# Document History

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| 15/09/2014 | 1.0 | Created | Nitin Chadha |
| 10/10/2014 | 1.1 | Added Cleaning task for Config Audit table | Nitin Chadha |
| 06/10/2014 | 1.2 | Added Notes to stop cache host individually | Nitin Chadha |
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AppFabric Installation Guide for SSO Scale Environments

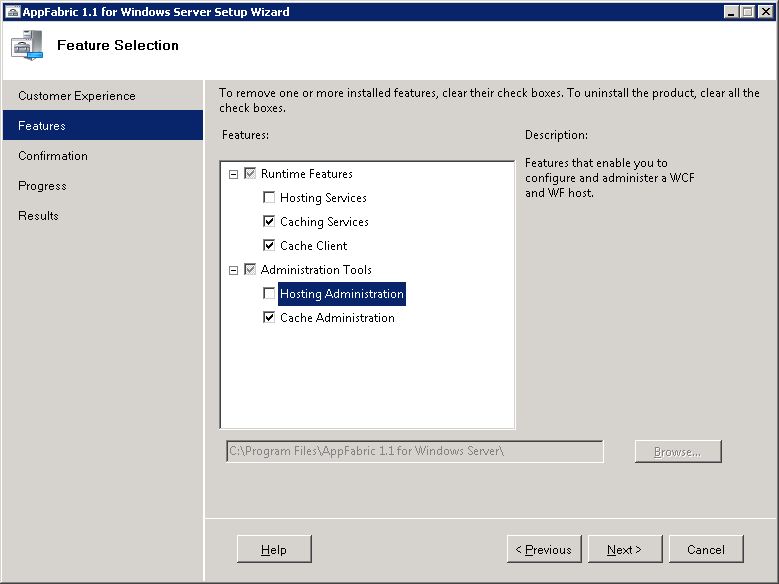
In the scale environments we are setting the AppFabric cache with **high availability**. Which means more than one copy of the data object would be stored in the cache. In an event of a cache host failure the secondary copies of the data would be made available to the client application via other non failed hoststo prevent the data loss.

Prerequisites

* Windows Server 2008 Enterprise or DataCenter Editions (Full GUI).Requires .NET 4.0
* AppFabric 1.1 (location \\share\media\Appfabric\v1.1)
* SQL Server Instance with alwayson for AppFabric cache host configuration and cluster management.
  + domain\zsvcappfabserver (Need Run as service, run batch jobs, local admin)
  + domain\zsvcappfabbatch (Need Run as service, run batch jobs, local admin)
  + Create a new role ROLE-G-AppFabricClusterManagement and add zsvcappfabserver, zsvcappfabbatch and any other userswho would be using AppFabric cluster including starting and stopping the cluster and checking the cache statistics.
* Note: For Customer experience only - the scripts resides in TFS at $/Deployment/Main/Code/Utilities/AF Monitoring

## Install the AppFabric caching software on the Hosts

### Install AppFabric Caching Software



(Fig 1)

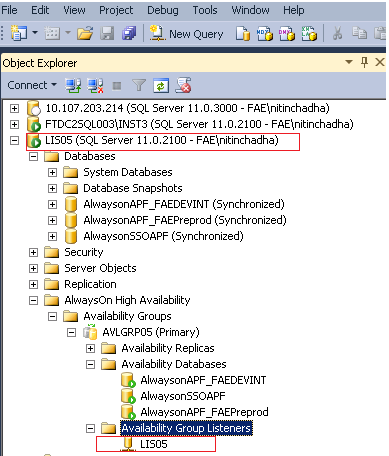
### Install cumulative rollup: <http://support.microsoft.com/kb/2716015/EN-US>O or from \\share\media\Appfabric\v1.1

## Setup the Database

To setup the AppFabric cache cluster to use SQL server as the cluster manager for high availability - it is recommended to use a high availability strategy, such as database clustering or mirroring, to keep the database available for cache cluster management responsibilities

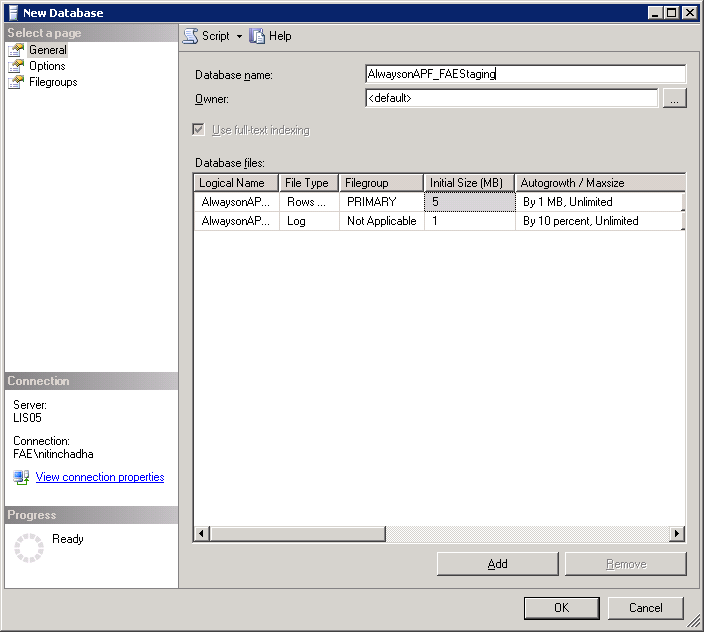
TheSQL server database for AppFabric caching must be setup as an "alwayson" database.

### Connect to the "Availability Group Listener" using the SQL server manager e.g.AlwaysonAPF (Speak to your dba to get the Alwayson Availability Group Listener)



(Fig 2)

### Right click Databases and create new database. Assign the database name - APFConfig\_SSO and click OK.



(Fig 3)

### Expand Security from the left pane on the Sql Server. Right click -> New Login Specify the role - ROLE-G-AppFabricClusterManagementcreated earlier and click ok C:\Users\NitinChadha\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\alwasyon7.png

### Select "User Mapping". Select APFConfig\_SSO and check db\_datareader and db\_datawriter from the list. Click OK.

### Right click the APFConfig\_SSO database. Click Permissions. Select the role ROLE-G-AppFabricClusterManagementand assign Execute permissions from the list below. Click OK.

### RDP/Login to one of the four AppFabric Host.

### Open Powershell ISE - (%windir%\system32\WindowsPowerShell\v1.0\PowerShell\_ISE.exe)

### Open the attached script SQLClsutermanagersetup.ps1 in PowerShell\_ISE and set the correct database name and the server.

*Note: the supporting scripts can be located at $/Deployment/Main/Code/Utilities/AF Monitoring*

# Set the database\_name to the empty database created earlier#

$database\_name= "**APFConfig\_SSO**"

# Set the database\_server to the alwayson database server#

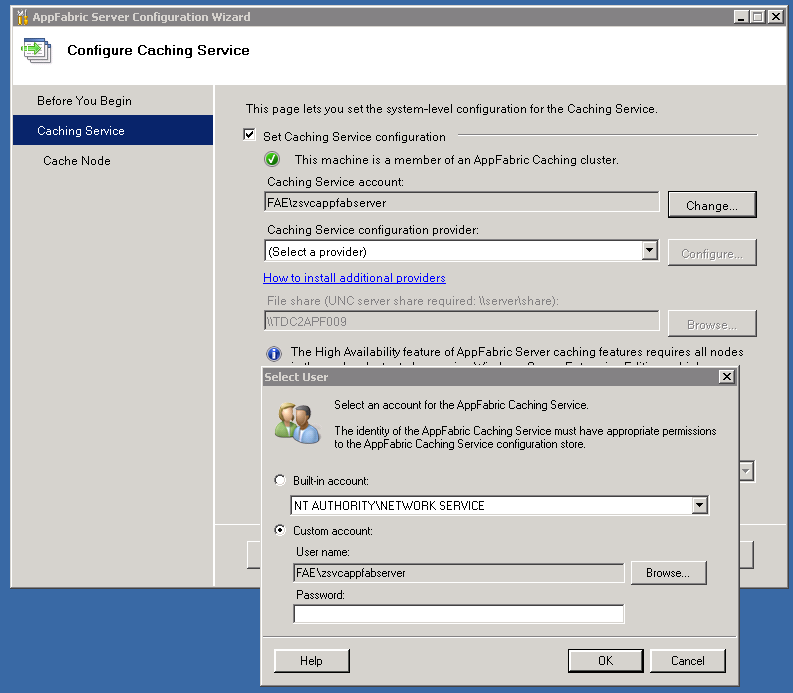
$database\_server= "**alwaysonAPF**"

### After making the above change. Run the script. Make sure the script execution output is all green.

## Configure the AppFabric caching software on the Hosts

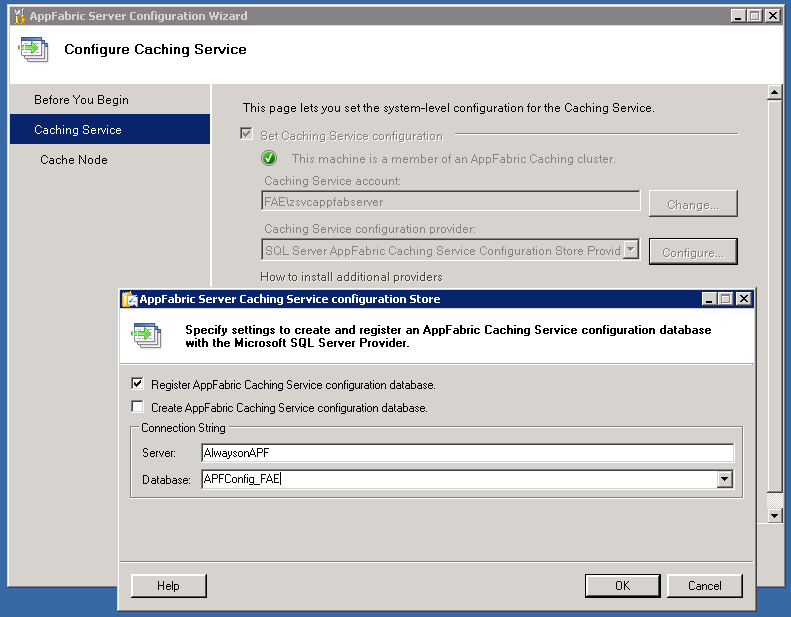
### Locate Configure AppFabric in "All Programs" -> "AppFabric for Windows ServerSetup AppFabric server configuration

In the configure caching service pane. Check the set caching service checkbox.



### In the caching service account change the service account to "<internal domain>\zsvcappfabserver"

### In the Caching service configuration provider - select SQL Server AppFabric Caching Service Configuration Store provider. Click Configure



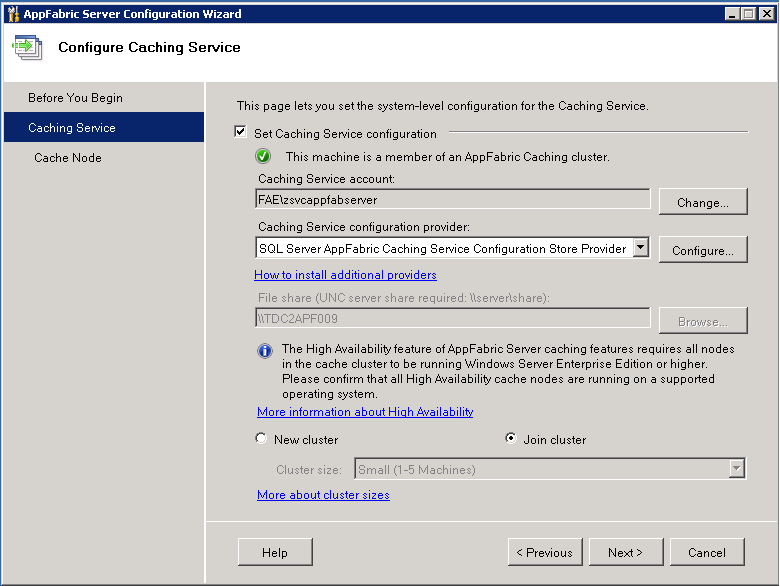
### Make sure "Register AppFabric Caching Service configuration database" is checked and

**Create** "AppFabric Caching Service Configuration database" is **unchecked**.

### In the Server field: type the Availability Group Listener" e.g. AlwaysonAPF which was setup earlier in step 1.2.1.

### In the database field: type APFConfig\_SSO. Click OK

### Check "Join Cluster" radio button and click Next and then Finish.



### Repeat the Steps from 1.1.1 to 1.1.2 and 1.3.1 to 1.3.7 for the other AppFabric Cache hosts.

## AF Cluster Administration

### On any AppFabric Cache host - Open “Caching Administration Windows PowerShell” in Start -> "All Programs" -> "AppFabric for Windows ServerSetup AppFabric server configuration

(In the hardened environments - Right click and open using "Run as administrator")

### Enter Start-CacheCluster

### Create new cache by using New-Cache SSOHA -Secondaries 1

### Grant <Internal domain>\zsvcappfabclient the AF cache access. Grant-CacheAllowedClientAccount <Internal domain>\ zsvcappfabclient

## Setup APF Cache powershell monitoring scripts

### Open windows explorer Go to %System32\WindowsPowerShell\v1.0 and create a new folder. Name it "Custom".

### Copy AppFabServiceStatusCheckHA.ps1, StartApfabricHostOnServerBoot.ps1 and StopAppFabricHost.ps1 from \Scripts\Powershell\Monitoring to the folder created above.

### Run Powershell ISE - (%windir%\system32\WindowsPowerShell\v1.0\PowerShell\_ISE.exe) (In the hardened environments - Right click and open using "Run as administrator")

### Open AppFabServiceStatusCheckHA.ps1

### In the customisable variable section,replace the following values as per your environment and needs. The "mail to" will receive status email alerts of AppFabric hosts in an event of a failure.

$servers = "APFCacheHost1","APFCacheHost2","APFCacheHost3","APFCacheHost4"   
 $mailTo = "email1@tfl.gov.uk","email2@tfl.gov.uk"  
 $mailFrom = "senderemail @tfl.gov.uk"  
 $smtpserver = "cubic.smtpserver.tfl.local"

### Open windows task scheduler. Import the three tasks.

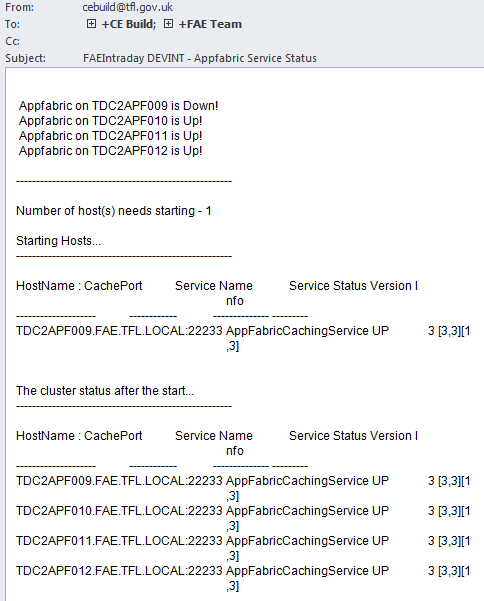
Before clicking ok after each import, change the user to **internaldomain**\zsvcappfabbatch

### In the task scheduler library, make sure the newly imported three tasks are listed.

### Disable task StopAppFabricHost. This task is only used for server maintenance. Only to bring the cache host server down. Run this task to stop the AppFabric host before the shutdown or reboot.

### To test the Appfabric MonitoringHA task - from the Caching Administration Windows PowerShell - Run Stop-CacheHost <cachehostServername1> 22233

### From the task scheduler library, run Appfabric MonitoringHA and wait for the monitoring emails. The email would notify that cache host is down. it will try to start the cache host, the result of that attempt would also be shown in the email. (Sample email)



## Cleaning up High Availability ConfigAudit table

Setup a scheduled job in SQL Server to run every day with the statement mentioned below.

Delete from dbo.configaudit where UpdatedTimeStamp < getdate()- 3

Basic tasks and Support

* To check if the cachecluster is up and running.  
    
  Run Get-CacheHost
* To Stop/Start the AppFabric Caching - Open powershell for AppFabric  
    
  Run Stop-CacheCluster or Start-CacheCluster

(Stop the Caching using the command above if you are permanently disabling the AppFabric caching)

* To Stop/Start the AppFabric Cache Host Individually (In a cache cluster make sure at least two host are running at a given time)  
    
  -Open powershell for AppFabric  
  Run Stop-CacheHost Host1 22233   
    
  -To Start the host

Start- CacheHost Host1 22233

* To check for number of items stored in the AppFabric Cache  
    
  Run Get-CacheStatistics SSOHA
* If you are installing AppFabric for the first time, make sure to install cumulative rollup afterwards: <http://support.microsoft.com/kb/2716015/EN-US>
* The service account which is being used to run the service must be setup on the DB with Read/Write and Execute on the same.
* Note: **DO NOT** Stop/Start the AppFabric caching host service from the Service Control Manager.