NOVASCALE
UNIVERSAL

R421
R422
R422-INF

HOW TO: Replace the BIOS

REFERENCE
Rev04v01

NOVASCALE UNIVERSAL

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R422
R422-INF

HOW TO: Replace the BIOS

Hardware

July 2007

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FRANCE

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Trademarks and Acknowledgements

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Preface

This HOW TO explains how to replace the BIOS for the motherboards of the following servers:

- NovaScale Universal R421
- Novascale Universal R422
- Novascale Universal R422-INF

Intended readers

This HOW TO is written for very qualified user's or Bull SAS support technicians.

Chapter 1. Introduction

There are 3 motherboard types:

- The Novascale R421 motherboard is the X7DBR-i model
- The Novascale R422 motherboard is the X7DBT model
- The Novascale R422-INF motherboard is the X7DBT-INF model

The BIOS is the same for both the X7DBT and X7DBT-INF motherboards, however, a different BIOS is used for the X7DBR-i motherboard.

Bull S.A.S. resells these servers with either:

- **Windows Compute Cluster Server 2003** (WCCS) operating system which must be pre-actived

or

- **Linux XHPC Bull Advanced Server** operating system (BAS4 for Xeon)

or

- Without an operating system.

Consequently there are 6 different BIOS's, each of which can be included on a floppy disk:

Target	BIOS file name	Floppy Disk name	Virtual Floppy Disk Name
R421 and WCCS	R421Wxxx.ROM	R421Wxxx	R421Wxxx.IMG
R421 and Redhat XBAS	R421Xxxx.ROM	R421Xxxx	R421Xxxx.IMG
R421 w/o OS	R421Nxxx.ROM	R421Nxxx	R421Nxxx.IMG
R422/R422-INF and WCCS	R422Wxxx.ROM	R422Wxxx	R422Wxxx.IMG
R422/R422-INF and Redhat XBAS	R422Xxxx.ROM	R422Xxxx	R422Xxxx.IMG
R422/R422-INF w/o OS	R422Nxxx.ROM	R422Nxxx	R422Nxxx.IMG

xxx = version (from 001 to 999)

A floppy disk image must be used, by means of the **Virtual Floppy disk** feature for the AOC-SIMSO or AOC-SIMSO+ card.

The BIOS floppy disk images should be downloaded from the Bull S.A.S. Support Site

http://support.bull.com/ols/product/platforms/ns/uline/r400/r421/dl/index.html

http://support.bull.com/ols/product/platforms/ns/uline/r400/r422/dl/index.htm

We assume in this document that the BIOS will be replaced on a server named **TARGET** and that it exists on a portable PC named **SUPPORT** which can access the network 192.168.1.*

The BIOS floppy disk images will have been downloaded onto

- (SUPPORT)C:\R421R422\BIOS\R421\WCCS\R421W001.IMG
- (SUPPORT)C:\R421R422\BIOS\R422\WCCS\R422W001.IMG

- (SUPPORT)C:\R421R422\BIOS\R421\XBAS\R421X001.IMG
- (SUPPORT)C:\R421R422\BIOS\R422\XBAS\R422X001.IMG

- (SUPPORT)C:\R421R422\BIOS\R421\NOS\R421N001.IMG
- (SUPPORT)C:\R421R422\BIOS\R422\NOS\R422N001.IMG

Three different procedures are used to replace a BIOS:

1. Use a WEB browser application on the **SUPPORT** PC that can access the AOC-SIMSO or AOC-SIMSO+ IP address.

2. Use the IPMI View application on the **SUPPORT** PC that can access the AOC-SIMSO or AOC-SIMSO+ IP address.

3. Use the **C:\DOS\BIOS\upgrade.bat** tool from a bootable USB key (this procedure is reserved for Bull S.A.S. support technicians when, for example, a motherboard has been replaced).

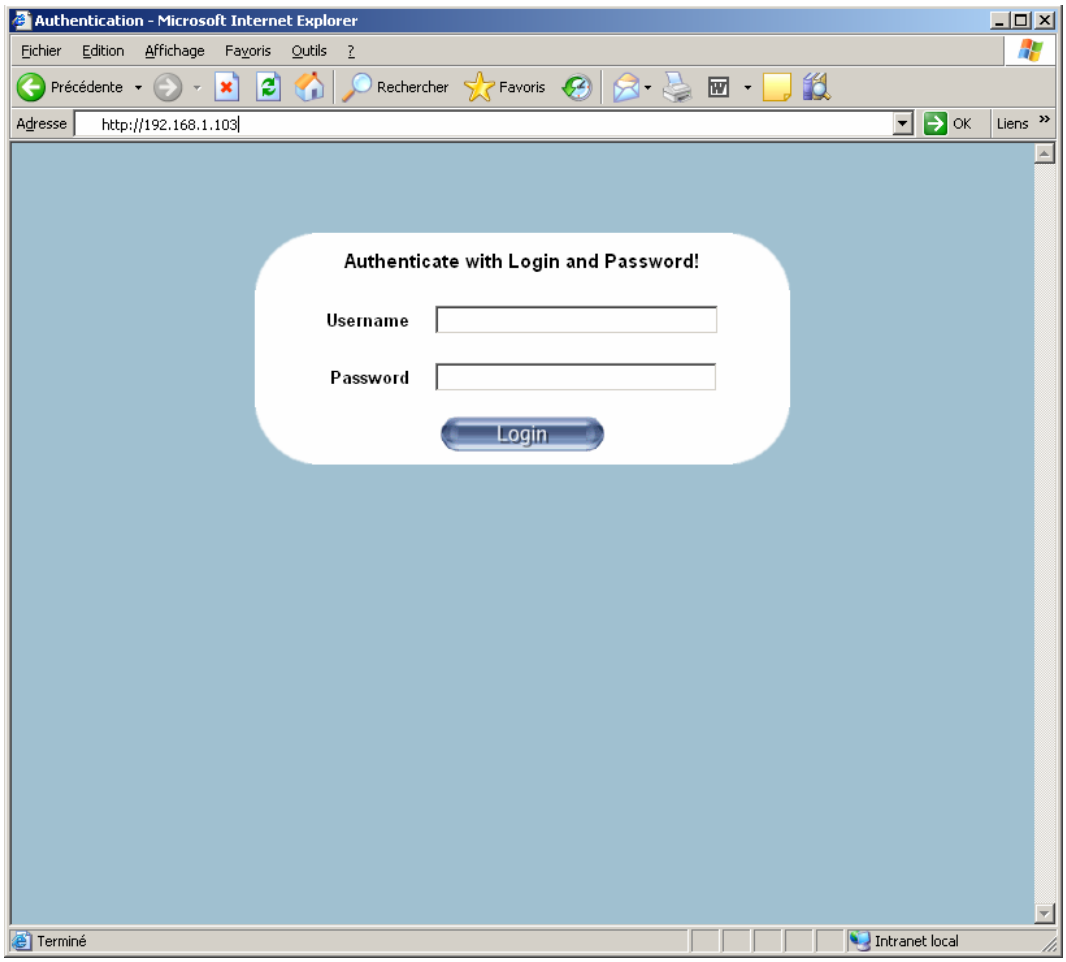
Chapter 2. Replacing the BIOS by means of a Web browser

Note:
For more information see the Bull *NovaScale R42x AOC-SIMSO/SIMSO+ Installation and User's Guide* (86 A1 96ET 00)

To replace the BIOS for a NovaScale Universal R421, R422 or R422-INF server carry out the following steps.

1. From the **SUPPORT** PC, that can access the network (192.168.1.*), type the IP address you want to connect to into the address bar of the browser.

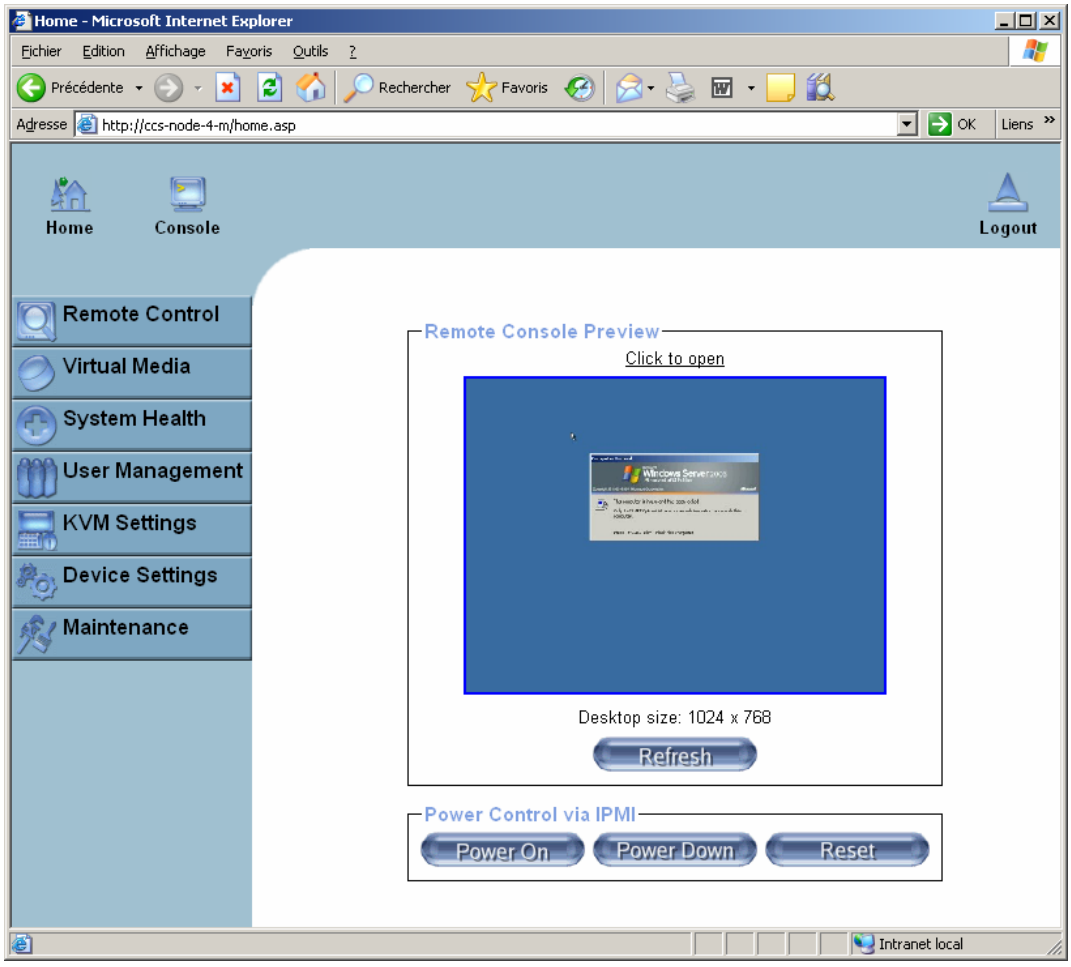
2. Once the connection is made, the Log In screen appears, as shown below



3. To log in;

- type in your Username in the **Username** box (the default is ADMIN)
- type in your password in the **Password** box (the default is ADMIN)
- Click on the **Login** button

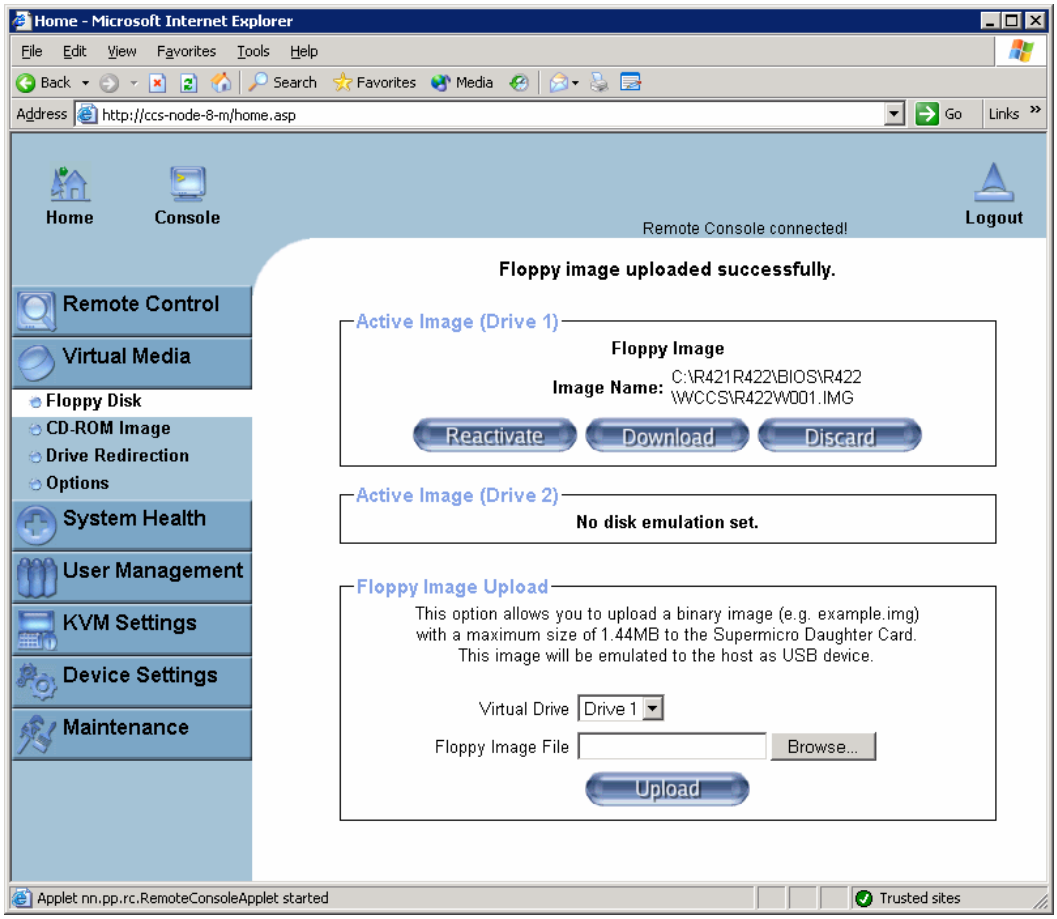
4. The Home Page will appear, as shown below.



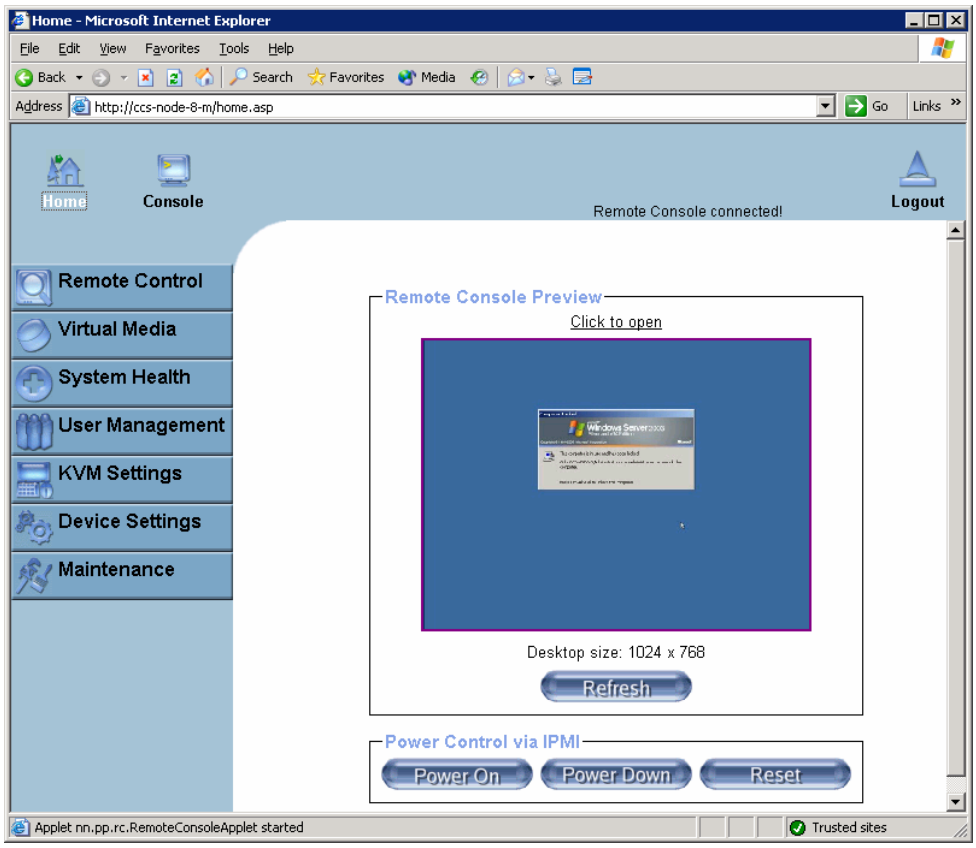
5. Click on the **Virtual Media** icon on the Home Page to activate its submenus

6. Click on the **Floppy Disk** icon to activate its submenus.

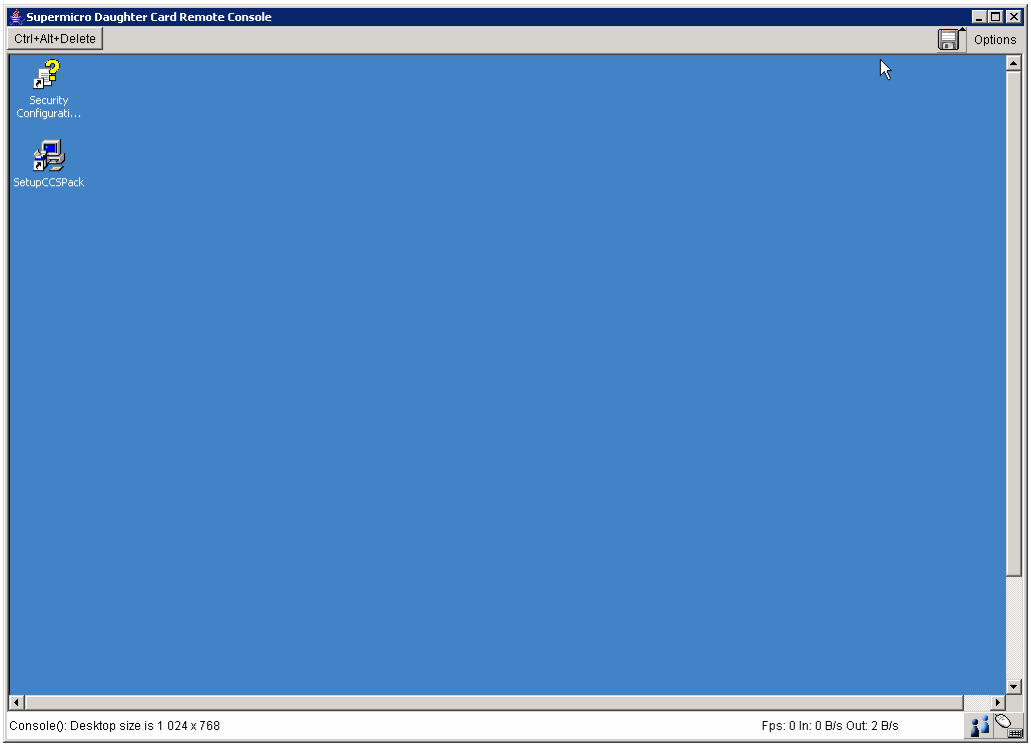
7. In the **Floppy Image Upload** box,
   - Select Virtual Drive = Drive 1
   - Floppy Image (for example) = C:\R421R422\BIOS\R422\WCCS\R422W001.IMG
   - Wait 5 minutes.



8. Now click on the **Home** icon to return to the Home Page.



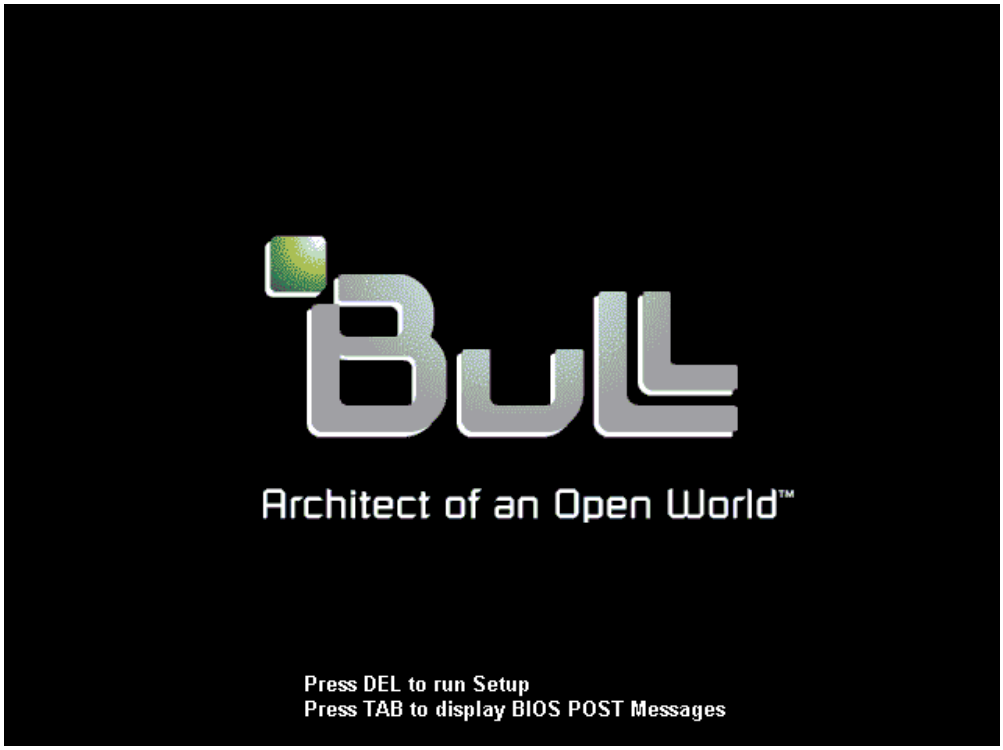
9. Click on the **Remote console preview**.-> **Click to Open** button to open the remote console screen.



10. Shutdown and Restart Windows (or any other operating system).

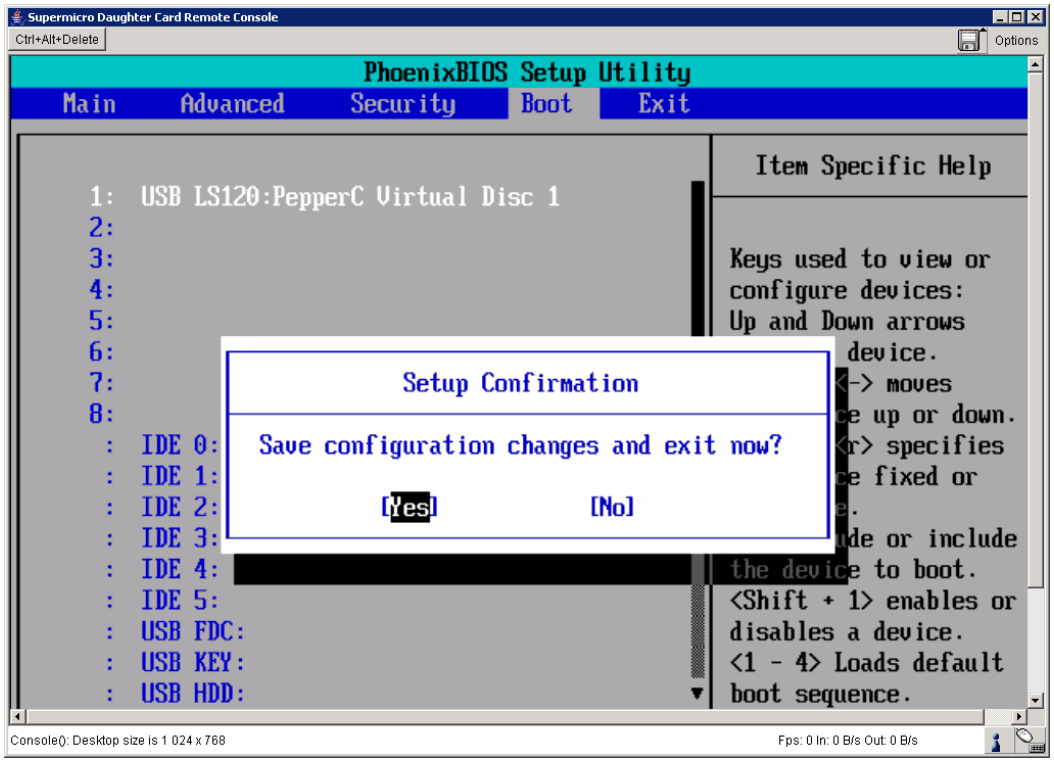
Or click on **Remote console preview.->Reset** button to reboot the server **TARGET**.

Warning:
When the Bull Logo displays on the remote console screen, press "Del" to enter setup.

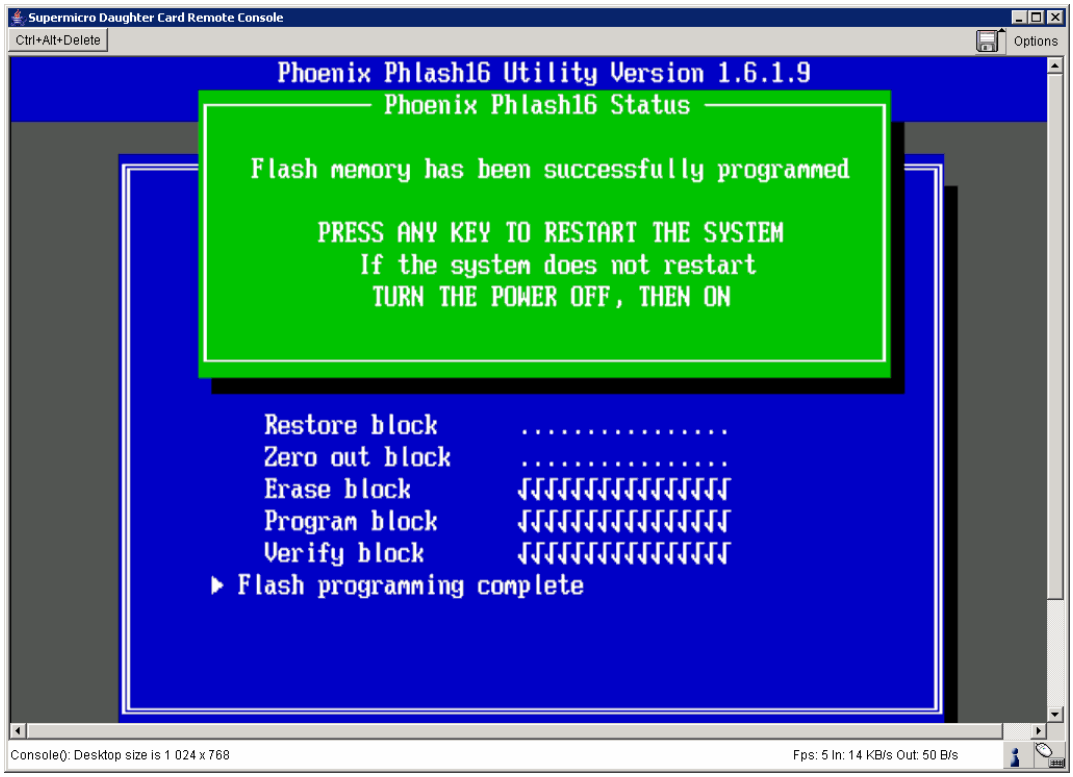


11. Place the **USB LS120:PepperC Virtual Disc 1** in first position in the Boot list.
    - Remove all other devices from the boot list.
    - Press F10, Save configuration changes and exit now.

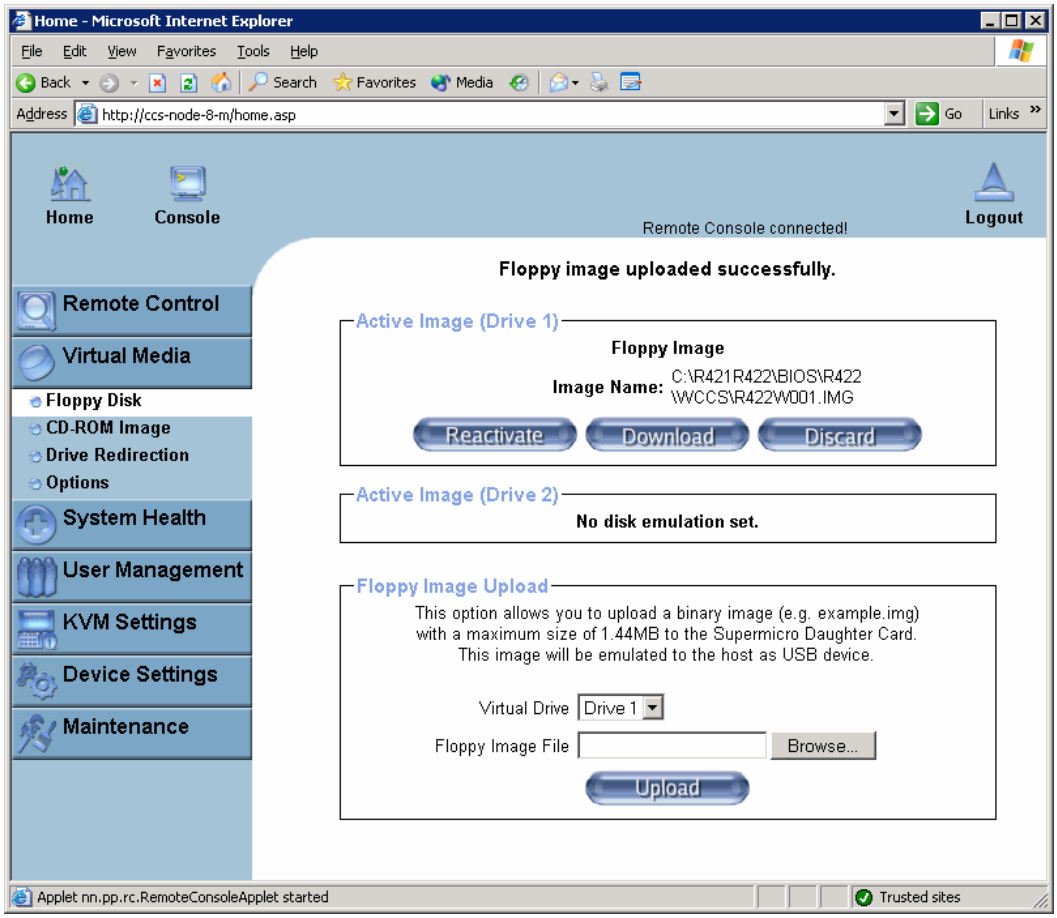
      The server **TARGET** reboots on the Virtual Floppy disk.



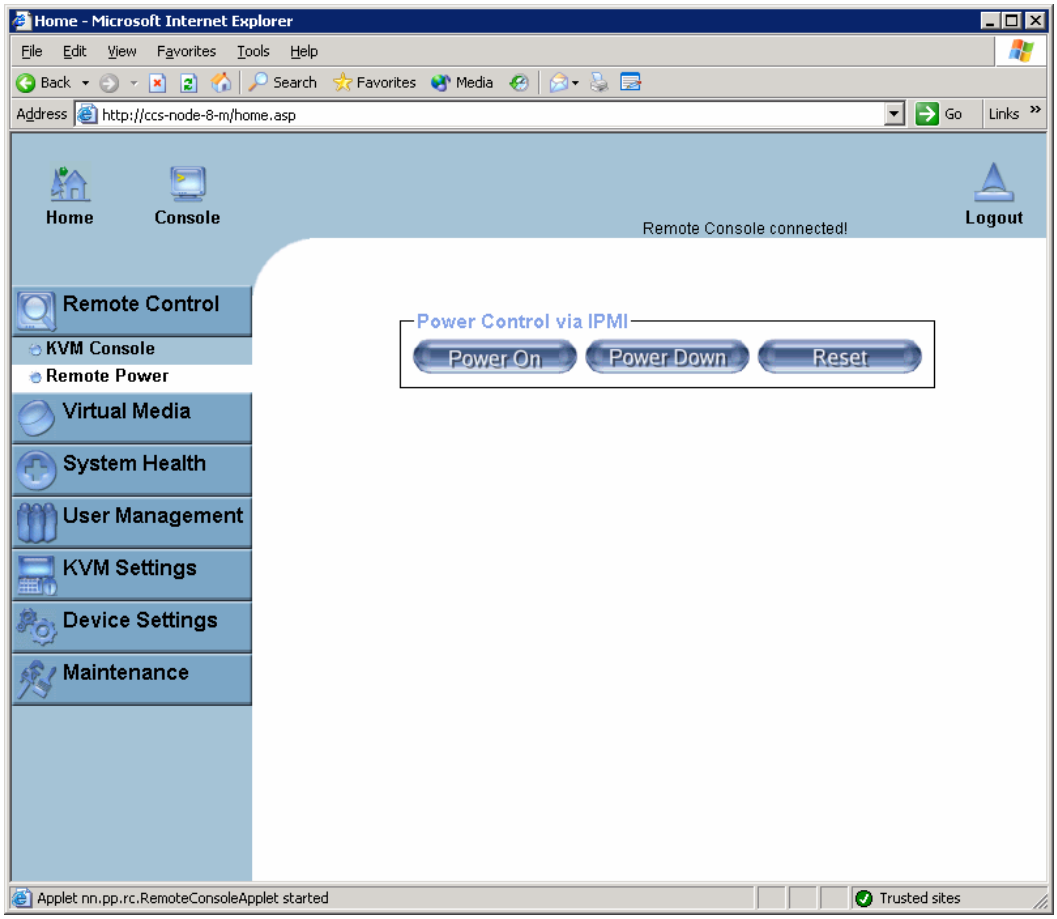
12. When the BIOS has been upgraded the following screen appears.



13. Then, in order to prevent that BIOS from being replaced again at the next reboot, click straight away on **Virtual Media**
    - Click on **Floppy Disk**
    - click on **Active Image (Disk 1)**. ->**Discard**



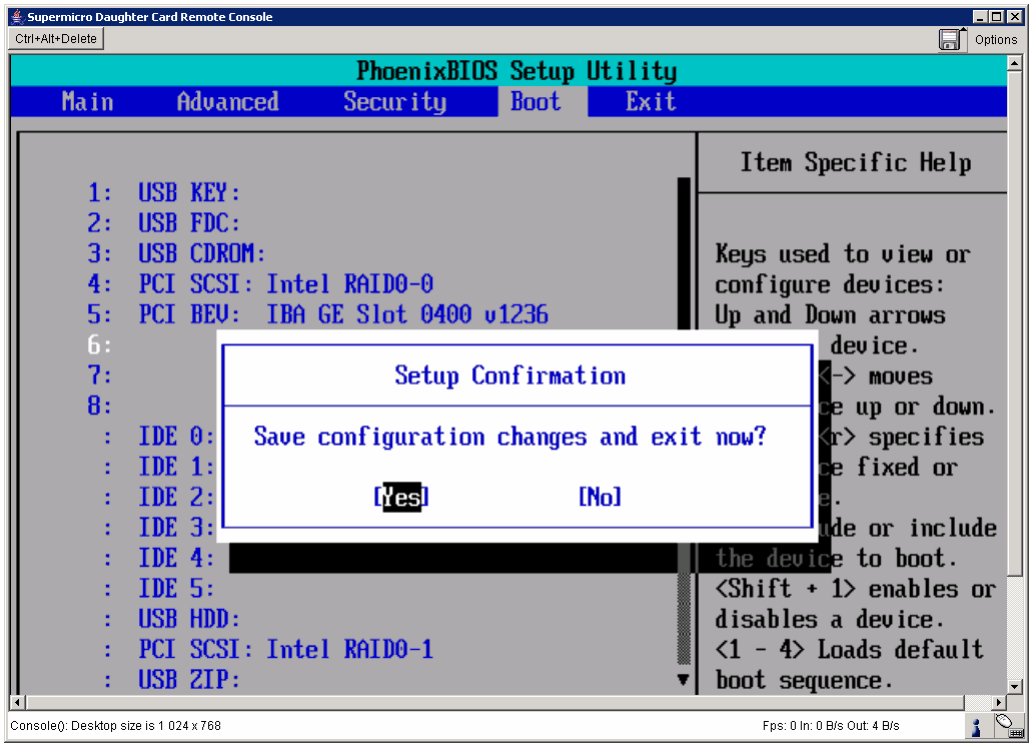
14. Click on **Remote Control**
    - Click on **Remote Power**
    - Click **Power Down** to power down the remote host **TARGET**



15. Click on **Power On** to power on the remote host **TARGET**

Warning:
When the Bull Logo displays into remote console screen, press "Del" to enter setup.

- Restore the Boot device list as shown below.
- Click on F10, save configuration changes and exit now.



The BIOS upgrade is terminated.

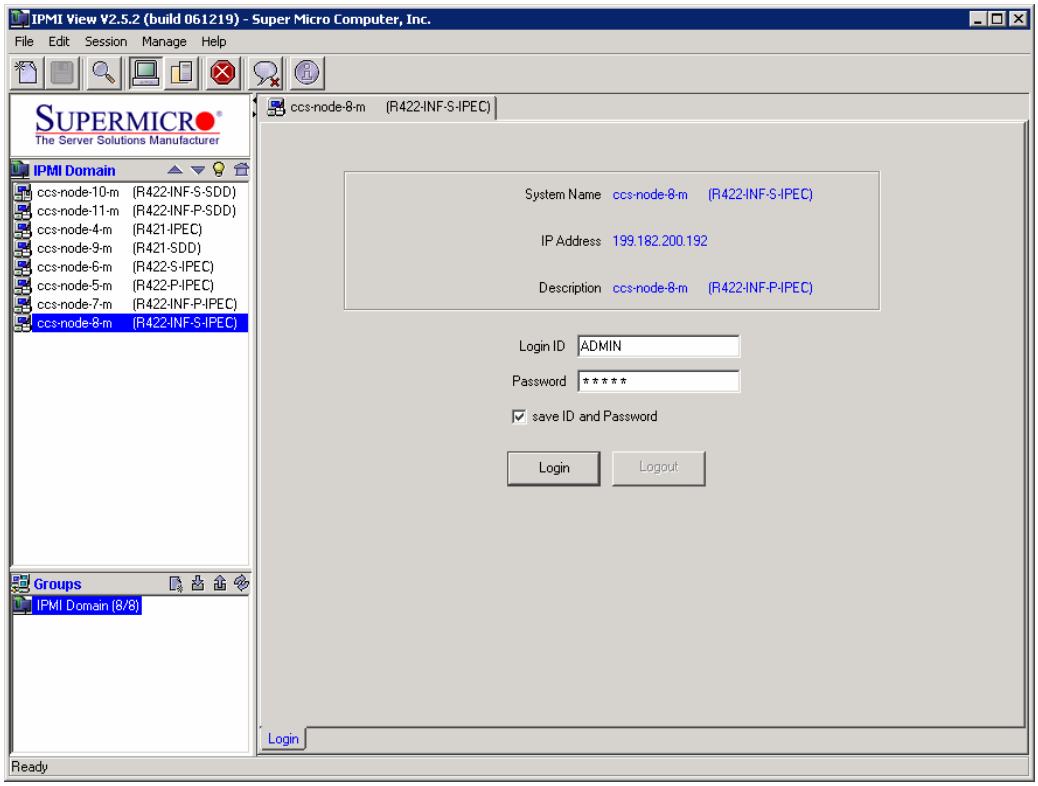
16. Now, click on X to close the **Remote console screen**

17. Return to the Home Page and click on the **Logout** Icon to log out from the **Remote Console Interface**.

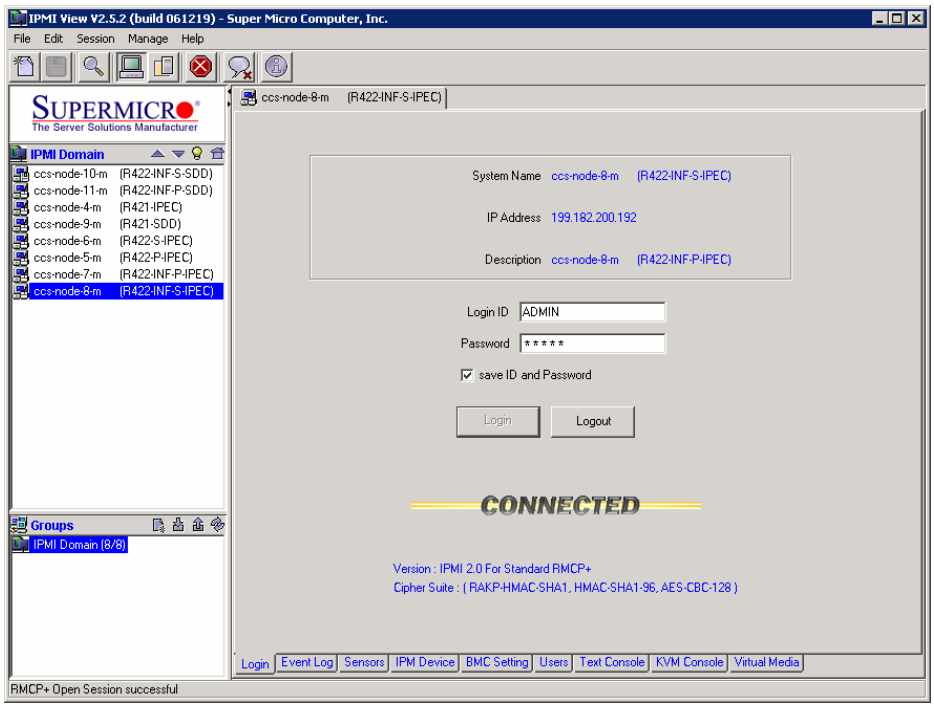
Chapter 3. Replacing the BIOS by means of the IPMI View application

1. Launch the IPMI View application on a server which can access the AOC-SIMSO or AOC-SIMSO+ network (default: 192.168.1.*)

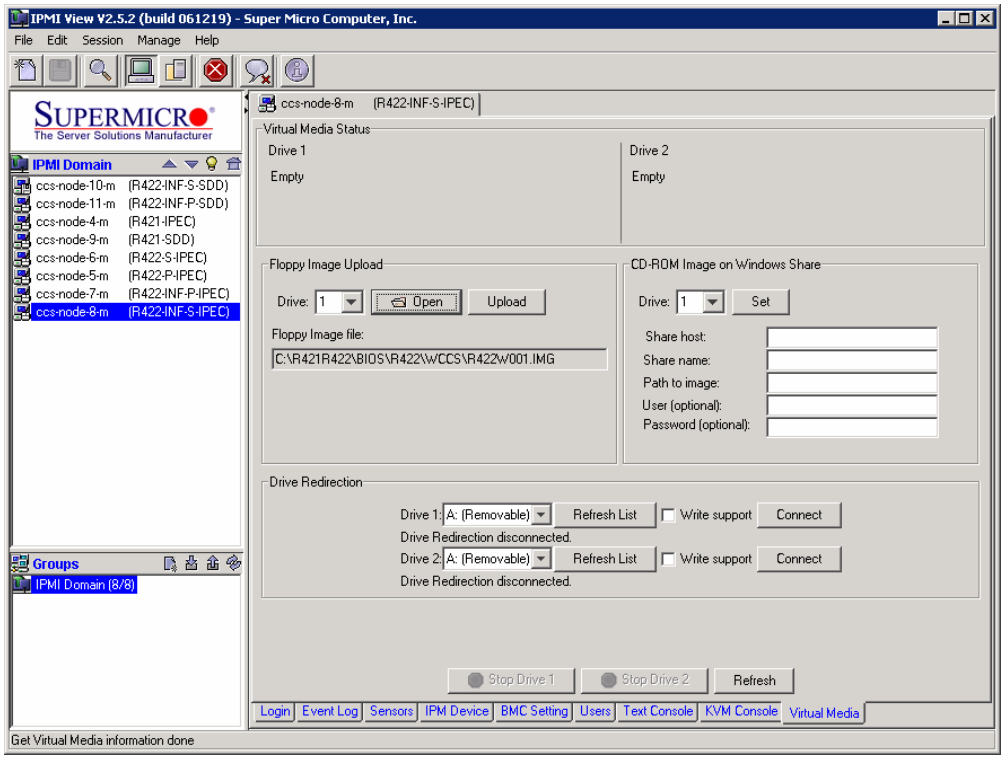
2. Log in to the target AOC-SIMSO or APC-SIMSO+ card
   - Type in Login ID in **Login ID** box
   - Type in Password in **Password** box.
   - Click on **Login** button.



The Home Page, below, appears.

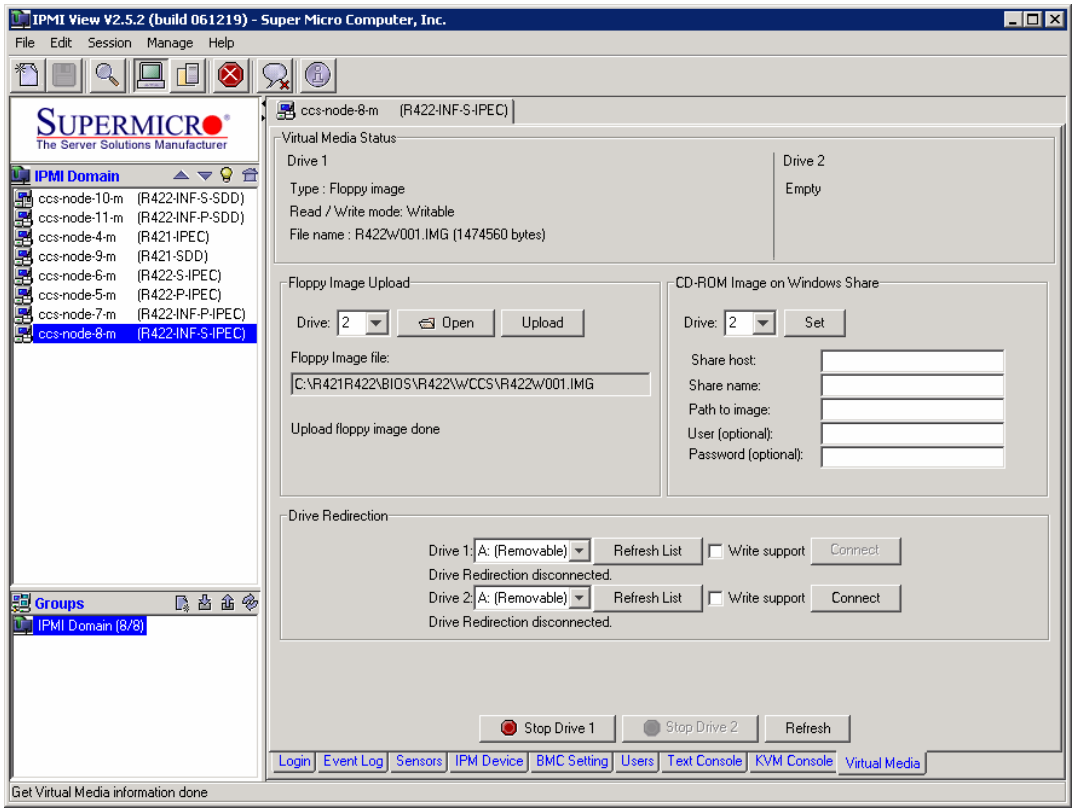


3. Click on the **Virtual Media** tab (at the bottom on the right)
   - Click on the **Open** button.
   - Type in the floppy image path in the **Floppy image File** box.

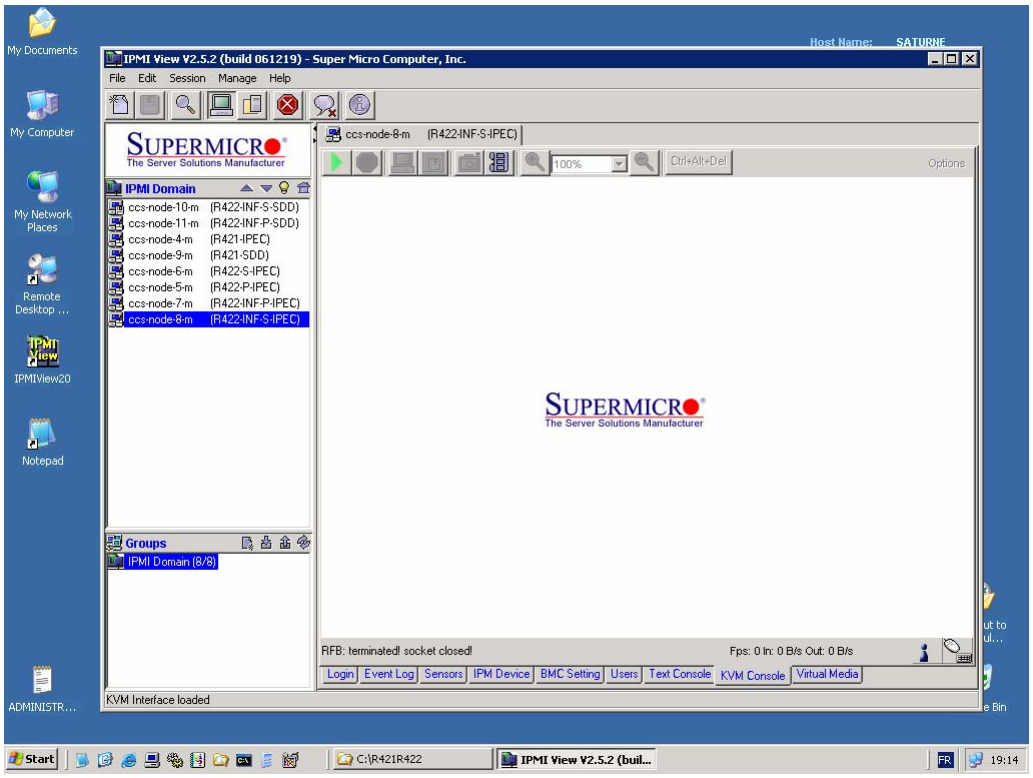


4. Click on the **Upload** button and wait a few minutes.

Note:
When the file has been uploaded the **Stop Drive 1** button becomes available.

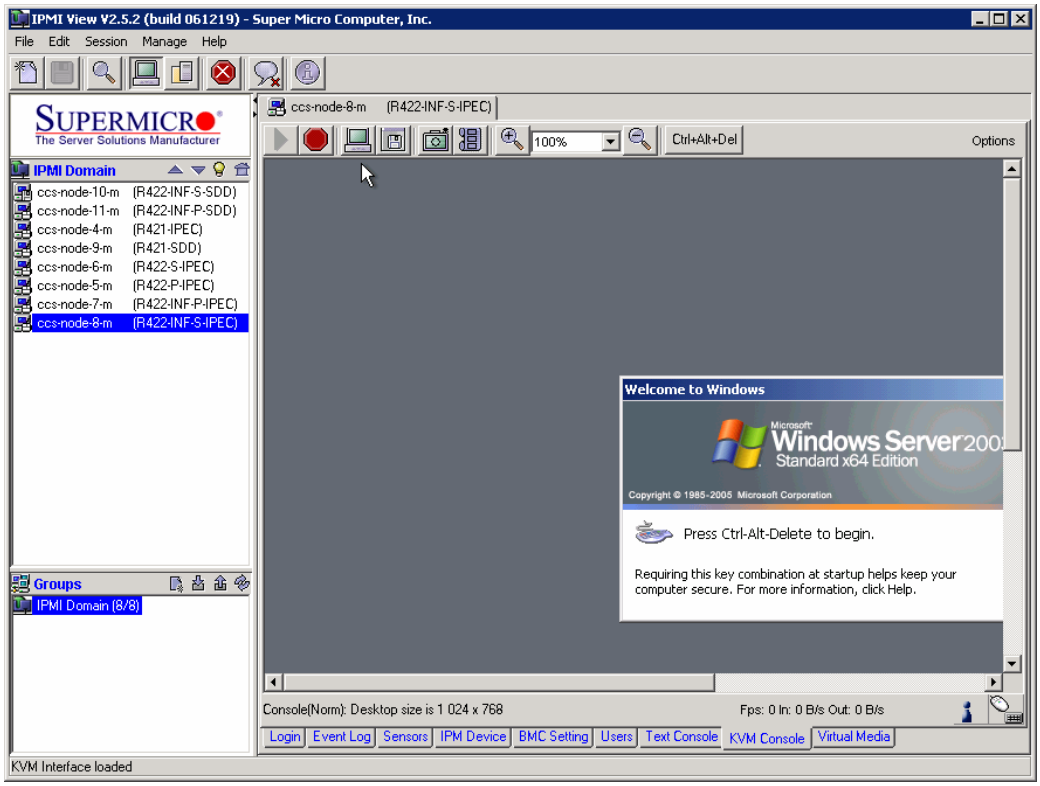


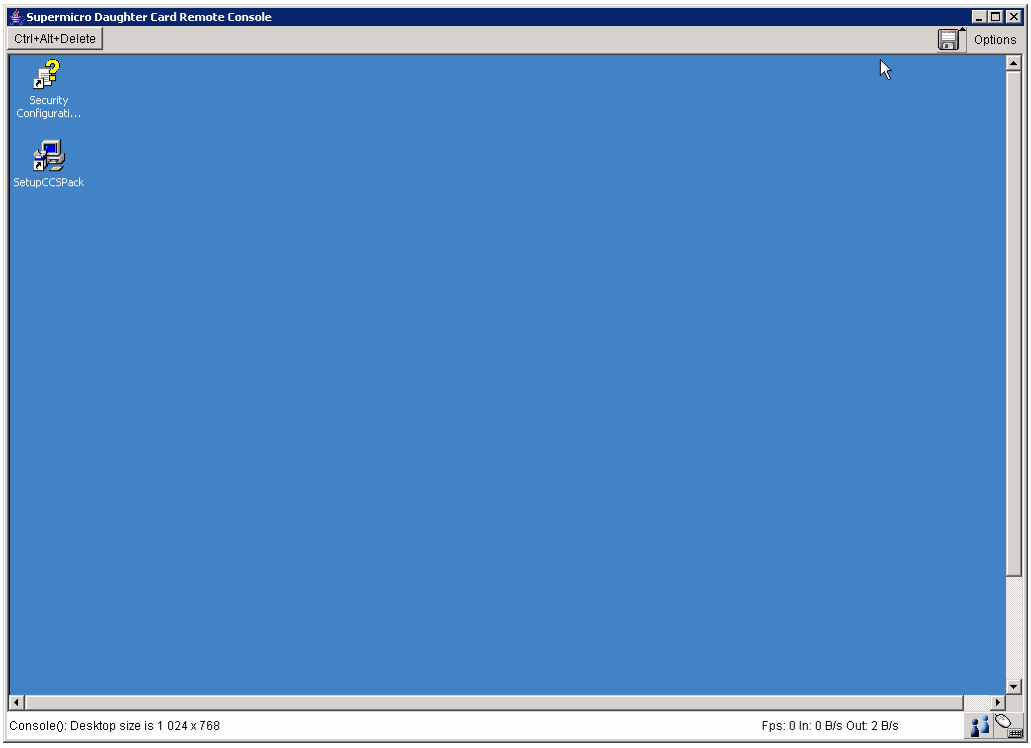
5. To start Video Console Redirection
    - Click on the **KVM Console** tab (At the bottom on the right)
    - Click on **Start Video Redirection** icon in the toolbar.



6. To maximize the size of the remote video screen in the local computer screen
   - Click on **Full screen** icon in toolbar.

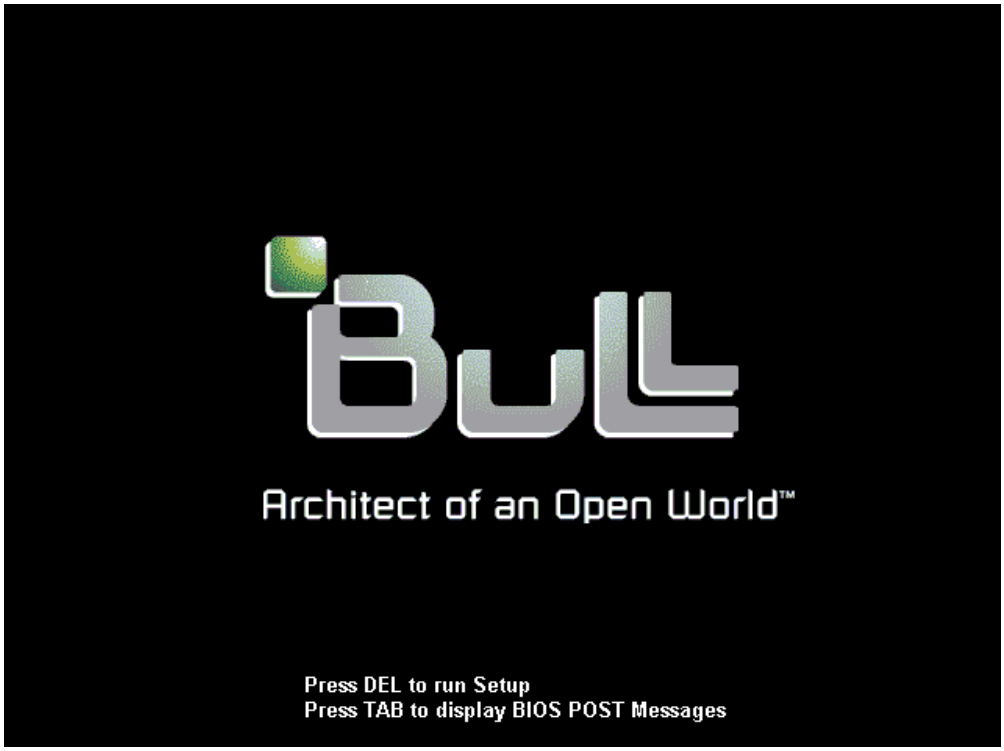
Note:
You may press **Alt+Enter** to go back to the original mode





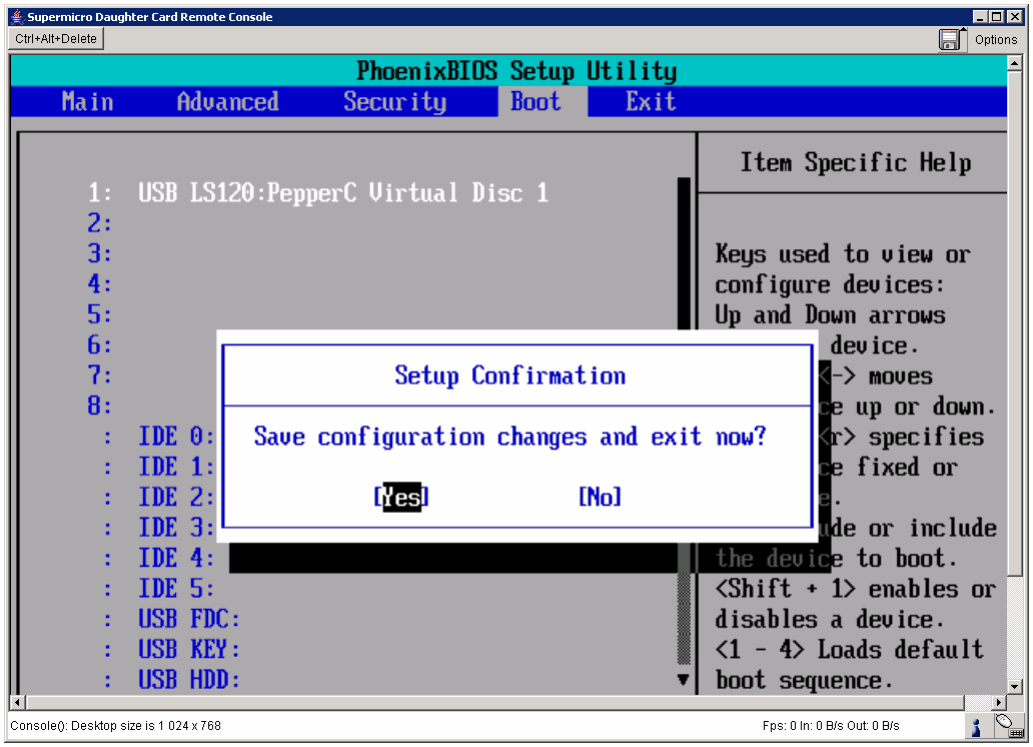
7. Shutdown and then Restart Windows (or any operating system).
    - Or click on **Remote console preview** ->.**Reset** button to reboot the server **TARGET**.

Warning:
When the Bull Logo displays into remote console screen, press "Del" to enter setup.

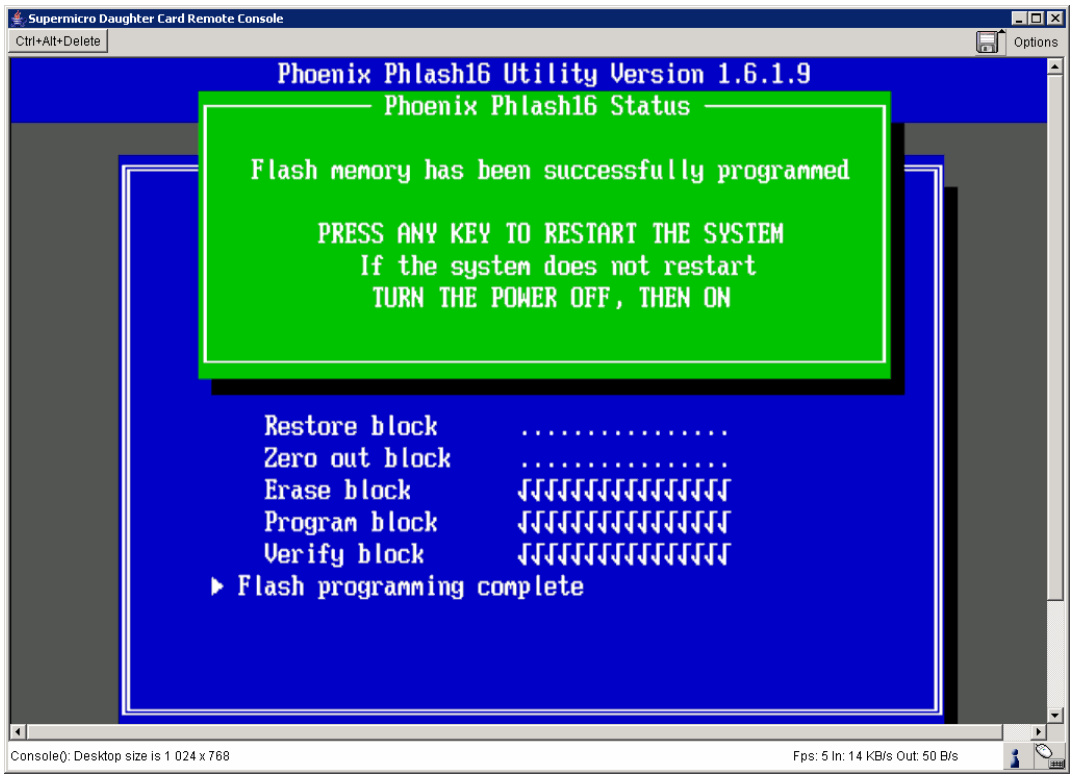


8. Place the **USB LS120:PepperC Virtual Disc 1** in first position in the Boot list.
   - Remove all other devices from the boot list.
   - Press F10, Save configuration changes and exit now.

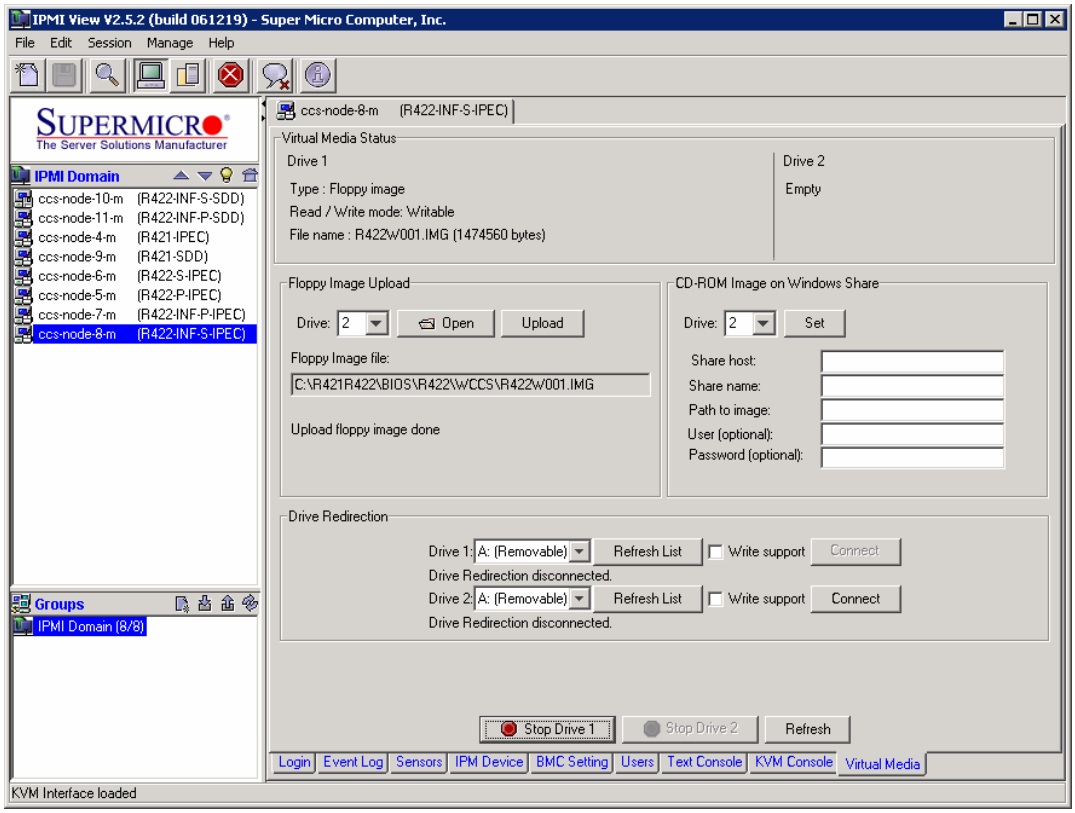
The server **TARGET** reboots on the Virtual Floppy disk

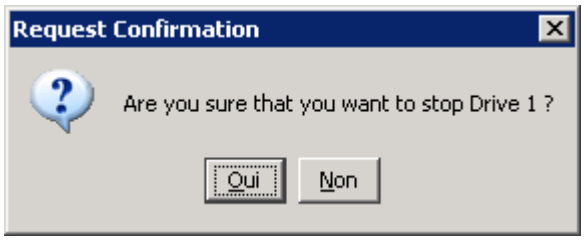


9. When the BIOS has been replaced the following screen is displayed.

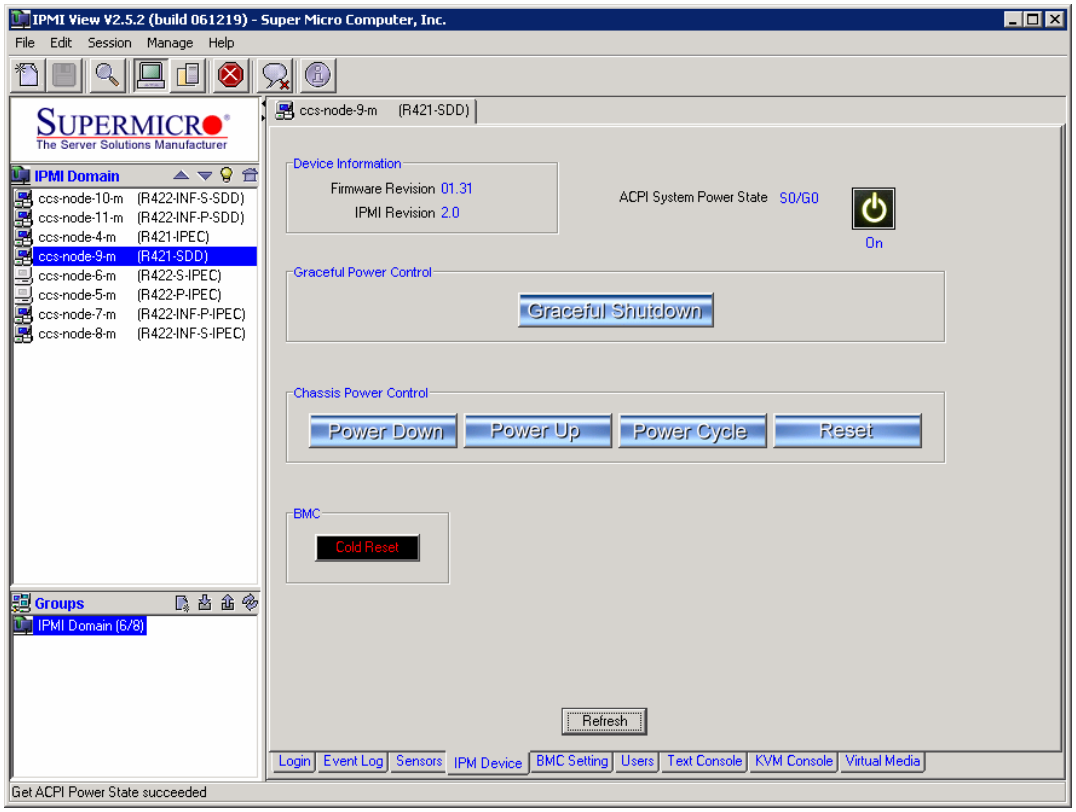


10. When the previous screen appears, type in **Alt+Enter** immediately to quit full screen mode.
    - Click on the **Stop Drive 1** button in order to prevent the BIOS from being updated again at the next reboot.





11. Click on the **IPMI Device** tab.
    - Click on the **Power Down** button to power down the remote host **TARGET**

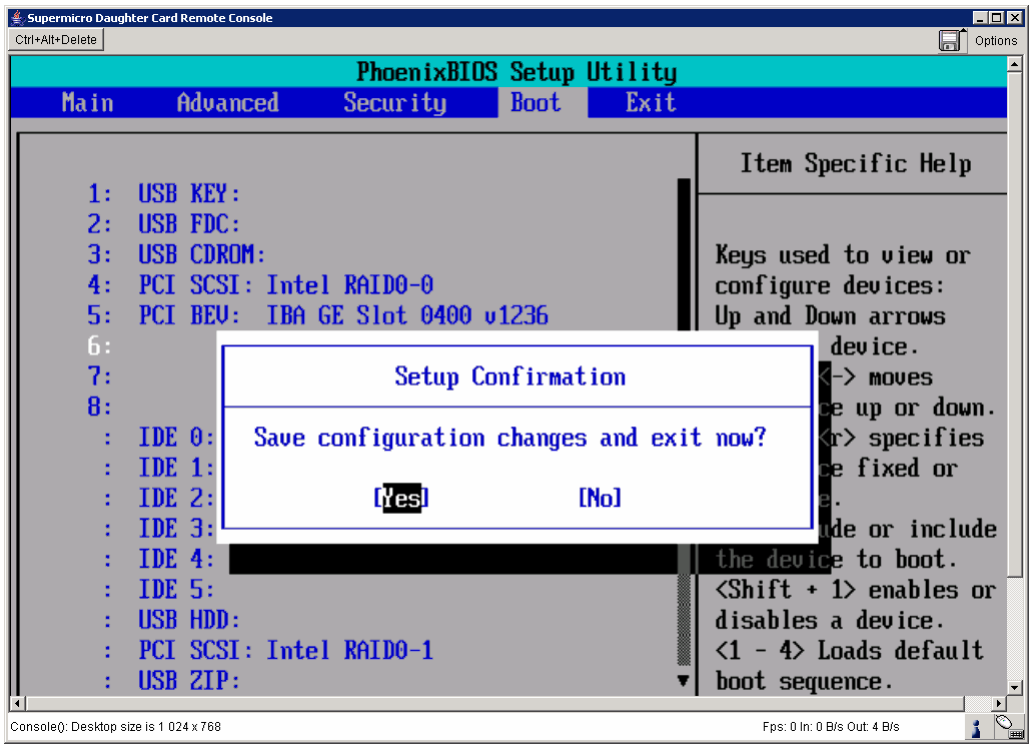


12. Click on the **Power Up** button to power on the remote host **TARGET**

Warning:
When the Bull Logo displays into remote console screen, press "Del" to enter setup.

Restore the Boot devise list as below.

– Click on F10, save configuration changes and exit now.



The BIOS upgrade is terminated.

13. Click on the **Login** tab.

Click on the **Logout** button to disconnect from the **TARGET** server.

Chapter 4. Replacing the BIOS by means of a bootable USB key

This procedure is reserved for Bull S.A.S. support technicians when, for example, a motherboard has been replaced.

Note:
The technician must have a portable PC with the Windows operating system running on it.

4.1 How to create your 'Bootable USB Key'

1. Download the **Bootable-USB-Key-kit.zip** from the Bull S.A.S. support WEB site.

http://support.bull.com/ols/product/platforms/ns/uline/r400/r421/dl/index.html

http://support.bull.com/ols/product/platforms/ns/uline/r400/r422/dl/index.htm

2. Deploy (extract all files) from the **Bootable-USB-Key-kit.zip** into the local directory

```
C:\R421R422\
```

3. Change to the **C:\R421R422\ClefUSBbootable-Tools** directory

4. Mount an USB Key for your PC (for Windows sees the USB key on drive J, for example).

Warning:
All data on this USB key will be lost.

5. Run the following command to create your **Bootable USB Key**.

```
C:\CreateBootableUSBkey.bat    J
```

And follow the directions which appear.

4.2 How to use a 'Bootable USB Key'

1. From the **SUPPORT** server Log in to the **TARGET** server either by means of a web browser application or by means of the IPMI View application and switch to **Full screen** mode.

2. Mount the **Bootable USB Key** into a **NovaScale R421**, **R422** or **R422-INF** server USB port.

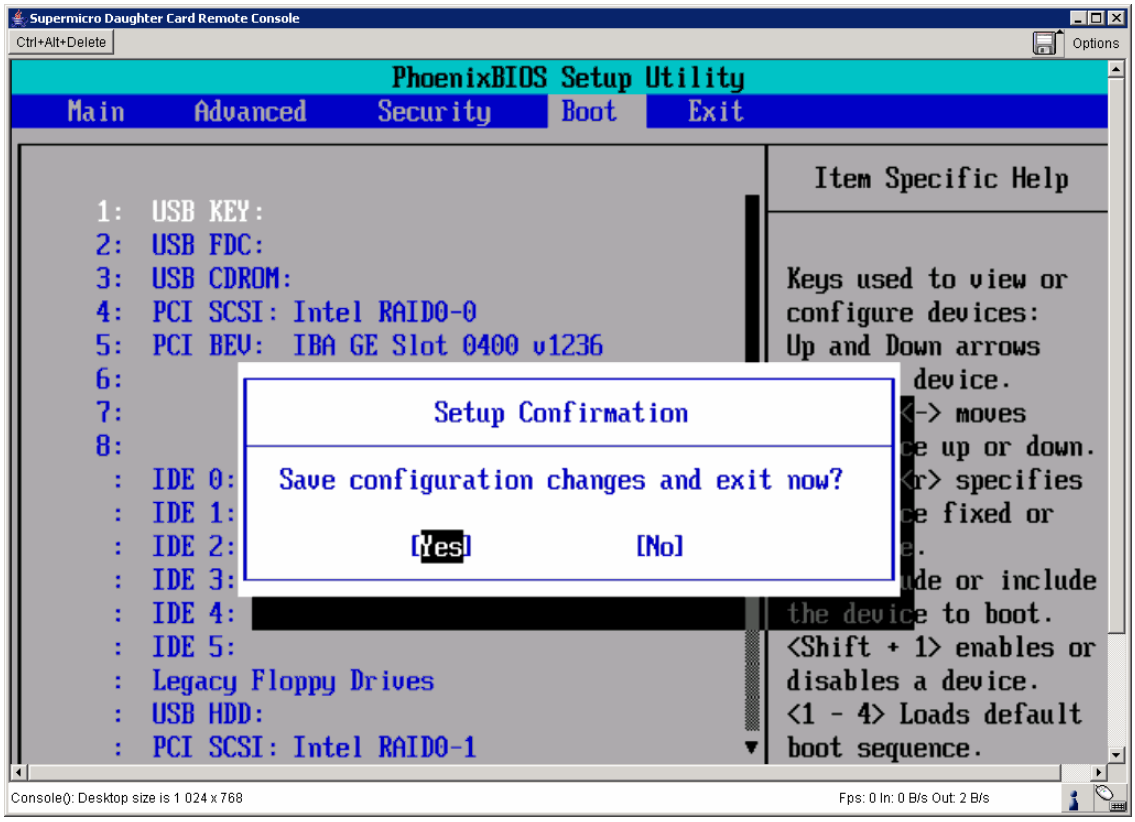
3. If necessary stop the operating system.

4. Reboot the system and press **Del** to run the setup.

5. Go to the **Boot** page and put the **USB Key** device in first position on the list.

6. Go to the **Exit** page and **Exit saving changes**

7. Move the **USB Key** to the first position in the boot list.



8. Type F10 and confirm to accept the changes and to reboot the server.
   The server stops on the C:\ prompt

9. Change to the **C:\DOS\BIOS** directory

10. The server reboots on the **Bootable USB Key**

11. Change directory from **C:** to **C:\DOS\BIOS**

12. Run the command

```
C:\Upgrade.bat  BiosFile
```

Where **BiosFile** is as follows.

- **R421W001 :: BIOS** dedicated to **Windows Compute Cluster Server 2003** on **NovaScale R421** servers
- **R422W001 :: BIOS** dedicated to **Windows Compute Cluster Server 2003** on **NovaScale R422/R422-INF** servers
- **R421X001 :: BIOS** dedicated to **Redhat/BAS4 for Xeon** on **NovaScale R421 servers**

- **R422X001 :: BIOS** dedicated to **Redhat/BAS4 for Xeon** on **NovaScale R422/R422-INF** servers
- **R421N001 :: BIOS** for **NovaScale R421** servers purchased without an Operating System
- **R422N001 :: BIOS** for **NovaScale R422/R422-INF** purchased without an Operating System

Examples

```
Upgrade.bat R421W001
```

```
Upgrade.bat R422W001
```

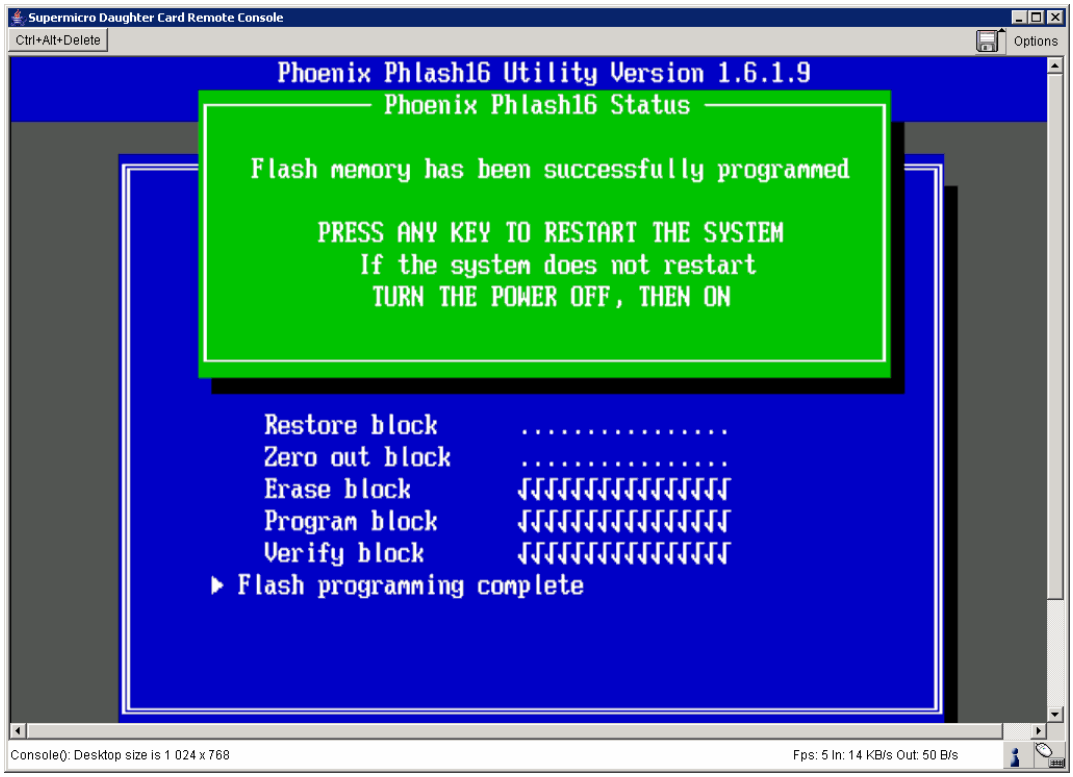
```
Upgrade.bat R421X001
```

```
Upgrade.bat R422X001
```

```
Upgrade.bat R421N001
```

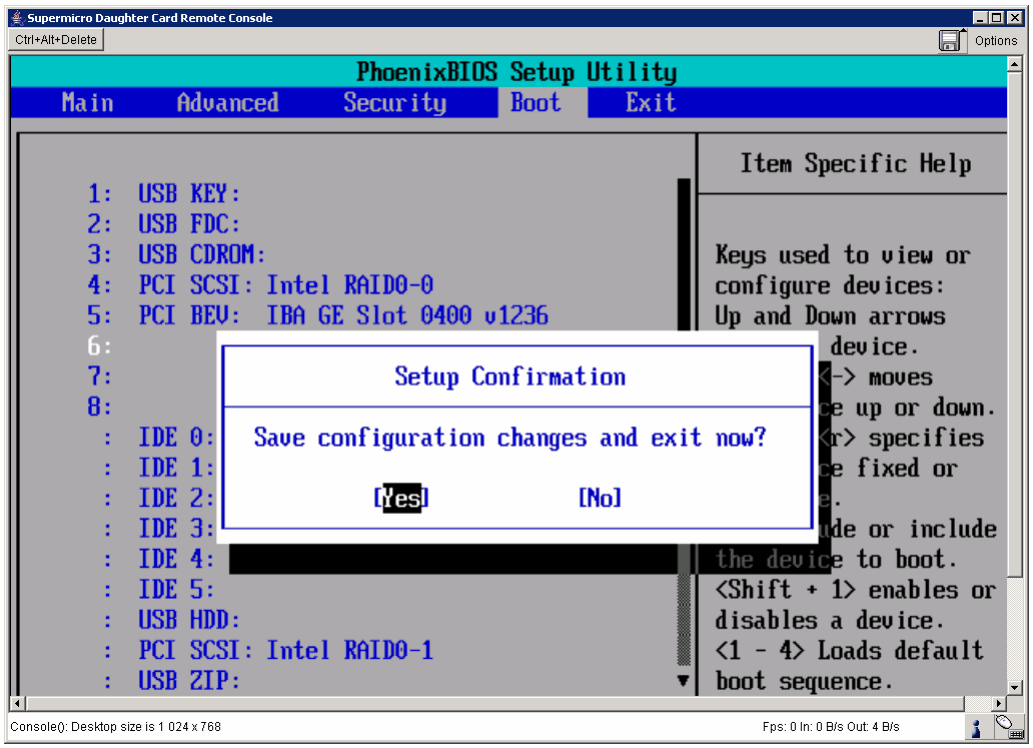
```
Upgrade.bat R422N001
```

13. When the BIOS has been upgraded the following screen appears.



The BIOS upgrade is terminated.

14. Power Off the server and dismount the **Bootable USB Key**
15. Power On the server
16. When the Bull Logo appears, enter in **Del** to enter Setup
17. Go to the **Boot** page and restore the Boot device list as shown below.
    - Click on F10, save the configuration changes and exit now.


Supermicro Daughter Card Remote Console
Ctrl+Alt+Delete
Options
PhoenixBIOS Setup Utility
Main
Advanced
Security
Boot
Exit
Item Specific Help
1: USB KEY:
2: USB FDC:
3: USB CDROM:
4: PCI SCSI: Intel RAID0-0
5: PCI BEV: IBA GE Slot 0400 v1236
6:
7:
8:
: IDE 0:
: IDE 1:
: IDE 2:
: IDE 3:
: IDE 4:
: IDE 5:
: USB HDD:
: PCI SCSI: Intel RAID0-1
: USB ZIP:
Keys used to view or
configure devices:
Up and Down arrows
device.
-> moves
e up or down.
r> specifies
e fixed or
.
de or include
the device to boot.
<Shift + 1> enables or
disables a device.
<1 - 4> Loads default
boot sequence.
Setup Confirmation
Save configuration changes and exit now?
[Yes]
[No]
Console(): Desktop size is 1 024 x 768
Fps: 0 In: 0 B/s Out: 4 B/s

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REFERENCE
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