Agenda

• Request
• Prerequisites
• Considerations
• Preparations
• Windows upgrade
• Clearpath Software Series installation, activation and configuration
Request

• Is it possible to upgrade a Libra 450 or 460 to **Software Series**?
  e.g. Bronze (GE0500) or Silver (GE1000)
• How easy is it?
• How long will it take?
## Prerequisites

<table>
<thead>
<tr>
<th></th>
<th>Libra 450</th>
<th>Libra 460</th>
<th>prerequisites ClearPath MCP Bronze (GE0500)</th>
<th>prerequisites ClearPath MCP Silver (GE1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows OS</strong></td>
<td>Windows Server 2008 R2 Enterprise x64 with SP1</td>
<td>Windows Server 2008 R2 Enterprise x64 with SP1</td>
<td>Windows Server 2012 R2</td>
<td>Windows Server 2012 R2</td>
</tr>
<tr>
<td><strong>Server</strong></td>
<td>ES3000 Model 3560T G1 (Dell T710)</td>
<td>ES3000 Model 3530T G3 (Dell T620)</td>
<td>ES3000 servers conform to the ClearPath MCP Software Series Reference Architecture</td>
<td>ES3000 servers conform to the ClearPath MCP Software Series Reference Architecture</td>
</tr>
<tr>
<td><strong>Physical processors</strong></td>
<td>One or Two Quad-Core Intel 2.8 GHz processors</td>
<td>Two Quad-Core Intel 3.3 GHz processors</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Logical Intel processors</strong></td>
<td>4 or 8 (with hyper threading disabled as recommended)</td>
<td>8 (with hyper threading disabled as recommended)</td>
<td>Minimum 2 (1 CPM) Recommended 3 (1 CPM)</td>
<td>Minimum 2 (1 CPM) Recommended 4 (2 CPM)</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>24 or 48 GB</td>
<td>64 GB</td>
<td>Minimum 2GB Recommended 40+</td>
<td>Minimum 2GB Recommended 40+</td>
</tr>
<tr>
<td><strong>Supported MCP disks</strong></td>
<td>Logical Disk or VSS1/VSS2</td>
<td>Logical Disk or VSS1/VSS2</td>
<td>Logical Disk or VSS1/VSS2</td>
<td>Logical Disk or VSS1/VSS2</td>
</tr>
<tr>
<td><strong>Number of MCP CPMs</strong></td>
<td>1 or 2</td>
<td>1 or 2</td>
<td>1</td>
<td>1 or 2</td>
</tr>
<tr>
<td><strong>MCP release</strong></td>
<td>Minimum MCP 12.0</td>
<td>Minimum MCP 14.0</td>
<td>MCP 16.0 or 17.0</td>
<td>MCP 16.0 or 17.0</td>
</tr>
<tr>
<td><strong>MCP E-Mode</strong></td>
<td>DELTA</td>
<td>DELTA</td>
<td>ETA IOA</td>
<td>ETA IOA</td>
</tr>
</tbody>
</table>
MCP migration considerations

• MCP Upgrade: skip maximum one MCP release
  – MCP 15.0 to 16.0 or 17.0
  – MCP 14.0 to 16.0
  – Older MCP releases – first update MCP to at least 14.0

• ETA systems:
  – MCP codefile must be of type ETA
  – recommendation: all system software compiled for LEVEL6
  – Applications can either be LEVEL5 or LEVEL6, but compilers used must be MCP 14.0 or higher
Windows migration considerations

• Dell systems make use of ‘Lifecycle Controller’ to install OS
  – ‘OS Drivers’ is a set of drivers installed in LC (PERC, motherboard)
  – ‘Lifecycle Controller’ and ‘OS Drivers’ in Lifecycle must be up-to-date to support installation of Windows 2012 R2

• Advised to install most recent BIOS
  – must be downloaded from Unisys ES3000 support website, as BIOS from Dell won’t work on OEM systems

• Do complete Windows OS install, not an OS upgrade

• If iDRAC configured correctly, upgrade can be done ‘remote’
Windows migration considerations

• As we will do a complete OS install, wiping the C:\ drive, make sure that there are no needed files on C:\
  • ASD files
  • Configuration files
  • User files

Notes:
- Libra’s were shipped with ASD file(s) only in the root of D:\
- Software Series systems needs all ASD files in one folder, not necessarily in the root of a drive
Preparations

• Check Dell support if style supports Windows 2012 R2
  – Libra 450 (Unisys ES3560T G1/G2 = Dell T710: is supported)
  – Libra 460 (Unisys ES3530T G3/G4 = Dell T620: is supported)

• Check if additional hardware is support in Win2012 R2
  – PCI cards (SCSI, Fiber, Network etc.)
  – Peripherals

• Inventory of configuration and installed software on Windows
  – Hostname, IP-addresses and NIC ports used, etc.
  – Dell ‘Open Manage Server Administrator’, Emulex ‘One Command’
Preparations - continued

• On existing Libra install new MCP 17.0 keys file
  – IK MERGE <keysfile-name>

• Create a folder with all 17.0 / 58.1 software
  – COPY all IC files into a folder (e.g. MCP581)
  – COPY NETSYSTEM_581xx into this folder
  – ADD SYSTEM_58150 to this folder (base release)

• COPY new SIMPLEINSTALL files and new INSTALLDATAFILE files from folder to DISK
Preparations - continued

• Save a LOG CONFIG in text-form

• For easy migration:
  – We will use the ‘Standby Haltload’ feature
  – To do so make Windows copy of ‘DISK’ ASD-file
    • and of H/L family if different
    • MCP must be halted to get consistent ASD copy
Preparations - continued

• Start ‘System Editor’ from ‘Console for MCP’
• Add new ASD to PCD and save it
Preparations - continued

• Start MCP with updated PCD
• ACQUIRE PK xxx : SAVE
• ACQUIRE CTL yyy
• LB PK xxx NAME = DISK ETA OLDNAME = DISK
• RY PK xxx
Preparations - continued

• Use SIMPLEINSTALL to make COPY jobs  (for SYSTEM & NETSYSTEM)
  – Use the correct TARGET PROCESSOR
  – COPY to DISKETA !!!
  – Save job
  – COPY ONLY !!!
  – NO INSTALL !!!
Preparations - continued

- Same name: Y
- COPY from created folder

**Destination-specific locations:**

- Files targeted for Halt/Load (MCP) family are on \* BIGDISK \*
- Non-Halt/Load files are located on \* BIGDISK \*

**Naming of source files:**

- Same names as on release media (manually copied)? (Y/N) \* Y \*
- Renamed as SYSTEM/<release ID>? (Y/N) \* N \*
- Located under current usercode? (Y/N) \* Y \*
- Located under the directory: \* MCP581 \*

Note: “Same Name = Y” will copy ETA/= files as *= (MCP581/ETA/SYSTEM/COMS as *SYSTEM/COMS)
Preparations - continued

- Verify the two jobs SI/WFLJOB/<date-time>
  - Be sure that only COPY is done and only to DISKETA !!!

- Start the jobs

- Rename new MCP file if desired

CHANGE *SYSTEM/581/ETAIOA/MCP ON DISKETA TO *SYSTEM/ETAIOA/581A26/MCP
Preparations - continued

• CM ? ALL
  – show all CM-ed MCP files

• CM <MCP-name> ON DISKETA + STANDBY

--- Mix-Time ------------------ 30 MESSAGES ------------------
43341 14:00 *SYSTEM/KEYSFILE COPIED FROM DISK TO DISKETA
43342 14:00 *SYSTEM/DSAKEYSFILE COPIED FROM DISK TO DISKETA
43341 14:00 PK515 REPLACED *SYSTEM/KEYSFILE ON DISKETA
43342 14:00 PK515 REPLACED *SYSTEM/DSAKEYSFILE ON DISKETA
43340 14:00 CM CODEFILE INCOMPATIBLE WITH THIS MACHINE
Preparations - continued

• CM ? ALL

CM Status: (2 CM’ED Families)
MCP: *SYSTEM/DELTA/581A25/MCP ON DISK
  BASE PACK: (PK500) (CURRENT HALT/LOAD FAMILY)
  CREATION DATE: Tuesday, June 28, 2016 (2016180)
  CM’ED MCP ON FAMILY INDEX: 1
  HLDUMPDISK: RESET
  STANDBY HALT/LOAD UNITS:
    DISKETA (PK515) (ON-LINE)
  MCP: *SYSTEM/ETAIOA/581A26/MCP ON DISKETA
  BASE PACK: (PK515)
  CREATION DATE: Thursday, August 4, 2016 (2016217)
  CM’ED MCP ON FAMILY INDEX: 1
  HLDUMPDISK: RESET
  STANDBY HALT/LOAD UNITS:
    DISK (PK500) (CURRENT HALT/LOAD UNIT)
Preparations - continued

• Check some files on DISK and DISKETA
  – SYSTEM/COMS, SYSTEM/TCPIPSUPPORT
  – on DISK should still be LEVEL5, on DISKETA should be LEVEL6

• CLOSE PK xxx (DISKETA)

• SV PK xxx

• LB PK xxx NAME=DISK OLDNAME=DISKETA
Prepare for Windows upgrade

- Full backup of Windows environment
  - Use ‘Windows Server Backup’
    - Set options ‘System State’, ‘Bare Metal’
  - If you want to include MCP ASD-files
    - Halt MCP to have consistent ASD-files
  - Destination remote share
    - to be able to do ‘Bare Metal recovery’
Prepare for Windows upgrade

• Download BIOS from Unisys Support website
  – Libra 450
  – Libra 460
  – Download LC-Legacy and OS Drivers from Dell
    • Enter correct Dell Service Tag number
    • Go to ‘Drivers and Downloads’
    • ‘Change OS’ to Windows 2012 R2
Prepare for Windows upgrade

Example for Libra 450

- Lifecycle controller
  - Lifecycle Controller - Legacy (6 files)
    - Dell Lifecycle Controller v1.7.5
      - File Name: Lifecycle-Controller_Legacy_Application_0WFGM_WN64_1.7.5.4_A00.EXE
      - Description: Update Package for Microsoft® Windows® 64-Bit. (24.18 MB)
      - Importance: Recommended
      - Release Date: 25 Jun 2015

- OS Drivers
  - Drivers for OS Deployment (2 files)
    - Dell OS Driver Pack
      - File Name: T710_Drivers-for-OS-Deployment_Application_D6YHJ_WN64_15.04.00_A00.EXE
      - Description: Update Package for Microsoft® Windows® 64-Bit. (128.16 MB)
      - Importance: Recommended
      - Release Date: 24 Apr 2015
Prepare for Windows upgrade

• Halt MCP, shutdown MCP Control
  – as reboots are needed

• Install BIOS, LCC and OS Drivers from within Windows

• Reboot as requested
Prepare for Windows upgrade

- When installing from ‘remote’ attach virtual media
Prepare for Windows upgrade

• And insert a Windows Server 2012 R2 ISO in the virtual drive
Windows upgrade

• Connect to iDRAC, start ‘Virtual Console’ and ‘Restart Windows’

• During BOOT press F10 to ‘Enter System Services’
Windows upgrade

• In ‘Unified Server Configurator’ select ‘OS Deployment’
Windows upgrade

- Skip the RAID configuration
Windows upgrade

- Select OS

Operating Systems

- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2008 x86 with SP2
- Microsoft Windows Server 2008 x64 with SP2
- Microsoft Windows Server 2008 R2 with SP1
- Red Hat Enterprise Linux 5.9 x86
Windows upgrade

- Lifecycle Controller will install the appropriate drivers during OS installation
Windows upgrade

- Select BIOS installation mode

![BIOS selection screen]

Drag the selection to hide the screen.

Select an Operating System

Insert OS Media

Reboot the System

Deploy OS

Select an Operating System (Step 1 of 3)

The selected Operating System supports the following supported modes.

- UEFI
- BIOS

Note: Once the OS Deployment wizard completes the selected installation mode.
Windows upgrade

• And let the installation start
Windows upgrade

• Don’t forget to ‘Press any key to boot from CD or DVD’
Windows upgrade

• And do a normal OS installation
Windows upgrade

• Do a full install on the C:\ drive
Windows upgrade completion

• Installation is done
• Check Event logs
  – Used OS Drivers image may not contain the latest drivers.
• Do ‘Windows Update’
Clearpath Software Series Installation

- Follow ‘Getting started guide’
- Extract DVD content to a disk folder
- Copy XML-file received in email into the folder COD
  Customer Order Data => activation
- Start MIM.EXE
- Select folders for MCP disks and diagnostics and ‘Start Install’
- Tool will check available space
Clearpath Software Series Installation

- Before the requested reboot, remove new ‘diskxxx.asd’ from Disks folder and move all your ASD-files into specified folder
  - Except the ASD file containing the old DELTA MCP
  - Optionally, rename ASD file e.g. DISKETA.ASD => DISK.ASD
Clearpath Software Series Installation

- Build PCD
- Select 2\textsuperscript{nd} CPM and NIC-ports
  - modify ‘Shared’ attribute
- Set Active
Clearpath Software Series Installation

• Setup HL Settings
  – Primary Disk is ETA disk
  – Choose ODT

• Setup System Settings
Clearpath Software Series Installation

- LOAD => DEADSTOP 28B (due to modified PK and Channel numbers)

- Continue
  - System will start as ‘MINIMAL’
  - CPM 0
  - HL DISK
  - HL ODT
Clearpath Software Series Installation

- UP PK xxx - yyy
- UP SC x – y
- UP CHAN x (one for each SC)
Clearpath Software Series Installation

• Handle waiting entries:
  – CATALOG FAMILY MISSING
    • IL PK <disk unitno>
  – STANDBY HALT/LOAD UNIT DISKETA NOT FOUND
    • OK
    • CM - STANDBY ON DISKETA
  – If ‘NO FILE CONFIGURATION/NETWORKSUPPORT/MINIMALNAME’
    • COPY *CONFIGURATION/NETWORKSUPPORT/DEFAULTNAME AS *
      CONFIGURATION/NETWORKSUPPORT/MINIMALNAME

• System is now running, but very slow as it is ‘unlicensed’.
Clearpath Software Series Activation

- IK IPSHOW ALL
- Go to Unisys Download Center
- Use login from Welcome Letter
- Submit activation code => activation key
- IK ADD <activation key>

Clearpath Software Series Activated

- System is activated
  - UP CPM 1
    => 2 CPMs
  - 100% performance each
- Correct INIT files
  - Matching ICPDEVICEID and LINEID
- Run SIMPLEINSTALL
  - INSTALL ONLY (no COPY)!!!
  - To correct SL’s that need to be changed
Clearpath Software Series configuration

• Update-compile databases due to changed DMS level

• Some additional actions needed on Windows
  – Minimum NTLM Session security
    • uncheck 'Require 128-bit encryption'
  – Enable NETBIOS over TCP (optional)
  – Setup hosts (and lmhosts) file to use EVLAN for MCP connection
    • IP-addresses used: MCP 192.168.16.5/30 – EVLAN 192.168.16.6/30
  – Install MCP-utils using ‘Installation Assistant’ on \<mcp>\INSTALLS
Request answered

• Is it possible to upgrade an existing Libra 450 or 460 to a Software Only Bronze or Silver environment?
  – Yes, but beware of limitations for existing peripherals

• How easy is it?
  – Need a lot of preparation, but is relatively easy

• How long will it take?
  – Including preparation, copy ASD, Dell software download, backup of Windows and do Windows Updates etc.: several days
Questions

ARE THERE ANY QUESTIONS?
Answers

• How to handle ‘No tape drives’ in virtual environments?
  – Using ‘Containers’ with wrap and unwrap – needs additional license
  – Using extra ASD file(s)
    • Backup to additional ASD disk/family
    • Close and save disk/family
    • Use Windows copy to backup ASD file(s)
Answers

• Performance
  – Processor performance depends on Intel CPU speed, cache size etc.
  – Read ‘Compatibility Guide’ for notes on Intel processors, performance and advised BIOS settings
Answers

• No DVD drive (inside MCP)
  – Note in Compatibility Guide: Unisys does not support the use of DVD/CD devices in a Software Series environment. While it’s possible they may function in certain environments, their proper functioning is not guaranteed.
  – Use a virtual DVD drive and mount MCP ISO
    • Elaborate Bytes Virtual CloneDrive (free tool)
    • DVDFab Virtual Drive (free tool)
  – Copy MCP container files to MCP share
Answers

• Want to get some experience with Software Series
  - Download MCP Express
    http://www.unisys.com/offerings/high-end-servers/clearpath-forward-systems/clearpath-mcp-software

  • ClearPath MCP Express is a free, PC-based ClearPath MCP operating environment. Students, teachers, hobbyists and ClearPath enthusiasts can use it for non-production evaluation, personal or educational purposes to explore and practice developing and testing ClearPath MCP-based applications. Existing ClearPath MCP users can similarly use it to expand their knowledge of the ClearPath MCP environment. It is downloadable from Unisys.com and it is free of charge.

  • The software license expires on July 31st of each calendar year and must be renewed by re-registering with Unisys and then downloading and installing a new package.