administration for Open Systems (100689)

Duration

3 days

Description

This course provides the skills necessary to perform administrator tasks on Shared Virtual Array (SVA) using two StorageTek software products, SVAA (SVA Administrator) and SVAC (SVA Console) for HP/UX, AIX, Solaris, and Windows 2000. This course also develops the skills necessary to create Snapshot copies of a SCSI volume or SCSI volume file system. This course develops skills with SVA Path for providing alternate I/O paths from the server to the SVA.

Audience

System administrators

Prerequisites

Students should have general knowledge of UNIX and system administration skills and basic knowledge of SVA hardware.

Siebel Model Numbers

TRNSVAO	For individuals attending a scheduled course at HQ
TRNSVAC	For custom training provided at a customer site

■ SVAA Administration for OS/390 (100684)

Duration

4 days

Description

This course provides the skills necessary to perform administrator tasks on the Shared Virtual Array (SVA) using two StorageTek software products, SVAA (SVA Administrator) and SVAC (SVA Console). This course also provides the skills necessary to perform Snapshot copies of DASD volumes and data sets. Data replication with PPRC is also presented.

An optional training module provides the skills necessary for using SVAA and SnapShot in an VM environment and cloning and administering of z/Linux Guests with SnapVantage.

Audience

System administrators, operators, data center managers

Prerequisites

Students should have basic MVS skills.

Siebel Model Numbers

TRNSVAM	For individuals attending a scheduled course at HQ
TRNSVOC	For custom training provided at a customer site

■ T9940B Installation, Configuration & Troubleshooting (101527)

Duration

½ day

Description

This course focuses on T9940B overview information, installation and configuration, cartridge information, maintenance practices, including hands-on practice with a detached leader block and a stuck cartridge. Also covered is an overview of the available technical documentation.

Special Consideration: This is a limited offering for customer sites that do their own service.

Audience

System administrators, operators, data center managers

Prerequisites

None

■ UNIX Skills for ACSLS (100456)

Duration

1 day

Description

This course is an introduction to UNIX for individuals lacking a working knowledge of UNIX. The intent is to provide a foundation for the ACSLS server course. Students become familiar with the common UNIX commands needed to install and use the StorageTek Nearline Automated Cartridge System using ACSLS software. Upon successful completion of this course, students should be able to:

- List the varieties of UNIX
- State and perform UNIX file system navigation
- Explain and demonstrate the vi editor functions
- Identify and perform common UNIX commands and utilities
- Explain and perform logging in/off functions as a user

Audience

System administrators, operators, data center managers

Prerequisites

None

Siebel Model Numbers

TRNACSU	For individuals attending a scheduled course at HQ
TRNACUC	For custom training provided at a customer site

■ VSM: Managing Disaster Recovery in a VSM Environment (100777)

Duration

½ day

Description

This course presents the VSM Vault Utilities, a programmatic solution to managing vaulting virtual volumes as part of a disaster recovery implementation. In a virtual tape environment, special challenges have to be faced when sending virtual volumes offsite. In addition, this course also presents the use of clustered VTSS in a DR implementation. Upon successful completion of this course, students should be able to:

- Describe the challenges that face DR in a VSM environment
- Describe how the VSM vault utilities meet these challenges
- Set up management and storage classes to enable proper functioning of the vault utilities
- Explain the parameter coding requirements for the vault utilities
- Describe how to set up VTSS clusters to perform disaster recovery

Audience

System administrators, operators, data center managers

Prerequisites

The StorageTek VSM MVS Systems Administration course (100267) is recommended.

Siebel Model Numbers

TRNVSDR	For individuals attending a scheduled course at HQ
TRNVSDC	For custom training provided at a customer site

■ VSM MVS Systems Administration (100267)

Duration

5 days

Description

This course presents the VSM solution in depth, with the primary focus on the VTCS software component. Key topics are architecture, administration, management, planning, and installation of VSM. Upon successful completion of the course, students should be able to:

- Explain VSM concepts
- Describe VSM architecture
- Show familiarity with VSM administration facilities
- Issue VSM console commands
- Run VSM utilities, including the CONFIG utility
- Demonstrate how to manage a virtual tape environment
- Describe the architecture and implementation of Clustered VTSS
- Demonstrate how to carry out problem determination and resolution tasks
- Demonstrate how to install and configure VSM

Audience

System administrators, operators, data center managers

Prerequisites

Students should have knowledge of HSC/Nearline systems administration and basic knowledge of MVS structures and facilities. SMC/HSC/MVS Nearline System Administration (100265) is recommended.

Siebel Model Numbers

TRNVSMA	For individuals attending a scheduled course at HQ
TRNVSMC	For custom training provided at a customer site

■ VSM Operator (101629)

Duration

1 day

Description

This course presents the basics of VSM to MVS systems operations personnel. Operations management, console operators, and tape librarians benefit from this course. The course includes an overview of the Virtual Storage Manager (VSM) subsystem including: basic concepts overview, hardware features, VSM terminology, operator commands, utility functions, subsystem management techniques, and problem determination/resolution. Upon successful completion of this course, students should be able to:

- Explain VSM concepts
- Describe VSM terminology
- Describe VSM commands and utility functions
- Demonstrate how to perform problem determination and resolution tasks

Audience

System administrators, operators, data center managers

Prerequisites

Students should have a general knowledge of MVS console operations, mainframe tape operations, and StorageTek automated library operations.

Complementary Courses

4

In this section, you will find courses we have identified as being complementary education offerings for our customers. We have teamed with a number of major top industry solutions providers to provide you with a broader range of storage education services from:

- Brocade
- Certance
- IBM Tivoli
- VERITAS

■ API Scripting – Introduction (101314)

Duration

2 hours Web-based training

Description

This **online** course presents concise information regarding basic communication processes, operation, object information, session management, discovery, monitoring, control, and zoning concepts of Perl API Scripting. Brocade Perl Scripting is tightly integrated with Brocade's industry-leading Fabric Access Application Interface (API) to deliver a robust, scalable interface for the rapid deployment of scripts for automation of common SAN management functions. As an adaptation of the API, which has been a proven interface to integrate Fabric Intelligence for Storage Management applications, Perl API Scripting adds scripting as a key interface for Fabric functions. Upon successful completion of this course, students should be able to:

- Describe the platform specific installation steps necessary to support API Perl Scripting
- Identify a Perl Scripting operating environment
- Identify the Fabric Access layers and how they interrelate
- Define the scripting call structure and parameters
- Perform basic scripting files to:
 - Discover fabric, switch, zoning and license objects
 - Control switch, zoning, and license objects
 - Invoke configuration uploads and downloads
 - Invoke firmware downloads
 - Extract switch and port related performance data
 - Produce a switch and port trend analysis report

Audience

This course is designed for quality assurance personnel, field engineers, systems engineers, and network managers who provide repetitive and/or automated technical services to SAN customers.

Prerequisites

The student should have background in Perl, Brocade Fabric Access API, a strong knowledge of API concepts, Brocade Fabric Switches, and a working knowledge of associated administration and theory of concepts.

Siebel Model Numbers

TRNBR51 For WBT training

■ API Scripting Toolkit (101728)

Duration

5-hour CD

Description

Mission-critical SAN environments require powerful management tools as the environments grow in size and complexity. The Fabric Access API Scripting Toolkit puts a tool into the hands of storage administrators allowing them to customize the management of storage environments to meet their particular management needs. The API Scripting Toolkit allows Perl developers to create custom extensions to storage management environments from a single access point to a SAN fabric. The API Scripting Toolkit provides a flexible approach to telnet-based facilities such as Expect. The result is improved administrator productivity, less maintenance, fewer errors, and a higher degree of control over the storage operational environment. In addition to this course the customer has an enterprise license and is entitled to 1 year of support and maintenance. Please refer to the Brocade Service Policies at: http://www.brocade.com/support/service_policies.jsp for complete details of the scope of support and the defined SLA.

Audience

SAN administrators with a working knowledge of PERL or alternate programming language. The Scripting Tool Kit is provided as an enterprise license and multiple administrators can complete the Web training. Please ensure that each person fulfills the prerequisites before taking this course.

Prerequisites

Students should have an understanding of the Brocade Telnet commands and working knowledge of Perl. This kit is compatible with Fabric OS versions 2.6.0d, 3.0.2g, 4.0.2b or greater.

Siebel Model Numbers

TRNBR14 For CD training

■ Brocade 2 Gbit/sec Accelerated BCFP (101142)

Duration

3 days

Description

This three-day, combination Web-based and instructor led course provides students with the knowledge and skills that are needed to install and configure a storage area network (SAN) using Brocade SilkWorm Fibre Channel Switches. This course offers students a significant amount of hands-on experience and discussion they need to become proficient with the new features of Brocade v3.1 and v4.1 firmware. Topics include Introduction to Fibre Channel, switch installation and configuration. Advanced topics with hands-on practice include Zoning, Trunking, Fabric Watch, updating switch firmware, backing up switch configurations and diagnostics with troubleshooting. Students perform switch management using Telnet and Brocade Web Tools and configure SNMP and Fabric Manager 4.0.

Additional topics include long distance SANs and Brocade API; operation of Brocade switches with connected FL_Port devices is demonstrated, including the Brocade SilkWorm translatable mode. Other topics delivered using e-learning include Fabric Watch, Extended Fabrics and Remote Switch, Secure Fabric OS, SNMP, Advanced Performance Monitor, Quick Loop, and Quick Loop Fabric Assist.

Important Note: Students are strongly advised to take the recommended Web-based components in advance of the instructor led curriculum.

Upon successful completion of this course, students should be able to:

- Describe hardware and software attributes of the Brocade product line
- Differentiate between the various cable and SFP types
- Describe fabric topologies and nodes (local and remote)
- Install, configure and administer the Brocade product line
- Administer the name server, zoning, and networking within a fabric
- Describe the concept of cascading switches and how the Brocade SilkWorm switch uses FSPF for routing and path selection
- Use the Web Tools GUI to administer a switch
- Troubleshoot basic switch problems
- Implement Fabric Watch to monitor a switch
- Describe the features and functions of long-distance fabric solutions
- Use the Advanced Performance Monitor to create performance graphs
- Monitor Brocade switches using SNMP
- Take the BCFP exam

Audience

This course is for a field/systems engineer or network analyst who provides technical support to customers and any user desiring detailed technical information about Brocade products or looking to get certified will benefit.

Prerequisites

Students should have general knowledge of Fibre Channel Fundamentals (100661) or six months of work experience associated with SCSI storage and local area networks (LANs).

Siebel Model Numbers

TRNBR52	For individuals attending a scheduled course at Brocade
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■ Brocade Accelerated BCSM Certification Track (101317)

Duration

4 days

Description

This accelerated course covers techniques needed by professional services personnel, systems engineers, and others seeking certification as a Brocade Certified SAN Manager. Students learn about the technical and process information needed to monitor, manage, and maintain SANs. The class explains how to configure SNMP to monitor switches for ISL, Trunk Group, and F_Ports for performance and errors. They also learn how to detect for failures and retrieve trend analysis data. Students learn how to configure Fabric Watch for receiving alerts on ISLs, FRU and component failures as well as how to set thresholds to monitor for in-between states. Students learn the functions and capabilities of Fabric Manager to manage multiple large-scale SANs. Students are also provided with the technical skills required to plan and implement security in SANs using the Brocade Secure Fabric OS product.

Important Note: This course is designed to help students prepare for the Brocade Certified SAN Manager exam.

Audience

This class is intended for the SAN engineers and architects responsible for planning, implementing and assessing SANs, who are seeking the BCSD Certification.

Prerequisites

Students should be familiar with SAN components, have a strong knowledge of Fibre Channel theory, and have a solid background in SilkWorm Administration. Students benefit more if they have hands-on experience with the Brocade 2 Gbit/sec product line.

Siebel Model Numbers

TRNBR17 For individuals attending a scheduled course at Brocade

■ Brocade Advanced Fabric Service Administration (101141)

Duration

5 days

Description

This class provides a thorough understanding of the Brocade SilkWorm family of Fibre Channel switches, with a concentration on the third generation. Switch features are discussed in detail. Switch installation in typical environments is taught, as well as fabric topologies supported by the current and future Brocade product line. Updating switch firmware and backing up switch configurations are discussed. Switch management options that are covered include front panel commands, Brocade Fabric OS commands through Telnet, SNMP management, and Brocade WEB TOOLS. Implementation of Brocade Zoning is discussed in detail. Operation of Brocade switches with connected FL_Port devices is demonstrated, including the Brocade SilkWorm translatable mode. The Fabric Watch product will be covered. The students also learn how to implement QuickLoop, QuickLoop Fabric Assist and QuickLoop Zoning. Laboratory sessions in this course cover Brocade Fabric OS commands; switch installation and setup; usage and interpretation of command output; Brocade Zoning; creation of multiple-switch fabric; and use of Fabric Watch and QuickLoop in both single- and dual-switch modes. Upon successful completion of this course students will be able to:

- Describe and discuss the switch initialization process from the boot PROM to the login prompt
- Describe how the FL_Port's translatable mode allows the host to transparently communicate with private storage
- Demonstrate how to use the Telnet management function of the switch; parse commands and understand the output
- Describe what the Name Server is and how it is implemented by Brocade
- Describe the concept of cascading switches and how the Brocade SilkWorm switch uses FSPF for routing and path selection
- Install and configure a Brocade SilkWorm switch
- Discuss what Brocade Zoning is, why it should be deployed in a SAN, and how to implement it
- Demonstrate how to use the Brocade Performance Monitor
- Describe how to set up trunking and use speed negotiation
- Demonstrate how to set up a Fabric Watch with SNMP and monitor the Fabric
- Understand the capabilities of QuickLoop and QuickLoop Zoning in a private host fabric environment

- Describe and demonstrate basic hardware troubleshooting commands and techniques
- Describe how to implement the Fabric Manager
- Demonstrate how to use the Brocade Web Tools for switch management
- Demonstrate how to install and compile the Brocade SNMP MIB and query the Brocade SilkWorm family of Fibre Channel

Audience

This class is for a field/systems engineer or network analyst who provides technical support to customers. Any user desiring detailed technical information about Brocade products will benefit.

Prerequisites

Students should have general knowledge of SANs and/or equivalent work experience associated with SCSI storage and local area networks (LAN).

■ Brocade Advanced Secure Fabric OS – Introduction (101663)

Duration

4 hours, Web-based training

Description

This **online** Web-based training course provides students with an overview of Brocade Secure Fabric OS. The sessions include potential points where a security breach may occur, identifying points of vulnerability, and introducing the tools and methods to protect a SAN using strong, secure standards. Demonstrations include how to implement and administer Secure Fabric OS using Fabric Manager 4.0.

Important Note: Viewing with a dialup network connection is not recommended.

Upon successful completion of this course, students should be able to:

- Identify the SAN requirements for installing Secure Fabric OS
- Enroll and enable Brocade Secure Fabric OS
- Create and manage Secure Fabric OS policies

Audience

This course is intended for SAN designers, fabric integrators, fabric administrators, and security professionals who are responsibly for designing, implementing and/or managing a secure fabric environment

Prerequisites

Students should have general knowledge of networking security along with six months hands-on experience with Brocade switches or hold a Brocade Certification (BCFP, BCSD).

Siebel Model Numbers

TRNBR61 For WBT training

■ Brocade Fabric Watch with Fabric OS V3.1/4.1 – Introduction (101657)

Duration

2 hours, Web-based training

Description

This **online** Web-based course provides an overview of Brocade's Fabric Watch licensed product with Fabric OS V3.1/V4.1. The sessions identify errors that Fabric Watch Tracks and the best applications of using Fabric Watch within a larger SAN management plan.

Important Note: Display settings should be set for a minimum of 800X600.

Upon successful completion of this course, students should be able to:

- Describe Brocade Fabric Watch and the best applications of Fabric Watch within a larger SAN management plan
- Identify the types of errors that Fabric Watch tracks
- Define Fabric Watch terms related to error detection
- EXplain the format of Fabric Watch-generated messages
- Define the most frequently performed Fabric Watch customizations
- Explain techniques for customizing Fabric Watch thresholds and alarm settings with the command line, WEB Tools, and switch configuration files

Audience

This course is intended for switch administrators and system integrators who will be implementing Fabric Watch to monitor switches in a SAN.

Prerequisites

None

Siebel Model Numbers

TRNBR55 For WBT training

■ Brocade Fibre Channel Fundamentals (101661)

Duration

6 hours, Web-based training

Description

This **online** Web-based training course provides an introduction to Fibre Channel (FC) theory and fundamentals. It provides basic Fibre Channel (FC) information needed to understand SAN component communication processes. This is a baseline training course for several other Brocade courses.

Upon successful completion of this course, students should be able to:

- Identify key reasons, markets, and components related to FC protocol
- Identify FC protocol layers and key related tasks and components
- Identify FC topologies, classes of service (COS), and key Switched Fabric flow control methodologies
- Identify key FC terminology, services, and expected behaviors
- Summarize and state the relevance of FC theory basics and describe where to find additional FC resources

Audience

This introduction course is designed to provide a level-set for all levels of experience, including those who are new to the SAN industry.

Prerequisites

None

Siebel Model Numbers

TRNBR59 For WBT training

■ Brocade Monitoring, Managing & Maintaining Switches with Fabric Manager (101665)

Duration

5 hours, Web-based training

Description

This **online** Web-based training course provides an overview of Brocade Fabric Manager 4.0. The sessions provide the technical and process information needed to monitor, manage, and maintain Brocade SANs. Basic fabric concepts and applications are reviewed and demonstrated. Lectures introduce the main concepts with the minimum of theory and a maximum of practical focus. Demonstrations apply the processes defined in lecture, using scenarios developed from real-world end-user solutions.

Important Note: It is recommended that the display settings be set for 1024X768.

Upon successful completion of this course the student should be able to:

- Describe Brocade Fabric Manager features and functionality
- Describe the Fabric Manager installation process
- Identify key parts of the Fabric Manager user interface
- Identify strategies for creating Fabric Manager groups
- Use Fabric Manager groups to perform a variety of port-based, switch-based, and SAN-based management tasks
- Perform basic fabric monitoring of a fabric or SAN
- Use Fabric Manager to manage HBAs

Audience

This course is intended for SAN designers, SAN managers, fabric integrators, and fabric administrators.

Prerequisites

Students should have a general knowledge of Brocade (2 Gbit/sec BCFP or SilkWorm Administration and Theory), or equivalent work experience. Students should also have general knowledge of network management along with six months hands-on experience with Brocade switches.

Siebel Model Numbers

TRNBR65 For WBT training

■ Brocade QuickLoop and QuickLoop Fabric Assist – Introduction (101656)

Duration

2 hours, Web-based training

Description

This **online** Web-based course provides an overview of Brocade's QuickLoop and QuickLoop Fabric Assist licensed products. The sessions include how a QuickLoop is formed, where it is most applicable to use it, and how to troubleshoot problems with it.

Important Note: It is recommended that the display settings be set for a minimum of 800X600.

Upon successful completion of this course, students should be able to:

- Describe how a QuickLoop is formed
- Configure a dual switch QuickLoop partnership
- Configure Zoning for a QuickLoop
- Describe the QuickLoop operation modes
- Describe how QuickLoop Fabric Assist differs from QuickLoop
- Describe how QuickLoop Fabric Assist works
- Describe how to implement QuickLoop Fabric Assist

Audience

This course is intended for switch administrators and system integrators who will be implementing QuickLoop and/or QuickLoop Fabric Assist.

Prerequisites

Students should have general knowledge of Fibre Channel and SANs.

Siebel Model Numbers

TRNBR54 For WBT training

■ Brocade SAN Design Fundamentals (101321)

Duration

6 hours

Description

This **online** Web-based training course provides an introduction to fundamental SAN design concepts. The sessions review SANs, SAN applications, SAN building blocks, SAN topologies, and device attachment techniques. The emphasis of this course is on the SilkWorm 3200 and 3800 switches.

Upon successful completion of this course, students should be able to:

- Describe the history of storage access and the creation of Storage Area Networks (SANs).
- Identify some of the key business applications for SANs.
- Describe the role of Fibre Channel as the technology used by Brocade to construct SANs.
- Describe the role of Brocade switches as SAN building blocks.
- Define key terminology around SAN connectivity, performance, storage, and data security.
- Identify SAN topologies suitable for use in SAN designs.
- Discuss SAN design techniques that succeed with all Brocade switches.
- Leverage SilkWorm 3000-series and 12000 and 24000 Director Switches in SAN designs.
- Identify strategies for attaching servers and storage to SANs that optimize overall performance.
- Predict and enhance SAN performance.

Technical Requirements: Display Resolution: 1024x768 minimum; Depth: 16 bit minimum; Browsers: Internet Explorer 5.5; Netscape Navigator 6.0

Audience

All

Prerequisites

None

Siebel Model Numbers

TRNBR21 For WBT training

■ Brocade SAN Troubleshooting with Advanced Fabric Services (101140)

Duration

4 days

Description

This class focuses on techniques needed by a second level and higher support engineer and lead storage area network (SAN) administrator who must understand how to use Brocade switch capabilities to troubleshoot SANs. The unique functionality, availability, and troubleshooting tools provided within the switch are discussed and applied in a lab environment using real-world problem solving process flows. Switch operation in a system environment is demonstrated and students learn FLOGI, registration with the Simple Name Server, and State Change Notifications for properly functioning systems. Switch port logs containing portions of Fibre Channel traces are compared and contrasted with the same traces captured using a Fibre Channel analyzer. Students are exposed to underlying Fibre Channel concepts and learn to identify Fibre Channel frame types and payloads. The objective is for the student to follow logical troubleshooting processes that include analyzing switch data, setting up Fibre Channel traces, and isolating physical and logical faults. At a minimum, the student should be able to assemble a comprehensive set of data that can be used by Brocade if an escalation and more detailed analysis is needed to solve a problem. This course focuses on lab work with hands-on involvement.

Upon successful completion of this course, students will be able to:

- Describe fabric configuration and FCP device auto discovery processes
- Describe and demonstrate the use of different hardware diagnostics available on the SilkWorm switch
- Describe and develop some best practices for determining where to start in a troubleshooting process flow
- Demonstrate how to gather and analyze support show and other switch commands and tool outputs
- Apply switch administration and Fibre Channel knowledge to help diagnose SAN problems
- Use a troubleshooting process flow to diagnose and fix SAN problems
- Capture, read, and interpret a Brocade switch portLogDump
- Demonstrate how to use Fibre Channel Analyzers to troubleshoot SANs

Audience

Technical personnel with a desire to apply a fundamental understanding of FC knowledge to troubleshoot SAN problems and field and support personnel and lead SAN administrators that need to be able to use the switch as a troubleshooting tool.

Prerequisites

Students should have general knowledge of Fibre Channel fundamentals and troubleshooting experience in any technology. Recommended prerequisite classes are Brocade Advanced Fabric Service Administration (101141).

Siebel Model Numbers

TRNBR40 For individuals attending a scheduled course at Brocade

■ Brocade SAN: Managing, Monitoring & Maintaining (101319)

Duration

3 days

Description

This course provides the technical and process information needed to manage Brocade-based fabrics. Basic SNMP, API Scripting, Fabric Watch, and Fabric Manager concepts and applications are reviewed. The SNMP MIBs that Brocade supports are discussed, and important SNMP components are identified. API Scripting is used to monitor and manage Brocade switches. Fabric Watch is configured using the command line and the switch configuration file to monitor the health of ISLs, FRUs, and SFP modules. Fabric Manager is configured to perform a variety of group-based tasks on single switches and multiple switches. This 3-day Instructor-led course is combined with a Web-based training component.

Important Note: Students are strongly advised to take the recommended Web-based components in advance of the instructor-led curriculum.

Audience

SAN engineers, administrators, operators and architects who will be monitoring SANs using Fabric Manager, SNMP, and Fabric Watch. Data center managers would also greatly benefit from this course.

Prerequisites

Students should have completed some of the following Brocade courses:

- Fibre Channel Fundamentals (101661)
- Brocade 2 Gbit/sec Accelerated BCFP Certification Track (101142)
- Advanced Fabric Services Administration (101141)
- Silkworm 12000 with Advanced Fabric Services (101139)

Siebel Model Numbers

TRNBR19 For individuals attending a scheduled course at Brocade

■ Brocade Secure Fabric Operating System (101322)

Duration

2 days

Description

This course provides the technical skills required to plan and implement security in a Brocade 1-Gb and 2-Gb fabric using strong secure public key cryptography and mechanisms for distributing certificates amongst switches to prevent unauthorized access. Students learn the concepts for creating certificate requests, implementing and distributing certificates, administering fabrics using secure services and creating policies that control access to the fabric by hosts, servers, and administrators. Lectures introduce the main concepts with a minimum of theory and a maximum of practical examples. Through scenarios developed from real-world end user solutions, students are exposed to implementing SAN solutions as well as understanding the impact of a SAN design upon the management maintenance and troubleshooting of a SAN fabric. Lab exercises apply the knowledge gained during lectures.

Audience

This course is intended for SAN designers, fabric integrators, fabric administrators, and security professionals who are responsible for designing, implementing, or managing a secure fabric environment.

Prerequisites

Students should have completed some of the following:

- SilkWorm Administration and Theory of Operation or equivalent work experience with Brocade 1-Gb or 2-Gb switches
- Brocade 2 Gbit/sec BCFP
- Experience with Brocade switches or holds a Brocade Certification (BCFP, BCSD)

Siebel Model Numbers

TRNBR22 For individuals attending a scheduled course at Brocade

■ Brocade SilkWorm 12000 with Advanced Fabric Services (101139)

Duration

2 days

Description

This class provides a thorough understanding of the Brocade SilkWorm 12000 Fibre Channel switch. Hardware and software features are discussed in detail. SilkWorm 12000 deployment is reviewed in detail, from uncrating the switch to verifying the installation. Issues specific to deploying the SilkWorm 12000 in an existing SAN are discussed in detail. SAN design with the SilkWorm 12000 is discussed, including all Brocade-supported SAN topologies, SAN designs that include other SilkWorm switches, and device attachment techniques. SilkWorm 12000 hardware and software troubleshooting is reviewed in detail, with a focus on problem identification, problem resolution, and solution verification. SilkWorm 12000 maintenance tasks are also reviewed, including firmware upgrade and switch configuration backup. Laboratory sessions in this course cover SilkWorm 12000 hardware handling; Brocade Fabric OS commands; switch installation and setup; usage and interpretation of command output; troubleshooting hardware and software issues; switch maintenance tasks; and creation of multiple-switch fabrics utilizing SilkWorm 12000 switches and 2000/3000 switches.

Upon successful completion of this course, students will be able to:

- Define the SilkWorm 12000 hardware and software architecture, including all hardware components, High Availability Monitoring, and logical switch management
- Identify the new features enabled by Brocade 2 Gbit/sec SilkWorm switches and Fabric OS version 4.0, including ISL Trunking, Performance Monitoring, and Fabric Zoning
- Identify the differences between the SilkWorm 12000 and other Brocade SilkWorm switches, and the implications for mixed fabrics
- Deploy the SilkWorm 12000, including physical installation, switch configuration, and deployment verification
- Design a SAN solution using the SilkWorm 12000 that follows Brocade-provided design recommendations
- Migrate a SilkWorm 12000 into an existing SAN solution following well-defined processes
- Troubleshoot and resolve hardware and software issues with the SilkWorm 12000
- Discuss SNMP-based monitoring issues with the SilkWorm 12000
- Perform software maintenance on the SilkWorm 12000, including: switch configuration backup, firmware upgrade, and core file upload

Audience

This course is intended for SAN designers, fabric integrators, fabric administrators, and security professionals who are responsibly for designing, implementing, or managing a secure fabric environment.

Prerequisites

None

Siebel Model Numbers

TRNBR39	For individuals attending a scheduled course at Brocade
TRNBR62	For WBT training

■ Brocade SilkWorm 3900 and 12000 – Introduction (101664)

Duration

3 hours, Web-based training

Description

This **online** course covers the technical and process information needed to install and configure the Brocade SilkWorm 3900 and 12000 switches, using the new features in Fabric OS v4.1.2, including FICON.

Upon successful completion of this course, students should be able to:

- Identify the key hardware and software components of a SilkWorm 3900 and 12000 switch using Fabric OS v4.12
- Perform basic deployment tasks for the SilkWorm 3900 and 12000 using Fabric OS v4.12, including physical installation, switch configuration, and deployment verification

Audience

This course is designed for a field/systems engineer or network analyst who provides technical support to customers. Any user desiring detailed technical information about Brocade products will also benefit.

Prerequisites

Students should have completed one of the following Brocade classes: Advanced Fabric Services Administration (101141) or 2 Gbit/sec Accelerated BCFP Certification Track (101142) or 3 Gbit/sec Accelerated BCFP Certification Track.

Siebel Model Numbers

TRNBR63 For WBT training

■ Brocade SilkWorm Family of 2 Gbit/sec Switches – Introduction (101655)

Duration

4 hours, Web-based training

Description

This **online** course covers the benefits and improved technical features and functionality available on the new SilkWorm family of 2 Gbit/sec switches. The SilkWorm 1 Gbit/sec switches are reviewed first and then the student is presented with an introduction to the SilkWorm 2 Gbit/sec switches including how the 2 Gbit/sec switches both match and enhance Fibre Channel connectivity. A description of the enhancements in the 2 Gbit/sec product line including such features as Zoning, Fabric Watch, Distributed Fabrics and Scalability is included. Lastly, a discussion of new features found in the 2 Gbit/sec product line, including ISLTrunking, Advanced Performance Monitoring, unique features of the SilkWorm 3900 and 12000, FICON, and high availability (HA) are also introduced.

Upon successful completion of this course the student should be able to:

- Describe the Brocade SilkWorm 1 Gbit/sec switches including port counts, availability, and base technologies (port hardware, Fabric OS)
- Describe the SilkWorm 2 Gbit/sec switches as compared to SilkWorm 1 Gbit/sec switches, Introduce higher port-count switches,
- Describe the new base technologies
- Demonstrate the overall compatibility of SilkWorm 2 Gbit/sec switches with SilkWorm 1 Gbit/sec switches
- Describe SilkWorm 2 Gbit/sec feature enhancements
- Describe new features in SilkWorm 2 Gbit/sec hardware and software
- Describe new features in the SilkWorm 3900 and 12000 switches and Fabric OS v4.1.

Audience

This course is designed for users who are contemplating upgrading their 1 Gbit/sec products to 2 Gbit/sec products.

Prerequisites

Students should have a general knowledge of Fibre Channel and SANs.

Siebel Model Numbers

TRNBR53 For WBT training

■ Brocade SNMP Protocol (101658)

Duration

2 hours, Web-based training

Description

This **online** course provides a basic overview of the SNMP protocol. It has the goal of giving enough knowledge on SNMP so students may understand SNMP terminology and material in other relevant Brocade courses.

Upon successful completion of this course, students should be able to:

- Provide an overview of the SNMP Protocol
- Explain what a SNMP Community name is
- Provide an overview of SNMP MIBs
- Define Object IDs, Object Names, and Object Instances and how they relate to particular devices on a switch such as power supplies or ports
- Explain how a SNMP trap works

Audience

This course is intended for switch administrators who have little or no knowledge of SNMP.

Prerequisites

None

Siebel Model Numbers

TRNBR56 For WBT training

■ Brocade Switches: Configuring SNMP (101659)

Duration

2 hours Web-based training

Description

This **online** Web-based training course covers the supported SNMP MIBs and SNMP configuration on Brocade Switches.

Upon successful completion of this course, students should be able to:

- Identify the SNMP MIBs supported by Brocade Switches
- Perform basic SNMP configuration on the switches using the command line and Web interfaces
- Configure SNMP traps and the trap error levels
- Enable and disable individual MIBs and MIB trap definitions using the `snmpmibcapset` command
- Configure authentication traps
- Configure ACLs to restrict SNMP get/set/trap operations to hosts under a host-subnet-area

Audience

This course is intended for switch administrators who have little or no knowledge of SNMP.

Prerequisites

Students should have completed Brocade SNMP, Introduction or Brocade 2 Gbit/sec with Advanced Fabric Services or equivalent experience.

Siebel Model Numbers

TRNBR57 For WBT training

■ Brocade: Configuring FICON on Brocade Switches (101662)

Duration

3 hours, Web-based training

Description

This **online** Web-based training course covers planning, implementing, and monitoring a Brocade 12000 Switch in a FICON environment.

Upon successful completion of this course, students should be able to:

- Explain the login process of a mainframe to a switch
- Complete a basic planning work sheet for a SilkWorm 12000 implemented in a FICON environment
- Describe the switch values that must be configured on the main frame so that the switch and main frame can communicate
- Utilize the available command line interface to show the status of FICON device
- Utilize Fabric Manager to manage, monitor and troubleshoot switches in a FICON environment
- Configure both single and cascaded switches in a FICON environment

Audience

This course is intended for switch administrators, system integrators, and sales engineers who set up and configure Brocade switches in a FICON environment.

Prerequisites

Students should have completed the following Brocade classes: Advanced Fabric Service Administration (101141) and SilkWorm 3900 and 12000 with Advance Fabric. Students should also be familiar with FICON fundamentals.

Siebel Model Numbers

TRNBR60 For WBT training

■ Brocade: Configuring Long Distance Fabrics Using Brocade Fabric OS V3.1/4.1 (101660)

Duration

3 hours, Web-based training

Description

This **online** Web course provides an overview of the configuration and implementation of long-distance connections between Brocade SilkWorm switches using Fibre Channel-based and WAN-based strategies.

Upon successful completion of this course, students should be able to:

- Describe Fibre Channel-based and WAN-based strategies for long-distance connections between SilkWorm switches
- Discuss the Virtual Channel technique used by Brocade to manage switch-to-switch data flow
- Implement long-distance Fibre Channel-based connections using the Extended Fabrics licensed feature
- Implement long-distance WAN-based connections using the new ISL R_RDY mode feature in Fabric OS v4.1

Audience

This course is intended for switch administrators and system integrators who will be implementing long-distance connections between SilkWorm switches.

Prerequisites

None

Siebel Model Numbers

TRNBR58 For WBT training

■ Certance LTO-2 Product Training (101542)

Duration

1-hour CD

Description

This course addresses the Certance LTO-2 drive, including cable connections, display indications, update procedures, troubleshooting, and differences between the Seagate LTO-1 drive and the Certance LTO-2 drive including new features in the LTO-2 drive.

Upon successful completion of this course, students should be able to:

- Describe the core technology of the LTO-Ultrium tape drive
- Describe Certance LTO drive features and tape cartridge specifications
- Describe procedures to install the Certance LTO drive in an L-Series library
- Describe firmware update procedures for the Certance LTO drive
- Describe troubleshooting procedures for the Certance LTO drive

Audience

System administrators, operators, data center managers

Prerequisites

Students should have a general knowledge of open systems.

■ Tivoli Storage Manager 5.2 Implementation (101823)

Duration

5 days

Description

This course provides hands-on practice in implementing a data management strategy with IBM TSM 5.2. It begins with installing the IBM TSM 5.2 Server, backup/archive clients, and administrative clients. Students will gain experience using the commands needed to install and configure a tape library locally attached to an ITSM server and to prepare media for use in a device library. Students create simple storage pools and learn to configure hierarchies of storage pools to manage the flow of data from disk to tape media. Storage pools are mapped to the data sent by client nodes through IBM TSM policies that provide the rules to implement data management service level agreements.

Students practice automating client operations by creating new IBM TSM schedules. To monitor client operations, students learn to configure and manage storage events. Students also learn how to protect their IBM TSM server by automating the backup and restore of the IBM TSM databases and storage pools from offsite data storage pools.

This course enables students to build the necessary knowledge and skills to:

- Define new policy domains, policy sets, management classes, backup copy groups and archive copy groups
- Authorize administrators to perform specific storage tasks
- Backup and restore client data
- Manage long-term and offsite data management through archiving and retrieving of client data.

Special Considerations: This course is the first in a series of two technical TSM 5.2 courses that must be taken in order.

Audience

System administrators, implementors

Prerequisites

None

Siebel Model Numbers

TRNTIVI	For individuals attending a scheduled course at HQ
TRNTIVC	For individuals attending a scheduled course at Tivoli

■ Tivoli Storage Manager 5.2 Total Integration (101824)

Duration

5 days

Description

This course provides in-depth administration training with IBM Tivoli Storage Manager Extended Edition, at a skill level that is beyond the Implementation course. Through the use of reporting tools, administrators will be able to control their environment, and determine which actions to take. These tasks vary according to the action we are trying to accomplish. The classroom setup for this training allows students to explore the possibilities available with a Storage Area Network. This includes configuring server-to-server and virtual volumes, tape library sharing, performing LAN-free backups, and installing and using SANergy. In addition, students learn how to optimize IBM Tivoli Storage Manager and incorporate Disaster Recovery Manager to improve and automate recovery.

This course enables students to build the necessary knowledge and skills to:

- Evaluate, plan, and implement storage solutions using IBM Tivoli Storage Manager and complementary products
- Upgrade to 5.2 IBM Tivoli Storage Manager from a previous version
- Install and configure server-to-server and work with virtual volumes
- Work with enterprise administration functions
- Install the Storage Agent and configure the SAN/LAN based IBM Tivoli Storage Manager environment to perform LAN-free functions including tape library and diskpool sharing
- Install and work with SANergy
- Develop skills to work with support to solve problems encountered in your environment, using client and server trace functions
- Optimize IBM Tivoli Storage Manager for best restore results
- Utilize Disaster Recover Manager in planning for recovery
- Discover how TSM Data Protection products are used in conjunction with IBM Tivoli Storage Manager

Audience

System administrators, implementors

Prerequisites

Students must have completed the Tivoli Storage Manager 5.2 Implementation course (101823).

Siebel Model Numbers

TRNTIVT	For individuals attending a scheduled course at HQ
TRNTVTC	For custom training provided at a customer site

■ VERITAS Backup Exec 9.x for Windows Servers (101881)

Duration

3 days

Description

This course covers how to plan a backup strategy, install Backup Exec™, identify new and enhanced features, create and run backup jobs, and create and run restore jobs. In addition, tape configuration and media rotation methods are covered.

Upon successful completion of this course, students should be able to:

- Describe the features and benefits of Backup Exec.
- Plan for a backup strategy, including backup concepts and methods
- Install and configure Backup Exec
- Manage Backup Exec activities
- Manage devices
- Manage media
- Complete a Backup
- Complete a Restore
- Monitor Backup Exec activity
- Define Backup Exec troubleshooting procedures

Audience

System administrators, system engineers, technical support personnel, consultants, network administrators, backup administrators, backup operators, who will be responsible for installing, configuring, and administering Backup Exec for Windows Servers.

Prerequisites

Students should be familiar with the administration and configuration of the Windows platforms including experience configuring server software and hardware. Students should also have knowledge of Windows system administration, including domain security.

Siebel Model Numbers

TRNVRBE For individuals attending a scheduled course at VERITAS

Related VERITAS Courses Also Available through StorageTek

- Backup Exec for Netware
- Backup and Restore Concepts

■ VERITAS Cluster Server for Solaris (101882)

Duration

5 days

Description

This course covers how to use VERITAS Cluster Server to manage applications in a high availability environment. After gaining the fundamental skills that are needed to manage a highly available application in an existing cluster, students deploy VCS in a lab environment to implement a sample cluster design.

Upon successful completion of this course, students should be able to:

- Manage existing highly available application services using VERITAS Cluster Server
- Install VCS and create a cluster
- Configure service groups and resources
- Implement and verify failover and failback capability for application, storage, and network services
- Configure and optimize cluster behavior
- Protect data in a shared storage environment
- Configure VCS to manage an Oracle database, an NFS share, and other applications
- Analyze, troubleshoot, and correct cluster problems
- Implement four-node clusters
- Configure service group dependencies and workload management
- Implement alternative storage and network configurations
- Perform ongoing maintenance

Audience

System administrators, system engineers, network administrators, system integration or development staff, and technical support personnel who will be working with VERITAS Cluster Server.

Prerequisites

Students should have experience as system and network administrators working in a UNIX environment. Experience developing shell or Perl scripts is helpful.

Siebel Model Numbers

TRNVRCS For individuals attending a scheduled course at VERITAS

Related VERITAS Courses Also Available through StorageTek

- Cluster Server for LINUX
- Cluster Server for HP
- Cluster Server for AIX
- Cluster Server Traffic Director

■ VERITAS NetBackup 5.0 for Windows (101880)

Duration

5 days

Description

This three-part course provides training to implement a data protection solution using VERITAS NetBackup in a Windows environment. After students complete the three task-based offerings, they know how to install, configure, manage, monitor, maintain, and tune NetBackup.

Upon successful completion of this course, students should be able to:

- Install and configure NetBackup 5.0
- Manage and monitor NetBackup 5.0
- Maintain and tune NetBackup 5.0

Audience

System or network administrators, system engineers, technical support personnel, and system integration/development staff who are responsible for installing, operating, or integrating VERITAS NetBackup 5.0 within their environments.

Prerequisites

Knowledge of Windows system administration and comprehension of Storage Area Network (SAN) concepts is required. In addition, students should be familiar with the concepts and terminology covered in the VERITAS NetBackup Essentials eLearning course.

Siebel Model Numbers

TRNVRNB For individuals attending a scheduled course at VERITAS

Related VERITAS Courses Also Available through StorageTek

- NetBackup for UNIX
- NetBackup for Windows NT/2000
- NetBackup for Solaris

■ VERITAS Storage Foundation for UNIX (101883)

Duration

5 days

Description

This course covers how to integrate, operate, and make the most of VERITAS Storage Foundation in a UNIX environment. Instruction will be provided on operational management procedures for VERITAS Volume Manager (VxVM), VERITAS File System (VxFS), and options such as VERITAS FlashSnap.

Upon successful completion of this course, students should be able to:

- Install and configure VERITAS Volume Manager
- Manage disks, disk groups, and volumes by using the VERITAS Enterprise Administrator graphical user interface (GUI) and a command line interface (CLI)
- Apply system troubleshooting and recovery
- Perform online file system administration
- Perform offline and off-host processing using volume snapshots and storage checkpoints
- Explain and use Enterprise storage management features, such as quality of storage service, cross-platform data sharing, and intelligent storage provisioning

Audience

UNIX system or network administrators, system engineers, technical support personnel, and system integration/development staff who will be installing, operating, or integrating VERITAS Storage Foundation, VERITAS Volume Manager, or VERITAS File System.

Prerequisites

Knowledge of UNIX system administration is recommended.

Siebel Model Numbers

TRNVRSF For individuals attending a scheduled course at VERITAS

Related VERITAS Courses Also Available through StorageTek

- Foundation Suite for AIX
- Foundation Suite for HP-UX
- Foundation Suite for Solaris
- Storage Foundation
- High Availability Fundamentals
- Storage Foundation for Oracle

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ABOUT STORAGETEK®

Storage Technology Corporation (NYSE: STK) is a \$2 billion global company that enables businesses, through its information lifecycle management strategy, to align the cost of storage with the value of information. The company's innovative storage solutions manage the complexity and growth of information, lower costs, improve efficiency and protect investments. For more information, visit www.storagetek.com, or call 1.800.275.4785 or 01.303.673.2800.

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