

HP 教育訓練中心課程簡介

HP-UX Logical Volume Manager (H6285S)



本課程內容包含利用邏輯容體管理員 (LVM) 設定與管理 HP-UX 磁碟系統時，提供需要的程序。學員同時可學習 MirrorDisk/UX 的回復技術，提供資料的備援與防護，減少磁碟故障產生的意外。

適合對象

- Experienced HP-UX system administrators

先修課程

- HP-UX System and Network Administration I (H3064S) and HP-UX System and Network Administration II (H3065S) or
- HP-UX System and Network Administration for Experienced UNIX® System Administrators (H5875S)

課程目標

At the conclusion of this course you should be able to:

- Configure and manage LVM disks, disk groups, and logical volumes
- Configure striped, mirrored, and distributed logical volumes
- Configure LVM for optimal performance
- Recover failed LVM disks and volumes

課程效益 Gain the skills required to:

- Effectively manage LVM disks, disk groups, and volumes
- Mirror LVM data and boot disks to improve uptime and reliability
- Replace failed LVM data and boot disks

Course title: HP-UX Logical Volume Manager

HP product number: H6285S

Category/Subcategory: HP-UX

Course length: 4 days

Level: Advanced

To order: To review course schedules and to register for a course, visit www.hp.com.tw/education

- Prepare you to attend HP Serviceguard I (H6487S) as HP-UX Logical Volume Manager (H6285S) is a critical prerequisite

為什麼選擇HP教育訓練中心?

- Focus on job-specific skills
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進階課程

- HP Serviceguard I (H6487S)
- HP-UX Troubleshooting (H4264S)
- HP-UX Security (H3541S)

課程大綱

Introduction to Disk Space Management and LVM

- Disk space management solutions
- Whole disk benefits and limitations
- LVM benefits and limitations
- LVM resources
- Disk space management solution comparison

Disk array & SAN concepts and addressing

- Disk array concepts
- LUN concepts
- RAID concepts
- RAID 0, RAID 1, RAID 1+0, and RAID 0+1 concepts
- RAID 3, RAID 5, and RAID 5DP concepts
- RAID levels and LVM
- SAN and multipathing concepts
- Hardware address concepts
- Legacy vs. Agile View hardware addresses
- Legacy parallel SCSI hardware addresses
- Legacy FC hardware addresses
- Legacy DSF names
- Viewing legacy hardware addresses and DSFs
- Agile View SCSI hardware addresses
- Agile View FC lunpath hardware addresses
- Agile View FC LUN hardware addresses
- Agile View persistent DSFs
- Viewing Agile View hardware addresses and DSFs

- Viewing an HBA's lunpaths via Agile View
- Viewing a LUN's WWID and LUN ID via Agile View
- Viewing a LUN's WWID and lunpaths via Agile View
- Selecting a path load balancing policy
- Monitoring HBA, LUN, and lunpath usage
- Monitoring HB, LUN, and lunpath health
- Enabling and disabling LUNs and lunpaths

LVM concepts and structures

- LVM objects
- LVM physical volumes, volume groups, and logical volumes
- LVM DSF directories and DSFs
- LVM extents
- LVM extent allocation
- LVM PVRA, VGRA, and BBRA areas
- LVM kernel structures and volume group activation
- LVM activation quorum
- LVM running quorum
- LVMv1.0 and v2.x limits

Creating and Managing Volume Groups and Logical Volumes

- Identifying available disks
- Creating physical volumes
- Creating volume groups
- Creating logical volumes
- Viewing groups and volumes
- Extending, reducing, and removing volume groups
- Extending, reducing, and removing logical volumes
- Extending and reducing file systems
- Removing physical volumes
- Activating and deactivating volume groups
- LVM basic command summary

Configuring and Managing Mirrored Logical Volumes

- Mirroring concepts
- Installing MirrorDisk/UX
- Mirroring logical volumes
- Viewing logical volumes
- Unmirroring logical volumes
- Synchronizing mirrors
- Splitting and merging mirrors for on-host and off-host backups
- Configuring spare physical volumes

Configuring and managing mirroring policies

- Mirroring policy concepts
- Mirror scheduling policy concepts
- Choosing and configuring an appropriate mirror scheduling policy
- Mirror consistency recovery policy concepts
- Choosing and configuring an appropriate consistency recovery policy
- Mirror allocation policy concepts
- Choosing and configuring an appropriate mirror allocation policy
- Mirroring policy summary

Creating and Managing Striped and Distributed Logical Volumes

- Striped logical volumes
- Striped logical volume advantages and disadvantages
- Configuring non-mirrored striped logical volumes
- Striped versus distributed logical volumes
- Creating a non-mirrored distributed logical volume
- Creating a mirrored distributed logical volume
- Configuring `/etc/lvmpvg` for distributed logical volumes

Moving Data in an LVM Environment

- Why move extents within a volume group
- Moving and balancing physical extents with `pvmove`
- Moving and balancing logical volumes with `lvmove`
- Moving logical volumes and physical extents with `vgmove`

Exporting and Importing Volume Groups

- Volume group export/import concepts
- Structures affected by physical volume and volume group moves
- Volume group export/import commands
- Moving volume groups and physical volumes to a different server
- Moving a physical volume to a new address

- Renaming a volume group
- Importing volume groups after reinstalling
- Importing split mirrors for off-host processing
- Exporting a corrupted volume group
- Importing volume groups in Serviceguard clusters

Monitoring and Tuning LVM Performance

- LVM performance considerations
- Balancing workloads: concepts and symptoms
- Balancing workloads: overriding the default allocation policy
- Balancing workloads: striping logical volumes
- Balancing workloads: mirroring logical volumes
- Minimizing head movement: concepts, symptoms, and commands
- Avoiding fragmentation: concepts, symptoms, and commands
- Minimizing MWC/MCR overhead: concepts, symptoms, and commands
- Buying faster disks and interfaces
- Updating the Operating System
- Other performance factors

Recovering LVM Disks and Structures

- LVM structure concepts
- Recovering lost or damaged LVM structures
- Recovering missing device files
- Rebuilding a corrupt `/etc/lvmtab` file
- Refreshing outdated kernel structures
- Failed disks: symptoms experienced by users
- Failed disks: symptoms reported in `syslog.log`
- Failed disks: symptoms reported by EMS
- Failed disks: symptoms reported in `vgdisplay`
- Failed disks: symptoms reported in `ioscan`
- Activating a volume group containing failed disks
- Gathering information about failed disks
- Restoring a power-failed disk
- Replacing a failed disk
- Replacing a disk with and without LVM OLR
- Restoring LVM headers

- Restoring unmirrored logical volumes
- Restoring mirrored logical volumes
- Removing failed physical volumes
- Removing corrupted volume groups
- Proactively checking PVRA/VGRA health
- Preparing for disk recovery

Managing volume group attributes

- LVMv1 attribute concepts & limits
- LVMv2 attribute concepts & limits
- Managing LVMv1 attributes with vgmodify
- Managing LVMv2 attributes with vgmodify
- Expanding & contracting LUNs offline with vgmodify
- Expanding & contracting LUNs online with vgmodify
- Upgrading volume groups with vgversion

Configuring and Managing LVM Boot Disks on PA-RISC Servers

- PA-RISC boot process structures, concepts, and restrictions
- Booting without LVM quorum
- Booting to LVM maintenance mode
- PA-RISC boot disk mirroring concepts
- Mirroring a boot disk
- Replacing a failed boot mirror
- Creating a DRD clone
- Creating a make_*_recovery archive
- Resizing boot disk logical volumes

Configuring and Managing LVM Boot Disks on Integrity Servers

- Integrity boot process structures, concepts, and restrictions
- Booting without LVM quorum
- Booting to LVM maintenance mode
- Integrity boot disk mirroring concepts

- Mirroring a boot disk
- Replacing a failed boot mirror
- Creating a DRD clone
- Creating a make_*_recovery archive
- Resizing Integrity boot disk logical volumes

Self study appendix: Configuring and managing PV links

- PV link overview
- Configuring PV links
- Viewing, adding, and removing PV links
- PV link switchover
- PV link switchback
- Configuring autoswitch behavior
- Switching links manually
- Optimizing PV links
- Configuring PV links with SecurePath

Self study appendix: Quiescing volume groups for use in snapshot LUNs

- Snapshot concepts
- Creating a snapshot
- Recognizing a snapshot
- Resolving duplicate VGIDs
- Importing a snapshot volume group
- Exporting a snapshot volume group

Self study appendix: Creating and managing DRD clones

- DRD concepts
- Using DRD clones to minimize planned and unplanned downtime
- Installing DRD
- Using the DRD command
- Creating a DRD clone
- Synchronizing a DRD clone
- Verifying a DRD clone's status
- Managing software via DRD-safe commands

- Managing kernel tunables via DRD safe commands
- Accessing images via other commands
- Activating an inactive DRD image

Self study appendix: Creating and managing logical volume snapshots

- Snapshot concepts
- Snapshot data sharing concepts
- Data unsharing unit concepts
- Fully allocated snapshot concepts
- Space efficient snapshot concepts
- Creating a volume group to accommodate snapshot volumes
- Creating a fully allocated snapshot
- Creating a space efficient snapshot
- Removing snapshots and volumes
- Snapshot Limitations
- Snapshot volumes vs. split logical volume mirrors

更多訊息

歡迎上網查詢HP教育訓練中心所有課程相關訊息及活動
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