

## **synopsis**

The following is a brief article on the steps required to recover a non-bootable CLARiiON CX700 array. It assumes that there are no hardware faults with the array itself, that you have access to the Vault disks in the array (0/0/0 - 0/0/4), and that you have a laptop with network connectivity and the CLARiiON service cable for serial connectivity.

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It's strange to think of EMC's CX700 CLARiiON array as a "legacy" array. Yet it's now two generations behind EMC's flagship mid-range array – the CX4-960. Our project was given access to two CX700s to use as test arrays for a multi-site data centre project we're working on. That's cool, as the CX700 is still a reasonably well-specced array, with multiple back-end loops and a fair bit of useable cache (at least compared to the CX4-120). So after the data centre guys Macguyvered the kit into racks that were too big for the rails, we cabled the lot up and thought it would be a fairly trivial process to get everything up and running.

As usual, I was wrong. The department that had provided these hand-me-down arrays had bought a service from EMC whereby the data was securely erased. For those of you playing at home, this is known as the "[Certified Data Erasure Service](#)", and you can grab the datasheet from [here](#). So basically, these arrays were saved from the scrapheap, but not before they were rendered basically unbootable.

When we powered them up, we got the following output via the terminal:

```
Disk 2 Read Error 0x00000187
Number Sectors: 1
LBA: 0x0002284B
Buffer: 0x1000A114
DDBS: Can't read MDB from first disk.
DDBS: Can't read MDB from second disk.
DDBS: Using first disk for boot - but inaccessible.
FLARE image (0x00400007) located at sector LBA 0x0002284C
Disk Set: 0
ErrorCode: 0x0000018D
ErrorDesc:
Device: BOOT PATH
FRU: STORAGE PROCESSOR
Description: Dual-Mode Fibre Driver Exchange Error!
DualMode Driver Exchange Status: 0x1000000C
Target ID: 0x00
EndError:
ErrorTime: 01/19/2010 05:07:11
```

**Figure 1 - Initial Boot Error**

(the full boot log can be found [here](#))

So I tried booting to the utility partition via the DDBS submenu. You would be familiar with this submenu if you've ever performed an out-of-family array conversion, it's where you go to run the conversion image over the new array and tell FLARE that it's brain is, er, bigger. In any case, this can be accessed by pressing ESC during the initial POST and then typing in "DB\_key". Note that on newer CX3 and CX4 arrays, you don't press ESC anymore, but rather CTRL-C is used to break the boot. You'll then be presented with menus that look something like this:

```
Copyright (c) EMC Corporation , 2007
Disk Array Subsystem Controller
Model: CX700: SAN GBFCC4
DiagName: Extended POST
DiagRev: Rev. 02.39
Build Date: Fri Jul 13 16:36:03 2007
StartTime: 01/19/2010 05:38:05
SaSerialNo: LKE00051202843
AabcdefgBCDEabFabcdGHabIabcJabKabLab
EndTime: 01/19/2010 05:38:20
... Storage System Failure - Contact your Service Representative ...
*****
***** Aborting!!!! *****

Hit ESC to begin running diagnostic menu...
          Diagnostic Menu
1)  Reset Controller           3)  DDBS Service Sub-Menu
2)  Display Warnings/Errors   4)  FCC Boot Sub-Menu
Enter Option : 3
```

## Figure 2 - Diagnostics Menu

So I select option 3, and then attempt the Utility Partition Boot and get the following:

```

1) Drive Slot ID Check      2) Utility Partition Boot
   0) Exit

Enter Option : 2
DDBS: K10_REBOOT_DATA: Count = 0
DDBS: K10_REBOOT_DATA: State = 0
DDBS: K10_REBOOT_DATA: ForceDegradedMode = 0
DDBS: Read default MDDE off disk 1
DDBS: MDDE (Rev 2) on disk 1
DDBS: Read default DDE (0x40000F) off disk 1
DDBS: Read default MDDE off disk 3
DDBS: MDDE (Rev 2) on disk 3
DDBS: Read default DDE (0x400010) off disk 3
DDBS: Can't read MDB from first disk.
DDBS: Can't read MDB from second disk.
DDBS: Using first disk for boot - but inaccessible.
Utility Partition image (0x0040000F) located at sector LBA 0x00BE804C
Disk Set: 1
ErrorCode: 0x00000187
ErrorDesc:
Device: DIAG MENU
FRU: STORAGE PROCESSOR
Description: Disk not logged in Error!
Target ID: 0x01
Targets Found: 0xF000FF53
EndError:
ErrorTime: 01/19/2010 05:39:52

```

## Figure 3 - Utility Partition Boot failure

(the full boot log can be found [here](#))

Okay, so that's not cool. I had hoped that I would be able to boot from the Utility Partition, because the process to load the Recovery Image either from the repository or via ftp is fairly simple. At this point we started to think of a number of whacky alternatives that could be used, including, but not limited to, reconstructing the FLARE disks from another CX700's hot spares, using the Vault disks from a CX300 and performing an in-place conversion to a CX700, and begging and pleading with our local EMC office for a Vault pack. None of these options really struck us as awesome ideas.

My trawling for solutions, however, did yield a rather interesting nugget of information. For those of you with access to Powerlink, there's an article entitled "*CX700 array unmanaged and fails to display its serial number after changing WWN seed array*". This article also goes by the ID emc119598 and discusses the process to rectify the array's WWN seed after a conversion from a CX500 to a CX700. The great thing about this article was not so much the solution provided as the alternative method described to access the CLARiiON's Diagnostics Menu. To wit, using the password "**SHIP\_it**" yields a menu subsystem that is dramatically different from the one provided with "**DB\_key**". The results are below, the full transcript can be downloaded [here](#):

```

Copyright (c) EMC Corporation , 2007
Disk Array Subsystem Controller
Model: CX700: SAN GBFCC4
DiagName: Extended POST
DiagRev: Rev. 02.39
Build Date: Fri Jul 13 16:36:03 2007
StartTime: 01/21/2010 22:04:18
SaSerialNo: LKE00051202843
Aabcdefghijklmnopqrstuvwxyz
EndTime: 01/21/2010 22:04:19
... Storage System Failure - Contact your Service Representative ...

```

```

*****
***** Aborting!!!! *****

Hit ESC to begin running diagnostic menu...
    
```

**Figure 4 - Diagnostic Service Menu**

Entering the alternative password, we see the following output:

```

Diagnostic Menu
1)  Reset Controller           21) BE1 FCC Sub-Menu
2)  Enter Debugger            22) CMI0 FCC Sub-Menu
3)  Display Warnings/Errors   23) CMI1 FCC Sub-Menu
4)  Boot OS                   24) AUX0 FCC Sub-Menu
5)  POST Sub-Menu             25) AUX1 FCC Sub-Menu
6)  Display/Change Privilege  26) FE0 FCC Sub-Menu
7)  Boot UProc Sub-Menu       27) FE1 FCC Sub-Menu
8)  Ap UProc Sub-Menu         28) FE2 FCC Sub-Menu
9)  Real Time Clock Sub-Menu  29) FE3 FCC Sub-Menu
10) Pers. Module Sub-Menu     30) POST ROM Sub-Menu
11) RAM Sub-Menu              31) BIOS ROM Sub-Menu
12) NOVRAM Sub-Menu           32) System Test Sub-Menu
13) Console UART Sub-Menu     33) Image Sub-Menu
14) SPS UART Sub-Menu         34) Disk Sub-Menu
15) LCC 0 UART Sub-Menu       35) Resume PROM Sub-Menu
16) LCC 1 UART Sub-Menu       36) Voltage Margin Sub-Menu
17) LCC 2 UART Sub-Menu       37) Information Display
18) LCC 3 UART Sub-Menu       38) ICA Sub-Menu
19) LAN Service Port Sub-Menu 39) DDBS Service Sub-Menu
20) BE0 FCC Sub-Menu          40) FCC Boot Sub-Menu

Enter Option : 33
    
```

**Figure 5 - Full Diagnostic Service Menu**

Option 33 is what we're interested in to start with. From here you can perform a Utility Partition Boot.

```

Image Sub-Menu
1)  Init Loop                  6)  Exit Loop
2)  Serial Download            7)  Relocate/Run Image
3)  Load from disk             8)  Display Sector Protection
4)  Save to disk               9)  Utility Partition Boot
5)  Update Firmware           0)  Exit

Enter Option : 9

Relocating Data Directory Boot Service (DDBS: Rev. 02.12)...
DDBS: K10_REBOOT_DATA: Count = 0
DDBS: K10_REBOOT_DATA: State = 0
DDBS: K10_REBOOT_DATA: ForceDegradedMode = 0
DDBS: Read default MDDE off disk 1
DDBS: MDDE (Rev 2) on disk 1
DDBS: Read default DDE (0x40000F) off disk 1
DDBS: Read default MDDE off disk 3
DDBS: MDDE (Rev 2) on disk 3
DDBS: Read default DDE (0x400010) off disk 3
DDBS: MDB read from both disks.
DDBS: DD invalid on both disks, continuing...
DDBS: Disk WWN seeds match each other but not chassis WWN seed.
DDBS: First disk is valid for boot.
DDBS: Second disk is valid for boot.
    
```

**Figure 6 - Utility Partition Boot**

[snip]

```

ICA::UtilityFrontEnd
(c) EMC Corporation 2001-2004 All Rights Reserved
DiagName: ICA::UtilityFrontEnd
    
```

```

DiagRev: 02.16.700.5.001
StartTime: 01/21/10 22:08:37
OS Type.....WinXP
SMBUS.....Running
SPID.....Running
ASIDC.....Running
ASIRAMDisk.....Running
ICA.....Running
FileZilla Server.....Running
Connecting to ICA.....Success
SP Type.....CX700
SP ID.....A
SP Signature......0x08291953
Checking Image Repository.....
    ICA::IRFS no valid Volume was found on this system
    ICA::IRFS Creating new Volume
    ICA::IRFS Finished creating new volume
    ICA::IRFS Checking Volume for consistency
Sizing Image Repository.....1024 MB
Sizing RAM Disk......2039 MB
Discovering Management LAN Port...ManagementPort0
Checking LAN Port State.....Not Configured
Checking LAN Port Config......Not Found
Loading Plugins......Done
EndTime: 01/21/10 22:09:03
    
```

**Figure 7 - Utility Partition Boot**

Now that's what I wanted to see :) – from here we just need to reload the FLARE image with ftp.

Having successfully performed a Utility Partition Boot, it's necessary to get the LAN service ports on the array configured in order to be able to ftp the recovery image to the array. Obviously, you'll need the array and your service laptop plugged into a network-type thing that will enable frank communication between the arrays and you.

```

=====
CLARiiON Utility Toolkit Main Menu
=====
1) About the Utility Toolkit
2) About this Array
3) Reset Storage Processor
4) Image Repository Sub-Menu
5) Plugin Sub-Menu
6) NVRAM Sub-Menu
7) Enable LAN Service Port
8) Enable Engineering Mode
9) Install Images
Enter Option: 7
    
```

**Figure 8 - Utility Toolkit Main Menu**

```

=====
Please enter the network settings you wish to use for this SP
=====
IP Address: 192.168.0.2
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.0.255
Host Name: spa
Domain Name:
    
```

**Figure 9 - SP Network Settings**

```

=====
Confirm Network Settings
=====
IP Address: 192.168.0.2
    
```

```

Subnet Mask:      255.255.255.0
Default Gateway: 192.168.0.255
Host Name:       spa
Domain Name:
Enable LAN Service Port with these settings? y/n [y]
The LAN Service Port has been enabled
Automatically enable the LAN Port with these settings in the future? y/n [y] n
Press the Enter key to continue...

```

Figure 10 - Confirm Network Settings

Once you've enabled the LAN port on the SP you're connected to, you need to ftp the image to the SP's repository. The username to use is **Clariion**, and the password is **clariion!**. Once you've logged in, run a put command to put the file up there. It doesn't really matter what you call it, but it should be a file of type mif. Here's a pointless text capture of the ftp login process:

```

C:\>ftp 192.168.0.2
Connected to 192.168.0.2.
220-FileZilla Server version 0.8.3 beta test release 1
220-written by Tim Kosse (Tim.Kosse@gmx.de)
220 Please visit http://sourceforge.net/projects/filezilla/
User (192.168.0.2:(none)): Clariion
331 Password required for clariion
Password:
230 Logged on
ftp> ls
200 Port command successful
150 Opening data channel for directory list.
FLARE.mif
226 Transfer OK
ftp: 11 bytes received in 0.00Seconds 11000.00Kbytes/sec.
ftp>

```

Figure 11 - FTP to SP

Once you've successfully uploaded the recovery image, you'll be good to go. It's also important to note that the FLARE recovery image should be for the release that you intend to run. I didn't consider uploading a Release 19 image, as I knew that these arrays had run Release 26 previously. In any case, jumping back into the Image menu on the terminal, it's now time to copy the image from the RAM disk and then load it.

```

=====
CLARiION Utility Toolkit Main Menu
=====
1) About the Utility Toolkit
2) About this Array
3) Reset Storage Processor
4) Image Repository Sub-Menu
5) Plugin Sub-Menu
6) NVRAM Sub-Menu
7) View LAN Service Port Settings
8) Enable Engineering Mode
9) Install Images

Enter Option: 4

```

Figure 12 - Utility Toolkit Main Menu

```

=====
CLARiION Utility Toolkit Image Repository Menu
=====
1) Back to the Main Menu
2) List Image Repository Contents
3) Delete Files from the Image Repository
4) Copy Files from the RAM Disk to the Image Repository
5) Copy Files from the Image Repository to the RAM Disk
Enter Option: 4

```

```

=====
Select files to copy to the Image Repository
=====
1) FLARE.mif
Enter comma separated list of options: 1
Copying FLARE.mif to the Image Repository... Success
Press the Enter key to continue...

=====
CLARiON Utility Toolkit Image Repository Menu
=====
1) Back to the Main Menu
2) List Image Repository Contents
3) Delete Files from the Image Repository
4) Copy Files from the RAM Disk to the Image Repository
5) Copy Files from the Image Repository to the RAM Disk
Enter Option: 1
    
```

Figure 13 - Image Repository

```

=====
CLARiON Utility Toolkit Main Menu
=====
1) About the Utility Toolkit
2) About this Array
3) Reset Storage Processor
4) Image Repository Sub-Menu
5) Plugin Sub-Menu
6) NVRAM Sub-Menu
7) View LAN Service Port Settings
8) Enable Engineering Mode
9) Install Images

Enter Option: 9

=====
Select Images to Install
=====
1) FLARE.mif
Enter comma separated list of options: 1
=====
Confirm Image Installation
=====
    FLARE.mif
    
```

Figure 14 - Recovery Image Installation

You need to install this only on the SP that you have visibility of, as troubleshooting the installation to both SPs is tricky.

```

Are you sure you want to install these images? y/n [n] y
=====
Select Storage Processors to install images for
=====
1) This SP (SP A)
2) Peer SP (SP B)
3) Both SP's
Enter Option: 1

Installing Data Directory Boot Service 02.12
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%
|--|--|--|--|--|--|--|--|--|--|
*****
The COPY operation has completed successfully.
Installing BIOS 03.70
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%
|--|--|--|--|--|--|--|--|--|--|
*****
The COPY operation has completed successfully.
Installing Extended POST 02.38
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%
    
```

```

|--|--|--|--|--|--|--|--|--|--|
*****
The COPY operation has completed successfully.
Installing FLARE Image 02.26.700.5.005
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%
|--|--|--|--|--|--|--|--|--|--|
*****
The COPY operation has completed successfully.
Press the Enter key to continue...
    
```

**Figure 15 - Recovery Image Copy**

Once the copy has completed successfully, the system needs to be reset, and you'll see the SP reboot up to three times before it's useable.

```

=====
CLARiON Utility Toolkit Main Menu
=====
1) About the Utility Toolkit
2) About this Array
3) Reset Storage Processor
4) Image Repository Sub-Menu
5) Plugin Sub-Menu
6) NVRAM Sub-Menu
7) View LAN Service Port Settings
8) Enable Engineering Mode
9) Install Images
Enter Option: 3

Requesting System Reset
    
```

**Figure 16 - System Reset**

Once this is complete, you can either load the recovery image to the other SP via Navisphere in Engineering Mode, or you can use the same method as described above. Note that, once the image is copied to the repository, it is not necessary to re-upload it, as both SPs have access to the files.

The normal process needs to be followed as would normally be followed to initialise an array. In my case I connected to the SPs with the serial cable and, using PPP, initialised security, setup IP addresses for the SPs, logged in, committed the FLARE (R26.005), enabled Access Logix, and configured cache settings. Once the arrays were feeling happy I upgraded FLARE to the latest (R26.028), reloaded the latest Utility Partition and Recovery Images, and went about loading the appropriate enablers for the array. And now we have a working lab :)



## appendix a - initial error

Copyright (c) EMC Corporation , 2007  
Disk Array Subsystem Controller  
Model: CX700: SAN GBFCC4  
DiagName: Extended POST  
DiagRev: Rev. 02.39  
Build Date: Fri Jul 13 16:36:03 2007  
StartTime: 01/19/2010 05:06:19  
SaSerialNo: LKE00051202843

AabcdeFGBCDEabFabcdGHabIabcJabKabLabMabcNabOabPabQabRabSabTabUabVabWabXYZAA

Initializing back end FIBRE...

PCI Config Reg: 2.4.1 0x0157

FCDMTL 0 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x397D6020

AG: init DMD to FC\_SPEED\_2\_GBPS

FCDMTL 0 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x396DE800

FCDMTL 0 [2.4.1] Noncached memory - 0xC037F bytes @ 0x3961E420 (0x3961E420 phys)

FCDMTL 0 [2.4.1] DVM Initialized

FCDMTL 0 [2.4.1] IMQ base ptr = 39690000; IMQ length = 8000

Dualmode fibre init completed

FCDMTL 0 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1

FCDMTL 0 [2.4.1] TPM Hndle API Event: cntx=0x397D64E4, evnt=0x4002, info=0x0

FCDMTL 0 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84

Link Event: 0x00030005

Device Event (0xEF): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE8): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE4): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE2): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE1): 0x00030012, tach\_ptr: 0x3C0486E0

DL waited 1s for discovery

Target 0 is online

Target 1 is online

Target 2 is online

Target 3 is online

Target 4 is online

Relocating Data Directory Boot Service (DDBS: Rev. 02.12)...

Autoflash POST?

DDBS: Read default MDDE off disk 2  
DDBS: MDDE (Rev 2) on disk 2  
DDBS: Read default DDE (0x400002) off disk 2

POST/DIAG image located at sector LBA 0x00012048

Initializing back end FIBRE...

PCI Config Reg: 2.4.1 0x0157

FCDMTL 1 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x3959DBE0

AG: init DMD to FC\_SPEED\_2\_GBPS

FCDMTL 1 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x396DEF20

FCDMTL 1 [2.4.1] Noncached memory - 0xC037F bytes @ 0x3961EB40 (0x3961EB40 phys)

FCDMTL 1 [2.4.1] DVM Initialized

FCDMTL 1 [2.4.1] IMQ base ptr = 39690000; IMQ length = 8000

Dualmode fibre init completed

FCDMTL 1 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1

FCDMTL 1 [2.4.1] TPM Hndle API Event: cntx=0x3959E0A4, evnt=0x4002, info=0x0

FCDMTL 1 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84

Link Event: 0x00030005

Device Event (0xEF): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE8): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE4): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE2): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE1): 0x00030012, tach\_ptr: 0x3C0486E0

DL waited 1s for discovery

Target 0 is online

Target 1 is online

Target 2 is online

Target 3 is online

Target 4 is online

DDBS: Read default MDDE off disk 2  
DDBS: MDDE (Rev 2) on disk 2  
DDBS: Read default DDE (0x400002) off disk 2

POST/DIAG image located at sector LBA 0x00012048

Initializing back end FIBRE...

```
PCI Config Reg: 2.4.1 0x0157
FCDMTL 2 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x3959DBE0
AG: init DMD to FC_SPEED_2_GBPS
FCDMTL 2 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x394A6340
FCDMTL 2 [2.4.1] Noncached memory - 0xC037F bytes @ 0x393E5F60 (0x393E5F60 phys)
FCDMTL 2 [2.4.1] DVM Initialized
FCDMTL 2 [2.4.1] IMQ base ptr = 39470000; IMQ length = 8000
```

Dualmode fibre init completed

```
FCDMTL 2 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1
FCDMTL 2 [2.4.1] TPM Hndle API Event: cntx=0x3959E0A4, evnt=0x4002, info=0x0
FCDMTL 2 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84
Link Event: 0x00030005
Device Event (0xEF): 0x00030012, tach_ptr: 0x3C0486E0
Device Event (0xE8): 0x00030012, tach_ptr: 0x3C0486E0
Device Event (0xE4): 0x00030012, tach_ptr: 0x3C0486E0
Device Event (0xE2): 0x00030012, tach_ptr: 0x3C0486E0
Device Event (0xE1): 0x00030012, tach_ptr: 0x3C0486E0
```

DL waited 1s for discovery

```
Target 0 is online
Target 1 is online
Target 2 is online
Target 3 is online
Target 4 is online
```

```
DDBS: Read default MDDE off disk 2
DDBS: MDDE (Rev 2) on disk 2
DDBS: Read default DDE (0x400002) off disk 2
```

POST/DIAG image located at sector LBA 0x00012048

Autoflash BIOS?

Initializing back end FIBRE...

```
PCI Config Reg: 2.4.1 0x0157
FCDMTL 3 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x39755FC0
AG: init DMD to FC_SPEED_2_GBPS
FCDMTL 3 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x394A6340
FCDMTL 3 [2.4.1] Noncached memory - 0xC037F bytes @ 0x393E5F60 (0x393E5F60 phys)
FCDMTL 3 [2.4.1] DVM Initialized
```

FCDMTL 3 [2.4.1] IMQ base ptr = 39470000; IMQ length = 8000

Dualmode fibre init completed

FCDMTL 3 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1

FCDMTL 3 [2.4.1] TPM Hndle API Event: cntx=0x39756484, evnt=0x4002, info=0x0

FCDMTL 3 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84

Link Event: 0x00030005

Device Event (0xEF): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE8): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE4): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE2): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE1): 0x00030012, tach\_ptr: 0x3C0486E0

DL waited 1s for discovery

Target 0 is online

Target 1 is online

Target 2 is online

Target 3 is online

Target 4 is online

DDBS: Read default MDDE off disk 2

DDBS: MDDE (Rev 2) on disk 2

DDBS: Read default DDE (0x400001) off disk 2

BIOS image located at sector LBA 0x00011048

Initializing back end FIBRE...

PCI Config Reg: 2.4.1 0x0157

FCDMTL 4 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x3959DB40

AG: init DMD to FC\_SPEED\_2\_GBPS

FCDMTL 4 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x3965EEC0

FCDMTL 4 [2.4.1] Noncached memory - 0xC037F bytes @ 0x394DD780 (0x394DD780 phys)

FCDMTL 4 [2.4.1] DVM Initialized

FCDMTL 4 [2.4.1] IMQ base ptr = 39550000; IMQ length = 8000

Dualmode fibre init completed

FCDMTL 4 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1

FCDMTL 4 [2.4.1] TPM Hndle API Event: cntx=0x3959E004, evnt=0x4002, info=0x0

FCDMTL 4 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84

Link Event: 0x00030005

Device Event (0xEF): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE8): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE4): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE2): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE1): 0x00030012, tach\_ptr: 0x3C0486E0

DL waited 1s for discovery

Target 0 is online

Target 1 is online

Target 2 is online

Target 3 is online

Target 4 is online

DDBS: Read default MDDE off disk 2

DDBS: MDDE (Rev 2) on disk 2

DDBS: Read default DDE (0x400001) off disk 2

BIOS image located at sector LBA 0x00011048

Initializing back end FIBRE...

PCI Config Reg: 2.4.1 0x0157

FCDMTL 5 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x39755FC0

AG: init DMD to FC\_SPEED\_2\_GBPS

FCDMTL 5 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x394A6A40

FCDMTL 5 [2.4.1] Noncached memory - 0xC037F bytes @ 0x393E6660 (0x393E6660 phys)

FCDMTL 5 [2.4.1] DVM Initialized

FCDMTL 5 [2.4.1] IMQ base ptr = 39470000; IMQ length = 8000

Dualmode fibre init completed

FCDMTL 5 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1

FCDMTL 5 [2.4.1] TPM Hndle API Event: cntx=0x39756484, evnt=0x4002, info=0x0

FCDMTL 5 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84

Link Event: 0x00030005

Device Event (0xEF): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE8): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE4): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE2): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE1): 0x00030012, tach\_ptr: 0x3C0486E0

DL waited 1s for discovery

Target 0 is online

Target 1 is online

Target 2 is online

Target 3 is online

Target 4 is online

DDBS: Read default MDDE off disk 2  
DDBS: MDDE (Rev 2) on disk 2  
DDBS: Read default DDE (0x400001) off disk 2

BIOS image located at sector LBA 0x00011048

EndTime: 01/19/2010 05:07:10

DDBS: K10\_REBOOT\_DATA: Count = 0  
DDBS: K10\_REBOOT\_DATA: State = 0  
DDBS: K10\_REBOOT\_DATA: ForceDegradedMode = 0

DDBS: SP A Normal Boot Partition

Disk 0 Read Error 0x0000018D  
Number Sectors: 1  
LBA: 0x00001000  
Buffer: 0x1000A31C

Disk 0 Read Error 0x0000018D  
Number Sectors: 1  
LBA: 0x00001400  
Buffer: 0x1000A524  
DDBS: Read default MDDE off disk 0  
DDBS: MDDE (Rev 2) on disk 0  
DDBS: Read default DDE (0x400007) off disk 0

Disk 0 Read Error 0x0000018D  
Number Sectors: 1  
LBA: 0x0002284B  
Buffer: 0x10009F0C

Disk 2 Read Error 0x00000187  
Number Sectors: 1  
LBA: 0x00001000  
Buffer: 0x1000A31C

Disk 2 Read Error 0x00000187  
Number Sectors: 1  
LBA: 0x00001400  
Buffer: 0x1000A524  
DDBS: Read default MDDE off disk 2  
DDBS: MDDE (Rev 2) on disk 2  
DDBS: Read default DDE (0x400008) off disk 2

Disk 2 Read Error 0x00000187  
Number Sectors: 1  
LBA: 0x0002284B  
Buffer: 0x1000A114

DDBS: Can't read MDB from first disk.  
DDBS: Can't read MDE from second disk.  
DDBS: Using first disk for boot - but inaccessible.

FLARE image (0x00400007) located at sector LBA 0x0002284C

Disk Set: 0  
ErrorCode: 0x0000018D

ErrorDesc:  
Device: BOOT PATH  
FRU: STORAGE PROCESSOR  
Description: Dual-Mode Fibre Driver Exchange Error!  
DualMode Driver Exchange Status: 0x1000000C  
Target ID: 0x00  
EndError:  
ErrorTime: 01/19/2010 05:07:11

## appendix b - ddbb error

Copyright (c) EMC Corporation , 2007  
Disk Array Subsystem Controller  
Model: CX700: SAN GBFCC4  
DiagName: Extended POST  
DiagRev: Rev. 02.39  
Build Date: Fri Jul 13 16:36:03 2007  
StartTime: 01/19/2010 05:38:05  
SaSerialNo: LKE00051202843

AabcdefgBCDEabFabcdGHabIabcJabKabLab

EndTime: 01/19/2010 05:38:20

.... Storage System Failure - Contact your Service Representative ...

\*\*\*\*\*

\*\*\*\*\* Aborting!!!! \*\*\*\*\*

Hit ESC to begin running diagnostic menu...

□[H□[2J

Diagnostic Menu

- |                            |                          |
|----------------------------|--------------------------|
| 1) Reset Controller        | 3) DDBS Service Sub-Menu |
| 2) Display Warnings/Errors | 4) FCC Boot Sub-Menu     |

Enter Option : 3



[H][2J

DDBS Service Sub-Menu

- 1) Drive Slot ID Check
- 2) Utility Partition Boot
- 0) Exit

Enter Option : 1

Which Back End Loop?

- 0 - BE Loop 0
- 1 - BE Loop 1
- 2 - AUX Loop 0
- 3 - AUX Loop 1

Enter number (0-3) [0]:

Initializing back end FIBRE...

PCI Config Reg: 2.4.1 0x0157

FCDMTL 0 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x397E3680

AG: init DMD to FC\_SPEED\_2\_GBPS

FCDMTL 0 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x396EBE60

FCDMTL 0 [2.4.1] Noncached memory - 0xC037F bytes @ 0x3962BAA0 (0x3962BAA0 phys)

FCDMTL 0 [2.4.1] DVM Initialized

FCDMTL 0 [2.4.1] IMQ base ptr = 396B0000; IMQ length = 8000

Dualmode fibre init completed

FCDMTL 0 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1

FCDMTL 0 [2.4.1] TPM Hndle API Event: cntx=0x397E3B44, evnt=0x4002, info=0x0

FCDMTL 0 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84

Link Event: 0x00030005

Device Event (0xEF): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE8): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE4): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE2): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE1): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xE0): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xDC): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xDA): 0x00030012, tach\_ptr: 0x3C0486E0

Device Event (0xD9): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD6): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD5): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD4): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD3): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD2): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD1): 0x00030012, tach\_ptr: 0x3C0486E0

DL waited 1s for discovery

Target 0 is online  
Target 1 is online  
Target 2 is online  
Target 3 is online  
Target 4 is online  
Target 5 is online  
Target 6 is online  
Target 7 is online  
Target 8 is online  
Target 9 is online  
Target 10 is online  
Target 11 is online  
Target 12 is online  
Target 13 is online  
Target 14 is online

Relocating Data Directory Boot Service (DDBS: Rev. 02.12)...

Drive Slot Check Report for Back End Loop 0

-----

Checking LOOP 0

ERRORS found:

SLOT 1 (Encl 0, Slot 1): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 2 (Encl 0, Slot 2): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 3 (Encl 0, Slot 3): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 4 (Encl 0, Slot 4): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 5 (Encl 0, Slot 5): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 6 (Encl 0, Slot 6): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 7 (Encl 0, Slot 7): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 8 (Encl 0, Slot 8): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 9 (Encl 0, Slot 9): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 10 (Encl 0, Slot 10): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 11 (Encl 0, Slot 11): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 12 (Encl 0, Slot 12): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 13 (Encl 0, Slot 13): Contains disk from LOOP 0 (Encl 0, Slot 0)  
SLOT 14 (Encl 0, Slot 14): Contains disk from LOOP 0 (Encl 0, Slot 0)

Summary:

Total Disks in the Correct Slots: 1  
Total Disks in the WRONG Slots: 14  
Total Slots Checked: 15

Success

Hit any key to continue

[H][2J DDBS Service Sub-Menu

- 1) Drive Slot ID Check            2) Utility Partition Boot
- 0) Exit

Enter Option : 0

[H][2J Diagnostic Menu

- 1) Reset Controller            3) DDBS Service Sub-Menu
- 2) Display Warnings/Errors    4) FCC Boot Sub-Menu

Enter Option : 4

□[H□[2J

FCC Boot Sub-Menu

- |                              |                  |
|------------------------------|------------------|
| 1) Restore Def Port Settings | 4) BE1 FCC Boot  |
| 2) Display Port Settings     | 5) AUX0 FCC Boot |
| 3) BE0 FCC Boot              | 6) AUX1 FCC Boot |
- 0) Exit

Enter Option : 0

□[H□[2J

Diagnostic Menu

- |                            |                          |
|----------------------------|--------------------------|
| 1) Reset Controller        | 3) DDBS Service Sub-Menu |
| 2) Display Warnings/Errors | 4) FCC Boot Sub-Menu     |

Enter Option : 2

Success

Hit any key to continue

[H][2J Diagnostic Menu

- 1) Reset Controller
- 2) Display Warnings/Errors
- 3) DDBS Service Sub-Menu
- 4) FCC Boot Sub-Menu

Enter Option : 3

[H][2J DDBS Service Sub-Menu

- 1) Drive Slot ID Check
- 2) Utility Partition Boot
- 0) Exit

Enter Option : 2

DDBS: K10\_REBOOT\_DATA: Count = 0  
DDBS: K10\_REBOOT\_DATA: State = 0  
DDBS: K10\_REBOOT\_DATA: ForceDegradedMode = 0

DDBS: Read default MDDE off disk 1  
DDBS: MDDE (Rev 2) on disk 1  
DDBS: Read default DDE (0x40000F) off disk 1  
DDBS: Read default MDDE off disk 3  
DDBS: MDDE (Rev 2) on disk 3  
DDBS: Read default DDE (0x400010) off disk 3

DDBS: Can't read MDB from first disk.  
DDBS: Can't read MDB from second disk.  
DDBS: Using first disk for boot - but inaccessible.

Utility Partition image (0x0040000F) located at sector LBA 0x00BE804C

Disk Set: 1

ErrorCode: 0x0000187  
ErrorDesc:  
Device: DIAG MENU  
FRU: STORAGE PROCESSOR  
Description: Disk not logged in Error!  
Target ID: 0x01  
Targets Found: 0xF000FF53  
EndError:  
ErrorTime: 01/19/2010 05:39:52

## appendix c - success

Copyright (c) EMC Corporation , 2007  
Disk Array Subsystem Controller  
Model: CX700: SAN GBFCC4  
DiagName: Extended POST  
DiagRev: Rev. 02.39  
Build Date: Fri Jul 13 16:36:03 2007  
StartTime: 01/21/2010 22:04:18  
SaSerialNo: LKE00051202843

AabcdefgBC

EndTime: 01/21/2010 22:04:19

.... Storage System Failure - Contact your Service Representative ...

\*\*\*\*\*  
\*\*\*\*\* Aborting!!!! \*\*\*\*\*

Hit ESC to begin running diagnostic menu...

□[H□[2J

Diagnostic Menu

- |                               |                             |
|-------------------------------|-----------------------------|
| 1) Reset Controller           | 21) BE1 FCC Sub-Menu        |
| 2) Enter Debugger             | 22) CMI0 FCC Sub-Menu       |
| 3) Display Warnings/Errors    | 23) CMI1 FCC Sub-Menu       |
| 4) Boot OS                    | 24) AUX0 FCC Sub-Menu       |
| 5) POST Sub-Menu              | 25) AUX1 FCC Sub-Menu       |
| 6) Display/Change Privilege   | 26) FE0 FCC Sub-Menu        |
| 7) Boot UProc Sub-Menu        | 27) FE1 FCC Sub-Menu        |
| 8) Ap UProc Sub-Menu          | 28) FE2 FCC Sub-Menu        |
| 9) Real Time Clock Sub-Menu   | 29) FE3 FCC Sub-Menu        |
| 10) Pers. Module Sub-Menu     | 30) POST ROM Sub-Menu       |
| 11) RAM Sub-Menu              | 31) BIOS ROM Sub-Menu       |
| 12) NOVRAM Sub-Menu           | 32) System Test Sub-Menu    |
| 13) Console UART Sub-Menu     | 33) Image Sub-Menu          |
| 14) SPS UART Sub-Menu         | 34) Disk Sub-Menu           |
| 15) LCC 0 UART Sub-Menu       | 35) Resume PROM Sub-Menu    |
| 16) LCC 1 UART Sub-Menu       | 36) Voltage Margin Sub-Menu |
| 17) LCC 2 UART Sub-Menu       | 37) Information Display     |
| 18) LCC 3 UART Sub-Menu       | 38) ICA Sub-Menu            |
| 19) LAN Service Port Sub-Menu | 39) DDBS Service Sub-Menu   |
| 20) BE0 FCC Sub-Menu          | 40) FCC Boot Sub-Menu       |

Enter Option : 33

□[H□[2J

Image Sub-Menu

- |                    |                              |
|--------------------|------------------------------|
| 1) Init Loop       | 6) Exit Loop                 |
| 2) Serial Download | 7) Relocate/Run Image        |
| 3) Load from disk  | 8) Display Sector Protection |
| 4) Save to disk    | 9) Utility Partition Boot    |
| 5) Update Firmware |                              |
| 0) Exit            |                              |

Enter Option : 1

Which Back End Loop?

- 0 - BE Loop 0
- 1 - BE Loop 1
- 2 - AUX Loop 0
- 3 - AUX Loop 1

Enter number (0-3) [0]:

Initializing back end FIBRE...

PCI Config Reg: 2.4.1 0x0157

FCDMTL 0 [2.4.1] Dual Mode Fibre init - OSW DB PTR 0x397E4200

AG: init DMD to FC\_SPEED\_2\_GBPS

FCDMTL 0 [2.4.1] Cached memory - 0xF77B9 bytes @ 0x396EC9E0

FCDMTL 0 [2.4.1] Noncached memory - 0xC037F bytes @ 0x3962C600 (0x3962C600 phys)

FCDMTL 0 [2.4.1] DVM Initialized

FCDMTL 0 [2.4.1] IMQ base ptr = 396B0000; IMQ length = 8000

Dualmode fibre init completed

FCDMTL 0 [2.4.1] TPM Notify: st=0xA000000, flg=0x4, cmd=0x1

FCDMTL 0 [2.4.1] TPM Hndle API Event: cntx=0x397E46C4, evnt=0x4002, info=0x0

FCDMTL 0 [2.4.1] TPM Lnk Up: state=0xA000000, flg=0x84

Link Event: 0x00030005



Device Event (0xEF): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xE0): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xDC): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xDA): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD9): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD6): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD5): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD4): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD3): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD2): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xD1): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xE8): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xE4): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xE2): 0x00030012, tach\_ptr: 0x3C0486E0  
Device Event (0xE1): 0x00030012, tach\_ptr: 0x3C0486E0

DL waited 1s for discovery  
Target 0 is online

Target 1 is online

Target 2 is online

Target 3 is online

Target 4 is online

Target 5 is online

Target 6 is online

Target 7 is online

Target 8 is online

Target 9 is online

Target 10 is online

Target 11 is online

Target 12 is online

Target 13 is online

Target 14 is online

Success

Hit any key to continue

FCDMTL 0 [2.4.1] DVM Disc Comp- Dev List Size: 12

FCDMTL 0 [2.4.1] TPM Notify: st=0xA000000, flg=0x208, cmd=0x0

Link Event: 0x00030001

□[H□[2J

Image Sub-Menu

- |                    |                              |
|--------------------|------------------------------|
| 1) Init Loop       | 6) Exit Loop                 |
| 2) Serial Download | 7) Relocate/Run Image        |
| 3) Load from disk  | 8) Display Sector Protection |
| 4) Save to disk    | 9) Utility Partition Boot    |
| 5) Update Firmware |                              |
- 0) Exit

Enter Option : 9

Relocating Data Directory Boot Service (DDBS: Rev. 02.12)...

DDBS: K10\_REBOOT\_DATA: Count = 0  
DDBS: K10\_REBOOT\_DATA: State = 0  
DDBS: K10\_REBOOT\_DATA: ForceDegradedMode = 0

DDBS: Read default MDDE off disk 1  
DDBS: MDDE (Rev 2) on disk 1  
DDBS: Read default DDE (0x40000F) off disk 1  
DDBS: Read default MDDE off disk 3  
DDBS: MDDE (Rev 2) on disk 3  
DDBS: Read default DDE (0x400010) off disk 3

DDBS: MDB read from both disks.  
DDBS: DD invalid on both disks, continuing...  
DDBS: Disk WWN seeds match each other but not chassis WWN seed.  
DDBS: First disk is valid for boot.  
DDBS: Second disk is valid for boot.

Utility Partition image (0x0040000F) located at sector LBA 0x00BE804C

Disk Set: 1 3

Total Sectors: 0x00095067

Relative Sectors: 0x0000003F

Calculated mirror drive geometry:

Sectors: 63

Heads: 255

Cylinders: 38

Capacity: 610470 sectors

Total Sectors: 0x00095067

Relative Sectors: 0x0000003F

Calculated mirror drive geometry:

Sectors: 63

Heads: 255

Cylinders: 38

Capacity: 610470 sectors

int13 - RESET (1)

int13 - READ PARAMETERS (3)

int13 - RESET (5)

int13 - READ PARAMETERS (7)

int13 - READ PARAMETERS (24)

int13 - READ PARAMETERS (611)

int13 - CHECK EXTENSIONS PRESENT (612)

int13 - GET DRIVE PARAMETERS (Extended) (613)

int13 - READ PARAMETERS (616)

int13 - CHECK EXTENSIONS PRESENT (617)

int13 - GET DRIVE PARAMETERS (Extended) (618)

int13 - READ PARAMETERS (620)

int13 - CHECK EXTENSIONS PRESENT (621)

int13 - GET DRIVE PARAMETERS (Extended) (622)

int13 - READ PARAMETERS (631)

int13 - CHECK EXTENSIONS PRESENT (632)

int13 - GET DRIVE PARAMETERS (Extended) (633)

int13 - DRIVE TYPE (648)

int13 - READ PARAMETERS (649)

int13 - DRIVE TYPE (650)

int13 - CHECK EXTENSIONS PRESENT (652)

int13 - GET DRIVE PARAMETERS (Extended) (653)

int13 - READ PARAMETERS (654)

int13 - CHECK EXTENSIONS PRESENT (655)

int13 - GET DRIVE PARAMETERS (Extended) (656)

int13 - READ PARAMETERS (666)

int13 - CHECK EXTENSIONS PRESENT (667)

int13 - GET DRIVE PARAMETERS (Extended) (668)

int13 - READ PARAMETERS (671)

int13 - CHECK EXTENSIONS PRESENT (672)

int13 - GET DRIVE PARAMETERS (Extended) (673)

int13 - READ PARAMETERS (676)

int13 - CHECK EXTENSIONS PRESENT (677)  
int13 - GET DRIVE PARAMETERS (Extended) (678)  
int13 - READ PARAMETERS (682)  
int13 - CHECK EXTENSIONS PRESENT (683)  
int13 - GET DRIVE PARAMETERS (Extended) (684)  
int13 - READ PARAMETERS (686)  
int13 - CHECK EXTENSIONS PRESENT (687)  
int13 - GET DRIVE PARAMETERS (Extended) (688)  
int13 - READ PARAMETERS (1290)  
int13 - CHECK EXTENSIONS PRESENT (1291)  
int13 - GET DRIVE PARAMETERS (Extended) (1292)  
int13 - READ PARAMETERS (1307)  
int13 - CHECK EXTENSIONS PRESENT (1308)  
int13 - GET DRIVE PARAMETERS (Extended) (1309)  
int13 - READ PARAMETERS (1324)  
int13 - CHECK EXTENSIONS PRESENT (1325)  
int13 - GET DRIVE PARAMETERS (Extended) (1326)  
int13 - READ PARAMETERS (1341)  
int13 - CHECK EXTENSIONS PRESENT (1342)  
int13 - GET DRIVE PARAMETERS (Extended) (1343)  
int13 - READ PARAMETERS (1367)  
int13 - CHECK EXTENSIONS PRESENT (1368)  
int13 - GET DRIVE PARAMETERS (Extended) (1369)  
int13 - READ PARAMETERS (1435)  
int13 - CHECK EXTENSIONS PRESENT (1436)  
int13 - GET DRIVE PARAMETERS (Extended) (1437)  
[2J[=2[01m[00m[2J[01mICA::UtilityFrontEnd[00m  
(c) EMC Corporation 2001-2004 All Rights Reserved  
DiagName: ICA::UtilityFrontEnd  
DiagRev: 02.16.700.5.001  
StartTime: 01/21/10 22:08:37

OS Type.....WinXP  
SMBUS.....Running  
SPID.....Running  
ASIDC.....Running  
ASIRAMDisk.....Running  
ICA.....Running  
FileZilla Server.....Running  
Connecting to ICA.....Success  
SP Type.....CX700  
SP ID.....A  
SP Signature.....0x08291953  
Checking Image Repository.....  
ICA::IRFS no valid Volume was found on this system  
ICA::IRFS Creating new Volume  
ICA::IRFS Finished creating new volume  
ICA::IRFS Checking Volume for consistency  
Sizing Image Repository.....1024 MB  
Sizing RAM Disk.....2039 MB  
Discovering Management LAN Port...ManagementPort0  
Checking LAN Port State.....Not Configured

Checking LAN Port Config.....Not Found  
Loading Plugins.....Done

EndTime: 01/21/10 22:09:03

```
[2J[01m=====
==[00m
[01mCLARiION Utility Toolkit Main Menu[00m
[01m===== [
00m
1) About the Utility Toolkit
2) About this Array
3) Reset Storage Processor
4) Image Repository Sub-Menu
5) Plugin Sub-Menu
6) NVRAM Sub-Menu
7) Enable LAN Service Port
8) Enable Engineering Mode
9) Install Images
```

Enter Option: 7

```
[2J[01m=====
==[00m
[01mPlease enter the network settings you wish to use for this SP[00m
[01m===== [
00m
IP Address: 192.168.0.2 Subnet Mask: 255.255.255.0 Default Gateway: 192.168.0.255
Host Name: spa Domain Name:
[2J[01m=====
==[00m
[01mConfirm Network Settings[00m
[01m===== [
00m
IP Address: 192.168.0.2
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.0.255
Host Name: spa
Domain Name:
```

Enable LAN Service Port with these settings? y/n [y]  
[01mThe LAN Service Port has been enabled[00m

Automatically enable the LAN Port with these settings in the future? y/n [y] n Press  
the Enter key to continue...

```
[2J[01m=====
==[00m
[01mCLARiION Utility Toolkit Main Menu[00m
[01m===== [
00m
1) About the Utility Toolkit
2) About this Array
3) Reset Storage Processor
4) Image Repository Sub-Menu
5) Plugin Sub-Menu
6) NVRAM Sub-Menu
7) View LAN Service Port Settings
8) Enable Engineering Mode
9) Install Images
```

Enter Option: 4

```
[2J[01m=====
==[00m
[01mCLARiION Utility Toolkit Image Repository Menu[00m
[01m===== [
00m
1) Back to the Main Menu
2) List Image Repository Contents
3) Delete Files from the Image Repository
4) Copy Files from the RAM Disk to the Image Repository
5) Copy Files from the Image Repository to the RAM Disk
```

Enter Option: 4

```
[2J[01m=====
==[00m
[01mSelect files to copy to the Image Repository[00m
[01m===== [
00m
```

1) FLARE.mif

Enter comma separated list of options: 1 Copying FLARE.mif to the Image Repository...  
Success

Press the Enter key to continue...

```

[2J[01m=====
==[00m
[01mCLARiiON Utility Toolkit Image Repository Menu[00m
[01m=====
00m
1) Back to the Main Menu
2) List Image Repository Contents
3) Delete Files from the Image Repository
4) Copy Files from the RAM Disk to the Image Repository
5) Copy Files from the Image Repository to the RAM Disk

```

Enter Option: 1

```

[2J[01m=====
==[00m
[01mCLARiiON Utility Toolkit Main Menu[00m
[01m=====
00m
1) About the Utility Toolkit
2) About this Array
3) Reset Storage Processor
4) Image Repository Sub-Menu
5) Plugin Sub-Menu
6) NVRAM Sub-Menu
7) View LAN Service Port Settings
8) Enable Engineering Mode
9) Install Images

```

Enter Option: 9

```

[2J[01m=====
==[00m
[01mSelect Images to Install[00m
[01m=====
00m
1) FLARE.mif

```

Enter comma separated list of options: 1

```

[2J[01m=====
==[00m
[01mConfirm Image Installation[00m
[01m=====
00m

```

FLARE.mif

Are you sure you want to install these images? y/n [n] y

```

[2J[01m=====
==[00m
[01mSelect Storage Processors to install images for[00m
[01m=====
00m
1) This SP (SP A)
2) Peer SP (SP B)
3) Both SP's

```

Enter Option: 1

```

Installing Data Directory Boot Service 02.12
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%
|----|----|----|----|----|----|----|----|----|----|
*****
The COPY operation has completed successfully.

```

```

Installing BIOS 03.70
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%
|----|----|----|----|----|----|----|----|----|----|
*****
The COPY operation has completed successfully.

```

```

Installing Extended POST 02.38
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%
|----|----|----|----|----|----|----|----|----|----|
*****

```

The COPY operation has completed successfully.

Installing FLARE Image 02.26.700.5.005  
0%..10%..20%..30%..40%..50%..60%..70%..80%..90%..100%  
|----|----|----|----|----|----|----|----|----|----|  
\*\*\*\*\*  
The COPY operation has completed successfully.

Press the Enter key to continue...

```
□[2J□[01m=====
==□[00m
```

```
□[01mCLARiiON Utility Toolkit Main Menu□[00m
□[01m=====□[
00m
```

- 1) About the Utility Toolkit
- 2) About this Array
- 3) Reset Storage Processor
- 4) Image Repository Sub-Menu
- 5) Plugin Sub-Menu
- 6) NVRAM Sub-Menu
- 7) View LAN Service Port Settings
- 8) Enable Engineering Mode
- 9) Install Images

Enter Option: 3 □[2JRequesting System Reset

```
□[0m□[2J□[1;1H
```