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Exchange 2007 CCR to Exchange 2010 HA Migration with (HA Proxy)

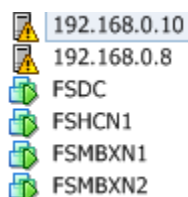
Hello and Welcome to All who are reading this page. Many administrators out there are looking for guides to migrate their current CCR (Exchange 2007) environment to High Availability in Exchange 2010 SP1. In this article of mine, I will be covering the complete migration steps from Exchange 2007 Environment to Exchange 2010 environment with Existing Hardware. At the end, I will be showing how to configure the Exchange 2010 CAS Array with the help of the free Load Balancer (HAPROXY). Even though a good article is present [here](#), I thought that if you will find everything in one place will be a bit stress release.

First of all, a brilliant article series is written by Mr. Henrik Walther about how to implement the CCR Cluster which can be found [here](#), please go through this article series and you will be able to implement and understand the CCR operation.

The HAProxy free OVF for the VMware Environment can be found [here](#), download this and extract the zip file, it will give you two files, one will be with the name ([Exchange 2010 HAProxy Virtual Load Balancer.ovf](#)) and the second file will be with the name of ([Exchange 2010 HAProxy Virtual Load Balancer.vmdk](#)). Once extracted you have to import these files into your VMware Infrastructure I will show you how.

My whole Lab Environment is based on VMware ESXi 5.0, so if you would like to have your environment with VMware as well, you can download the Free version of ESXi 5.0 available on the VMware download site. You will have to register once (free registration) and download the .iso file. A license key will be emailed to your provided email address.

First of all let me show you my Environment.



This is my current environment, with 2 ESXi hosts and 4 VM's. Let me tell you the Roles installed on each machine.

1. FSDC – Active Directory Server (Windows 2008 SP2)
2. FSHCN1 – HUB Transport and Client Access Server. (Windows 2008 SP2)
3. FSMBXN1 and FSMBXN2 – The Mailbox Servers. (CCR CLUSTER). (Windows 2008 SP2)

I will be upgrading the existing environment to Exchange 2010, but now you will think that I don't have a second Exchange 2010 HUB\CAS Server, so how will I maintain the HUB\CAS uptime. We need to add a new virtual machine in our environment with Windows 2008 R2 SP1, join it to the domain, and we will install the HUB\CAS Role of Exchange 2010 SP1 on this VM.

Before installing the role of Exchange 2010 HUB\CAS we have to prepare the active directory by issuing following commands.

Setup /preparead, to run this command you mount the DVD of Exchange 2010 on the Domain controller or our newly created EX2010HCN1 VM. I ran it on the EX2010HCN1 machine and the output is as follows:

```
review the license terms, please go to
http://go.microsoft.com/fwlink/?LinkId=150127&clid=0x409/
Press any key to cancel setup.....
No key presses were detected. Setup will continue.
Preparing Exchange Setup

    Copying Setup Files                                COMPLETED

No server roles will be installed

Performing Microsoft Exchange Server Prerequisite Check

    Organization Checks                                FAILED
    The Active Directory Schema is not up-to-date and Ldifde.exe is not install
ed on this computer. You must install Ldifde.exe by opening Windows Powershell,
running 'Import-Module ServerManager', then running 'Add-WindowsFeature RSAT-ADD
S'. Alternately you can restart setup on a domain controller.

    The Active Directory needs to be prepared for Exchange Server and Ldifde.ex
e is not installed on this computer. You must install Ldifde.exe by opening Wind
ows Powershell, running 'Import-Module ServerManager', then running 'Add-Windos
Feature RSAT-ADDS'. Alternately you can restart setup on a domain controller.

The Exchange Server setup operation didn't complete. More details can be found
in ExchangeSetup.log located in the <SystemDrive>:\ExchangeSetupLogs folder.

Exchange Server setup encountered an error.

D:\>_

Administrator: Windows PowerShell Modules
PS C:\Users\administrator.FS>
PS C:\Users\administrator.FS> Import-Module servermanager
PS C:\Users\administrator.FS> Add-WindowsFeature RSAT-ADDS
WARNING: [Installation] Succeeded: [Remote Server Administration Tools] AD DS Snap-Ins and
Command-Line Tools. You must restart this server to finish the installation process.
WARNING: [Installation] Succeeded: [Remote Server Administration Tools] Server for NIS Tools. You
must restart this server to finish the installation process.
WARNING: [Installation] Succeeded: [Remote Server Administration Tools] Active Directory module for
Windows PowerShell. You must restart this server to finish the installation process.
WARNING: [Installation] Succeeded: [Remote Server Administration Tools] Active Directory
Administrative Center. You must restart this server to finish the installation process.

Success Restart Needed Exit Code Feature Result
-----
True      Yes          Succes... {AD DS Snap-Ins and Command-Line Tools, Se...
```

As you can see, that the status is failed, it failed because, this machine is not a domain controller and to update the schema it needs the Ldifde.exe which can only be achieved by adding the feature RSAT-ADDS as shown in the powershell below.

After you have installed the required role and restarted the machine, run the command again and this time it should complete. Once this is done, now is the time to run the setup for Exchange 2010 HUB\CAS Server installation on our Windows 2008 R2 machine. But before you can start the Exchange 2010 Installation you have to (MUST) upgrade all the Exchange 2007 Servers to SP2 at least, in my case I will be upgrading all the Servers to SP3. So lets have a look at the process of upgrading the Exchange 2007 Servers to SP3. A good article on this is listed [here](#) by Matt Ellis. But will be writing about some errors also which I faced during the Upgrade. These errors are very common and many times my Colleagues also face them so I thought of listing them down.

Exchange 2007 HUB\CAS Upgrade to SP3

So now we have to install SP3 on our Exchange 2007 HUB\CAS Server. This can take upto 1 hour, depending on the machine you are working on. In my case it took about an hour.

NOTE: Once the installation is completed, you might get an error on the Finalization part; the error could be on MExchange Transport Service not coming to running state. (This happens mostly when you did not disable IPv6 at the beginning of the Exchange 2007 Installation). Good technique would be to follow the guide from Microsoft to Disable IPv6 or this, behavior is normal, you just have to restart the machine and the service will come to the running state. It just needs some time to discover the exchange environment. (As it is said, many problems from Microsoft are resolved after a reboot☺).

Exchange 2007 Mailbox Upgrade to SP3

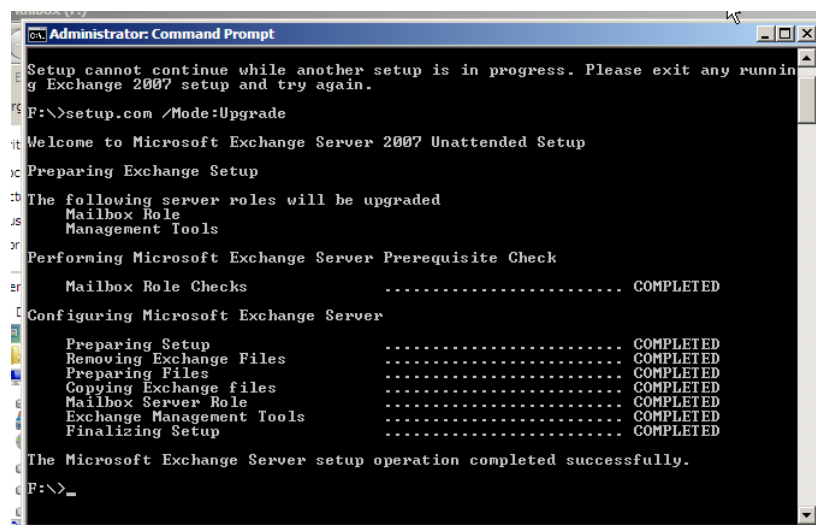
Before we start upgrading our Mailbox Servers, we have to make sure that the Clustered Mailbox is on the active node (FSMBXN1) in the cluster, as we will start working with Passive Node (FSMBXN2) Upgrade. This is to be done, because you don't want your management to call you and start complaining about the Email services un-availability.

Any normal IT Admin like me would just double click the setup.exe file and think that the upgrade can be done like that, (I am not sure about if it could be done through GUI), but the only way that I found out is through the command prompt.

Open the command prompt and type the drive letter name where the SP3 is extracted, in my case (d:) and press enter. The prompt will change and now you should be in your drive. Once there you should run the following command

Setup.com /Mode: Upgrade

The end result will be like this: (FSMBXN2-Passive Upgraded to SP3)



```
Administrator: Command Prompt
Setup cannot continue while another setup is in progress. Please exit any running Exchange 2007 setup and try again.
F:\>setup.com /Mode:Upgrade
Welcome to Microsoft Exchange Server 2007 Unattended Setup
Preparing Exchange Setup
The following server roles will be upgraded
Mailbox Role
Management Tools
Performing Microsoft Exchange Server Prerequisite Check
Mailbox Role Checks ..... COMPLETED
Configuring Microsoft Exchange Server
Preparing Setup ..... COMPLETED
Removing Exchange Files ..... COMPLETED
Preparing Files ..... COMPLETED
Copying Exchange files ..... COMPLETED
Mailbox Server Role ..... COMPLETED
Exchange Management Tools ..... COMPLETED
Finalizing Setup ..... COMPLETED
The Microsoft Exchange Server setup operation completed successfully.
F:\>_
```

Now is the time to shut down the Cluster. This can be achieved by going on the Passive Node (FSMBXN2) which was just upgraded and issuing the following command from the exchange PowerShell:

```
Stop-ClusteredMailboxServer -id "YOURCMSNAME" -StopReason "SP3 Upgrade Activity"
```

You can get the name of your CMS name by typing the following command:

```
Get-clusteredmailboxserverstatus
```

Once you run the Stop Command you will get a message to confirm to perform the action, just enter Y and press Enter.

After Stopping the CMS on the node, we have to move it to the Upgraded Node (FSMBXN2) (in offline mode Don't bring it online, it should come online automatically). To move the CMS from one Node to the other Node we have to run the following command:

```
Move-ClusteredMailboxServer -id "YOURCMSNAME" -TargetNode "Nodename" -  
move comment "SP3 Activity"
```

Press Yes at the warning.

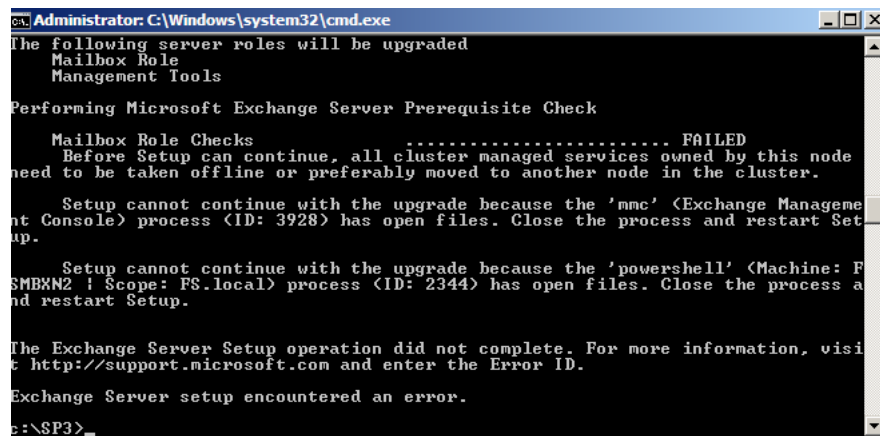
Now, our CMS is on the Upgraded Node (FSMBXN2) and we have to upgrade our CMS we can achieve this by issuing the following Command:

Setup /UpgradeCMS

In my environment it took around 15 minutes and after this the Cluster was online on FSMBXN2.

Now we have to upgrade the Second node (FSMBXN1) which was active. Again I issued the same command (Setup /mode:upgrade). It upgraded my node and then after the upgrade I had an error.

Note: During the upgrade of the second node in CCR your upgrade might fail and you will get error like this:



```
Administrator: C:\Windows\system32\cmd.exe
The following server roles will be upgraded
  Mailbox Role
  Management Tools
Performing Microsoft Exchange Server Prerequisite Check
  Mailbox Role Checks ..... FAILED
  Before Setup can continue, all cluster managed services owned by this node
  need to be taken offline or preferably moved to another node in the cluster.
  Setup cannot continue with the upgrade because the 'mnc' (Exchange Manage
  ment Console) process (ID: 3928) has open files. Close the process and rest
  art Setup.
  Setup cannot continue with the upgrade because the 'powershell' (Machine: F
  SMBXN2 ! Scope: FS.local) process (ID: 2344) has open files. Close the pro
  cess and restart Setup.
The Exchange Server Setup operation did not complete. For more information, vi
  sit http://support.microsoft.com and enter the Error ID.
Exchange Server setup encountered an error.
C:\SP3>
```

Don't worry, just close the exchange management console if you have that opened and the exchange management shell as well and then re-run the upgrade. If after closing the exchange management console and the Shell, you still get the error you have two options here:

- i. Either move the Quorum Owner by command to the Upgraded Node.
- ii. Or restart the machine that you are about to upgrade, this restart will automatically move the Quorum owner to the upgraded Node. (Easy and effective☺).

Installing Exchange 2010 SP1 HUB\CAS after Upgrading Exchange 2007 to SP3

Insert the Exchange 2010 DVD into the DVD drive. When the AutoPlay dialog appears, click **Run Setup.exe** under **Install or run program**. If the AutoPlay dialog doesn't appear, navigate to the root of the DVD and double-click Setup.exe. Alternatively, browse to the location of your Exchange 2010 installation files and double-click Setup.exe.

On the **Introduction** page, click **next**.

On the **License Agreement** page, review the software license terms. If you agree to the terms, select **I accept the terms in the license agreement**, and click **next**.

On the **Error Reporting** page, select **Yes** or **No** to enable the Exchange Error Reporting feature, and click **next**.

On the **Installation Type** page, select **Custom Exchange Server Installation**. For Exchange 2010 SP1, you can select to automatically install all required Windows roles and features for this server. If you want to change the installation path for Exchange 2010, click **Browse**, locate the appropriate folder in the folder tree, and then click **OK**. Click **Next**.

On the **Server Role Selection** page, select the **Client Access Role**, and **Hub Transport Role** click **Next**. The **Management Tools** option, which installs the Exchange Management Console and the Exchange Management Shell, will also be selected and installed.

Now, as our Exchange 2007 Environment is with SP3, and we have installed our Exchange 2010 HUB\CAS Server in the environment, is the time to uninstall the Exchange 2007 SP3 from the Passive Node and Evict this node from the Cluster and install a fresh Windows 2008 R2 on this Machine.

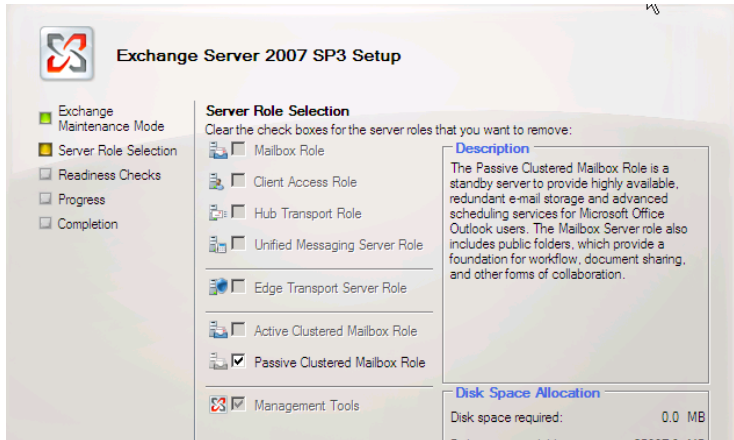
Uninstalling Exchange 2007 from the Passive node in the Cluster

For the purpose of this Uninstallation I have moved the Cluster on FSMBXN1 and our Passive node is FSMBXN2.

Uninstallation Steps are pretty much easy. You have to go to Control Panel > Program and Features > Click Exchange 2007 and Click Un-install. Uncheck all the items installed and after some time the Un-Installation will be complete.



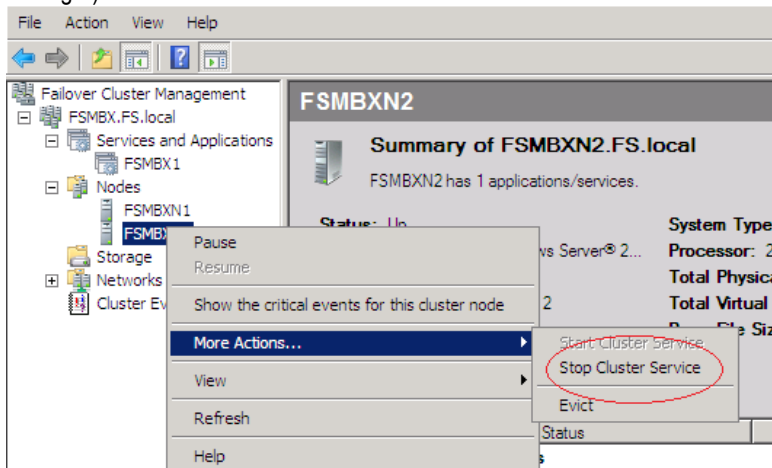
On the maintenance page click Next.



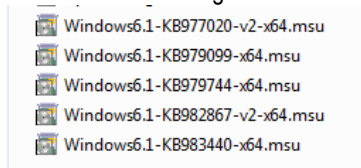
On the Server Role Selection page, uncheck the Passive Clustered Mailbox Role and Management Tools, and Click Next and then click Uninstall. The uninstallation will take some time and at the end this is what you will get.



Now we have to stop the cluster service and remove the Node from the Cluster (We have to do this from the Failover Cluster Manager). And then we can format the machine and install windows 2008 R2 on that.



Right-Click the node and first stop the cluster service and Right-Click again on the same node and click Evict. Then you can format the Machine and install Windows 2008 R2. Prepare the Newly formatted machine with all the Updates required for the installation of Exchange 2010 SP1. The updates required are as follows:



Installing Exchange 2010 SP1 Mailbox Server

We uninstalled Exchange 2007 from FSMBXN2 and formatted that Server with Windows 2008 R2. Now is the time to install Exchange 2010 Sp1 Mailbox Server. The steps are pretty simple:

1. Put the Exchange 2010 Sp1 DVD in the Server.
2. Run the Setup
3. Accept the License Agreement.
4. Select the only the Mailbox Role to be installed.
5. It will take around 20 to 30 minutes for the Installation (depending on the Machine you are working on).
6. Once done just click finish and Restart the Server.

Migrating from Exchange 2007 to Exchange 2010

To start the migration, we have to move the mailboxes from Exchange 2007 to Exchange 2010. This can be achieved from the following steps:

1. Go to Recipient Configuration
2. Click Mailbox, on the right hand side you will see the list of users.
3. Right Click the users one by one or Select all the users with Ctrl-A and then Right Click and select local move request.
4. When you will click local move request, you will be given option for the mailboxes where to move. Select the Mailbox which resides on Exchange 2010 Sp1. And go through the rest of the options.
5. If you feel that there might be some corrupted messages in the mailbox, you can set the count for the corrupted messages.

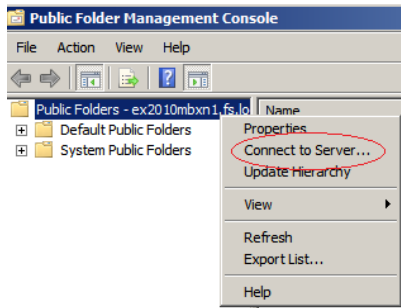
Once the mailbox move has been completed we have to do move the Offline Address Book Generation to this New Exchange 2010 Server. To do this:

1. Go to Organization Configuration.
2. Click Mailbox and on the right hand side you will see the tab for Offline Address Book.
3. You will see, Offline Address book listed there. Right Click on the address book and select Move.
4. Once you click Move, you will be given the options for Servers that you want to move the generation on. Select the Exchange 2010 Server.
5. After moving click Update.

Once the generation has been shifted to Exchange 2010 Server, now is the time to Replicate you Public Folders if any to Exchange 2010 Servers. To do this:

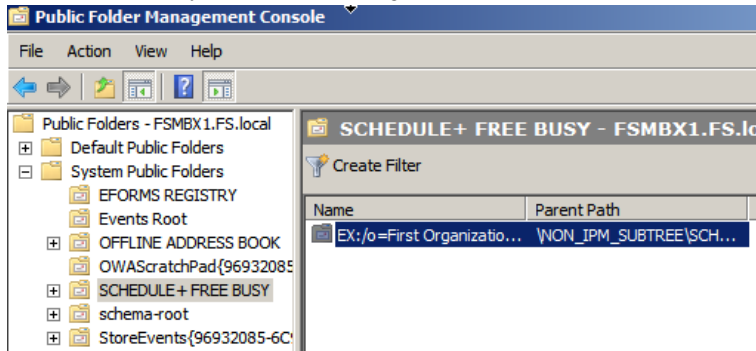
1. Click Tool book in Exchange 2010 Management Console
2. Double Click Public Folder Management Console and follow the pictures below

3.

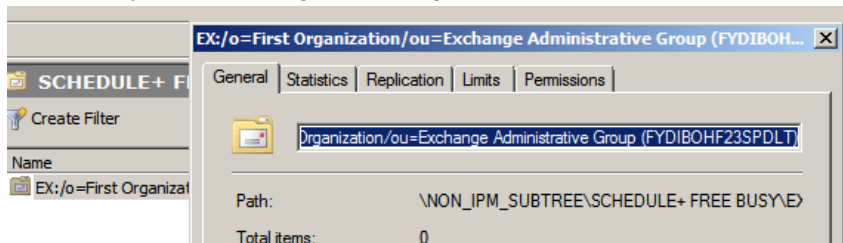


4. After clicking the connect server type the Name of the Exchange 2007 CCR Cluster (FSMBX1) and click connect.

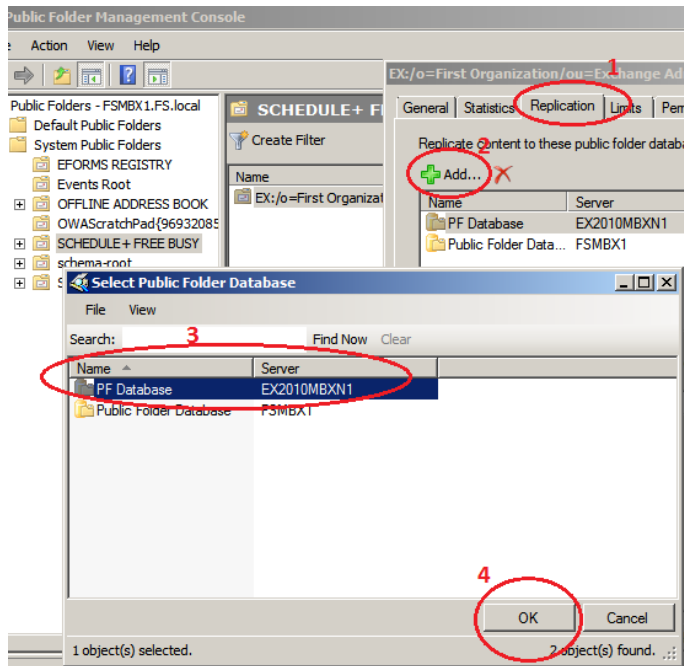
5. Once connected you will be on a page like below:



As I am not having public folders, my only concern is the Schedule + Free Busy information to be replicated to Exchange 2010. To do this Right click on the Folder being shown in the right hand console and click Properties, you will be brought to the page below:



Click on the Replication Tab and click ADD and then select the Exchange 2010 Mailbox Server Name:



Once done click Apply and click OK.

It's better if you follow the rest of the Article from this [Site](#), this article is written by Pete Long.

Now I am assuming that our Exchange Mailboxes have been migrated from 2007 to 2010 and are working fine. Now is the time to uninstall Exchange 2007 from our environment. So let's do that.

To uninstall Exchange 2007 from our Environment we have to go to our node FSMBXN1 and open the command prompt and issue the following command:

Setup /mode:uninstall or be specific as shown in the command prompt below

This will take some time and you will be getting the result as follows:

```

Administrator: Command Prompt
C:\Users\administrator. >cd \
C:\>cd C:\Program Files\Microsoft\Exchange Server\Bin
C:\Program Files\Microsoft\Exchange Server\Bin>setup.com /removeCMS /CMSName:

Welcome to Microsoft Exchange Server 2007 Unattended Setup
Preparing Exchange Setup
The following server roles will be removed
  Clustered Mailbox Server
Performing Microsoft Exchange Server Prerequisite Check
Configuring Microsoft Exchange Server
  Clustered Mailbox Server ..... COMPLETED
The Microsoft Exchange Server setup operation completed successfully.
  
```

Now, our uninstallation is complete and we can carry on to un join the Server from the domain and format it.

Once your new machine with Windows 2008 R2 is up and running we have to rename the machine as you like, join it to the domain and install all the necessary updates for the installation of Exchange 2010 SP1 and at the end install Exchange 2010 SP1 Mailbox role.

Now let me give you a brief of my Exchange 2010 Environment.

I have the following servers having Exchange 2010 Installed:

1. EX2010FSHCN1 (IP = 192.168.0.7)
2. EX2010FSHCN2 (Will be added later)
3. EX2010FSMBXN1 (Public=192.168.0.8 and Private=11.11.11.1)
4. EX2010FSMBXN2 (Public=192.168.0.9 and Private=11.11.11.2)
5. HAPROXY (Management IP=192.168.0.12 and Load Balanced IP=192.168.0.13)

Implementing DAG (Database Availability Group)

As we have finished installing Exchange 2010 SP1 Mailbox Role on the Second node as well, now is the time to create DAG (Database Availability Group). A good article from Mr. Henrik Walther is present at this [Site](#). Follow this article and you will have complete and better understand how DAG can be Implemented and Managed.

I will just be covering the steps of creating the DAG:

1. Under Organization configuration go to Mailbox.
2. When you have selected mailbox, on your right hand side, you will see, Database Availability Group Tab. Select this TAB.
3. Then you will see the option of New DAG on extreme right hand side. Click this.
4. When you will click the option, you have to type the Name of the DAG. Not necessary to type the Witness server and witness directory, as the setup will automatically locate a HUB\CAS Server and create the Directory in that. You can make sure of this, by going to the properties of your newly created DAG.
5. Now, we need to assign a Static IP Address for the DAG. This can be done by going to the properties of DAG and click the IP Address Tab and click ADD and type the IP address that you want to use for DAG.
6. Once that is done, you have to close the EMC or go back to Database TAB and refresh. Once refreshed, you have to add a Database Copy to the Second Member for the High Availability.
7. To add a database copy to the second server in the DAG, you have to right click the Database for which you want a second copy, and click Add Database Copy. The wizard will ask you for the Target Server, click browse and then select the server where you want the copy to be created.
8. The wizard will take some time to create the copy and once that is done, you are up with your Exchange Mailbox Servers and your mailboxes are on Full availability.

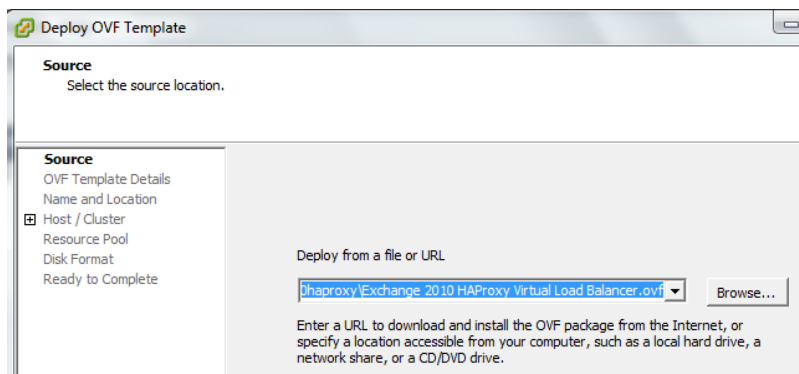
Installing HAProxy in VMware Environment

In the beginning of the article I have mentioned the links from where you can download the OVF file for VMware. If you have downloaded that, now is the time to add that OVF file into VMware Environment and finish our job.

Usually Client Access Servers High Availability is obtained by NLB (Network Load Balancing), But if we deploy HAProxy in our Environment, we don't have to create the CAS Array based on NLB. We just have to deploy the CAS Servers in our Environment and Add the IP Addresses of all the CAS Servers in the HAProxy Management and HAProxy will automatically load balance the CAS Servers.

After downloading the HAProxy OVF file, open the VSpere Client and connect to the ESXi Server where you want to import the VM. I have a VMware High Availability Cluster in my environment so I will be deploying the OVF in the cluster. Of Corse in the cluster also you have to choose on which ESXi Server I should be hosting the Machine.

Click File -> Deploy OVF Template



When you will click OVF Template

1. You have to browse to the location on your local machine where you have extracted the Zip file.
2. Once you are at the location click Next, Accept the license agreement and click Next.
3. Type the name of the Virtual Machine and click the Server where you want the Machine to be placed.
4. Then in one step it will ask you where to keep the VM files, you have select the Datastore where you want the VM to be. It will be better if you place it in a Volume accessible by all the hosts in a Cluster.
5. Select the Disk Format of the Storage, i selected thin format.
6. Click next and you are done.

Once the machine is imported you can power it on and follow this [video](#).

Once you start the machine you have to login with Username (root) and Password (setup). Login and configure the Management IP address, give the password for the user (admin). Give a load balanced IP Address and give the IP Address for the First CAS Server in the Site. Later when you will add more CAS Server you can add the IP Addresses of those CAS Servers as well.

