

Teaching the Teachers Labs

OBJECTIVES

Configure a brand new NetVista N2200e to run as an ICA session, then change it to open to a launch bar.

Use TCM Operations Utility to add workstations to a group, then perform other tasks

Use the Configuration Tool for flash update

Use TCE Service Utility for flash recovery

Use the TCM Operations Utility for flash update

Use TCM Op Utility to configure a thin client to use a boot server and an authentication server. Then boot from flash.

Configure a thin client to peer boot from an N2200e Thin Client

Peer Flash Recovery

OBJECTIVE: Configure a brand new NetVista N2200e to run as an ICA session, then change it to open to a launch bar.

1. **Boot your thin client by pressing the white button on the front of the box.**
2. **Select the keyboard language you want to use on the Keyboard setting screen (arrow up or down),**
 - Select a language
3. **The next screen asks for you to choose a display resolution and frequency (Page up and down)**
 - Choose a resolution and frequency
 - A test screen will appear and then you will be asked if it displayed correctly, press enter to save and continue.
4. **Compact flash boot - Configure IP settings screen**
 - Choose to use NVRAM, by setting DHCP to Disabled (Page up and down)
 - Type in your thin client IP address
 - Subnet mask should not need to be changed
 - Type in Your Gateway IP address
 - Type in your Domain name server IP address (If used)
 - Press enter twice to boot the thin client, while booting you will see the following screens:
 - Hardware testing screen
 - Loading screen
 - Black screen
 - Copy write screen
 - Partial Green and Partial black/blue screen
 - Black screen and cursor will appear
 - IBM logo screen
 - Configuration Tool (CT) Opens
5. **From the Workstation Mode list choose Configure Single ICA Client, the next few screens allow you to set up this ICA session. Fill in the following screens.**
 - Type a description in the first box and the server name in the second. (Click Next)
 - Choose encryption level, leave it at default (Click Next)
 - If you choose to use any other encryption level it must be installed on the server or it will not work.
 - Enter your username, password and domain (Click Next) (domain is optional)
 - Leave application and working directory blank
 - In order to use this option your server requires special preparation.
 - Click Finish and then Save and Restart
 - This will restart your thin client and open to a full screen, single ICA session.
6. **Open to a launchbar with both emulator and Advanced Diagnostics icons.**
 - Press the left Ctrl + Alt + Shift keys all at once to bring up the Configuration Tool
 - Press “Configure Workstation”
 - Change the workstation mode to “Applications with launch bar”
 - Press proceed when the mode change message box appears

- Click on 5250 emulator, click Add
 - Type in a host name or IP address of the emulation server, press OK
 - If you leave this field blank, you will get a dialog box when you boot asking for the host name or IP address.
- Click on Advanced diagnostics, click Add, change the label if you prefer and then click OK
 - Click OK, Save and Restart, and your thin client will restart with the new desktop settings.

OBJECTIVE: Use TCM Operations Utility to add workstations to a group, then perform other tasks

1. In the TCM Op Utility add or create a group:

- In the TCM utility click on the "Add Workstation or Group" icon.
- Click on the "Group" button.
- Enter a "Group name".
- Entering remote access authorization values at the group level creates a template with these values which appears when workstations are added to the group.
 - Enter an "Administrator password".
 - Enter a "Read community name".
 - Enter a "Read/Write community name".
- Click on "OK" to save changes.

2. Add a workstation to a group

- Click on the group to which you want to add a workstation.
- Click on "Add Workstation or Group."
- The Workstation option will already be selected with the remote authorization values pre-filled. You may leave these values or change them if the workstation has different values.
- Click "OK"
- This will add the new workstation to the group.
- Click on the "Refresh Workstation Status" icon.
- Wait a few seconds for refresh to occur.
- If you no longer wish to add workstations to the group you need to deselect or no longer highlight the group name. To do this press the Ctrl key and left click the mouse on the selected group name. This will unselect the highlighted item, and allow you to add a workstation, range or group outside of the group that was highlighted.

3. Perform a workstation shut down:

- Add a workstation to the workstation list to perform shut down.
- Specify the administrator password and community names configured as remote access authorization.
- Click on the "Refresh Workstation Status" icon.
- Click on the "Reboot or Shut Down" menu item from the task menu then select "Shut down" and click "Finish"

Note: As the thin client shuts down watch for the amber light to flash twice, the second amber light will be visible 10-15 seconds after the client shuts down. This indicates the hardware will work for Wake On LAN.

4. How to perform Wake On LAN:

- Use the workstation you shut down in the last step of number 4. The workstation you select must previously have been "Refreshed" before you can do a Wake On LAN.
- Click on this workstation if it is not already selected.
- From the Task list click on "Wake On LAN" and then click "Finish"
- This will restart your workstation.

OBJECTIVE: Use the Configuration Tool for flash update

1. **The IBM NetVista Thin Client Express Service Utility (TCE Utility) must be installed on an NT 4.0 Server, NT 4.0, TSE, or Windows 2000 Professional. You will need to know the IP address for this server.**
2. **Configure an N2200e as described in the Configuring a brand new NetVista lab.**
3. **In the Configuration Tool, click on Software Update**
 - When at the thin client desktop, press the left Ctrl + Alt + Shift keys all at once to bring up the Configuration Tool.
4. **Choose Configure Software Update Server Access**
 - Enter the NT server IP address that has the TCE Utility installed on it.
 - Change NS-x86-2200-e-032-010-01.BOM in the Software Update File list name to be NS-x86-2200-e-032-010-02.BOM, which is an image containing a different set of languages. Click OK.
 - Click OK to the “Changes have been saved” message box.
5. **Press Request Immediate Update**
6. **Click OK to proceed with the update. You will see the following screens while waiting for the update:**
 - Screen goes black
 - Hardware testing screen
 - Loading operating system
 - Copy write screen
 - Update begins
 - System boot with your previous configurations and a new BOM image.
7. **Confirm the BOM file you selected is the one that was loaded on the flash card.**
 - Click on the "View Network Information" button.
 - Confirm that the Current BOM file is NS-x86-2200-e-032-010-02.BOM.

OBJECTIVE: Use TCE Service Utility for flash recovery

1. To create a “dirty” flash card

- Completely power off the thin client by removing the power cord.
- Power on the thin client.
- This is NOT something we recommend. It is only done here for educational purposes!

2. Configure the thin client to perform the flash recovery

- Press the "Esc" key to exit during the boot sequence.
- Point the boot monitor to the TCE server.
 - From the Simple Configuration, press "F5" twice for "Advanced Configuration".
 - Select "Configure network settings" and set "Boot file source" to "Network" and press "Enter" to continue.

3. Set "Boot file server IP address," “First”, to the IP address of your server.

- Set "Boot file server directory and file name", “First”the path of the recovery kernel. (e.g. /NS/flashbase/x86/kernel.2200)
- Set "Boot file server protocol:" for NFS to “First” and press "F3" to Save and Return.
- Press "F10" to reboot.

4. Select which BOM image to load onto your flash card.

- You will see the kernel load and the thin client will prompt you to choose a BOM file. Enter the name of the BOM file that contains the language you need.
 1. NS-x86-2200-e-032-010-01.BOM
Languages: US English, LA Spanish, Canadian French, Brazilian Portuguese
 2. NS-x86-2200-e-032-010-02.BOM
Languages: US English, German, UK English, French, Swedish Finnish
 3. NS-x86-2200-e-032-010-03.BOM
Languages: US English, Swiss German, Spanish, Belgian French, Swiss French, Swiss Italian, Italian, Belgian Dutch, Portuguese
- Once the flash recovery is complete the thin client should reboot and start as though it were a brand new thin client (genesis mode).

5. Use the Setup Utility to configure the thin client and reboot bringing you to the Configuration Tool.

6. Confirm the BOM file you selected is the one that was loaded on the flash card.

- Click on the "View Network Information" button.
- Confirm that the Current BOM file is the one you chose.

OBJECTIVE: Use the TCM Operations Utility for flash update

1. Add a workstation (that you have previously configured) to the TCM Op Utility.

- In the TCM Utility click on the "Add Workstation or Group" icon.
- Click on the "Workstation" button.
- Enter the "Workstation IP address".
- Enter the "Administrator password" if one has been set previously through the Configuration Tool.
- Enter the SNMP community names if any of them have been set previously through the Configuration Tool.
- Click on "OK" to save changes.

2. Refresh the status of the workstation.

NOTE: Refresh needs to be done before other tasks can be accomplished.

- Click on the workstation just added to the list.
- Click on the "Refresh Workstation Status" icon.
- Wait a few seconds for refresh to occur.
- The icon will change to reflect the current status of the workstation.

3. It is necessary to set an Administrator password to use FTP functions. It is recommended that you also change the SNMP read/write community name from its default, shipped value of IBMNCD.

NOTE: We want to encourage our customers to change the SNMP read/write community name in order to have a more secure system. However it's not required.

- Select the "Change Remote Access Authorization" task. This sets the values on the thin client.
 - Enter an "Administrator password" if one has not been set previously. If it has then check the "Use Current" box.
 - Enter an SNMP Read/Write Community Name. If one has been previously set, this step can be skipped. However, if the default is being used, IBM recommends that it be changed.
 - Click OK to save your changes.
- Reboot the workstation for the changes to take effect.
 - From the Task menu click on the "Reboot or Shut Down" menu item
 - Click on "Reboot". It is necessary to do the reboot for the authorization changes to occur.

4. Set up to update the flash image the workstation.

- Click to select the workstation that is to be updated, if not already selected.
- From the Tasks menu click on the "Flash Update" menu item.
 - Enter the "Server address"
 - Enter the "Server type"
 - Enter the "BOM name"
 - Click on "Finish".
 - From the Task menu click on the "Reboot or Shut Down" menu item
 - Click on "Reboot". It is necessary to do the reboot for the flash update to occur.
- The selected workstation should reboot, update the flash card, and then reboot again.

OBJECTIVE: Use TCM Op Utility to configure a thin client to use a boot server and an authentication server. Then boot from flash.

1. Set up for Network Boot

- Start NSM V2R1 for the client workstation on the configuration server.
- Select either the System, or the individual workstation (ie, IP address, MAC address, or DNS name)
- Select "Hardware" -> "WorkStations", and scroll down to the section titled "Workstation Management Settings:"
- Enter "SNMP Read Community Name:" and "SNMP Read/Write Community Name:" and/or "SNMP Read Community Name Alternate:" and "SNMP Read/Write Community Name Alternate" and the "Administrator Password:".
- Click on the "Save" icon.
- Reboot the client workstation to retrieve the new settings.

2. Set up workstations on the TCM Op Utility

- Add Thin Client Expressworkstations individually or as part of a group
 - Assuming the remote access authorization has been done previously for these workstations, enter their administrator password and the SNMP community names.
 - Click "OK"
- NOTE: Ensure that the stations are powered on and booted. It does not matter if they are booted from a server.
- Highlight target workstations and refresh.
- Verify that all workstations refreshed properly.
- Keep these target workstations highlighted through the following steps

3. Boot from Server - Simple Menus

- Select "Boot from Server" from the Tasks menu pulldown or the "Boot from Server" icon.
 - The simple dialog is presented.
 - The default IP address is the current machine.
- Enter the NSM V2R1 boot server address and select the server type.
- Click on "Finish".
- Reboot the target workstation.
 - Click on "Reboot or Shut Down" from the Tasks menu pulldown or the "Reboot or Shut Down" icon.
 - Select Reboot.
 - Click on "Finish".

4. Boot from Server - Advanced Menus

- Select "Boot from Server" from the Tasks menu pulldown or the "Boot from Server" icon.
- The simple dialog is presented. Click Advanced.
- Enter the NSM V2R1 boot server address and select the type.
- Enter the NSM V2R1 boot server type, or custom path, and protocol.
- Click on "Next".

- Enter the NSM V2R1 Configuration server type or custom path, and protocol.
- Click on “Next”.
- Enter the Authentication server IP.
- Click on “Finish”.
- Reboot the target workstation.
 - Click on "Reboot or Shut Down" from the Tasks menu pulldown or the "Reboot or Shut Down" icon.
 - Select Reboot.
 - Click on "Finish".

5. Authenticate from Server - Simple Menus

- Select "Authenticate from Server" from the Tasks menu pulldown or the "Authenticate from Server" icon.
- The simple dialog is presented. The default IP address is current machine.
- Enter the NSM V2R1 authentication server. This will propagate the settings to the workstation configuration server as well.
- Click on "Finish".
- Reboot the target workstation.
 - Click on "Reboot or Shut Down" from the Tasks menu pulldown or the "Reboot or Shut Down" icon.
 - Select Reboot.
 - Click on "Finish".

6. Authenticate from Server - Advanced Menus

- Select "Authenticate from Server" from the Tasks menu pulldown or the "Authenticate from Server" icon.
- The simple dialog is presented. Clicked on "Advanced".
- Enter the NSM V2R1 Configuration server address, type, server directory or custom path and protocol.
- Click on "Next".
- Enter the Authentication server IP address.
- Click on "Finish".
- Reboot the target workstation.
 - Click on "Reboot or Shut Down" from the Tasks menu pulldown or the "Reboot or Shut Down" icon.
 - Select Reboot then click on "Finish".

7. Boot from Flash

- Select "Boot from Flash" from the Tasks menu pulldown or the "Boot from Flash" icon.
- Click on "Finish".
- Reboot the target workstation.
- Click on "Reboot or Shut Down" from the Tasks menu pulldown or the "Reboot or Shut Down" icon.
- Select Reboot then click on "Finish".

OBJECTIVE: Configure a thin client to peer boot from an N2200e Thin Client

PEER BOOT FROM NetVista N2200e

Peer booting a network station is the ability of one network station (without a flash card) to boot from another network station that has the Thin Client Express flash card installed and working. The peer booted network station is for the most part a clone of the flash booted network station. Currently, it is very difficult to do much in the way of customizing these peer booted network stations. From a hardware cost point of view, this configuration does provide an advantage for the customer since only one network station has the cost of the flash card. This cost leverage is greatly increased if the customer has existing Series 2200 machines that now can be used via the peer boot.

- 1. Verify that the NetVista N2200e is powered on, configured and functioning**
- 2. On the peer booted network station remove the flash card (if the flash card is present).**
 - Power off the network station.
 - Remove all cables from the network station.
 - Remove the cover from the network station.
 - Remove the flash card if it exists.
 - Re-assemble the network station.
 - Reconnect all the cables.
- 3. On the peer booted network station set up the NSBoot Setup Utility to peer boot and reboot.**
 - Reboot the network station.
 - Press the "Esc" key to exit the boot sequence.
 - Select "Simple configuration menu" and press Enter to continue.
 - Select "Configure IP settings" and press Enter to continue.
 - Fill in the following fields:
 - Set "DHCP" to Disabled.
 - Set "Thin client IP address" to the one assigned for this network station.
 - Set "Boot file server operating system" to **IBM NetVista Thin Client**
 - Set "Boot file server IP address" to match that of the flash booted thin client.
 - Set "Subnet Mask", "Gateway IP address", and "Domain name server IP address" to match your network.
 - Press Enter to continue.
 - Press F10 to reboot.

OBJECTIVE: Peer Flash Recovery

Peer recovery of a flash image is a method of copying a Thin Client Express flash image from one network station to another network station. Only the base contents of the Thin Client Express flash image are copied, none of the configuration information is copied. This is typically done when a file on the Thin Client Express flash card gets corrupted due to error or misuse and it limits or renders as useless the Thin Client Express network station. Another reason for performing this type of recovery is to create a Thin Client Express flash card from a blank flash card that could be used to populate a Series 2200 machine that was purchased prior to the availability of Thin Client Express.

To restore the flash card on a thin client by using the peer recovery method, you need an N2200e Thin Client which contains a functioning NetVista Thin Client Express flash card. This thin client will be referred to as the flash booted thin client. The thin client with the flash card that needs to be copied to is peer booted to the flash booted thin client. This thin client is called the peer booted thin client. The following are the steps for the peer flash recovery:

1. Create the update.rcov file on the flash booted thin client.

- Using the Configuration Tool configure the thin client to have an Advanced Diagnostics session as an icon on the launch bar.
- Click on the "Save and Restart" button to complete the reconfiguration.
- From the Advanced Diagnostics session issue the following command at the prompt:
echo "" > /termbase/profiles/update.rcov

2. Reflash the flash image on the peer booted thin client.

- Reboot the thin client.
- Press the "Esc" key to exit the boot up sequence.
- Point the boot monitor to the update.rcov file on the flash booted thin client.
 - Press "F5" for "Advanced configuration".
 - Select "Configure network settings" and press "Enter" to continue.
 - Set "Boot file source" to "Network" and press "Enter" to continue.
 - Set "Boot file server IP address", First, to the IP address of flash booted thin client.
 - Set "Boot file server directory and file name:", First to the path of the recovery kernel.
 - (e.g. /kernel.2200)
 - Set "Boot file server protocol:" for NFS to be First and press "F3" to Save and Return.
- Press F10 to reboot.
- The flash card on the peer booted thin client will be reflashed.
- When completed the Configuration Tool window is displayed.
- Manually updated the configuration.

3. Remove the update.rcov file from the flash booted thin client

- From the desktop bring up the "Advance Diagnostics" application.
- Delete the update.rcov file from the flash card.
 - Issue the command "rm /termbase/profiles/update.rcov"