Intel® vPro™ Technology Lab

Configuration of Microsoft® System Center Configuration Manager 2007 SP2 for Intel® vPro™ Technology

Version 1.61.1

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Lab Overview

This lab contains the following exercises:-

- Discover Intel vPro client
- Install and Configure ConfigMgr Out of Band Management Component
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- Simple Intel vPro client management using AMT WebUI
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- Un-Provision Intel vPro client Management Controller

Lab Materials

- Step by Step Lab Instruction Guide (this document)
- Intel vPro Technology PC
- Desktop or Laptop Computer hosting Virtual Machine Environment
- Pre-Configured Virtual Machines

Lab Environment

- Windows domain is VPROLAB
- DNS domain is VPROLAB.COM
- Administrator password is P@ssw0rd
- Network is 192.168.11.0/24

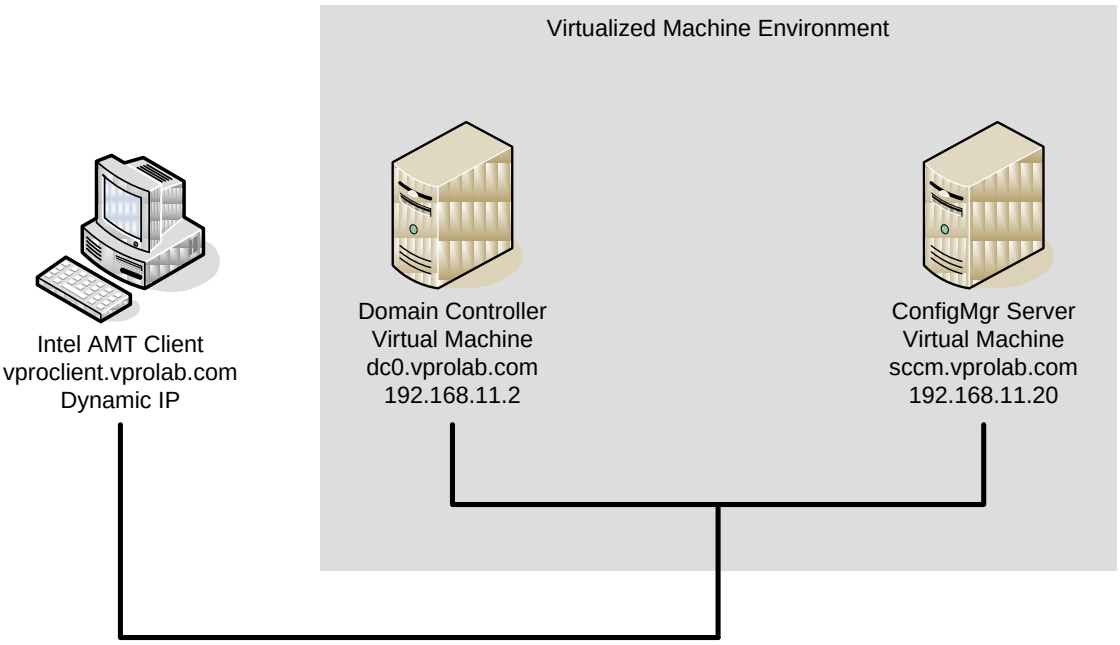

Figure 1 - Standard ConfigMgr Lab Schematic

Lab Instructions

As you complete each procedure, use the ☐ tick box provided to record your progress and avoid missing any procedures

Lab Startup

- Start the Virtual machine for the Domain Controller and logon as Administrator
- Start the Virtual machine for the ConfigMgr server and logon as Administrator

☐ Tick this box when you have completed all steps in this procedure

Discover Intel vPro Clients

IMPORTANT: Before proceeding with this exercise, ensure the following pre-requisites have been completed; the Intel vPro client should be joined to the VPROLAB domain, the client should have the ConfigMgr agent installed, the client firewall should be configured for ConfigMgr client agent compatibility, the client should be discovered in ConfigMgr and collection membership should be updated for all collections

Your instructor will be able to help you complete these steps

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Discover Intel vPro Clients

Discover Intel vPro Clients

HELPFUL HINT: The ConfigMgr agent detects Intel vPro capability and reports this information during a normal Hardware Inventory cycle. This information should be used to construct collection membership rules identifying Intel vPro clients. Other discovery methods including Network Discovery and on-demand Out of Band Management Controller discovery from the ConfigMgr console can be unreliable

Intel vPro specific information can be viewed using Resource Explorer to inspect the AMT Agent hardware component

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **Site Database > Computer Management > Collections** and right-click **Collections**. Click **New Collection** to open the New Collection Wizard
- At the General screen, enter **All vPro Systems** in the **Name** field and click Next
- At the Membership rules screen, click the database button to open the Query Rule Properties dialog
- At the Query Rules Properties dialog, enter a name for the query in the **Name** field. For this lab use the name **All vPro Systems Query**

- Select **System Resource** for the **Resource class** field and click **Edit Query Statement…**

- At the All vPro System Query Statement Properties dialog select the Criteria tab and enter a criteria statement **AMT Agent.Provision State is equal to 0 or AMT Agent.Provision State is equal to 1 or AMT Agent.Provision State is equal to 2**

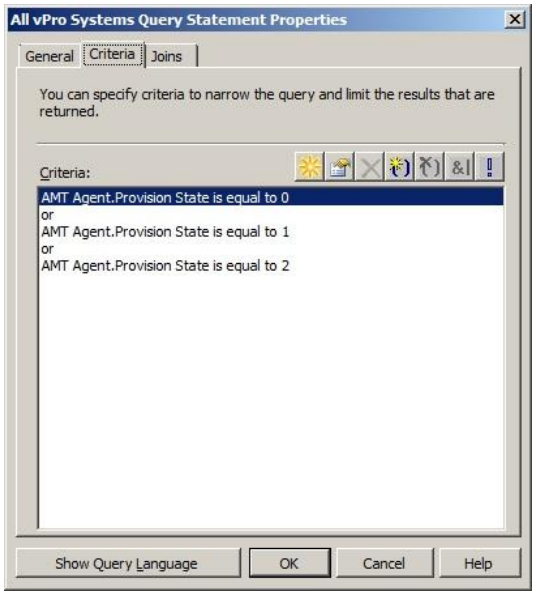

Figure 2 - All vPro Systems Collection Query Criteria

- Click OK to close the Query Statement Properties dialog and click OK to close the Query Rule Properties dialog. Click Next

- At the Advertisements screen, click Next

- At the Security screen, click Next

- At the Confirmation screen, click Close to close the New Collection Wizard

- Select the **All vPro Systems** collection just created and create two new sub-collections named **All Un-Provisioned vPro Systems** and **All Provisioned vPro Systems**. The membership query statements for these two sub-collections should be named **All Un-Provisioned vPro Systems Query** and **All Provisioned vPro Systems Query** respectively and the criteria statements should be **(AMT Agent.Provision State is equal to 0 or AMT Agent.Provision State is equal to 1 or AMT Agent.Provision State is equal to 2) and (System Resource.AMT**

Status is NULL or System Resource.AMT Status is not equal to "3")" and **System Resource.AMT Status is equal to "3"** respectively

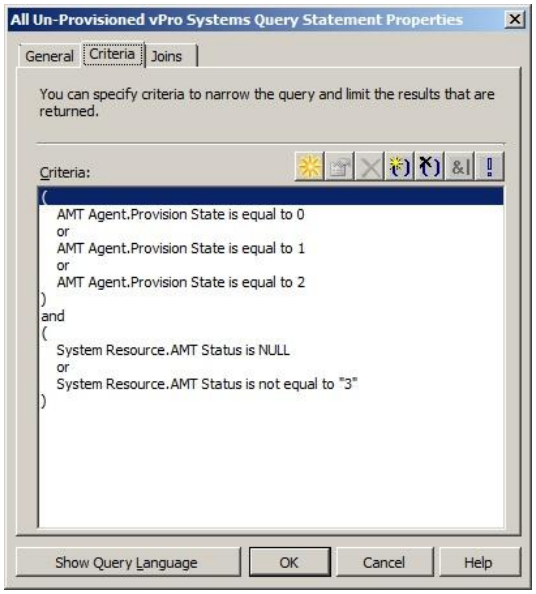

Figure 3 - All Un-Provisioned vPro Systems Collection Query Criteria

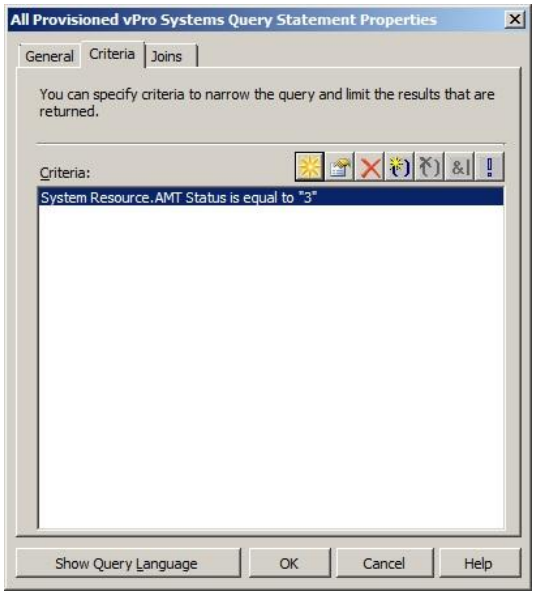

Figure 4 - All Provisioned vPro Systems Collection Query Criteria

- Select the **All vPro Systems** collection, right-click and click **View > Add/Remove columns…** At the Add/Remove columns dialog, add columns for **AMT Status** and **AMT Version**. Click OK

- Select the **All vPro Systems** collection and update the collection membership for this collection and all sub-collections. The **All vPro Systems** and **All Un-Provisioned vPro Systems** collections should contain the un-provisioned Intel vPro client and the **All Provisioned vPro Systems** collection should be empty. If all the collections are empty perform a hardware inventory discovery cycle and once this is complete update the collection membership again

HELPFUL HINT: After Intel vPro clients have been discovered, the Intel AMT firmware versions and PC BIOS versions should be evaluated to determine if any updates are available or required. Updates are available from PC OEM's and can be distributed as a software update package to avoid visiting clients

☐ Tick this box when you have completed all steps in this procedure

Install and Configure ConfigMgr Out of Band Management Component

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Create Active Directory Security Group for ConfigMgr Primary Site Servers
- Create Active Directory OU for Client Management Controller Objects
- Create Client Management Controller Server Certificate Template
- Configure Issuing Certificate Authority to Allow Revocation of Client Management Controller Certificates
- Install ConfigMgr Out of Band Service Point
- Configure Out of Band Management Component
- Configure Site Parameters to Use Secure Remote Power Control

Create Active Directory Security Group for ConfigMgr Primary Site Servers

- On the domain controller, click **Start > All Programs > Administrative Tools > Active Directory Users and Computers**
- Expand the **vprolab.com** domain and select the **Users** container. Right-click the **Users** container and click **New > Group**

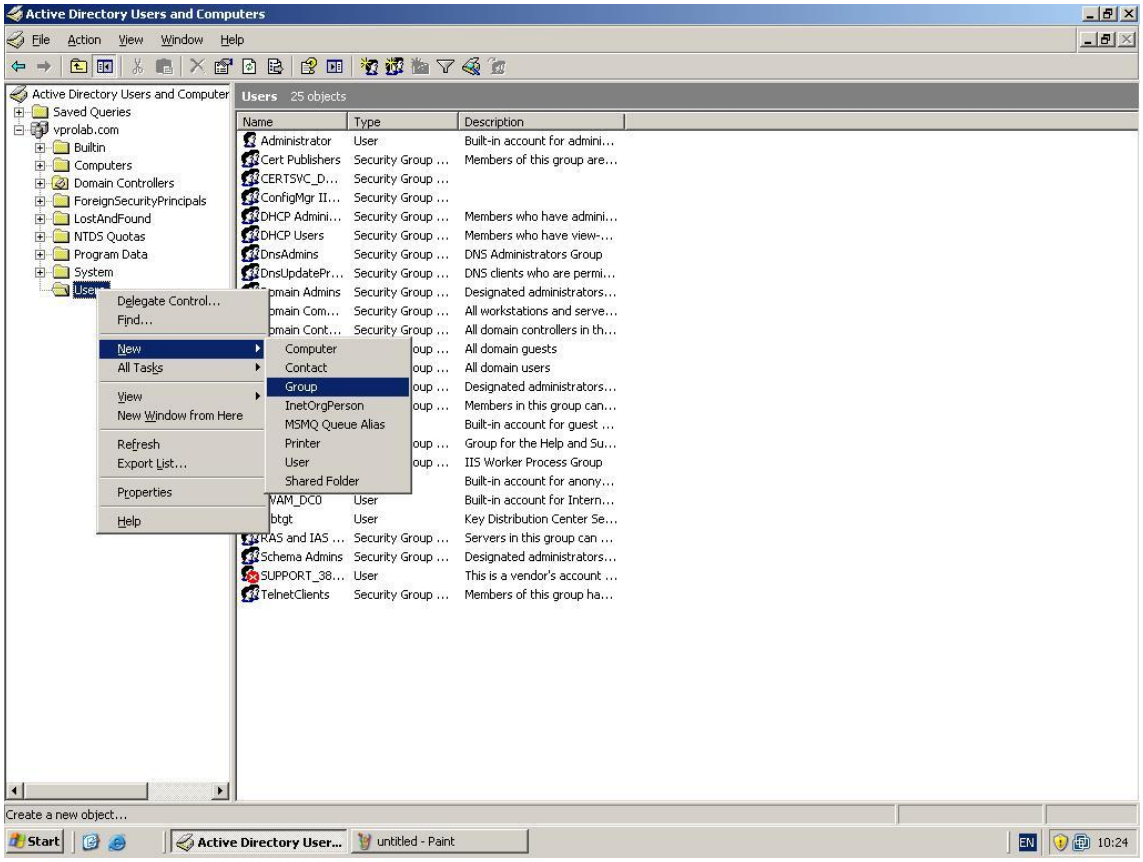

Figure 5 - Active Directory Users and Computers New Group

- At the New Object – Group dialog, enter **ConfigMgr Primary Site Servers** into the Group name field and set Group type to **Security**. Click OK to create the group

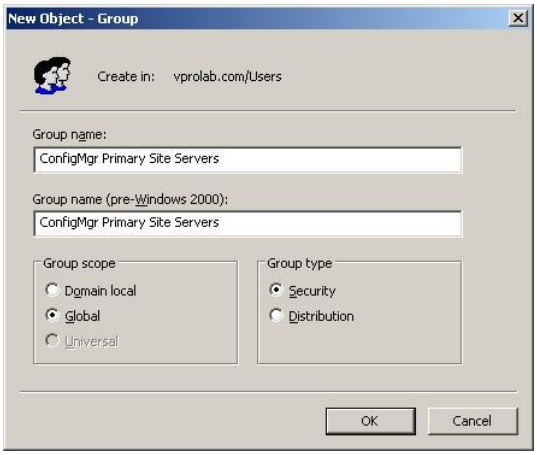

Figure 6 - ConfigMgr Primary Site Servers Group

- In Active Directory Users and Computers, right-click the **ConfigMgr Primary Site Servers** group just created and click **Properties**

- At the ConfigMgr Primary site Servers Properties dialog, click the **Members** tab, click **Add…** and add the SCCM member server to this group. If the SCCM member server is not found then click **Object Types…** and ensure the Computers object type is checked before retrying. Click OK once the SCCM member server is added to this group

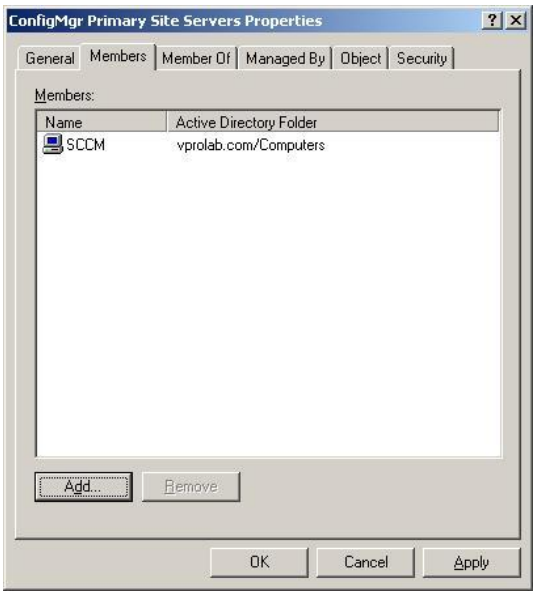

Figure 7 - ConfigMgr Primary Site Servers Group with SCCM Member Server

- Shutdown and reboot the SCCM member server so that it picks up the new group membership

- Do not close the Active Directory Users and Computers console

☐ Tick this box when you have completed all steps in this procedure

Create Active Directory OU for Client Management Controller Objects

IMPORTANT: When a single ConfigMgr site provisions Intel vPro clients in multiple domains, an identically named OU must appear in each domain. During provisioning

ConfigMgr determines the domain containing the Intel vPro client and creates objects representing the Management Controller in OU for the domain containing the client

- At the Active Directory Users and Computers console, right-click the **vprolab.com** domain and click **New > Organizational Unit**

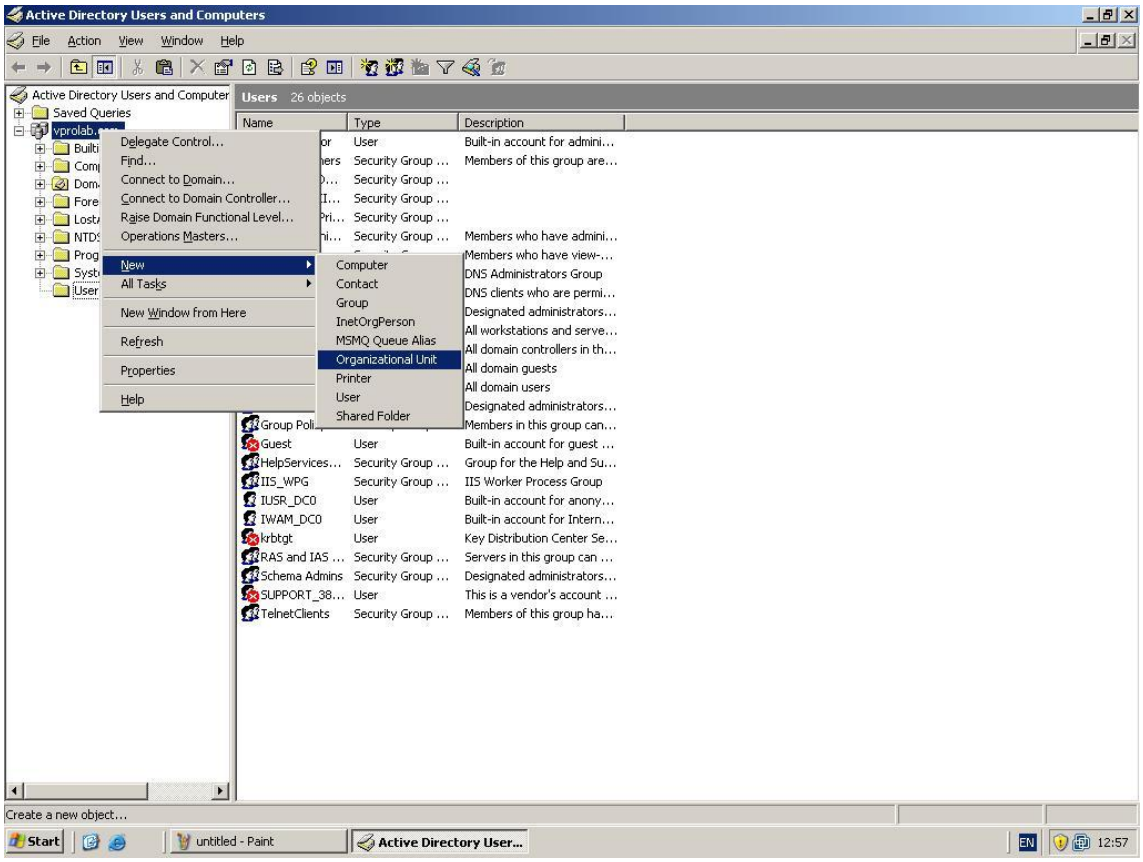

Figure 8 - Active Directory Users and Computers New Organizational Unit

- At the New Object – Organizational Unit dialog, enter **Out of Band Management Controllers** into the Name field and click OK to create the organizational unit

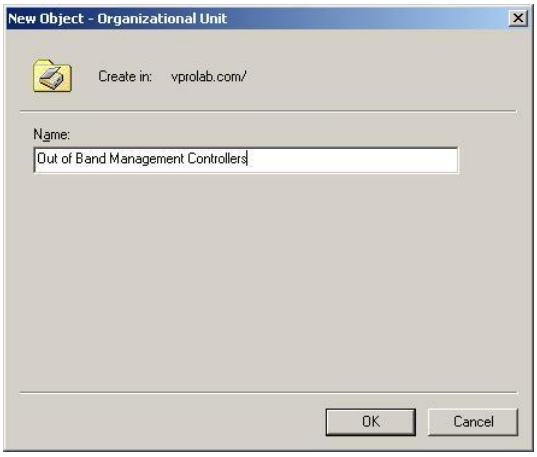

Figure 9 - Out of Band Controllers Organizational Unit

- Right-click the **Out of Band Management Controllers** organizational unit just created and click **Properties**

- At the Out of Band Management Controller Properties dialog, click the **Security** tab and click **Advanced**

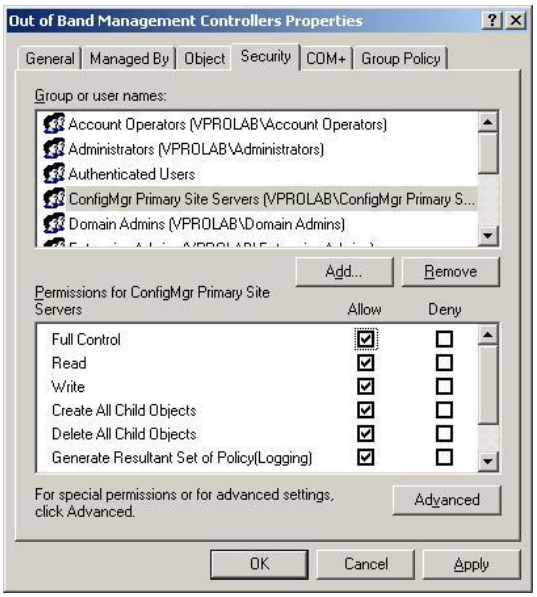

Figure 10 - Organizational Unit Security Properties

- At the Advanced Security Settings for Out of Band Management Controllers dialog, click **Add…** and add the **ConfigMgr Primary Site Servers** group

- At the Permission Entry for Out of Band Management Controllers dialog, for the **Apply onto** field select **This object and all child objects** and for **Permissions** check **Allow Full Control**. Click OK

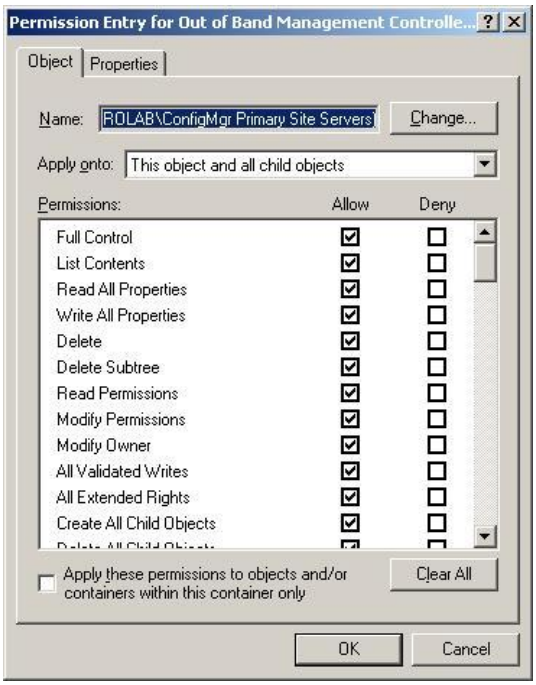

Figure 11 - Organizational Unit Advanced Permissions

- Click OK to close the Advanced Security Settings dialog
- Click OK to close the Out of Band Management Controller Properties dialog
- Close the Active Directory Users and Computers console

☐ Tick this box when you have completed all steps in this procedure

Create Client Management Controller Server Certificate Template

- On the domain controller, click **Start > All Programs > Administrative Tools > Certificate Authority**
- Expand **vProLab Enterprise Issuing CA**, right-click **Certificate Templates** and click **Manage** to load the Certificate Templates management console

- At the Certificate Templates console, in the list of templates displayed in the right hand console pane, right-click the **Web Server** entry and click **Duplicate Template**

IMPORTANT: When using a certificate authority based on Windows Server 2008, select a certificate template that is compatible with Windows Server 2003

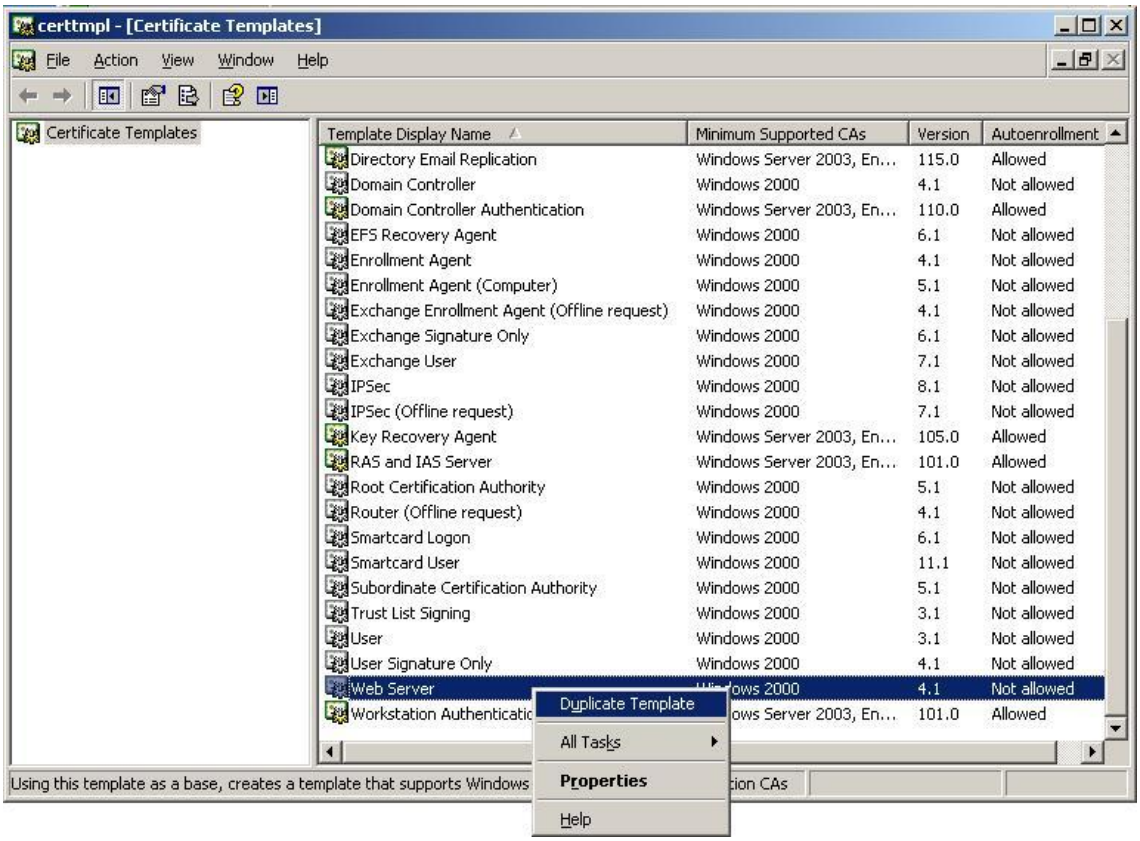

Figure 12 - Duplicate Certificate Template

- At the Properties of New Template dialog, click the **General** tab and enter **ConfigMgr AMT Web Server Certificate** into the **Template display name** field

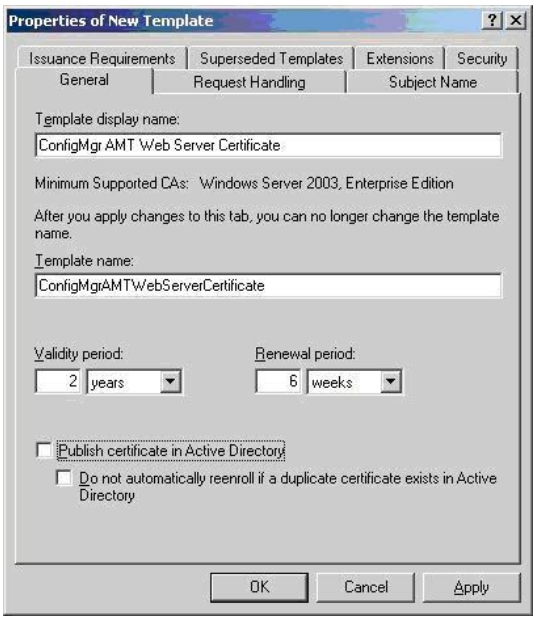

Figure 13 - Management Controller Server Certificate Template General Tab

- At the Properties of New Template dialog, click the **Security** tab. Select the **Domain Admins** group and uncheck **Enroll** permissions for this group. Select the **Enterprise Admins** group and uncheck **Enroll** permissions for this group

- Click **Add…** and add the **ConfigMgr Primary Site Servers** group. Select the **ConfigMgr Primary Site Servers** group and check **Read** and **Enroll** permissions for this group. Click OK

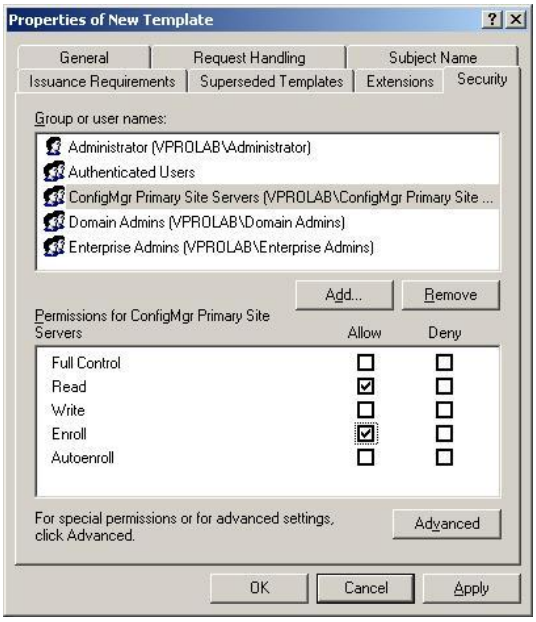

Figure 14 - Management Controller Server Certificate Template Security Tab

- Close the Certificate Templates management console
- At the Certification Authority management console, right-click **Certificate Templates** and click **New > Certificate Template to Issue**

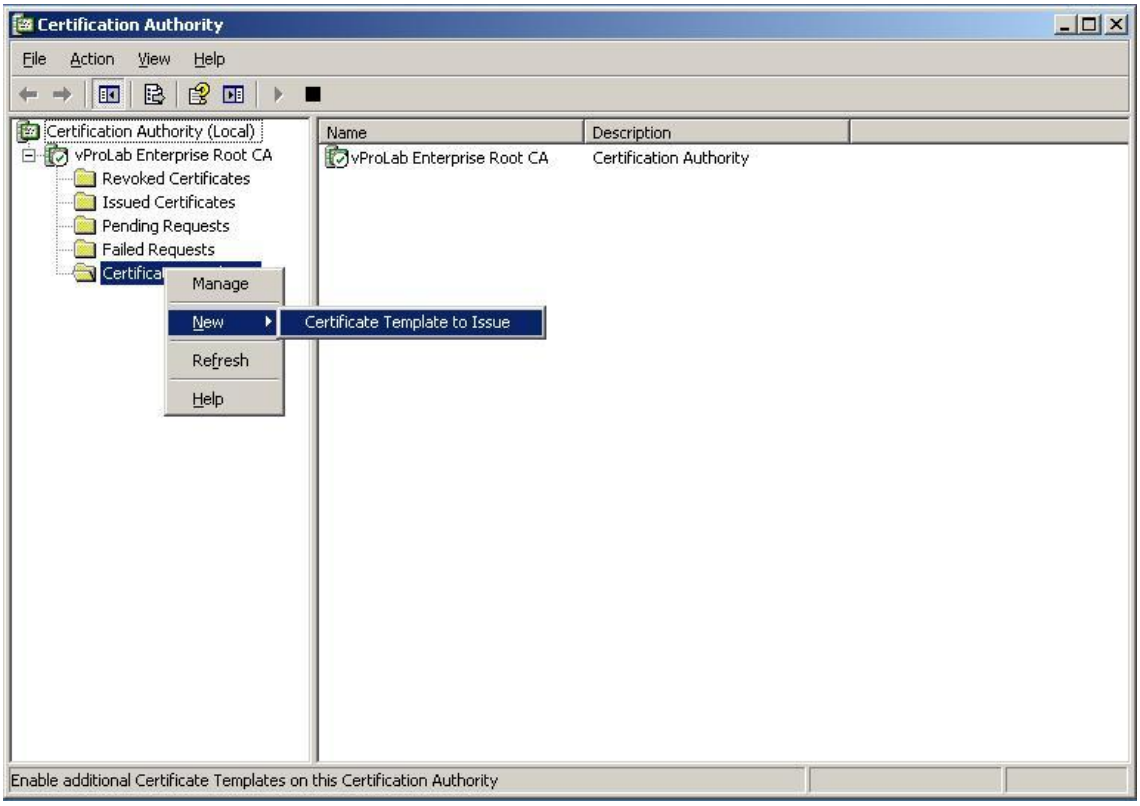

Figure 15 - Certificate Authority Certificate Template to Issue

- In the Enable Certificate Templates dialog, select the **ConfigMgr AMT Web Server Certificate** template just created and click OK to enable certificates to be created based on this template

Figure 16 - Enable Certificate Templates Dialog

- Do not close the Certification Authority console

☐ Tick this box when you have completed all steps in this procedure

(Optional) Configure Issuing Certificate Authority to Allow Revocation of Client Management Controller Certificates

HELPFUL HINT: Provisioning and Out of Band Management operations can still be performed if this step is not completed but certificates issued to Management Controllers will not be automatically revoked when the Management Controller is un-provisioned

- At the Certification Authority console, right-click **vProLab Enterprise Issuing CA** and click **Properties**
- At the CA Properties dialog, click the **Security** tab
- Click **Add…** and add the **ConfigMgr Primary Site Servers** group. Select the **ConfigMgr Primary Site Servers** group and check **Issue and Manage Certificates** and **Request Certificates** permissions for this group. Click OK

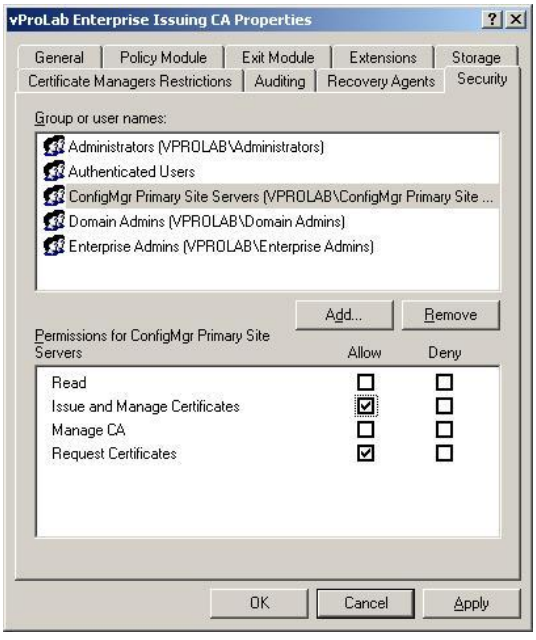

Figure 17 - Certificate Authority Security Properties

- Close the Certification Authority console

☐ Tick this box when you have completed all steps in this procedure

Install ConfigMgr Out of Band Service Point

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**

- In the Configuration Manager console, expand **System Center Configuration Manager > Site Database > Site Management > ISW > Site Settings > Site Systems**

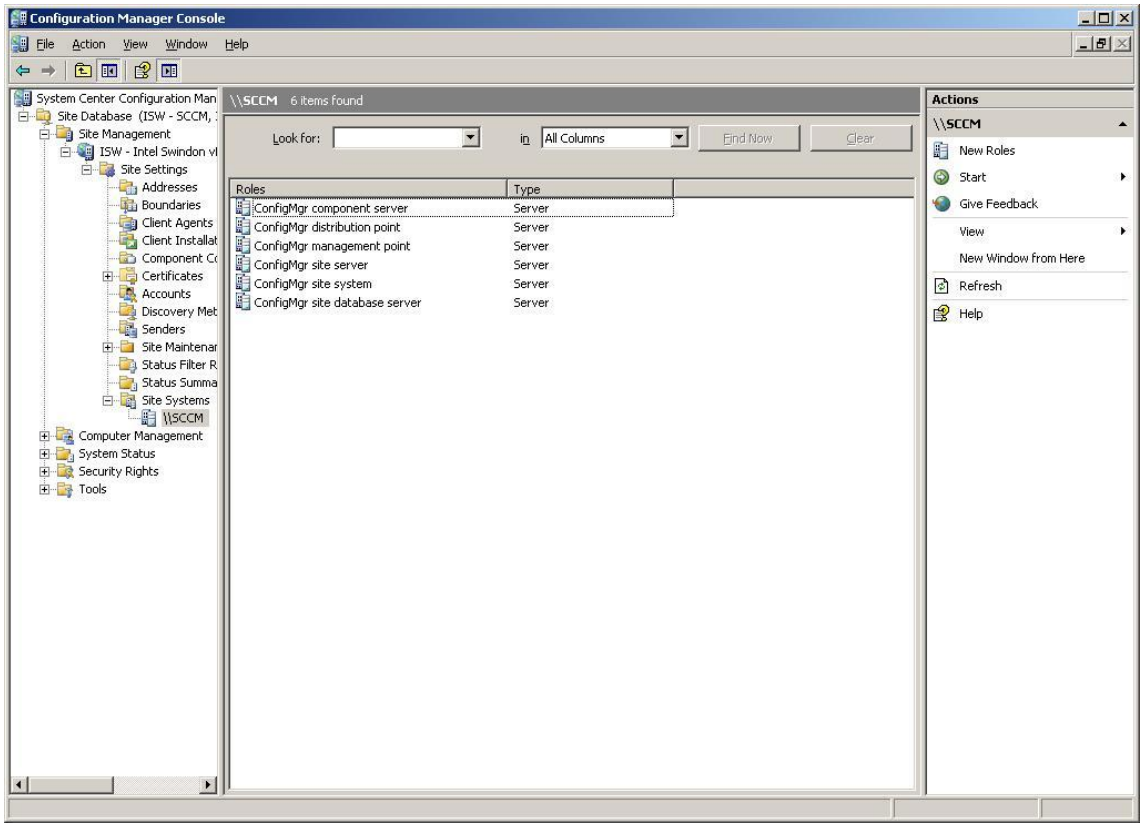

Figure 18 - Configuration Manager Console Showing Site Systems

- Right-click the **\\SCCM** site system server and click **New Roles** to launch the New Site Role Wizard

- On the General page, click Next

- On the System Role Selection page, check **Out of band service point** and click Next
- On the Out of Band Service Point page, change any default settings you require for how out of band transmission packets are sent. For this lab leave the settings at their default value and click Next
- On the Summary page, review the settings in the Details window and click Next
- On the Confirmation page, verify the wizard completed successfully and click Close
- Do not close the Configuration Manager console

HELPFUL HINT: After installing the ConfigMgr Out of Band Service Point, the log file **C:\Program Files\Microsoft Configuration Manager\Logs\AMTSPSetup.Log** can be reviewed to inspect the success or failure of the installation

☐ Tick this box when you have completed all steps in this procedure

Configure Out of Band Management Component

- In the Configuration Manager console, expand **System Center Configuration Manager > Site Database > Site Management > ISW > Site Settings > Component Configuration**
- In the Component Configuration pane, right-click **Out of Band Management** and click **Properties**

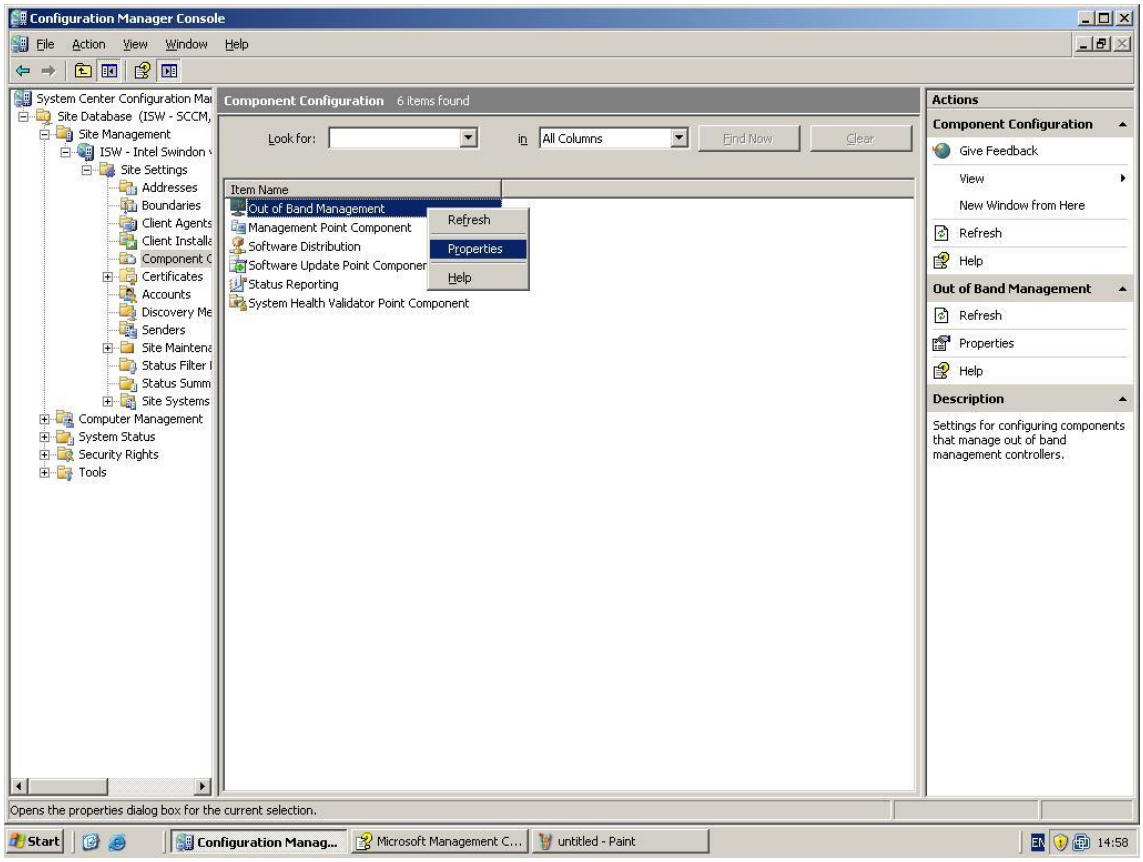

Figure 19 - Configuration Manager Console Showing Component Configuration

- In the Out of Band Management Properties dialog, click the **General** tab

- Set the **Active Directory container** field to the **Out of Band Management Controllers** organizational unit created earlier using the **Browse…** button. For this lab the Active Directory container distinguished name (DN) is **LDAP://OU=Out of Band Management Controllers,DC=vprolab,DC=com**

- Configure a strong local **MEBx Account** password that will be applied to client Management Controllers during provisioning using the **Set…** button. For this lab use the password **P@ssw0rd**

- If using Out of Band provisioning, check **Allow out of band provisioning** to allow ConfigMgr to respond to ConfigMgr Out of Band provisioning requests from clients

- If using Out of Band provisioning, check **Register ProvisionServer as an alias in DNS** to create a CNAME record in DNS to allow client Management Controllers to locate ConfigMgr during the ConfigMgr Out of Band provisioning process

HELPFUL HINT: Allow out of band provisioning and **Register ProvisionServer as an alias in DNS** do not need to be checked if ConfigMgr Out of Band provisioning is not being used

- Set the **Provisioning certificate** field to the provisioning certificate using the **Browse…** button. For this lab the provisioning certificate is contained in the file Provisioning Certificate.pfx located on the desktop and the certificate private key password is **P@ssw0rd**

- Set the **Certificate template** field to the client Management Controller server certificate template created earlier using the **Select…** button. For this lab the Issuing CA is **DC0.vprolab.com** and the AMT certificate template is **ConfigMgr AMT Web Server Certificate**

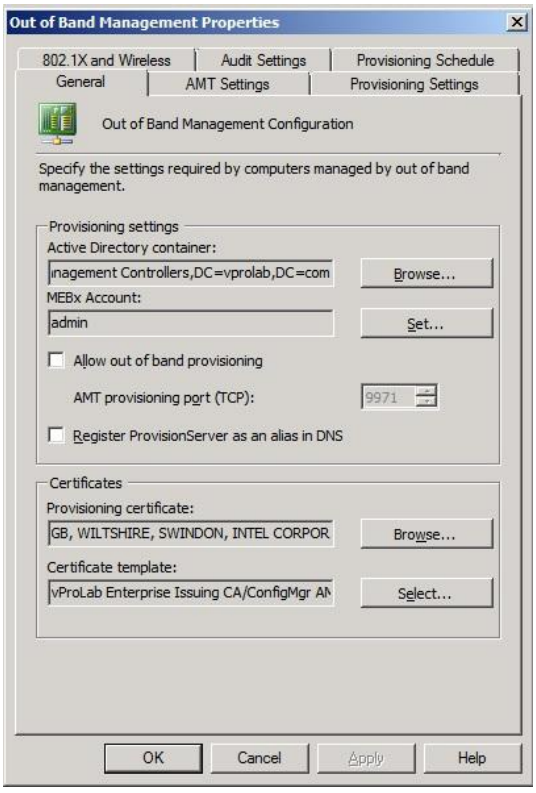

Figure 20 - Out of Band Management Properties General Tab

- Click **Apply** to save the General tab settings

- In the Out of Band Management Properties dialog, click the **AMT Settings** tab

- Click the * button to add a Windows domain user or group to the AMT user accounts list. The domain users or groups added to this list will have access to the Management Controller on all clients provisioned by this Out of Band Service Point. For this lab use **VPROLAB\Domain Admins** as the group with permissions to **PT Administration** features**.** Click OK to close the AMT User Account Setting dialog

Figure 21 - VPROLAB\Domain Admins AMT User Account Setting

HELPFUL HINT: Using Active Directory security groups in the AMT User Accounts list allows IT administrators to control access to Management Controllers through group membership thus avoiding re-provisioning clients to add or remove user access

- (Optionally) set **Default IDE-redirect** image to an ISO or floppy disk image located on a network share or to a local physical CD-ROM or floppy drive containing media to be booted during IDE redirection operations

- Set the **Manageability is on in the following power state** field to **Always on (S0-S5)**

- Check **Enable Web Interface** to enable the Intel AMT WebUI on the Management Controller

- Check **Enable serial over LAN and IDE redirection** to enable Serial Over LAN and IDE redirection on the client

- Check **Allow ping responses** to enable the Management Controller to respond to ping requests when the client Operating System is not running

- Check **Enable BIOS password bypass for power on and restart commands** to enable clients to boot past any BIOS password during remote power-on or reset operations

- Uncheck **Enable support for Intel WS-MAN translator**

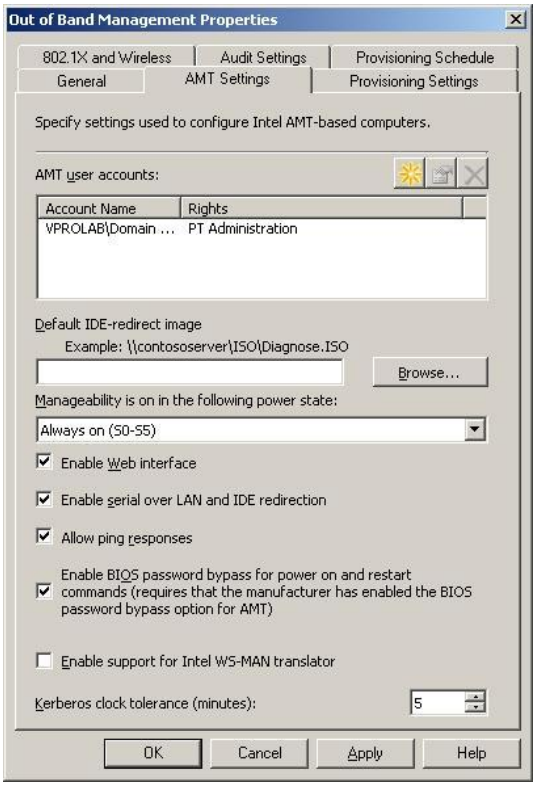

Figure 22 - Out of Band Management Properties AMT Settings Tab

- Click **Apply** to save the AMT Settings tab settings

- In the Out of Band Management Properties dialog, click the **Provisioning Settings** tab

- Click the * button to add any non-factory default MEBx user credentials to the AMT Provisioning and Discovery accounts list. The MEBX credentials added to this list are used by ConfigMgr to initially authenticate with Management Controllers during provisioning and network discovery operations. For this lab use a name of **admin** and a password of **P@ssw0rd**

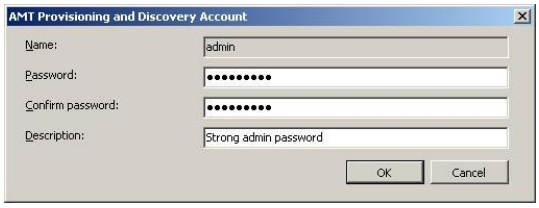

Figure 23 - AMT Provisioning and Discovery Account Dialog

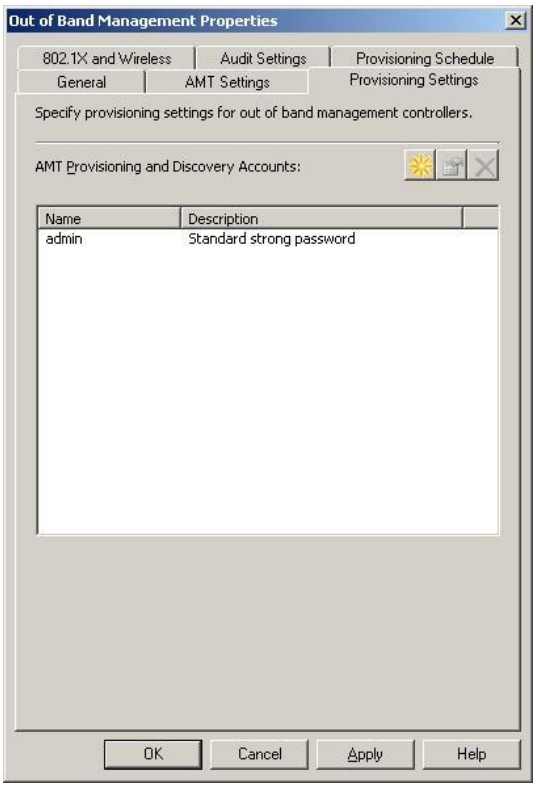

Figure 24 - Out of Band Management Properties Provisioning Settings Tab

- Click **Apply** to save the Provisioning Settings tab settings
- In the Out of Band Management Properties dialog, click the **Provisioning Schedule** tab
- Set the AMT provisioning schedule to determine the client provision process start time and recurrence if provisioning is unsuccessful. For this lab select **Simple schedule** and set **Run every** to 1 day

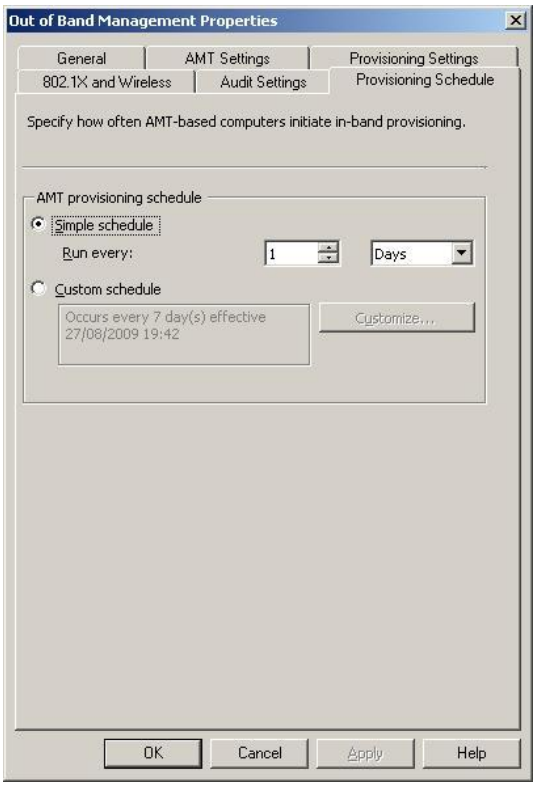

Figure 25 - Out of Band Management Properties Provision Polling Schedule Tab

- Click OK to save the Out of Band Management Properties
- Do not close the Configuration Manager console

☐ Tick this box when you have completed all steps in this procedure

Configure Site Parameters to Use Secure Remote Power Control

- Expand **Site Database > Site Management,** right-click ISW and click **Properties**
- At the Site Properties dialog, click the **Wake On LAN** tab
- Check **Enable Wake On LAN for this site** and check either **Use power on commands only** or **Use power on commands if the computers support this technology; otherwise use wake-up packets** depending on the computers and network infrastructure

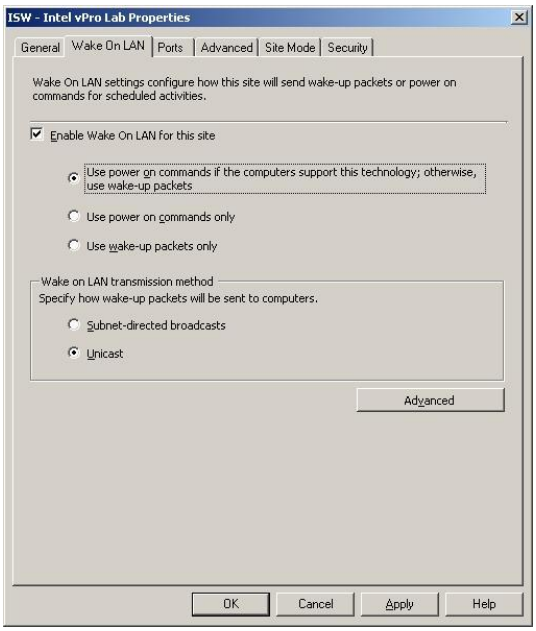

Figure 26 - Site Properties Wake On LAN Tab

- Click OK to save the site settings
- Do not close the Configuration Manager console

☐ Tick this box when you have completed all steps in this procedure

Configure ConfigMgr for Out of Band Management Console Operations

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Configure Certificate Repository on Out of Band Management Console Host
- Install Telnet Client on Out of Band Management Console Host

Configure Certificate Repository on Out of Band Management Console Host

IMPORTANT: During redirection operations such as Serial Over LAN or IDE Redirection, when the Out of Band Management console is attempting to authenticate certificates from Management Controllers to establish a secure channel, only the Trusted Root Certification Authority store is searched by the console to build a trusted certificate chain

Therefore if the certificate authority used to issue certificates to the Management Controller is not a Root Certificate Authority (i.e. there are intermediate certificates between the Management Controller certificate and the Root Certificate Authority certificate), the intermediate certificates from the Management Controller certificate signing chain must be available in the local machine Trusted Root Certification Authority store on the workstation hosting the Out of Band Management console otherwise redirection operations will fail

- On the SCCM server, open the Microsoft Management Console (MMC)
- Add the Certificates Snap-in to MMC and chose to manage certificates for the local Computer account
- At the Microsoft Management Console, expand **Certificates (Local Computer) > Intermediate Certification Authorities > Certificates**
- Locate all internal PKI intermediate certificates from the signing chain for certificates issued to Management Controllers, select and copy them into the **Certificates (Local Computer) > Trusted Root Certification Authorities > Certificates** folder. For this lab the **vProLab Enterprise Issuing CA** intermediate certificate should be selected and copied. This step only needs to be performed once during setup of the Out of Band Management console host

- Close the Microsoft Management Console

☐ Tick this box when you have completed all steps in this procedure

Install Telnet Client on Out of Band Console Host

IMPORTANT: To use Serial Over LAN the telnet client must be installed on the system hosting the Out of Band Management Console

- On the SCCM server, use **Control Panel > Programs** to add the Telnet client. This step only needs to be performed once during setup of the Out of Band Management console host

☐ Tick this box when you have completed all steps in this procedure

Provision Intel vPro Client Management Controller using ConfigMgr Agent

IMPORTANT: Before proceeding with this exercise, ensure the following pre-requisites have been completed; the Intel vPro client Management Controller should be in a factory default state or fully un-provisioned using the MEBX

Your instructor will be able to help you complete these steps

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Configure ConfigMgr for Automatic Management Controller Provisioning
- Generate In-Band Provisioning Policy
- (Optional) Retrieve ConfigMgr Client Policies
- Monitor Provisioning Progress of Client Management Controllers

Configure ConfigMgr for Automatic Management Controller Provisioning

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **Site Database > Computer Management > Collections > All vPro Systems** and right-click the **All Un-Provisioned vPro Systems** sub-collection. Click **Modify Collection Settings**
- At the All Un-Provisioned vPro Systems Settings dialog, click the **Out of Band** tab and check **Enable automatic out of band management controller provisioning**. Click OK

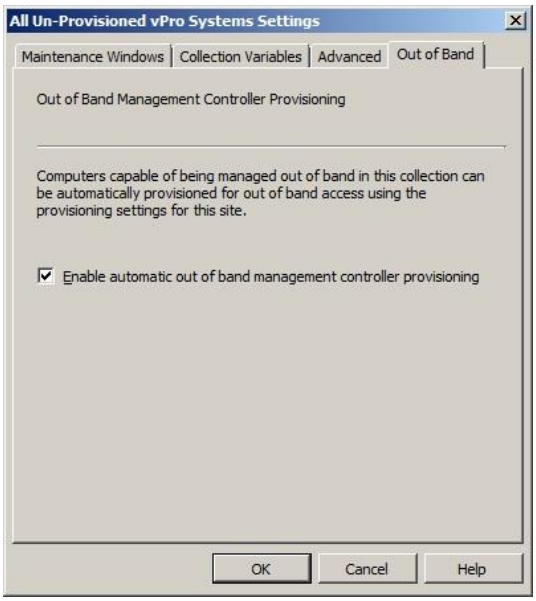

Figure 27 - Out of Band Collection Settings

- Repeat the above steps for the **All Provisioned vPro Systems** sub-collection
- Do not close the Configuration Manager console

HELPFUL HINT: In a production environment, membership criteria for collections where automatic Management Controller provisioning is enabled may need to be refined so that only specific Intel vPro clients are provisioned. For example additional criteria may need to be added to identify clients located in specific buildings or departments or are members of specific Active Directory groups to provide additional control over which clients are provisioned

☐ Tick this box when you have completed all steps in this procedure

Generate In-Band Provisioning Policy

HELPFUL HINT: ConfigMgr client policies are automatically generated periodically and do not need to be manually generated. However for lab purposes we have chosen to manually re-generate policies to accelerate the in-band provisioning process

- Expand **Site Database > Computer Management > Collections**

- Select the **All vPro Systems** collection and update the collection membership for this collection and all sub-collections to force ConfigMgr to re-generate policies for collection members and enable the automatic provisioning policy

- Do not close the Configuration Manager console

☐ Tick this box when you have completed all steps in this procedure

(Optional) Retrieve ConfigMgr Client Policies

HELPFUL HINT: ConfigMgr client machine policies are normally retrieved automatically and applied periodically and do not need to be manually retrieved. However for lab purposes we have chosen to manually retrieve machine policies to accelerate the in-band provisioning process

- Logon to the Intel vPro client. For this lab logon with username **Administrator@vprolab.com** and password of **P@ssw0rd**

- Open **Control Panel** and open **Configuration Manager**. For clients running Windows XP, Configuration Manager is located under Administrative Tools, for clients running Windows Vista or Windows 7, Configuration Manager is located under System and Maintenance or System and Security

- At the Configuration Manager Properties dialog, click the **Actions** tab

- Select **Machine Policy Retrieval and Evaluation Cycle**, and click **Initiate Action** to force the client to update policy settings. If the action cannot be initiated then wait for 1-2 minutes for the ConfigMgr client services to fully initialize and retry this operation

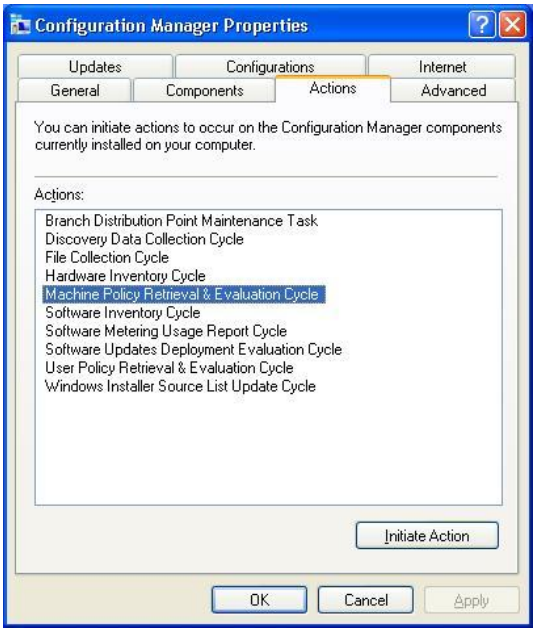

Figure 28 - Configuration Manager Properties Actions Tab

- Close the Configuration Manager on the client

☐ Tick this box when you have completed all steps in this procedure

Monitor Provisioning Progress of Client Management Controllers

- On the SCCM server, click **Start > All Programs > ConfigMgr 2007 Toolkit -> Trace32**

- At the SMS Trace main window, open the log file **amtopmgr.log** and monitor the incoming provisioning request and operations. Identify the incoming provisioning request, the start of the provisioning task, the 1st and 2nd stage provisioning operations and the end of the provisioning task

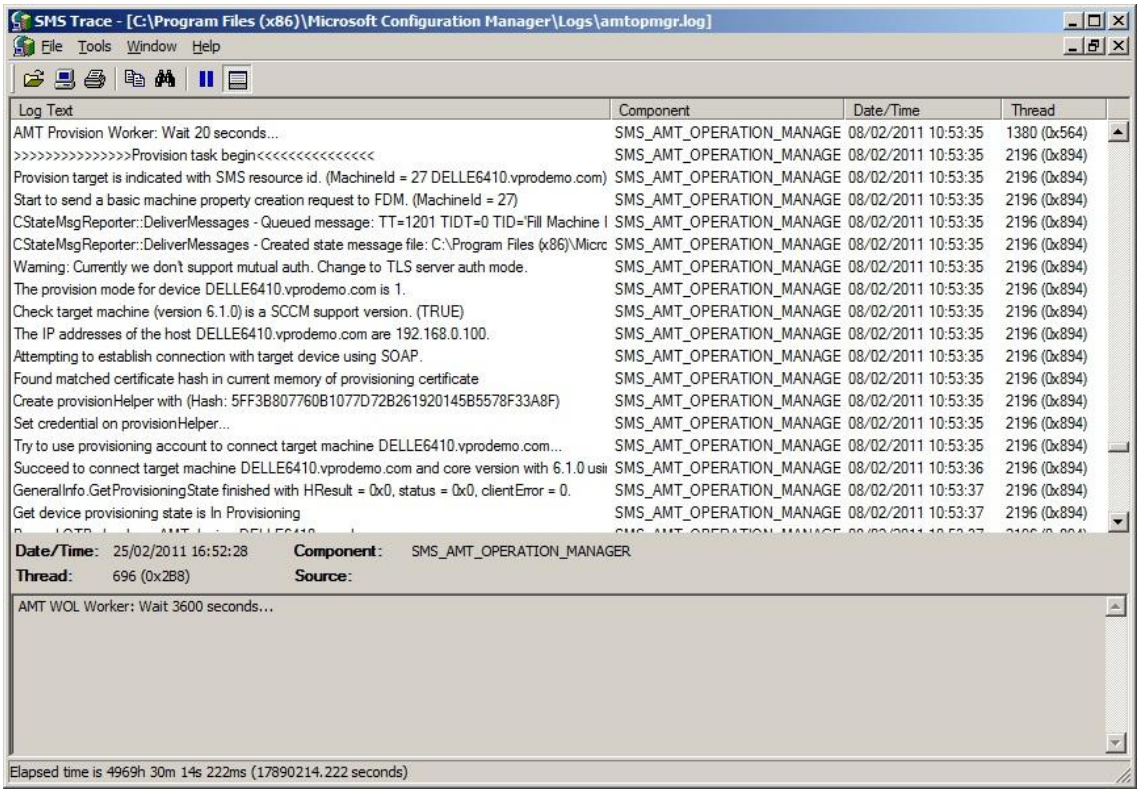

Figure 29 - Trace32 Monitoring of Provisioning Task Operations

- At the ConfigMgr console, Expand **Site Database > Computer Management > Collections**, select the **All vPro Systems** collection and update the collection membership for this collection and all sub-collections. If provisioning was completed successfully, the **All vPro Systems** and **All Provisioned vPro Systems** collections should contain the provisioned Intel vPro client and the **All Un-Provisioned vPro Systems** collection should be empty. If the **All Provisioned vPro Systems** collection is empty and the **All Un-Provisioned vPro Systems** collection still contains the Intel vPro client provisioning was unsuccessful. Use Trace32 to inspect the provisioning operations and correct any errors

- Verify that a Computer object was successfully created in the OU specified for Management Controller objects and the object account is enabled. Verify that the issuing certificate authority issued a certificate to the Management Controller

☐ Tick this box when you have completed all steps in this procedure

Simple Intel vPro Client Management using AMT WebUI

HELPFUL HINT: After provisioning, the AMT WebUI built into the Management Controller is available on all Intel vPro Technology platforms and can be used to perform simple one-on-one client troubleshooting using hardware inventory retrieval, BIOS event logs and remote client power control. The AMT WebUI can be configured so that it available regardless of client power state or it can be completely disabled if not required

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Connect to AMT WebUI
- Use AMT WebUI To Perform Simple Client Management

Connect to AMT WebUI

IMPORTANT: Microsoft KB908209 and the associated registry entry must be installed on systems hosting Internet Explorer 6, 7 or 8 before logging into the AMT WebUI using Kerberos authentication

- On the domain controller or SCCM server, open **Internet Explorer** and enter a URL of **https://vproclient.vprolab.com:16993** to connect to the AMT WebUI. If the browser is unable to connect, close the browser and use the command **ipconfig /flushdns** to flush any residual DNS information. Re-open the browser and retry connecting to the AMT WebUI
- At the AMT WebUI, logon with username **VPROLAB\Administrator** and password **P@ssw0rd**

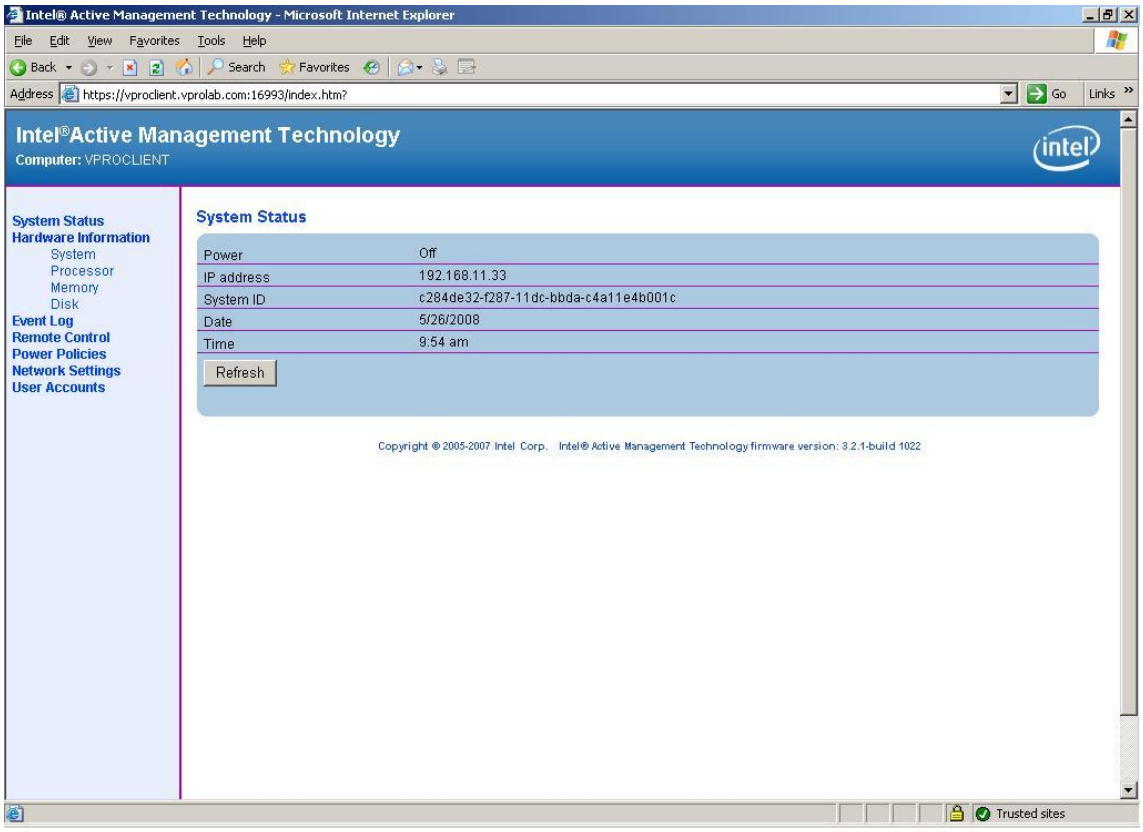

Figure 30 - VPROLAB\Administrator User WebUI Console

Use AMT WebUI to Perform Simple Client Management

- Use the left-hand navigation bar and explore the simple client management options available. These options include simple hardware inventory, Management Controller event log, client power control, client management controller power policies and account modification

☐ Tick this box when you have completed all steps in this procedure

On-Demand Remote Power Control of Intel vPro Clients

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- On-Demand Remote Power Control from ConfigMgr Console
- Invoke Out of Band Management Console
- On-Demand Remote Power Control from Out of Band Console

On-Demand Remote Power Control from ConfigMgr Console

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **Site Database > Computer Management > Collections**
- Select the **All Systems** collection
- In the All Systems pane, right-click the client to be remotely controlled. If more than one client will be remotely controlled hold down the Ctrl key and click each of the other clients to perform a multiple client selection. Right-click the selected client and click **Out of Band Management > Power Control**

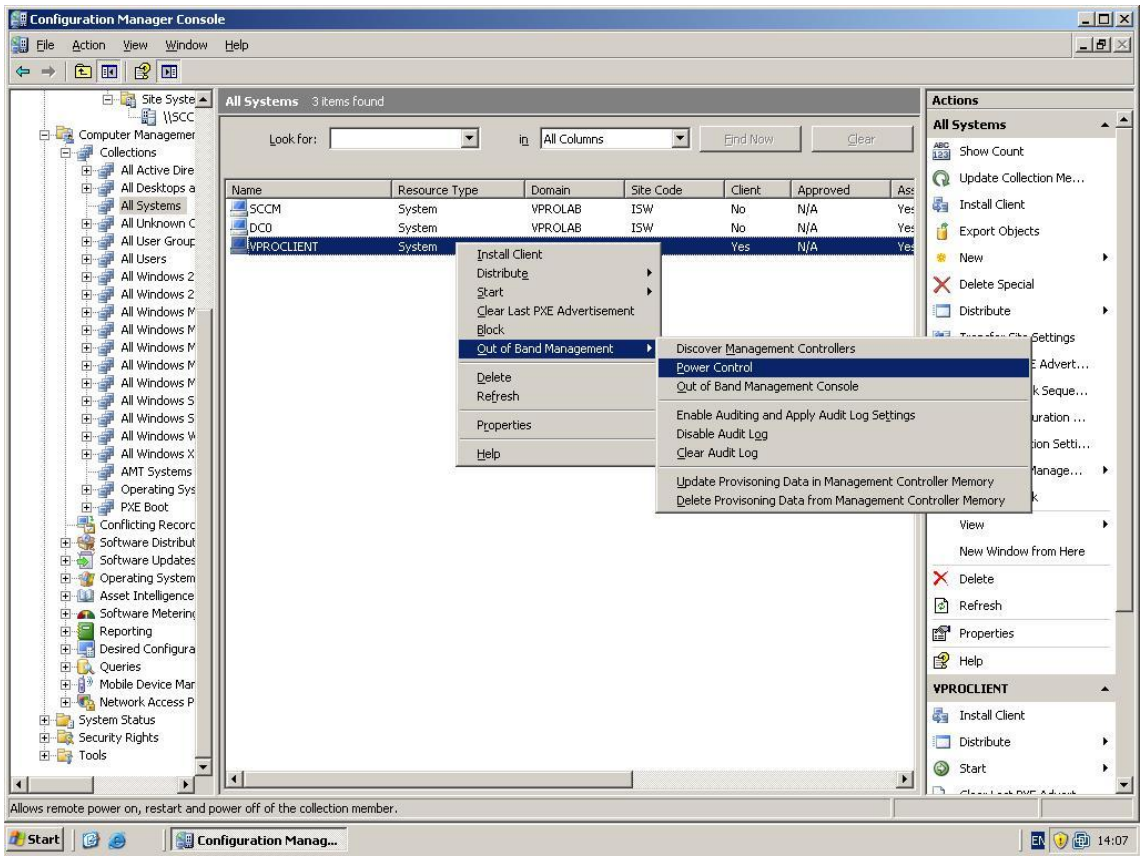

Figure 31 - Launch Client Power Control

- At the Power Control dialog box, select **Power Off** in the **Select power control action to perform** list and click OK. At the confirm power off dialog click OK. After a few seconds client systems will power off

Figure 32 - Client Power Control Dialog

- In the All Systems pane, right-click the client to be remotely controlled. If more than one client will be remotely controlled hold down the Ctrl key and click each

of the other clients to perform a multiple client selection. Right-click the selected client and click **Out of Band Management > Power Control**

- At the Power Control dialog box, select **Power On** in the **Select power control action to perform** list and click OK. After a few seconds client systems will power on

HELPFUL HINT: If client systems will be managed Out of Band, client Management Controllers must be configured to be active when the platform is in sleep or powered off states using the Management Controller power policies. By default, ConfigMgr configures Management Controllers to be active in all client power states

☐ Tick this box when you have completed all steps in this procedure

Invoke Out of Band Management Console

- Expand **Site Database > Computer Management > Collections**
- Select the **All Systems** collection
- In the All Systems pane, right-click the client to be managed and click **Out of Band Management > Out of Band Management Console**

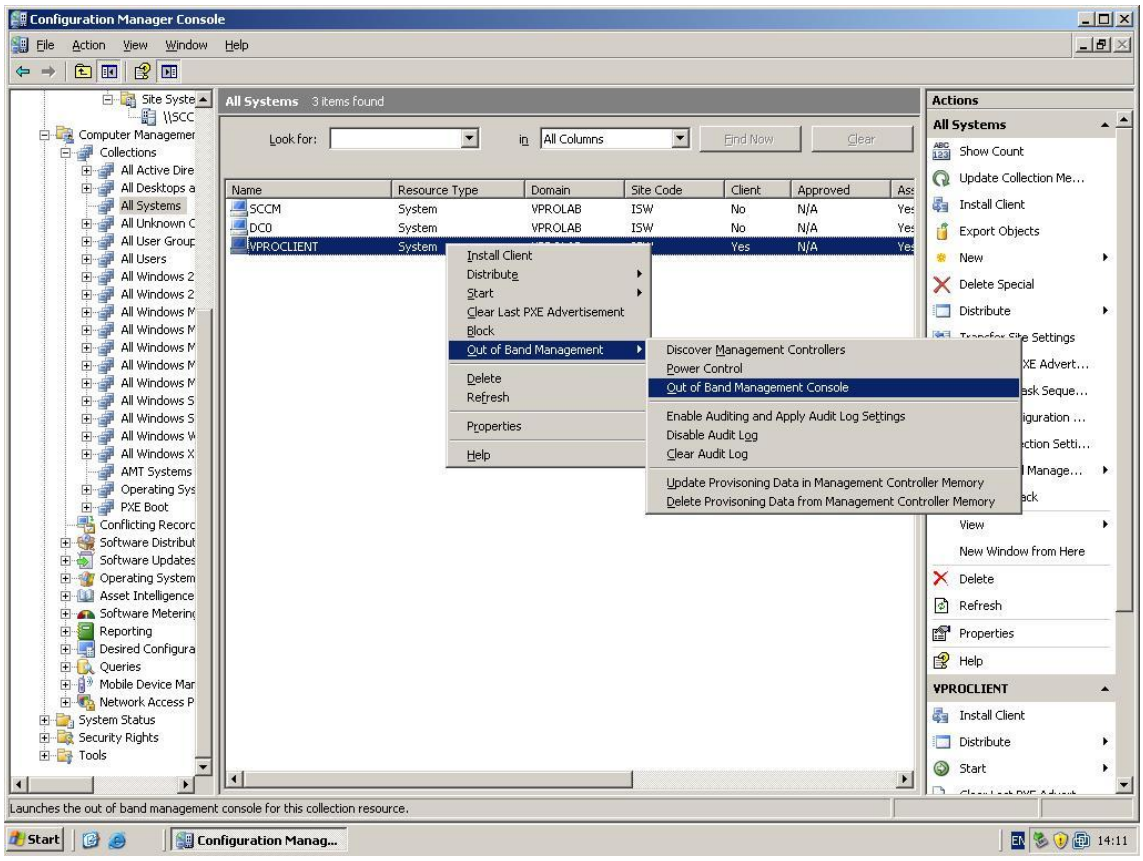

Figure 33 - Launch Out of Band Management Console

☐ Tick this box when you have completed all steps in this procedure

On-Demand Remote Power Control from Out of Band Console

- At the Out of Band Management Console, wait for the client system status shown at the bottom left hand corner of the console to change from Disconnected to Connecting to Busy to Connected

- At the Out of Band Management Console , select **System Status** to view the current client status

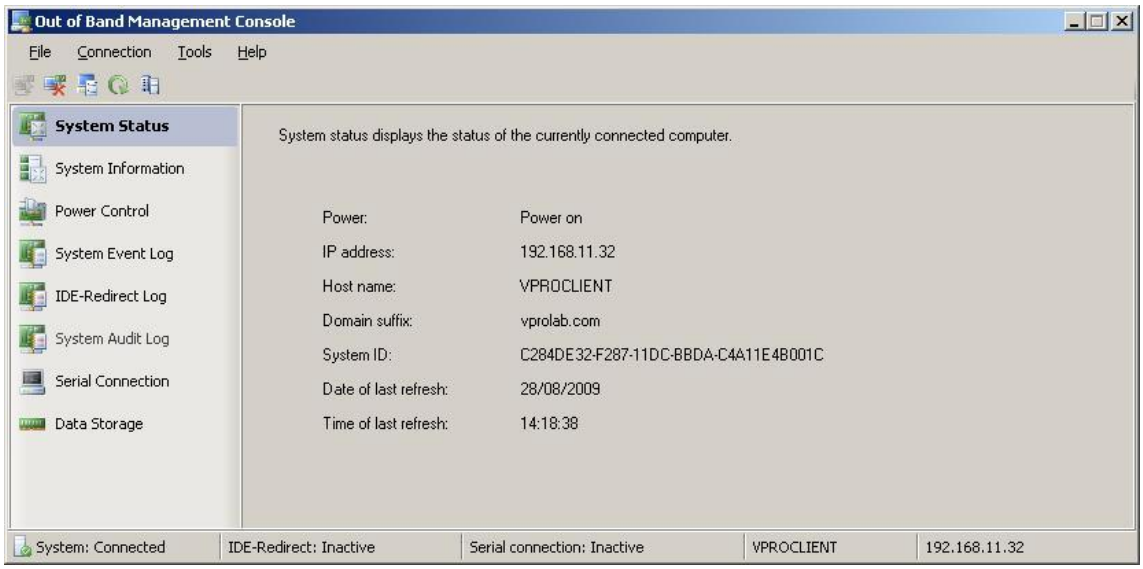

Figure 34 - Out of Band Console Showing System Status

- At the Out of Band Management Console, select **Power Control** to view the power control options. This may take 10-20 seconds to complete. If necessary use the Refresh button

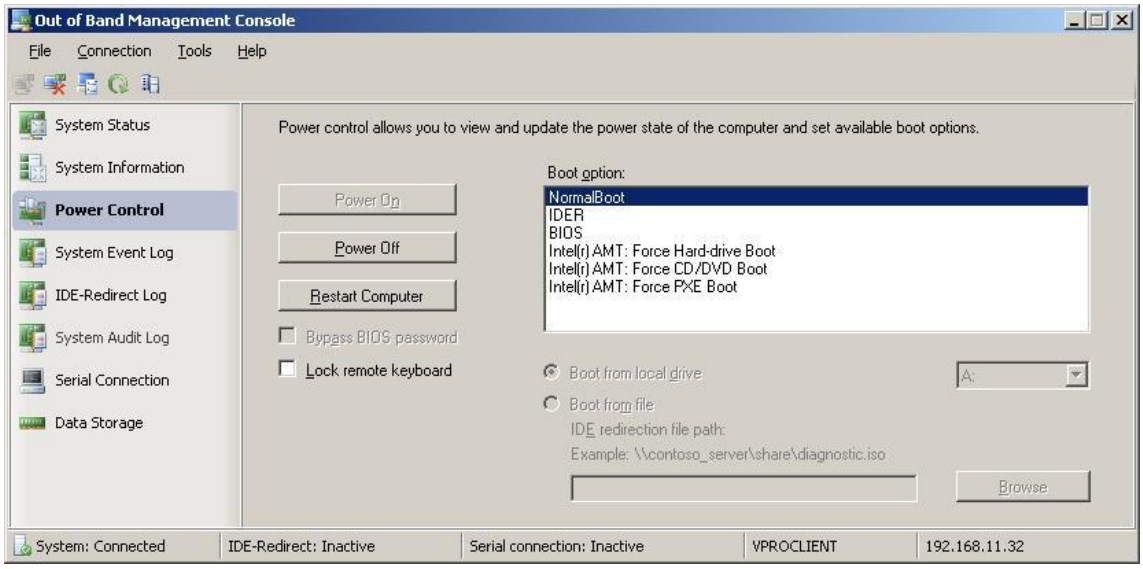

Figure 35 - Out of Band Console Showing Power Control with NormalBoot Option

- Select **NormalBoot** in the **Boot Option:** list and click **Power Off** to power down the client. At the Confirmation dialog click Yes. After a few seconds the client system will power off

- At the Out of Band Management Console, use the  Refresh button to refresh the power options. Select **NormalBoot** in the **Boot Option:** list and click **Power On** to power up the client. At the Confirmation dialog click Yes. After a few seconds the client system will power on

- Close the Out of Band Management Console

☐ Tick this box when you have completed all steps in this procedure

Retrieve Real-Time Intel vPro Client Hardware Inventory Information

HELPFUL HINT: Hardware inventory information is available from Intel vPro clients regardless of their power state. Information is obtained in 'real-time' and provides an IT helpdesk technician with accurate hardware information for troubleshooting or ordering replacement parts

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Invoke Out of Band Management Console
- Retrieve Client Hardware Information

Invoke Out of Band Management Console

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **Site Database > Computer Management > Collections**
- Select the **All Systems** collection
- In the All Systems pane, right-click the client to be managed and click **Out of Band Management > Out of Band Management Console**

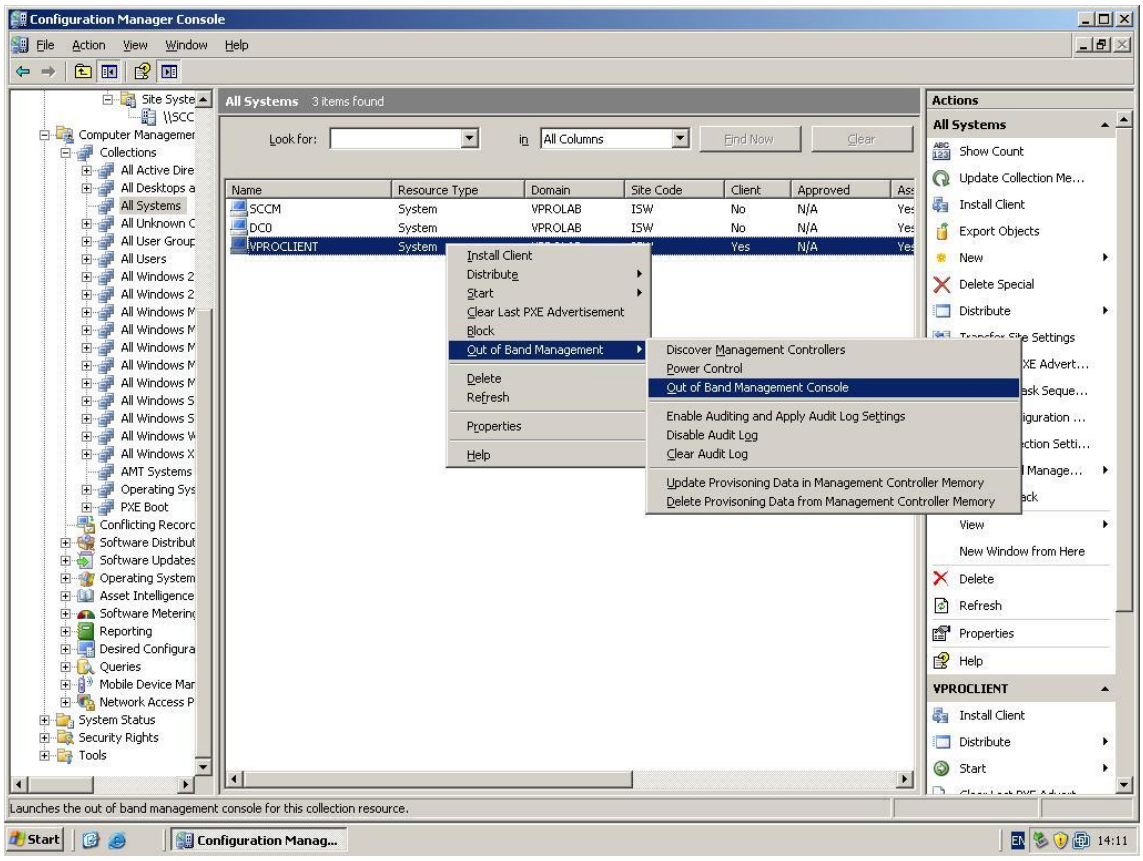

Figure 36 - Launch Out of Band Management Console

☐ Tick this box when you have completed all steps in this procedure

Retrieve Client Hardware Information

- At the Out of Band Management Console, wait for the client system status shown at the bottom left hand corner of the console to change from Disconnected to Connecting to Busy to Connected

- At the Out of Band Management Console, select **System Information** to view the client system hardware inventory. This may take 10-20 seconds to complete. If necessary use the Refresh button

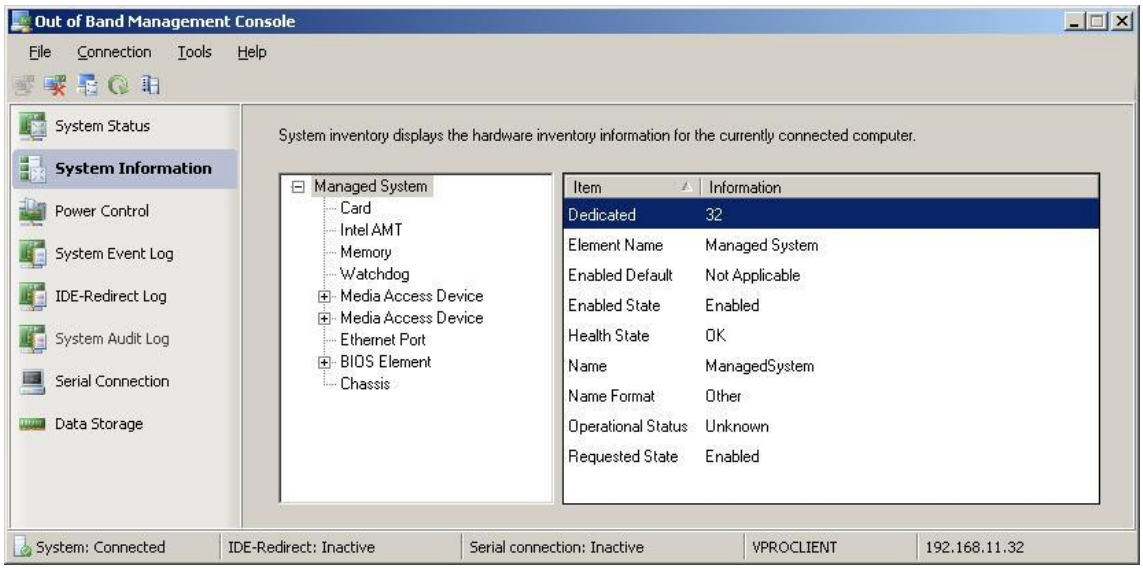

Figure 37 - Out of Band Console Showing System Information

- Select some of the hardware inventory items and examine the information available
- Use the Power Control capabilities of the Out of Band Management Console to power off the client and verify that hardware inventory can still be retrieved when the client is off
- Close the Out of Band Management Console

☐ Tick this box when you have completed all steps in this procedure

Remote BIOS Setup Access with Intel vPro Clients Using Serial over LAN

HELPFUL HINT: Serial over LAN (SOL) can be used to view BIOS POST messages and interact with BIOS Setup to help with remote PC troubleshooting

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Invoke Out of Band Management Console
- Invoke Client BIOS Setup

Invoke Out of Band Management Console

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **Site Database > Computer Management > Collections**
- Select the **All Systems** collection
- In the All Systems pane, right-click the client to be managed and click **Out of Band Management > Out of Band Management Console**

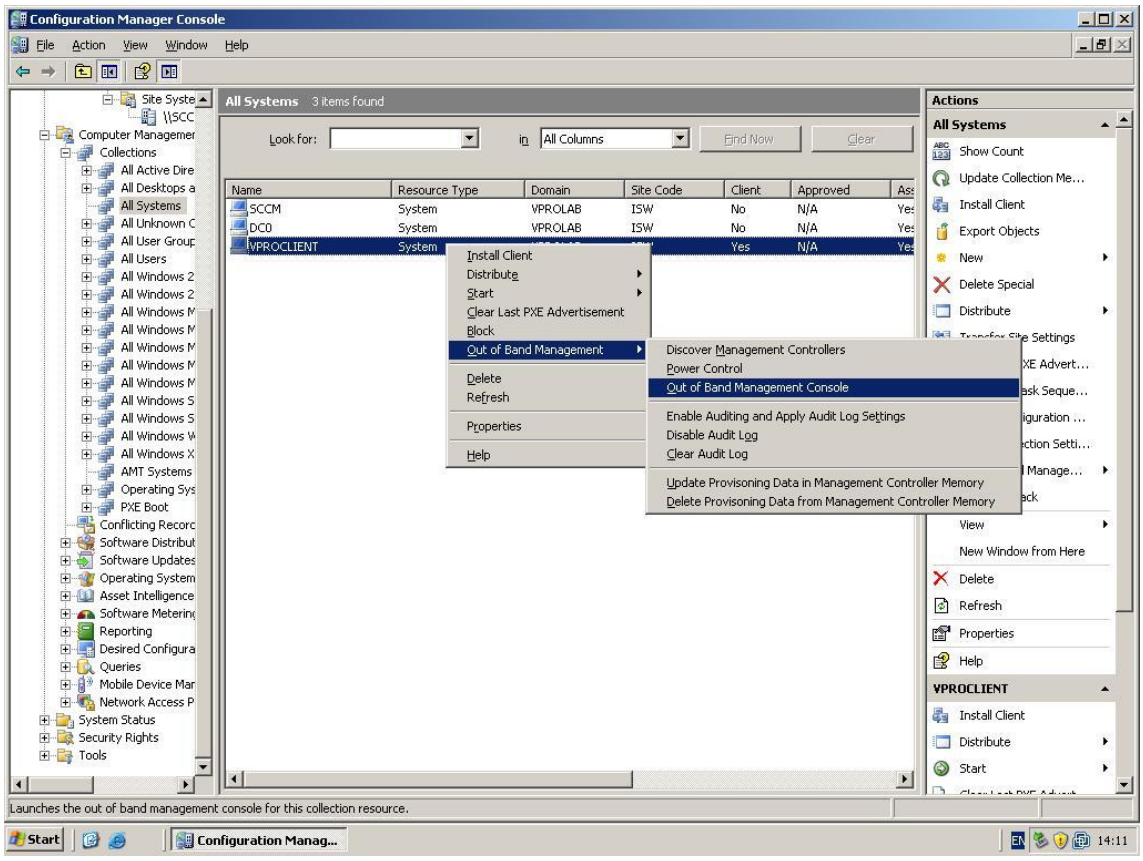

Figure 38 - Launch Out of Band Management Console

☐ Tick this box when you have completed all steps in this procedure

Invoke Client BIOS Setup

- At the Out of Band Management Console, wait for the client system status shown at the bottom left hand corner of the console to change from Disconnected to Connecting to Busy to Connected

- At the Out of Band Management Console, select **Open Serial-over-LAN Connection** from the **Tools** menu to make the serial connection active. The Serial connection status will change from Inactive to Active

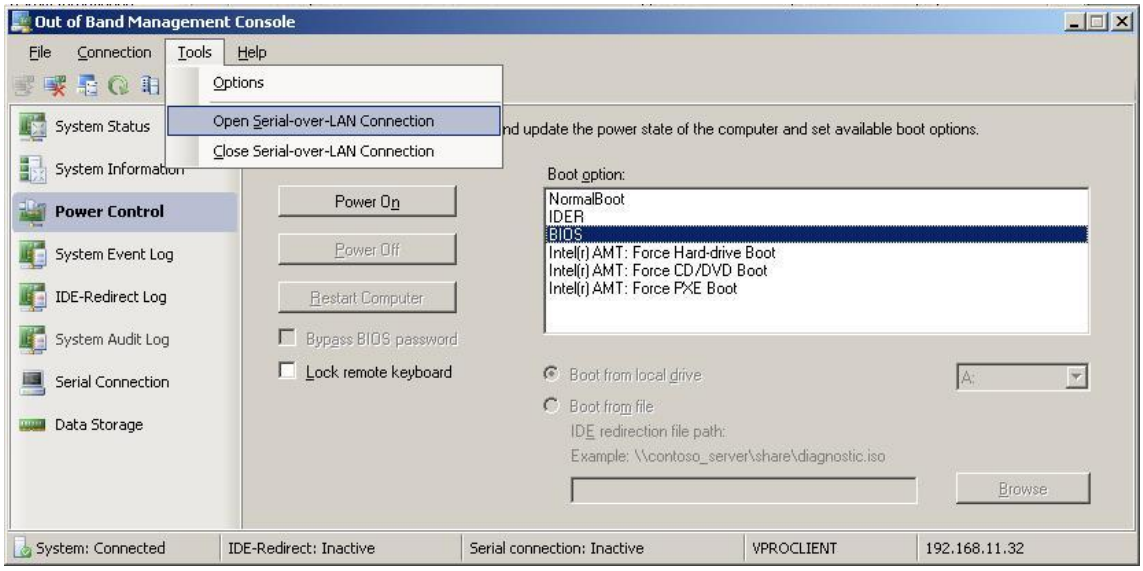

Figure 39 - Out of Band Console Opening Serial-over-LAN Connection

- At the Out of Band Management Console, select **Power Control** to view the power control options. This may take 10-20 seconds to complete. If necessary use the Refresh button. Select **BIOS** in the **Boot Option:** list and click **Power On** or **Restart System**. At the Confirmation dialog click Yes

N

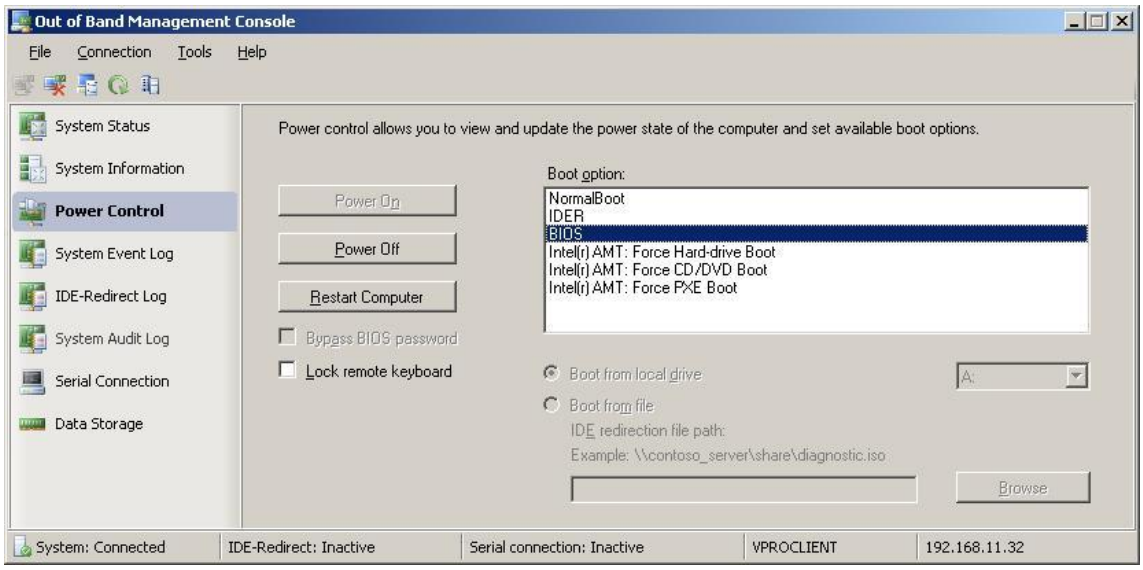

Figure 40 - Out of Band Console Showing Power Control with BIOS Option

- At the Out of Band Management Console, select **Serial Connection** to view BIOS POST and BIOS Setup messages on the Serial over LAN console. If necessary click the console pane

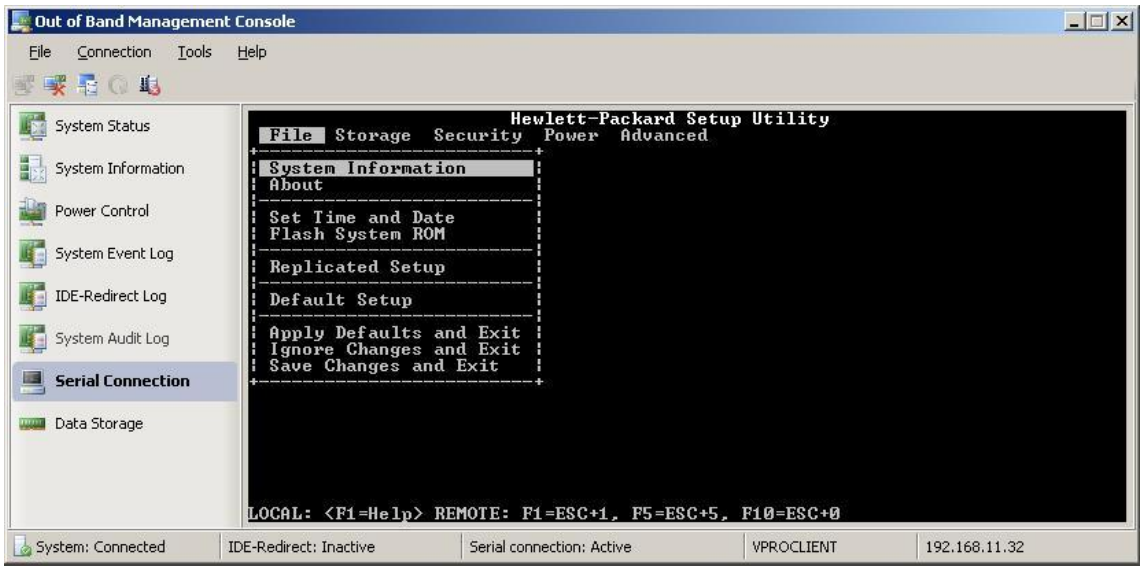

Figure 41 - Out of Band Console Showing Serial Connection with BIOS Setup

- Click in the console pane to enter keystrokes at the console and use the console to view and explore BIOS options. Once you have finished exploring the BIOS options, exit BIOS Setup without saving any changes

- Close the Out of Band Management Console. At the Confirm Disconnect dialog click **Restart** to reboot the client

☐ Tick this box when you have completed all steps in this procedure

Remote Boot Intel vPro Clients with Remediation Software Using IDE Redirection

HELPFUL HINT: IDE Redirection (IDER) can be used to securely boot Intel vPro clients from ISO images located on the ConfigMgr Server or other network drives. ISO images can contain diagnostic software to perform remote PC troubleshooting or Operating System installation software

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Invoke Out of Band Management Console
- Boot Client Using IDE Redirection

Invoke Out of Band Management Console

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **Site Database > Computer Management > Collections**
- Select the **All Systems** collection
- In the All Systems pane, right-click the client to be managed and click **Out of Band Management > Out of Band Management Console**

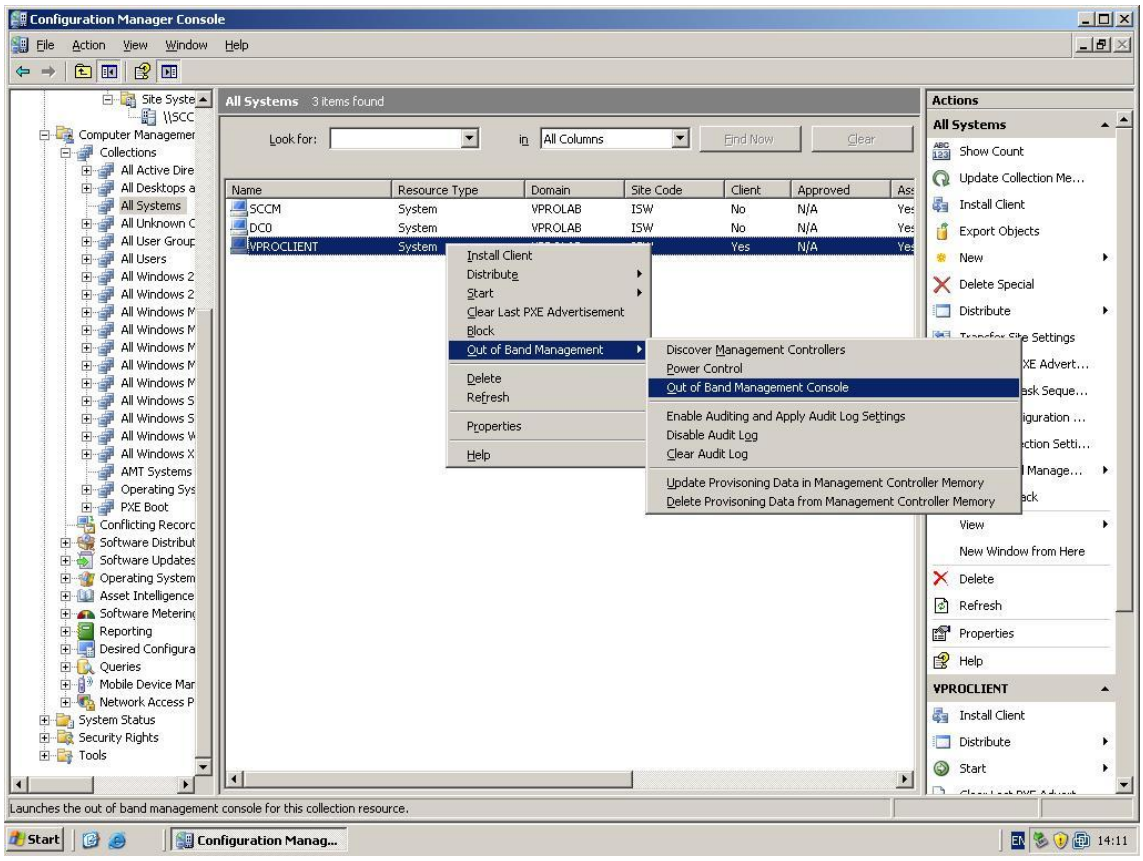

Figure 42 - Launch Out of Band Management Console

☐ Tick this box when you have completed all steps in this procedure

Boot Client Using IDE Redirection

- At the Out of Band Management Console, wait for the client system status shown at the bottom left hand corner of the console to change from Disconnected to Connecting to Busy to Connected

- At the Out of Band Management Console, select **Open Serial-over-LAN Connection** from the **Tools** menu to make the serial connection active. The Serial connection status will change from Inactive to Active

- At the Out of Band Management Console, select **Power Control** to view the power control options. This may take 10-20 seconds to complete. If necessary use the Refresh button. Select **IDER** in the **Boot Option:** list, check the **Boot from file** option and use the **Browse** button to select a boot image. For this lab

use **C:\IDER\dos_gold.iso** as the boot image. Click **Power On** or **Restart System**. At the Confirmation dialog click Yes

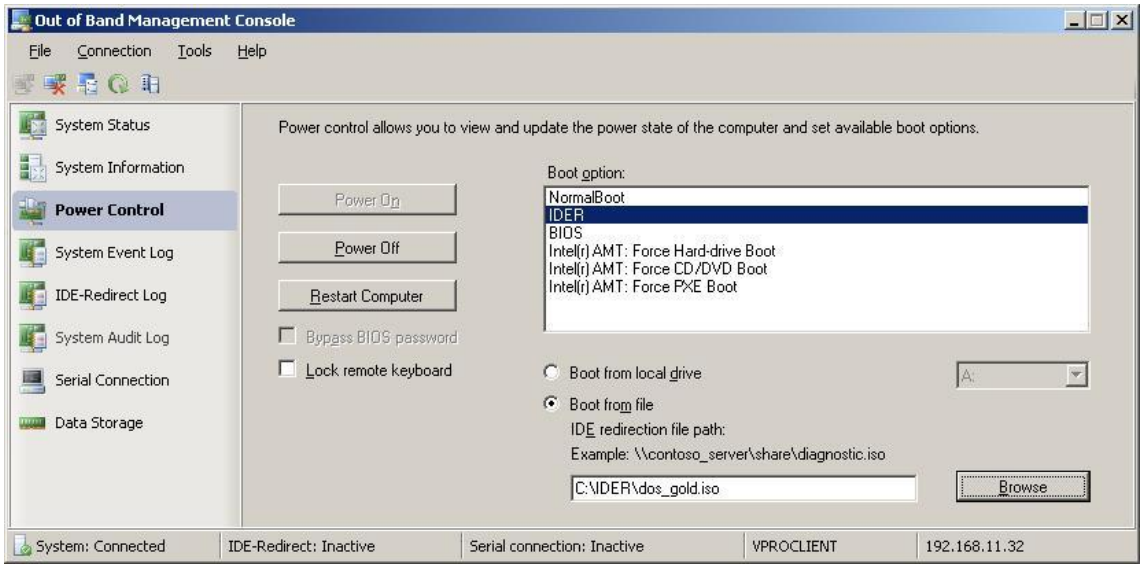

Figure 43 - Out of Band Console Showing Power Control with IDER Option

- At the Out of Band Management Console, select **Serial Connection** to view BIOS POST messages and the operating system booting from the boot image. If necessary click the console pane

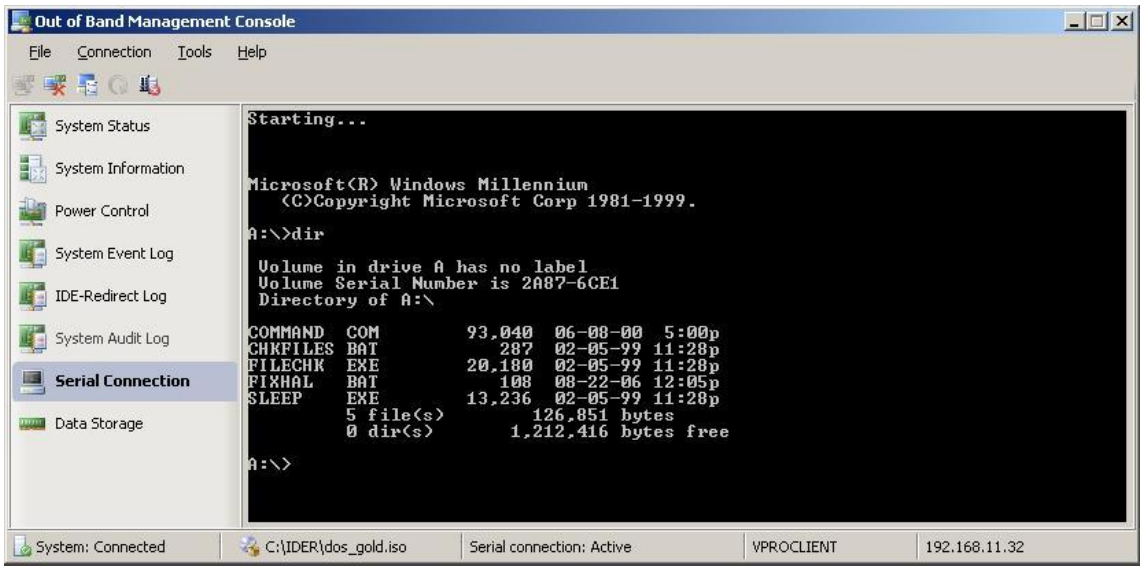

Figure 44 - Out of Band Console Showing Serial Connection with Operating System

- Click in the console pane to enter keystrokes at the console and use the console to enter operating system commands

- Close the Out of Band Management Console. At the Confirm Disconnect dialog click **Restart** to reboot the client

☐ Tick this box when you have completed all steps in this procedure

Enable Hardware KVM on Intel vPro Clients

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Enable Hardware KVM Using HTA
- Enable Hardware KVM Using Intel SCS 7.X Delta Provisioning

Enable Hardware KVM Using HTA

HELPFUL HINT: The HTML application (HTA) for enabling hardware KVM is suited for enabling hardware KVM on-demand on single clients. The logged on user must have access to the PT_Administration realm of the Management Controller in order to enable hardware KVM

- On the SCCM server, open the HTML application (HTA) for enabling hardware KVM. For this lab, the application is available using the **Enable Hardware KVM HTA** shortcut on the desktop
- Enter the **FQDN** for the remote Intel vPro client and a **New RFB Password** consisting of a combination of uppercase and lowercase characters, numbers and special characters. For this lab use the password P@ssw0rd

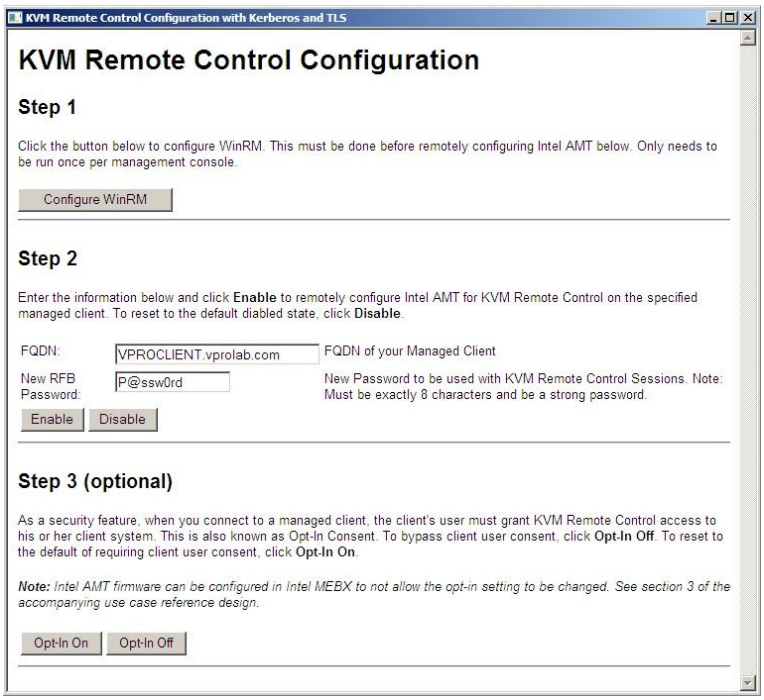

Figure 45 – HTML Application for Enabling Hardware KVM

- Click **Enable** to enable hardware KVM on the remote Intel vPro client
- The output of the hardware KVM enabling operation is shown in the Output section at the bottom of the HTA window. Verify that the return code was 0

Figure 46 - Output from HTML Application for Enabling Hardware KVM

- (Optionally) Click **Opt-in on** or **Opt-in off** to remotely enable or disable the user consent option for opening a hardware KVM session. For this lab click **Opt-in on** so that user consent is required

- Close the HTML application

Enable Hardware KVM Using Intel SCS 7.X Delta Provisioning

HELPFUL HINT: SCS 7.X delta provisioning is suited for enabling hardware KVM automatically on multiple clients

- Create domain account for RCS Service User

- Create domain security group for RCS Service Users and add RCS Service User to this group

- On SCS server, create local RCS Admins security group

- On SCS server, install the Wizard and Service components of SCS 7.X. Select the RCS Service User as the service user

- On SCS server, configure RCS Admins group with DCOM and WMI permissions for RCS
- At ConfigMgr console, add RCS Service Users domain security group into AMT ACL with PT_Administration realm access
- At ConfigMgr console, update Management Controller settings to apply updated AMT ACL
- On SCS server, use ACU Wizard to create SCS Delta Provisioning Profile on SCS server that includes Hardware KVM
- At ConfigMgr console, create SCS Delta Provisioning Package Containing ACU Configurator and batch file to invoke delta provisioning operation
- At ConfigMgr console, advertise SCS Delta Provisioning Package to provisioned Intel vPro clients
- Monitor package completion

☐ Tick this box when you have completed all steps in this procedure

Hardware KVM with RealVNC VNC Viewer Plus and Intel vPro Clients

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Connect to Intel vPro Client Using VNC Viewer Plus
- Remote Client BIOS and Boot Operations with Hardware KVM
- Remote Client Diagnostics with Hardware KVM

Connect to Intel vPro Client Using VNC Viewer Plus

- On the SCCM server, open VNC Viewer Plus. For this lab, the viewer is available as a shortcut on the desktop
- At the VNC Viewer Plus New Connections dialog, enter the Intel vPro client FQDN for the **AMT Server**, select Intel AMT KVM as the **Connection Mode** and TLS as the **Encryption** option. Click **Connect** to connect to the client

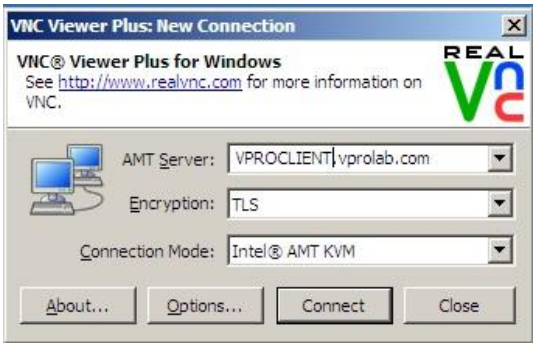

Figure 47 - VNC Viewer Plus New Connection Dialog

- If the Intel vPro client is powered down the viewer screen will remain black until the client is remotely powered on using the buttons on the viewer toolbar. If the end user privacy opt-in policy setting for hardware KVM requires a user consent code to be entered, the viewer will prompt for the consent code before a graphical session can be established. The consent code will be displayed as a sprite on the Intel vPro client screen. Enter the 6-digit consent code to establish the graphical session

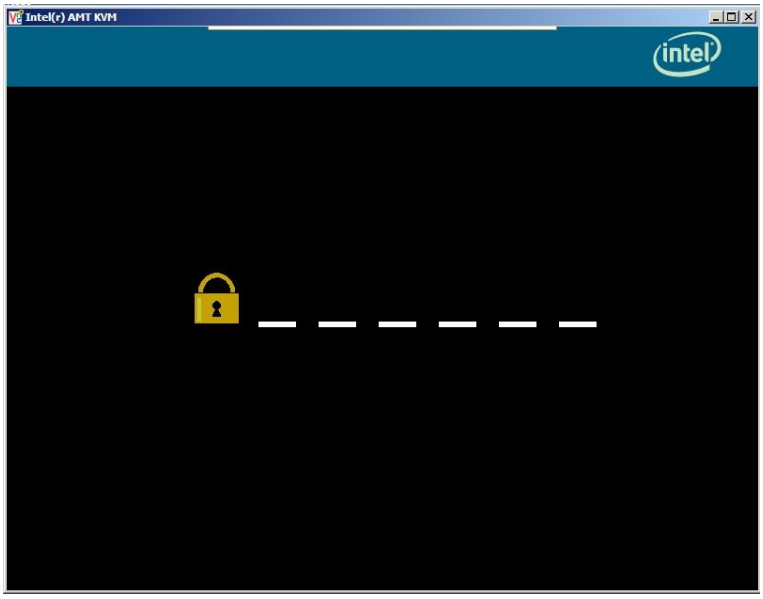

Figure 48 - VNC Viewer Plus Consent Code Dialog

Remote Client BIOS and Boot Operations with Hardware KVM

- Connect to the Intel vPro client with VNC Viewer Plus
- From the VNC Viewer Plus toolbar open the **Power** dialog
- Click **Power On** or **Reset** and select **Boot to BIOS** from the drop down options
- After selecting Boot to BIOS, click **Power On** or **Reset**
- If the full BIOS Setup screen is not displayed, use the **Close Connection** option from the toolbar to disconnect and re-connect to refresh the screen using the correct resolution

Remote Client Diagnostics with Hardware KVM

- Connect to the Intel vPro client with VNC Viewer Plus
- From the VNC Viewer Plus toolbar open the **Mount Disk Images** dialog
- Click **Browse…** to select an ISO image and click **Mount**

- From the VNC Viewer Plus toolbar open the **Power** dialog
- Click **Power On** or **Reset** and select **Boot to CD/DVD** from the drop down options
- After selecting Boot to CD/DVD, click **Power On** or **Reset** to initiate a client boot operation using the ISO image
- If the full BIOS POST and ISO boot screen is not displayed, use the **Close Connection** option from the VNC Viewer Plus toolbar to disconnect and select the option to re-connect when prompted to maintain the mounted ISO image and refresh the screen using the correct resolution

☐ Tick this box when you have completed all steps in this procedure

Hardware KVM with Microsoft Service Manager and Intel vPro Clients

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Connect to Intel vPro Client Using Service Manager
- Remote Client BIOS and Boot Operations with Hardware KVM
- Remote Client Diagnostics with Hardware KVM

Connect to Intel vPro Client Using Service Manager

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Service Manager 2010 > Service Manager Console**
- In the System Center console, expand **Configuration Items > Computers > All Windows Computers**

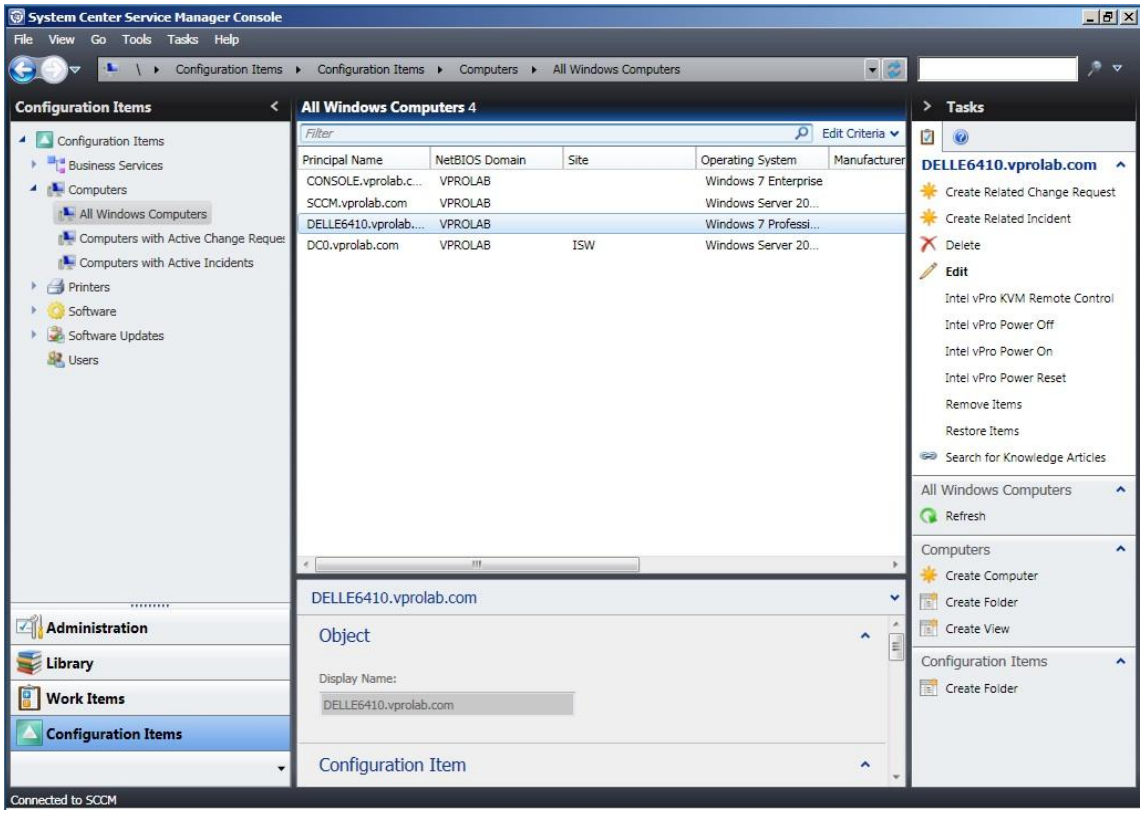

Figure 49 - System Center Console All Computers

- In the All Windows Computers pane, select the client to be managed and click **Intel vPro KVM Remote Control** from the Tasks pane to connect to the client using the KVMView application

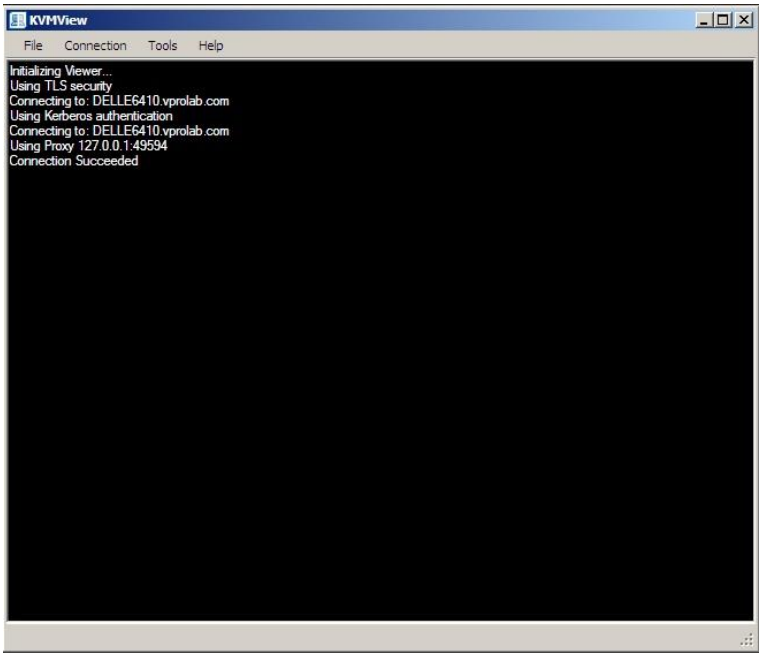

Figure 50 - KVM View Connection Dialog

- If the Intel vPro client is powered down the viewer screen will remain black until the client is remotely powered on using the buttons on the viewer toolbar. If the end user privacy opt-in policy setting for hardware KVM requires a user consent code to be entered, the viewer will prompt for the consent code before a graphical session can be established. The consent code will be displayed as a sprite on the Intel vPro client screen. Enter the 6-digit consent code to establish the graphical session

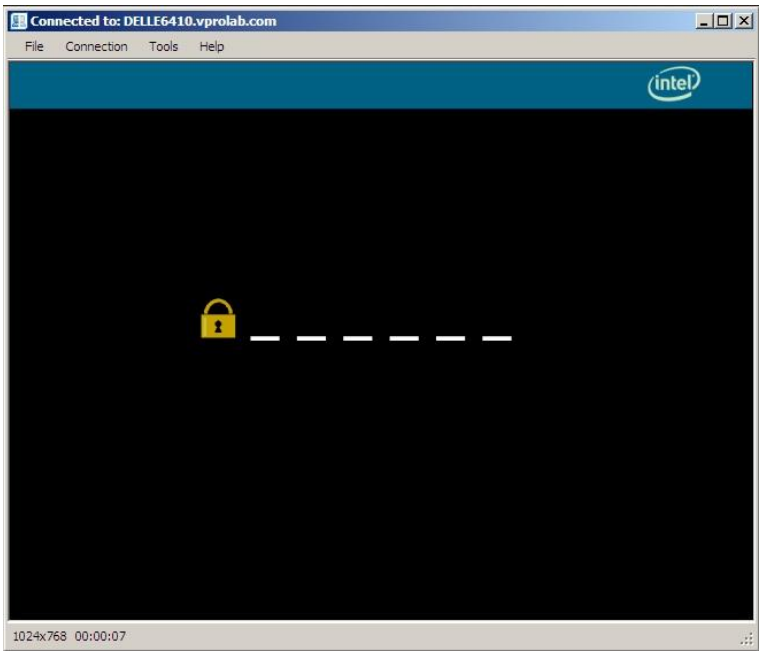

Figure 51 - KVM View Consent Code Dialog

Remote Client BIOS and Boot Operations with Hardware KVM

- Connect to the Intel vPro client with KVMView
- From the KVMView toolbar select **Power Control > Power Up** or **Power Control > Power Reset**
- When the client displays BIOS POST messages use the client specific function key to enter BIOS Setup. This varies from one client to another but is usually F1, F2, F10 or DELETE
- If the full BIOS Setup screen is not displayed, use the **Close Connection** option from the toolbar to disconnect and re-connect to refresh the screen using the correct resolution

Remote Client Diagnostics with Hardware KVM

- Connect to the Intel vPro client with KVMView
- From the KVMView toolbar select **Power Control > Power Up** or **Power Control > Power Reset**

- From the KVMView toolbar select **Power Control > Boot with IDER** to open the Media Redirection dialog

- Click **Browse…** to select an ISO image and click **Connect** to initiate a client boot operation using the ISO image

- If the full BIOS POST and ISO boot screen is not displayed, use **Connection > Stop** from the KVMView toolbar to disconnect and **Connection > Start** to re-connect whilst maintaining the mounted ISO image and refreshing the screen using the correct resolution

☐ Tick this box when you have completed all steps in this procedure

Scheduled Software Deployment Using Intel vPro Remote Power Control

HELPFUL HINT: ConfigMgr advertisements used in conjunction with Intel vPro platform secure power control capability can be used to (1) avoid leaving PC's powered on to receive software updates resulting in decreased power consumption (2) wake clients that are powered off to receive critical software updates thus decreasing the time to achieve critical update penetration resulting in a more secure business environment (3) deploy non-critical software updates outside normal business hours to reduce the impact on employee productivity (4) automatically power up PC's before the start of the business day so PC's are ready for immediate use by employees to improve employee productivity

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Shutdown Intel vPro Client
- Create Software Package or Task Sequence
- Add Client to Software Package Deployment Collection
- Advertise Software Package or Task Sequence
- Observe Client Behaviour
- Review Results from Advertised Software Package

Shutdown Intel vPro Client

- Logon to the Intel vPro client. For this lab logon with username **Administrator@vprolab.com** and password of **P@ssw0rd**
- Delete the directory **%SystemDrive%"\Virus Patterns"** if it exists. This directory will be re-created when the advertised software package is executed on the client
- Shutdown the Intel vPro client so it can be woken up using an ConfigMgr Advertisement

☐ Tick this box when you have completed all steps in this procedure

Create Software Package or Task Sequence

HELPFUL HINT: There are no special requirements when creating ConfigMgr packages or task sequences for use with Intel vPro clients. The virtual machine images include pre-configured software packages for use with this exercise

Refer to ConfigMgr documentation for further details on creating ConfigMgr packages and task sequences

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**

- Expand **System Center Configuration Manager > Site Database > Computer Management > Software Distribution > Packages** to see a list of pre-configured packages used in this lab

☐ Tick this box when you have completed all steps in this procedure

Add Client to Operating System Deployment Collection

- Expand **System Center Configuration Manager > Site Database > Computer Management > Collections**

- Select the **Package Deployment** collection, right-click the collection and click **Properties**

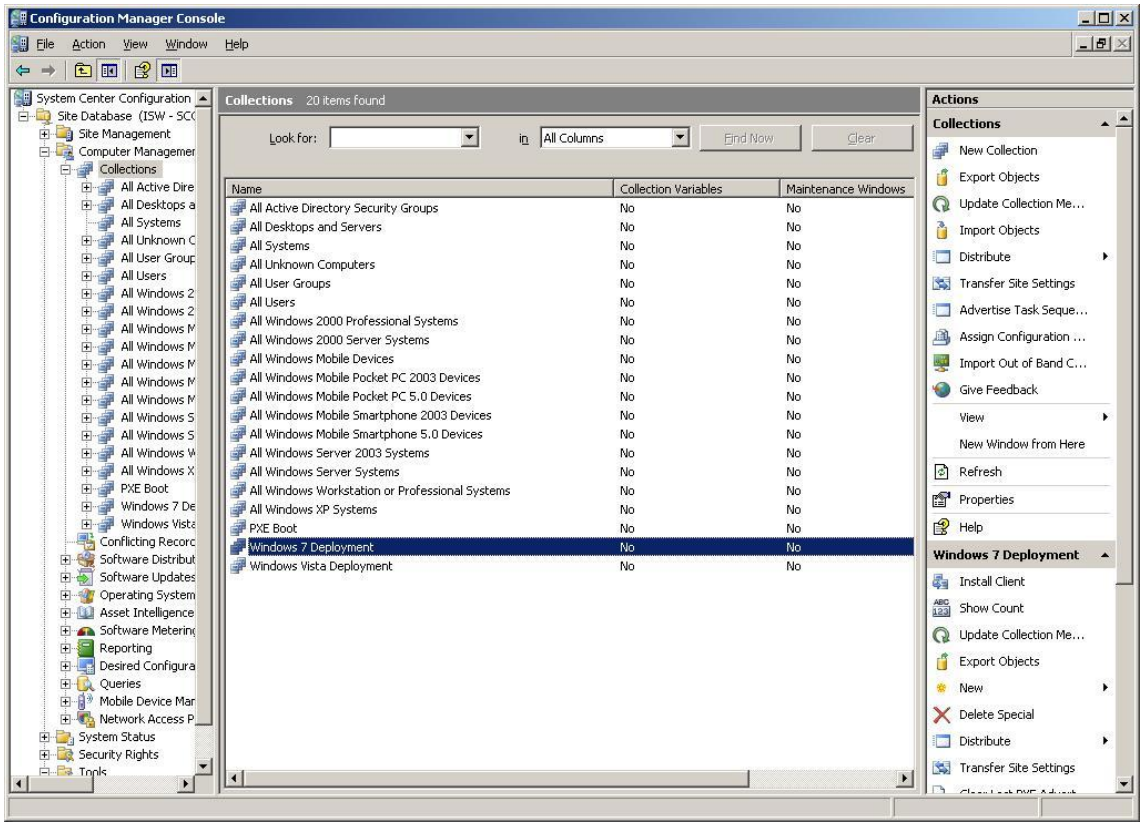

Figure 52 - Package Deployment Collection

- At the Package Deployment Properties dialog, click the **Membership Rules** tab and click the Computer icon to launch the Create Direct Membership Rule Wizard

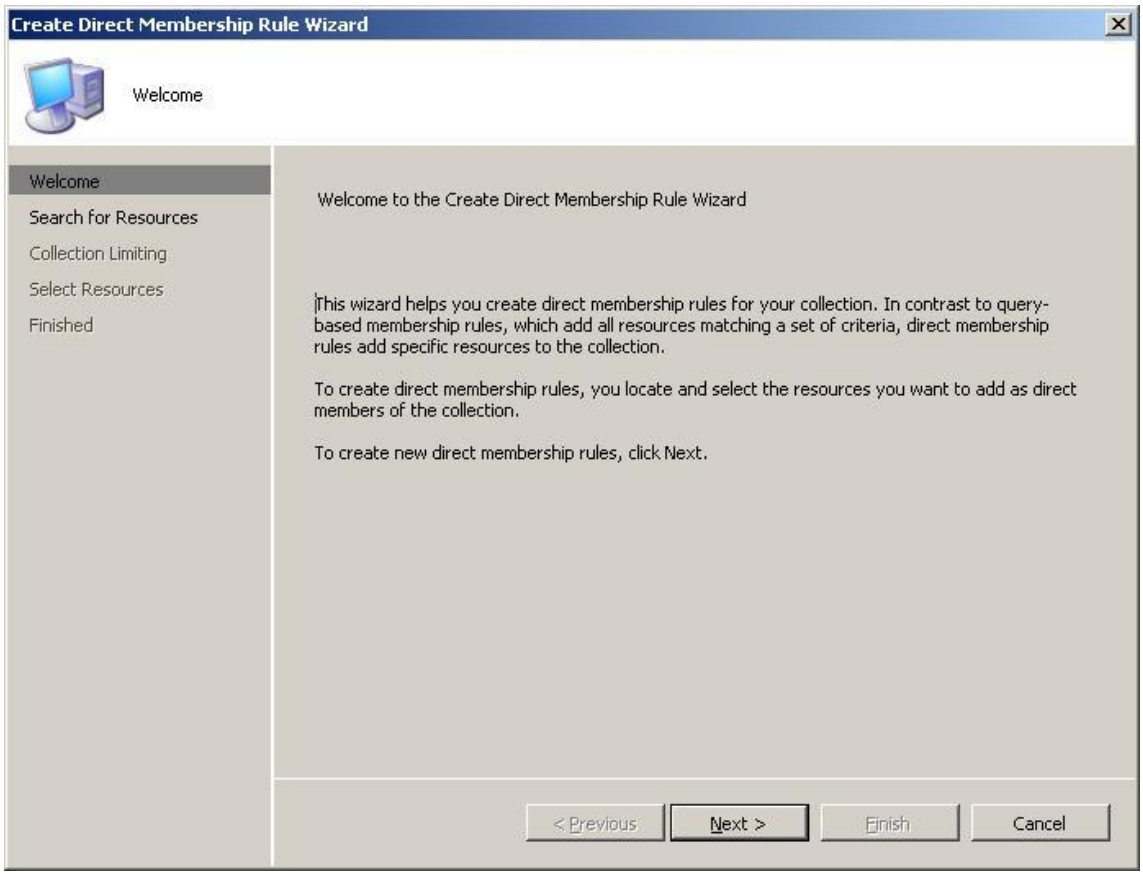

Figure 53 - Direct Collection Membership Rule Wizard

- Use the wizard to add the Intel vPro client to the membership rules for the **Package Deployment** collection

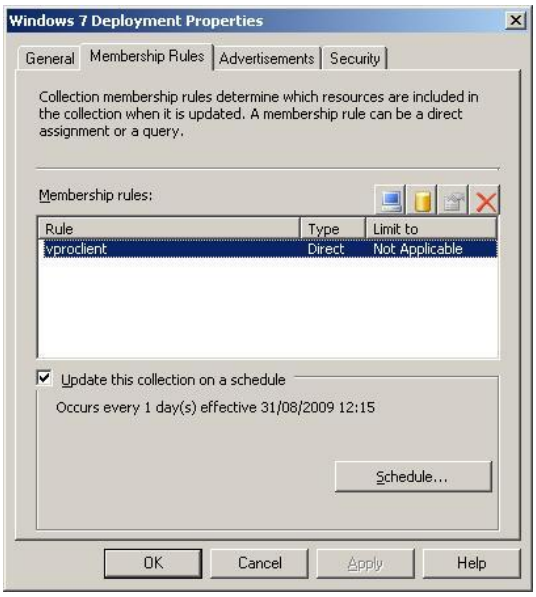

Figure 54 - Direct Collection Membership Rule Dialog

- Select the **Package Deployment** collection, right-click the collection and click **Update Collection Membership**. Refresh the collection until the hourglass disappears from the collection and the Intel vPro client is shown as a member of the collection

☐ Tick this box when you have completed all steps in this procedure

Advertise Software Package or Task Sequence

- At the Configuration Manager console, expand **System Center Configuration Manager > Site Database > Computer Management > Software Distribution**

- Right-click **Advertisements** and click **New > Advertisement** to launch the New Advertisement Wizard

- On the General page, enter **Virus Pattern Update Advertisement** into the **Name** field. Use the **Browse…** button to select **Virus Pattern Update Package** for the **Package** field. Use the dropdown menu to select **Virus Pattern Update Program** for the **Program** field. Use the **Browse…** button to select **Package Deployment** for the **Collection** field. Click Next

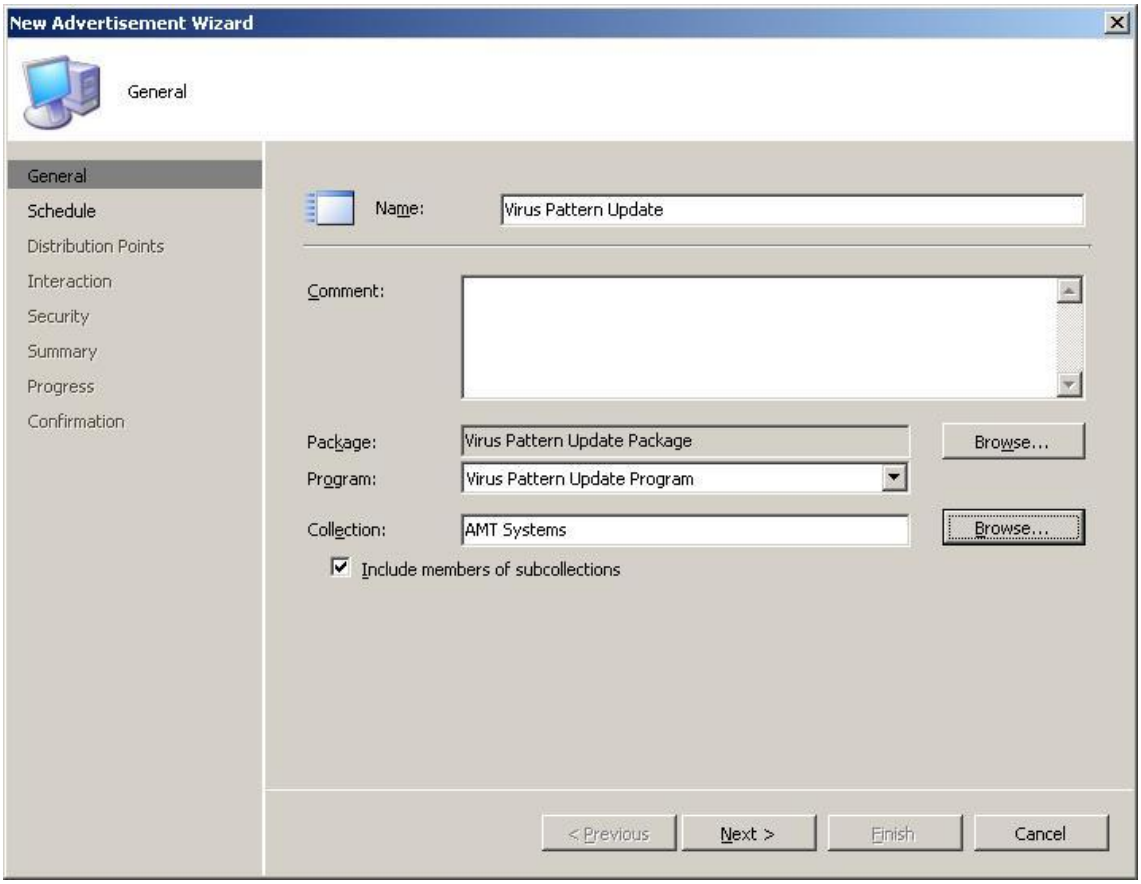

Figure 55 - New Advertisement Wizard General Page

- On the Schedule page, click the * button to add mandatory assignments. Select an appropriate schedule for the mandatory assignment. For this lab, check **Assign immediately after this event** and select **As soon as possible** from the dropdown box. Click OK to close the Assignment Schedule dialog

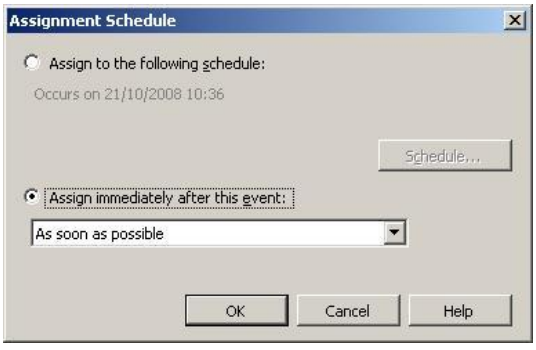

Figure 56 - Advertisement Assignment Schedule Dialog

- On the Schedule page, check **Enable Wake On LAN**, **Ignore maintenance windows when running program** and **Allow system restart outside maintenance windows**. Click Next

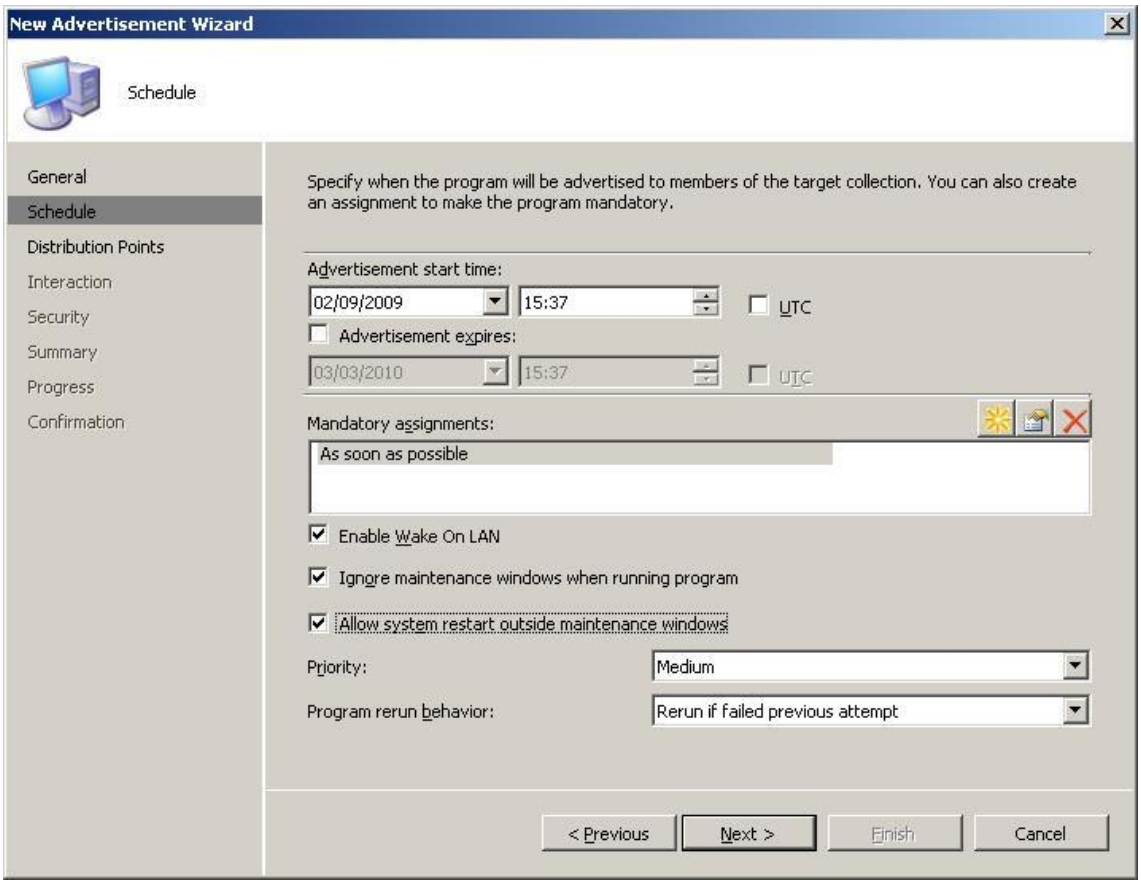

Figure 57 - New Advertisement Wizard Schedule Page

- On the Distribution Points page, click Next
- On the Interaction page, click Next
- On the Security page, click Next
- On the Summary page, review the settings and click Next
- On the Confirmation page, click Close

☐ Tick this box when you have completed all steps in this procedure

Observe Client Behaviour

- ConfigMgr will wake-up the Intel vPro client according to the schedule assigned to the advertisement

- The ConfigMgr agent will retrieve and process the advertisement. This can take 5 to 10-minutes from the time the client boots to the Operating System

☐ Tick this box when you have completed all steps in this procedure

Review Results from Advertised Software Package

- For this lab, the Intel vPro client will retrieve the advertised software package and execute the package program. The package program simulates a software update process, writes an audit log file to the client local disk and performs a client shutdown. For this lab, it may take 10 minutes for the client to retrieve the advertisement, execute the package program and shutdown the client

- After the Intel vPro client has been shutdown by the advertised package, power up the client

- Logon to the Intel vPro client. For this lab logon with username **Administrator@vprolab.com** and password of **P@ssw0rd**

- Examine the contents of the directory **%SystemDrive%\Virus Patterns** and locate the log file written by the software package that was advertised and executed. Verify that the log file contains the time and date when the advertised package was executed

☐ Tick this box when you have completed all steps in this procedure

On Demand Operating System Deployment using Intel vPro Forced PXE Boot

HELPFUL HINT: Using Intel vPro remote forced PXE boot to deploy an Operating System works well when it is necessary to deploy an Operating System "on-demand" to a single client

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Create Operating System Deployment Task Sequence
- Add Client to Operating System Deployment Collection
- Advertise Task Sequence To Operating System Deployment Collection
- Invoke Out of Band Management Console
- Remotely Boot Client Using PXE
- Observe Operating System Installation

Create Operating System Deployment Task Sequence

HELPFUL HINT: There are no special requirements when creating ConfigMgr packages or task sequences for use with Intel vPro clients. The virtual machine images include pre-configured task sequences for use with this exercise

Refer to ConfigMgr documentation for further details on creating ConfigMgr packages and task sequences

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- At the Configuration Manager console, expand **System Center Configuration Manager > Site Database > Computer Management > Operating System Deployment > Task Sequences** to see a list of pre-configured task sequences used in this lab

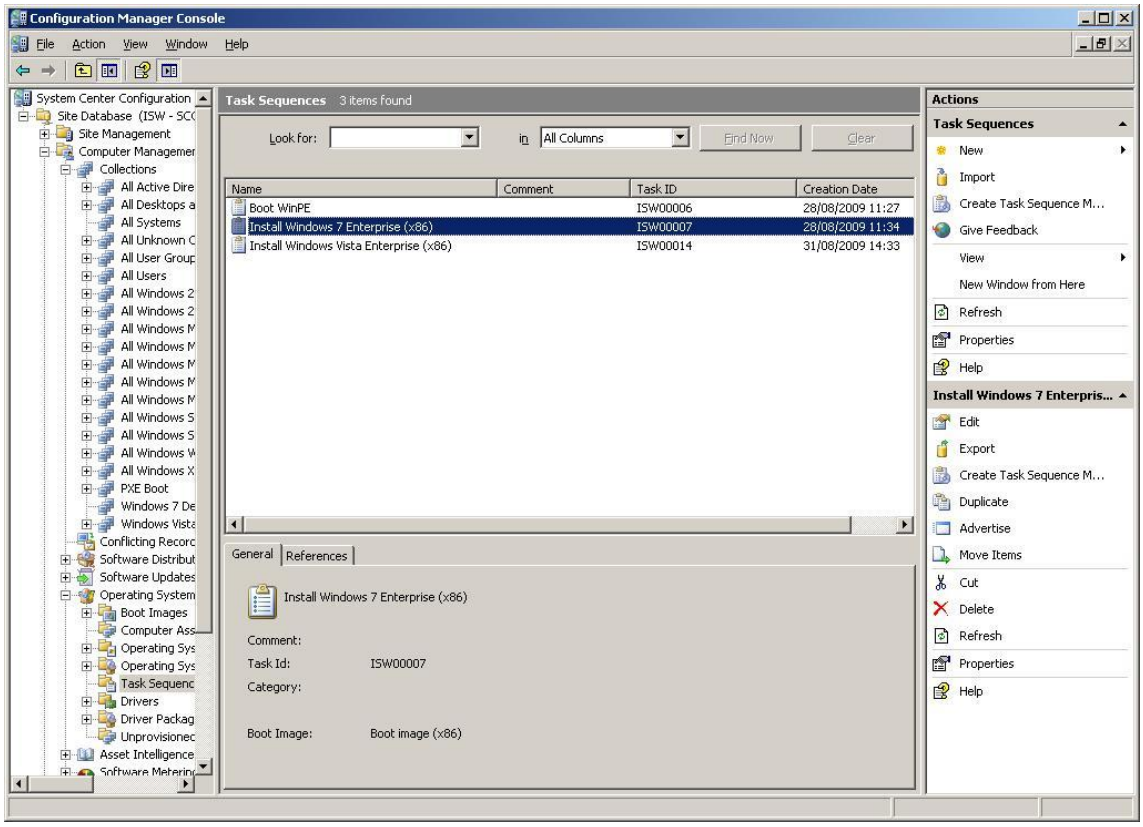

Figure 58 - Pre-Configured Task Sequences

- Select the **Install Windows 7 Enterprise (x86)** task sequence, right-click the sequence and click **Edit** to launch the Task Sequence Editor

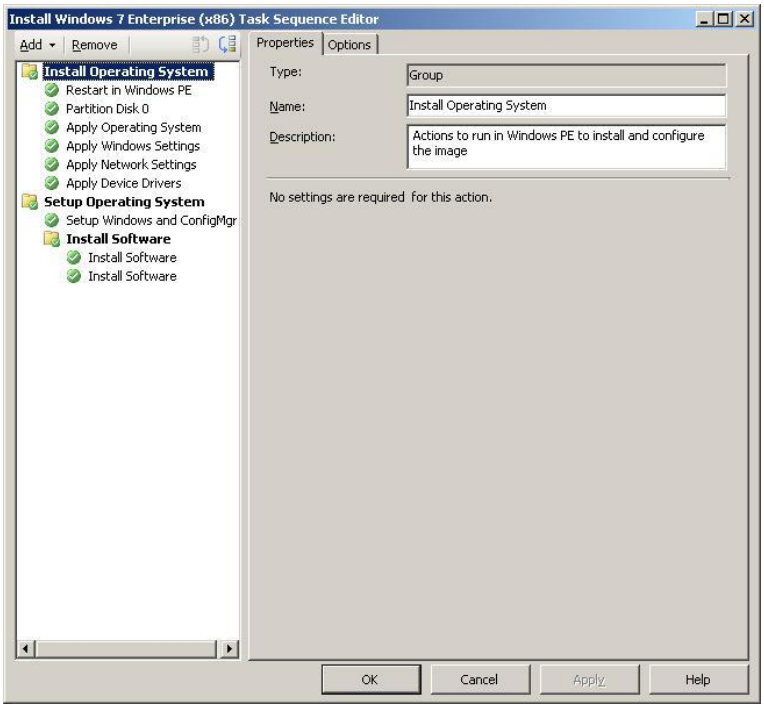

Figure 59 - Windows 7 Installation Task Sequence

- Use the Task Sequence Editor to inspect the example task sequence but do not make any changes for this lab. Click Cancel to close the editor without saving any changes

☐ Tick this box when you have completed all steps in this procedure

Add Client to Operating System Deployment Collection

- Expand **System Center Configuration Manager > Site Database > Computer Management > Collections**

- Select the **Windows 7 Deployment** collection, right-click the collection and click **Properties**

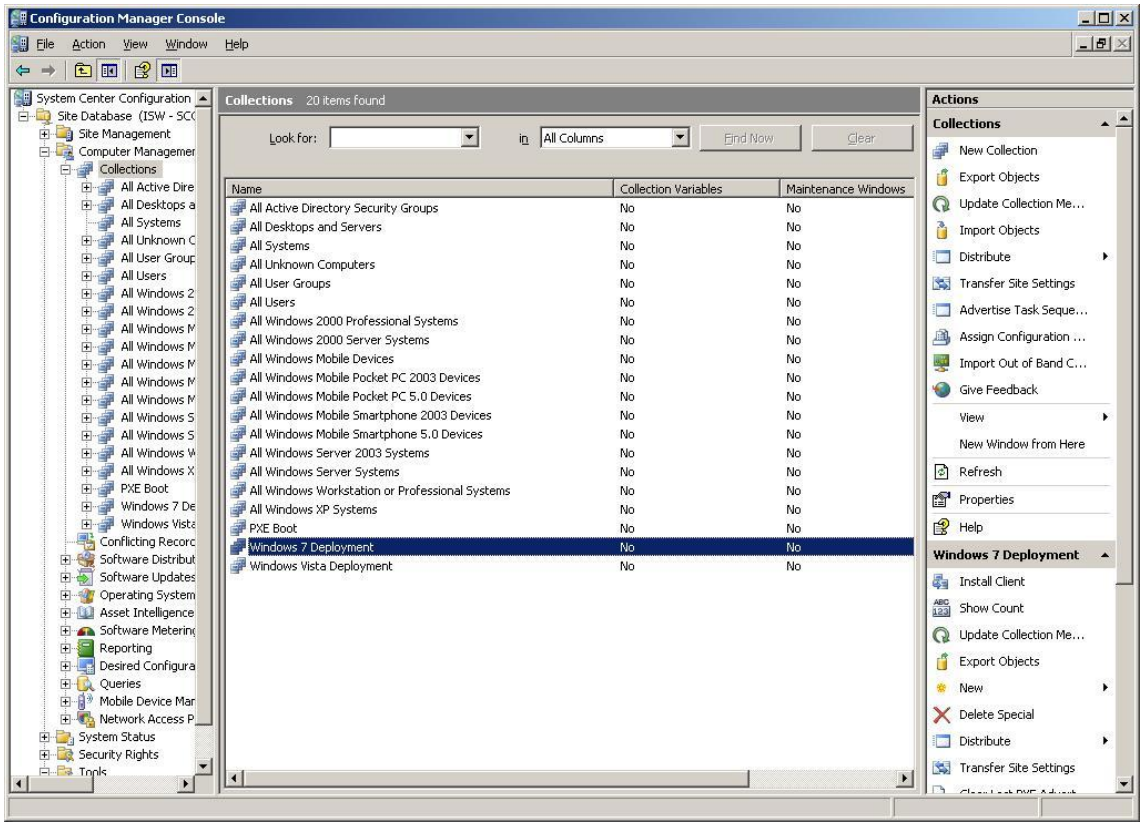

Figure 60 - Windows 7 Deployment Collection

- At the Windows 7 Deployment Properties dialog, click the **Membership Rules** tab and click the Computer icon to launch the Create Direct Membership Rule Wizard

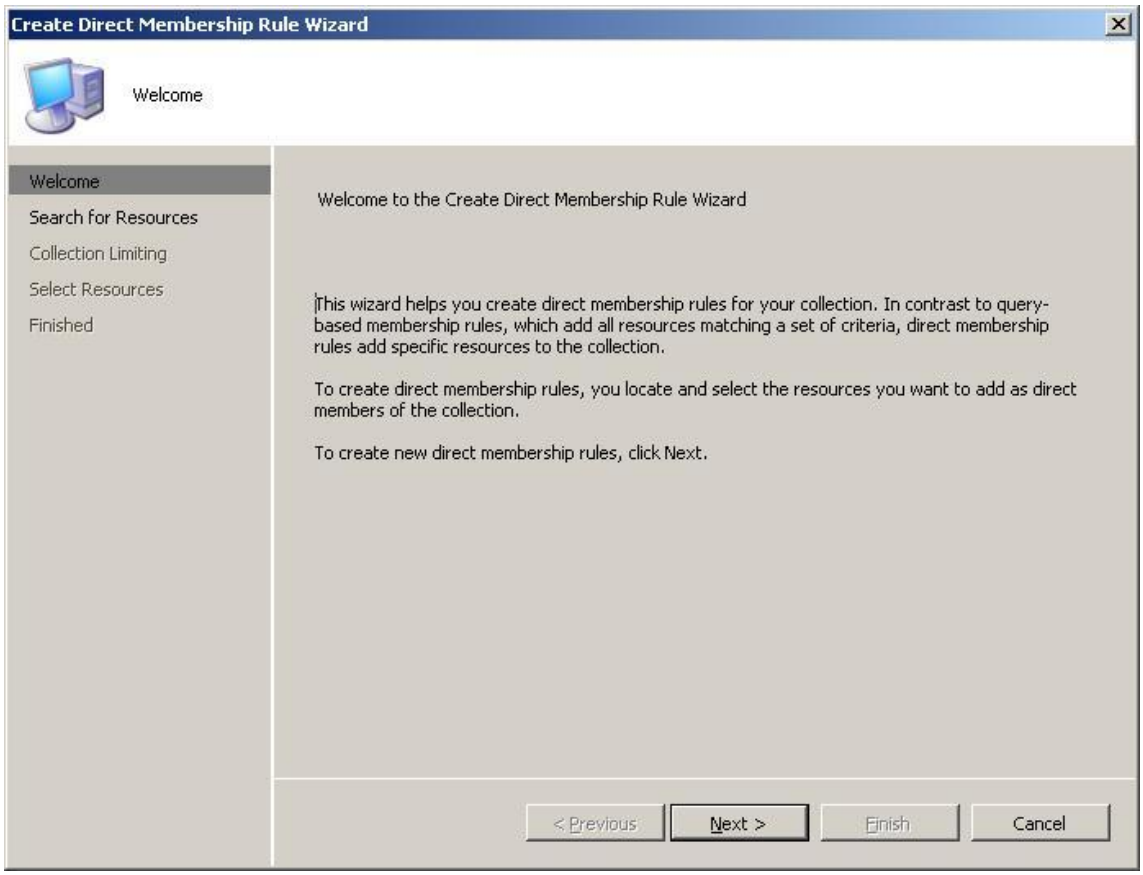

Figure 61 - Direct Collection Membership Rule Wizard

- Use the wizard to add the Intel vPro client to the membership rules for the **Windows 7 Deployment** collection

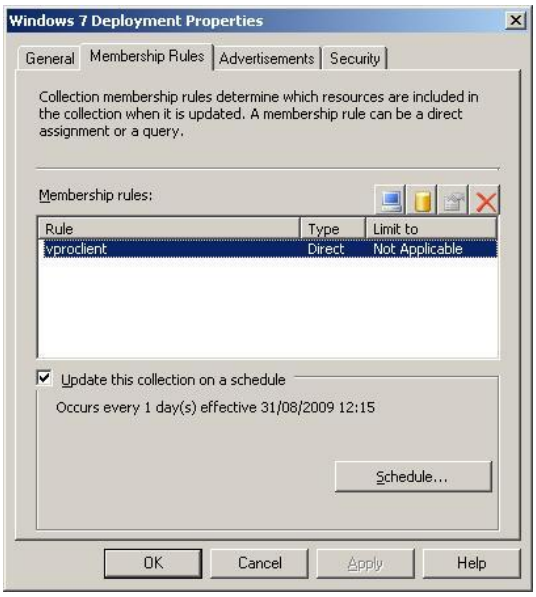

Figure 62 - Direct Collection Membership Rule Dialog

- Select the **Windows 7 Deployment** collection, right-click the collection and click **Update Collection Membership**. Refresh the collection until the hourglass disappears from the collection and the Intel vPro client is shown as a member of the collection

☐ Tick this box when you have completed all steps in this procedure

Advertise Task Sequence to Operating System Deployment Collection

- At the Configuration Manager console, expand **System Center Configuration Manager > Site Database > Computer Management > Operating System Deployment > Task Sequences**

- Select the **Install Windows 7 Enterprise (x86)** task sequence, right-click the sequence and click **Advertise** to launch the New Advertisement Wizard

- On the General page, use the **Browse…** button to select to select **Windows 7 Deployment** for the **Collection** field. Check the option **Make this task sequence available to boot media and PXE**. Click Next

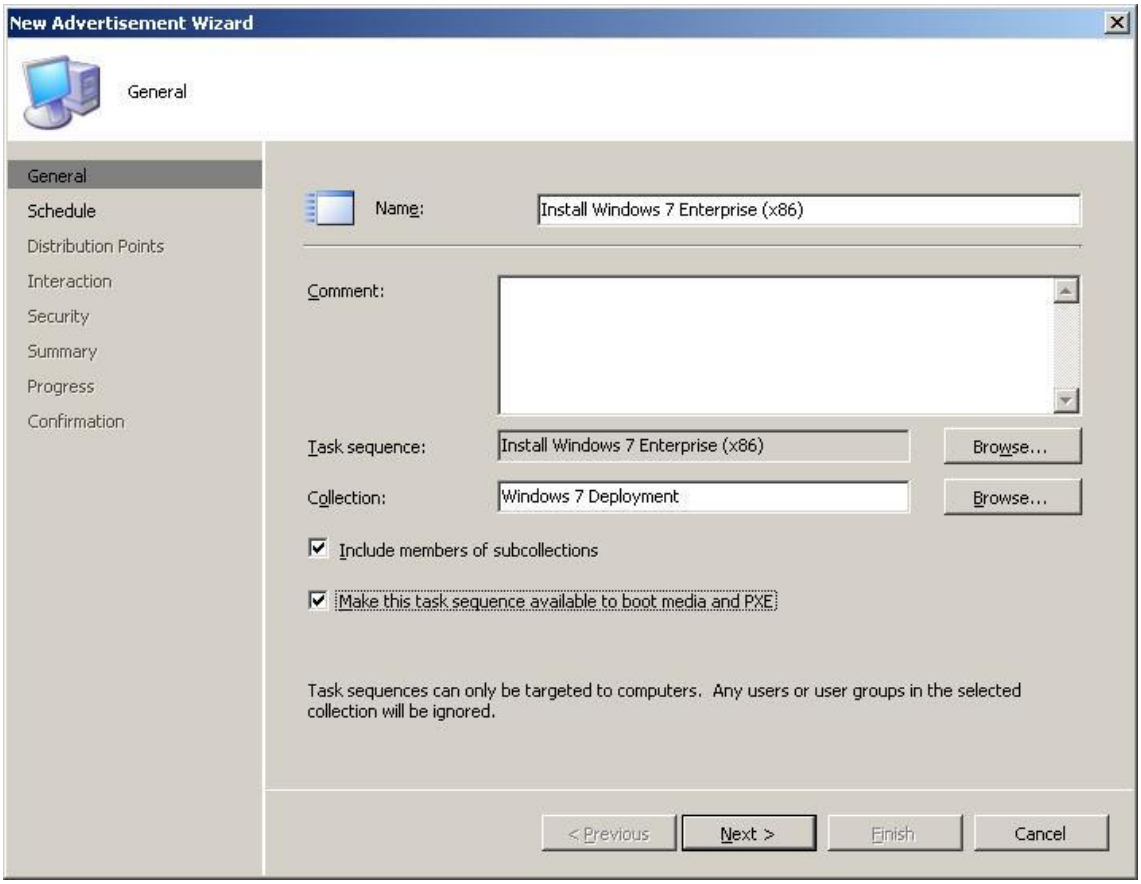

Figure 63 - New Advertisement Wizard General Page

- On the Schedule page, click the * button to add mandatory assignments. Select an appropriate schedule for the mandatory assignment. For this lab, check **Assign immediately after this event** and select **As soon as possible** from the dropdown box. Click OK to close the Assignment Schedule dialog

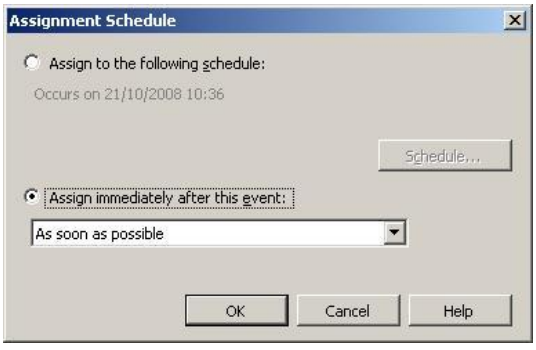

Figure 64 - Advertisement Assignment Schedule Dialog

- On the Schedule page, check **Enable Wake On LAN**, **Ignore maintenance windows when running program** and **Allow system restart outside maintenance windows**. Click Next

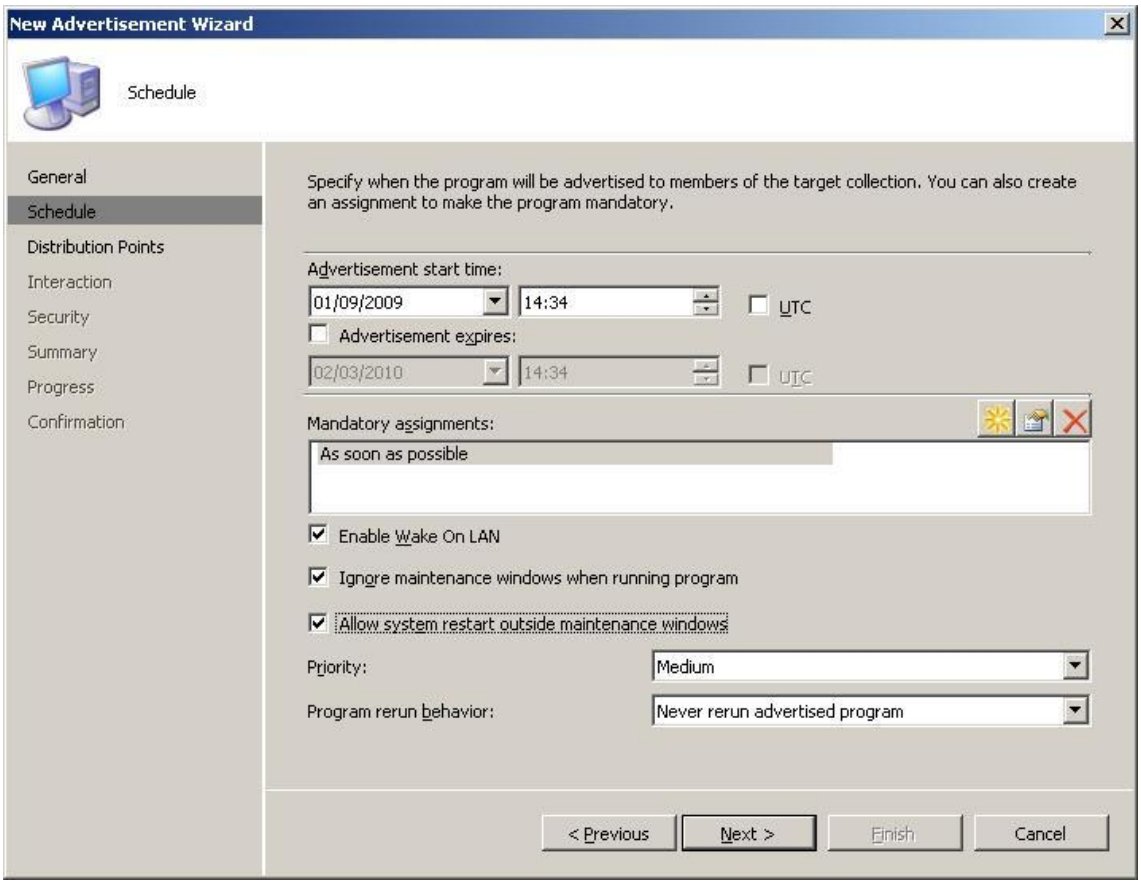

Figure 65 - New Advertisement Wizard Schedule Page

- On the Distribution Points page, click Next

- On the Interaction page, check the option **Show the task sequence progress**. Click Next

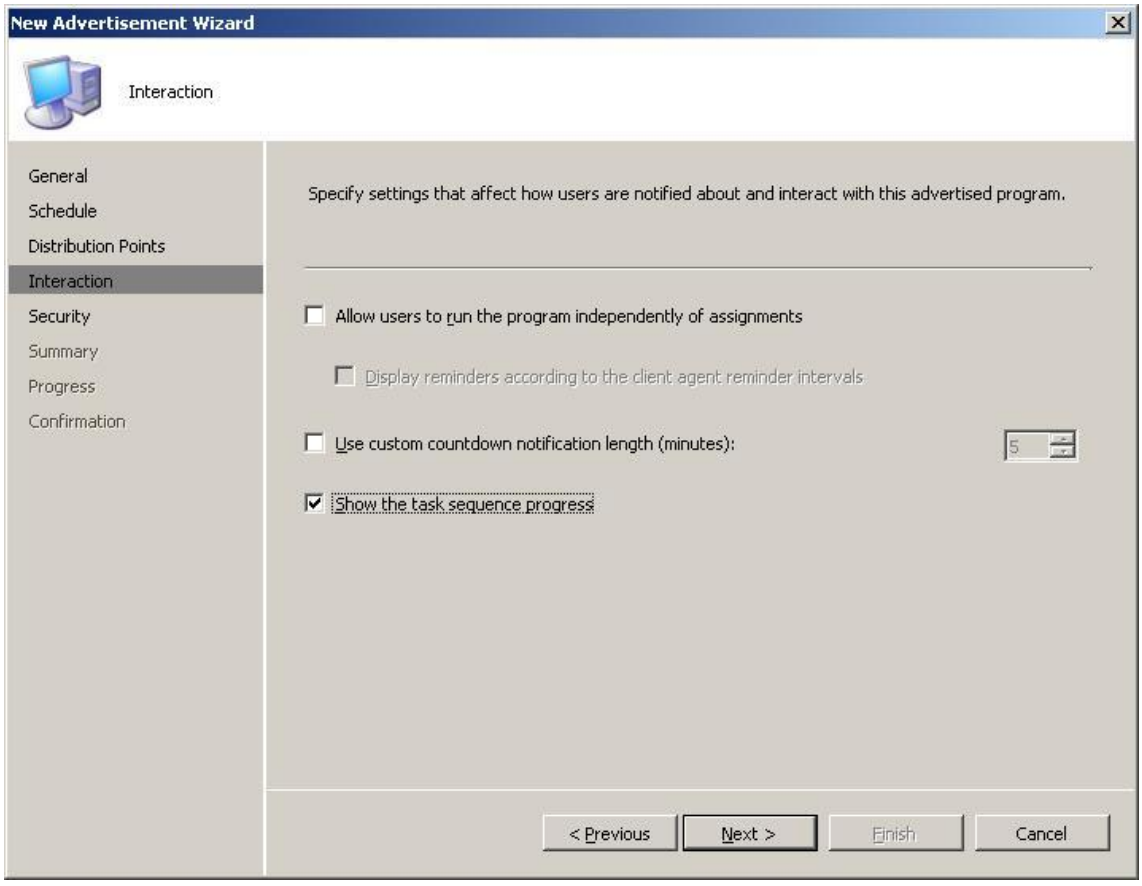

Figure 66 - New Advertisement Wizard Interaction Page

- On the Security page, click Next
- On the Summary page, review the settings and click Next
- On the Confirmation page, click Close

Invoke Out of Band Management Console

- Expand **Site Database > Computer Management > Collections**
- Select the **Windows 7 Deployment** collection
- In the All Systems pane, right-click the client to be managed and click **Out of Band Management > Out of Band Management Console**

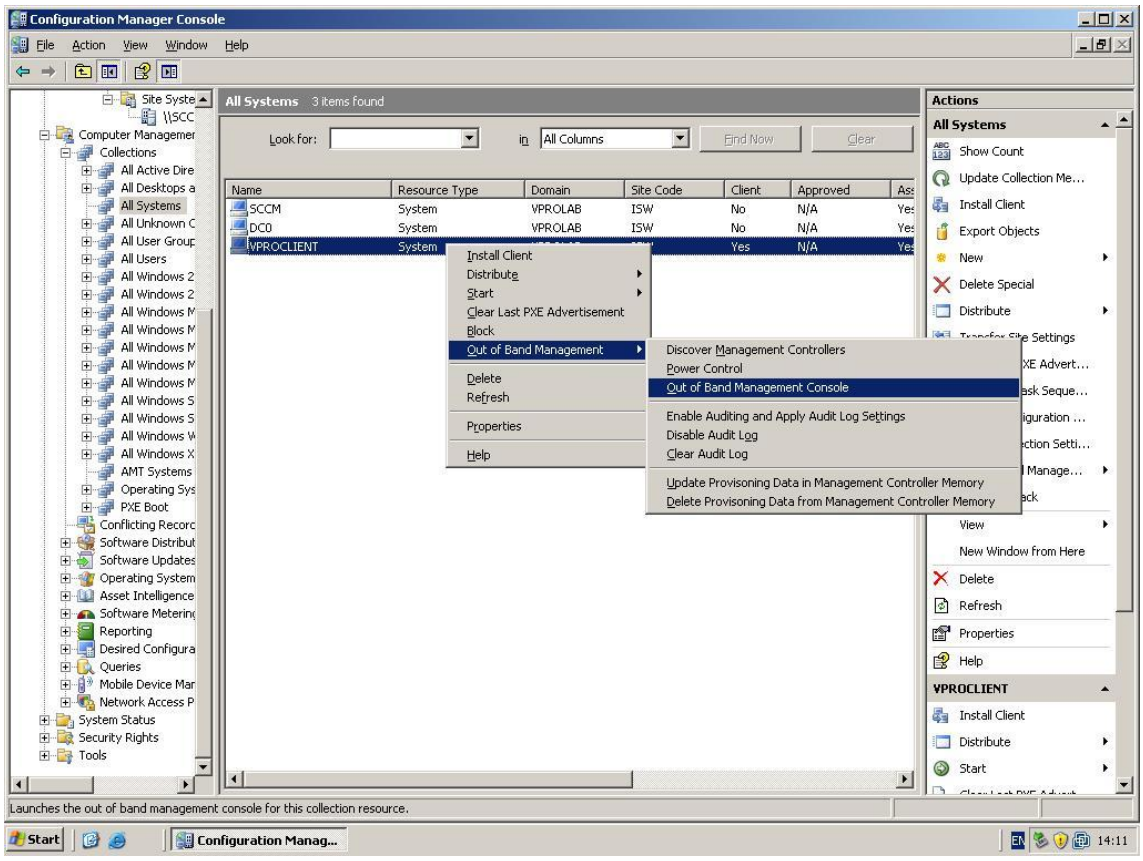

Figure 67 - Launch Out of Band Management Console

☐ Tick this box when you have completed all steps in this procedure

Remotely Boot Client Using PXE

- At the Out of Band Management Console, select **Power Control** to view the power control options. This may take 10-20 seconds to complete. If necessary use the Refresh button

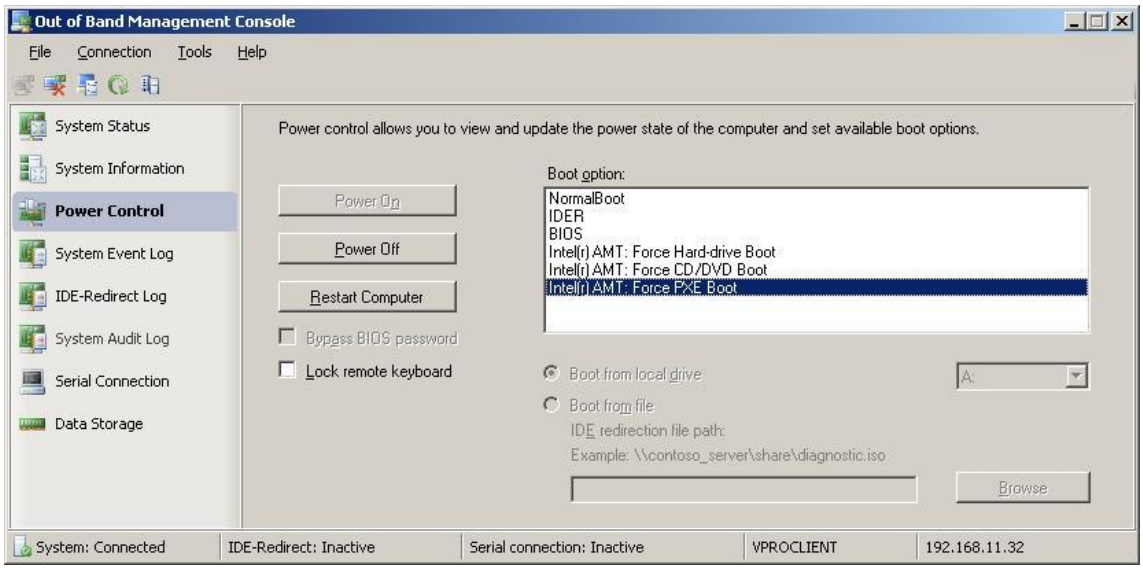

Figure 68 - Out of Band Console Showing Power Control with PXE Boot Option

- Select **Force PXE Boot** in the **Boot Option:** list and click **Power On** or **Restart Computer**. At the Confirmation dialog click Yes. After a few seconds the client system will boot using PXE

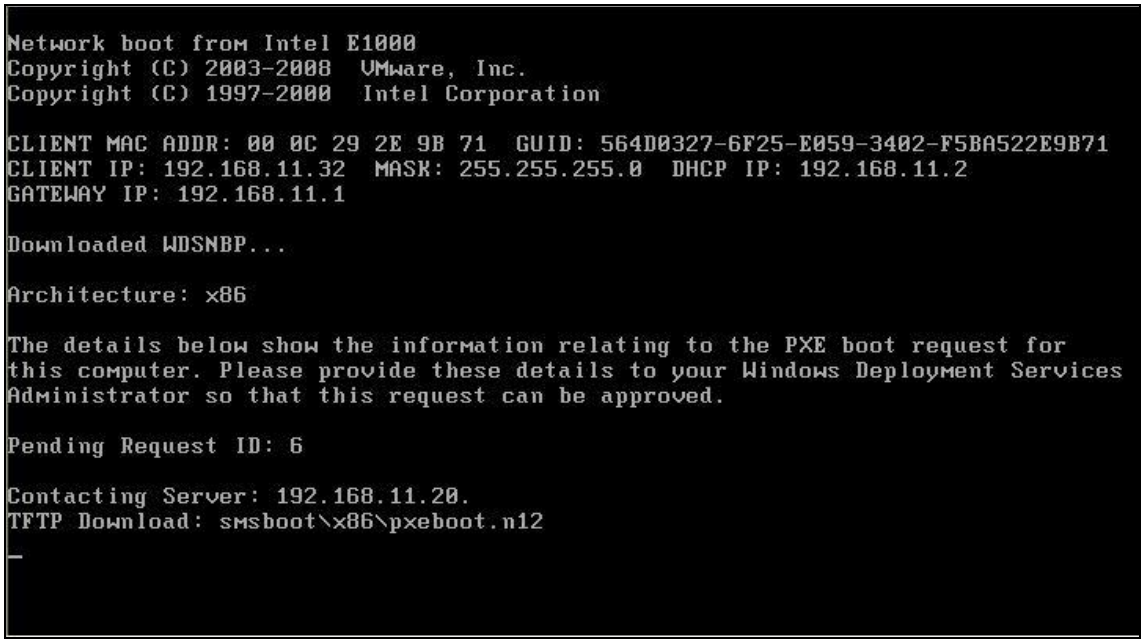

Figure 69 - Client Booting from PXE Server

☐ Tick this box when you have completed all steps in this procedure

Observe Operating System Installation

- The client will execute the tasks in the advertised task sequence to prepare the client system and install the Operating System. Installation can take 20-minutes

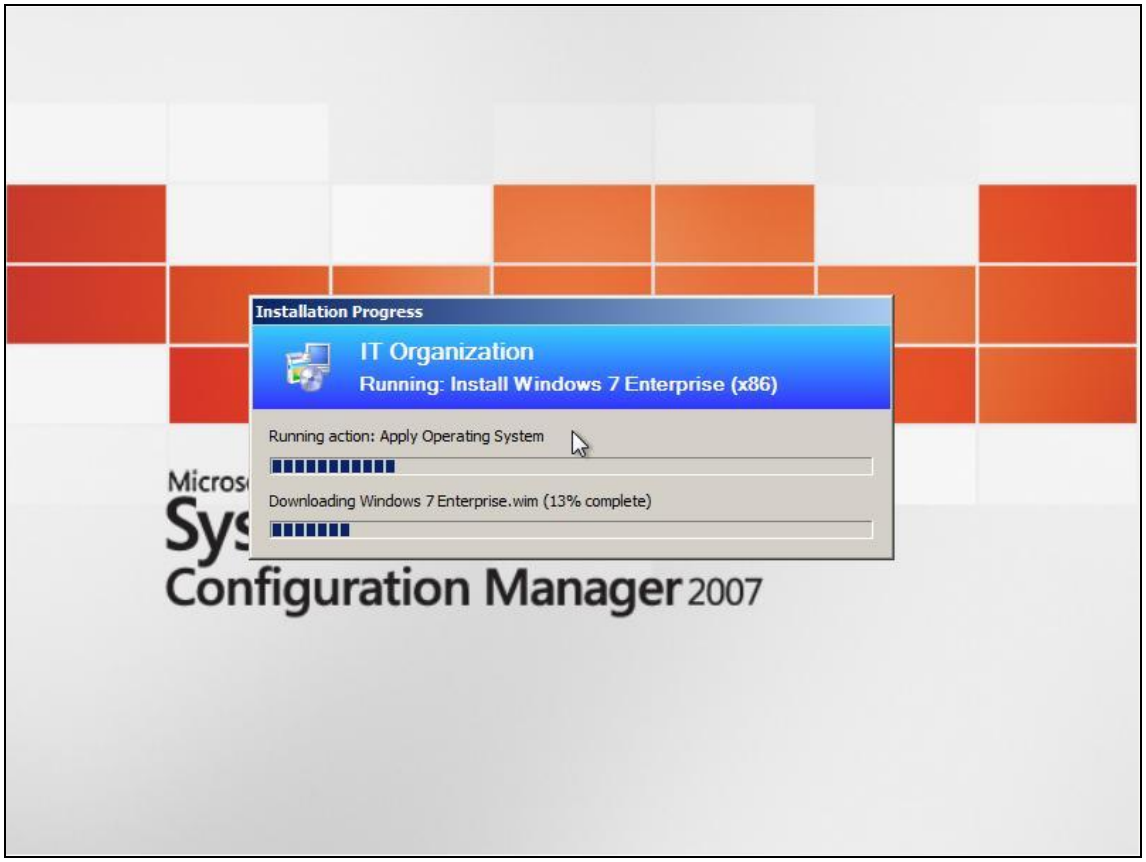

Figure 70 - Client Executing Windows 7 Installation Task Sequence

☐ Tick this box when you have completed all steps in this procedure

Scheduled Operating System Deployment using Intel vPro Remote Power Control

HELPFUL HINT: Using Intel vPro secure remote power control and ConfigMgr advertisements to deploy an Operating System works well when it is necessary to schedule and deploy an Operating System outside of business hours to multiple clients

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Shutdown Intel vPro Client
- Create Operating System Deployment Task Sequence
- Add Client to Operating System Deployment Collection
- Advertise Task Sequence To Operating System Deployment Collection
- Observe Client Behaviour
- Observe Operating System Installation

Shutdown Intel vPro Client

- Logon to the Intel vPro client. For this lab logon with username **Administrator@vprolab.com** and password of **P@ssw0rd**
- Shutdown the Intel vPro client so it can be woken up using an ConfigMgr Advertisement

☐ Tick this box when you have completed all steps in this procedure

Create Operating System Deployment Task Sequence

HELPFUL HINT: There are no special requirements when creating ConfigMgr packages or task sequences for use with Intel vPro clients. The virtual machine images include pre-configured task sequences for use with this exercise

Refer to ConfigMgr documentation for further details on creating ConfigMgr packages and task sequences

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**

- At the Configuration Manager console, expand **System Center Configuration Manager > Site Database > Computer Management > Operating System Deployment > Task Sequences** to see a list of pre-configured task sequences used in this lab

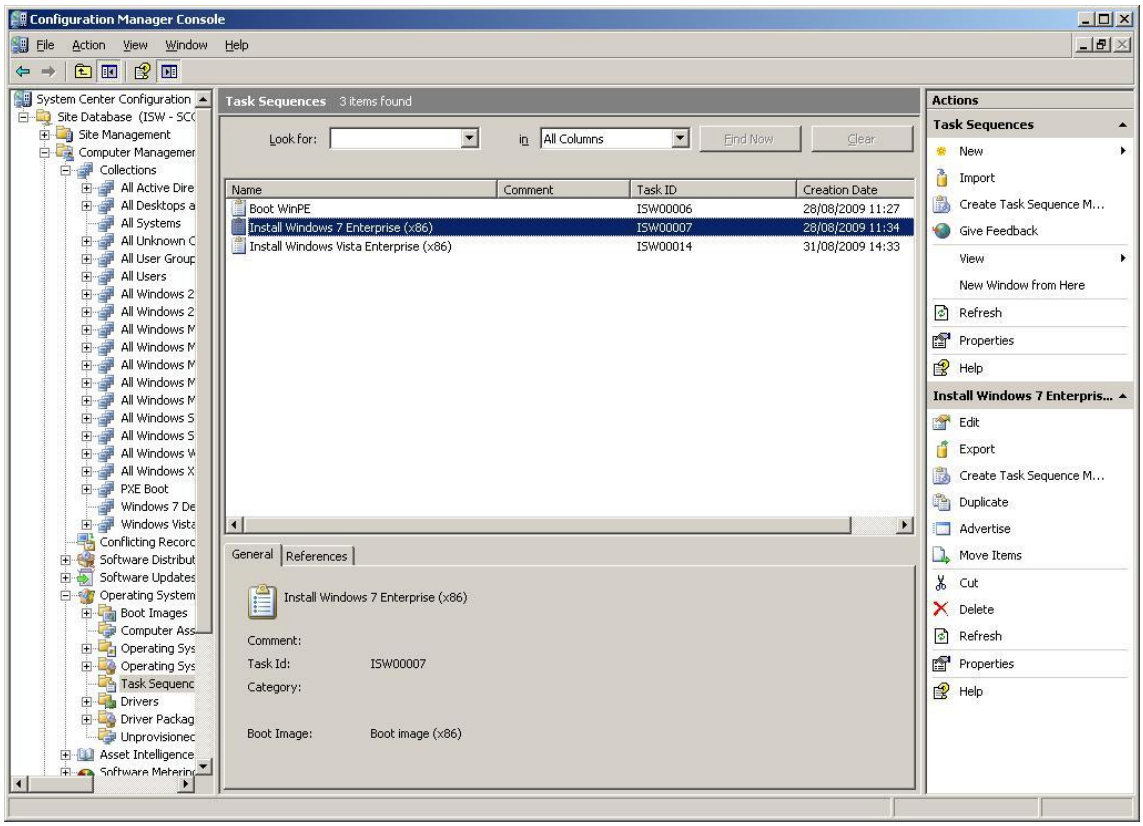

Figure 71 - Pre-Configured Task Sequences

- Select the **Install Windows 7 Enterprise (x86)** task sequence, right-click the sequence and click **Edit** to launch the Task Sequence Editor

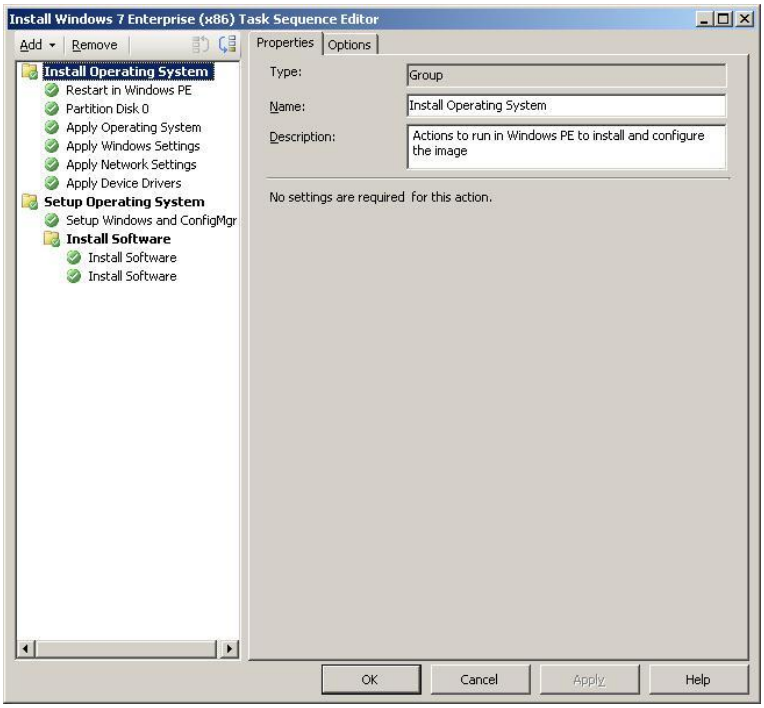

Figure 72 - Windows 7 Installation Task Sequence

- Use the Task Sequence Editor to inspect the example task sequence but do not make any changes for this lab. Click Cancel to close the editor without saving any changes

☐ Tick this box when you have completed all steps in this procedure

Add Client to Operating System Deployment Collection

- Expand **System Center Configuration Manager > Site Database > Computer Management > Collections**

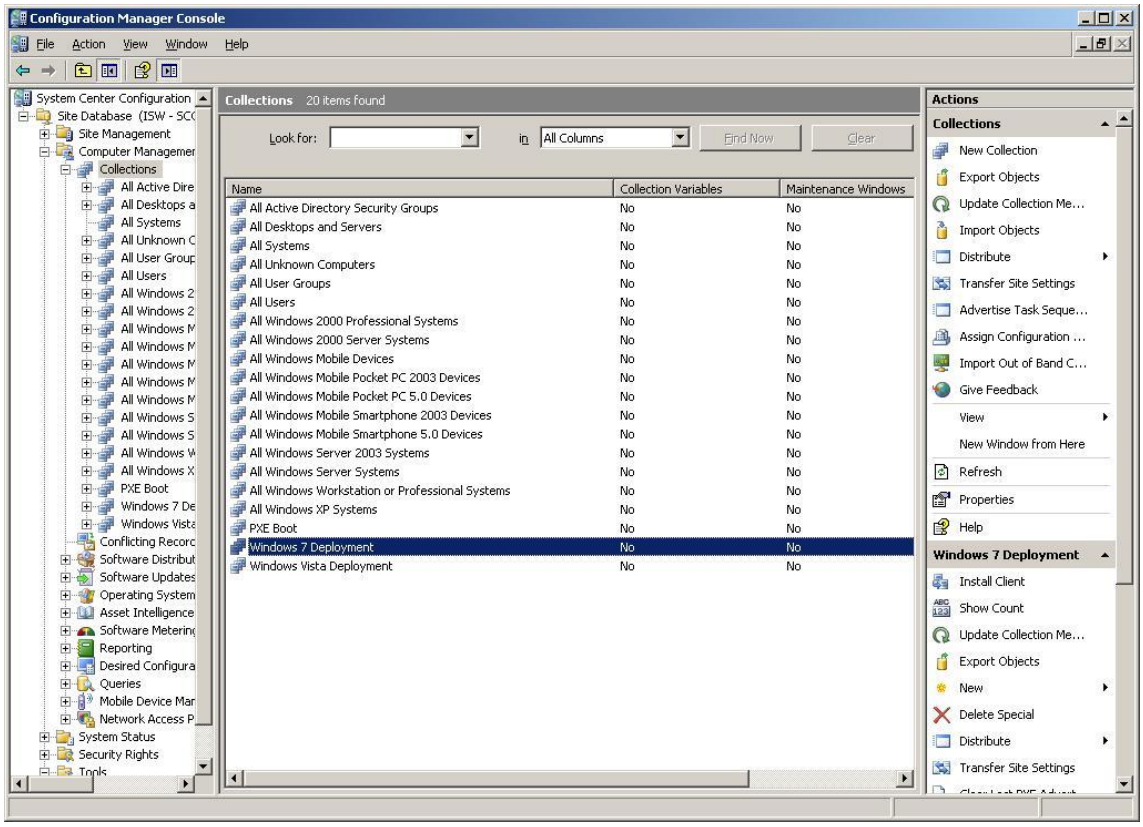

Figure 73 - Windows 7 Deployment Collection

- Select the **Windows 7 Deployment** collection, right-click the collection and click **Properties**

- At the Windows 7 Deployment Properties dialog, click the **Membership Rules** tab and click the Computer icon to launch the Create Direct Membership Rule Wizard

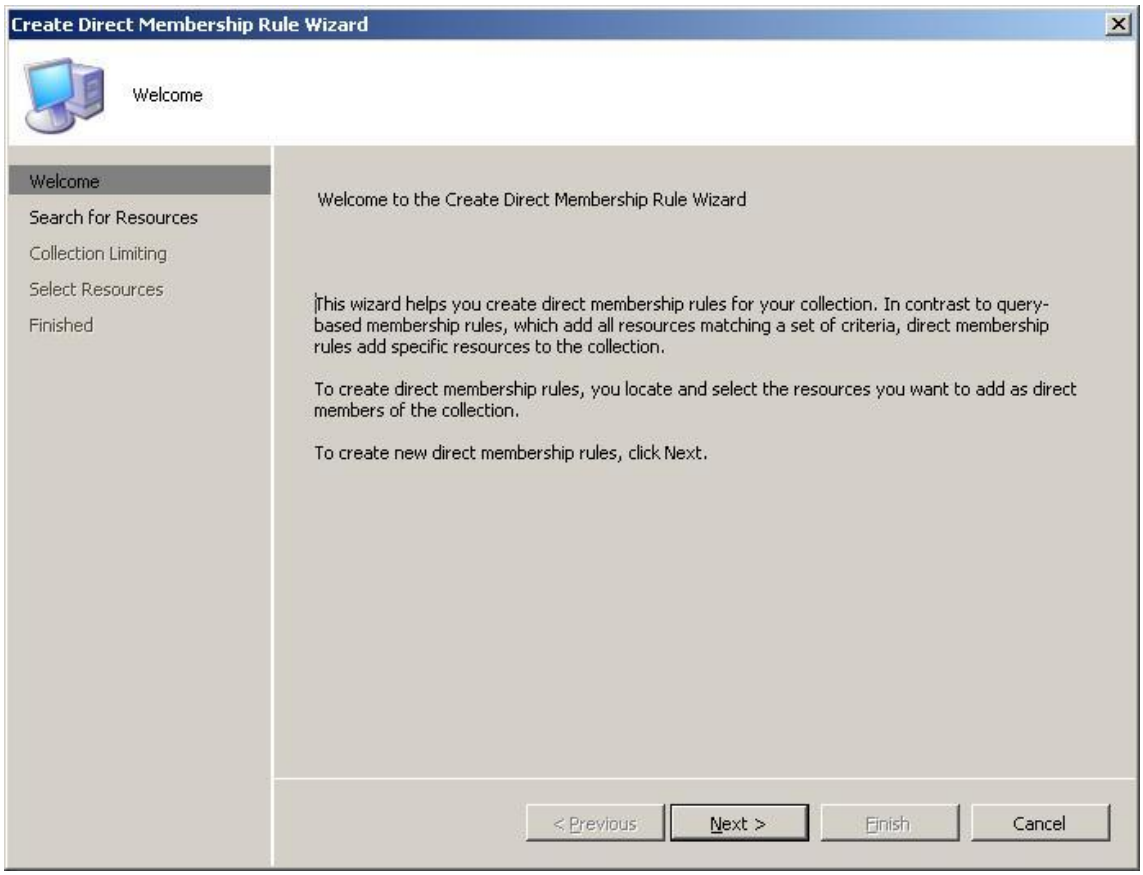

Figure 74 - Direct Collection Membership Rule Wizard

- Use the wizard to add the Intel vPro client to the membership rules for the **Windows 7 Deployment** collection

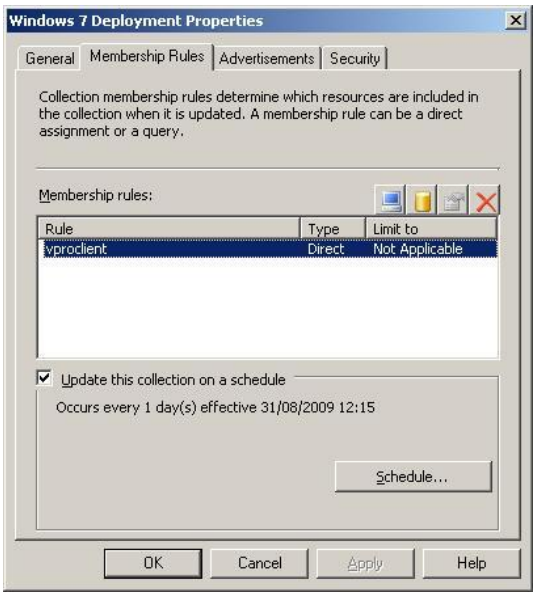

Figure 75 - Direct Collection Membership Rule Dialog

- Select the **Windows 7 Deployment** collection, right-click the collection and click **Update Collection Membership**. Refresh the collection until the hourglass disappears from the collection and the Intel vPro client is shown as a member of the collection

☐ Tick this box when you have completed all steps in this procedure

Advertise Task Sequence to Operating System Deployment Collection

- At the Configuration Manager console, expand **System Center Configuration Manager > Site Database > Computer Management > Operating System Deployment > Task Sequences**

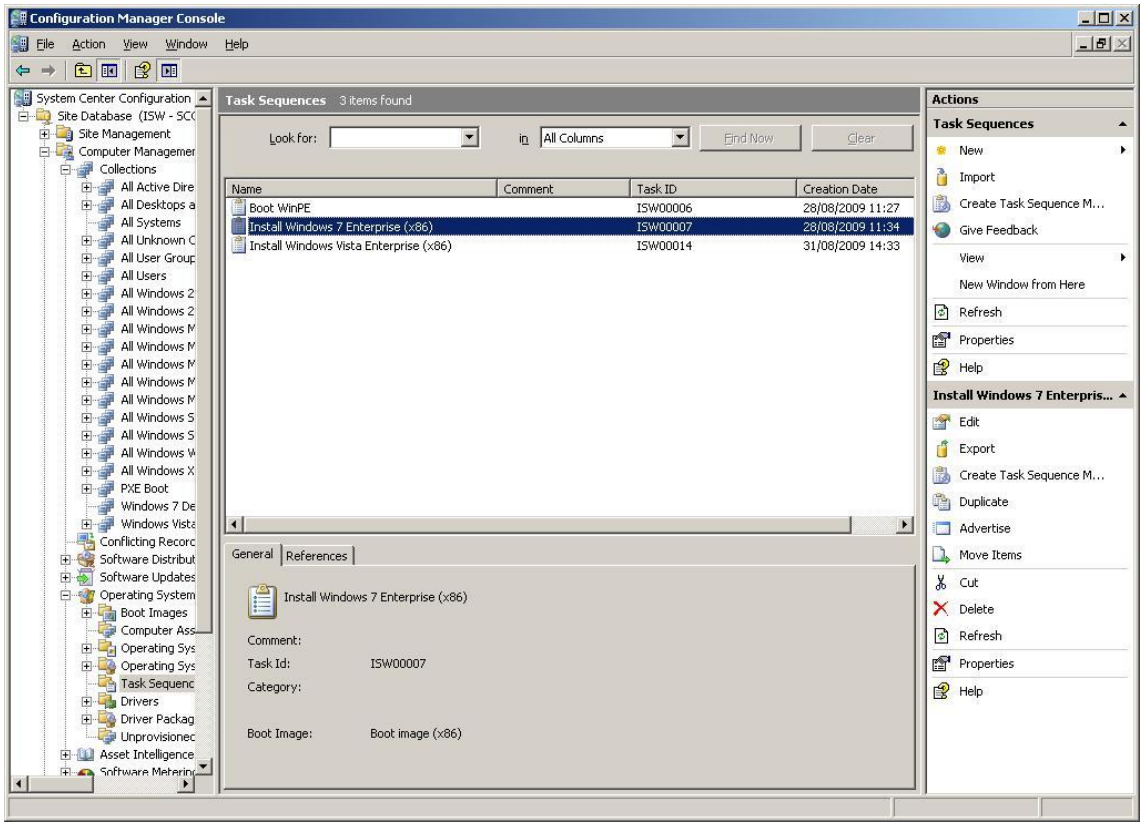

Figure 76 - Pre-Configured Task Sequences

- Select the **Install Windows 7 Enterprise (x86)** task sequence, right-click the sequence and click **Advertise** to launch the New Advertisement Wizard

- On the General page, use the **Browse…** button to select to select **Windows 7 Deployment** for the **Collection** field. Click Next

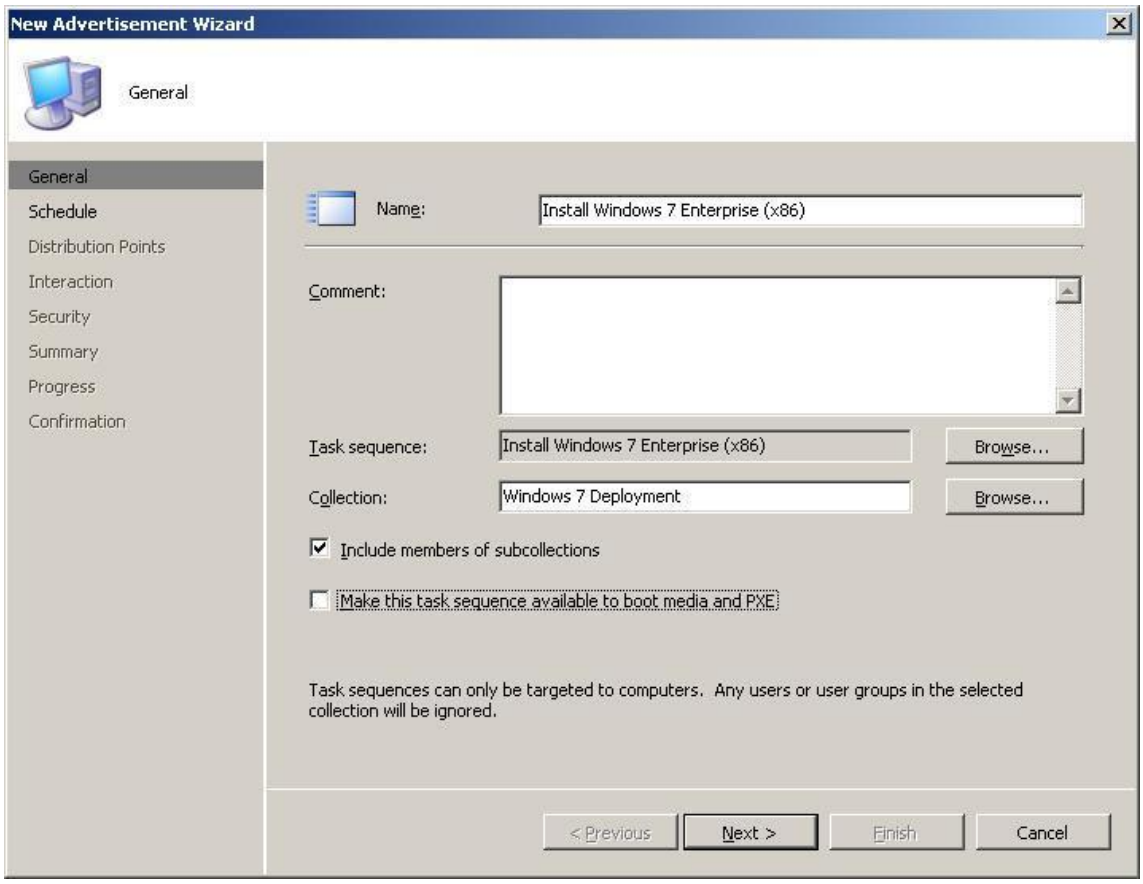

Figure 77 - New Advertisement Wizard General Page

- On the Schedule page, click the * button to add mandatory assignments. Select an appropriate schedule for the mandatory assignment. For this lab, check **Assign immediately after this event** and select **As soon as possible** from the dropdown box. Click OK to close the Assignment Schedule dialog

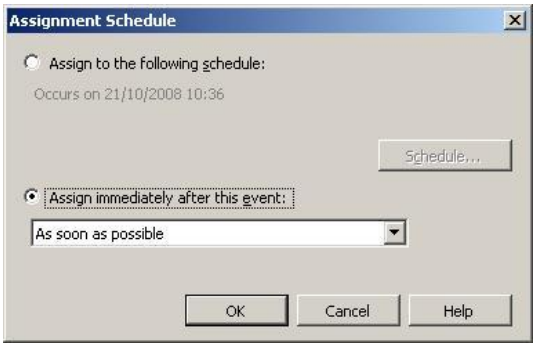

Figure 78 - Advertisement Assignment Schedule Dialog

- On the Schedule page, check **Enable Wake On LAN**, **Ignore maintenance windows when running program** and **Allow system restart outside maintenance windows**. Click Next

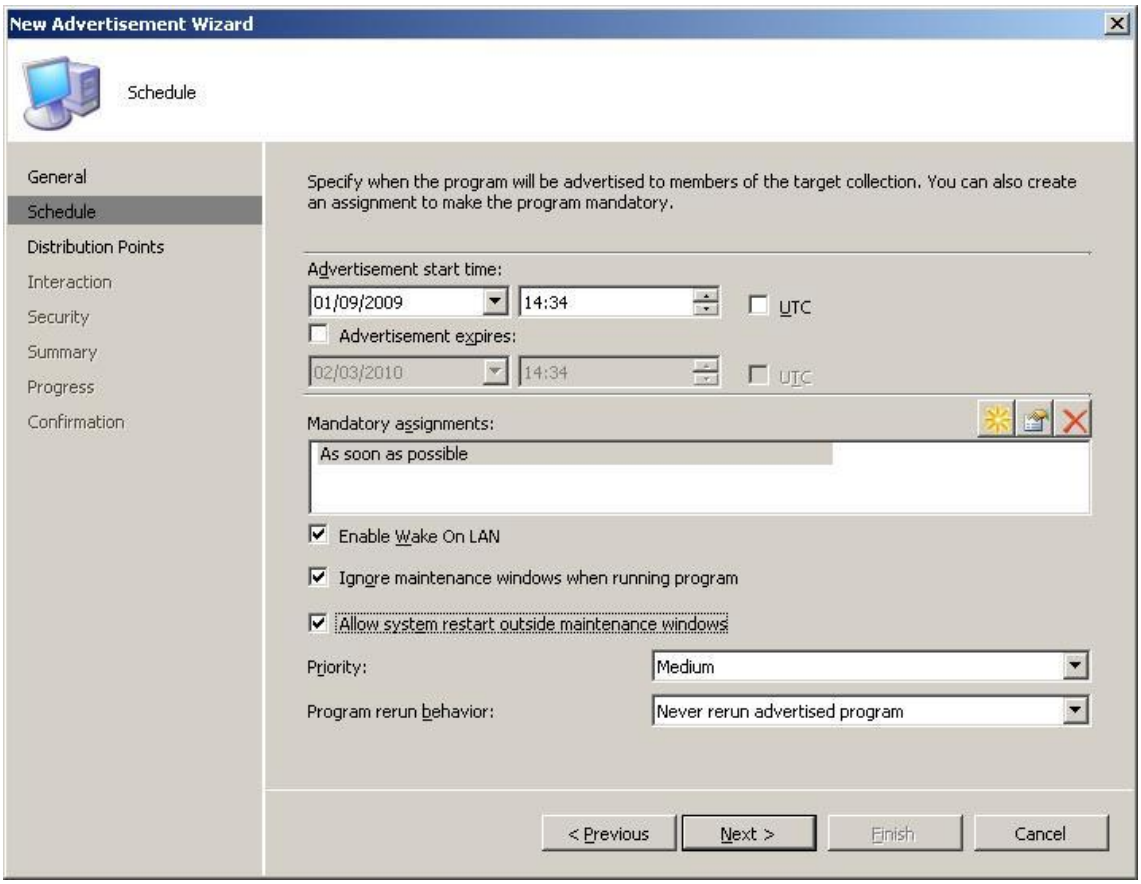

Figure 79 - New Advertisement Wizard Schedule Page

- On the Distribution Points page, click Next

- On the Interaction page, check the option **Show the task sequence progress**. Click Next

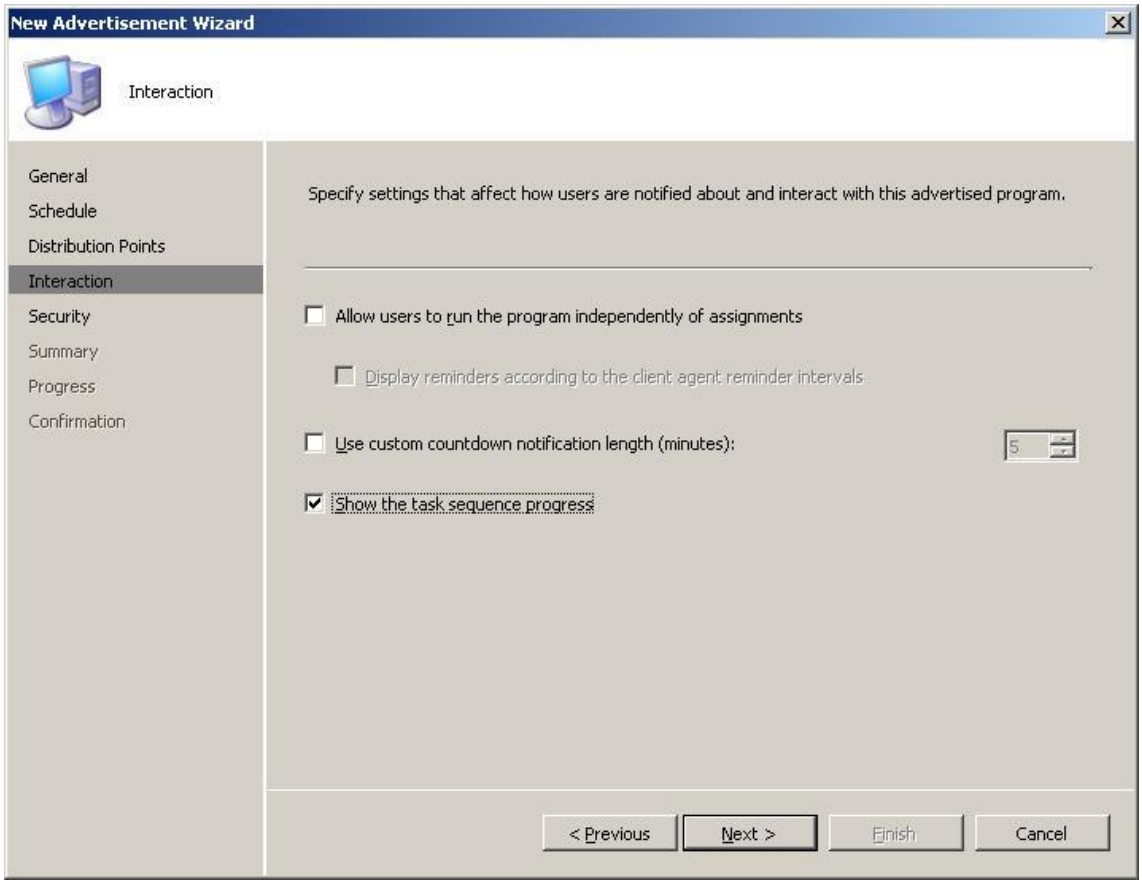

Figure 80 - New Advertisement Wizard Interaction Page

- On the Security page, click Next
- On the Summary page, review the settings and click Next
- On the Confirmation page, click Close

☐ Tick this box when you have completed all steps in this procedure

Observe Client Behaviour

- ConfigMgr will wake-up the Intel vPro client according to the schedule assigned to the advertisement
- The ConfigMgr agent will retrieve and process the advertisement. This can take 5 to 10-minutes from the time the client boots to the Operating System

☐ Tick this box when you have completed all steps in this procedure

Observe Operating System Installation

- The client will execute the tasks in the advertised task sequence to prepare the client system and install the Operating System. Installation can take 20-minutes

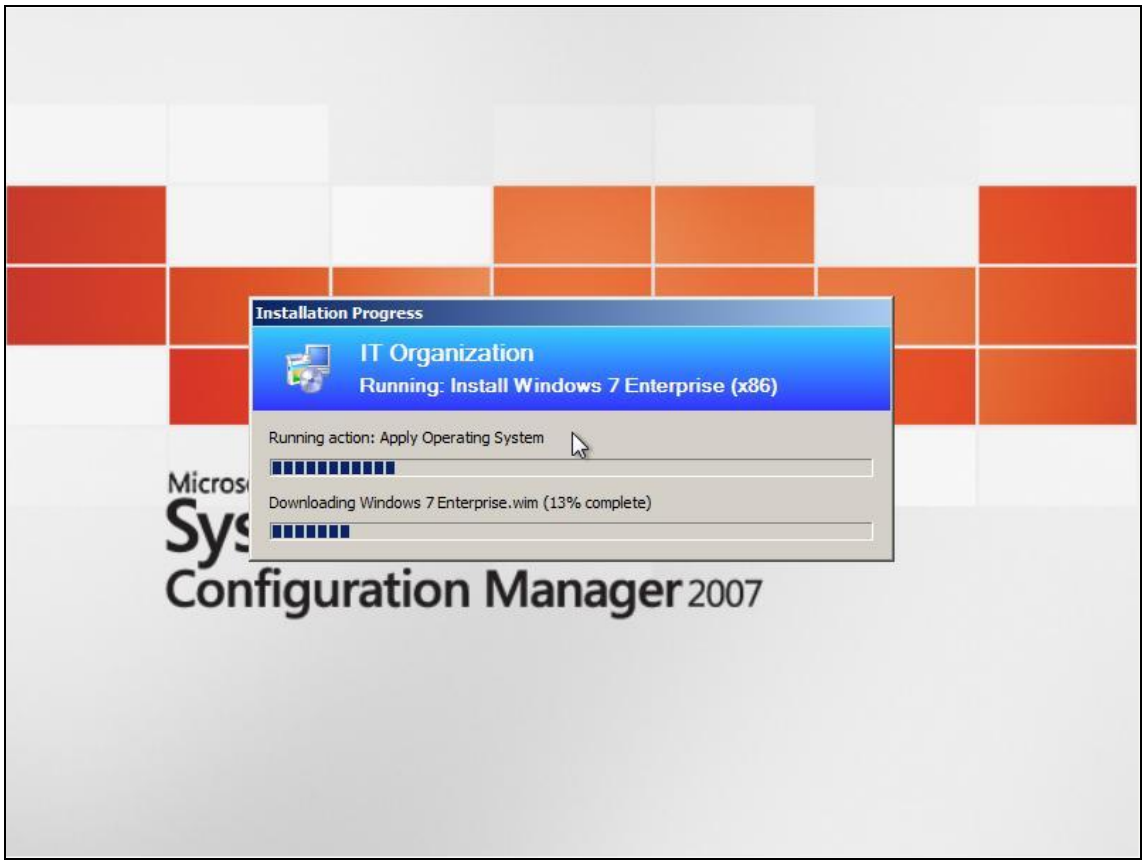

Figure 81 - Client Executing Windows 7 Installation Task Sequence

☐ Tick this box when you have completed all steps in this procedure

Re-Provision Intel vPro Client Management Controller

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Change Management Controller Provisioning Configuration
- Re-Provision Intel vPro Client
- Verify Management Controller Changes

Change Management Controller Provisioning Configuration

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **System Center Configuration Manager > Site Database > Site Management > ISW > Site Settings > Component Configuration**
- In the Component Configuration pane, right-click **Out of Band Management** and click **Properties**

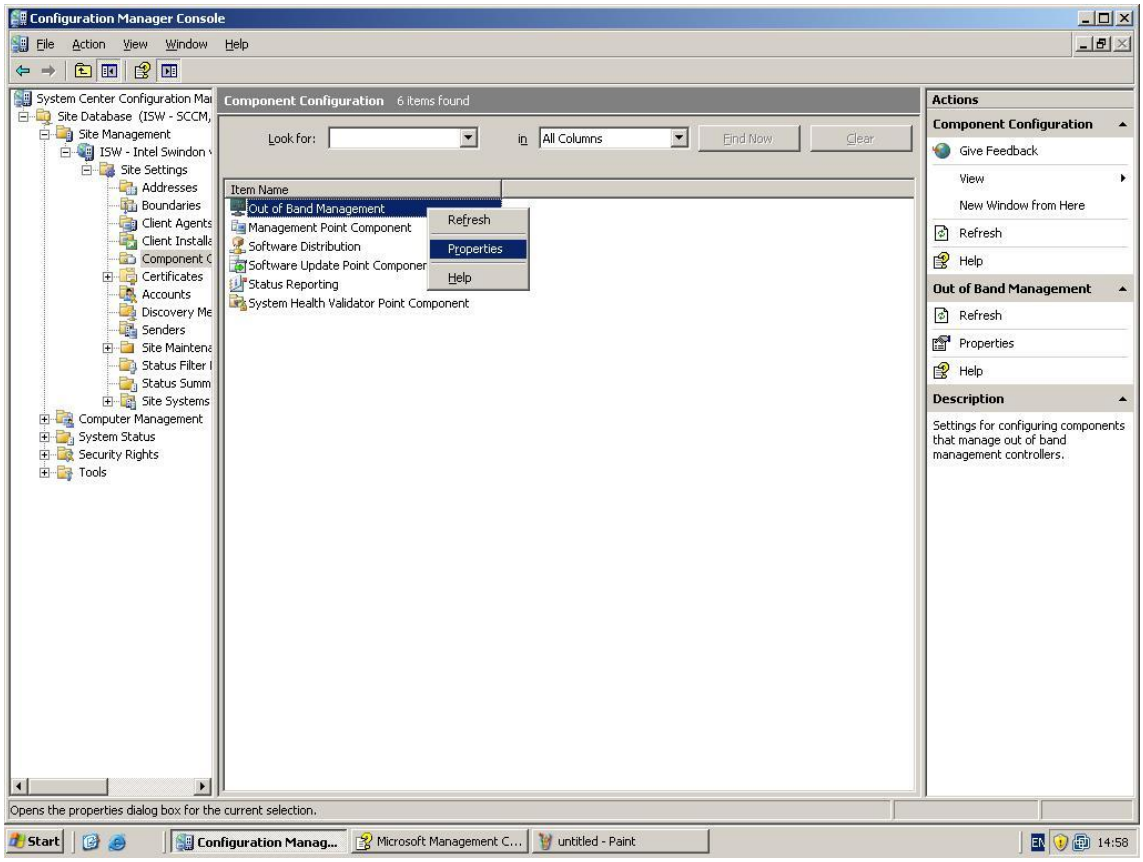

Figure 82 - Configuration Manager Console Showing Component Configuration

- In the Out of Band Management Properties dialog, click the **AMT Settings** tab

- Click the * button to add a Windows domain user or group to the AMT user accounts list. The domain users or groups added to this list will have access to the Management Controller on all clients provisioned by this Out of Band Service Point. For this lab use **VPROLAB\HelpDeskAgent** as the domain user with rights to **Hardware Information**, **Event Log Manager**, **General Information** and **Event Log Reader** supported AMT features. Click OK to close the AMT User Account Setting dialog

Figure 83 - VPROLAB\HelpDeskAgent AMT User Account Setting

- Click OK to save the Out of Band Management Properties

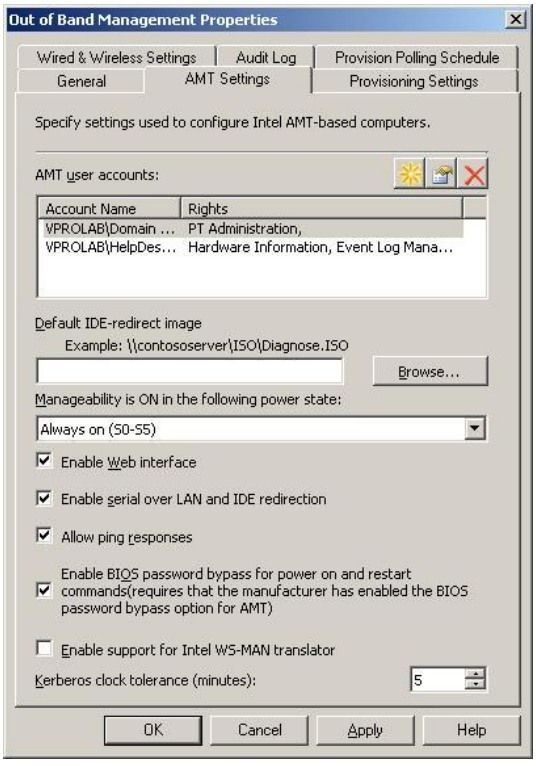

Figure 84 - Out of Band Management Properties AMT Settings Tab

☐ Tick this box when you have completed all steps in this procedure

Re-Provision Intel vPro Client

- Expand **Site Database > Computer Management > Collections > All vPro Systems**
- Select the **All Provisioned vPro Systems** collection
- In the **All Provisioned vPro Systems** pane, right-click the client to be re-provisioned. If more than one client will be re-provisioned hold down the Ctrl key and click each of the other clients to perform a multiple client selection. Right-click the selected client and select **Out of Band Management > Update Provisioning Data in Management Controller Memory**
- At the Update Out of Band Data confirmation dialog, click OK

HELPFUL HINT: If the Management Controller is configured to be active regardless of client power state, then Management Controller configuration changes can be applied regardless of client power state thus reducing the overall time for changes to reach saturation point in an Enterprise environment

☐ Tick this box when you have completed all steps in this procedure

Verify Management Controller Changes

- Allow enough time for the Management Controller re-provisioning process to complete. For this lab, 1-2 minutes should be sufficient
- On the domain controller or SCCM server, open **Internet Explorer** and enter a URL of **https://vproclient.vprolab.com:16993** to connect to the Management Controller built-in WebUI on the Intel vPro client. If the browser is unable to connect to the WebUI, close the browser and use the command **ipconfig /flushdns** to flush any residual DNS information. Re-open the browser and retry connecting to the WebUI
- At the WebUI, logon with username **VPROLAB\HelpDeskAgent** and password **P@ssw0rd** which were just added to the Intel AMT provisioning configuration

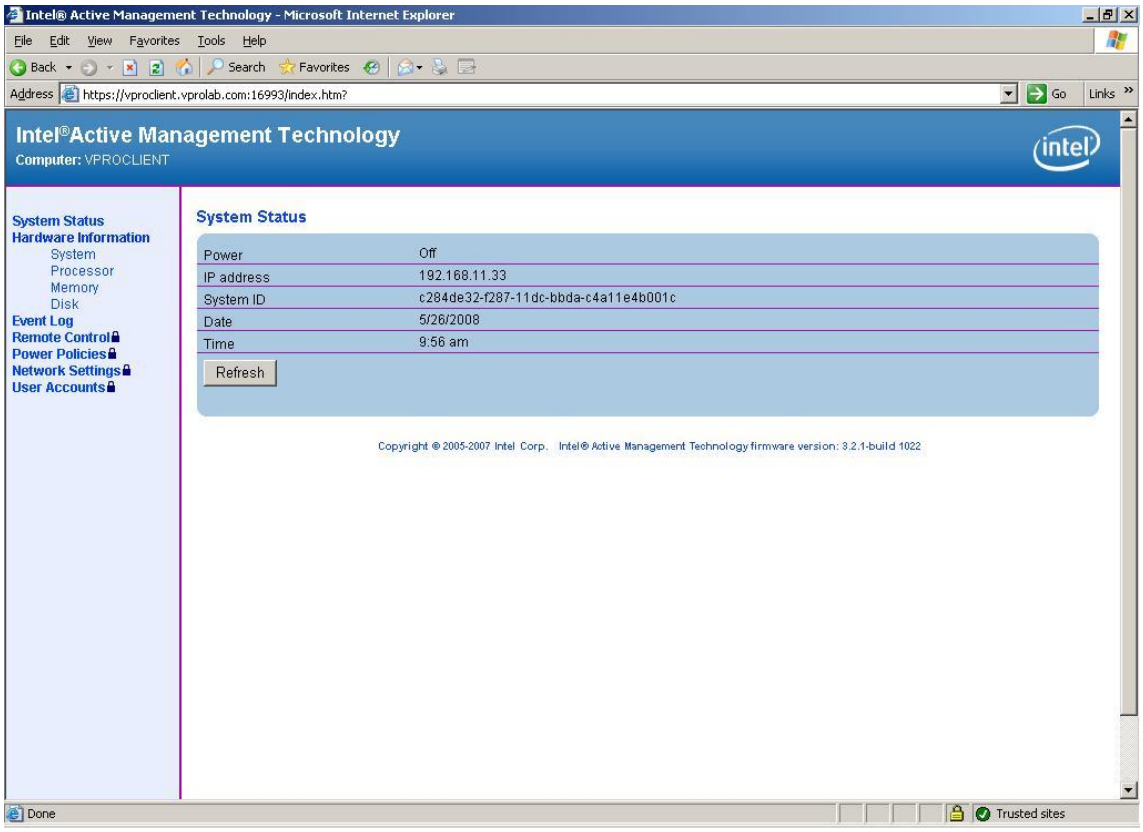

Figure 85 - VPROLAB\HelpDeskAgent User WebUI Console

- At the WebUI console note that padlocks on the left-hand navigation bar. This domain user has restricted access to the Management Controller based on those properties configured in the Out of Band Management Properties dialog

- Close the browser

☐ Tick this box when you have completed all steps in this procedure

Un-Provision Intel vPro Client Management Controller

HELPFUL HINT: Un-provisioning is the process an Enterprise would perform when clients need to be de-commissioned. Un-provisioning the client Management Controller removes configuration information and credentials from the Management Controller and revokes certificates associated with the Management Controller

This exercise consists of the following procedures. The steps that need to be performed to complete each procedure are described after this list

- Delete Provisioning Data from Management Controller
- Monitor Un-Provisioning Progress of Client Management Controller

Delete Provisioning Data from Management Controller

- On the SCCM server, click **Start > All Programs > Microsoft System Center > Configuration Manager 2007 > ConfigMgr Console**
- Expand **Site Database > Computer Management > Collections > All vPro Systems**
- Select the **All Provisioned vPro Systems** collection
- In the **All Provisioned vPro Systems** pane, right-click the client to be un-provisioned. If more than one client will be un-provisioned hold down the Ctrl key and click each of the other clients to perform a multiple client selection. Right-click the selected client and click **Out of Band Management > Delete Provisioning Data from Management Controller Memory**
- At the Delete Provisioning Data dialog, check **Remove all data from AMT memory**. If you wish to prevent the client from being automatically re-provisioning then check **Disable automatic out of band provisioning**. Click OK

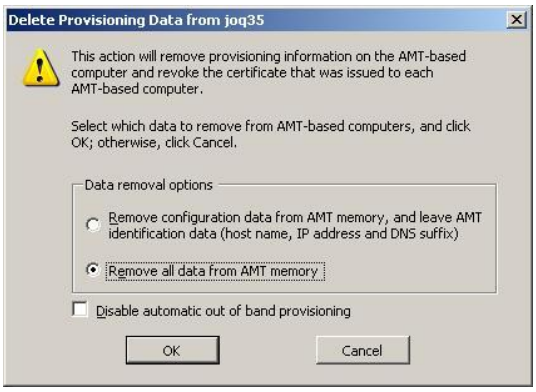

Figure 86 - Delete Provisioning Data Dialog

- Allow sufficient time for the Management Controller un-provisioning process to complete. For this lab allow 20-30 seconds

Monitor Un-Provisioning Progress of Client Management Controllers

- Expand **Site Database > Computer Management > Collections** and right-click the **All vPro Systems** collection. Click **Update Collection Membership**. At the confirmation request click OK

- Allow enough time for collection membership to be updated. For this lab allow 15-30 seconds

- Right-click **All vPro Systems** and click **Refresh** until the hour glass symbol disappears from the **All vPro Systems** collection. The **AMT Status** column displays the system provisioning state as **Not Provisioned**

☐ Tick this box when you have completed all steps in this procedure

Lab Shutdown

- Shutdown the Virtual machine for the SCCM server
- Shutdown the Virtual machine for the Domain Controller

☐ Tick this box when you have completed all steps in this procedure

Appendix A - Virtual Machine Software Inventory

Domain Controller

- Windows Server 2008 R2 Enterprise Edition
- KB908209 registry changes for Internet Explorer

ConfigMgr Primary Site Server

- Windows Server 2008 R2 Enterprise Edition
- KB908209 registry changes for Internet Explorer
- SQL 2008 Enterprise Edition
- System Center Configuration Manager 2007 with Service Pack 2
- System Center Service Manager 2010
- Intel vPro Processor Management Pack for Microsoft System Center Service Manager 2010 V1.0
- RealVNC VNC Viewer Plus V1.1
- Windows Power Shell Module for Intel vPro Technology V3.0