

## Building a XenApp 6.0 Lab on Amazon EC2

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Not everyone has access to equipment at home or work to learn, experiment or test software. It often requires a pretty good chunk of money up front to get started – that won't fly for everyone. For those who want access to fast, reliable and affordable computing power, the cloud is the perfect place to look. In this article, we'll cover building a 2 server lab to run Citrix XenApp 6.0 and a Domain Controller on Windows Server 2008 R2 on Amazon's Elastic Computing Cloud (EC2).

### What You'll Need

- A connection to the internet.
- An e-mail address.
- A credit card.
- Access to Citrix XenApp 6.0 Media (ISO)
- An hour or two.

### What We're Going to Do

- Using Amazon EC2, create 2 Instances running Windows Server 2008 R2 AMIs.]
- Configure an Elastic IP Address
- Configure a Domain Controller
- Install and Configure Citrix Licensing
- Install and Configure Citrix XenApp 6.0 in a Single Farm/Zone Environment
- Install and Configure Web Interface
- Publish an Application

### What We Won't Be Doing

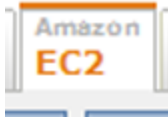
- Secure Gateway/SSL Access
- Multi-Zone Configuration

## Creating an Amazon AWS Account

To get started, visit <http://aws.amazon.com> and create an account. You can use your regular Amazon.com account if you wish. You'll need to provide a valid credit card number to complete the process.

## Creating the Domain Controller Instance

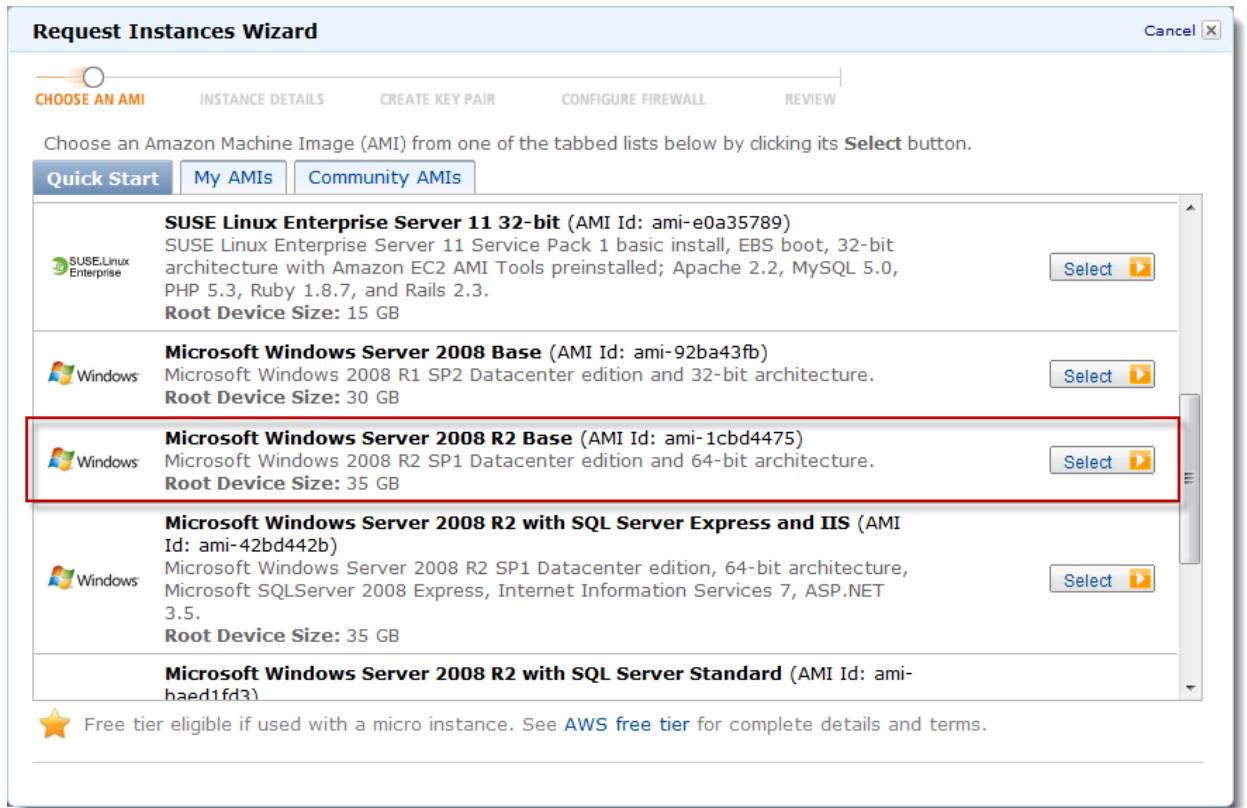
Log into Amazon AWS using the username you just created and select the **Amazon EC2** tab.



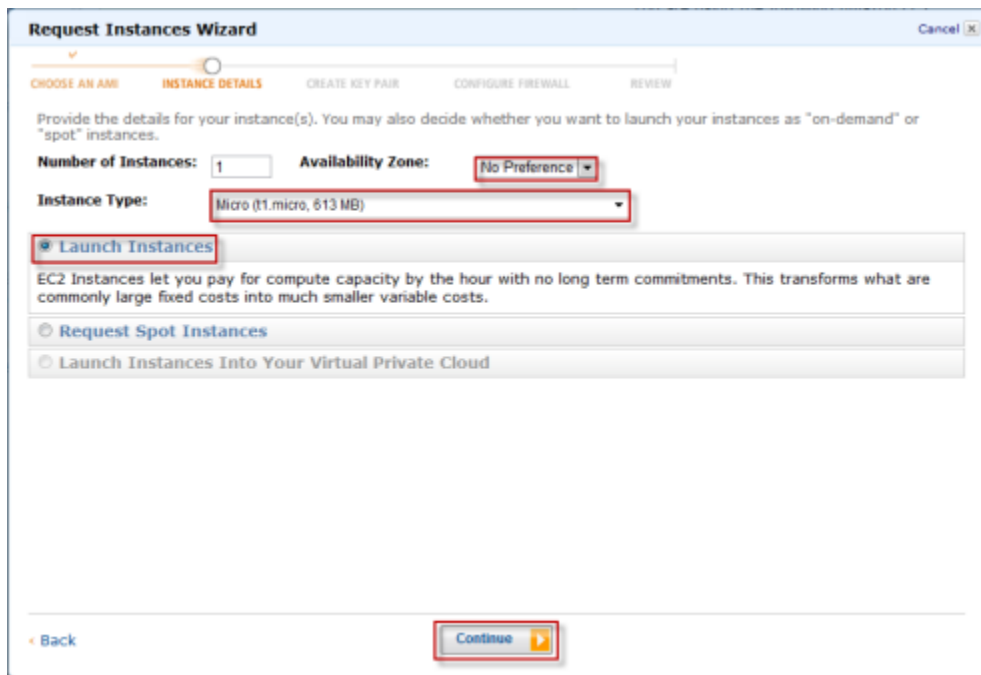
Select **Launch Instance**.



Select the **Microsoft Windows Server 2008 R2 Base AMI**



On the **Instance Details** page (part of the Request Instances Wizard), select **Micro** (Instance Type) and an **Availability Zone** close to your location. We're selecting a Micro instance here because we're only using it for a Domain Controller. Leave **Launch Instances** selected. Click **Continue**.



On the **Advanced Instance Options** page, you can leave all settings as they are and then click **Continue**.

On the **Key/Value** page, enter **Role** as the key and **DomainController** as the value.

Key (127 characters maximum)	Value (255 characters maximum)
Function	EI-XA6-StudyGroup
Role	Domain Controller

Next, we'll create a new **Key Pair**. EC2 uses key pairs to allow you to connect to your instances. Enter a key pair name of your choice, then select **Create & Download your Key Pair**. **Keep this somewhere safe.**

Choose from your existing Key Pairs

Create a new Key Pair

1. Enter a name for your key pair: \* EI-EC2 (e.g., jdoekey)

2. Click to create your key pair: \*

**Create & Download your Key Pair**

Save this file in a place you will remember. You can use this key pair to launch other instances in the future or visit the Key Pairs page to create or manage existing ones.

Proceed without a Key Pair

On the **Configure Firewall** page, select **Create a New Security Group** and name and describe it as you desire. Leave the rules alone for now; we'll come back to that later. Click **Continue**.

Choose one or more of your existing Security Groups

Create a new Security Group

**Group Name**

**Group Description**

**Inbound Rules**

Create a new rule:

Port range:   
(e.g., 80 or 49152-65535)

Source:   
(e.g., 192.168.2.0/24, sg-47ad482e, or 1234567890/default)

[< Back](#)

You may now select **Launch** if all the settings shown are as you desire.

**Launch Instance Wizard**

**Your instances are now launching.**  
Note: Your instances may take a few minutes to launch, depending on the software you are running.

[> View your instances on the Instances page](#)

Select **View your instances on the Instances page**

You should then see a new instance, powered on, but without a name.

Name	Instance	AMI ID	Root Device	Type	Status	Security Groups	Key Pair Name
-----	i-05ea7aa4	-----	efs	t1.micro	stopped	cb1x	EC2
-----	i-f5ef7b94	-----	efs	m1.large	stopped	cb1x	EC2
empty	i-09a79236	-----	efs	t1.micro	running	LAB-EIXA6	EIEC2

Select the *empty* section and edit it. Label the instance something like **EIEC2-DC-01**

In 15-30 minutes, we'll come back to this instance. That amount of time is required for EC2 to generate a password for this instance.

## Creating the Citrix XenApp Instance

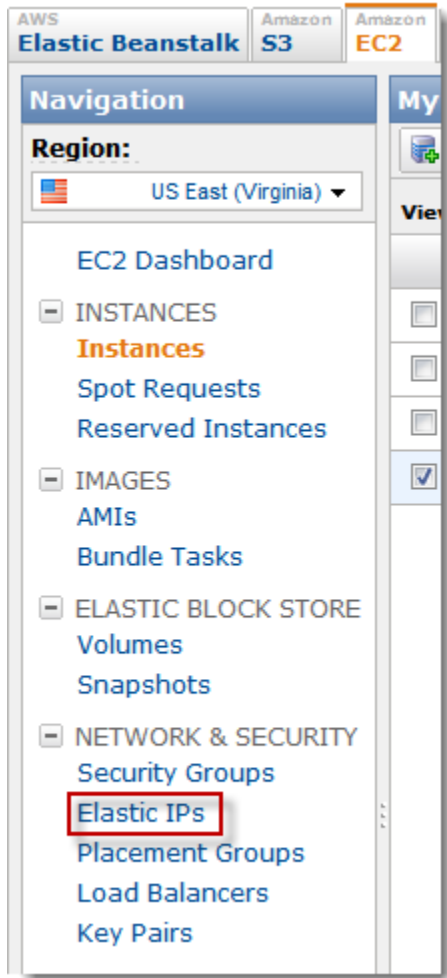
Creating the instance required for the Citrix XenApp 6.0 server is nearly the same. Here are the exceptions:

- Use a **Large** not Micro Instance.
- The **Role** tag should have a key of **CitrixXenApp**
- Use the existing Key Pair and Security Group

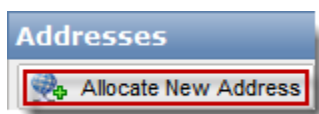
## Configuring an Elastic IP Address

An Elastic IP address is a static IP that can be assigned to any single instance on the fly. It's best used in connection with an domain A record.

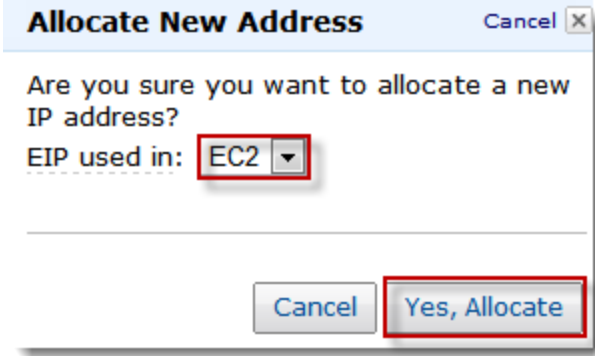
To create an elastic IP, navigate to the Amazon EC2 tab in Amazon AWS. On the left tree select **Elastic IPs** from the **Network & Security** section.



Select **Allocate New Address**



Define where you want to allocate the new Elastic IP. Select **EC2** from the drop down menu and then select **Yes, allocate**.

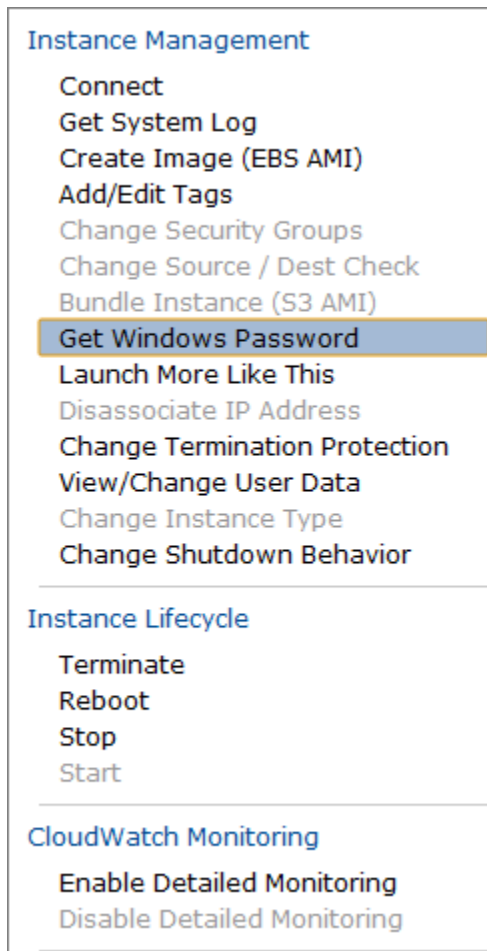


Right-Click on the new Elastic IP and select **Associate**. Select the instance you wish to associate it with.

Voila! You now have a static IP assigned to that instance. You can then use your DNS provider to configure an A record (e.g. ec2lab.domain.com)

## Connecting to the Domain Controller Instance

On the Instances page, right-click on your Domain Controller Instance. Select **Get Windows Password**.



Select your **Key pair** file (\*.pem) and select **Decrypt Password**.

**Retrieve Default Windows Administrator Password** Cancel X

To access this instance remotely (e.g., Remote Desktop Connection), you will need your Windows Administrator password. A default password was created when the instance was launched and is available encrypted in the system log.

To decrypt your password, you will need your key pair for this instance. Browse to your key pair, or copy & paste the contents of your private key file into the text box below, then click **Decrypt Password**.

 **Instance:**

\* Required field

**Encrypted Password:**

**Key Pair:**

Note: You were prompted to download and save this when you created your key pair.

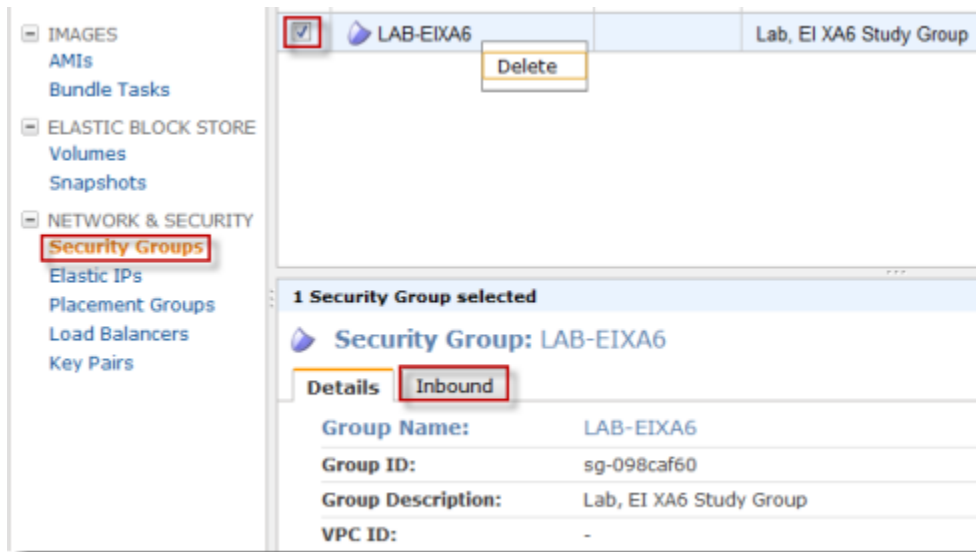
**Private Key\*:**

|



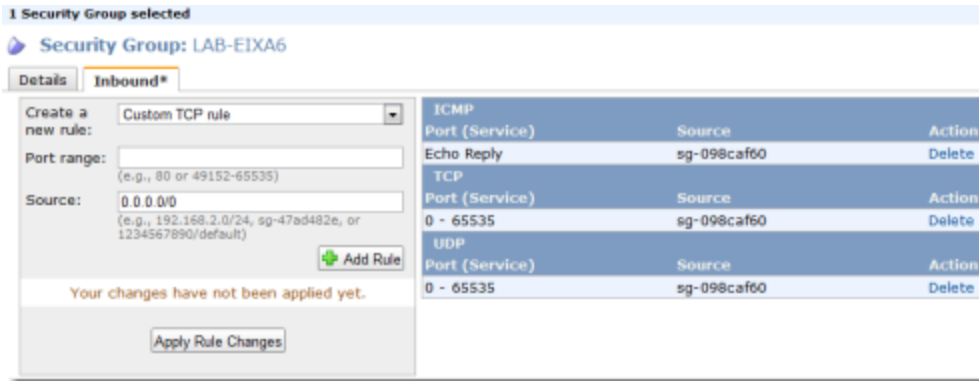
Make note of the decrypted password.

On the left navigation tree, select **Security Groups**. Click on the **Security Group** you created during the instance creation wizard. The bottom pane will now have 2 tabs. Make note of the **Group ID** and then select **Inbound**.



Create the following rules using the **Group ID** as the **Source**.

- All TCP
- All UDP
- All ICMP

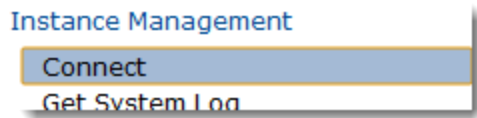


Next, add the following rules with a source of **0.0.0.0/0**

- HTTP
- HTTPS
- RDP
- TCP 2598
- TCP 1494

Select **Add Rule** after each of them, then select **Apply Rule Changes**.

Go back to the **Instances** page, and right-click on your Domain Controller and select **Connect**.



Select **Download shortcut file** and save the \*.rdp file wherever you like then click **close**.



You may now use **Remote Desktop Connection** and the credentials provided to connect to your instance.

## Configuring the Domain

Follow the following written steps to configure your domain controller:

1. Change your password to something easy to remember. I also recommend changing the default Administrator user account name to something unique.
2. Start > All Programs > EC2ConfigService Settings
3. Uncheck **Set Computer Name...**
4. Click **Apply**.
5. Reboot the Instance.
6. Reconnect to the instance.
7. Launch **Windows Server Manager**.
8. Select **Change System Properties**.
9. Change the name of the system to **EI-DC-01** or the like.
10. Click **Apply** and reboot the instance.
11. Reconnect to the instance.
12. Launch **Windows Server Manager** again.
13. Select **Roles**
14. Select **Add Roles**
15. Click **Next**

16. Select **Active Directory Domain Services**
17. Click **Next** twice
18. Click **Install**
19. Run **dcpromo.exe**
20. **Create a new domain in a new forest.**
21. Select an FQDN of your choice. We'll use **EC2.local**
22. Select **Windows Server 2008 R2** functional level.
23. Select **DNS Server**, click **Next**.
24. Allow the computer to use an IP address assigned via DHCP.
  - a. For the purposes of this lab, it will do just fine.
25. Click **Yes** to continue.
26. Click **Next**.
27. Set a password of your choice.
28. Click **Next**.
29. Click **Next** after verifying the settings.
30. Select **Reboot on completion**.
31. Your domain controller is now configured.

## Installing Citrix XenApp

Retrieve and decrypt the password for EI-XA-01 as you did for the domain controller instance. Download the \*.rdp file as well and remote to the XenApp instance.

Prevent EC2 from changing the computer name at startup and reboot the instance.

Change the computer name to EI-XA-01 and reboot the instance.

Add EI-DC-01 as the Primary DNS Server on EI-XA-01. Add 8.8.8.8 as the Secondary DNS Server.

Join the EC2.lab domain and reboot the instance.

Visit <http://citrix.com>

Log-in or create a new account.

Select the **Downloads** page.

On the dropdown menu, select **Citrix XenApp**



Scroll down to **Product Software** and select the product and version you wish to use. We're going to select **XenApp 6.0 Platinum Edition**.

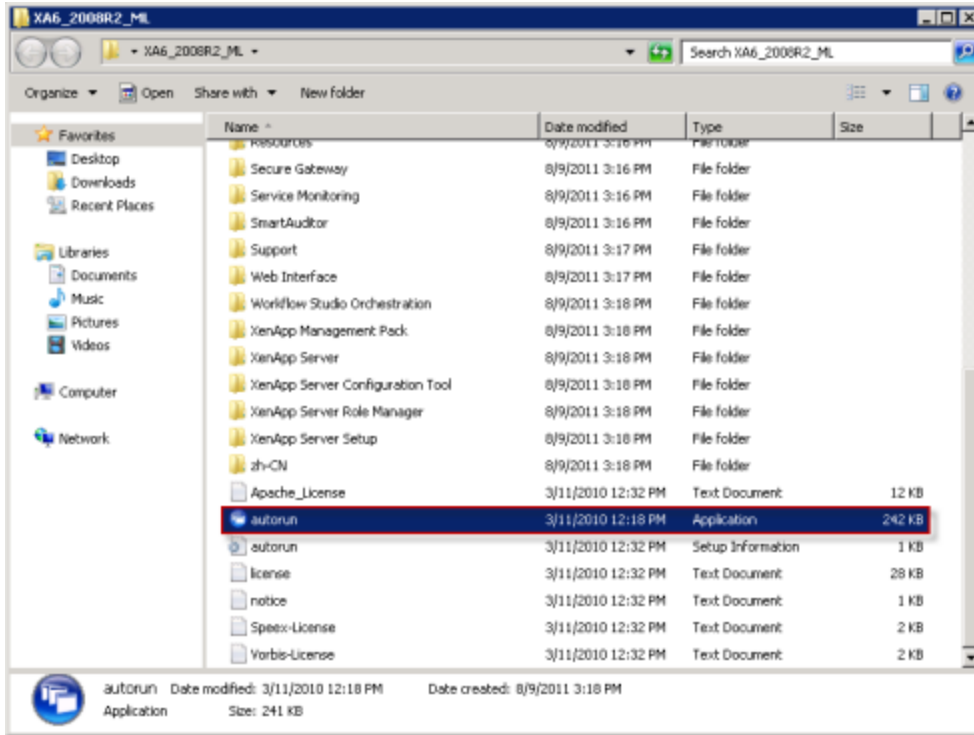


Select the **.zip** version of the media for easy extraction, and download the software.

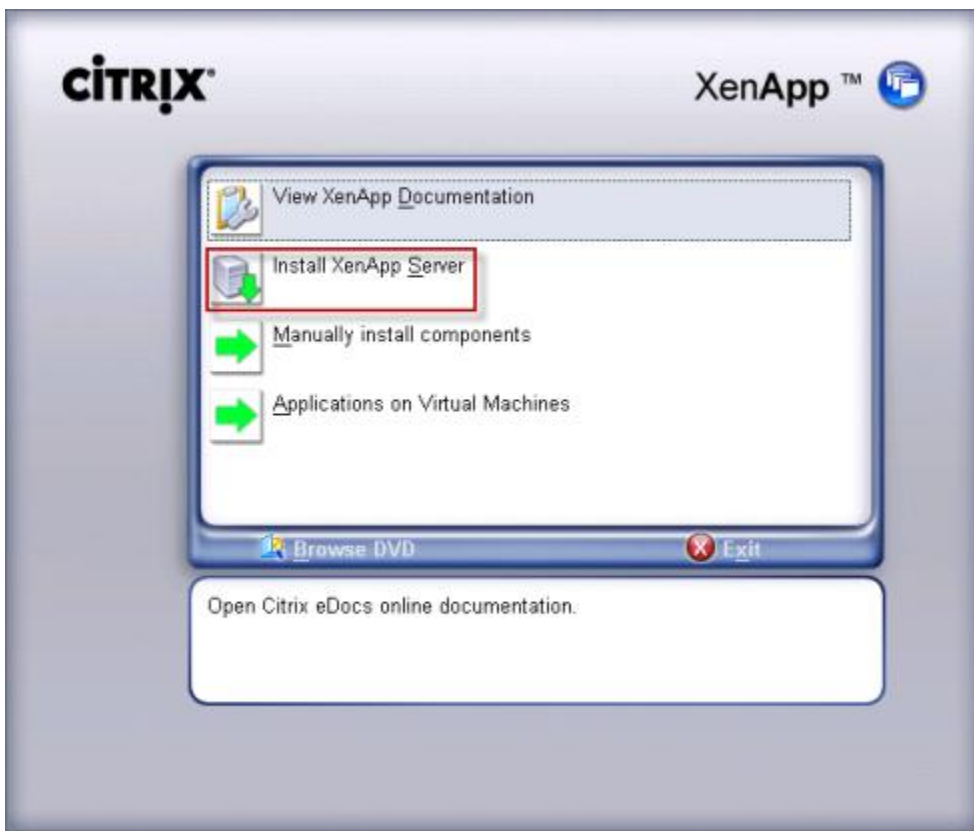


When the download is complete, extract the **.zip** file to a folder on EI-XA-01 (XenApp Server)

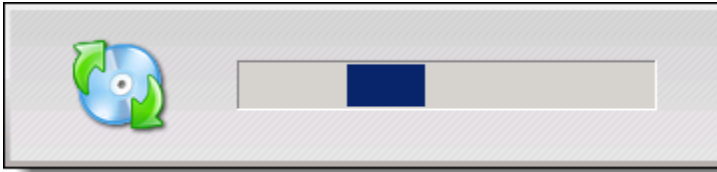
Run **autorun.exe**



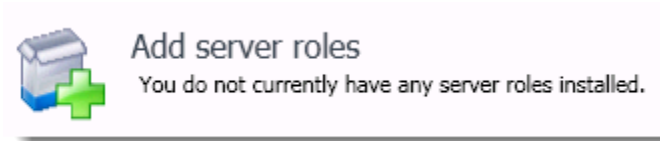
Select Install XenApp Server



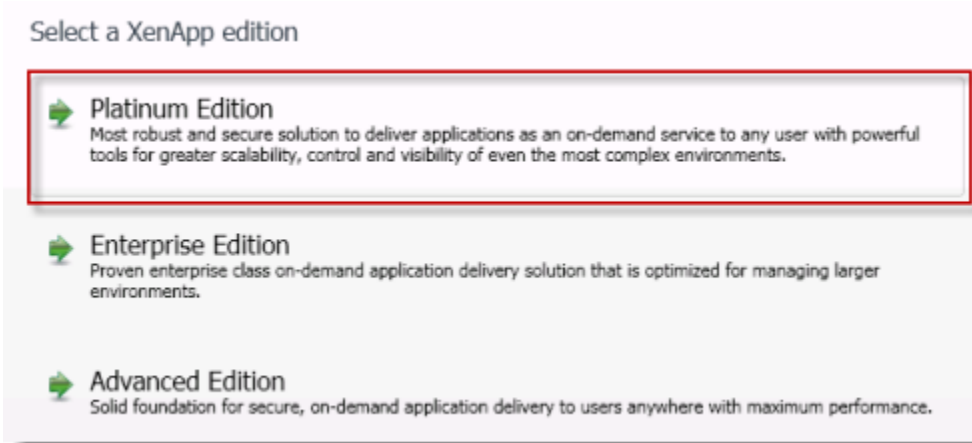
Setup will now load.



Select **Add Server Roles**.

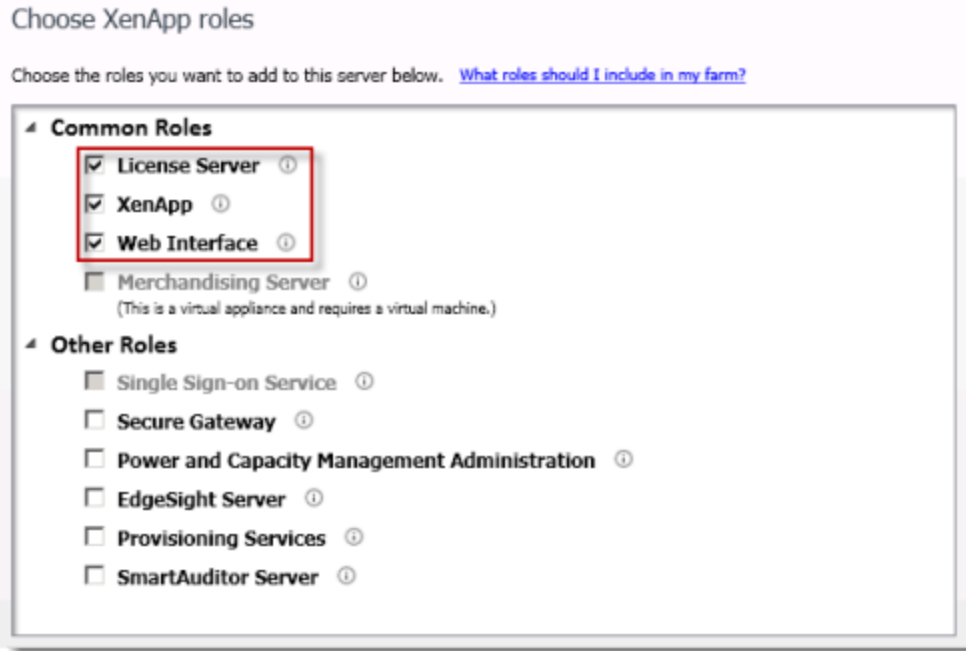


Select the edition you wish to use. We're using **Platinum Edition**.



Read the EULA, click **Agree**.

Select the following roles and click **Next**.

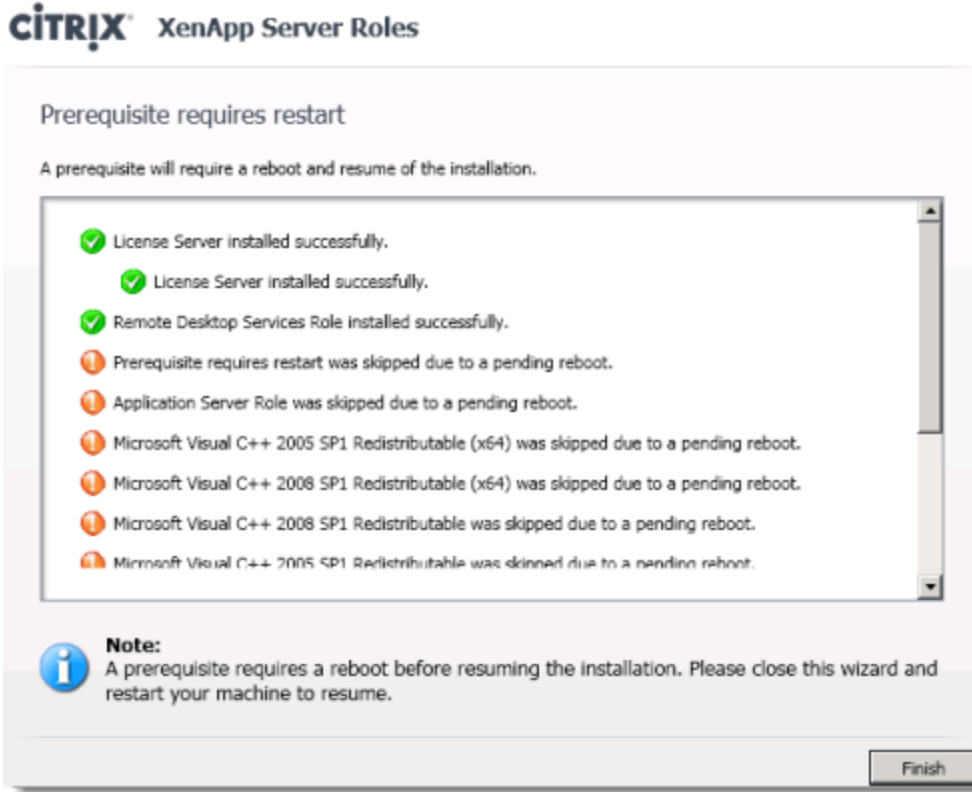


Leave the **Role Subcomponents** as they are and click **Next**.

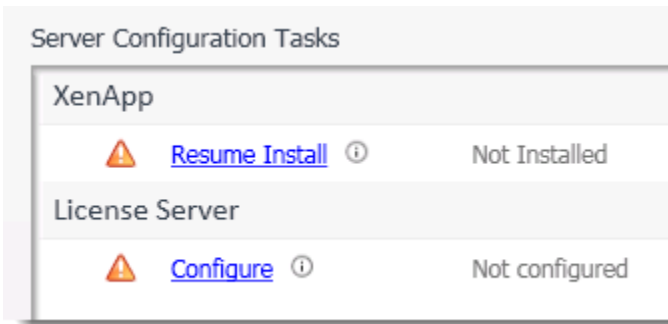
Click **Next** again.

Verify your settings and click **Install**.

The server will need to be rebooted throughout the install process. Each time it reboots, relaunch the **Role Manager** and resume the process.

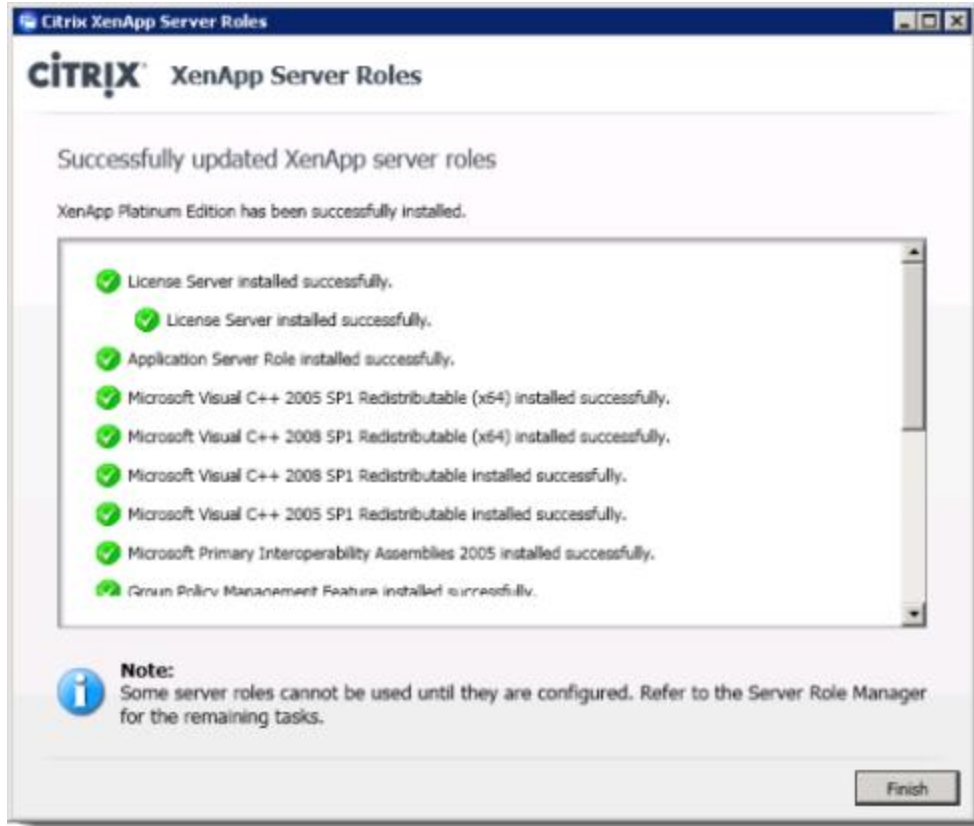


After rebooting the instance, select **Resume Install** to continue.



Select **Install** again to continue the roles installation.

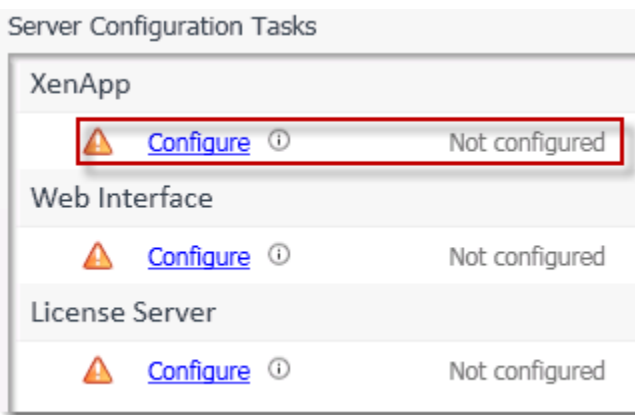
The installation is complete when you see the following screen.



Click **Finish**.

## Configuring XenApp 6.0

On the XenApp Server, launch the **Server Role Manager** and select **Configure** under XenApp.



Select **Create a new server farm**

### Choose a task to perform



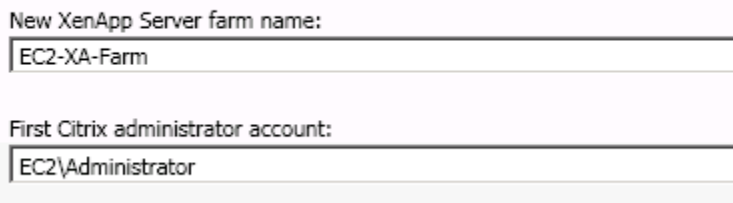
 **Create a new server farm**  
Use this option to create a new server farm and then add this server to the farm.

 **Join an existing server farm**  
Use this option to add this server to a server farm that already exists.

**Choose a name** for your new Citrix XenApp Server farm and the **First Admin Account**. By default, the user you are installing XenApp as is the First Citrix administrator account. Click **Next**.

*You'll need to log in as this user later to configure the farm via the Citrix Delivery Services Console.*

### Enter basic information about the new server farm



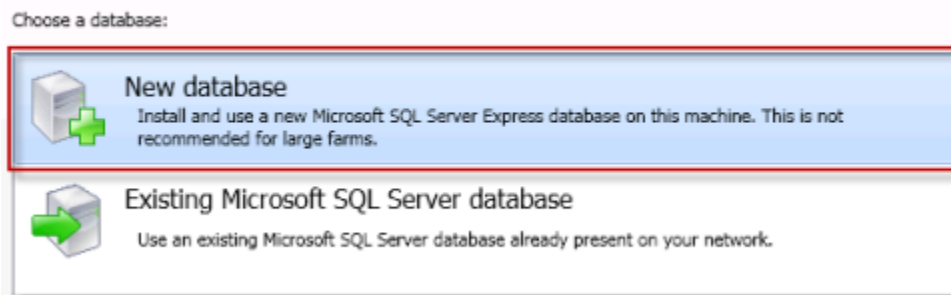
New XenApp Server farm name:  
EC2-XA-Farm

First Citrix administrator account:  
EC2\Administrator


Select **I will enter the license server information later** as we have not yet configured the Licensing Server. Click **Next**.


Select **New Database** and then click **Next**

### Choose a database for the new server farm

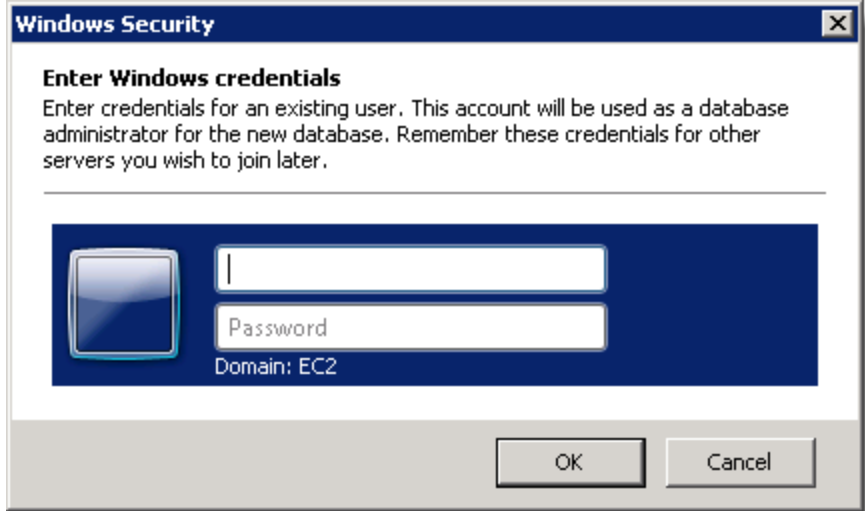


Choose a database:

 **New database**  
Install and use a new Microsoft SQL Server Express database on this machine. This is not recommended for large farms.

 **Existing Microsoft SQL Server database**  
Use an existing Microsoft SQL Server database already present on your network.

You will be prompted for Windows credentials. Enter the Domain Administrator or create a service account in Active Directory Users and Computers. Enter this and then select **OK**.



Once entered, select **OK**, then verify the information and click **Next**.

Next, Shadowing should be configured. It's suggested to **Allow Shadowing of user sessions on this server**. Select other options as you wish, then click **Next**.

*Even if you don't want shadowing, allow it during the install and then restrict it with policies. You will be unable to allow shadowing once you have prohibited it in this step.*

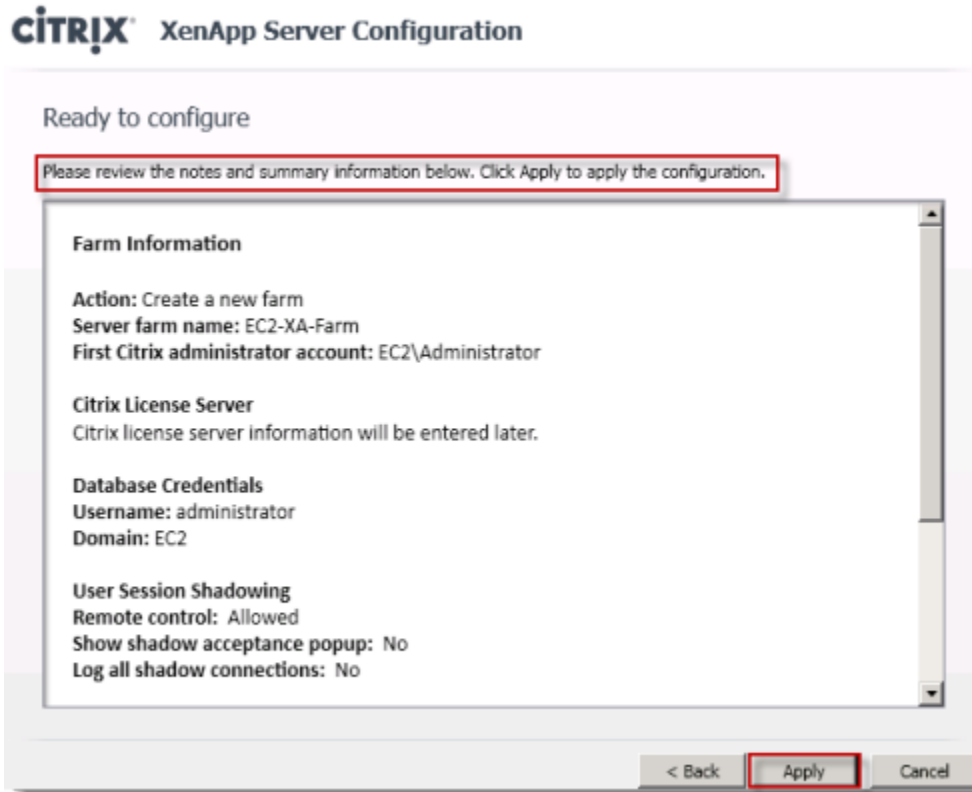


You will now be presented with the **Advanced Server Settings** page. Here you can customize Zone settings, XML Service settings, Web Interface URL, and Remote Desktop Users. For this example, we'll leave the Zone configuration to **Default**, change the **XML Service Port** to **8080**, leave the **Online Plug-in** blank, but modify the **Remote Desktop Users** group by selecting **Authenticated Users**. After specifying this, select **Next**.

## Remote Desktop Users

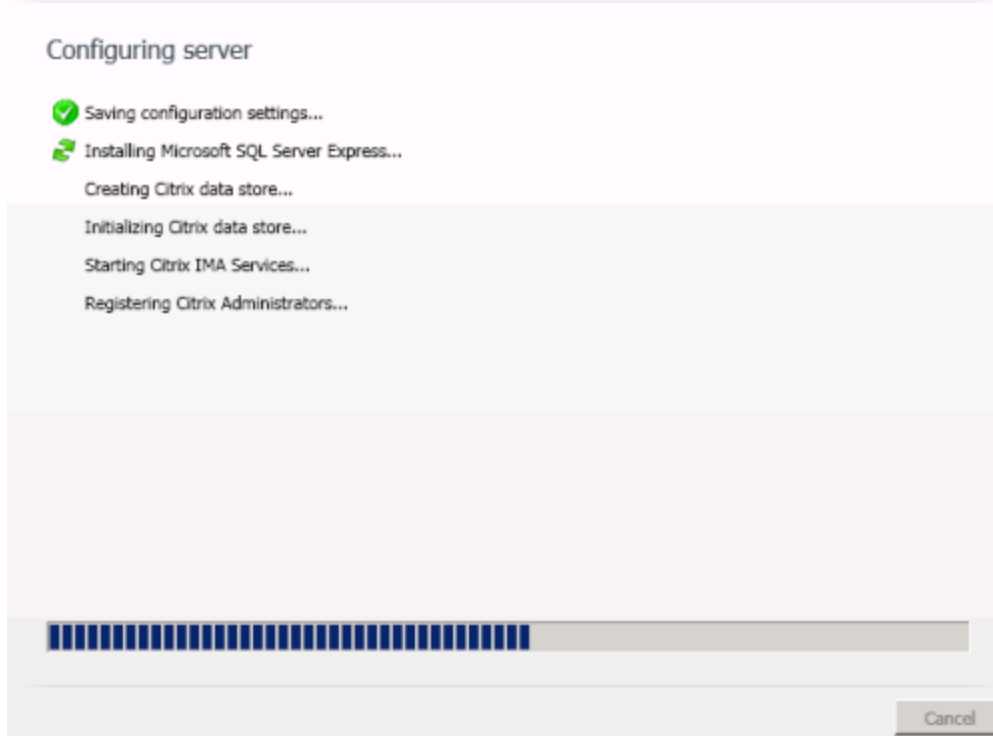
- Add Anonymous users
- Add the list of users from the Users group
- Add the Authenticated Users

Verify the settings are correct, and then select **Apply**.

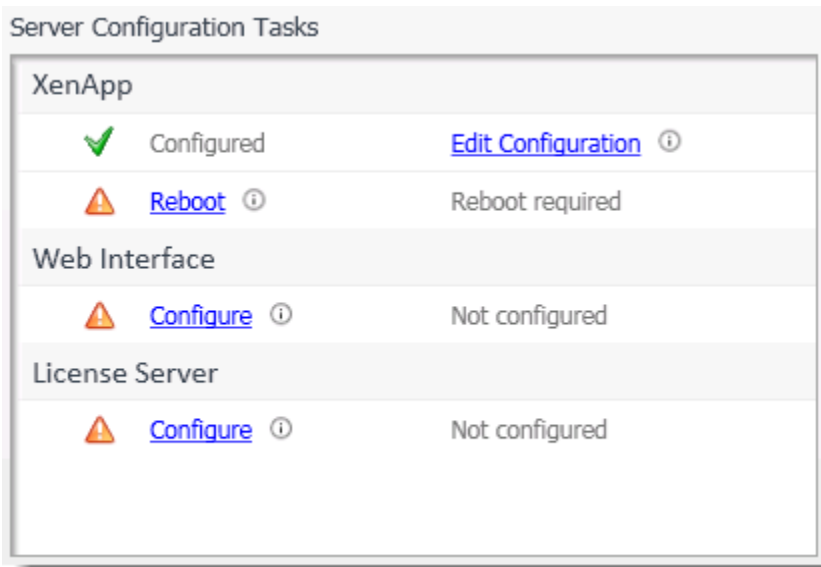


The Role Manager will now configure XenApp...

## CITRIX® XenApp Server Configuration



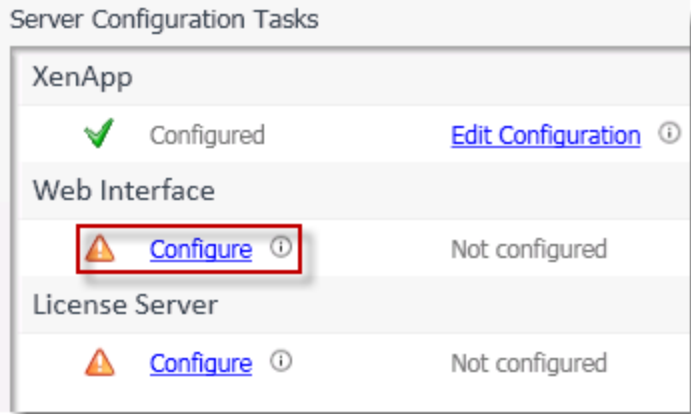
Once complete, **reboot** the XenApp instance.



## Configuring the Web Interface

Once the instance has rebooted, we can now configure the Web Interface.

To do this, select **Configure** next to Web Interface on the **Role manager**.



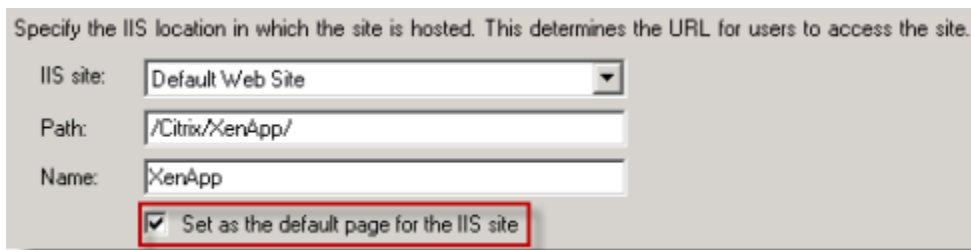
The Web Interface Management Console will be launched.

For this lab, we will configure a **XenApp Web Site** rather than a **XenApp Services Site**. This means users will be required to launch a browser and use the Web Interface to use published resources and content.

To create a new site, right click on **XenApp Web Sites** and select **Create Site**.

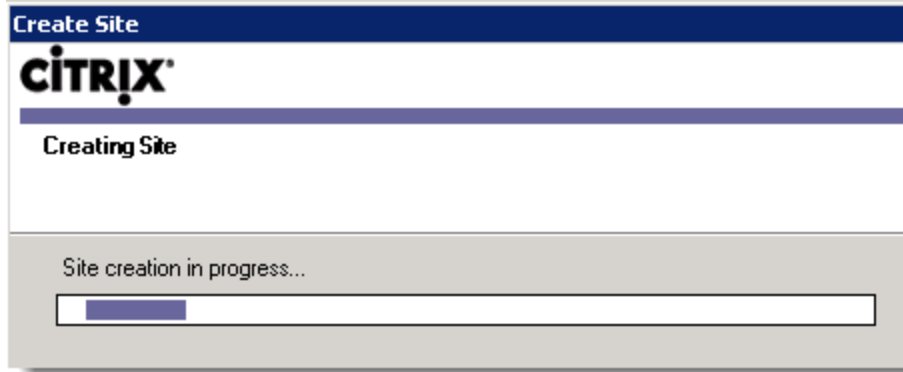


You can leave the default IIS site, Path and Name, but I recommend setting this site **as the default page for the IIS site**. Then click **Next**.



Authentication will take place **At Web Interface**. Select that option from the drop down and select **Next**.

Verify the settings are correct, then select **Next**.



The site will now be created, you may select **Configure this site now** and then click **Next**.

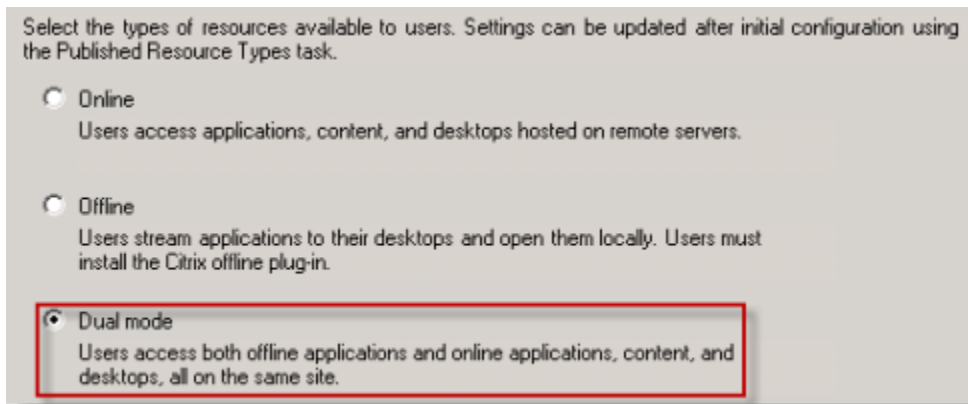
Specify a **Farm Name** this can be anything you like. Add the name of the XenApp Server – in our case **EI-XA-01**. The XML Service Port should be configured as HTTP/8080. Click **Next**.

Leave the **Authentication Method** as **Explicit** and then click **Next**.

You can **Allow any domains** or **Restrict Domains to the following** and then specify the domain you wish to allow. For this lab, we'll leave it as **Allow any domains** and then click **Next**.

Select the **Logon Screen Appearance**. We'll leave it as **Minimal** and then click **Next**.

Select **Dual mode** for the **Published resource type** and then click **Next**.

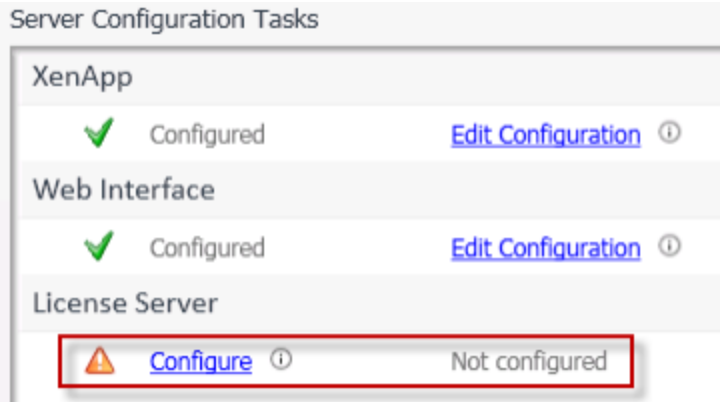


Verify the settings, and then click **Finish**.

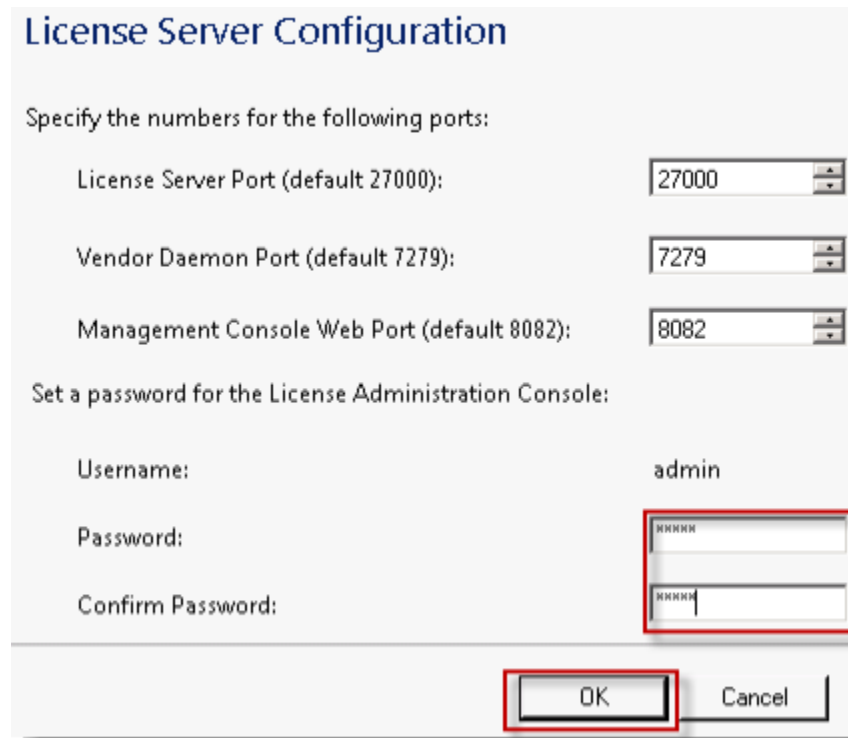
You can now access the web interface site from <http://<xahostname>/> or you could assign the Elastic IP created earlier to the XA Instance and access it externally using that IP or an A record you created.

## Configuring the License Server

Launch the **Citrix XenApp Server Role Manager** from the start menu on the XenApp instance, then select **Configure** under the **License Server** section.



You can leave the **default port settings**, but configure a **password** for the Admin **account** as shown below.



If you have license files to register, you can place them in **c:\program files (x86)\citrix\licensing\myfiles\** and then run **Reread License Files** in the License Management Console.

Next, open the **Citrix Delivery Services Console**.

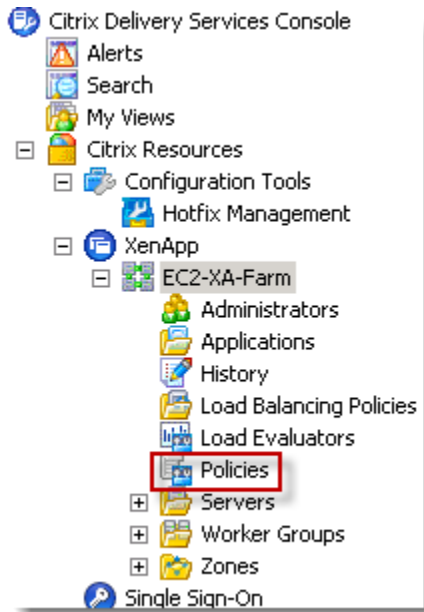
You'll be prompted with **Configure and run discovery**. Select **Skip this screen in the future** then select **Next**.

Uncheck **Single Sign-On** and click **Next**.

Select **Add Local Computer** then select **Next**, then **Next** again, then **Finish**.

Expand **Citrix Resources > XenApp > Farm Name**

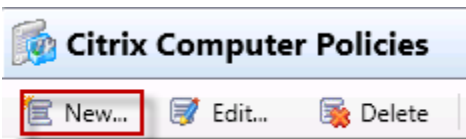
Select **Policies**



Select the **Computer** tab.



Select **New...** from **Citrix Computer Policies**

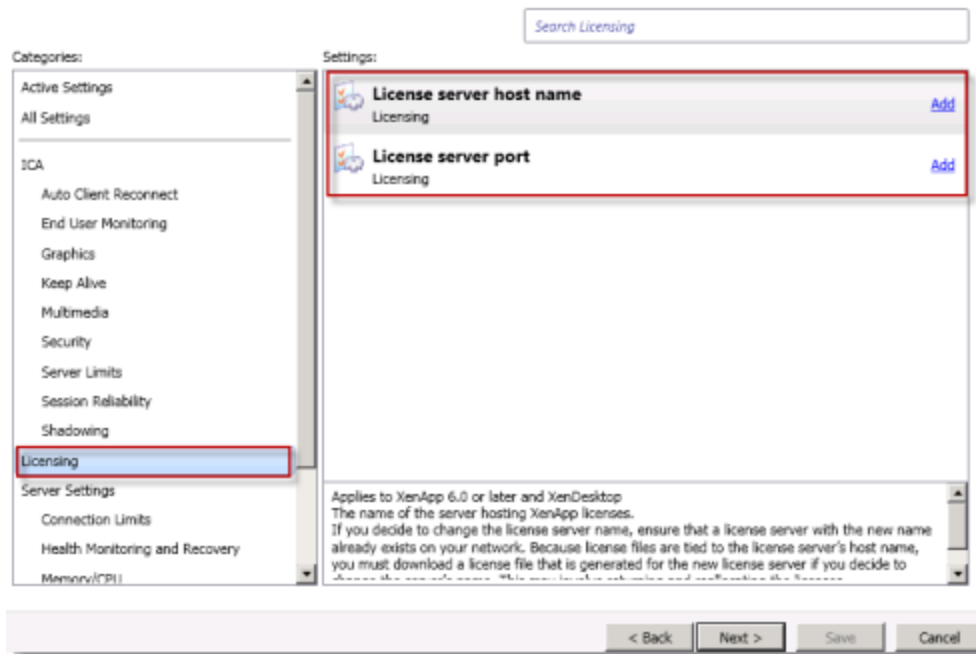


Name the policy **License Server Settings** and then click **Next**.

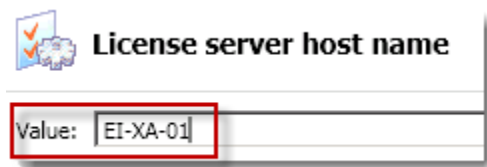
From the **Categories**, select **Licensing**.

Click **Add** next to **License server host name**.

Choose the settings that will be applied



Set the **Value** to **ei-xa-01** or the name of your XenApp instance, and then select **OK**.



You can set the port, but you should leave it as the default 27000 unless you changed it earlier in the configuration.

Click **Next**.

Select which servers you wish to apply the policy (all available) and then continue on with the wizard until it completes.

## Summary

You are now able to publish resources as you wish!

We've covered:

- Registering for Amazon AWS
- Creating EC2 Instances and Networking them together
- Creating a Domain
- Installing Citrix XenApp 6.0 and related roles

Let me know if you have any questions or find any inaccuracies in the guide. I hope this helped get you started!