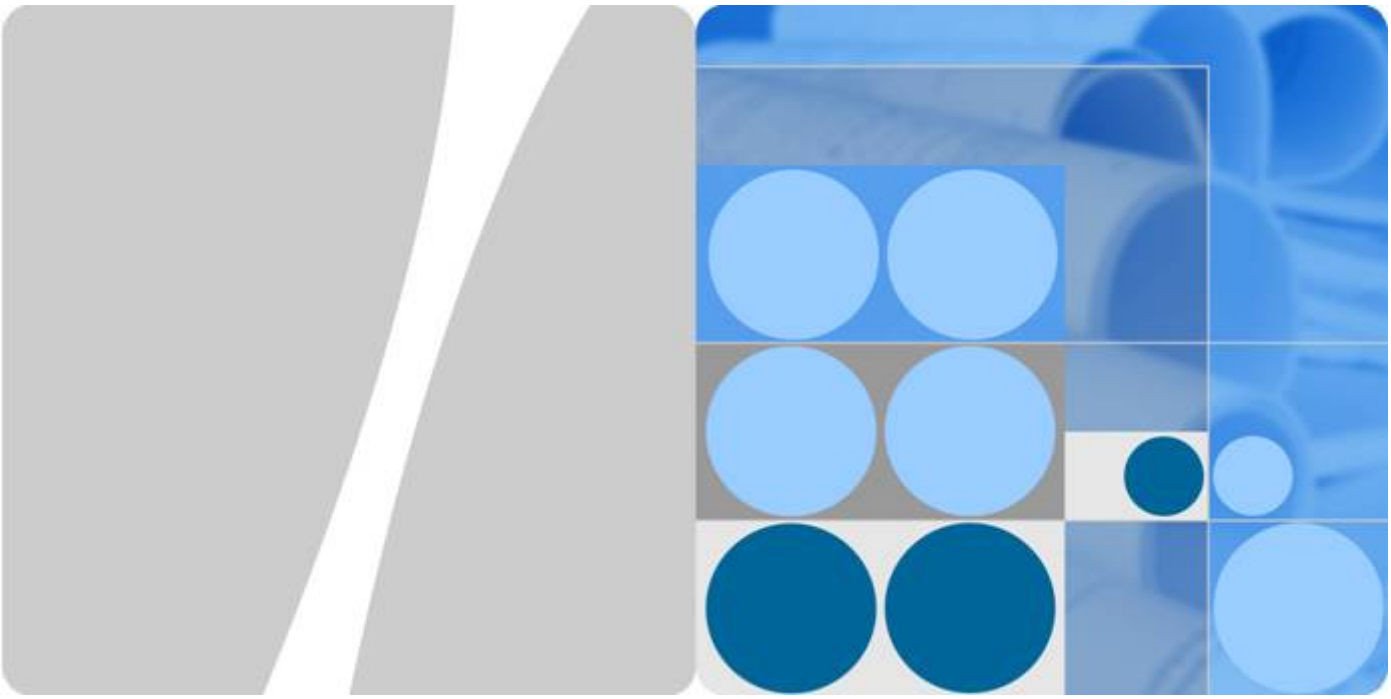

OceanStor DeviceManager

V100R001C10

Demo Usage Guide

Issue 01

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Contents

1 Overview

OceanStor DeviceManager is an integrated storage management platform designed for all HUAWEI storage systems. Using OceanStor DeviceManager, you can configure, manage, and maintain your storage devices with ease.

As the needs grow for exchanges and trainings on HUAWEI storage device operation and management, the simulated version of OceanStor DeviceManager, OceanStor DeviceManager Demo (Demo for short), is developed to provide you with close-to-real environment experience and understandings on HUAWEI storage systems.

Version Mappings

Table 1-1 lists the version mappings of the Demo usage guide.

Table 1-1 Version mappings

Usage Guide Version	Demo Version
OceanStor DeviceManager V100R001C10 Demo Usage Guide 01	OceanStor 5300 V3&5500 V3&5600 V3&5800 V3&6800 V3&6900 V3 V300R001C10
	OceanStor S2600T&S5500T&S5600T&S5800T&S6800T V200R002C20
	OceanStor 18500&18800&18800F V100R001C20

Restrictions

Configuration data provided by Demo is generated based on scenario simulations. You can perform simulated operations such as viewing and configuring on Demo. However, the operation results may differ from those of OceanStor DeviceManager in actual scenarios.

2 Demo Usage Guide

About This Chapter

This section describes how to run Demo and how to use Demo to experience HUAWEI storage systems' functions and features.

2.1 Preparations
Check the Demo operating environment before running and using Demo.

2.2 Installing Demo
This section describes how to install Demo.

2.3 Starting the Demo Service
After installing Demo, you must start the Demo service to access Demo.

2.4 Logging In to Demo
You can log in to Demo to configure and use basic functions of DeviceManager.

2.5 Experiencing Storage Systems' Functions
HUAWEI storage systems are configured and managed using OceanStor DeviceManager. You can use the simulated scenarios on Demo to experience various functions of the storage systems.

2.6 Operations
This section describes how to initialize Demo data and how to close and uninstall Demo.

2.1 Preparations

Check the Demo operating environment before running and using Demo.

Procedure

Step 1 Check the Demo operating environment.

1. Check that the PC or portable computer used for running Demo has sufficient system disk space.

   Check that the available system disk space is equal to or larger than 500 MB. A space smaller than 500 MB causes Demo operation failure.

2. Check the operating system and browser compatibility.

   Demo supports multiple types of operating systems and browsers. However, partially compatible browsers cannot provide guaranteed ease-of-use experience. **Table 2-1** lists the compatible operating systems and browsers.

   Table 2-1 Compatible operating systems and browsers for Demo

Operating System	Fully Compatible Browser	Partially Compatible Browser
Windows 7 Professional for X86/X64	● Internet Explorer 9 to 11 ● Firefox 24 to 28 ● Chrome 27 to 35	Internet Explorer 8
Windows Server 2008 R2 Enterprise Edition SP1 for X64	● Internet Explorer 9 to 11 ● Firefox 24 to 28 ● Chrome 27 to 35	Internet Explorer 8
Mac OS X 10.5 and later versions	Safari 5.5 to 8.0	-
Ubuntu 11	Firefox 24 to 28	-

Step 2 Prepare the Demo installation file.

1. Download the required Demo installation file from **http://support.huawei.com/enterprise**.

   Go to the address and choose **Support** > **Tools and Resources** > **Tools software** > **IT** > **Demo Of Storage** to download the required Demo installation file.

2. Save the file in any local directory (such as **D:\Demo**).

----End

2.2 Installing Demo

This section describes how to install Demo.

Prerequisites

You have prepared the correct Demo installation file.

NOTE

See **2.1 Preparations** to learn about how to obtain Demo installation file.

Procedure

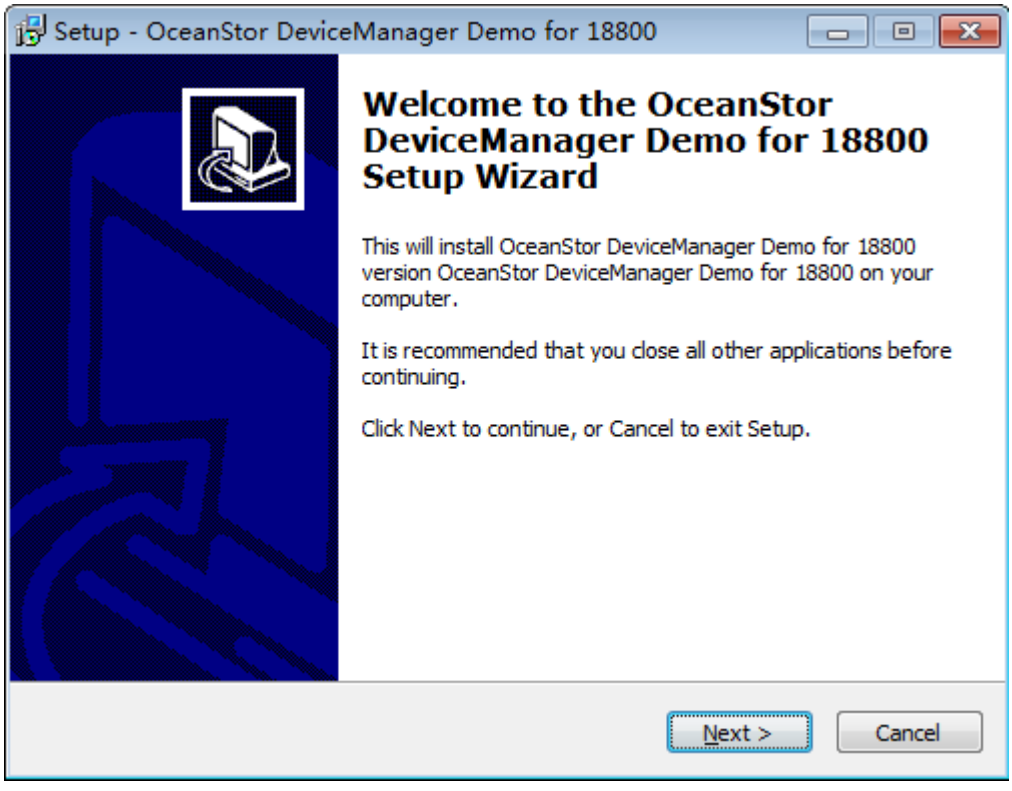
Step 1 Double-click the installation file **DeviceManagerDemoforXXX.exe**.

NOTE

XXX indicates the product name, for example, 18800.

The installation wizard welcome page is displayed, as shown in **Figure 2-1**.

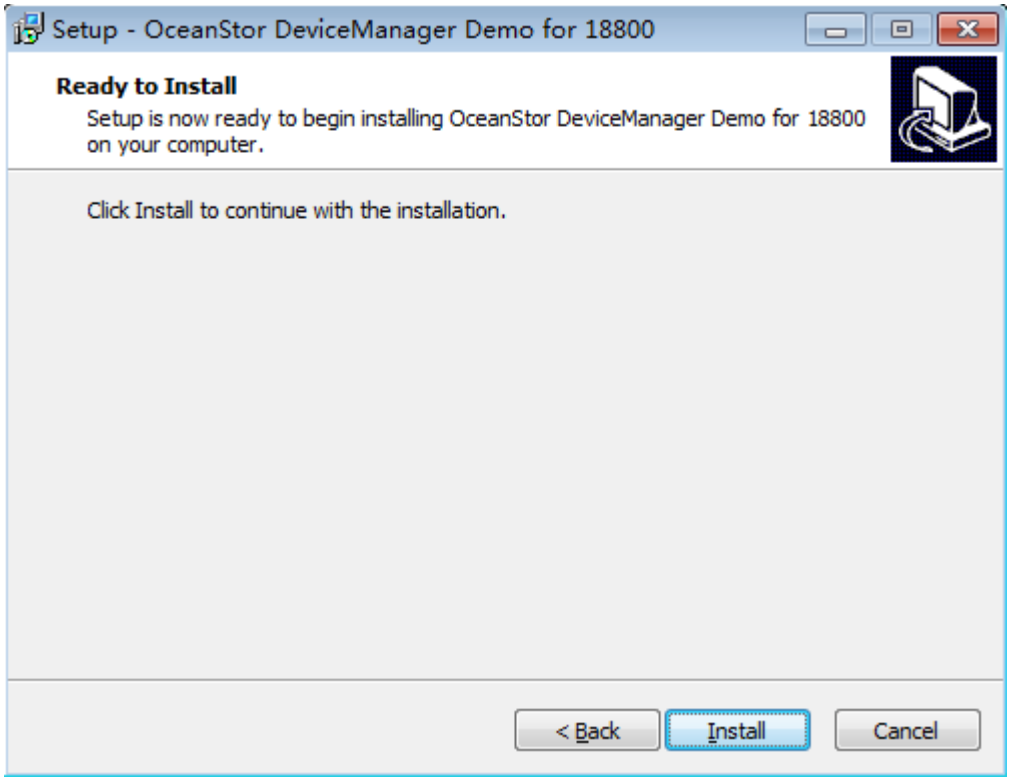
Figure 2-1 Welcome page



Step 2 Click **Next**.

The installation wizard preparation page is displayed, as shown in **Figure 2-2**.

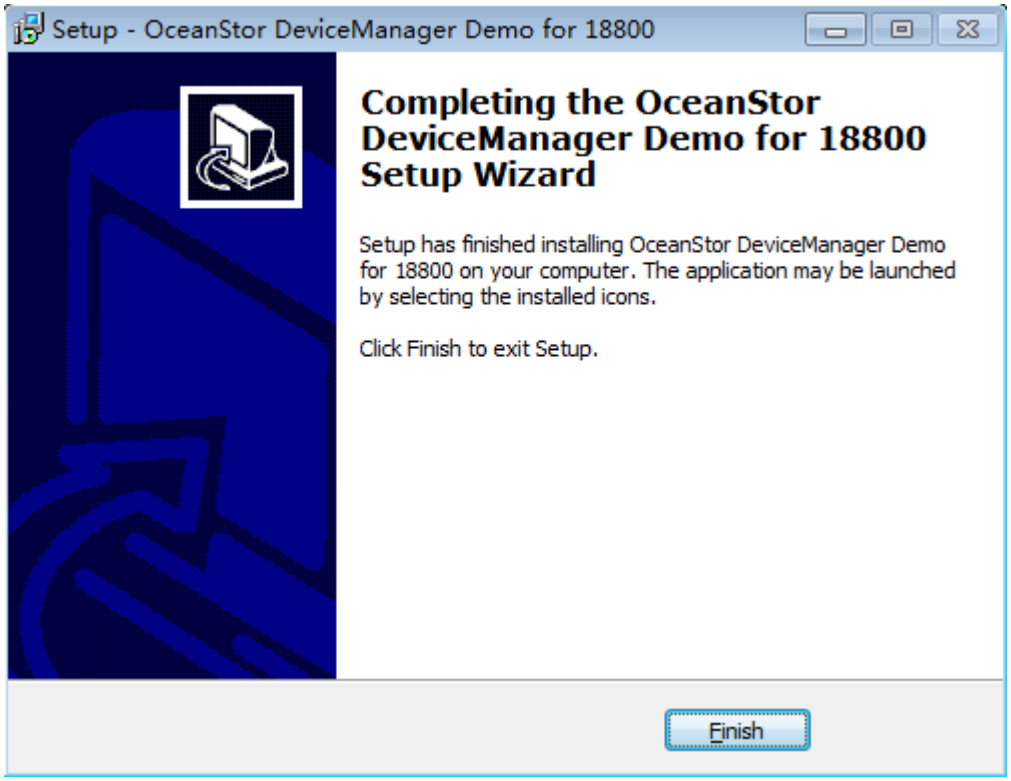
Figure 2-2 Preparation page



Step 3 Click **Install**.

The installation completion page is displayed, as shown in **Figure 2-3**.

Figure 2-3 Completion page



Step 4 Click **Finish**.

----End

2.3 Starting the Demo Service

After installing Demo, you must start the Demo service to access Demo.

Prerequisites

You have correctly installed Demo.

NOTE

See **2.2 Installing Demo** to learn about how to install Demo.

Context

Only one Demo service can be started at a time.

Procedure

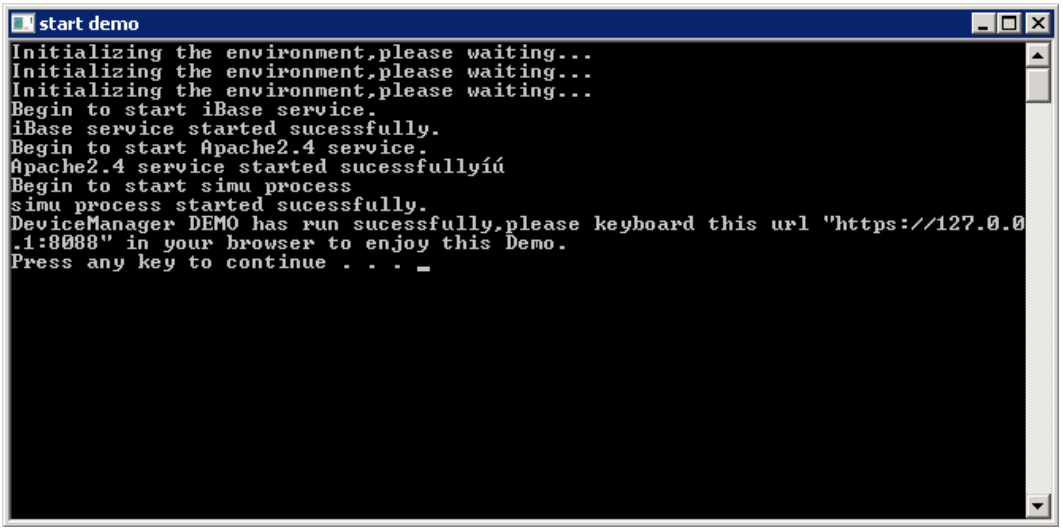
Step 1 In the desktop of your maintenance terminal, choose **Start** > **All Programs** > **DeviceManagerDemoforXXX** > **start demo**.

NOTE

XXX indicates the product name, for example, 18800.

The Demo service startup window is displayed, as shown in **Figure 2-4**.

Figure 2-4 Demo service startup window



Step 2 Press any key to start the Demo service.

----End

2.4 Logging In to Demo

You can log in to Demo to configure and use basic functions of DeviceManager.

Prerequisites

You have correctly installed Demo and started Demo services.

Procedure

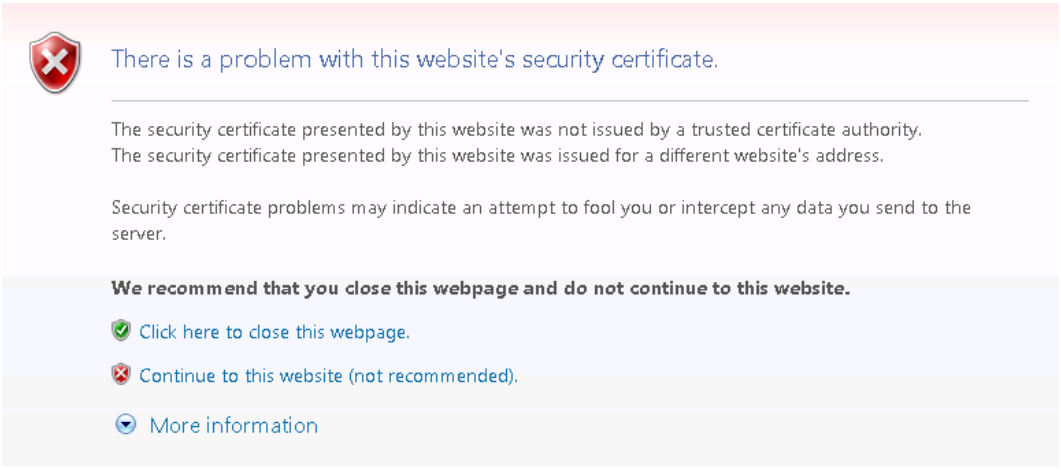
Step 1 Start the browser. In the address box, enter **https://localhost:8088/** or **https://IP:8088/**.

The certificate error page is displayed, as shown in **Figure 2-5**.

NOTE

This section uses Windows Internet Explorer as an example.

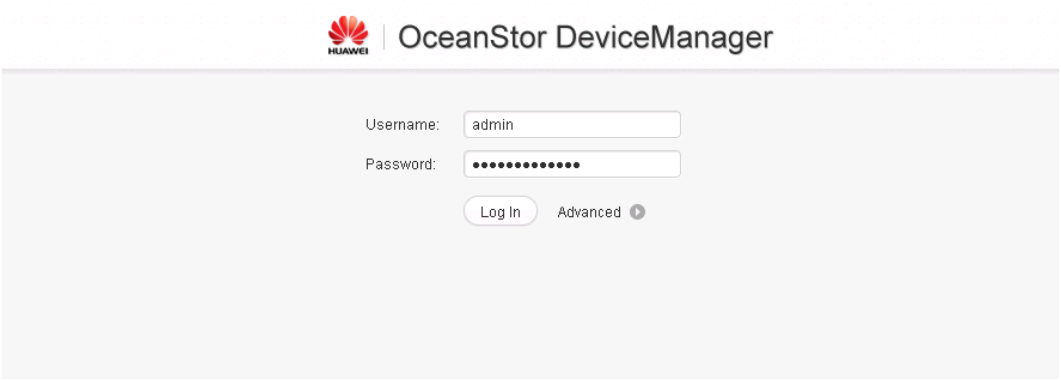
Figure 2-5 Certificate error page



Step 2 In the certificate error page, click **Continue to this website (not recommended).**

The Demo login page is displayed, as shown in **Figure 2-6**.

Figure 2-6 Demo login page



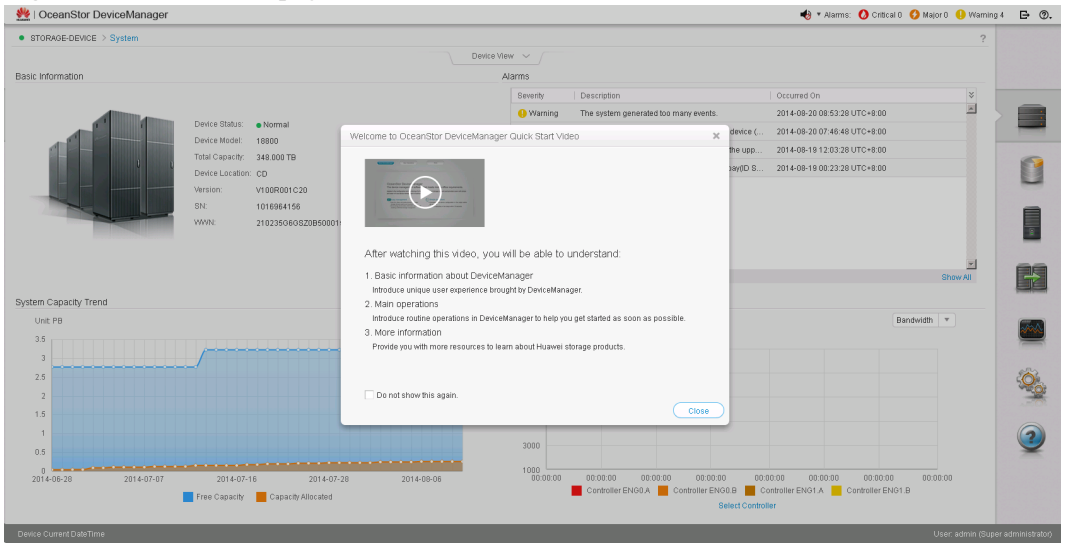
Step 3 In the Demo login page, click **Log In**.

NOTE

A user name and the password are preset for Demo. Therefore, you do not need to enter the user name and the password.

The Demo home page is displayed, as shown in **Figure 2-7**.

Figure 2-7 Demo home page



----End

Follow-up Procedure

After you log in to Demo, you can experience functions and features provided by HUAWEI storage systems. You can also watch the quick start multimedia materials to learn common scenarios and their operation procedures.

2.5 Experiencing Storage Systems' Functions

HUAWEI storage systems are configured and managed using OceanStor DeviceManager. You can use the simulated scenarios on Demo to experience various functions of the storage systems.

Table 2-2 provides common operation guidance. For detailed operation procedures, see the online help document in Demo.

Table 2-2 Common operation guidance

Menu	Function
System 	**Managing Devices** allows you to monitor storage devices and their components, and set related parameters.

Menu	Function
Resource allocation 	● **Managing Storage Pools** allows you to consolidate and centrally manage the storage space provided by various disks. ● **Managing LUNs** allows you to create and manage LUNs. ● **Managing Disk Domains** allows you to create and manage disk pools. ● Through resource performance tuning, you can view and manage resource tuning features including SmartTier, SmartQoS, and SmartPartition. – **Managing the SmartTier** allows you to enable automatic data migration among disks based on their access frequencies. The feature optimizes storage performance allocation and improves service quality. – **Managing the SmartQoS** allows you to adjust data flow and properly allocate storage resources. – **Managing the SmartPartition** allows that, you partition cache resources of a storage system to ensure high performance of critical applications and quality storage service. – **Managing SmartMigration** allows you to achieve online service migration without interrupting host services. ● **Managing vStores** allows you to have comprehensive and independent storage resources.
Hosts 	● **Managing Mapping Views** allows you to create and manage mapping views, and allocate storage resources to hosts. ● **Managing Hosts** allows you to create and manage hosts. ● **Managing Host Ports** allows you to view port information and create and manage port groups.

Menu	Function
Data protection 	● **Managing Snapshots** allows you to manage the snapshots of storage devices. ● **Managing Remote Replications** allows you to set up the replication relationship between local and remote storage devices to copy data on the primary LUN to the secondary LUN. If data on a storage device is lost due to a disaster, data on the other storage device is available, ensuring data security and availability. ● **Managing Clones** allows you to set up the pair relationship between the primary and secondary LUNs. You can obtain multiple physical copies of the primary LUN. Each of the physical copies can be used separately for a specific service. ● **Managing Consistency Groups** allows you to create a consistency group, add remote replications to it, and centrally manage the remote replications in the consistency group. For example, you can synchronize or split the remote replications in a consistency group at the same time. ● **Managing LUN Copies** allows you to manage the LUN copies of storage devices. ● **Managing Volume Mirrors** allows you to create mirror LUNs for local LUNs or external LUNs to implement continuous application and data protection. ● **Managing Remote Devices** allows you to create remote links among storage systems and transfer data.
Monitoring 	● **Monitoring System Performance** allows you to monitor performance indicators of devices in real time. ● **Exporting Alarms and System Logs** allows you to view alarms and logs. ● **Viewing Power Consumption** allows you to view the total power consumption and power consumption on specific dates.

Menu	Function
Settings 	● **Initially Configuring a Storage Device** allows you to configure basic device information, device time, Fibre Channel ports, Ethernet ports, alarm notification, and to manage license files. ● **Restarting a Device** allows you to restart storage devices. ● **Powering Off a Device** allows you to power off storage devices. ● **Exporting System Data** allows you to export running data, system logs and disk logs. ● **Management Basic Information About a Storage System** allows you to configure the storage device name, location, and time. ● **Managing License Files** allows you to view license information, and import and activate license files. ● **Managing Alarms** helps send alarm information to recipients' email boxes, mobile phones, or PCs. ● **Naming an iSCSI Device and an iSCSI Initiator** allows you to change the names of iSCSI devices and initiators. **Setting iSNS** allows you to discover and manage the storage system. ● **Permission Management** allows you to manage user accounts, configure security policy, configure domains and configure authorized IP addresses. ● **Managing Storage System Advanced Functions** allows you to change the high and low watermarks for the cache. ● **Upgrading Device** allows you to complete an upgrade of the disk array. **NOTE** Demo does not support the following functions: importing and exporting license files, powering off devices, restarting hardware devices, exporting system data, and automatically reporting alarms and events.
Technical Support 	**Technical Support** provides the links to the documentation center, training center, and technical knowledge base.

2.6 Operations

This section describes how to initialize Demo data and how to close and uninstall Demo.

Table 2-3 describes the procedures for initializing Demo data and closing and uninstalling Demo.

Table 2-3 Operations

Operation	Objective	Procedure and Description
Stopping the Demo service	To avoid occupying system processes when the Demo service is not needed	In the desktop of your maintenance terminal, choose **Start** > **All Programs** > **DeviceManagerDemo-forXXX** > **stop demo**. A window is displayed indicating the Demo service stops. The window is closed automatically, meaning that the Demo service is stopped.
Uninstalling Demo	To clear the Demo program and related files	1. In the desktop of your maintenance terminal, choose **Start** > **All Programs** > **DeviceManagerDemo-forXXX** > **uninstall demo**. A window is displayed asking you to confirm the uninstallation. 2. Click **Yes**. A dialog box is displayed indicating that the uninstallation is completed. 3. Click **OK**.

3 FAQ

About This Chapter

This section describes how to handle problems that are commonly encountered during Demo use.

3.1 What Can I Do When Demo Quits Unexpectedly During Startup?

Question

What can I do when demo quits unexpectedly during startup?

Answer

This problem is caused by existence of multiple java paths in the system, that is, other java environments were installed before Demo. Handle the problem in the following procedure:

1. In the desktop of your maintenance terminal, choose **Start** > **Control Panel**.
2. Click **System**.
3. Select **Advanced System Settings**.
4. Click the **Advanced** tab.
5. Click **Environment Variables**.
6. Check the value of **Path** to see whether multiple java paths exist.
   - If yes, keep the last java path and delete other java paths.
   - If no, contact technical support engineers.

A How to Get Help

If a tough or critical problem persists in routine maintenance or troubleshooting, contact Huawei for technical support.

For any problem experienced with using Demo, feed back at **http://support.huawei.com/ecommunity/bbs/10225947.html**.

Huawei provides users with timely and efficient technical support through the regional offices, secondary technical support system, telephone technical support, remote technical support, and onsite technical support.

Contents of the Huawei technical support system are as follows:

- Huawei headquarters technical support department
- Regional office technical support center
- Customer service center
- Technical support website: **http://support.huawei.com/enterprise/**

You can query how to contact the regional offices at **http://support.huawei.com/enterprise/**.

B Glossary

A

AC power module The module that transfers the external AC power supply into the power supply for internal use.

Application server A service processing node (a computer device) in the network. Application programs of data services are run on the application server.

Asynchronous remote replication A kind of remote replication. When the data on the primary site is updated, the data does not need to be updated on the mirroring site synchronously to finish the update. In this way, performance is not reduced due to data mirroring.

B

Backup A periodic operation performed on the data stored in the database for the purposes of database recovery in case that the database is faulty. The backup also refers to data synchronization between active and standby boards.

Bandwidth A range of transmission frequencies that a transmission line or channel can carry in a network. In fact, it is the difference between the highest and lowest frequencies the transmission line or channel. The greater the bandwidth, the faster the data transfer rate.

Baud rate The number of times per second the signal can change on a transmission line. Commonly, the transmission line uses only two signal states, making the baud rate equal to the number of bits per second that can be transferred. The underlying transmission technique may use some of the bandwidth, so it may not be the case that user data transfers at the line's specified bit rate.

Bit error A computer that is connected to the serial port or management network port of the storage system for maintenance.

Bit error rate The percentage of bits that have errors relative to the total number of bits received in a transmission.

Bonding	Bonding can bind multiple independent physical network ports into a logical port, which ensures the high availability of server network connections and improving network performance.
Boundary scan	A test methodology that uses shift registers in the output connections of integrated circuits. One IC often is connected to the next. A data pattern is passed through the chain and the observed returned data stream affected by the circuit conditions gives an indication of any faults present. The system is defined under IEEE standard 1149.1 and is also often known as JTAG (Joint Test Action Group).
Browser/Server	An architecture that defines the roles of browser and server, where the browser is the service request party and the server is the service provider.

C

Cache hit ratio	The ratio of directly accessed I/O from Cache to all the I/O operation during the read operation.
Cache prefetch strategy	According to the operation in which data has been read or is being read, the required data is read from a disk into the cache in advance.
Captive Screw	After the screw is loosened, screw caps and bolts are not disconnected from the main body.
Cascading	Connect the storage system to more disk enclosures through connection cables, thus expanding the capacity of the storage system.
CHAP	A method to periodically verify the identity of the peer using a 3-way handshake. During the establishment of a link, the authenticator sends a "challenge" message to the peer. The peer responds with a value calculated using a "one-way hash" function. The authenticator checks the response against its own calculation of the expected hash value. If the values match, the authentication is acknowledged. CHAP provides protection against playback attack.
Clone	A snapshot technology. The source data is completely copied to generate a data duplicate; therefore the duplicate needs the storage space as the same size as the source data. It is also called clone. In the VIS system, it is also called third-mirror break-off snapshot.
Cluster	A mechanism adopted to improve the system performance. Several devices of the same type form a cluster. The exterior of a cluster is some like a kind of equipment. In the interior of a cluster, the nodes share the load.
Coffer	A technology for ensuring data security and integrity in a storage system. It is used to store the mission-critical data of the system.
Coffer disk	Disks that build up the coffer.

Constant prefetch A cache prefetch strategy. The size of the data to be prefetched is the size as set. This strategy applies to the applications that require reading data of a fixed size in a certain order. An example is the streaming media demanded by multiple subscribers who use the same bit rate.

Controller The core module that processes services in a storage system. It contains physical components such as system-level CPUs and memory.

Controller enclosure An enclosure that accommodates controllers and provides storage services. It is the core component of a storage system, and generally consists of components such as controllers, power supplies, and fans.

Copyback The process of copying the data from the hot spare disk back to the previous disk when the faulty member disk is restored or replaced by a new one.

Copying A state of pair. The state indicates that the source LUN data is being synchronized to the target LUN.

D

Data flow A process that involves processing the data extracted from the source system, such as filtering, integration, calculation, and summary, finding and solving data inconsistency, and deleting invalid data so that the processed data meets the requirements of the destination system for the input data.

Data migration It is the process to cleanse and transform historical data, and then load them to the new system.

Data source A system, database, or file that can make BOs persistent. A data source can be a database instance or a database user.

Data switch A data switch used for interconnections between controllers.

Dirty data The data that is stored temporarily on cache and has not been written onto disks.

Disaster recovery A system deployment solution aiming at reducing loss in disasters. A set of disaster recovery system that is the same as the production system is deployed as a backup to store the production data when a fault occurs in the production system. The applications are switched over to the disaster recovery system before the production system recovers. After the production system recovers, the applications are switched back to the production system.

Disk array A set of disks from one or more commonly accessible disk subsystem. These disks are combined and controlled by the control software. The control software provides the storage capacity of these disks for hosts as one or more virtual disks.

Disk Domain	A combination of disks. A disk domain consists of the same type or different types of disks. Disk domains are isolated from each other. Therefore, services carried by different disk domains do not affect each other in terms of performance and faults (if any).
Disk location	Locate a hard disk, that is, determine the enclosure number and slot number of the hard disk in the storage system.
Disk enclosure	It consists of the following parts in redundancy: expansion module, hard disk, power module, and fan module. System capacity can be expanded by cascading multiple disk enclosures.
Disk utilization	The percentage of used capacity in the total available capacity.

E

eDevLUN (external device LUN)	Logic space created by third-party storage systems.
Engine	Two controllers in one enclosure are called Engine.
Expansion	Connecting a storage system to more disk enclosures through connection cables, thus expanding the capacity of the storage system.
Expander module	A component used for expanding.

F

Failover	The automatic substitution of a functionally equivalent system component for a failed one. The term failover is most often applied to intelligent controllers connected to the same storage devices and host computers. If one of the controllers fails, failover occurs, and the survivor takes over its I/O load.
Field replaceable unit	A unit that can function as a circuit board, part, or component of an electronic device. It can be quickly and easily removed from a personal computer or other electronic devices. If an FRU becomes faulty, users can replace it with a new one instead of sending the entire product or system for maintenance.
File Engine	The component in a unified storage systems that provides file-level service.
Firmware	The programmable software part in a hardware component. A firmware is a part of hardware, but is scalable as software.
Front-end host port	The port that connects the controller enclosure to the service side and transfers service data. There are three types of front-end host ports: SAS, FC, and iSCSI.

G

Gateway	The entrance node on another network.
Global system for mobile communications	The second-generation mobile networking standard defined by European Telecommunications Standards Institute (ETSI). It is aimed at designing a standard for global mobile phone networks. The standard allows a subscriber to use a phone globally. GSM consists of three main parts: mobile switching subsystem (MSS), base station subsystem (BSS), and mobile station (MS).

H

Hard disk	A non-volatile storage device that stores digitally encoded data on rapidly rotating platters with magnetic surfaces. Hard disks generally offer more storage and quicker access to data than floppy disks do.
Hard disk tray	The tray that bears the hard disk.
Heartbeat	Heartbeats are the packets, requiring no acknowledgement, transmitted between two devices. The device can judge the validity status of the peer device. Heartbeat supports node communication, fault diagnosis, and event triggering.
Hit ratio	The ratio of directly accessed I/Os from cache to all I/Os.
Hot swap	In a running system, inserting or removing a blade does not affect normal running of the system.

I

I/O	Data movement process between memory and peripheral devices in the computer system. I/O is a collective name, indicating the operations reading data into the memory and writing data to other places from computer memory.
Initiator	A system component that can initiate an I/O operation on an I/O bus or on a network.
Intelligent prefetch	A cache prefetch strategy. The system software calculates a proper size of prefetched data. This strategy applies to a read application involving a single bit stream or to the situations where you do not know whether the data is read in a certain order. An example is reading or writing a file.
Interface module	interface module connects various types of front-end host port, such as the front-end host ports of SAS, FC and iSCSI. The interface module can be configured with one type of the following host ports or expansion ports: 10Gb iSCSI, 8Gb FC, and iSCSI host ports, or 4Gb FC and 6Gb SAS expansion ports.

L

Load balance	A method of adjusting the system, application components and data to averagely distribute the applied I/O or computing requests for physical resources of the system.
Logical unit	The entity is located inside the SCSI object, and can execute I/O commands. After a SCSI I/O command is sent to an object, the logic unit inside the object executes this command. Usually, each SCSI physical disk has one logic unit. A tape drive and array controller may have multiple logic units, which process different I/O commands. Each logic unit inside an array controller corresponds to a virtual disk.
Logical unit number	The SCSI identifier of the internal logical unit of a target.
LUN format	The process of writing 0 bits in the data area on the logical drive and generating related parity bits so that the logical drive can be in the ready state.
LUN mapping	The storage system maps LUNs to ASs so that the ASs can access the storage reorganization.
LUN migration	A method for the data in the LUN to migrate between different physical storage space while ensuring data integrity and uninterrupted operation host services.
LUN copy	The function of copying the original LUN data to one or multiple target LUNs.

M

Maintenance terminal	The computer that is connected through a serial port or management network port and maintains the storage system.
Management network	An entity that provides a means to transmit and process the information related to network management.
Management network port	The network port on the controller enclosure that is connected to the maintenance terminal. It is provided for the remote maintenance terminal.

N

Node	A managed device in the network. For a device with a single frame, one node stands for one device. For a device with multiple frames, one node stands for one frame of the device.

O

Out-of-band management	A management mode used during out-of-band networking. In the out-of-band management mode, the management and control information of the network and the bearer service information of the user network are transmitted through different logical channels.
Original LUN	The LUN where the original data of the copied LUNs is located.
Owning controller	For a LUN, the user configures the owing controller, that is, specified the created LUN to a certain controller. When the owning controller of the LUN is invalid, another controller manages the LUN automatically. When the owning controller of the LUN is restored, the original controller manages the LUN again.

P

Power failure protection	When the external power failure occurs, the AC PEM depends on the battery for power supply, which ensures the integrity of the dirty data in cache.
Pre-copy	When the system monitors that a member disk in a RAID group is to fail, the system copies the data on the disk to a hot spare disk in advance. This technology is called pre-copy.
Primary storage controller	The controller that plays a leading role in controlling the management is the primary storage controller. It can perform relevant management operations on the controller enclosure.
Primary/ Secondary switchover	A procedure during which the two controllers of the storage system change their master/slave states.
Prior controller	For the application server LUN, prior controller means that the working controller is the owner controller of the corresponding array LUN.

R

RAID level	The application of different redundant types to a logical drive. A RAID level improves the fault tolerance or performance of the logical drive but reduces the available capacity of the logical drive. You must specify a RAID level for each logical drive.
Reconstruction	A function of the storage system. It refers to the process of restoring the data saved in the faulty member disk in a storage pool.
Redundancy	The scheme to add more than one channels, elements or parts that have the same functions with the counterparts in the system or device at a critical place. When a fault occurs, the system or device can work well, and the reliability is then improved.

Remote replication	A core technology for disaster recovery and a foundation that implements remote data synchronization and disaster recovery. This technology remotely maintains a set of data mirror through the remote data connection function of the storage devices that are separated in different places. Even when a disaster occurs, the data backup on the remote storage device is not affected. Remote replication can be divided into synchronous remote replication and asynchronous remote replication by whether the host that requires mirrors needs the confirmation information of the remote replication site.
Reverse synchronizing	The process of restoring data from the redundancy machine (RM) when the services of the production machine (PM) are recovering.
Route	The path that network traffic takes from its source to its destination. In a TCP/IP network, each IP packet is routed independently. Routes can change dynamically.

S

Script	A collection of data statements used to perform an operation.
Secondary controller	(1) A controller that backs up service and management data of the primary controller in a clustered system. When the primary controller fails, the secondary controller is upgraded to the primary controller and takes over the management and services of the controller enclosure. (2) A controller that backs up the management data of the primary controller in a block-level array. When the primary controller fails, the secondary controller is upgraded to the primary controller and takes over the management of the system.
Serial port	An input/output location (channel) that sends and receives data to and from a computer's CPU or a communications device one bit at a time. Serial ports are used for serial data communication and as interfaces with some peripheral devices, such as mice and printers.
Service data	Data which is saved in data disk. Service data is the data source for computing check data in parity disk.
Service network port	The network port that is used to store services.
SFP optical transceiver	A component that can make data conversion between optical signals and electrical signals and that can receive and transfer data.
Simple network management protocol	A network management protocol of TCP/IP. It enables remote users to view and modify the management information of a network element. This protocol ensures the transmission of management information between any two points. The polling mechanism is adopted to provide basic function sets. According to SNMP, agents, which can be hardware as well as software, can monitor the activities of various devices on the network and report these activities to the network console workstation. Control information about each device is maintained by a management information block.

Single point failure	A type of failure. Data transmission over a network is stopped and cannot be recovered automatically if a single point failure occurs. The point can be an interface, a board, a device, or a link.
Small computer system interface	A set of standards for physically connecting and transferring data between computers and peripheral devices. SCSI is most commonly used for hard disks and tape drives, but it can connect a wide range of other devices, including scanners, and optical drive.
SmartTenancy	A feature of Huawei storage system. With SmartTenancy, multiple virtual storage systems can be created in one physical storage system, which allows tenants to share the same storage system hardware resource without affecting data security and privacy of each other. This feature achieves more flexible, easy-to-manage and low-cost shared storage in a multi-protocol unified storage architecture.
Snapshot	A data backup technology through which a fully usable copy of a data object can be quickly generated. The duplicate contains the image of the data object at a point in time.
Snapshot copy	A copy of the snapshot LUN, which is also a snapshot LUN.
Storage system	An integrated system. It consists of the following parts: controller, storage array, host bus adapter, physical connection between storage units, and all control software.
Storage unit	An abstract definition of backup storage media for storing backup data. The storage unit is connected with actual storage media, used to back up data.
Streaming media	A transmission mode in which data is consumed (read, listened to, or watched) while it is being sent.
Stripe	The set of strips at corresponding locations of each member extent of a disk array which uses striped data mapping. The strips in a stripe are associated with each other in a way (e.g. relative extent block addresses) that allows membership in the stripe to be quickly and uniquely determined by a computational algorithm. Parity RAID uses stripes to map virtual disk block addresses to member extent block addresses.
Subnet	A type of smaller networks that form a larger network according to a rule, for example, according to different districts. This facilitates the management of the large network.
Subnet mask	The technique used by the IP protocol to determine which network segment packets are destined for. The subnet mask is a binary pattern that is stored in the device and is matched with the IP address.
Synchronous remote replication	A kind of remote replication. When the data on the primary site is updated, the data must be synchronously updated on the mirroring site before the update is complete. In this way, the data that is stored on both the primary and mirroring sites can be synchronized.

T

Target	A system component that can receive SCSI I/O operation commands.
Target LUN	The target for LUN copy.
Thin provisioning	A mechanism that offers on-demand allocation of storage space.
Thin LUN	The thin LUN is a logic disk that can be accessed by hosts. The thin LUN dynamically allocates storage resources from the thin pool according to the actual capacity requirements of users.
Timing Snapshot	To create snapshots periodically to continuously protect data.
Topology	The logical layout where computer systems and network components are interconnected with one another. The topological structure gives the interconnection relationship among the components from the viewpoint of communication, but the topological structure does not specify the exact locations of components and the interconnection mode.
Trap	A type of SNMP message that indicates the occurrence of an event. This type of message is transmitted to the received through UDP. The transmission process is not completely reliable.

U

User datagram protocol	A TCP/IP standard protocol that allows an application program on one device to send a datagram to an application program on another. User Datagram Protocol (UDP) uses IP to deliver datagram. UDP provides application programs with the unreliable connectionless packet delivery service. There is a possibility that UDP messages will be lost, duplicated, delayed, or delivered out of order. The destination device does not confirm whether a data packet is received.
User interface	The space in which users interact with a machine.

V

Variable prefetch	A cache prefetch strategy. The size of the data to be prefetched is the multiple for prefetching multiplied by the length of a read command. This strategy applies to the applications that require reading data of variable size in a certain order or to the situations where multiple subscribers read data concurrently but no fixed prefetch size can be set, because the amount of pre-read data cannot be judged. An example is the streaming media demanded by multiple subscribers who use different bit rates.
vStore	A property of SmartTenancy. In Huawei SmartTenancy, a tenant is called a vStore, which represents a virtual storage system.

W

Working controller	The controller used by the array LUN to read and write a disk.
Write back	A caching technology in which the completion of a write request is signaled as soon as the data is in cache, and actual writing to non-volatile media occurs at a later time. Write back includes an inherent risk that an application will take some action predicated on the write completion signal, and a system failure before the data is written to non-volatile media will cause media contents to be inconsistent with that subsequent action. For this reason, good write back implementations include mechanisms to preserve cache contents across system failures (including power failures) and to flush the cache at system restart time.
Write through	A caching technology in which the completion of a write request is not signaled until data is safely stored on non-volatile media. Write performance with the write through technology is approximately that of a non-cached system, but if the data written is also held in cache, subsequent read performance may be dramatically improved.

Z

Zone	In the fiber channel, a collection of the N_Port or the NL_Port which can communicate with each other in the optical network. Only the N_Port or the NL_Port in the same partition can communicate with each other through the optical network.

C Abbreviation

C

CHAP	Challenge Handshake Authentication Protocol

F

FC	Fiber Channel

G

GPT	Guid Partition Table

H

HBA	Host Bus Adapter

I

IE	Internet Explorer
I/O	Input/Output
IOPS	Input/Output Operations Per Second
IP	Internet Protocol
IQN	iSCSI Qualified Name
iSCSI	Internet Small Computer Systems Interface
iSNS	Internet Storage Name Service

L

LDAP	Lightweight Directory Access Protocol
LUN	Logical Unit Number
R	
RAID	Redundant Array of Independent Disks
S	
SAS	Serial Attached SCSI
SCSI	Small Computer System Interface
SSD	Solid-State Drive
SVP	Service Processor
T	
TOE	TCP Offload Engine
W	
WWN	World-Wide Name
Y	
YaST	Yet another Setup Tool