

# HOW EXCHANGE WORKS

MONDAY, 31 AUGUST 2009

## Upgrading Exchange 2007 CCR To SP2...

The steps for upgrading an Exchange 2007 CCR to SP2 is different from the procedure that we clustered servers. Check my [article](#) for upgrading non clustered exchange servers to SP2.

Note: The procedure to upgrade Exchange 2007 CCR is the same whether you have a CCR with pack, with SP1 or with SP1 and any update rollups.

You can only upgrade CCR nodes by using the shell. The command to be run is [Setup.com /mode:Upgrade](#) ([Setup /M: Upgrade in short](#)). You cannot upgrade CCR nodes by using the GUI.

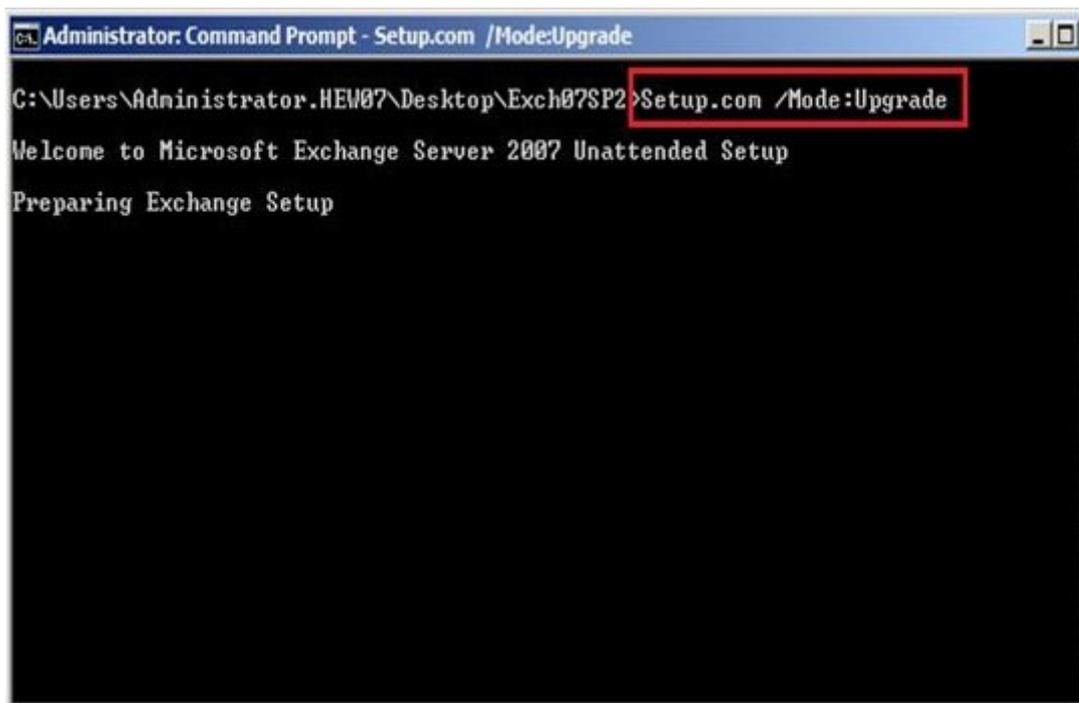
The process in a nutshell is to upgrade the passive node first, restart, move CMS to the passive the CMS which makes the node the active one & then upgrade the initial active node and restart.

My lab has two CCR nodes, CCR2 (active) and CCR1 (passive). The CMS name is MBX and wins the CCRCLUSTER. Both nodes have SP1 installed with Update Rollup 9. You don't have to delete them manually.

### 1. Upgrade The Passive CCR Node:

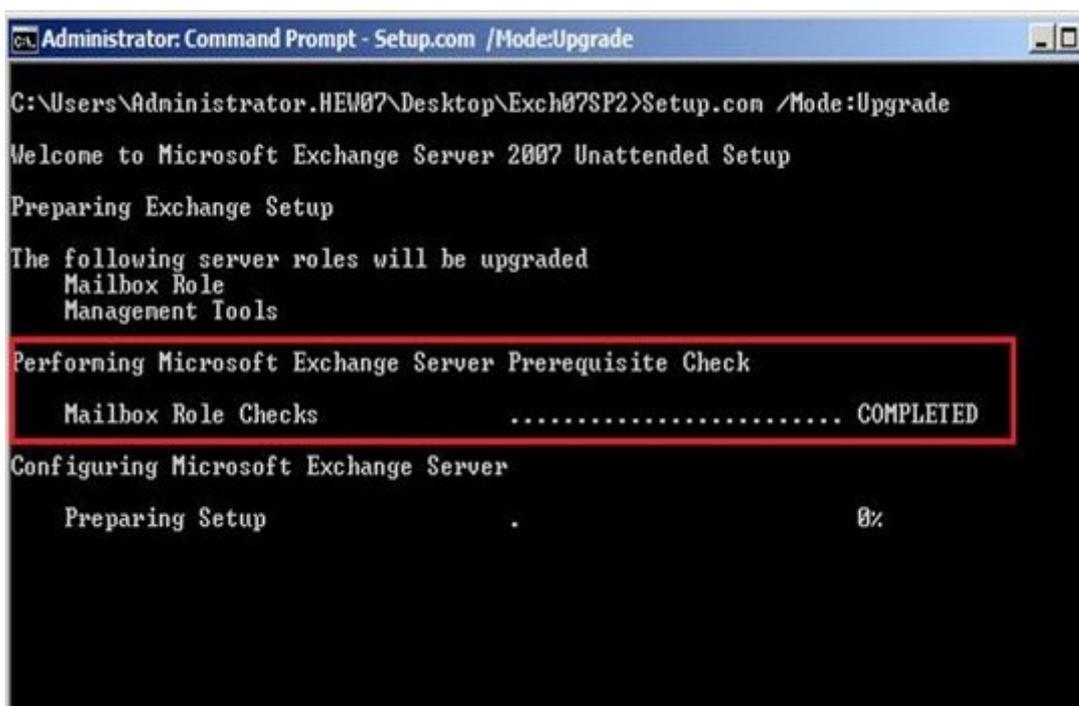
Log into the passive node (CCR1 in my case) with an admin account. Make sure to stop any mail services which are running on the server like MOM agents. You can also put the server in maintenance for 30 minutes so that email alerts doesn't fill your inbox. This is very important in a large organization will have a dedicated monitoring team.

Launch a command prompt window and navigate to the exchange 2007 sp2 installation directory. Run the command `Setup.com /Mode: Upgrade`



```
Administrator: Command Prompt - Setup.com /Mode:Upgrade
C:\Users\Administrator.HEW07\Desktop\Exch07SP2>Setup.com /Mode:Upgrade
Welcome to Microsoft Exchange Server 2007 Unattended Setup
Preparing Exchange Setup
```

Setup runs the exchange pre-requisites check for the mailbox role.

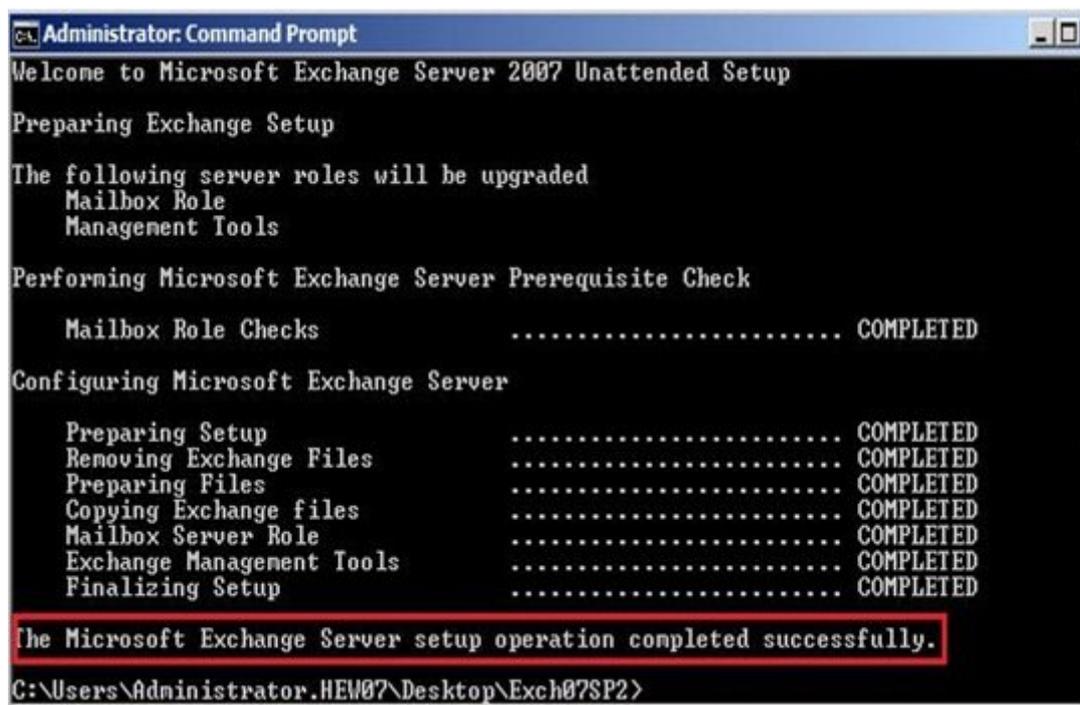


```
Administrator: Command Prompt - Setup.com /Mode:Upgrade
C:\Users\Administrator.HEW07\Desktop\Exch07SP2>Setup.com /Mode:Upgrade
Welcome to Microsoft Exchange Server 2007 Unattended Setup
Preparing Exchange Setup
The following server roles will be upgraded
Mailbox Role
Management Tools
Performing Microsoft Exchange Server Prerequisite Check
Mailbox Role Checks ..... COMPLETED
Configuring Microsoft Exchange Server
Preparing Setup . 0%
```

Once the checks are completed, the following happens in order.

- Preparing the SP2 setup
- Removing the exchange files on the system
- Starts copying files from the dvd / installation folder.
- Installs the mailbox server role.
- Installs management tools
- And finalize the setup.





```
Administrator: Command Prompt
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.
C:\Users\Administrator.HEM07\Desktop\Exch07SP2>
```

Restart the server once the command completes successfully.

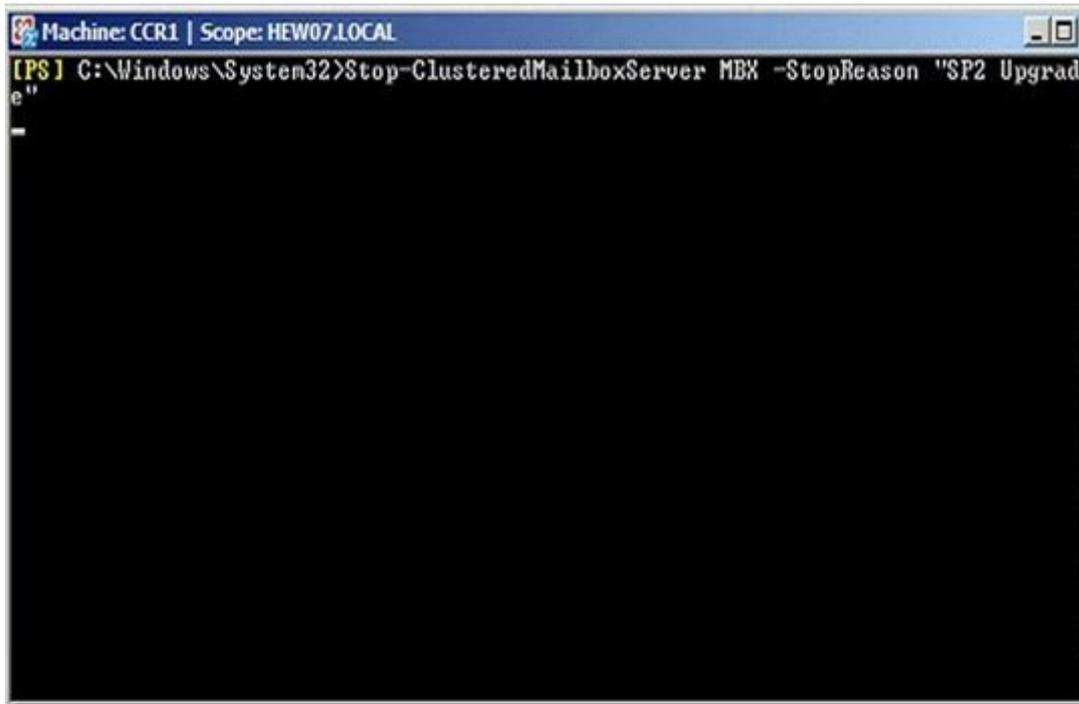
## 2. Upgrade the Clustered Mailbox Server

Once the passive server gets restarted and is back online, it will be running Exchange 2007 SP2; the active node is still online and serving the users. We need to upgrade the Clustered Mailbox now, before we upgrade the present active node.

Before upgrading the CMS, we need to stop the CMS that is running on the active node and the passive node (upgraded server). This step will result in exchange server becoming unavailable and hence has to be done out of hours.

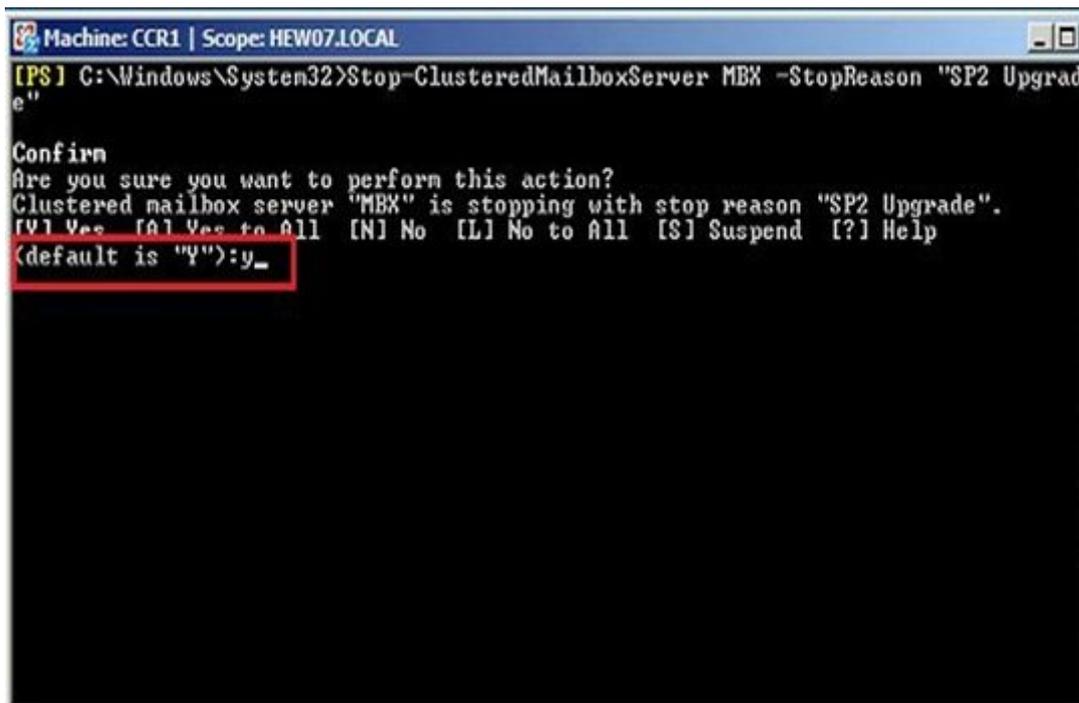
Log into the passive node, launch the exchange shell and run the following command to stop it; also do it from the console if you prefer to do so.

`Stop-ClusteredMailboxServer MBX -StopReason "SP2 Upgrade"`



```
Machine: CCR1 | Scope: HEW07.LOCAL
[PS] C:\Windows\System32>Stop-ClusteredMailboxServer MBX -StopReason "SP2 Upgrade"
```

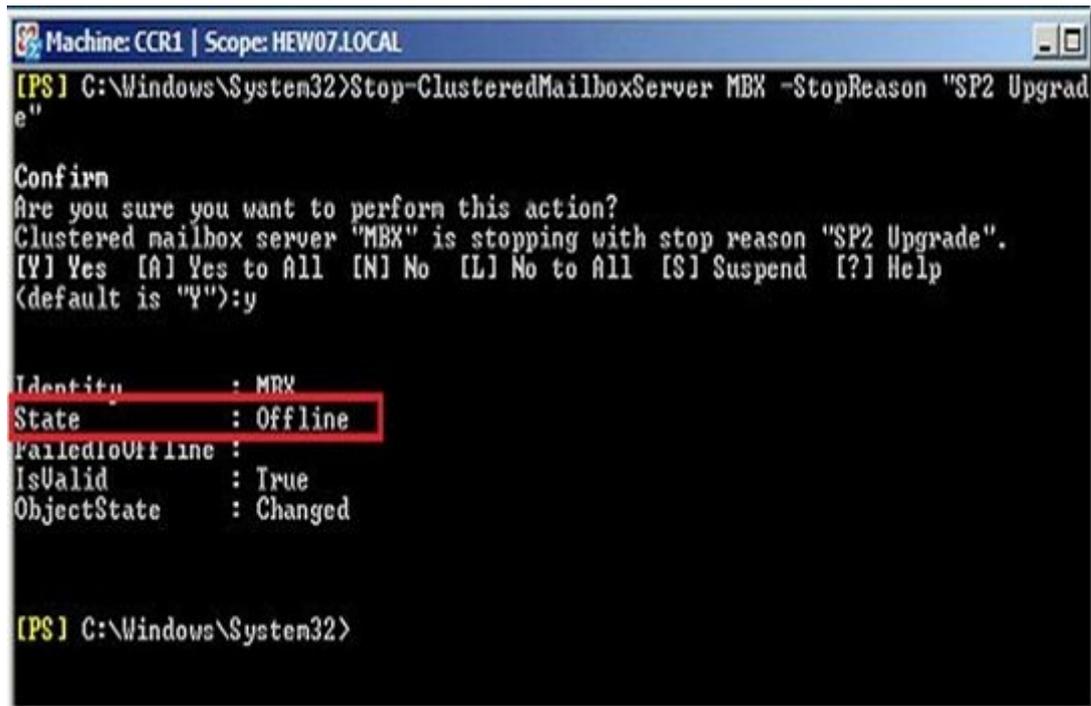
Confirm the step by pressing "Y".



```
Machine: CCR1 | Scope: HEW07.LOCAL
[PS] C:\Windows\System32>Stop-ClusteredMailboxServer MBX -StopReason "SP2 Upgrade"

Confirm
Are you sure you want to perform this action?
Clustered mailbox server "MBX" is stopping with stop reason "SP2 Upgrade".
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help
(default is "Y"):y_
```

Make sure that the cluster status is Offline.



```
Machine: CCR1 | Scope: HEW07.LOCAL
[PS] C:\Windows\System32>Stop-ClusteredMailboxServer MBX -StopReason "SP2 Upgrade"

Confirm
Are you sure you want to perform this action?
Clustered mailbox server "MBX" is stopping with stop reason "SP2 Upgrade".
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help
(default is "Y"):y

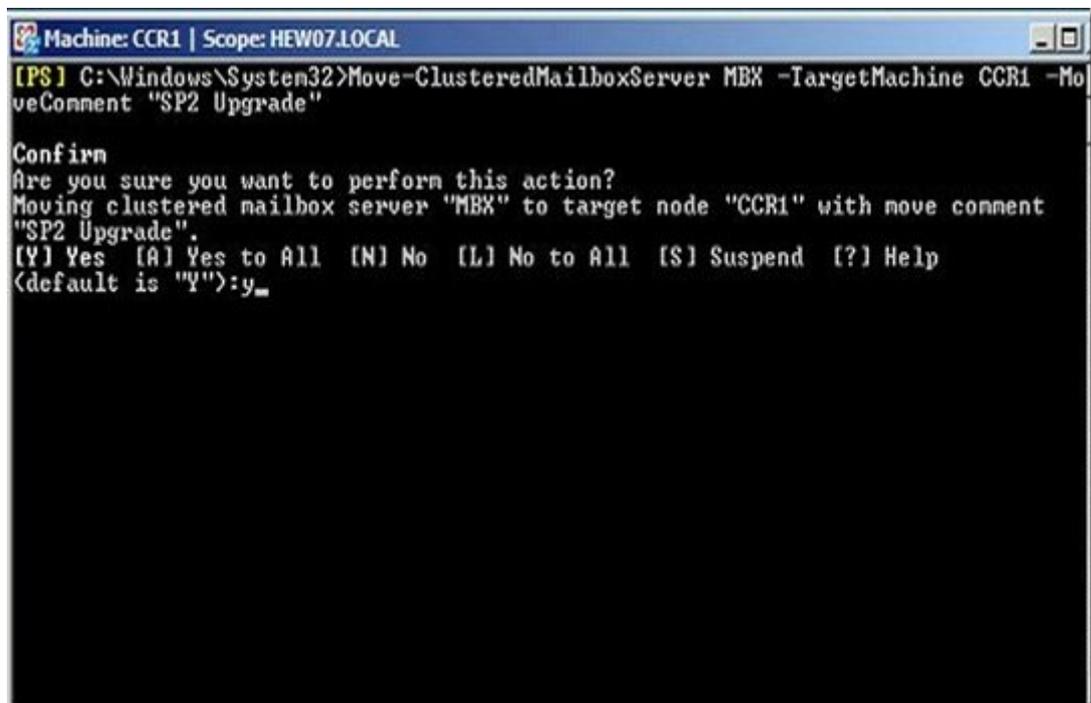
Identity      : MBX
State         : Offline
FailedToOffline :
IsValid      : True
ObjectState   : Changed

[PS] C:\Windows\System32>
```

Once the cluster is stopped, move the CMS to the passive node from the console or by running command from the shell.

[Move-ClusteredMailboxServer MBX -TargetMachine CCR2 -MoveComment "SP2 Upgrade"](#)

Confirm the step as well.



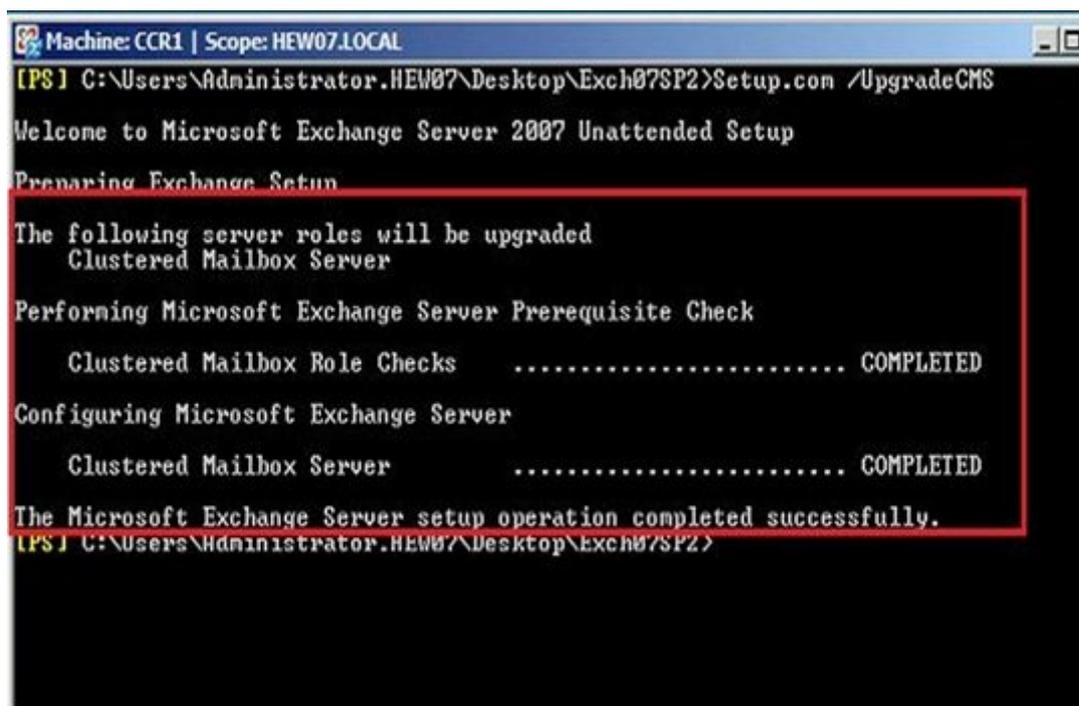
```
Machine: CCR1 | Scope: HEW07.LOCAL
[PS] C:\Windows\System32>Move-ClusteredMailboxServer MBX -TargetMachine CCR1 -MoveComment "SP2 Upgrade"

Confirm
Are you sure you want to perform this action?
Moving clustered mailbox server "MBX" to target node "CCR1" with move comment "SP2 Upgrade".
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help
(default is "Y"):y_
```

Navigate to the exchange 2007 sp2 installation folder /dvd and upgrade the CMS by running the command. You can't use the console for this step.

[Setup.com /UpgradeCMS](#)

Setup runs a pre-requisite check before upgrading the CMS.



```
Machine: CCR1 | Scope: HEW07.LOCAL
[PS] C:\Users\Administrator.HEW07\Desktop\Exch07SP2>Setup.com /UpgradeCMS

Welcome to Microsoft Exchange Server 2007 Unattended Setup

Preparing Exchange Setup

The following server roles will be upgraded
  Clustered Mailbox Server

Performing Microsoft Exchange Server Prerequisite Check

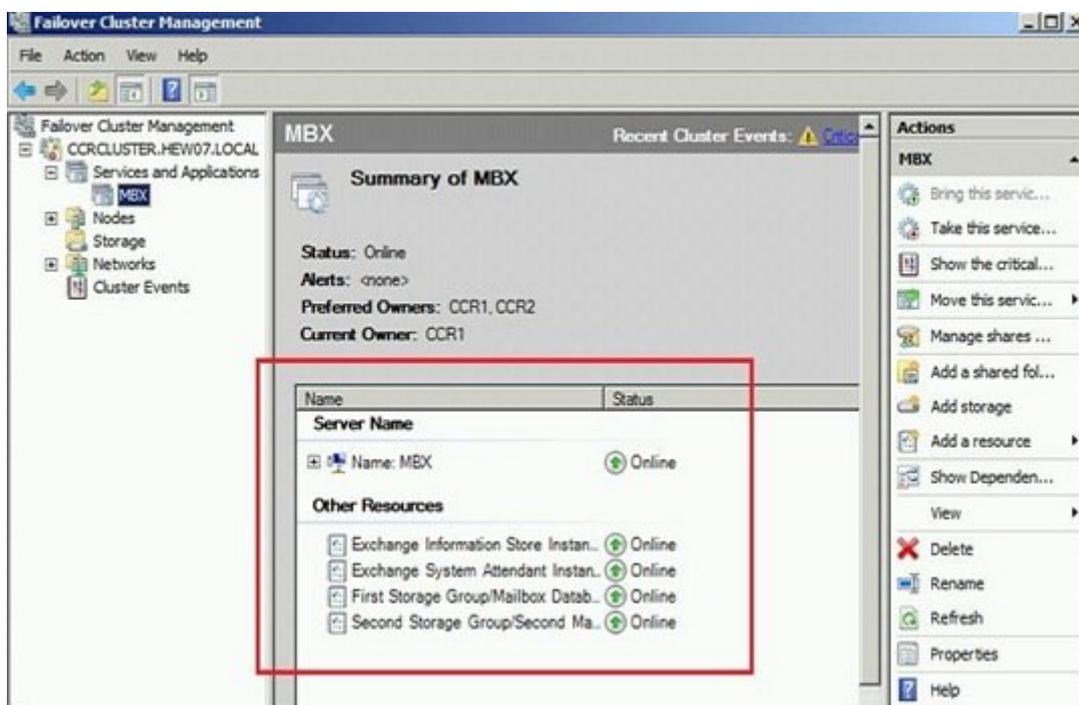
  Clustered Mailbox Role Checks ..... COMPLETED

Configuring Microsoft Exchange Server

  Clustered Mailbox Server ..... COMPLETED

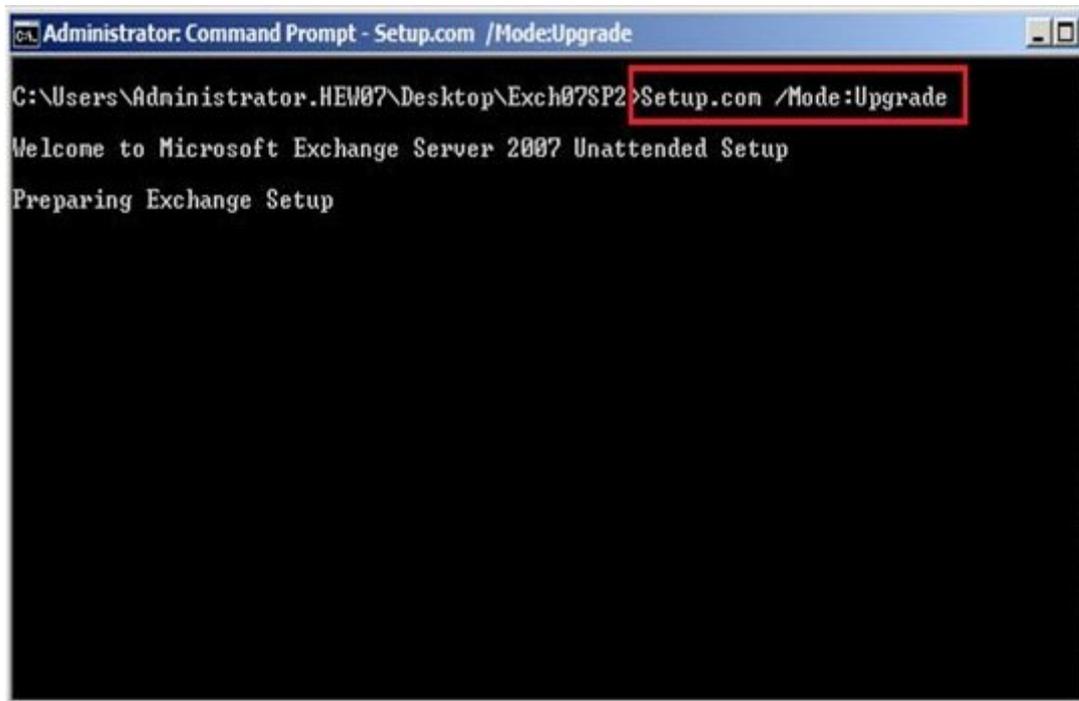
The Microsoft Exchange Server setup operation completed successfully.
[PS] C:\Users\Administrator.HEW07\Desktop\Exch07SP2>
```

Once the setup was completely successfully, it brought the stopped cluster online & now we have CCR running on one node. You can check the status of the cluster using Failover Cluster Management. Users can start connecting to the cluster from now on.



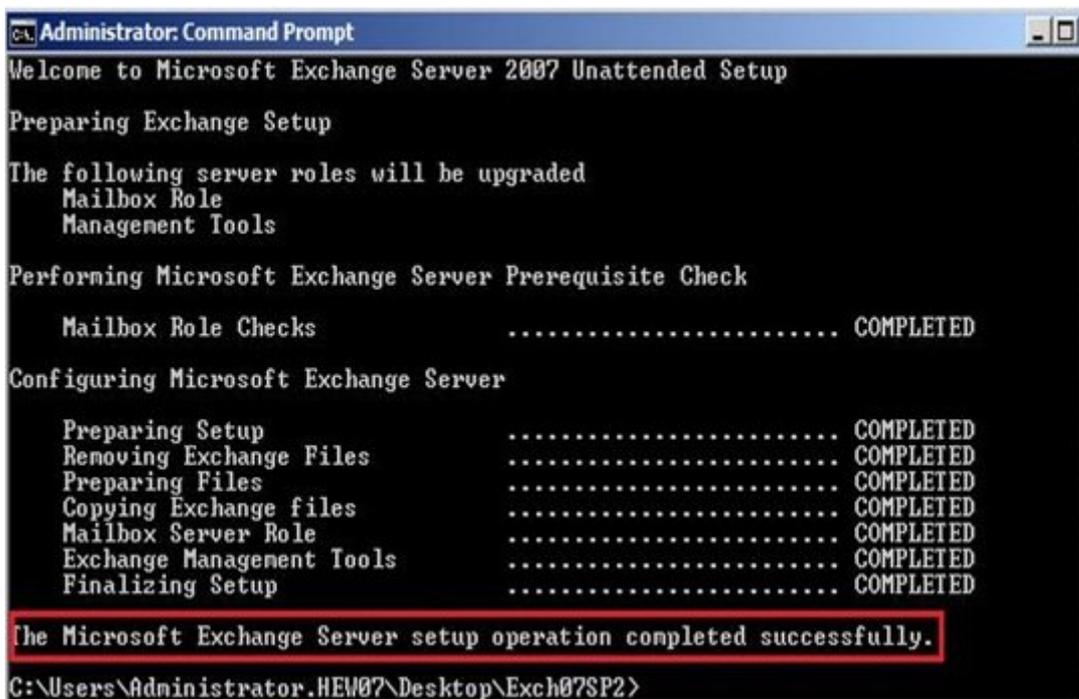
### 3. Upgrade The Initial Active Node (Now Passive)

Login to the present passive node (initial active node) with an admin account. Launch a command window and navigate to the exchange 2007 sp2 installation directory / dvd drive. Run the command Setup.com /Mode:Upgrade



```
Administrator: Command Prompt - Setup.com /Mode:Upgrade
C:\Users\Administrator.HEW07\Desktop\Exch07SP2>Setup.com /Mode:Upgrade
Welcome to Microsoft Exchange Server 2007 Unattended Setup
Preparing Exchange Setup
```

Setup runs the pre-requisite check and installs the service pack.



```
Administrator: Command Prompt
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.
C:\Users\Administrator.HEW07\Desktop\Exch07SP2>
```

Restart the server and now you have an Exchange 2007 SP2 CCR.

[Tweet This!](#)

## OTHER ARTICLES WORTH READING...



Microsoft Exchange Online Still Run...



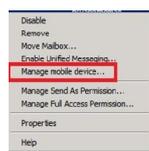
Message Moderation Is Not Working I...



Organization In Outlook 2010 Us...



Five Years Self Signed Certificate ...



Managing Mobile Devices Using Excha...

POSTED BY RAJITH JOSE ENCHIPARAMBIL AT 22:37



LABELS: EXCHANGE 2007

REACTIONS:

Interesting (6)

Didn't Know (0)

Useful (9)

## 51 COMMENTS:

Deepak Khandelwal said...

Good post.. very helpful..

2 SEPTEMBER 2009 15:40

Rajith Jose Enchiparambil said...

Thanks Deepak.

3 SEPTEMBER 2009 19:43

Anonymous said...

Great post, very helpful... got a few questions....

We are running Exch 2007 sp1 in a CCR environment.

We have 6 Exch servers in total (2 cas, 2, hub and 2 mailbox) One of each server type in "active datacenter" and the other in our DR site.

1. Can we move the cluster from active to passive using the GUI wizard in SP1 ?

2. we have our CAS and hub roles on different servers, what is the process for upgrading in a CCR environment ?

Great site, keep up these great blogs.

Thanks

Liam

4 SEPTEMBER 2009 03:03

Rajith Jose Enchiparambil said...

Hi Liam,

1. Yes. You can move the clustered mailbox server from one node to another from the console.
2. The order of SP2 installation is as follows. CAS - UM - HUB - EDGE - MAILBOX. So, install CAS and HUB servers & CCR at the end.

Rajith.

4 SEPTEMBER 2009 09:17

Rajith Jose Enchiparambil said...

Hi Liam,

In case you want the path to manage CMS from EMC, navigate to Server Config -> Mailbox -> your CMS Server, right click & select "Manage Clustered Mailbox Server". It will open a wizard with you options to start/stop/move cluster.

4 SEPTEMBER 2009 09:51

Anonymous said...

Rajith, thank you so much for these great responses, I appreciate your help, keep up your great blog. I have learned a deal from your blog over the past 2 days. Thank you.

5 SEPTEMBER 2009 03:13

Rajith Jose Enchiparambil said...

Good to know that you like my articles.  
Thanks.

5 SEPTEMBER 2009 07:34

Anonymous said...

Really Thank You. Very good article. I followed your instructions and all went fine.

Oscar Soto  
MVP Directory Services

7 SEPTEMBER 2009 02:58

Rajith Jose Enchiparambil said...

Glad to hear that the article helped you Oscar.

7 SEPTEMBER 2009 08:35

Anonymous said...

Does need to re-apply the edge subscription after upgrading to sp2 the edge servers?

Thanks,  
Noah

7 SEPTEMBER 2009 23:19

Anonymous said...

Hi,  
is it necessary to run the sp2 on the domain controllers too? If yes, which is the preferred or after upgrading the exchange environment?

Great site!

Thanks,

Peter

8 SEPTEMBER 2009 09:17

Rajith Jose Enchiparambil said...

Hi Peter,

SP2 is for Exchange servers only. So, if you have your exchange running on a DC (single environment), then you need to install exchange SP2 on the DC, otherwise NO!

Exchange SP2 extends the AD schema, but the setup will take care of it and hence does not run separately (although you can). But, that process is different to running the actual SF

Rajith.

8 SEPTEMBER 2009 09:48

Anonymous said...

Hi Rajith,

thanks a lot for the quick response.

This is a really useful blog.

Peter

8 SEPTEMBER 2009 10:32

Rajith Jose Enchiparambil said...

Thanks Peter.

8 SEPTEMBER 2009 11:03

Anonymous said...

Rajith, One more question.. I just discovered that we were still on UR5, do we need to u before installing SP2 or does sp2 contain all necessary updates.

Thanks

Liam

9 SEPTEMBER 2009 03:38

Rajith Jose Enchiparambil said...

Hi Liam,

The procedure is the same whether you have an exchange 2007 ccr without any service or with SP1 and any update rollups.

Thanks,

Rajith.

9 SEPTEMBER 2009 08:14

Anonymous said...

Wonderful thank you as always... I am loving all the exch 2010 blogs as well, keep the c

Thanks

Liam

9 SEPTEMBER 2009 22:26

Rajith Jose Enchiparambil said...

Good to know that you are following my blog Liam. Let me know if you want me to write specific topic.

Thanks,

Rajith.

10 SEPTEMBER 2009 08:39

giasone said...

My 2003 64bit SP2 CCR cluster worked fine in the SP2 upgrade at first. Passive node we upgradecms went fine and the mail server is happy on Node B. However every time I try setup /m:upgrade on Node A it fails with the error:

Welcome to Microsoft Exchange Server 2007 Unattended Setup

## Preparing Exchange Setup

Exchange Server setup encountered an error.

Nothing in the logs. Any ideas?

27 SEPTEMBER 2009 15:07

giasone said...

Got the fix - strangely enough powershell was the issue. Running the setup.com /m: upg command prompt made it all work.

28 SEPTEMBER 2009 17:53

Rajith Jose Enchiparambil said...

I wasn't around for two days. Good to know that you have sorted the issue Giasone.

28 SEPTEMBER 2009 20:54

Anonymous said...

Hi Rajith,

Is there any specific steps that needs to be followed for upgrading forefront for exchange environment.

Regards

Birju Ashramath

30 SEPTEMBER 2009 08:16

Rajith Jose Enchiparambil said...

Hi Birju Ashramath,

Use Fsutility (command line) to disable the forefront security during the sp2 upgrade and afterwards. Fsutility /disable and Fsutility /enable. Check <http://support.microsoft.com/k> more info.

30 SEPTEMBER 2009 09:12

Anonymous said...

Couple of questions...

First, approx how long did it take for the /upgradecms step? I know the time will vary de and number of mailboxes but I'm just looking for a ballpark so I know how early I need

Second, we run both CCR and SCR. CCR is in our server room with the SCR configured v If I run all of these steps in the CCR, do I need to run /upgradecms for the SCR also or

would /upgradecms during the CCR install take care of that?

Thanks for any advice you can offer!

6 OCTOBER 2009 19:11

giasone said...

My /upgradecms was against a CCR cluster with 400 users and took about 20 minutes. I have a quad-core with 12GB of RAM each - not sure if that changes the timing or not.

6 OCTOBER 2009 20:42

Rajith Jose Enchiparambil said...

Hi,

The upgrade process shouldn't take that long, like long hours. I would suggest to do the weekend (friday evening being the best) rather than coming early on a weekday and find out the upgrade is still running while your staff starts to come in.

Thanks Giasone for your input.

7 OCTOBER 2009 08:44

Aaron said...

Rajith,

This was a great post, thanks for the hand. Just one change you may want to consider is following on CCR2 (Previously passive now active node): Navigate to the exchange 2007 folder /dvd and upgrade the CMS by running the following command. You can't use the ccr step.

Setup.com /UpgradeCMS

Thanks again!

-Aaron

15 OCTOBER 2009 13:52

Rajith Jose Enchiparambil said...

Thanks Aaron.

23 OCTOBER 2009 15:20

Ravinder said...

Its good post but we are facing a problem below:

```
[PS] E:\Exchange SP2\E2K7SP2EN64>.\setup /prepareschema
```

Welcome to Microsoft Exchange Server 2007 Unattended Setup

Preparing Exchange Setup

No server roles will be installed

Performing Microsoft Exchange Server Prerequisite Check

Organization Checks ..... COMPLETED

Configuring Microsoft Exchange Server

Extending Active Directory schema

Progress ..... FAILED

Active Directory server CCRMBOSI.exqsi.com is not available. Error message:  
The LDAP server returned an unknown error.

The Exchange Server Setup operation did not complete. For more information, visit <http://support.microsoft.com> and enter the Error ID.

Exchange Server setup encountered an error.

Help me too to resolve thi problem.

1 NOVEMBER 2009 10:04

Anonymous said...

Deepak Khandelwal said...

Good post.. very helpful..

02 September 2009 15:40

Rajith Jose Enchiparambil said...

Thanks Deepak.

03 September 2009 19:43

Anonymous said...

Great post, very helpful... got a few questions....

We are running Exch 2007 sp1 in a CCR

1 NOVEMBER 2009 11:39

Anonymous said...

giasone said...

My /upgradecms was against a CCR cluster with 400 users and took about 20 minutes. I had a quad-core with 12GB of RAM each - not sure if that changes the timing or not.

06 October 2009 20:42

Rajith Jose Enchiparambil said...

Hi,

The upgrade process shouldn't take that long, like long hours. I would suggest to do the weekend (friday evening being the best) rather than coming early on a weekday and find out the upgrade is still running while your staff starts to come in.

Thanks Giasone for your input.

07 October 2009 08:44

Aaron said...

Rajith,

This was a great post, thanks for the hand. Just one change you may want to consider is following on CCR2 (Previously passive now active node): Navigate to the exchange 2007 folder /dvd and upgrade the CMS by running the following command. You can't use the c step.

```
Setup.com /UpgradeCMS
```

Thanks again!

-Aaron

15 October 2009 13:52

Rajith Jose Enchiparambil said...

Thanks Aaron.

23 October 2009 15:20

Ravinder said...

Its good post but we are facing a problem below:

```
[PS] E:\Exchange SP2\E2K7SP2EN64>.\setup /prepareschema
```

```
Welcome to Microsoft Exchange Server 2007 Unattended Setup
```

```
Preparing Exchange Setup
```

```
No server roles will be installed
```

Performing Microsoft Exchange Server Prerequisite Check

Organization Checks ..... COMPLETED

Configuring Microsoft Exchange Server

Extending Active Directory schema

Progress ..... FAILED

Active Directory server XXXXXX.DOMAIN.com is not available. Error message:  
The LDAP server returned an unknown error.

The Exchange Server Setup operation did not complete. For more information, visit <http://support.microsoft.com> and enter the Error ID.

Exchange Server setup encountered an error.

Help me too to resolve this problem.

1 NOVEMBER 2009 11:42

Anonymous said...

This was a great post, thanks for the hand. Just one change you may want to consider is following on CCR2 (Previously passive now active node): Navigate to the exchange 2007 folder /dvd and upgrade the CMS by running the following command. You can't use the c step.

Setup.com /UpgradeCMS

Thanks again!

-Aaron

15 October 2009 13:52

Rajith Jose Enchiparambil said...

Thanks Aaron.

23 October 2009 15:20

Ravinder said...

Its good post but we are facing a problem below:

```
[PS] E:\Exchange SP2\E2K7SP2EN64>.\setup /prepareschema
```

Welcome to Microsoft Exchange Server 2007 Unattended Setup

Preparing Exchange Setup

No server roles will be installed

Performing Microsoft Exchange Server Prerequisite Check

Organization Checks ..... COMPLETED

Configuring Microsoft Exchange Server

Extending Active Directory schema

Progress ..... FAILED

Active Directory server XXXXXX.DOMAIN.com is not available. Error message:  
The LDAP server returned an unknown error.

The Exchange Server Setup operation did not complete. For more information, visit <http://support.microsoft.com> and enter the Error ID.

Exchange Server setup encountered an error.

Help me too to resolve this problem.

1 NOVEMBER 2009 11:43

Anonymous said...

Great post, very helpful... got a few questions,

1. CMS upgrade should be done via Exchange Shell.
2. The Distributed Transaction Coordinator service must be started before setup can complete.
3. Forefront should be disabled prior to upgrade.

Please clarify...

11 NOVEMBER 2009 15:32

Rajith Jose Enchiparambil said...

Hi Anonymous,

Answers below.

1. True. It can only be done using shell.
2. DTCS service will be running as normal. Doesn't have to pay much attention to it.
3. The original release (RTM) version of Forefront Security for Exchange Server is incompatible with Exchange 2007 SP2.

You must either remove Forefront Security for Exchange Server or upgrade it to a later version. After you can upgrade to Exchange 2007 SP2. The Exchange 2007 SP2 Setup program does not check prerequisites if the computer is running the RTM version of Forefront Security for Exchange Server.

If you are running the latest version of Forefront Security for Exchange Server, you must run Forefront services before you run the Exchange 2007 SP2 Setup program.

11 NOVEMBER 2009 16:34

Anonymous said...

Hi Rajith Jose,

Thanks for the quick response. The DTCS service is not running on our mailbox servers. It is disabled. We are running Forefront version 10.1.0746.12. I hope we don't have to remove and upgrade to SP2.

11 NOVEMBER 2009 18:10

Rajith Jose Enchiparambil said...

The Exchange 2007 SP2 Setup program does not pass prerequisites if the computer is running an older version of Forefront Security for Exchange Server.

So, run and see if you are not sure about the version of Forefront.

12 NOVEMBER 2009 09:04

Anonymous said...

Hi Rajith Jose,

I would like to add one more prerequisite. Windows Installer 4.5 should be installed before SP2.

20 NOVEMBER 2009 15:56

Rajith Jose Enchiparambil said...

Yes, that is right Anonymous. I will add it. Thanks.

20 NOVEMBER 2009 16:16

Anonymous said...

Hello! :)

Any difference here if one is using Windows Server 2003 or Windows Server 2008 on the

2 DECEMBER 2009 13:40

Rajith Jose Enchiparambil said...

Hi Anonymous,

The process is the same.

2 DECEMBER 2009 14:43

Anonymous said...

Hi

We have Exchange 2007 CCR with Sp1, 2 Hub Server , One Edge all with Sp1. can anyone tell me which server we should update first with Sp1. Step to install sP1 is same for Sp2.

Thanks in advance

3 DECEMBER 2009 09:25

Anonymous said...

Can anyone confirm estimated downtime when upgrading to SP2? Is it the number of mailbox stores that determine the downtime? What are you guys expecting?

3 DECEMBER 2009 14:43

Rajith Jose Enchiparambil said...

Hi Anonymous,

The order to install SP1/SP2 is CAS, HUB, EDGE, Mailbox/CCR.

3 DECEMBER 2009 16:35

Deelow said...

Namestay Rajith,

Thanks for the info. I am getting an error on the Mailbox check due to the account NOT being an enterprise admin OR Org admin. I have an environment where the Exchange 2007 servers are delegated for installation. I have had no problem installing Sp2 on non-CCR servers that way in the same manner.

Please advise why this happens with command-line version and CCR upgrade.

11 DECEMBER 2009 17:36

Anonymous said...

Hi All,

This is a great manual. But there's a problem with the servicepack regarding the backup of the 2nd node (it's not being installed)

see <http://social.technet.microsoft.com/Forums/en-US/exchangesvrvailabilityanddisasterrecovery/thread/1e296b90-c959-4e73-ac2c-21319>

I've written a solution for this issue.

greetings

24 DECEMBER 2009 15:45

Rajith Jose Enchiparambil said...

Thanks Greet.

30 DECEMBER 2009 09:42

Gurm42 said...

In regards to downtime, the downtime is not huge - it's probably been on the order of 1! for every server I've done.

It goes like:

Passive Node: Down 15 minutes then reboot.

CMS: Down 5 minutes, tops. (This is a complete downtime though, no service during thi

Former Active Node: Down 15 minutes then reboot.

3 JANUARY 2010 07:54

Gurm42 said...

Now, a real stinker here is that the SP2 install CAN, in some cases, be too much downtir to handle. In one cluster I've upgraded recently, there were 2 days of backed up logfiles hadn't checked the backup server) and between that and the various downtimes the CCF the databases were too far out of sync, and I had to do a complete reseed of 500GB of r

3 JANUARY 2010 07:56

Rajith Jose Enchiparambil said...

Thanks for the info Gurm42.

3 JANUARY 2010 21:35

Anonymous said...

before you upgrade, do you have to stop the shipping of log files from the active to the p you just let it stop on its own and let the cluster figure out that the other node is down?

thanks,  
markB

4 JANUARY 2010 17:18

Rajith Jose Enchiparambil said...

Hi Anonymous,

You upgrade the passive node first & restart. Then move the cluster to the restarted pas stop the cluster.And continue...



You don't have to manually stop the log shipping.

4 JANUARY 2010 17:22

POST A COMMENT

Comment as:

**Post Comment**

Preview

[Newer Post](#)

[Home](#)

Subscribe to: [Post Comments \(Atom\)](#)