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initial configuration of fibre channel switches
revision 0.2

synopsis

This is a very simple document that covers topics such as setting IP addresses and doing firmware updates on different fibre channel workgroup-class switches.

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introduction

I've been meaning to put this information in one place for some time now, rather than having to go through various manuals and text files to get what I needed. Clearly, some of it is quite dated, but you never know when you'll need to re-initialise a McData Spherion 4400 switch!

The switch examples used in this document include the Brocade SilkWorm 200E, McData Spherion 4400 and Cisco 9124(e), amongst others.

brocade

initial configuration

The default IP address on Brocade workgroup switches is 10.77.77.77. The subnet mask is 255.255.255.0. If you set your workstation to something in this range you can run the EZ-Switch setup for Fabric OS.

I prefer to do it the hard way, with serial connectivity, as it enables me to watch the switch perform POST.

The first thing to do when you connect to a new switch is to change the **root**, **factory**, **admin** and **user** account passwords. These need to be something relatively complex, or you'll be continuously prompted to change them at each login. You should store these in a safe place, because if you lose them, it's quite difficult to get them back.

```
Fabric OS (SW200E)
SW200E console login: admin
```

```
Password:
Please change passwords for switch default accounts now.
Use Control-C to exit or press 'Enter' key to proceed.
```

```
Warning: Access to the Root and Factory accounts may be required for
proper support of the switch. Please ensure the Root and Factory
passwords are documented in a secure location. Recovery of a lost Root
or Factory password will result in fabric downtime.
```

```
for user - root
Changing password for root
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
Please change passwords for switch default accounts now.
for user - factory
Changing password for factory
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
Please change passwords for switch default accounts now.
for user - admin
Changing password for admin
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
Please change passwords for switch default accounts now.
for user - user
Changing password for user
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
Saving passwords to stable storage.
Passwords saved to stable storage successfully
```

Once you've changed the passwords, the next step is to configure network settings on the switch using the **ipaddrset** command. The default values are in square brackets, and if you simply press enter these values will be set.

```
SW200E:admin> ipaddrset
Ethernet IP Address [10.77.77.77]:192.168.0.25
Ethernet Subnetmask [255.255.255.0]:
Fibre Channel IP Address [none]:
Fibre Channel Subnetmask [none]:
Gateway IP Address [none]:192.168.0.254
DHCP [Off]:
IP address is being changed...Done.
SW200E:admin> 2008/04/23-23:34:16, [IPAD-1000], 10,, INFO, SilkWorm200E, SW/0 Ether/0
IPv4 manual 192.168.0.25/24 DHCP Off
```

```
2008/04/23-23:34:16, [IPAD-1001], 11,, INFO, SilkWorm200E, CP/0 IPv4 manual
10.192.2.254 DHCP Off
2008/04/23-23:34:21, [WEBD-1007], 12,, INFO, SW200E, HTTP server will be restarted due
to change of IP Address
```

Configure other options, such as Domain ID and BB credits, using the **switchdisable** and **configure** command.

```
SW200E:admin> switchdisable
2008/04/23-23:34:41, [FW-1424], 13,, WARNING, SW200E, Switch status changed from
HEALTHY to MARGINAL.
SW200E:admin> configure
```

Configure...

Fabric parameters (yes, y, no, n): [no] **y**

```
Domain: (1..239) [1] 27
R_A_TOV: (4000..120000) [10000]
E_D_TOV: (1000..5000) [2000]
WAN_TOV: (0..30000) [0]
MAX_HOPS: (7..19) [7]
Data field size: (256..2112) [2112]
Sequence Level Switching: (0..1) [0]
Disable Device Probing: (0..1) [0]
Suppress Class F Traffic: (0..1) [0]
Switch PID Format: (1..2) [1]
Per-frame Route Priority: (0..1) [0]
Long Distance Fabric: (0..1) [0]
BB credit: (1..27) [16]
```

```
Insistent Domain ID Mode (yes, y, no, n): [no] y
Virtual Channel parameters (yes, y, no, n): [no]
F-Port login parameters (yes, y, no, n): [no]
Zoning Operation parameters (yes, y, no, n): [no]
RSCN Transmission Mode (yes, y, no, n): [no]
Arbitrated Loop parameters (yes, y, no, n): [no]
System services (yes, y, no, n): [no] y
```

```
Disable RLS probing (on, off): [on]
Portlog events enable (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
snmp attributes (yes, y, no, n): [no]
rpcd attributes (yes, y, no, n): [no]
cfgload attributes (yes, y, no, n): [no]
webtools attributes (yes, y, no, n): [no]
System (yes, y, no, n): [no] y
```

```
system.blade.bladeFaultOnHwErrMsk: (0x0..0xffff) [0x0]
```

WARNING: The domain ID will be changed. The port level zoning may be affected

WARNING: The Domain ID will be changed.

Since Insistent Domain ID Mode is enabled, please ensure that switches in fabric do not have duplicate domain IDs configured, otherwise this may cause switch to segment, if Insistent domain ID is not obtained when fabric re-configures.

Give the switch a hostname. You know you want to.

```
SW200E:admin> switchname fcswitch02
Committing configuration...
Done.
```

Re-enable the switch.

```
SW200E:admin> switchenable
2008/04/23-23:35:40, [MFIC-1003], 14,, WARNING, fcswitch02, Effective Insistent domain
```

```
ID for the fabric changed from OFF to ON
SW200E:admin> reb2008/04/23-23:35:43, [FW-1425], 15,, INFO, fcswitch02, Switch status
changed from MARGINAL to HEALTHY.
```

Rebooting the switch looks like this.

```
SW200E:admin> reboot
Broadcast message from root (ttyS0) Wed Apr 23 23:35:45 2008...
The system is going down for reboot NOW !!
INIT: Switching to runlevel: 6
SW200E:admin>
INIT: Sending processes the TERM signalStopping diagnostics
```

```
Unmounting all filesystems.
Please stand by while rebooting the system...
Restarting system.
```

.

<NULL>

```
The system is coming up, please wait...
Read board ID of 0x80 from addr 0x23
```

```
Read extended model ID of 0x19 from addr 0x22
```

```
Matched board/model ID to platform index 6
Read board ID of 0x80 from addr 0x23
```

```
Read extended model ID of 0x19 from addr 0x22
```

```
Matched board/model ID to platform index 6
```

```
Checking system RAM - press any key to stop test
```

```
Checking memory address: 00100000□□□□□□□□
```

```
System RAM test using Default POST RAM Test succeeded.
```

```
Press escape within 4 seconds to enter boot interface.
```

```
Booting "Fabric Operating System" image.
```

```
Entry point at 0x01000000 ...
```

```
loading kernel
```

```
loaded at:      01000000 013F7364
```

```
board data at: 013F5324 013F5364
```

```
relocated to:  01005110 01005150
```

```
zimage at:     0100597D 01169E30
```

```
initrd at:     0116A000 013F4C00
```

```
avail ram:     013F8000 08000000
```

```
Linux/PPC load:
```

```
BootROM command line: quiet
```

```
Uncompressing Linux...done.
```

```
Now booting the kernel
```

```
PCI: Cannot allocate resource region 0 of device 0000:00:00.0
```

```
Installing Linux 2.6 Kernel
```

Attempting to find a root file system on hda1...

INIT: version 2.78 booting
INIT: Entering runlevel: 3uptime: 4293889076; sysc_gid: 0
2008/04/23-23:36:36, [HAM-1004], 16,, INFO, SilkWorm200E, Processor rebooted - Reboot

Fabric OS (fcswitch02)
fcswitch02 console login: SNMP Research EMANATE/Lite Agent Version 16.2.0.9
Copyright 1989-2006 SNMP Research, Inc.
sysctrl: all services Standby
2008/04/23-23:36:45, [ZONE-1022], 17,, INFO, fcswitch02, The effective configuration has changed to cfg.
TS_MSG_UPDATE_TZONE message
sec0: Security is initializing.....
sysctrl: all services Active
POST1: Started running Wed Apr 23 23:36:48 GMT 2008
POST1: Test #1 - Running turboramtest
POST1: Test #2 - Running portregtest
POST1: Script PASSED with exit status of 0 Wed Apr 23 23:36:50 GMT 2008 took (0:0:2)
POST2: Started running Wed Apr 23 23:36:51 GMT 2008
POST2: Test #1 - Running portloopbacktest (TXRX INTERNAL)
POST2: Test #2 - Running minicycle (TXRX INTERNAL)
POST2: Running diagshow
POST2: Script PASSED with exit status of 0 Wed Apr 23 23:37:11 GMT 2008 took (0:0:20)
2008/04/23-23:37:12, [BL-1000], 18,, INFO, fcswitch02, Initializing ports...
2008/04/23-23:37:12, [BL-1001], 19,, INFO, fcswitch02, Port initialization completed.

firmware update

To update Brocade FOS firmware, you'll need the zip file containing the firmware on a suitably configured ftp server. I find FileZilla on a laptop usually does the trick. I recommend you do this from a serial console session so you can observe the switch POST when the switch reboots.

Using username "admin".
admin@192.168.0.103's password:

```
-----  
fcswitch02:admin> firmwaredownload  
Server Name or IP Address: 192.168.0.200  
FTP User Name: dan  
File Name: /v5.3.0a/release.plist  
FTP Password:  
Verifying the input parameters ...  
Checking system settings for firmwaredownload...  
You can run firmwaredownloadstatus to get the status  
of this command.
```

This command will cause a warm/non-disruptive boot on the switch, but will require that existing telnet, secure telnet or SSH sessions be restarted.

Do you want to continue [Y]:
Firmware is being downloaded to the switch. This step may take up to 30 minutes.
Preparing for firmwaredownload...

```
Removing wget-1.5.3-1  
Removing binutils-libs-2.10.1-1  
Removing binutils-2.10.1-1  
Removing ftp-0.17-1  
Removing ncftp-3.0.3-3  
Removing fabos-fw-5.2.2-8  
Removing mmlib-1.1.3-1  
Removing lkcd-4.1_1_2.4.19-1  
Start to install packages...  
dir #####  
ldconfig #####  
glibc #####  
bash #####  
readline #####  
terminfo #####  
termcap #####  
fileutils #####  
textutils #####
```

```
setup #####
swbd12-setup #####
which #####
findutils #####
bzip #####
zlib #####
chkconfig #####
sed #####
procps #####
psmisc #####
modutils #####
sin #####
rcinit #####
misc #####
pam #####
util-linux #####
sh-utils #####
popt #####
grep #####
rpm #####
sysvinit #####
man #####
less #####
gzip #####
tar #####
rsync #####
uuid-libs #####
e2fsprogs #####
telnet-server #####
cpio #####
dev #####
bootenv #####
wtd #####
fwl #####
swbd23-prom #####
Please avoid powering off the system during prom update.
kernel #####
swbd21-drivers #####
sysklogd #####
getty #####
net-tools #####
vixie-cron #####
uucp #####
ksymoos #####
portmap #####
inetd #####
iptables #####
tcpd #####
rsh-server #####
rsh #####
openssl-libs #####
openssh #####
openssh-server #####
rusers-server #####
rdate #####
logrotate #####
ntp #####
pciutils #####
strace #####
sendmail #####
iproute2 #####
libxml2 #####
fss #####
fabos-setup #####
fabos-drivers #####
fabos-libs #####
fabos-diag #####
fabos #####
fabos-zoning #####
fabos-man #####
fabos-hmon #####
fabos-wnhs #####
fabos-swbd34 #####
fabos-webtoolsez #####
sqlite #####
dhcpcd #####
apache #####
```

```
fastcgi #####
fabos-webtools #####
tz #####
mtracer-tool #####
sysstat #####
ipv6 #####
Removing unneeded files, please wait ...
Finished removing unneeded files.
```

```
All packages have been downloaded successfully.
Firmware has been downloaded to the secondary partition of the switch.
HA Rebooting ...
fcswitch02:admin>
```

I recommend running **firmwareshow** after rebooting and confirming that the running version is the expected one.

adding port-on-demand (pod) licenses

Port-on-demand licenses are a way for vendors to sell a switch with not all ports enabled. Different vendors do this in different ways, with some including the SFPs and no licences, and others not including the SFPs until the port on demand licenses have been purchased. I've personally always preferred to buy everything up front – but I've never been made to do this with my own cash.

Getting the actual keys to enter at the console will vary, but rest assured that each vendor will have their own annoying variation on logging into their website and entering an authorization key and some other information, either switch WWN or host-id. You'll then get a string that you can enter into the switch. Licenses are normally tied to the switch they are installed on too, so trying to add a key from one switch to another is a pointless exercise.

In this example I've added a 4-port license to a Brocade switch that is already licensed for zoning and basic fabric.

```
Using username "admin".
admin@192.168.0.103's password:

-----
fcswitch02:admin> licenseadd
Usage: licenseadd "license-key"
fcswitch02:admin> licenseadd "S9RScezReTQSTdF"
adding license-key [S9RScezReTQSTdF]
fcswitch02:admin> licenseshow
be9zycdSbecfA0zh:
  Web license
dcccQ9bdSedd0RQ:
  Zoning license
S9RScezReTQSTdF:
  First Ports on Demand license - additional 4 port upgrade license
```

However, you'll notice that the output of **switchshow** still indicates that ports 9 – 12 are still disabled.

```
fcswitch02:admin> switchshow
switchName:    fcswitch02
switchType:    34.0
switchState:   Online
switchMode:    Native
switchRole:    Principal
switchDomain:  103
switchId:      fffc67
switchWwn:     10:00:00:05:1e:05:72:04
zoning:        ON (cfg)
switchBeacon:  OFF

Area Port Media Speed State      Proto
=====
  0   0   id    N4    No_Light
  1   1   id    N4    No_Light
```

```

2 2 id N4 No_Light
3 3 id N4 No_Light
4 4 id N4 No_Light
5 5 id N4 No_Light
6 6 id N4 No_Light
7 7 id N4 No_Light
8 8 id N4 No_Light Disabled
9 9 id N4 No_Light Disabled
10 10 id N4 No_Light Disabled
11 11 id N4 No_Light Disabled
12 12 -- N4 No_Module (No POD License) Disabled
13 13 -- N4 No_Module (No POD License) Disabled
14 14 -- N4 No_Module (No POD License) Disabled
15 15 -- N4 No_Module (No POD License) Disabled

```

You need to enable the ports you want to license once you've added in the magic keys. You can do this using the **portenable** command.

```

fcswitch02:admin> portenable 8
fcswitch02:admin> portenable 9
fcswitch02:admin> portenable 10
fcswitch02:admin> portenable 11

```

And now the output of **switchshow** is much improved.

```

fcswitch02:admin> switchshow
switchName: fcswitch02
switchType: 34.0
switchState: Online
switchMode: Native
switchRole: Principal
switchDomain: 103
switchId: fffc67
switchWwn: 10:00:00:05:1e:05:72:04
zoning: ON (cfg)
switchBeacon: OFF

```

```

Area Port Media Speed State Proto
=====
0 0 id N4 No_Light
1 1 id N4 No_Light
2 2 id N4 No_Light
3 3 id N4 No_Light
4 4 id N4 No_Light
5 5 id N4 No_Light
6 6 id N4 No_Light
7 7 id N4 No_Light
8 8 id N4 No_Light
9 9 id N4 No_Light
10 10 id N4 No_Light
11 11 id N4 No_Light
12 12 -- N4 No_Module (No POD License) Disabled
13 13 -- N4 No_Module (No POD License) Disabled
14 14 -- N4 No_Module (No POD License) Disabled
15 15 -- N4 No_Module (No POD License) Disabled

```

zoning

Zoning with Fabric OS is fairly simple. Create aliases, create zones, create a config, add zones to the config, save the config and enable the config. I find **switchshow** is the easiest way to get the WWNs to add to aliases, assuming that I know which port I've plugged a device into.

The first step is to create the aliases.

```

fcswitch02:admin>
alicreate "CX300_SPA0", "50:06:01:60:30:23:29:e2"
alicreate "CX300_SPB1", "50:06:01:69:30:23:29:e2"
alicreate "HOST01_HBA0", "21:00:00:1b:32:0a:c3:2b"
alicreate "HOST02_HBA0", "21:00:00:1b:32:0a:ab:2a"
alicreate "HOST03_HBA0", "21:00:00:1b:32:0a:3c:2c"

```

```
alicreate "HOST04_HBA0", "21:00:00:1b:32:0a:70:2a"
```

You then want to create zones, which are simply a combination of two aliases.

```
zonecreate "CX300_SPA0_HOST01_HBA0", "CX300_SPA0;HOST01_HBA0"  
zonecreate "CX300_SPB1_HOST01_HBA0", "CX300_SPB1;HOST01_HBA0"  
zonecreate "CX300_SPA0_HOST02_HBA0", "CX300_SPA0;HOST02_HBA0"  
zonecreate "CX300_SPB1_HOST02_HBA0", "CX300_SPB1;HOST02_HBA0"  
zonecreate "CX300_SPA0_HOST03_HBA0", "CX300_SPA0;HOST03_HBA0"  
zonecreate "CX300_SPB1_HOST03_HBA0", "CX300_SPB1;HOST03_HBA0"  
zonecreate "CX300_SPA0_HOST04_HBA0", "CX300_SPA0;HOST04_HBA0"  
zonecreate "CX300_SPB1_HOST04_HBA0", "CX300_SPB1;HOST04_HBA0"
```

If this is the first time zoning the switch, create a configuration file using **cfgcreate**. You can also add your first zone to the configuration file at this time.

```
cfgcreate "CFGPROD01", "CX300_SPA0_HOST01_HBA0"
```

Using **cfgadd**, you can then add the remainder of the zones to the configuration file.

```
cfgadd "CFGPROD01", "CX300_SPB1_HOST01_HBA0"  
cfgadd "CFGPROD01", "CX300_SPA0_HOST02_HBA0"  
cfgadd "CFGPROD01", "CX300_SPB1_HOST02_HBA0"  
cfgadd "CFGPROD01", "CX300_SPA0_HOST03_HBA0"  
cfgadd "CFGPROD01", "CX300_SPB1_HOST03_HBA0"  
cfgadd "CFGPROD01", "CX300_SPA0_HOST04_HBA0"  
cfgadd "CFGPROD01", "CX300_SPB1_HOST04_HBA0"
```

Pat yourself on the back – you're almost there. Running **cfgsave** will alert you to any obvious syntax errors or problems with the configuration file. If this passes muster, **cfgenable** can then be used to enable the configuration for the switch.

```
cfgsave  
cfgenable "CFGPROD01"
```

Note that if you have more than one switch in the fabric, you should do all of your zoning on the Principal switch in the fabric. This is usually the one that has its switchRole as Principal in the output of **switchshow**.

mcdata***initial configuration***

The default IP address on McData workgroup switches is 10.1.1.10 or 10.0.0.1 – depending on the vintage of the switch. The subnet mask is 255.0.0.0. If you set your workstation to something in this range you can run the web-based setup assistant for EFCM. The default username is Administrator, and the default password is password.

I prefer to do it the hard way, with serial connectivity, as it enables me to watch the switch perform POST. You should set the following settings for a COM port connection (using putty or hyperterm or whatever):

- Bits per second - 115200.
- Data bits - 8.
- Parity - None.
- Stop bits - 1.
- Flow control - Hardware or None.

```
Linux 2.4.18_mvl30-amazon (switch) (00:21 on Saturday, 01 January 2000)
```

```
switch login: admin
Password:
```

```
Establishing connection... Please wait.
```

```
*****
*
*          Command Line Interface SHell  (CLISH)
*
*
*****
```

```
SystemDescription      McDATA 4416
Eth0NetworkAddress    10.0.0.1 (use 'set setup system' to update)
MACAddress             00:c0:dd:0c:d9:14
WorldWideName          10:00:08:00:88:e0:65:a2
ChassisSerialNumber    US0DT22613550683XX28
SymbolicName           MFCSM4Gb
ActiveSWVersion         V5.2.3.15.0
ActiveTimestamp        Thu Jun  8 20:56:10 2006
DiagnosticsStatus     Passed
LicensedExternalPorts  4
LicensedInternalPorts  8
```

```
The alarm log is empty.
```

```
MFCSM4Gb: admin> admin start
```

```
MFCSM4Gb (admin): admin> set setup system
```

```
A list of attributes with formatting and current values will follow.
Enter a new value or simply press the ENTER key to accept the current value.
If you wish to terminate this process before reaching the end of the list
press 'q' or 'Q' and the ENTER key to do so.
```

```
Eth0NetworkDiscovery    (1=Static, 2=Bootp, 3=Dhcp, 4=Rarp) [Static   ]
Eth0NetworkAddress      (dot-notated IP Address)           [10.0.0.1  ]
192.168.0.17
Eth0NetworkMask         (dot-notated IP Address)           [255.0.0.0 ]
255.255.255.0
Eth0GatewayAddress      (dot-notated IP Address)           [10.0.0.254]
192.168.0.254
AdminTimeout            (dec value 0-1440 minutes, 0=never) [30        ]
InactivityTimeout       (dec value 0-1440 minutes, 0=never) [0         ]
LocalLogEnabled         (True / False)                     [True      ]
RemoteLogEnabled        (True / False)                     [False     ]
```

```
RemoteLogHostAddress      (dot-notated IP Address)      [10.0.0.254]
NTPClientEnabled          (True / False)                [False   ]
NTPServerAddress         (dot-notated IP Address)     [10.0.0.254]
EmbeddedGUIEnabled       (True / False)                [True    ]
```

Do you want to save and activate this system setup? (y/n): [n] **y**

System setup saved and activated.

MFCSM4Gb: admin>

Log Msg: [8][Sat Jan 01 00:24:35.861 UTC 2000][C][8400.003C][Switch][Network setup is changing - may lose connection - admin being released automatically]

MFCSM4Gb: admin>

You can also configure the IP address with the following command:

ipconfig xxx.xxx.xxx.xxx yyy.yyy.yyy.yyy zzz.zzz.zzz.zzz

Where xxx.xxx.xxx.xxx is the IP address, yyy.yyy.yyy.yyy is the subnet mask, and zzz.zzz.zzz.zzz is the default gateway.

show zoning and alias details

I always found using EFCM was a nice way to do zoning with McData switches. But if you're stuck in front of a console and need to check the zoning or confirm some aliases are correct, you can run the following commands.

```
Root> show zoning
Default Zone Enabled:      False
Zone Set:  Production0
Zone:  HOST10_HBA1_SITE1DISK02_SPA0
Zone Member:  21:00:00:1B:32:1F:A8:58
Zone Member:  50:06:01:60:3C:E0:0F:E1
Zone:  HOST10_HBA1_SITE1DISK02_SPB0
Zone Member:  50:06:01:68:3C:E0:0F:E1
Zone Member:  21:00:00:1B:32:1F:A8:58
Zone:  HOST10_HBA2_SITE1DISK02_SPA1
Zone Member:  21:01:00:1B:32:3F:A8:58
Zone Member:  50:06:01:61:3C:E0:0F:E1
Zone:  HOST10_HBA2_SITE1DISK02_SPB1
Zone Member:  21:01:00:1B:32:3F:A8:58
Zone Member:  50:06:01:69:3C:E0:0F:E1
Zone:  HOST11_HBA1_SITE1DISK02_SPA0
Zone Member:  21:00:00:1B:32:1F:47:58
Zone Member:  50:06:01:60:3C:E0:0F:E1
Zone:  HOST11_HBA1_SITE1DISK02_SPB0
Zone Member:  50:06:01:68:3C:E0:0F:E1
Zone Member:  21:00:00:1B:32:1F:47:58
Zone:  HOST11_HBA2_SITE1DISK02_SPA1
Zone Member:  50:06:01:61:3C:E0:0F:E1
Zone Member:  21:01:00:1B:32:3F:47:58
Zone:  HOST11_HBA2_SITE1DISK02_SPB1
Zone Member:  50:06:01:69:3C:E0:0F:E1
Zone Member:  21:01:00:1B:32:3F:47:58
Zone:  HOST12_HBA1_SITE1DISK02_SPA0
Zone Member:  21:00:00:1B:32:1F:D3:58
Zone Member:  50:06:01:60:3C:E0:0F:E1
Zone:  HOST12_HBA1_SITE1DISK02_SPB0
Zone Member:  50:06:01:68:3C:E0:0F:E1
Zone Member:  21:00:00:1B:32:1F:D3:58
Zone:  HOST12_HBA2_SITE1DISK02_SPA1
Zone Member:  50:06:01:61:3C:E0:0F:E1
Zone Member:  21:01:00:1B:32:3F:D3:58
Zone:  HOST12_HBA2_SITE1DISK02_SPB1
Zone Member:  50:06:01:69:3C:E0:0F:E1
Zone Member:  21:01:00:1B:32:3F:D3:58
Zone:  HOST13_HBA1_SITE1DISK02_SPA0
Zone Member:  21:00:00:1B:32:1F:14:59
Zone Member:  50:06:01:60:3C:E0:0F:E1
```

```

Zone: HOST13_HBA1_SITE1DISK02_SPB0
  Zone Member: 50:06:01:68:3C:E0:0F:E1
  Zone Member: 21:00:00:1B:32:1F:14:59
Zone: HOST13_HBA2_SITE1DISK02_SPA1
  Zone Member: 21:01:00:1B:32:3F:14:59
  Zone Member: 50:06:01:61:3C:E0:0F:E1
Zone: HOST13_HBA2_SITE1DISK02_SPB1
  Zone Member: 21:01:00:1B:32:3F:14:59
  Zone Member: 50:06:01:69:3C:E0:0F:E1
Zone: HOST14_HBA1_SITE1DISK02_SPA0
  Zone Member: 50:06:01:60:3C:E0:0F:E1
  Zone Member: 21:00:00:1B:32:10:D2:85
Zone: HOST14_HBA1_SITE1DISK02_SPB0
  Zone Member: 50:06:01:68:3C:E0:0F:E1
  Zone Member: 21:00:00:1B:32:10:D2:85
Zone: HOST14_HBA2_SITE1DISK02_SPA1
  Zone Member: 50:06:01:61:3C:E0:0F:E1
  Zone Member: 21:01:00:1B:32:30:D2:85
Zone: HOST14_HBA2_SITE1DISK02_SPB1
  Zone Member: 50:06:01:69:3C:E0:0F:E1
  Zone Member: 21:01:00:1B:32:30:D2:85
Zone: HOST16_HBA1_SITE1DISK02_SPA0
  Zone Member: 21:00:00:1B:32:10:A6:DB
  Zone Member: 50:06:01:60:3C:E0:0F:E1
Zone: HOST16_HBA1_SITE1DISK02_SPB0
  Zone Member: 21:00:00:1B:32:10:A6:DB
  Zone Member: 50:06:01:68:3C:E0:0F:E1
Zone: HOST16_HBA2_SITE1DISK02_SPA1
  Zone Member: 21:01:00:1B:32:30:A6:DB
  Zone Member: 50:06:01:61:3C:E0:0F:E1
Zone: HOST16_HBA2_SITE1DISK02_SPB1
  Zone Member: 21:01:00:1B:32:30:A6:DB
  Zone Member: 50:06:01:69:3C:E0:0F:E1
Zone: HOST15_HBA1_SITE1DISK02_SPA0
  Zone Member: 21:01:00:1B:32:30:88:DD
  Zone Member: 50:06:01:60:3C:E0:0F:E1
Zone: HOST15_HBA1_SITE1DISK02_SPB0
  Zone Member: 50:06:01:68:3C:E0:0F:E1
  Zone Member: 21:01:00:1B:32:30:88:DD
Zone: HOST15_HBA2_SITE1DISK02_SPA1
  Zone Member: 21:00:00:1B:32:10:88:DD
  Zone Member: 50:06:01:61:3C:E0:0F:E1
Zone: HOST15_HBA2_SITE1DISK02_SPB1
  Zone Member: 50:06:01:69:3C:E0:0F:E1
  Zone Member: 21:00:00:1B:32:10:88:DD
Zone: MV_SITE1DISK02_SPA1_SITE2DISK02_SPA1
  Zone Member: 50:06:01:61:3C:E0:0F:E1
  Zone Member: 50:06:01:61:44:60:06:4F
Zone: MV_SITE1DISK02_SPB1_SITE2DISK02_SPB1
  Zone Member: 50:06:01:69:44:60:06:4F
  Zone Member: 50:06:01:69:3C:E0:0F:E1

```

Root> **show activeAlias**

```

CLI Alias enabled state:      Disabled
Web Alias enabled state:     Enabled
Total Associations Possible:   250
Current Association Count:    63

```

WWN	Alias
21:00:00:E0:8B:1D:46:27	HOST10_HBA1
21:00:00:E0:8B:1D:35:2A	HOST11_HBA1
21:00:00:E0:8B:1D:B8:28	HOST12_HBA1
50:06:01:60:30:21:2D:56	SITE1DISK01_SPA0
50:06:01:61:30:21:2D:56	SITE1DISK01_SPA1
50:06:01:68:30:21:2D:56	SITE1DISK01_SPB0
50:06:01:69:30:21:2D:56	SITE1DISK01_SPB1
50:06:01:60:3C:E0:0F:E1	SITE1DISK02_SPA0
50:06:01:61:3C:E0:0F:E1	SITE1DISK02_SPA1
50:06:01:68:3C:E0:0F:E1	SITE1DISK02_SPB0
50:06:01:69:3C:E0:0F:E1	SITE1DISK02_SPB1

Root>

cisco

initial configuration

To configure your COM port for serial connectivity, use the following settings:

- Bits per second: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

When you access the switch for the first time it will run you through an initial configuration wizard. Here you can set IP address details, hostname, snmp, clocks, timezone, ntp and other switch settings. In this example I have configured only basic settings – preferring to use templates for my configuration activities. But if you only have a few switches to do, then make the best use of the wizard.

```
==~::~~::~~::~~::~~::~~::~~::~ PuTTY log 2015.01.22 13:52:39 ~::~~::~~::~~::~~::~~::~==
```

```
Enter the password for "admin":
Confirm the password for "admin":
```

```
---- Basic System Configuration Dialog ----
```

```
This setup utility will guide you through the basic configuration of
the system. Setup configures only enough connectivity for management
of the system.
```

```
Please register Cisco MDS 9000 Family devices promptly with your
supplier. Failure to register may affect response times for initial
service calls. MDS devices must be registered to receive entitled
support services.
```

```
Press Enter at anytime to skip a dialog. Use ctrl-c at anytime
to skip the remaining dialogs.
```

```
Would you like to enter the basic configuration dialog (yes/no): y
```

```
Create another login account (yes/no) [n]:
```

```
Configure read-only SNMP community string (yes/no) [n]:
```

```
Configure read-write SNMP community string (yes/no) [n]:
```

```
Enter the switch name :
```

```
Continue with Out-of-band (mgmt0) management configuration? (yes/no) [y]:
```

```
Mgmt0 IPv4 address : 192.168.0.50
```

```
Mgmt0 IPv4 netmask : 255.255.255.0
```

```
Configure the default gateway? (yes/no) [y]:
```

```
IPv4 address of the default gateway : 192.168.0.254 1
```

```
Configure advanced IP options? (yes/no) [n]:
```

```
Enable the ssh service? (yes/no) [y]:
```

```
Type of ssh key you would like to generate (dsa/rsa) [rsa]:
```

```
Number of rsa key bits <1024-2048> [1024]:
```

```
Enable the telnet service? (yes/no) [n]:

Configure congestion/no_credit drop for fc interfaces? (yes/no) [y]:

Enter the type of drop to configure congestion/no_credit drop? (con/no) [c]:
Enter milliseconds in multiple of 10 for congestion-drop in range [100 - 500], or
[d/default] for default:

Enter mode for congestion/no_credit drop[E/F]:

Enable the http-server? (yes/no) [y]:

Configure clock? (yes/no) [n]:

Configure timezone? (yes/no) [n]:

Configure summertime? (yes/no) [n]:

Configure the ntp server? (yes/no) [n]:

Configure default switchport interface state (shut/noshut) [shut]:

Configure default switchport trunk mode (on/off/auto) [on]:

Configure default switchport port mode F (yes/no) [n]:

Configure default zone policy (permit/deny) [deny]:

Enable full zoneset distribution? (yes/no) [n]:

Configure default zone mode (basic/enhanced) [basic]:

The following configuration will be applied:
password strength-check
interface mgmt0
  ip address 192.168.0.50 255.255.255.0
  no shutdown
  ip default-gateway 192.168.0.254
  ssh key rsa 1024 force
  feature ssh
  no feature telnet
system timeout congestion-drop default mode F
feature http-server
system default switchport shutdown
system default switchport trunk mode on
no system default zone default-zone permit
no system default zone distribute full
no system default zone mode enhanced

Would you like to edit the configuration? (yes/no) [n]:

Use this configuration and save it? (yes/no) [y]:
```

```
[# ] 1%
[# ] 2%
[## ] 3%
[## ] 4%
[### ] 5%
[### ] 6%
[### ] 7%
[#### ] 8%
[#### ] 9%
[##### ] 10%
[##### ] 11%
[##### ] 12%
[##### ] 13%
[##### ] 14%
[##### ] 15%
[##### ] 17%
[##### ] 18%
[##### ] 19%
[##### ] 20%
[##### ] 21%
[##### ] 22%
[##### ] 23%
```

```
[#####] 24%
[#####] 25%
[#####] 26%
[#####] 27%
[#####] 28%
[#####] 29%
[#####] 30%
[#####] 31%
[#####] 32%
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[#####] 90%
[#####] 91%
[#####] 92%
[#####] 93%
[#####] 94%
[#####] 95%
[#####] 96%
[#####] 97%
[#####] 98%
[#####] 100%
```

Copy complete.

```
User Access Verification
192.168.0.50 login: admin
Password:
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2013, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
```

```
switch# conf t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
switch(config)# switchname ORG-DC2-FCS-P002
```

```
ORG-DC2-FCS-P002(config)# exit
```

```
ORG-DC2-FCS-P002# copy run start
```

```
[# ] 1%
[# ] 2%
[## ] 3%
[## ] 4%
[### ] 5%
[### ] 6%
[### ] 7%
[#### ] 8%
[#### ] 9%
[##### ] 10%
[##### ] 11%
[##### ] 12%
[##### ] 13%
[##### ] 14%
[##### ] 15%
[##### ] 17%
[##### ] 18%
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[##### ] 47%
[##### ] 48%
[##### ] 50%
[##### ] 51%
[##### ] 52%
```

```

##### ] 53%
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##### ] 90%
##### ] 91%
##### ] 92%
##### ] 93%
##### ] 94%
##### ] 95%
##### ] 96%
##### ] 97%
##### ] 98%
##### ] 100%
Copy complete.

```

```
ORG-DC2-FCS-P002#
```

```
ORG-DC2-FCS-P002# exit
```

If you need to change some of the settings you applied through the wizard, here's how. Most activities involve a **configure terminal** command (or **conf t** for short).

To set the IP address of the switch.

```

conf t
int mgmt0
ip address <Ip address><mask>
exit
ip default-gateway <default-gw>
exit

```

```
show int mgmt 0 to verify
```

To set the correct time on the switch.

```
clock set <HH:MM:SS> <DD> <Month in words> <YYYY>
```

where:

HH is the hour; valid values are 00 through 23.

MM is minutes; valid values are 00 through 59.

SS is seconds; valid values are 00 through 59.

DD is the date; valid values are 01 through 31.

YYYY is the year; valid values are 2000 through 2030.

An example of this command would be

```
clock set 13:47:09 23 March 2007
```

But I think you should use ntp.

```
conf t
ntp server 192.168.0.2 prefer
ntp server 192.168.0.3
end
```

The following command will provide information on licensing.

```
FCSWITCH01# show license usage
Feature                               Ins  Lic  Status Expiry Date Comments
                               Count
-----
FM_SERVER_PKG                         No   -   Unused          Grace 120D 0H
ENTERPRISE_PKG                        No   -   Unused          Grace 120D 0H
PORT_ACTIVATION_PKG                   Yes  24   In use never    -
10G_PORT_ACTIVATION_PKG                No   0   Unused          -
-----
```

Use the **shutdown** and **no shutdown** commands to disable and enable ports.

```
FCSWITCH01# conf t
FCSWITCH01(config)# int ext1
FCSWITCH01(config-if)# shut
FCSWITCH01(config-if)# no shut
FCSWITCH01(config-if)# end
```

If you need to acquire a license for a port, you can use the following commands to shut the port down and then acquire the port licenses.

```
FCSWITCH01# conf t
FCSWITCH01(config)# int ext1
FCSWITCH01(config-if)# shut
FCSWITCH01(config-if)# port-license acquire
```

Always remember to **copy run start** before you start and after you've finished and confirmed that everything is in order.

```
copy running-config startup-config
```

connecting to 9124e switches via HP OA

If you are running HP's 9124e Blade FC switches, you'll want to connect to them via the serial connection in the Onboard Administrator (OA). Firstly, log in to the OA via ssh or serial connection.

```
HP BladeSystem Onboard Administrator
(C) Copyright 2006-2010 Hewlett-Packard Development Company, L.P.
```

```
Type 'HELP' to display a list of valid commands.
Type 'HELP <command>' to display detailed information about a specific command.
Type 'HELP HELP' to display more detailed information about the help system.
```

At this point you'll want to connect to something.

```
DC100GH01-OA1> connect
```

```
Invalid Arguments
```

```
CONNECT { INTERCONNECT | SERVER [SERIAL] } <bay number>: Opens a Text Console
```

session to the interconnect or server specified.

```
DC100GH01-OA1> connect interconnect 2
```

Serial connection is not supported.

```
DC100GH01-OA1> connect interconnect 3
```

NOTICE: This pass-thru connection to the integrated I/O console is provided for convenience and does not supply additional access control. For security reasons, use the password features of the integrated switch.

Connecting to integrated switch 3 at 9600,N81...
Escape character is '<Ctrl>_' (Control + Shift + Underscore)

In this example, interconnect 3 is the first FC switch in our c7000 blade chassis. Keep in mind the escape sequence as well, as this will come in handy when disconnecting.

Press [Enter] to display the switch console:

```
User Access Verification
FOSLAB5A05 login: admin
Password:
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2009, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
other third parties and are used and distributed under license.
Some parts of this software may be covered under the GNU Public
License or the GNU Lesser General Public License. A copy of
each such license is available at
http://www.gnu.org/licenses/gpl.html and
http://www.gnu.org/licenses/lgpl.html
FOSLAB5A05# exit
```

```
User Access Verification
FOSLAB5A05 login:
```

At this point, use CTRL-SHIFT-UNDERSCORE to disconnect from the console session.

```
-----
Command: D)isconnect, C)hange settings, send B)reak, E)xit command mode X)modem
send > D
-----
```

Once you've disconnected from the first switch, you can then connect to the second, and so on.

```
DC100GH01-OA1> connect interconnect 4
```

NOTICE: This pass-thru connection to the integrated I/O console is provided for convenience and does not supply additional access control. For security reasons, use the password features of the integrated switch.

Connecting to integrated switch 4 at 9600,N81...
Escape character is '<Ctrl>_' (Control + Shift + Underscore)

Press [Enter] to display the switch console:

```
User Access Verification
FOSLAB5A06 login: admin
Password:
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2009, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
other third parties and are used and distributed under license.
Some parts of this software may be covered under the GNU Public
License or the GNU Lesser General Public License. A copy of
each such license is available at
http://www.gnu.org/licenses/gpl.html and
```

```
http://www.gnu.org/licenses/lgpl.html
FOSLAB5A06# exit
```

```
User Access Verification
FOSLAB5A06 login:
```

```
-----
Command: D)isconnect, C)hange settings, send B)reak, E)xit command mode X)modem
send > D
-----
```

```
DC100GH01-OA1>
```

recovering the admin password

Sometimes, silly things happen to good people. One of those silly things is forgetting the local admin password on a 9124 switch. But it can be reset if you can tolerate power-cycling the switch. Start by logging in to the console of the switch.

Power cycle the switch.

During the bootup of the switch, issue CTRL-C one or more times at the console session until you see the loader prompt:

```
loader>.
```

View the kickstart image in bootflash:

```
loader> dir bootflash:
```

Boot the kickstart image.

```
loader> boot kickstart_image
boot m9500-sf2ek9-kickstart-mz.3.3.4a.bin
```

You should now see the boot prompt

```
FCSWITCH01(boot)#.
```

Enter configuration mode:

```
FCSWITCH01(boot)# conf t
```

Enter a new admin password.

```
FCSWITCH01(boot)(config)# admin-password <new password>
FCSWITCH01(boot)(config)# exit
FCSWITCH01(boot)#
```

View the system image in bootflash.

```
FCSWITCH01(boot)# dir bootflash:
m9500-sf2ek9-mz.3.3.4a.bin
```

Load the system image.

```
FCSWITCH01(boot)# load bootflash:system_image
load bootflash: m9500-sf2ek9-mz.3.3.4a.bin
```

Verify that you now see the login prompt.

If necessary, reset the SNMP admin password after logging in to the switch.

```
FCSWITCH01# conf t
FCSWITCH01(config)# snmp-server user admin auth md5 <new password>
FCSWITCH01(config)# exit
FCSWITCH01(config)# copy run start
```

firmware downgrades

While all the kids like running firmware upgrades, sometimes you'll find yourself in a position to have to downgrade from one revision of code to another, like from NX-OS to SAN-OS. You'll need a valid set of credentials, a solid tftp server, and a working network configuration. It also helps if you don't have firewalls all over the place.

```
User Access Verification
login: admin
Password:
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2009, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
```

First thing, every time, **copy run start**. And while you're at, put a copy on your tftp server as well.

```
FCSWITCH02# copy running-config startup-config
[#####] 100%
FCSWITCH02# copy startup-config tftp://192.168.101.9/startup-config_FCSWITCH02_2
8072010
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....
|
TFTP put operation was successful
```

I like to run a **show module** command to confirm I'm logged into the hardware I think I'm logged into.

```
FCSWITCH02# show module
Mod  Ports  Module-Type                Model                Status
---  ---
1    24     1/2/4 Gbps FC/Supervisor-2  DS-C9124-K9-SUP     active *

Mod  Sw          Hw      World-Wide-Name(s) (WWN)
---  ---
1    4.1(3a)    5.1     20:01:00:0d:ec:f3:7f:40 to 20:18:00:0d:ec:f3:7f:40

Mod  MAC-Address(es)                Serial-Num
---  ---
1    00-0d-ec-be-d2-ec to 00-0d-ec-be-d2-f0  JAF1352AJRF
```

- this terminal session

Now copy the firmware files from your tftp server to the bootflash directory on the switch to be upgraded.

```
FCSWITCH02# copy tftp://192.168.101.9/m9100-s2ek9-mz.3.3.4a.bin bootflash:m9100-
s2ek9-mz.3.3.4a.bin
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....
-
TFTP get operation was successful
FCSWITCH02# copy tftp://192.168.101.9/m9100-s2ek9-kickstart-mz.3.3.4a.bin bootfl
ash:m9100-s2ek9-kickstart-mz.3.3.4a.bin
Trying to connect to tftp server.....
Connection to server Established. Copying Started.....
|
TFTP get operation was successful
```

Check that the files made it.

```
FCSWITCH02# dir bootflash:
 1943      Feb 21 16:11:20 2010  backup-22-2-10
 12288     Dec 23 20:58:41 2009  lost+found/
14444032   Jul 28 13:43:47 2010  m9100-s2ek9-kickstart-mz.3.3.4a.bin
18678784   Dec 23 21:00:11 2009  m9100-s2ek9-kickstart-mz.4.1.3a.bin
55576589   Jul 28 13:43:17 2010  m9100-s2ek9-mz.3.3.4a.bin
51055100   Dec 23 21:01:38 2009  m9100-s2ek9-mz.4.1.3a.bin
 2411     Jul 20 22:02:19 2010  mts.log
```

```
Usage for bootflash://sup-local
 152953856 bytes used
 10017792 bytes free
162971648 bytes total
```

Double-check that the files made it.

```
FCSWITCH02# show version image bootflash:m9100-s2ek9-mz.3.3.4a.bin
 image name: m9100-s2ek9-mz.3.3.4a.bin
 bios:      v1.0.16(10/23/08)
 system:    version 3.3(4a)
 compiled:  10/13/2009 12:00:00 [10/29/2009 13:52:44]
```

Check for any incompatibilities with your current configuration and the downgrade process.

```
FCSWITCH02# show incompatibility system m9100-s2ek9-mz.3.3.4a.bin
No incompatible configurations
```

And then fire when ready!

```
FCSWITCH02# install all system bootflash:m9100-s2ek9-mz.3.3.4a.bin kickstart bootflash:m9100-s2ek9-kickstart-mz.3.3.4a.bin
```

```
Verifying image bootflash:/m9100-s2ek9-kickstart-mz.3.3.4a.bin for boot variable "kickstart".
```

```
[#####] 100% -- SUCCESS
```

```
Verifying image bootflash:/m9100-s2ek9-mz.3.3.4a.bin for boot variable "system".
```

```
[#####] 100% -- SUCCESS
```

```
Verifying image type.
```

```
[#####] 100% -- SUCCESS
```

```
Extracting "system" version from image bootflash:/m9100-s2ek9-mz.3.3.4a.bin.
```

```
[#####] 100% -- SUCCESS
```

```
Extracting "kickstart" version from image bootflash:/m9100-s2ek9-kickstart-mz.3.3.4a.bin.
```

```
[#####] 100% -- SUCCESS
```

```
Extracting "bios" version from image bootflash:/m9100-s2ek9-mz.3.3.4a.bin.
```

```
[#####] 100% -- SUCCESS
```

```
Performing Compact Flash and TCAM sanity test.
```

```
[#####] 100% -- SUCCESS
```

```
Notifying services about system upgrade.
```

```
[#####] 100% -- SUCCESS
```

Compatibility check is done:

Module	bootable	Impact	Install-type	Reason
1	yes	non-disruptive	reset	

Images will be upgraded according to following table:

Module	Image	Running-Version(pri:alt)	New-Versi
1	system	4.1(3a)	3.3(4
a)	yes		

```

1 kickstart 4.1(3a) 3.3(4)
a) yes
1 bios v1.0.17(05/28/09): v1.0.17(05/28/09) v1.0.16(10/23/0
8) no

```

The next step is pretty much the point of really quite hard to get back from.

Do you want to continue with the installation (y/n)? [n] **y**

Install is in progress, please wait.

Notifying services about the upgrade.
[#####] 100% -- SUCCESS

Setting boot variables.
[#####] 100% -- SUCCESS

Performing configuration copy.
[#####] 100% -- SUCCESS

Module 1: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[#####] 100% -- SUCCESS

Converting startup config.
[#####] 100% -- SUCCESS

Upgrade can no longer be aborted, any failure will result in a disruptive upgrade.

Freeing memory in the file system.
[#####] 100% -- SUCCESS

Loading images into memory.
[#####] 100% -- SUCCESS

Saving linecard runtime state.
[#####] 100% -- SUCCESS

Saving supervisor runtime state.
[#####] 100% -- SUCCESS

Saving mts state.
[#####] 100% -- SUCCESS

Rebooting the switch to proceed with the upgrade.
Telnet and Ssh will now be disabled.

The switch will reboot and you can watch it post, or duck out for a coffee. Better make it instant.

```

FCSWITCH02 login: admin
Password:
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
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The copyrights to certain works contained herein are owned by
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License or the GNU Lesser General Public License. A copy of
each such license is available at
http://www.gnu.org/licenses/gpl.html and
http://www.gnu.org/licenses/lgpl.html

```

Once you've logged in again successfully, run the following commands to confirm that everything is as you expect.

```

FCSWITCH02# show module
Mod  Ports  Module-Type  Model  Status
---  ---
1    24     1/2/4 Gbps FC/Supervisor-2  DS-C9124-K9-SUP  active *

Mod  Sw  Hw  World-Wide-Name(s) (WWN)
---  ---
1    3.3(4a)  5.1  20:01:00:0d:ec:f3:7f:40 to 20:18:00:0d:ec:f3:7f:40

```

```
Mod  MAC-Address(es)                Serial-Num
---  -
1    00-0d-ec-be-d2-ec to 00-0d-ec-be-d2-f0  JAF1352AJRF
```

* this terminal session

FCSWITCH02# **show version**

```
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2009, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
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License or the GNU Lesser General Public License. A copy of
each such license is available at
http://www.gnu.org/licenses/gpl.html and
http://www.gnu.org/licenses/lgpl.html
```

Software

```
BIOS:          version 1.0.17
kickstart:     version 3.3(4a)
system:        version 3.3(4a)
```

```
BIOS compile time:      05/28/09
kickstart image file is: bootflash:///m9100-s2ek9-kickstart-mz.3.3.4a.bin
kickstart compile time: 10/13/2009 12:00:00 [10/29/2009 13:38:12]
system image file is:   bootflash:///m9100-s2ek9-mz.3.3.4a.bin
system compile time:    10/13/2009 12:00:00 [10/29/2009 13:52:44]
```

Hardware

```
cisco MDS 9124 ("1/2/4 Gbps FC/Supervisor-2")
Motorola, ppc8541 (e500) with 514956 kB of memory.
Processor Board ID JAF1352AJRF
```

```
bootflash: 254464 kB
```

FOSLAB5A02 kernel uptime is 0 days 0 hour 1 minute(s) 41 second(s)

```
Last reset at 817640 usecs after Wed Jul 28 13:48:32 2010
Reason: Reset due to upgrade
System version: 4.1(3a)
Service:
```

Once I've confirmed that everything is in order, I like to delete the old firmware files to avoid confusion during recovery scenarios. You can do this by running **dir bootflash:** followed by **del <filename>** to delete the files that you no longer need. Don't delete the current firmware though. Just saying.