# Install & Configuring

# UDA 2.0 to Deploy ESX 5.x.x

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## Download and Install the UDA to vSphere5.x

Note: These instructions should work if you using the UDA to deploy ESX 4.x.

1. Download the ESX version of the UDA from:

   http://www.mikelaverick.com/downloads/uda20-build17_1.ova
   http://www.mikelaverick.com/downloads/uda-2.0.20.tgz

   **Note**: Patch UDA2.0.20.tgz adds support for ESX5.x

2. In vCenter select **File** in the menu and **Deploy OVF Template**
3. Select **Deploy from file** and use the **Browse** button to locate the .OVA file
4. **Click Next** to accept the description
5. Set the **UDA VM name** and **location in the inventory**
6. Select a **datastore** location
7. Select a **network** port group

   **Note**:

   Remember this appliance will be used to deploy ESX so you must put it on the same network as the Management physical NIC.

   Occasionally, I find the .OVF format reports an error during the import process. If this happens to you might prefer to create the UDA virtual machine manually. You download and upload just the virtual disk files to the ESX host.

   The .OVA file is actually just a tar file, and good ZIP should be able to extract it to expose the .OVF and .VMDK that are contained inside it.

   Once the .VMDK's have been upload you can use the vmkfstools command to reassemble them.

   Followed by the vmkfstools command to rebuild them into the "thick" format

   vmkfstools -i /root/uda20/uda20_disk1.vmdk /vmfs/volumes/sanlun1/uda20/uda20-beta.vmdk

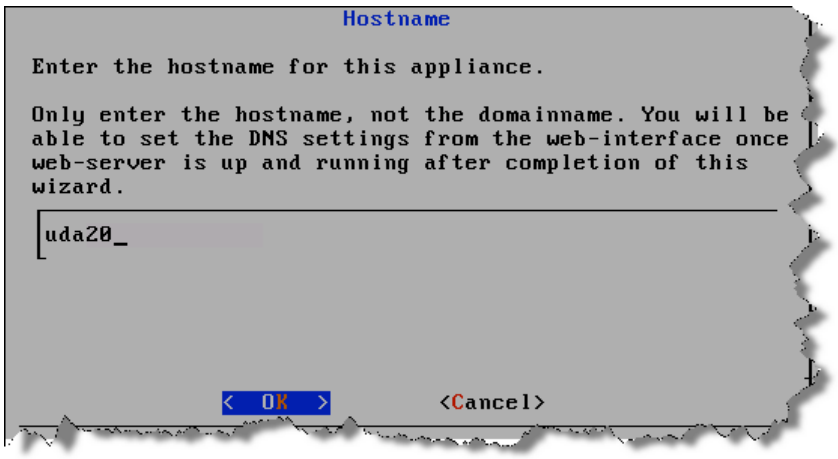
## Power On and First Run-Configuration

When you first power on the UDA it will boot to Linux, and inside Linux a small wizard runs to allow you to configure its various settings such as its:

- Hostname
- IP Address Settings
- DHCP Configuration (if selected)

Although you can use the tab key to navigate the wizard I've found using the cursor keys the best way.

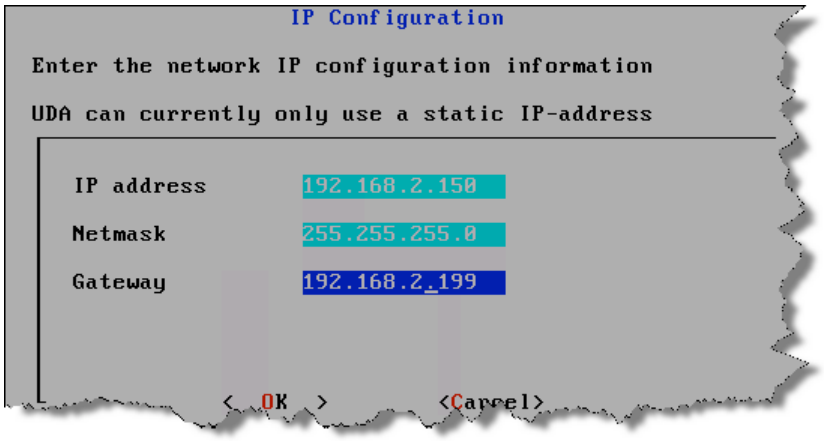
1. **Power on the UDA**
2. At the **Welcome Screen** press [**ENTER**]
3. In the **Hostname** dialog, type in the *hostname* for your UDA




**Note**:

Notice how the interface clearly states the hostname only, not FQDN.

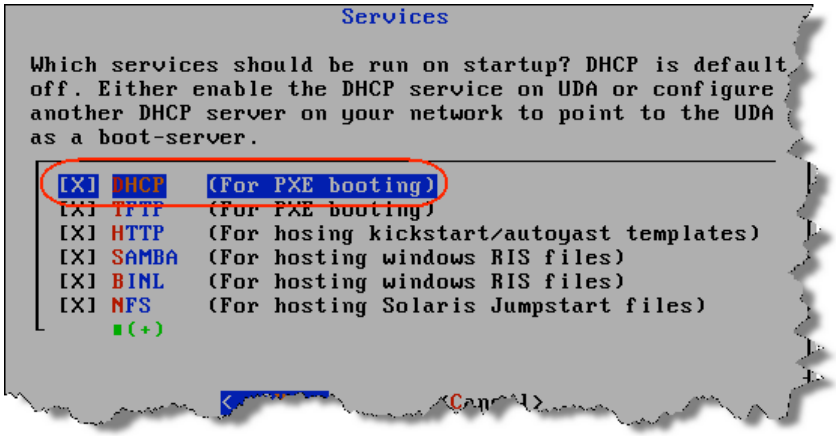
4. Next set your **IP, Subnet Mask and Default Gateway**




**Note**:

As the UDA is both boot source and source of the ESX media, I used the same network range as my ESX hosts.

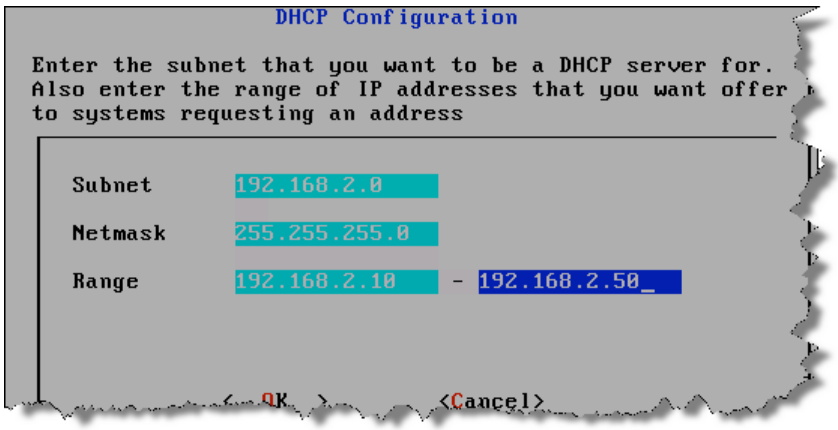
5. Next **enable the DHCP Service** in the list




**Note**:

If you already have a DHCP server and merely wish the UDA server to be a PXE boot server – then skip this part. At the end I will describe how to make an existing Microsoft DHCP issue the IP address to your ESX hosts and point to the UDA as you may have corporate policies that enforce the use of authorized Active Directory DHCP Servers.

6. Next set the **Network ID, Subnet Mask and Starting and Ending Range for your DHCP Scope**




7. Next **set your password for root and admin accounts**


**Note**:

The UDA uses two user accounts – the root account for SSH and console logins, and then a more limited account called admin which is used to authenticate to the friendly web-page front-end that allows for high-level post-configuration.

8. **Confirm your password and the summary of the settings** you have provided

**Note:**

Once the wizard completes you can open up a web-browser on the UDA, login as admin with your password and you should see the welcome screen like so:


**Note:**

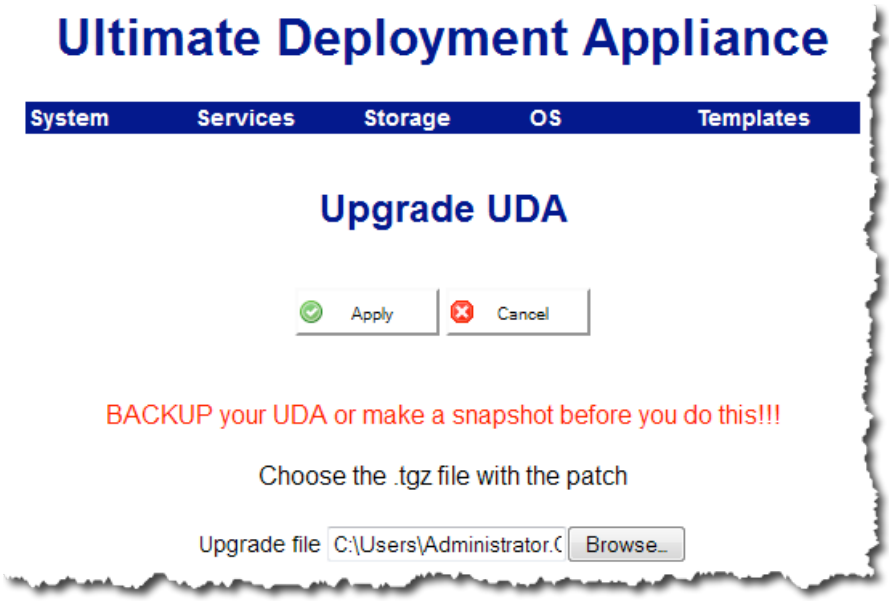
You may now wish to click the System menu option, to set your DNS server and DNS Domain. This will help using names rather than IP addresses in the storage aspect of the UDA

## Apply the Build 20 Patch

UDA 20 Build 17 added support for ESX 4.1. For ESX 5.1 all that was required was a very small patch. Rather than have people complete redeploy their existing UDA environment there is a patch that updates the UDA Build 2.0 that adds support for ESX 5.1.

1. Click the **System** menu button
2. Select **Upgrade**
3. **Browse for the .tgz patch** you downloaded earlier

4. Click **Apply**



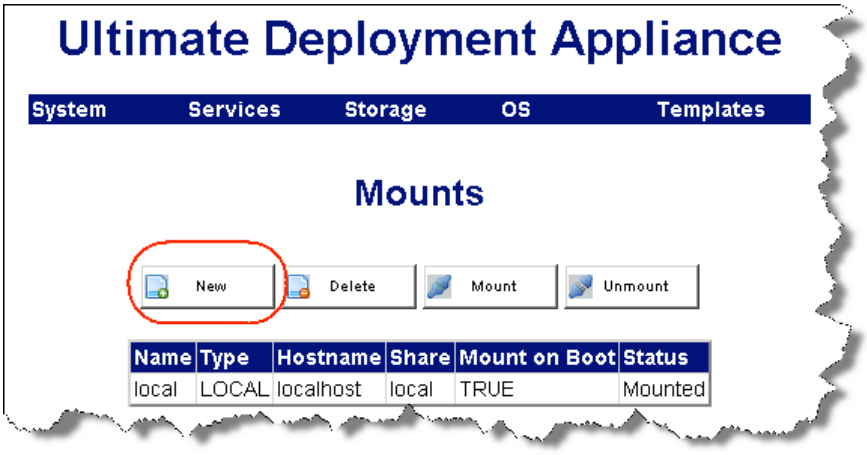

## Post-Configuration of the UDA

The main post-configuration of the UDA lies in a three step process. Firstly, that's giving the UDA access to storage where your main ISO images are held – these can be virtual disk, Windows or NFS share. Secondly, once the storage has been accessed you can then "mount" the ESX4 ISO to the UDA, the UDA will automatically copy all the files required for a PXE boot from the disk to the UDA without you having to know anything about Linux, TFTP, DHCP or PXE. Lastly, you can create a template for installing ESX hosts or any other operating system that the UDA support. Templates form the outline or the basis of how a particular operating system will be installed – essentially it's the master file from which all scripted installs of ESX of a particular type can be made.

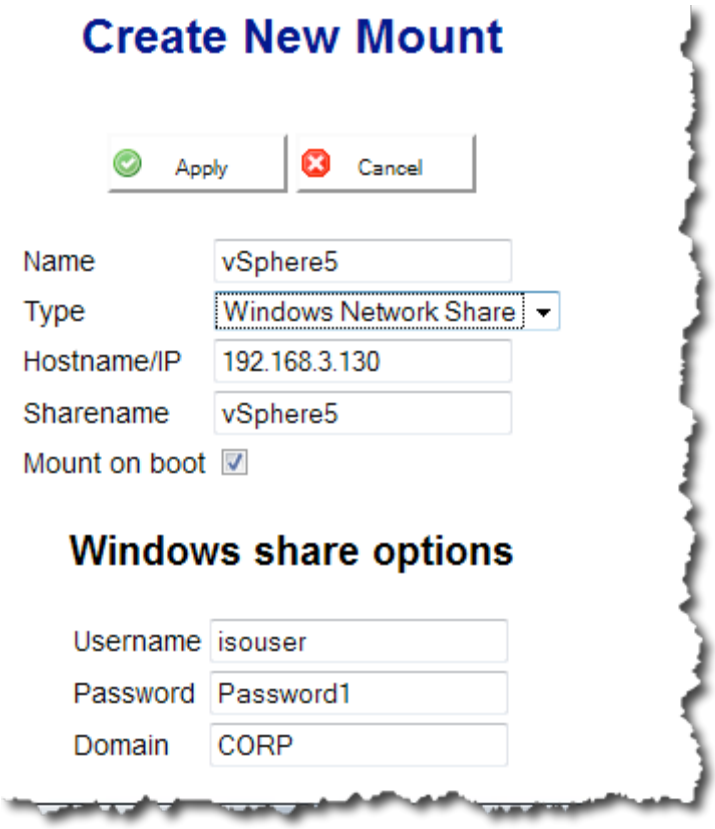
## Accessing Storage (Windows Share)

If your ESX5i ISO resides on a Windows share this is how you gain access to the share via the UDA

1. Click the **Storage** menu option
2. Next click the **New** button



3. **From the Type pull-down list**, select **Windows Network Share**, and complete the dialog box like so:



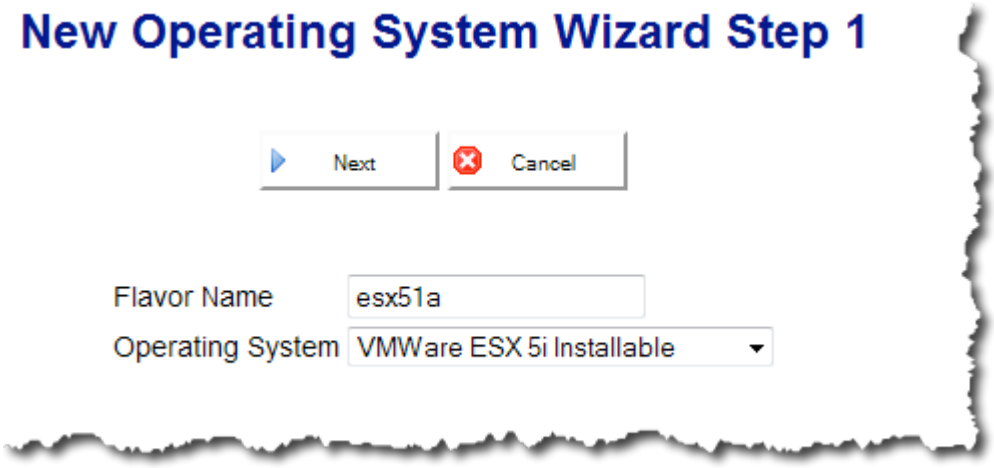

**Note**:

I think most of this is self-explanatory. The field "name" is the friendly name used by the UDA to refer collectively to all these settings. It's perhaps worth checking before you begin, that the UDA can ping the hostname, and the user specified has rights to the share, and the typical sort of IP and authentication troubleshooting you would do for Windows. If that does not help then you can resort to raw IP data as the UDA will accept that as well.

## Add the OS (ESX5 Classic)

Next we need to configure an "operating system" for the UDA. It needs to know which operating system we are using – Windows, ESX3, ESX4, ESX5 or GentOS. Once selected we can then indicate what flavor of that operating system we are using, ESX4.0.0, ESX4.0.1, or ESX5.1 and so on. This allows the UDA to mount any number of different distributions of a given operating system. Once you have browsed and selected the ISO in question the UDA will then "import" the critical boot files required for PXE booting to be successful for you.

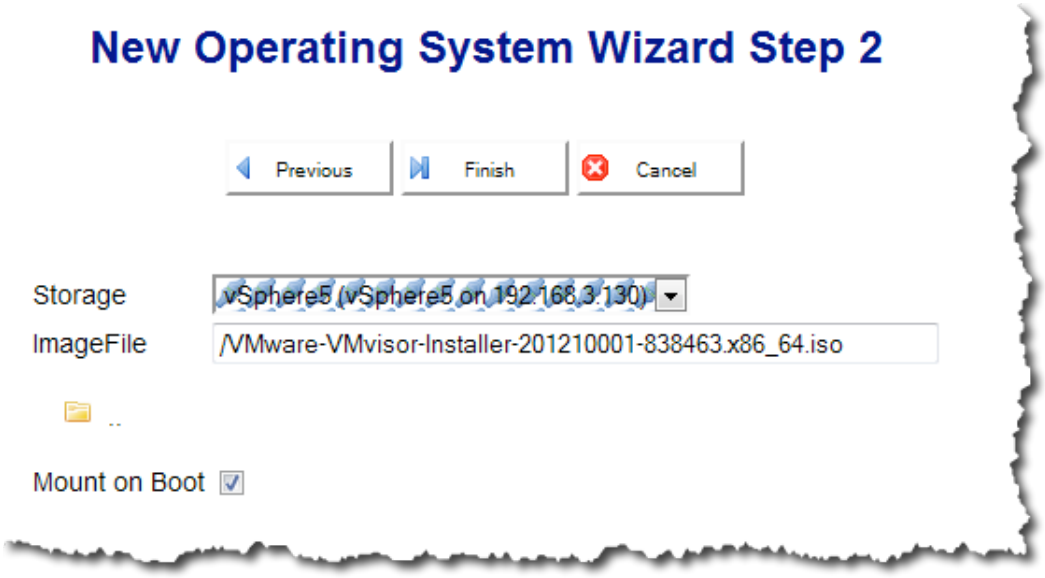
1. Click the **OS** menu option
2. Click the **New** button
3. **Select** from the pull-down list **VMware ESX Server 5.X.X**
4. Then **type in a unique flavor name** such as **esx51a**




**Note:**

Flavor names can be anything you like, but you MUST set one for the UDA to work properly.

5. Click **Next** and **then select the ESX ISO in your mounting point**




6. Then click the **Finish** button

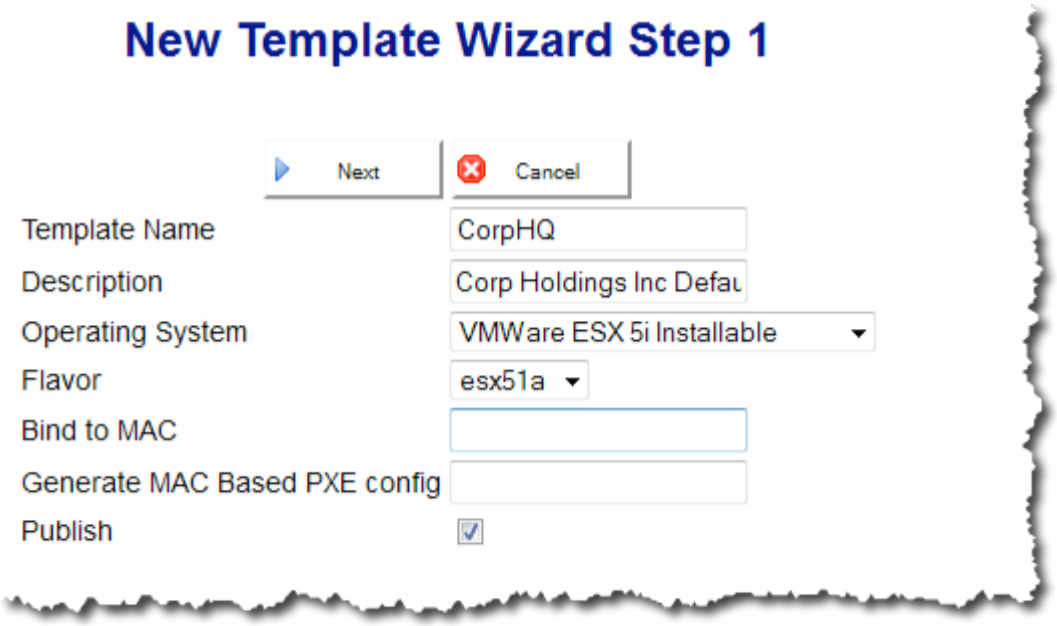
**Note**:
The UDA does NOT copy the entire CD from the network share – just the files required for PXE booting. The share will still need to be online and available for the UDA to function.

## Add a New Template

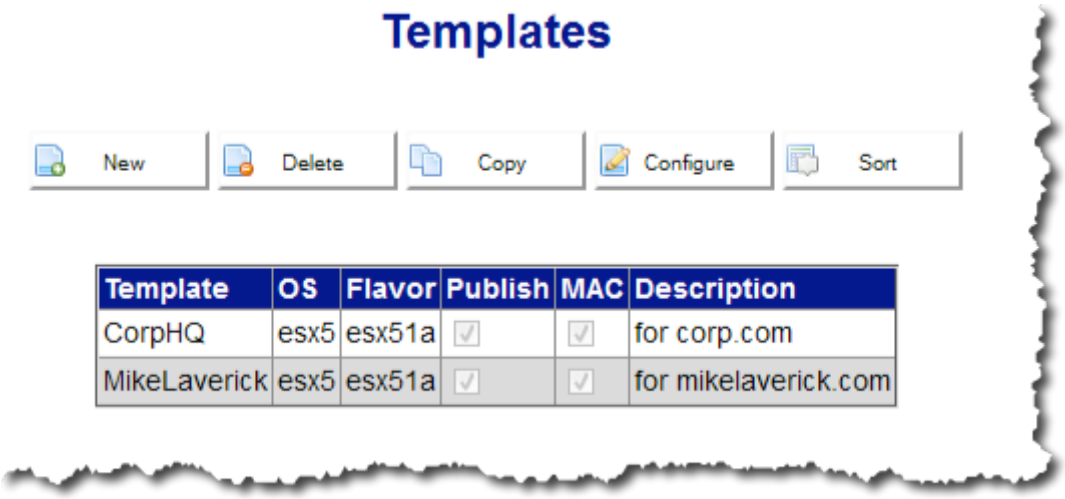
Part of the UDA takes a little time to explain but it's actually very simple. Each ESX host you have will need a text file to automate the installation – it's a scripted installation after all. However, can you imagine having 30-40 different script files each with IP addresses, subnet masks and default gateways hard-coded to them? It would be a nightmare to maintain. It would be so much better to have one single "master" template that merely contains the install instructions with variables – and a separate file or "sub-template", which would contain all those variables. Wouldn't it be great if you could define (within reason) any variable you like – and for the

system to automatically build a menu to select from once the main PXE boot process has completed? Well, I'm pleased to say that the UDA does all that for you! In fact in the ESX version of the UDA we have created a sample "master" template that does a complete scripted installation for you. All you need to do is change the variables.

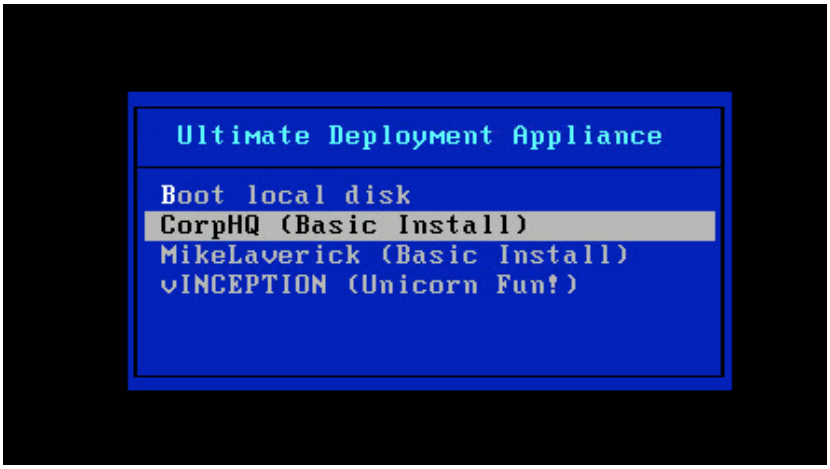
1. Click the **Template** menu option
2. **Type in the "master" template name** such as VI4BOOK or RTFM, then from the **Operating System pull-down list select VMware ESX 5.X.**X, and then **select the flavor used with this template.**

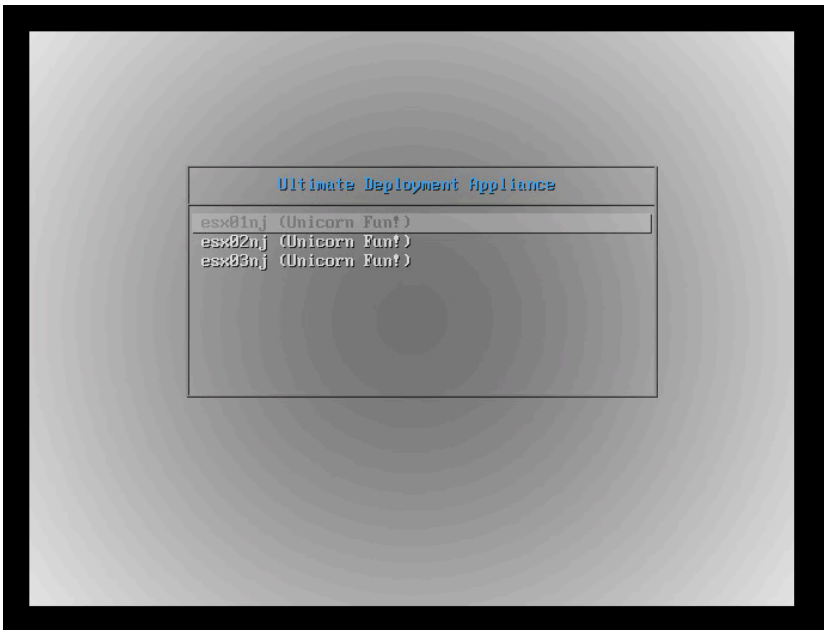



3. Click Next and Finish. Repeated this process to create a master template from my ESX hosts using the mikelaverick.com domain name:




These names CorpHQ and MikeLaverick will build a menu system inside the UDA that will be displayed whenever you carry out a PXE boot. The screen grabs below from a HP ILO Card demonstrate what the "end-user" will see




## Adding Sub-Templates and Templates

**Note:** Remember there are sample templates and sub-templates on mikelaverick.com that you can copy and re-use for your own purposes.

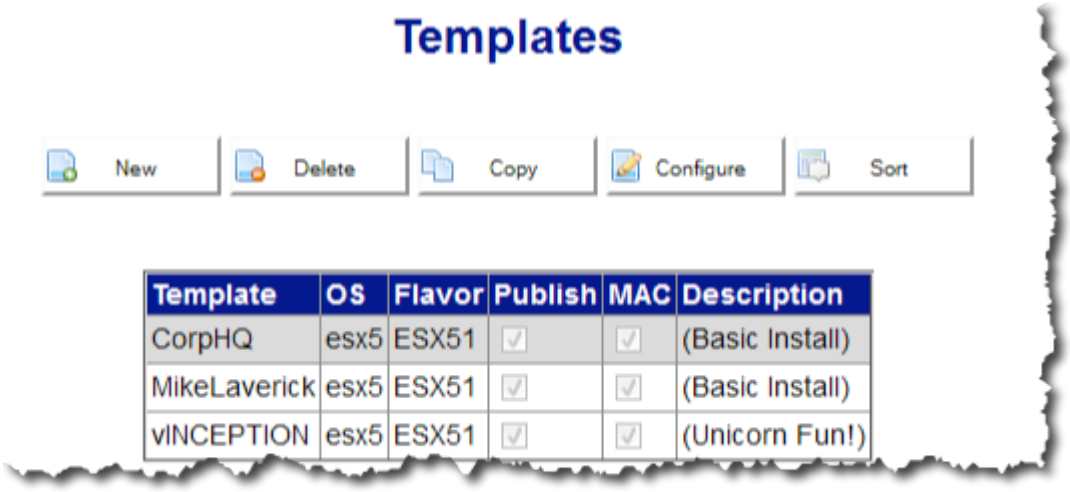
Sub-Templates store the variables that make each ESX host different from the rest – such as its hostname and IP address. Our sample "master" template holds some variables in it represented by [squarebrackets] for example

[DISKTYPE] = Holds the variable of /dev/sda or /cciss/c0d0
[SERV_IP] = Holds the variable for the ESX Hosts unique IP Address
[HOSTNAME] = Holds the variable for the ESX Hosts fully-qualified domain name

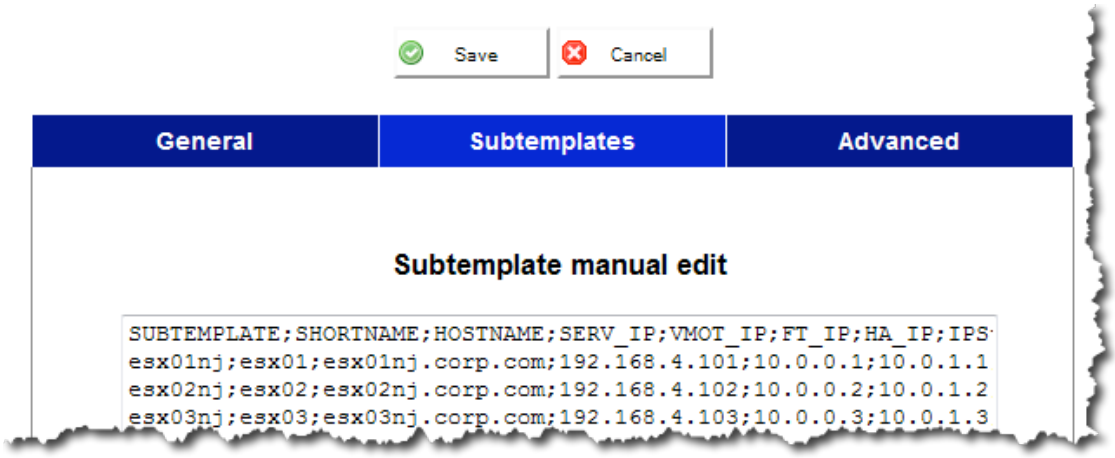
In truth there's nothing hard-coded about these variables you make anything up. So if it pleases you have a variable called [mike] that would work just as well.

By modifying the sub-template file associated with each “master” template it is possible very quickly to create configurations for many ESX hosts by a simple copy and paste – and modifying the variables

1. Click the **Template** menu option
2. **Select the “master” template in the list**, and click the **Configure** button




3. Click the **SubTemplates** option and then select the **Edit** button. Input your variables using a semi-colon as a separator like so




**Note:**

The variable called “SUBTEMPLATE” is hard-coded and it will create a sub-menu inside my main menu of COPHQ with options to build esx01nj and so on. Remember the sky is the limit here; you can create as many variables as you need for any purpose. In my live UDA environment, which I use to build my corp.com hosts I use these variables:

SUBTEMPLATE;
SHORTNAME;
HOSTNAME;
SERV_IP
VMOT_IP

FT_IP
HA_IP
IPSTORAGE1
IPSTORAGE2
IPSTORAGE3

The UDA is good to go and if you wanted you could jump in with both feet and give it a whirl. OR, alternatively, you could hang fire and learn more about the settings in the "master" template that automates the install.

## Scripted Install File Overview with Advanced %post Scripting

Below is a sample weasel script used by the UDA to automate the install. Even if you decide not to use the UDA this script would still work if you just replaced the [VARIABLES] with actual values. Most of this stuff is common sense so I will endeavor (believe it or not!) not to patronize you as we go through it. My comments are in *italics* in an "in-line" format to describe each part or add an additional explanation. A copy of the sample script can be downloaded from:

**http://www.mikelaverick.com/downloads/esx51.txt**

Additionally, this is the sub-template file I use with it:

**http://www.mikelaverick.com/downloads/udasubtemplate.txt**

## Enabling Microsoft Windows DHCP with UDA

In some environments it may not be possible to use the UDA's built-in DHCP daemon. It is possible to disable the DHCP Service on the UDA, and configure a Microsoft DHCP server to take over the role. This is quite an easy configuration change:

**To Disable DHCP On the UDA**

1. Logon as Admin on the UDA's web-admin tool
2. Click the **Services** link
3. Select the **DHCP** link
4. Click the **Configure** button
5. Disable the option for **Start DHCP on boot**
6. Click the **Apply** button
7. Click the **Services** link again
8. Select the **DHCP** link again
9. Click the **Stop** button

**To Enable DHCP On the Windows DHCP**

1. Configure the following **Scope Options** or **Server Options:**
2. **Enable** the option **066 Boot Server Host Name**, and set the empty string value to be the **IP address of your UDA**
3. **Enable** the option **067 Bootfile Name**, and set the empty string to be, **pxelinux.0**