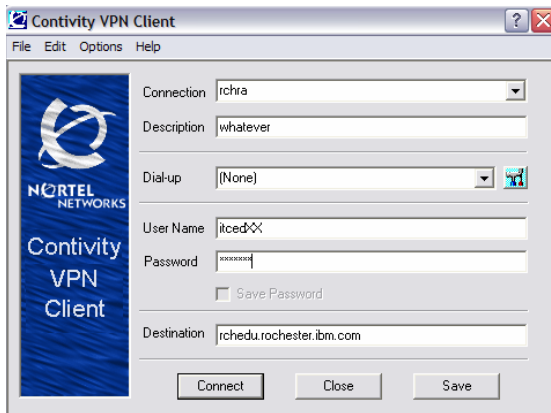


## Lab 1

1. In this first Lab, I'm going to have you run through the set-up Wizard as if this were the first time you activated your HMC. The labs for this class will be fairly simple since we have limited time and the purpose of this class is NOT to make you HMC experts but to (hopefully) remove some of the fear and doubt associated with the Hardware Management Console – henceforth known as the HMC.
2. From your PC activate the Nortel Contivity Client using the profile and password we supplied. Be sure the destination reads rchedu.rochester.ibm.com. Remember profiles and passwords are case sensitive.

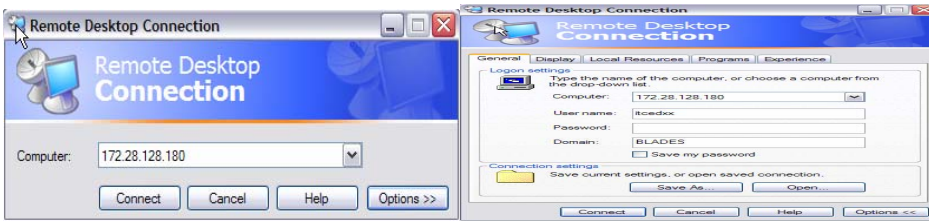


3. Once you see

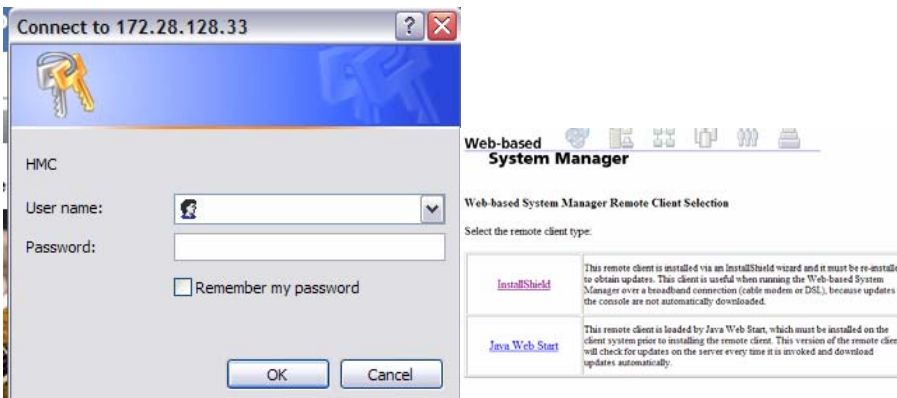


Select OK to minimize the screen.

4. Next start the remote desktop connection (if you don't have the icon on your desktop, by default it installs in Accessories/Communication/Remote desktop connection) and use the IP we supplied, use the same profile and password you used in step 2. Click on options and insure domain is set to Blades. Click on connect. You will be running your labs on our blades to improve you response time when communicating with the HMC.



5. Although the Web Based System Manager is already installed on your blade, I'm going to show you how to download the WebSm code to your PC in the future. Open the browser on your blade and key in [http://123.456.789.123/remote\\_client.html](http://123.456.789.123/remote_client.html) where the IP address is the one we provided you for the HMC you will be using in your labs. The next screen is asking for a profile and password to access the HMC. Use the classxx (again case sensitive) one we provided. Next you would select the InstallShield and download a setup.exe file to your desktop which you would execute to set up WebSM on your desktop. This has already been done so go ahead and cancel the operation.



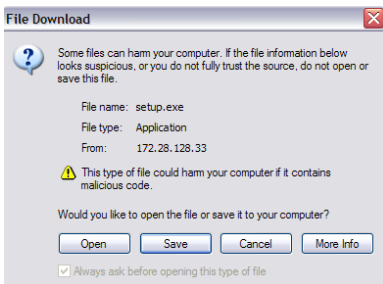
### Web-based System Manager

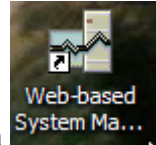
#### InstallShield Remote Client Install Image Download

Note - When downloading Web-based System Manager Remote Client on a system with a low-band width (56K and less) internet connection, it can take some time to retrieve the image, as it is quite large (100 MB). After the install image has been downloaded, run the file to start the Remote Client Installation Wizard.

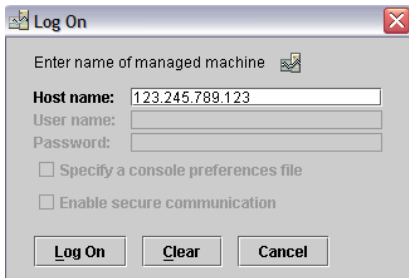
Select the install image you want to download.

<a href="#">Linux</a>	Install the Web-based System Manager on a Linux platform. Supported systems are Redhat Enterprise Linux Version 3, SLES 8, SLES 9, Suse 9.0, and Suse 9.1.
<a href="#">Windows</a>	Install the Web-based System Manager on a Windows platform. Supported systems are Windows 2000, XP, and Windows 2003 Server.

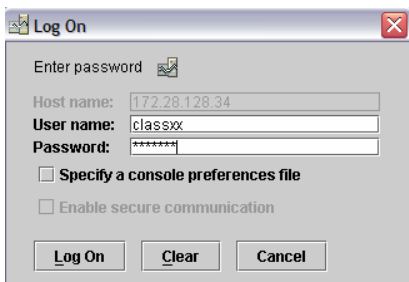




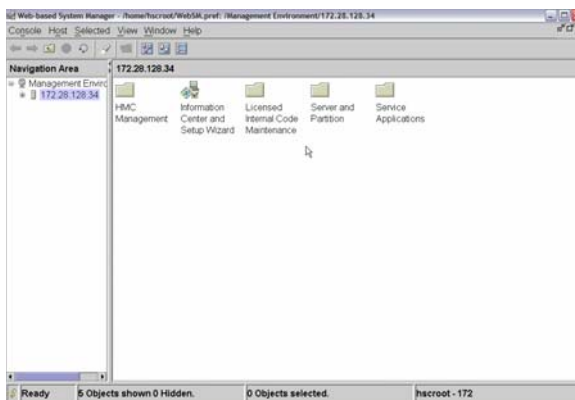
6. Double click the Web-based System ma... icon on your blade desktop. For a Host name enter in the IP address of the HMC you have been assigned to and hit the enter key. (Even though we are using the blades for improved response time this first connect takes some time).



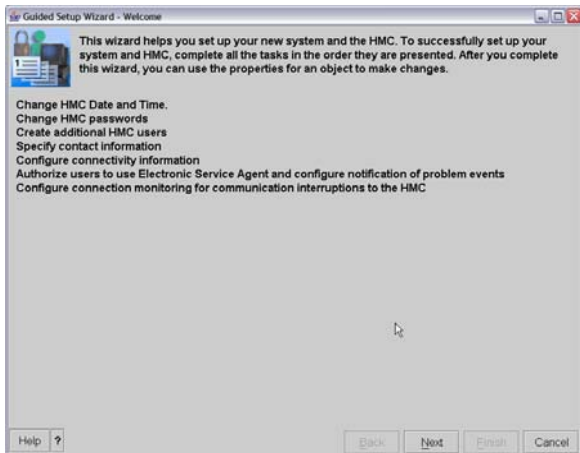
Soon you should see the User Name and Password fields un grayed. Enter your classxx profile and password.



Your screen should soon look like:



7. Expand the IP address (the HMC) in the navigation area of the HMC, under Service and partition you should see 'Information Center and Setup Wizard'. Single left click this option and in the Content Pane you should be able to double click to 'Launch the Guided Setup Wizard. The result should look like: (if you do make any changes PLEASE cancel at the end – DO NOT hit finish)



8. Select next, here is where you would set the date, time and location of your HMC. Play with the drop down time zones to see your options. Select next.

9. Here is where you would change the password for hscroot (which would be strongly suggested if you plan on putting your HMC on the internet since EVERYBODY knows it is "abc123". Select next.

10. Here is where you would change the password for root. Again, a good idea to change it in the real (your) world. Select next.

11. Here is where you could create additional profiles but only using the existing roles. We'll show you later in the course how to create more customized roles/profiles. Not a bad idea to create another superadmin as a back door. Select next, status screen, next.

12. If you were on the real HMC here is where you would configure your network settings. Since you are using websm the wizard can't handle it but later in the lab will cover the material manually. Select next.

13. Here you would enter your contact information, Select next.

14. Here you would enter your street address. Select next, next again

15. Here is where you decide how the HMC will contact IBM when it needs to phone home re hardware problems. You have three choices:

- a. Dial up, you will need to provide it with a phone number
- b. VPN, IF your HMC has access to the internet (at least one of its HMC ports would have to be connected to the internet).
- c. Use another HMC or partition to be the et phone homer. Here you would need to supply the IP address of the other server. It would also require additional set on the partition you selected.

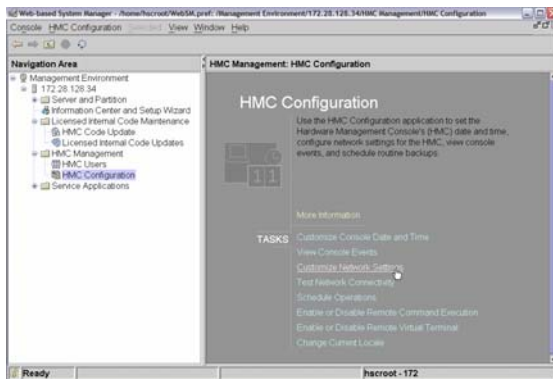
Play with the options and when satisfied, leave only the dial up checked and select next. Agree, and you will have to do an add to give it a phone number before proceeding. Then select next.

16. Here you would provide the IBM ID (had you already registered) for Service Agent. Select Next.

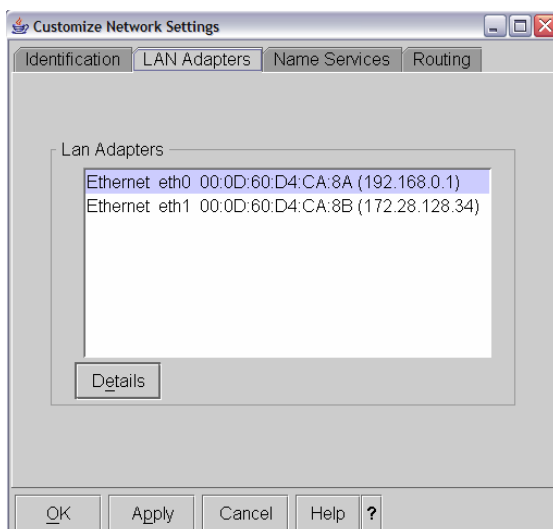
17. Here you would provide it with an email address to be notified if problems arise. Select next.

18. Here you determine how long the HMC should wait – if it loses connection to its managed system – before it considers it serious enough to call IBM. Select next.

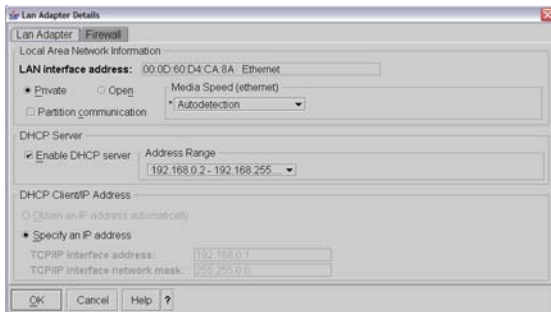
19 **Select CANCEL.** And say yes. You should be back at the Guided setup wizard starting point. Expand the HMC Management topic and select HMC configuration. In the content area dbl click customize network settings.



20. The first screen is where you name your HMC and if you plan on using DNS you would include your qualified Domain name. At the top of this menu you would select the LAN adapters tag, the results should look like:



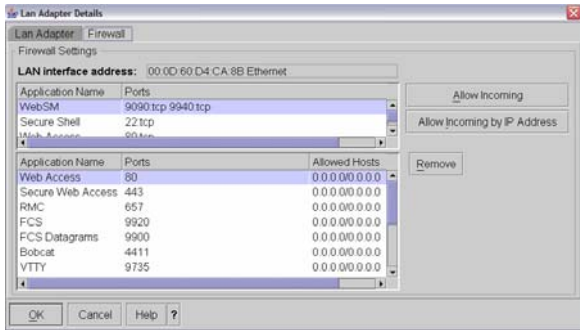
21. Right now the etho port is highlighted. If you want to see how it's currently configured click on the details button. The results should look like:



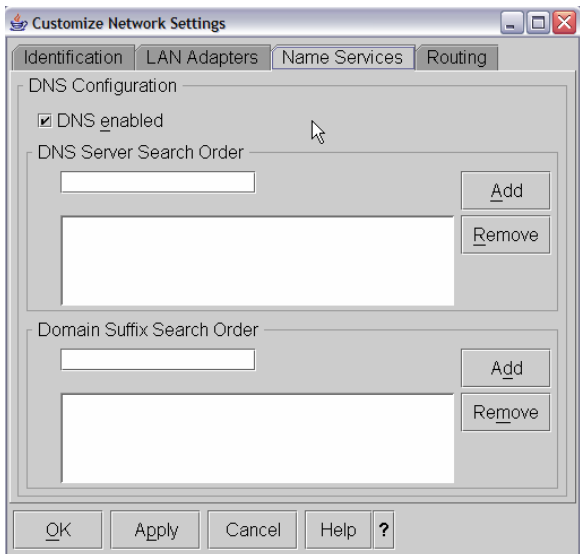
Here we see where this IP port is configured to be on a private LAN (only talking to managed systems and other HMCs). It's configured to be a DHCP Host so that any DHCP client talking to this port will get an IP address within a range of 192.168.0.2 to 198.168.255.254 (the first DHCP client it talks to would get an address of 192.168.255.254, since we have redundant HMCs configured, your HMC might be configured as a DHCP client as only one in the network can be the server). With DHCP server selected the IP address of this port would get the first IP address BELOW the range specified. Select cancel and highlight eth1 and select details. Should look like:



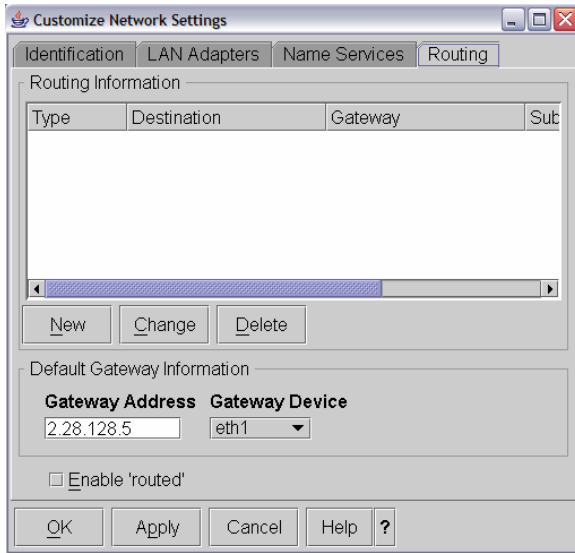
In this example eth1 is set up to be in an OPEN network, DHCP Server is NOT selected but rather than being a DHCP client we hard coded an IP address by selecting 'Specify an IP Address and gave it an address of 172.28.128.34. For those of you that are using this HMC this is the address you input when starting websm, since this is the port you are getting into the HMC from. Since this port is open to the world you might want to select the firewall tab to set up a firewall for this port.



Select cancel. The final 2 options (Names Services and Routing) are used for DNS so that you can identify your HMC by name as opposed to by IP address, which would be real handy if your internet port is a DHCP client. Domain suffix search order must be added or you have to use the fully qualified host name of the HMC.



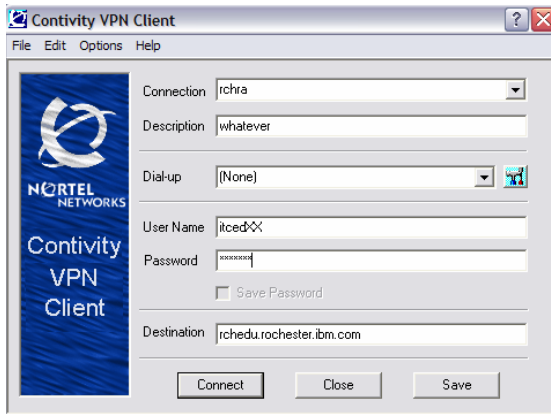
Routing: Gateway address must be present for open networks, you may need to select the Gateway Device (port) and other routes may also be added if necessary. Enable routed allows to route packets and isn't necessary.



Select cancel till you return to the HMC Configuration menu. Give a “Thumbs UP” to let us know that you have completed the lab.

## Lab 2

1. In this lab you are going to create a simple partition and look at some of the options available to work on partitions as well as the Managed Server (Service Processor). From your PC activate the Nortel Contivity Client using the itcedxx profile and password we supplied. Remember profiles and passwords are case sensitive.

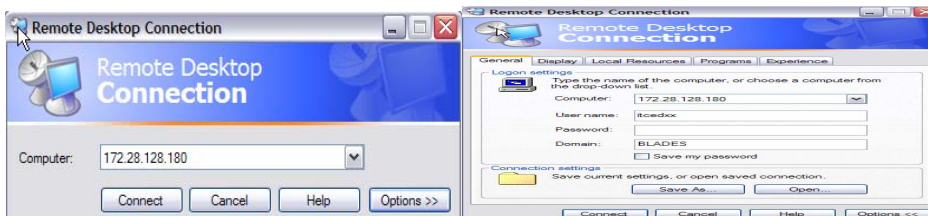


2. Once you see

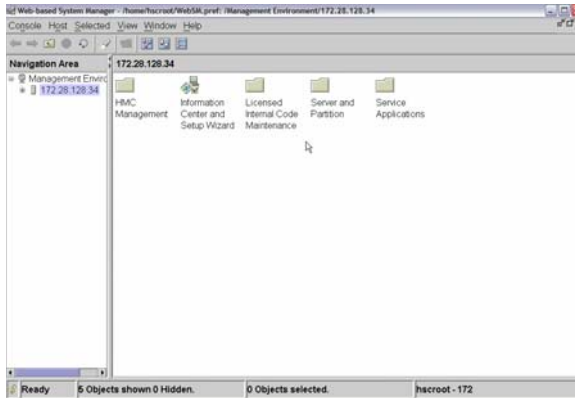


Select OK to minimize the screen.

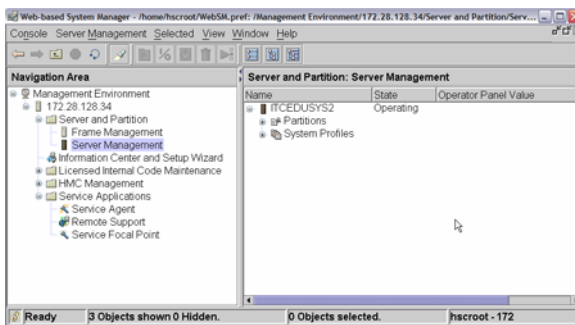
3. Next start the remote desktop connection (if you don't have the icon on your desktop, by default it installs in Accessories/Communication/Remote desktop connection) using the IP address we supplied, and use the same itcedxx profile and password you used in step 2.



4. Double click the Web-based System machine icon on your blade desktop. For a Host name enter in the IP address of the HMC you have been assigned to and hit the enter key. Soon you should see the User Name and Password fields un grayed. Enter your classxx profile and password. Your screen should soon look like:



5. If necessary expand the tree of the HMC in the Navigation area. Next (if necessary) expand the tree labeled Sever and partition. Next Double click Server Management. The result should look like:



Frame management is only applicable to the 595 so don't worry about it. The ITCEDUSYSX that you see in the control area of the screen is the name of the Managed System. You will need to expand its tree to see partitions and System Profiles.

6. Highlight the ITCEDUSYSX and right click on it. Take a look at some of the options. For one you should see Add Managed System, this is how you would add a MS that did not auto configure itself to the HMC. Select create and select logical partition by left clicking on it.

7. For a partition name use your classxx id. Leave the partition environment at OS/400, select next at the bottom of the screen.

8. Leave the default of no for workload managed group and select next.

9. For a profile name use anything amusing or that works for you. Select next.

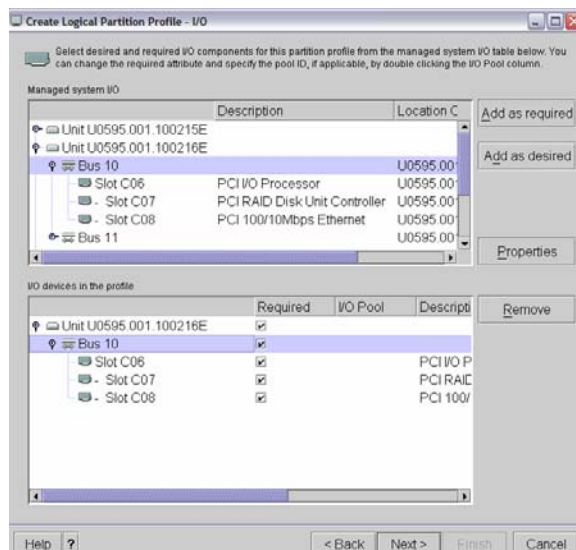
10. The next screen is where you set up your memory requirements. Change your desired to 2GB 144MB, and your maximum to 4GB. Select next.

11. Leave the default of shared processors and select next.

12. Make your desired processing units as .8, minimum of .4 and maximum of 2.0. Select Advanced.

13. Change the mode to uncapped, look at the defaults for virtual processors set by the HMC. If you leave the Desired Virtual set to 1, this partition can never be over 125% busy even though it's uncapped. A better idea would be to set the desired to 2 (the number of physical processors on this system) so the partition could (potentially) use both processors and be up to 250% busy. Also change the Maximum VPs to 2 (again set it at the physical number of processors on the system). Select ok and next.

14. Here is where you define the I/O to the partition. What you will see are the 5095 towers (U0595.001), system unit (U787A.001) and – System Dependand – IXSs (UTMP0.00X). Expand either (or both) of the 5095s until you find a bus that contains an IOP, Ethernet IOA and disk IOA. Highlight this bus and add it as required. The result should look something like:



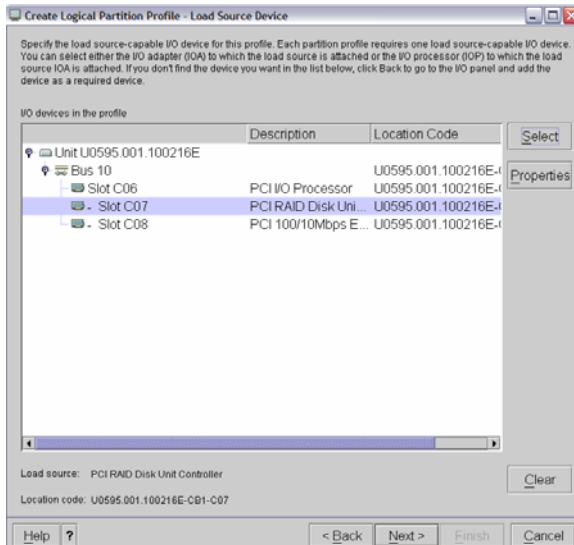
Adding a resource as required says that when this partition is activated IF any of these resources are not available (or are already in use by another partition) then DO NOT activate but instead fail and give a message saying the required resources are NOT AVAILABLE. Select Next.

15. Pass on I/O pools, select next.

16. Say no for virtual devices and select next.

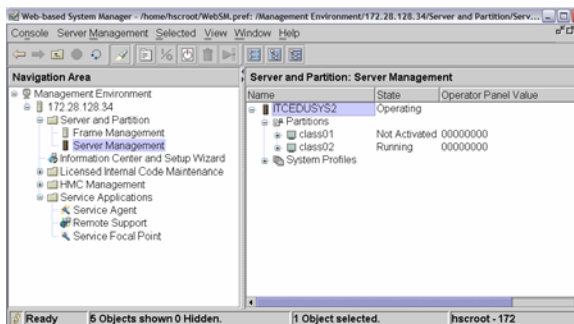
17. Pass on opticonnect, select next.

18. Next the HMC needs to know what resource (IOP or Disk IOA) is going to control this partitions load source disk drive. You will only see the resources you added as required. Expand the frame, highlight the disk IOA and select it. The result should look like:

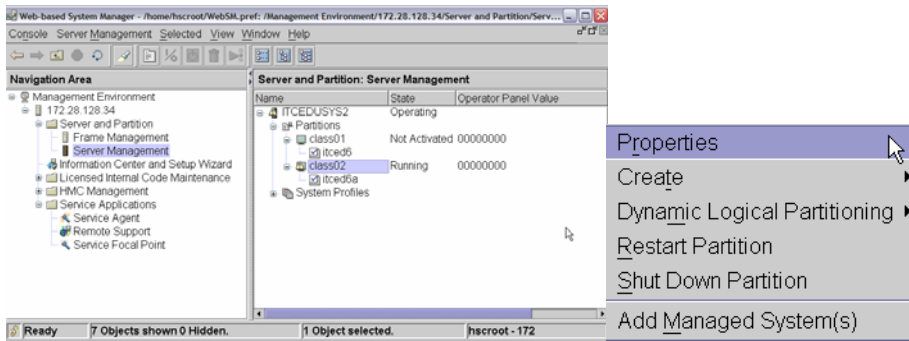


Select next.

19. The rest of the create is optional so take next until you see Finish and then take it. The result should look like:



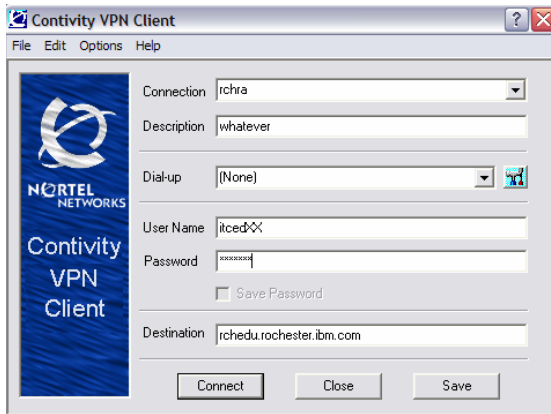
20. Do NOT try to activate you partition since you have obviously have overcommitted resources. You should see at least one active partition. Expand it and highlight the partition and/or profile and look at some of the actions available for an active partition verses the actions available for an inactive partition.



21. Give a Thumbs UP when you are done with the lab.

### Lab 3

1. In this lab you are going to look at some of the issues that were addressed in Unit 3, Licensed Internal Code Maintenance. Since our systems are behind an IBM firewall we won't be able to actually apply any updates/fixes from the HMC or Managed Server. What we can and will do is go to the IBM fix central website to view (and download to your PC – if desired) the HMC upgrade/fixes. We won't be able to do any work with the Managed Server fixes since they can only be applied from an HMC and/or an OS400 Service Partition. I will however show you screen shots of me applying a MS fix. You will also go thru the process to view what your current Service level is.
2. From your PC activate the Nortel Contivity Client using the itcedxx profile and password we supplied. Remember profiles and passwords are case sensitive.

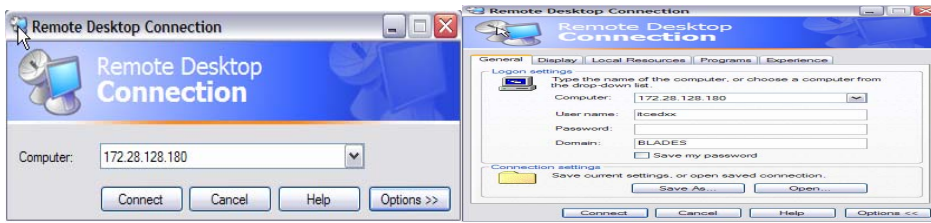


3. Once you see

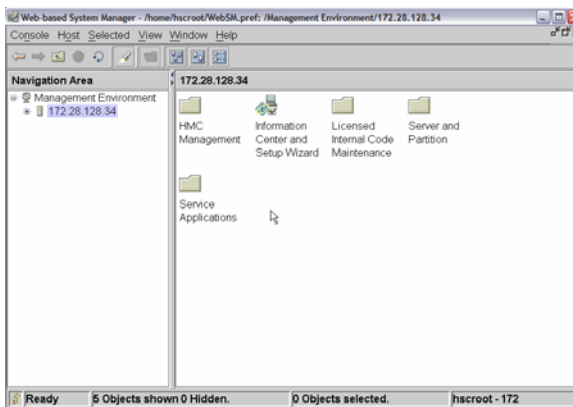


Select OK to minimize the screen.

4. Next start the remote desktop connection (if you don't have the icon on your desktop, by default it installs in Accessories/Communication/Remote desktop connection) using the IP address we supplied, and use the same itcedxx profile and password you used in step 2. Click on connect.



5. Double click the Web-based System machine icon on your blade desktop. For a Host name enter in the IP address of the HMC you have been assigned to and hit the enter key. Soon you should see the User Name and Password fields un grayed. Enter your classxx profile and password. Your screen should soon look like:

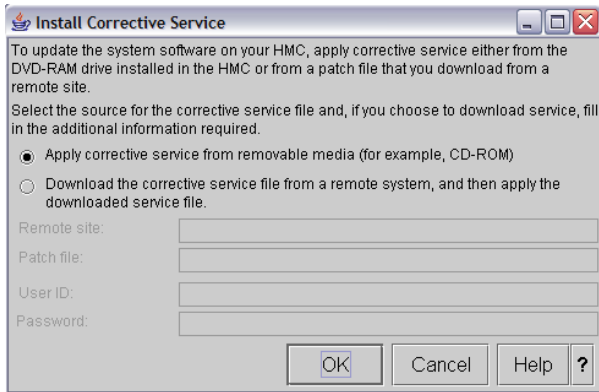


6. If necessary expand the tree of the HMC in the Navigation area. Next (if necessary) expand the tree labeled Licensed Internal Code Maintenance, click on HMC Code update.



The first thing you should notice is the **Status** at the bottom of the Control Pane. This particular HMC is at Version 4 Release 3.2 and the build level is 20041209.1. This information may come in handy when dealing with your Service Provider.

7. Next we are going to work with installing HMC fixes. Click on **Install Corrective Service**



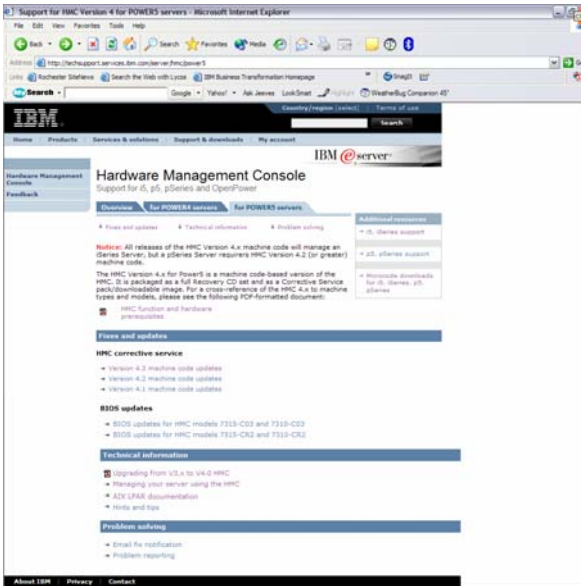
If you had a CD with the HMC fixes all you would have to do is put the CD into the drive and click on OK. The HMC would handle the rest. But how about the other option? Next I'm going to show you where to find the Remote site, Patch file, User ID and Password. I'm also going to show you can order or create a CD for the fixes.

8. Go to your browser and get to Google. Search on **IBM Fix Central**. The url is <http://www-912.ibm.com/eserver/support/fixes/fcgui.jsp>

9. For Server select iSeries and for Product or fix type select Server Hardware Management Console, next select continue.



The next screen you should see is the one on the next page.



Lots of good stuff here. There is technical information; problem solving tips BIOS updates, a HMC function and hardware prerequisites document and – of primary interest to us – is the HMC Corrective fixes. Since our HMC is 4.3, select **Version 4.3 machine code updates**.

**HMC Version 4 Release 3**

**Notice:** All releases of the HMC Version 4.x machine code will manage an iSeries Server, but a pSeries Server requires HMC Version 4.2 (or greater) machine code.

The HMC Version 4.3 for Power5 is a machine code-based version of the HMC. It is packaged as a full Recovery CD set and as a Corrective Service pack/downloadable image.

**Special note for p5 595, i5 595, and p5 590 systems:**  
The licensed internal code update process may take several hours depending upon the configuration of the managed systems or managed frames. **DO NOT** interrupt this operation while it is running or an unrecoverable error may occur with the managed system or the managed frame. This operation may take much longer than the estimated completion time indicated on the GUI. Wait until **Completed** is displayed on the user interface to ensure the operation has completed successfully.

**HMC V4 R3 Recovery CD package**

Currently, the HMC Recovery CD V4R3.0 package is not available for download online. However, the Package name link and the View link in the table below both contain instructions for obtaining the HMC Recovery CD V4 R3 package. **If you restore your HMC using this Recovery CD V4 R3.0 package, you will need to immediately apply the V4 R3.1 corrective service fix in the section below.**

Package	APAR#	PTF#	Checksum*	Readme	Date	Order CD
HMC_Recovery_CD_V4R3.2	MB00774	MH00191	NA	<a href="#">View</a>	2004.12.14	<a href="#">Go</a>

**HMC V4 R3 updates and fixes**

Click a Package name to download the corrective service image. Click the View link for a list of fixes in the package, as well as download and installation instructions.

Package	APAR#	PTF#	Checksum*	Readme	Date	Order CD
HMC_Update_V4R3.3	MB00869	MH00205	64411	<a href="#">View</a>	2005.01.25	<a href="#">Go</a>
HMC_Update_V4R3.2	MB00690	MH00154	54163	<a href="#">View</a>	2004.12.14	<a href="#">Go</a>
HMC_Update_V4R3.1	MB00689	MH00153	06485	<a href="#">View</a>	2004.11.19	<a href="#">Go</a>
HMC5250 console disconnects in HMC V4R3.2	MB00830	MH00196	50758	<a href="#">View</a>	2004.11.14	<a href="#">Go</a>
Fixes for multisystem code update failures in HMC V4R3.2	MB00829	MH00197	36250	<a href="#">View</a>	2004.12.14	<a href="#">Go</a>
Restore critical console data - HMC V4R3.1	MB00744	MH00183	34872	<a href="#">View</a>	2004.11.22	<a href="#">Go</a>
Internal Code updates HMC 4.3.1 fixes	MB00750	MH00186	14573	<a href="#">View</a>	2004.11.22	<a href="#">Go</a>
InfoCenter_MH00171 (Language support)	MB00727	MH00171	52882	<a href="#">View</a>	2004.11.22	<a href="#">Go</a>

Lots of good stuff here. **The HMC\_Recovery\_CDV4R3.2** is the package you would use for an install or a major upgrade. Remember the recovery process is a little different than the upgrade process when going from say V4R3.2 to 3.3.

Take a look at the **Readme/View** for the Recovery\_CD.

Take a look at this page. Notice that at the bottom of this page are instructions on how to install the new release. Take the back arrow.

Now let's take a look at the **HMC V4 R3 updates and fixes**. Lots of good stuff here. For one, there are **upgrade/updates** such as MH00205 (kind of like going to a new release) and there are individual PTF such as MH00196, which fix specific problems.

From here you could order a CD (which is almost a necessity for the **Update** files, since they span several CDs) via the **Go** function, you could **View** the **Readme file**, or if you click on the package itself you could download the package to your PC (or file server). From here you could either burn a CD and install the package via CD, or you could install the package from the FTP server. Lots of options.

Of particular interest is the **Readme** file. Click on it for **HMC5250 console disconnects In HMC V4R3.2**.

### Step 3. Install Update

**Cautions:**

As a safety precaution, IBM recommends that you back up critical console data. See your operations guide for more information on backing up the HMC.

At the HMC interface, follow these steps to install the update:

1. Select **Licensed Internal Code Maintenance**
2. Select **HMC Code Update**
3. Select **Install Corrective Service**
4. Select **Download corrective service from remote system**
5. Enter the specified information in the following fields:

**Remote Site**

Enter the fully qualified name of the host where the ZIP file is stored.

**Note:** If you are downloading the corrective service file directly from the Internet, enter

`techsupport.services.ibm.com`

**Patch File**

Enter the FTP directory and ZIP file name (that is, the absolute pathname to the ZIP file).

**Note:** If you are downloading the corrective service file directly from the Internet, enter

`/eserver/pseries/hmc/fixes/MH00196.zip`

**User ID**

Enter the FTP userid. (For direct internet download, use "anonymous".)

**Password**

Enter the FTP password for the userid. (For direct internet download, use your email address.)

The HMC interface retrieves the update package from the remote FTP server and begins the install process.

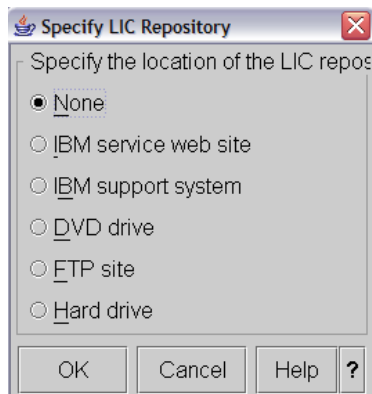
Take a look at the document. About 2/3 of the way down the document you will find instructions (and file names mentioned in step 7) on how to install this package from the HMC. Again, we can't in this class since our HMCs are behind an IBM firewall. But in

the real world you could either order a CD, burn your own CD or install the fix from the HMC itself.

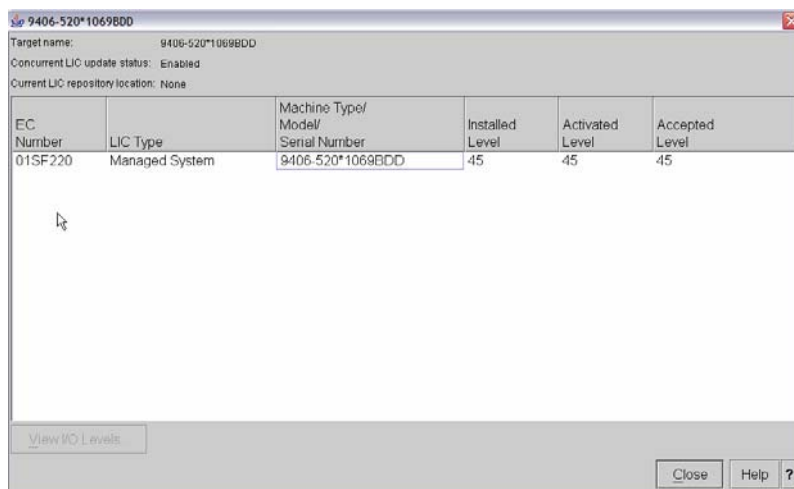
10. Take the back arrow back to the first Fix Central screen. Select iSeries and for Product or fix type select Server Firmware thru HMC, select continue. The next screen tells you that you can only install Service Processor firmware fixes thru either the HMC or an OS/40 Service Partition.

11. Close your browser and let's go back to the HMCs.

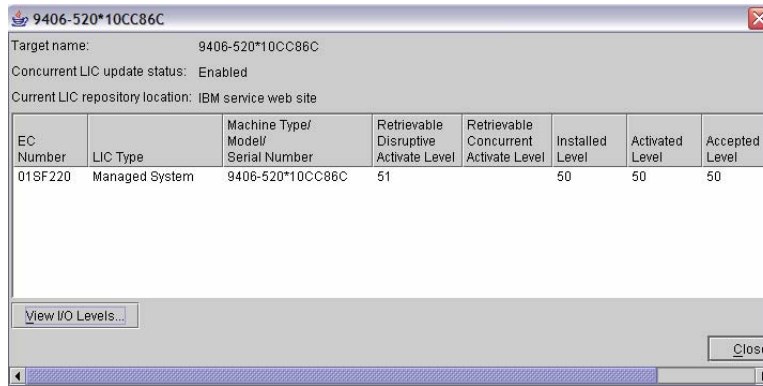
12. Now we are going to look at fixes for the Service Processor. Highlight the **Licensed Internal Code Updates** in the Navigation pane and then select **Change Internal Code**. Select the Managed Server and click on **OK**. Select View System Information (what level of code is currently installed) click on **OK**.



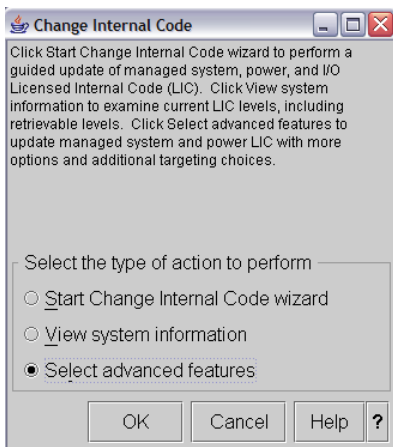
A location of none is where you go to find out the current fix level installed, activated and accepted.



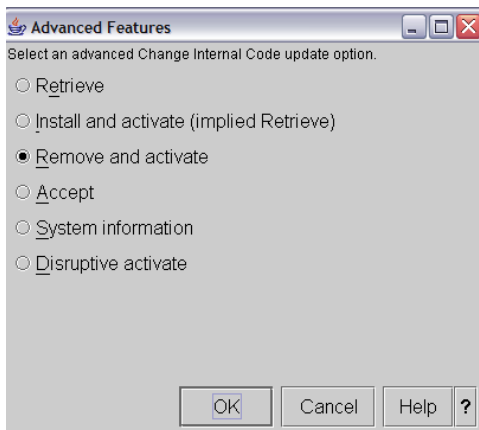
If you had (could) view the other sites (including the hard drive) it would show you if there were higher code level than the currently installed level, as in the example below.



13. Go ahead and cancel our view of the code levels for the Service Processor. Next let's look at some of the advanced features.



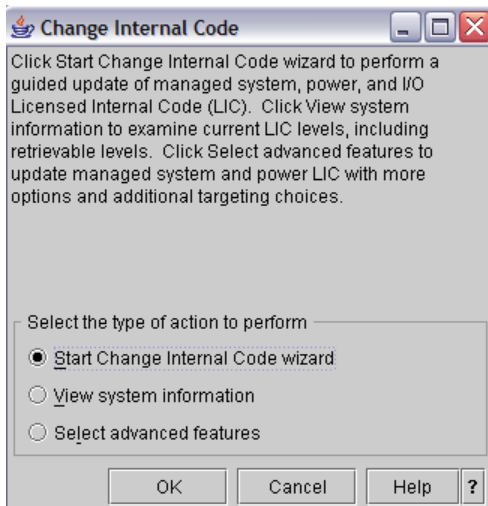
Highlight advanced and click on **OK**



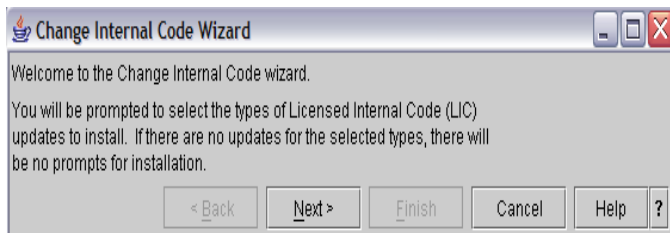
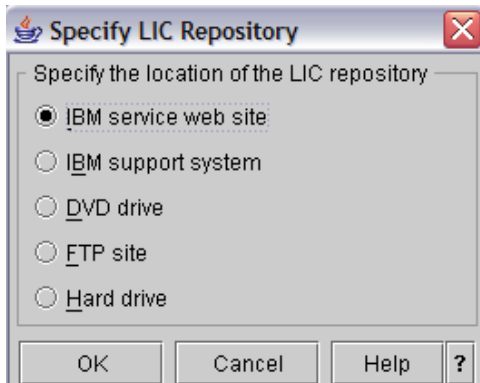
If you select NOT to use the **Change Internal Code Wizard** this is how you would get (retrieve) and apply SP fixes. Click on the help text to see what functions are available.

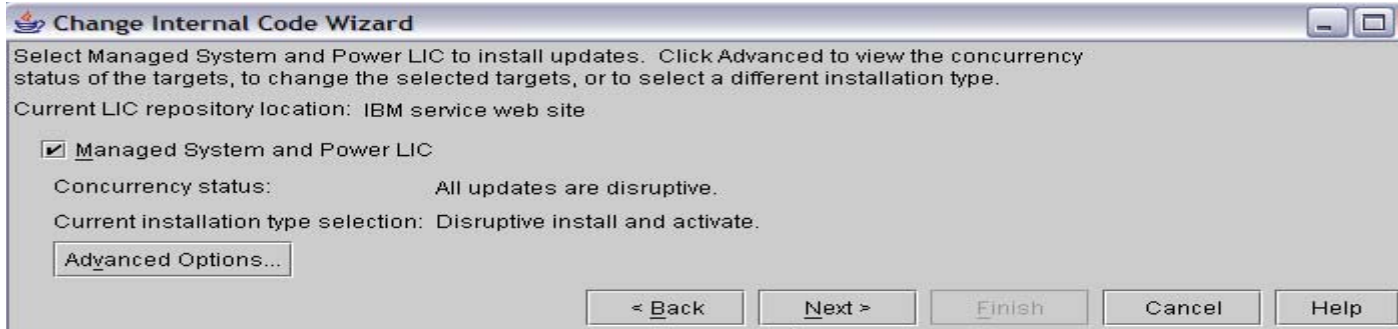
14, Cancel when thru looking around. Close windows until you are back at the HMC 'main' menu.

15. The rest of this lab are screen shots of me actually applying the next level of code (51) to one our Rochester systems NOT behind the firewall. Unfortunately it's not hands on but hopefully you can see how relatively easy it is to accomplish. I'll download the code but NOT do a disruptive apply, since disruptive means it has to IPL the service processor and if you haven't brought down your partitions (and did a disruptive retrieve and apply) the SP would bring them down for you.

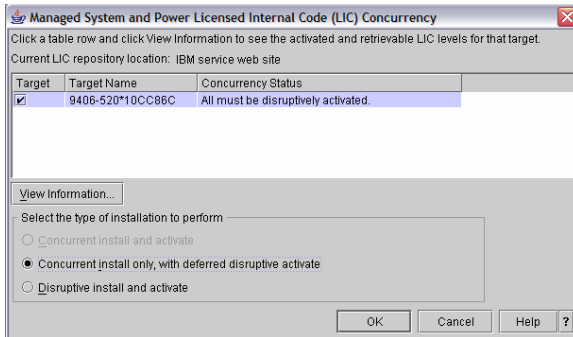


I have already viewed the web site to know there is a new level of code I wish to install. You will notice it doesn't ask for the URL since the HMC knows where the fixes are.

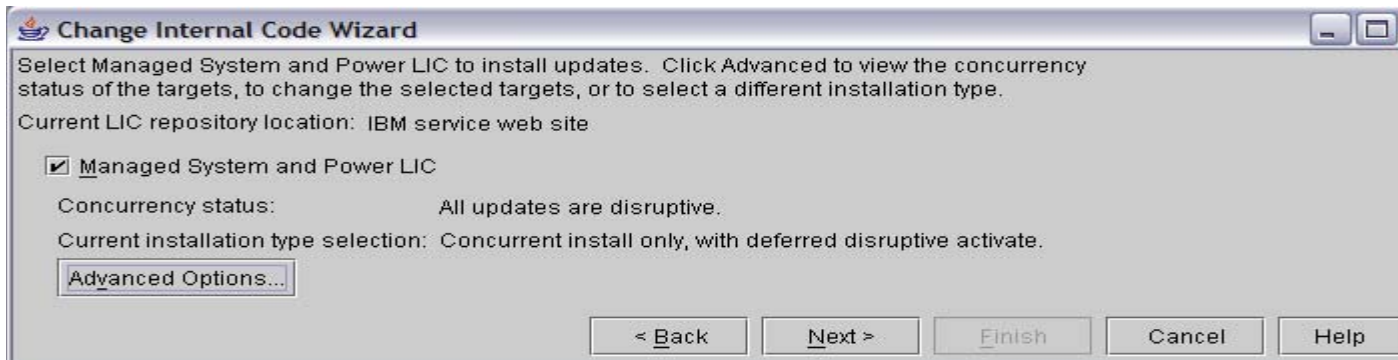




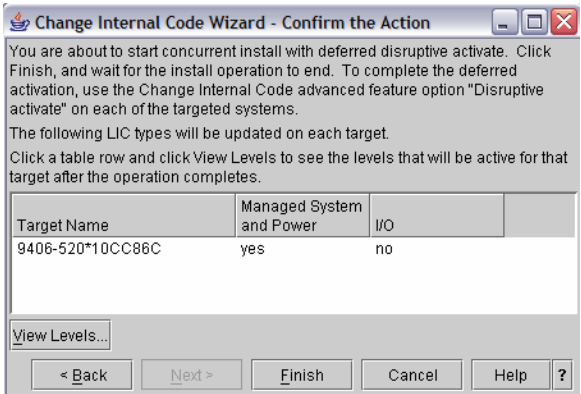
Here I take the advanced options



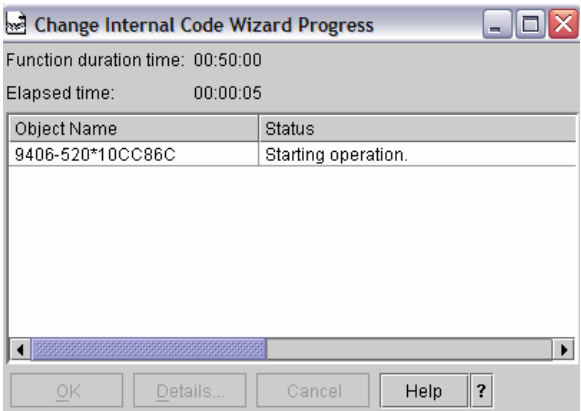
I could have done a disruptive install (download) and activate (IPL) instead I chose to install (download) but not activate till I was ready.

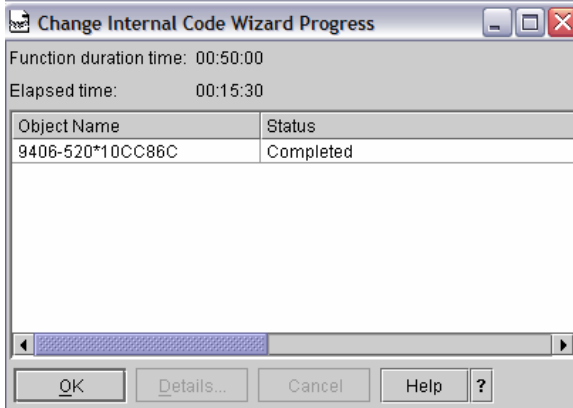
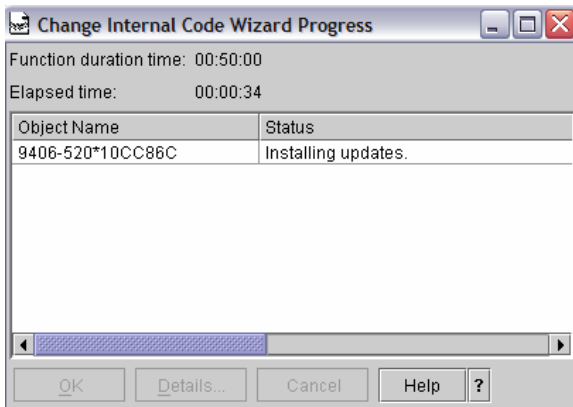


Notice on the above screen, under Current installation type selection. I selected **next**

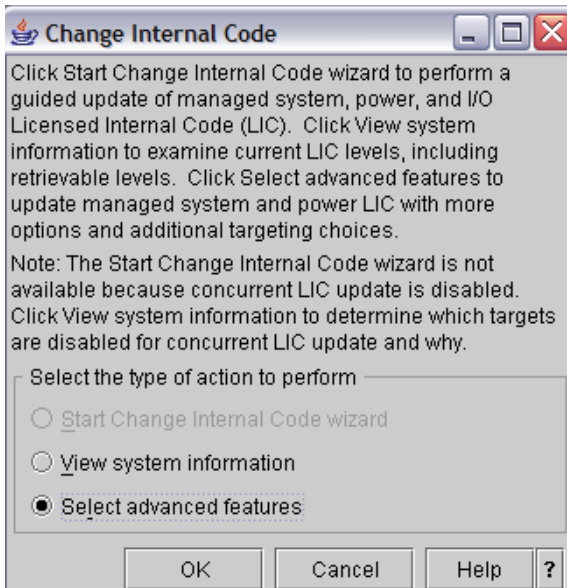


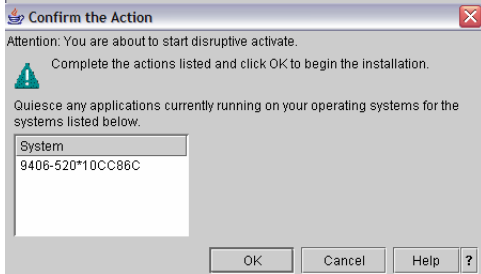
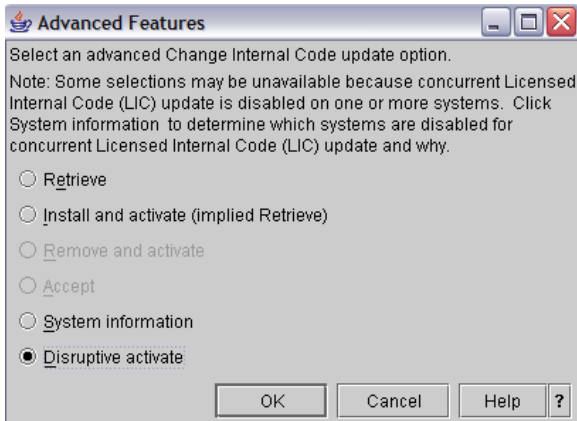
Clicked on **finish**



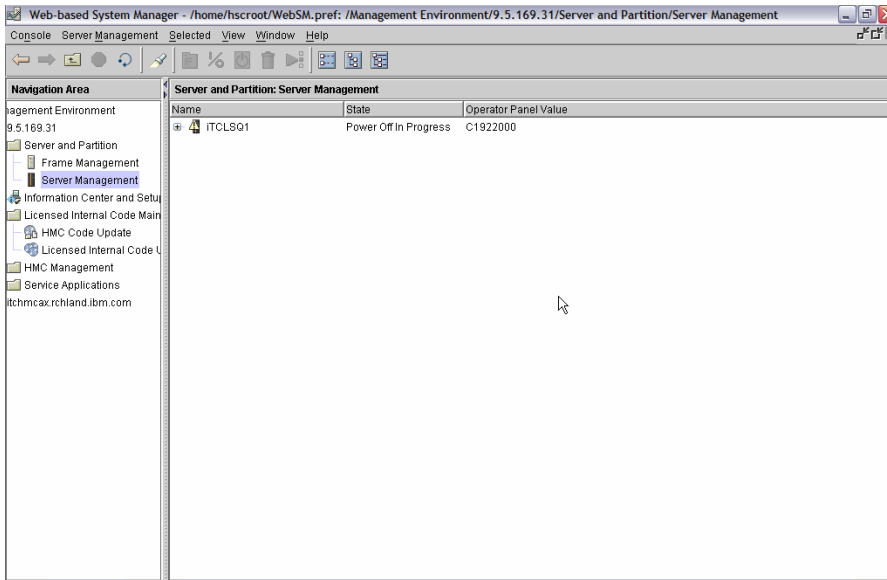


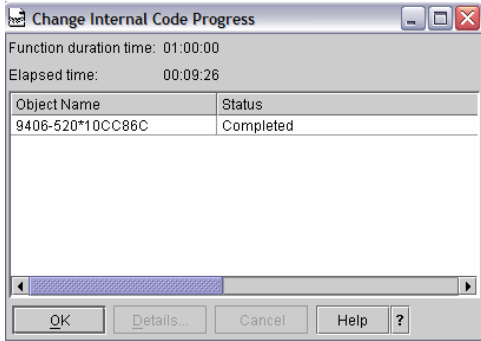
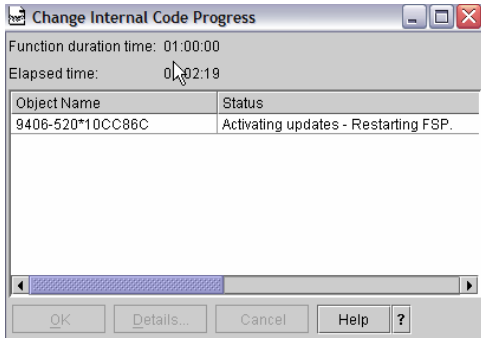
Now the fixes are on the hard drive and ready to be activated which again requires an IPL of the SP





I selected **OK**

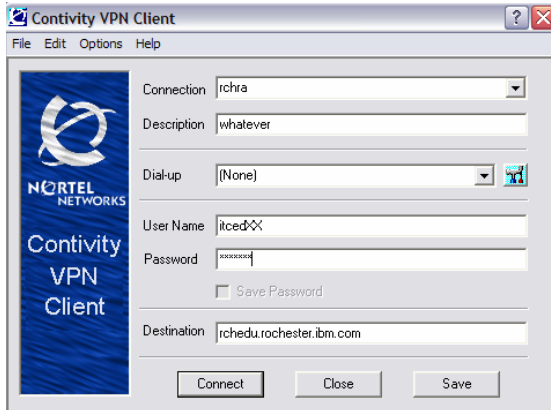




This completes the lab. Give a Thumbs UP when finished.

## Lab 4

1. In this lab you are going to look at some of the issues that were addressed in Unit 4 HMC management. You're going to do some work with HMC user profiles and roles. Take a look at the console log. Schedule the movement of processing units from one partition to another partition. From your PC activate the Nortel Contivity Client using the itcedxx profile and password we supplied. Remember profiles and passwords are case sensitive.

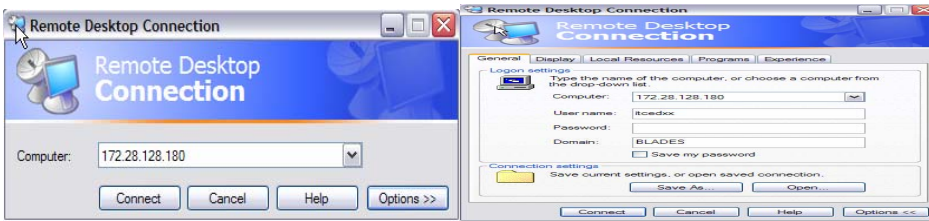


2. Once you see

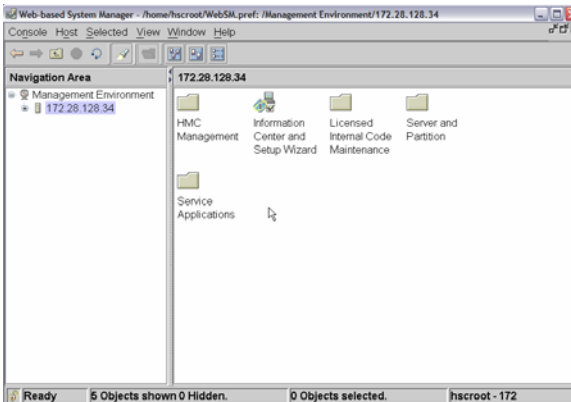


Select OK to minimize the screen.

3. Next start the remote desktop connection (if you don't have the icon on your desktop, by default it installs in Accessories/Communication/Remote desktop connection) using the IP address we supplied, and use the same itcedxx profile and password you used in step 2. Click on connect.



4. Double click the Web-based System machine icon on your blade desktop. For a Host name enter in the IP address of the HMC you have been assigned to and hit the enter key. Soon you should see the User Name and Password fields un grayed. Enter your classxx profile and password. Your screen should soon look like:



5. If necessary expand the tree of the HMC in the Navigation area. Next (if necessary) expand the tree labeled HMC Management, and highlight HMC Users. The result should look like:

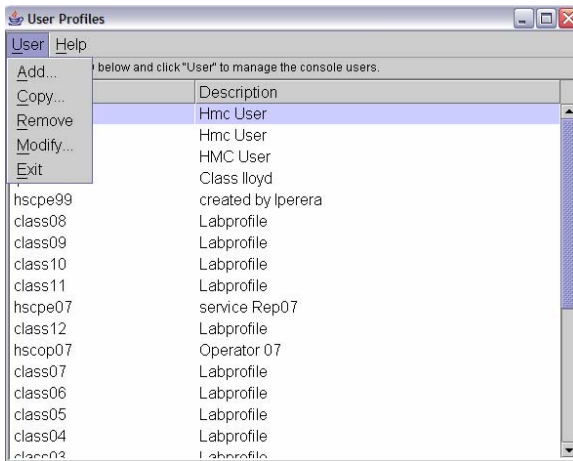


6. Select Manage HMC Users and Access.

Here we see a list of the HMC users currently created for this HMC.

If you expand User (by putting the cursor over the user field) you see the operations available.

Play with the options but you can only work with existing Managed System and Task Roles.



Once finished close any open windows or cancel your way back to the Navigation area.

### 7. Select Manage Access Task Roles and Managed Resources.

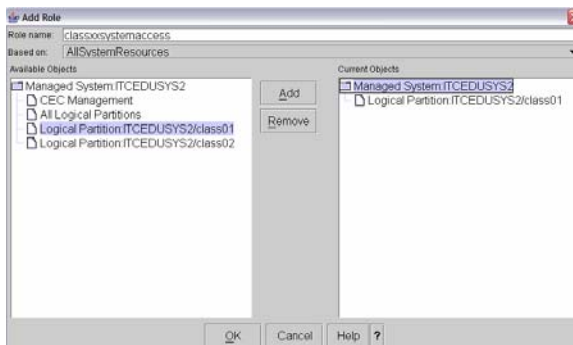
First we'll work with Managed Access Roles. Click on edit and select ADD.

Call the Role, classxxsystemaccess. (where XX is your class number)

Dbf click on the Managed System to see all the pieces that you can control access via this role.

Highlight one of the partitions and add it to the Current objects.

Dbf click on the Managed System on the right hand side to see what resources will be accessed with this role. Should look like:



Click on OK to add this access role.

### 8. Back at the customize user controls roles, select task roles, click on EDIT and select ADD.

Next you see a screen with Command Line tasks and Console tasks on the left hand side.

Call this role classxxtaskrole. (where XX is your class number).

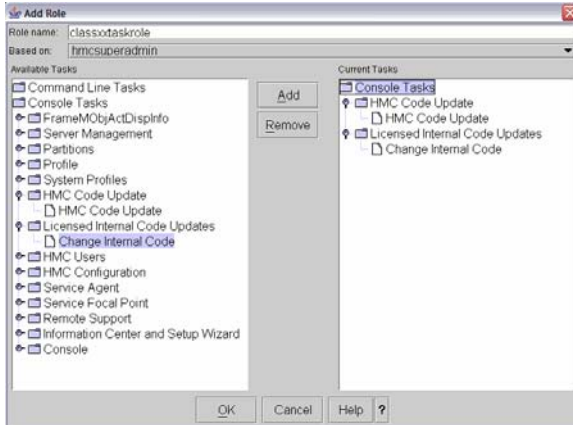
Double click on Console Tasks and expand HMC Code updates and Licensed Internal Code Updates.

Highlight HMC code updates and add it to the new role.

Highlight Change Internal Code and add it.

Double click on Console tasks on the right side (and expand) to see what was added. So a user created or changed to use this role could work on HMC and SP fixes and not much else.

Should look like:



Click on OK.

9. Via the edit tab remove both the Task role and the Managed Resource Role you just created. Close the window.

10. In the Navigation Pane highlight HMC Configuration

Select Schedule Operations

Highlight one of the partitions and OK

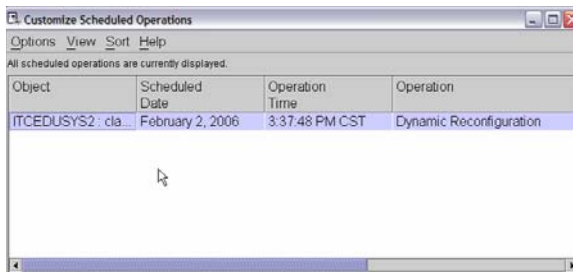
Under options select new

Highlight Dynamic Reconfiguration, select OK

Change the date to 2006 and select the options tab

Select the appropriate options to move 112 MB of memory to a different partition

Select save. Should look like:



From Options tab delete the scheduled operation and select OK. Close the window.

11. In the Content Pane select:

View Console Events – this will take a few minutes especially with everybody trying to get to it at once.

From the View tab look at the different ways you can arrange the events.

Once satisfied close the window and give a Thumbs UP to signify lab completion.