HPCC Systems®

HPCC Configuration Manager

Boca Raton Documentation Team

LexisNexis® Risk Solutions

HPCC Configuration Manager

Boca Raton Documentation Team

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DEVELOPER NON-GENERATED VERSION

Using Configuration Manager

Configuration Manager is the utility with which we configure the HPCC platform. The HPCC platform's configuration is stored in an XML file named **environment.xml**. When you install a package, a default single-node environment.xml is generated. After that, you can use the Configuration Manager to modify it and add nodes and configure components.

The Configuration Manager Wizard creates a similar file, but after it is generated, you must rename it and put it into place on each node.

Configuration Manager also offers an **Advanced View** which allows you to add instances of components or change the default settings for components. Even if you plane to use Advanced View, it is a good idea to start with a wizard generated configuration and use Advanced View to finish it.

This document will guide you through configuring an HPCC environment using the Configuration Manager.

Running the Configuration Manager

This document will guide you through configuring an HPCC environment using the Configuration Manager.

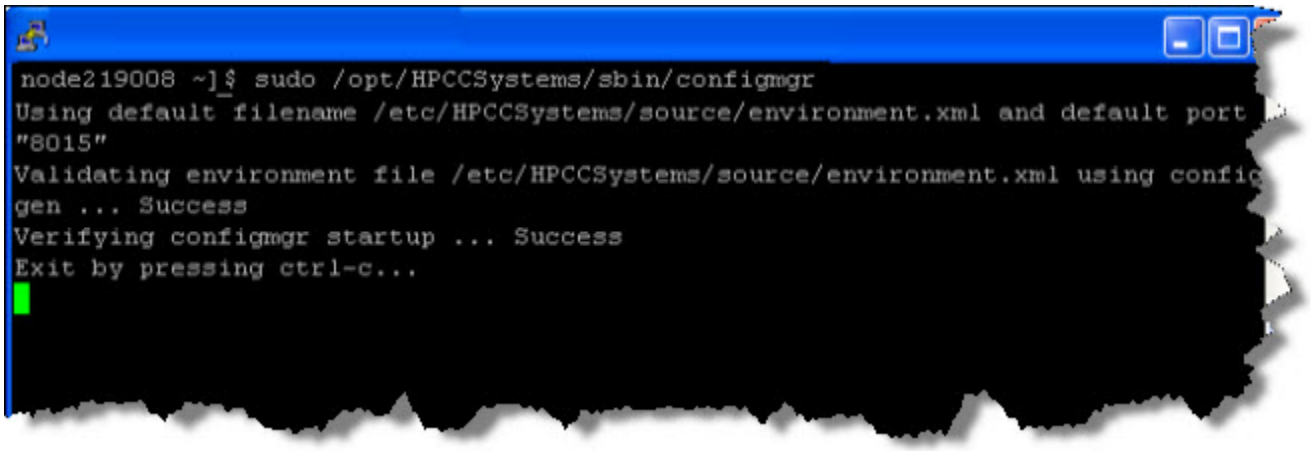
The HPCC package should already be installed on ALL nodes.

You can use any tool or shell script you choose.

1. SSH to a node in your environment and login as a user with sudo privileges. We would suggest that it would be the first node, and that it is a support node, however that is up to your discretion.

2. Start the Configuration Manager service on the node (again we would suggest that it should be on a support node, and further that you use the same node to start the Configuration Manager every time, but this is also entirely up to you).

```
sudo /opt/HPCCSystems/sbin/configmgr
```



3. Using a Web browser, go to the Configuration Manager's interface:

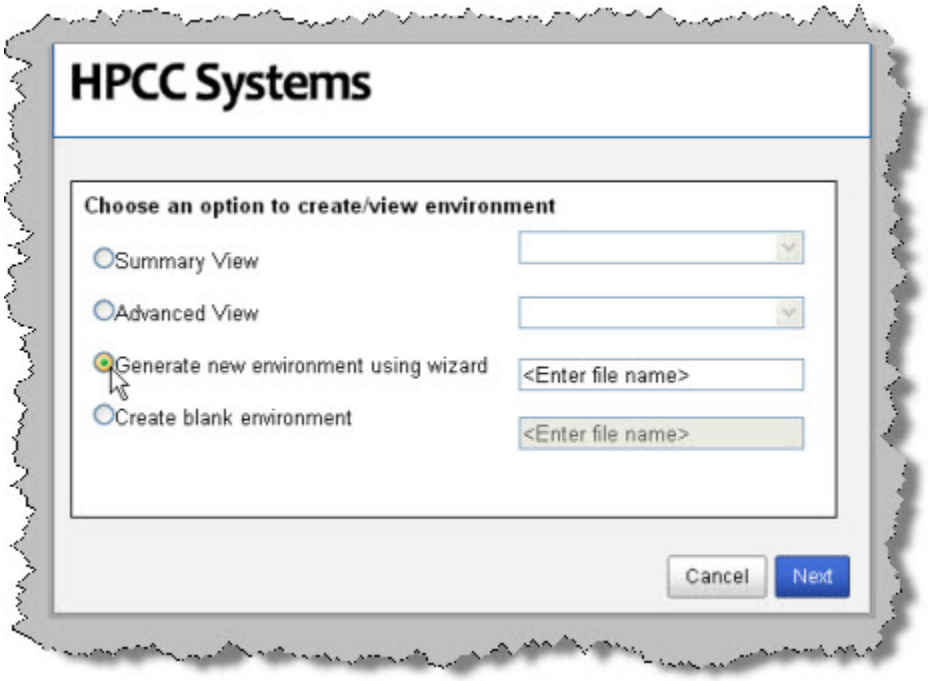
```
http://<ip of installed system>:8015
```

   The Configuration Manager startup wizard displays.

There are different ways to configure your HPCC system. You can use the **Generate environment wizard** and use that environment or experienced users can then use the **Advanced View** for more specific customization. There is also the option of using **Create blank environment** to generate an empty environment that you could then go in and add only the components you would want.

Environment Wizard

1. To use the wizard select the **Generate new environment using wizard** button.



2. Provide a name for the environment file.

   This will then be the name of the configuration XML file. For example, we will name our environment *NewEnvironment* and this will produce a configuration XML file named *NewEnvironment.xml* that we will use.

3. Press the Next button.

   Next you will need to define the IP addresses that your HPCC system will be using.

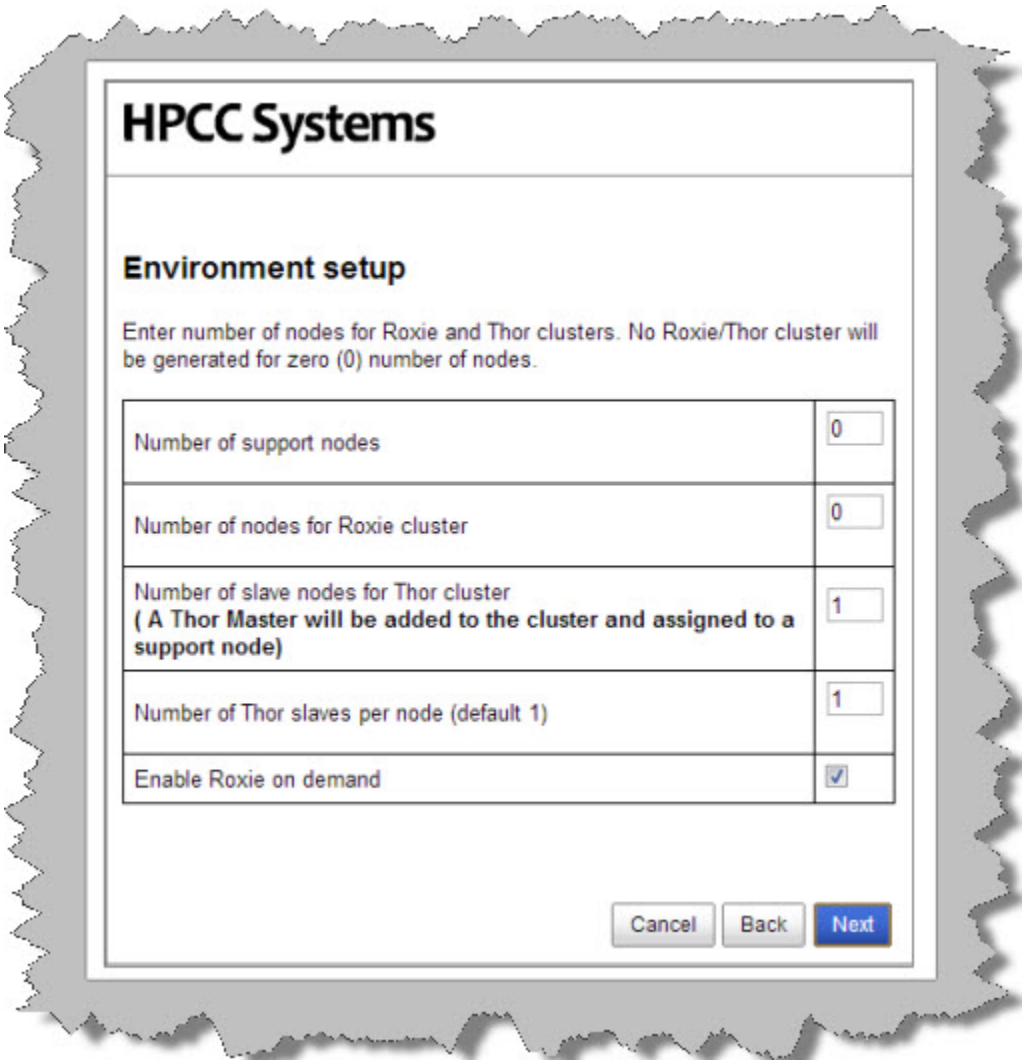
4. Enter the IP addresses or hostname(s).

   IP Addresses can be specified individually using semi-colon delimiters. You can also specify a range of IPs using a hyphen (for example, nnn.nnn.nnn.x-y). In the image below, we specified the IP addresses 10.239.219.1 through 10.239.219.100 using the range syntax, and also a single IP 10.239.219.111. Alternatively, you can enter the hostnames.

5. Press the Next button.

   Now you will define how many nodes to use for the Roxie and Thor clusters.

6. Enter the appropriate values as indicated.



Number of support nodes: Specify the number of nodes to use for support components. The default is 1.

Number of nodes for Roxie cluster: Specify the number of nodes to use for your Roxie cluster. Enter zero (0) if you do not want a Roxie cluster.

Number of slave nodes for Thor cluster Specify the number of slave nodes to use in your Thor cluster. A Thor master node will be added automatically. Enter zero (0) if you do not want any Thor slaves.

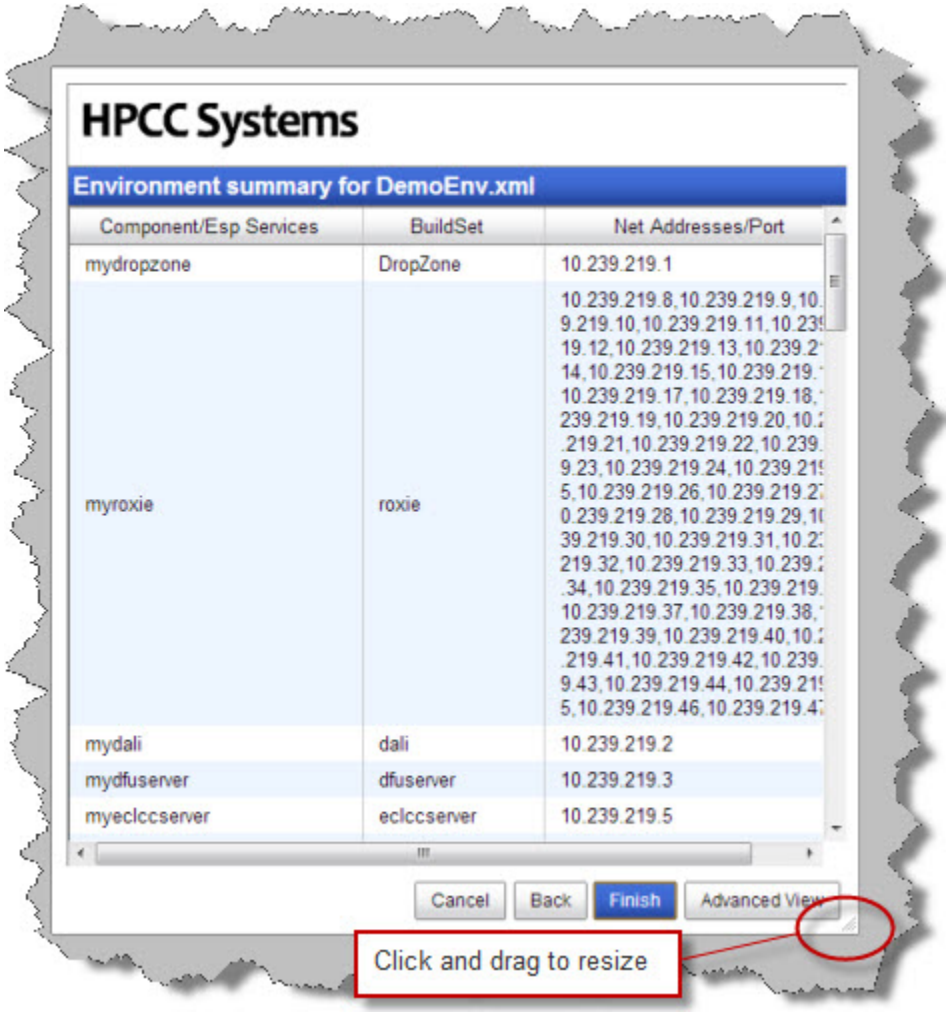
Number of Thor slaves per node (default 1) Specify the number of Thor slave processes to instantiate on each slave node. Enter zero (0) if you do not want a Thor cluster.

Enable Roxie on demand Specify whether or not to allow queries to be run immediately on Roxie. This must be enabled to run the debugger. (Default is true)

7. Press the **Next** button

The wizard displays the configuration parameters.

8. Press the **Finish** button to accept these values or press the **Advanced View** button to edit in advanced mode.



You will now be notified that you have completed the wizard.

At this point, you have created a file named NewEnvironment.xml in the **/etc/HPCCSystems/source** directory

	Keep in mind, that your HPCC configuration may be different depending on your needs. For example, you may not need a Roxie or you may need several smaller Roxie clusters. In addition, in a production [Thor] system, you would ensure that Thor and Roxie nodes are dedicated and have no other processes running on them. This document is intended to show you how to use the configuration tools. Capacity planning and system design is covered in a training module.

Distribute the Configuration

1. Stop the HPCC system.

   If it is running stop the HPCC system (on every node), using a command such as this:

   ```
   sudo /sbin/service hpcc-init stop
   ```

   Note: You may have a multi-node system and a custom script such as the one illustrated in Appendix of the **Installing and Running the HPCC Platform** document to start and stop your system. If that is the case please use the appropriate command for stopping your system on every node.

   Be sure HPCC is stopped before attempting to copy the environment.xml file.

2. Back up the original environment.xml file.

   ```
   # For example
   sudo -u hpcc cp /etc/HPCCSystems/environment.xml /etc/HPCCSystems/source/environment-date.xml
   ```

   Note: The live environment.xml file is located in your **/etc/HPCCSystems/** directory. ConfigManager works on files in **/etc/HPCCSystems/source** directory. You must copy from this location to make an environment.xml file active.

   You can also choose to give the environment file a more descriptive name, to help differentiate any differences.

   Having environment files under source control is a good way to archive your environment settings.

3. Copy the new .xml file from the source directory to the /etc/HPCCSystems and rename the file to *environment.xml*

   ```
   # for example
   sudo -u hpcc cp /etc/HPCCSystems/source/NewEnvironment.xml /etc/HPCCSystems/environment.xml
   ```

4. Copy the **/etc/HPCCSystems/environment.xml** to the **/etc/HPCCSystems/** on to *every* node.

   You may want to use a script to push out the XML file to all nodes. See the *Example Scripts* section in the Appendix of the **Installing and Running the HPCC Platform** document. You can use the scripts as a model to create your own script to copy the environment.xml file out to all your nodes.

5. Restart the HPCC platform on all nodes.

Configuration Manager Advanced View

For the advanced user, the Advanced View offers access to adding additional instances of components or making configuration settings for individual components.

Using ConfigMgr in Advanced Mode

This section shows some of the configuration options in Advanced Mode. There are a few different ways to configure your system. If you are not an experienced user you can use the Generate environment wizard discussed in the previous section. The following steps will detail the Advanced set up.

1. SSH to the first box in your environment and login as a user with sudo privileges.

2. If it is running, stop the HPCC system using this command on every node:

```
sudo /sbin/service hpcc-init stop
```

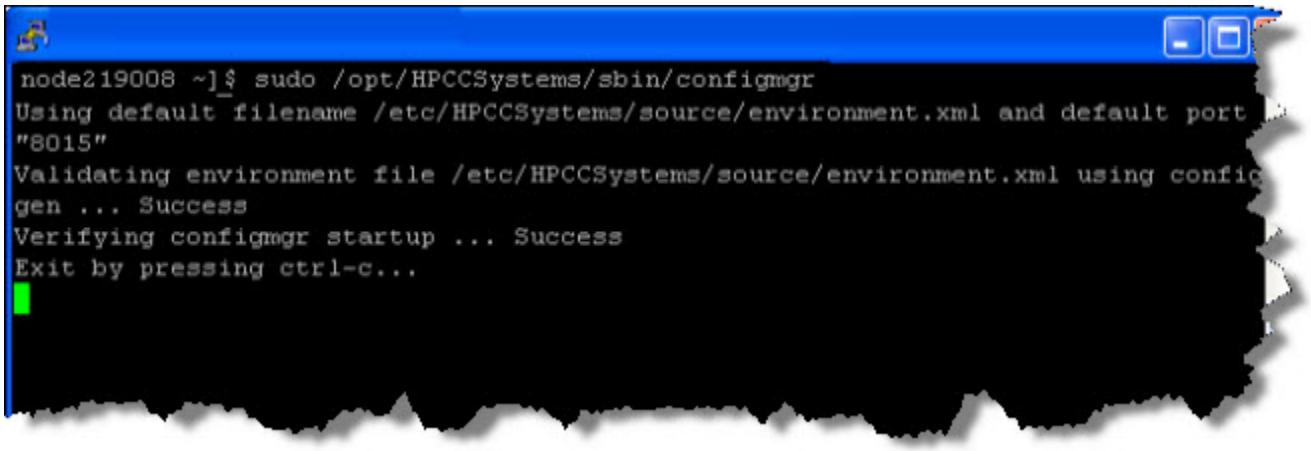
Note: If you have a large system with many nodes, you may want to use a script to perform this step. See the *Example Scripts* section in the Appendix of the **Installing and Running the HPCC Platform** document.

You can use this command to confirm HPCC processes are stopped:

```
sudo /sbin/service hpcc-init status
```

3. Start the Configuration Manager service on one node (usually the first node is considered the head node and is used for this task, but this is up to you).

```
sudo /opt/HPCCSystems/sbin/configmgr
```



4. Using a Web browser, go to the Configuration Manager's interface:

```
http://<ip of installed system>:8015
```

The Configuration Manager startup wizard displays.

5. Select **Advanced View**, then press the **Next** button.

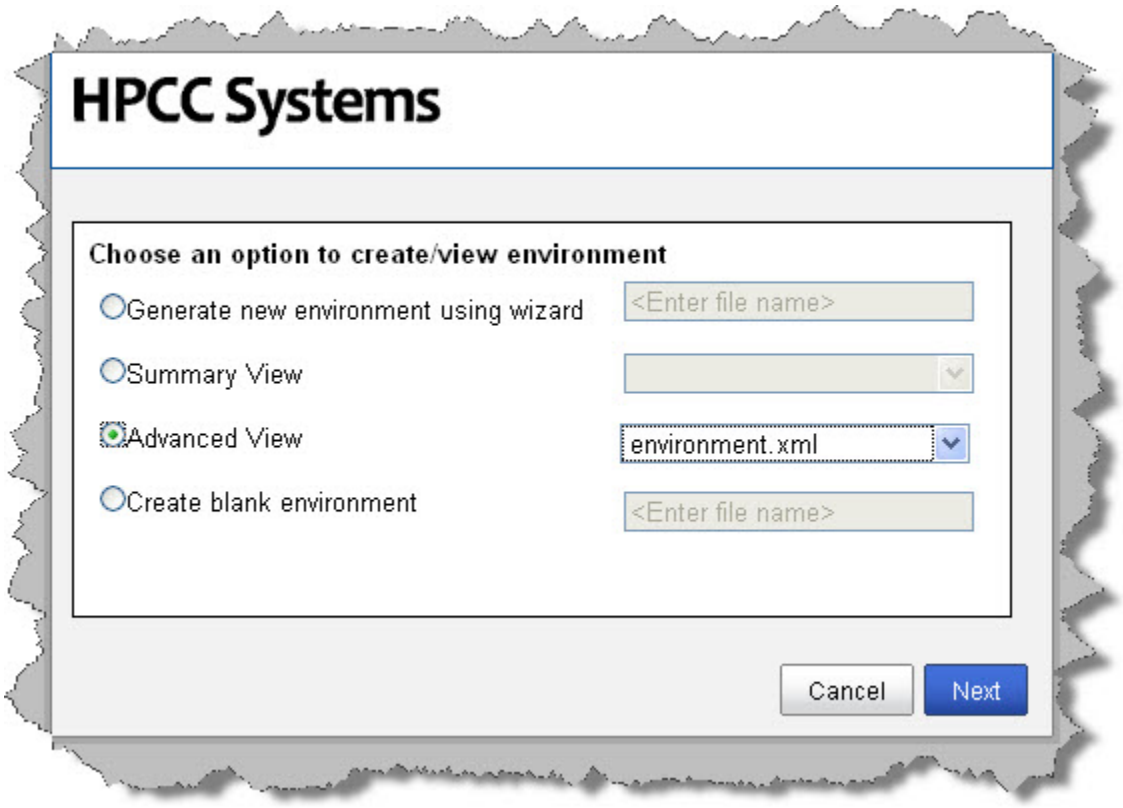
There are a few different ways to configure your system. If you are not an experienced user you can use the Generate environment wizard discussed in the previous section.

6. Select an XML file from the drop list.

This list is populated from versions of an environment XML file in your server's /etc/HPCCSystems/source/ directory.

The system will check the current environment file and if a match is found here it will highlight in blue the current environment file being used.

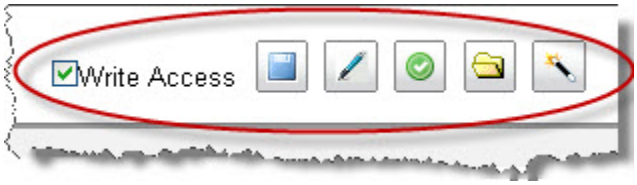
7. Press the **Next** button.



8. The Configuration Manager interface displays.

	Default access is read-only. Many options are only available when write-access is enabled. Gain write access by checking the **Write Access** checkbox. Unchecking this box returns the environment to read-only mode. All menu items are disabled in read-only mode. Closing the web page automatically removes any write-access locks.

9. Check the **Write Access** box.



The **Save** button  validates and saves the environment.

The **Save Environment As** button  validates and lets you specify the environment filename to save.

The **Validate Environment** button  just validates the current environment including any changes that have not yet been saved.

The **Open Environment** button  allows you to open a new environment file to work on.

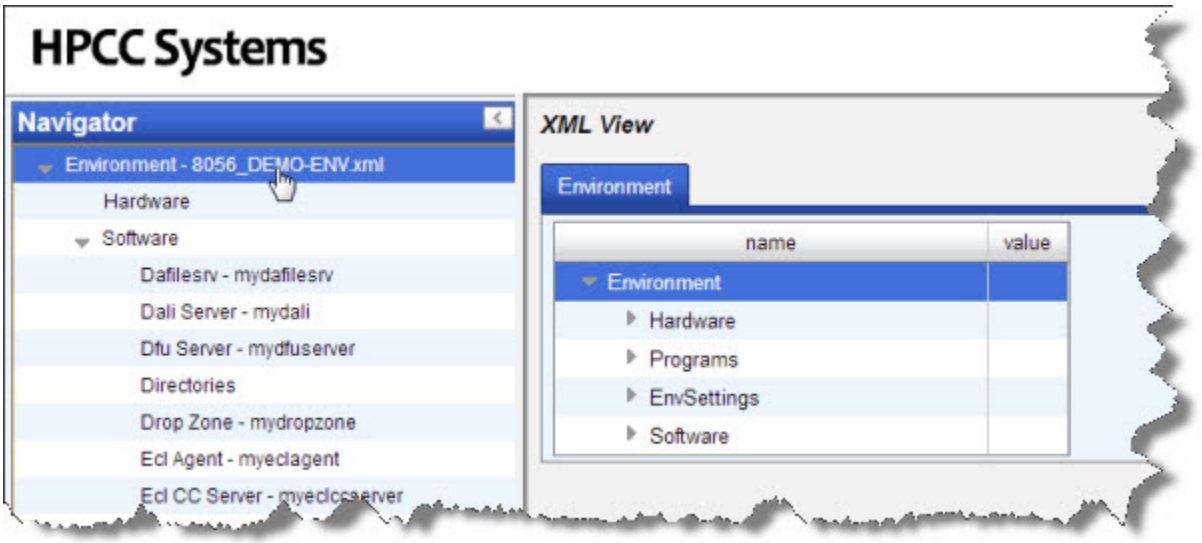
The **Wizard** button  will bring up the Configuration Manager chooser form which will allow you to create or view an environment file where you can also launch the configuration wizard.

These buttons are only enabled in Write Access mode.

XML View

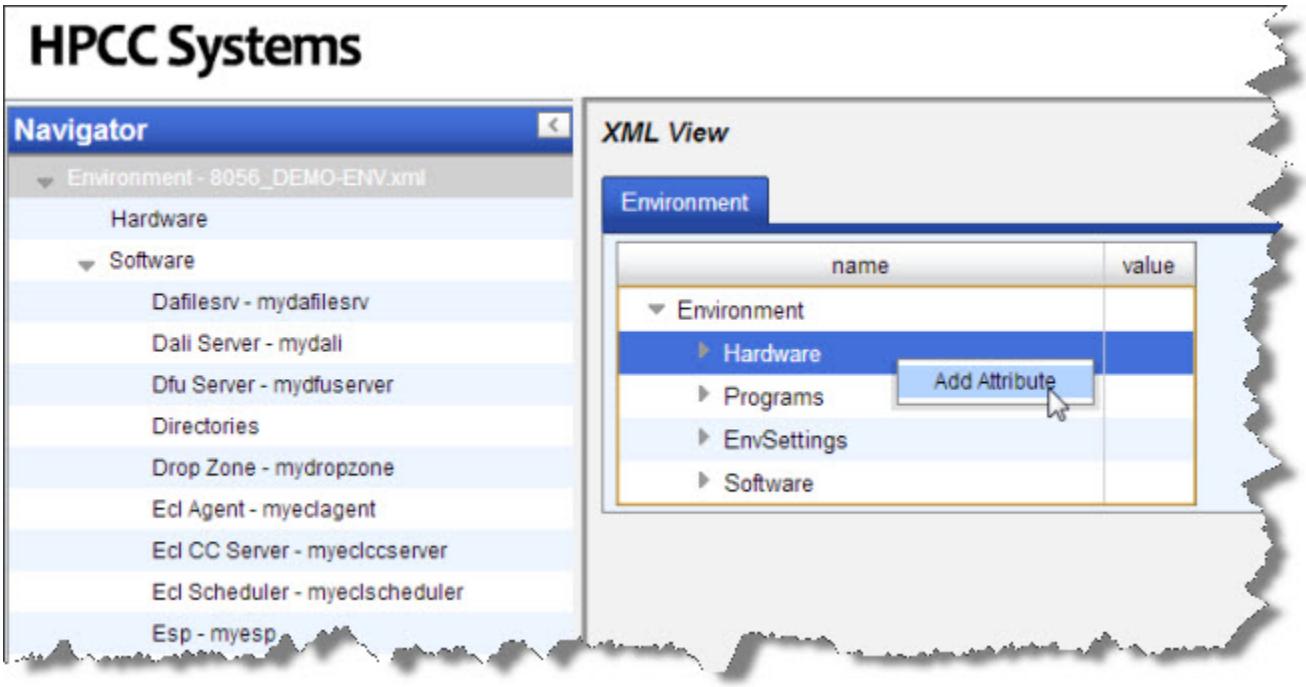
In the advanced view of Configuration Manager, you can optionally choose to work with the XML View.

To see the the configuration in XML View, click on the Environment heading in the Navigator panel on the left side.



You can access all attributes through the XML view.

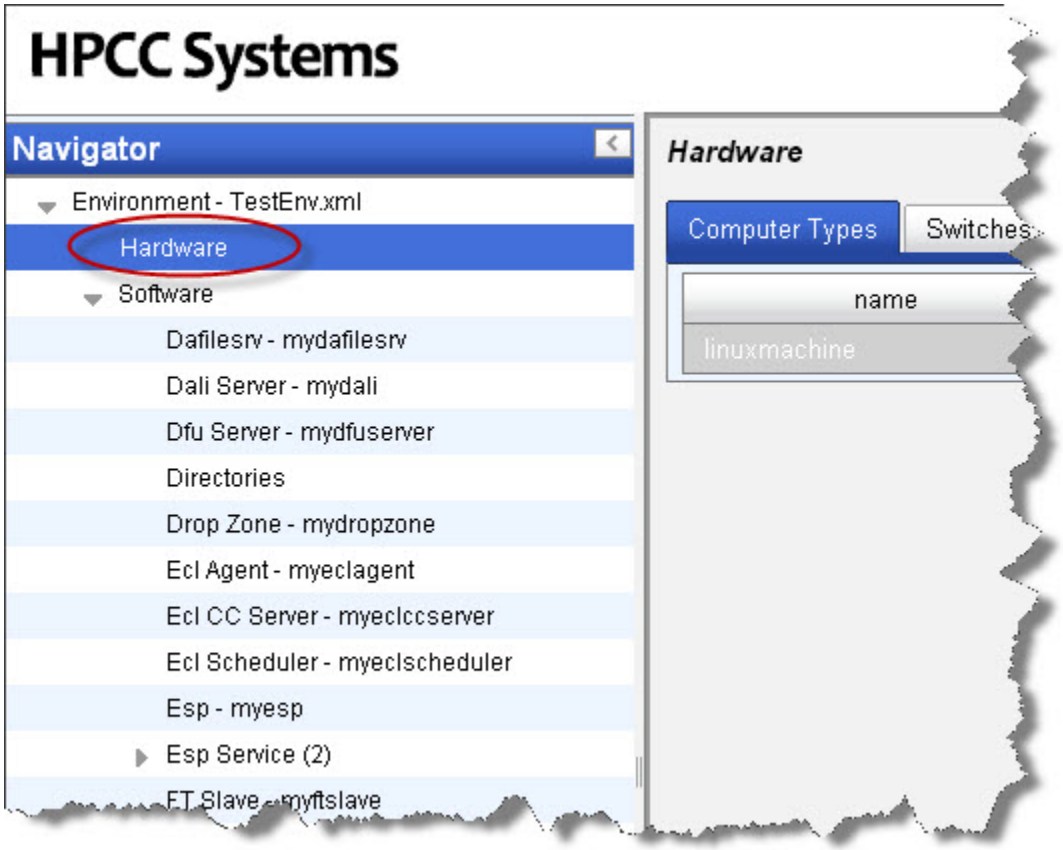
If you wish to add an attribute that does not exist, right-click on one of the components then you can choose to add an attribute.



Hardware Section

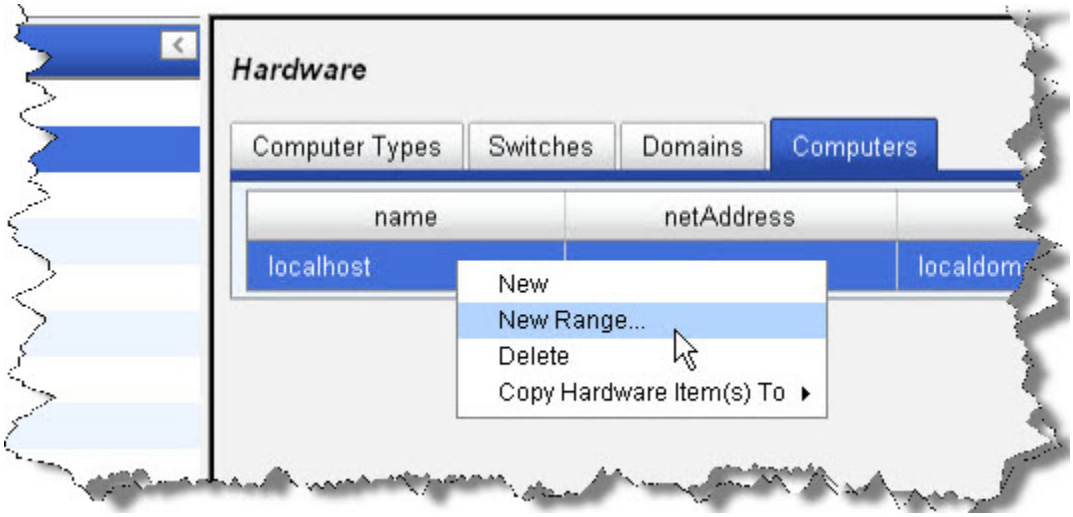
This section allows you to define your list of servers. When defining instances of components, you will choose from servers in this list.

1. Select **Hardware** in the Navigator panel on the left side.



2. Select the **Computers** tab.

3. right-click on one of computers listed, then select New Range.



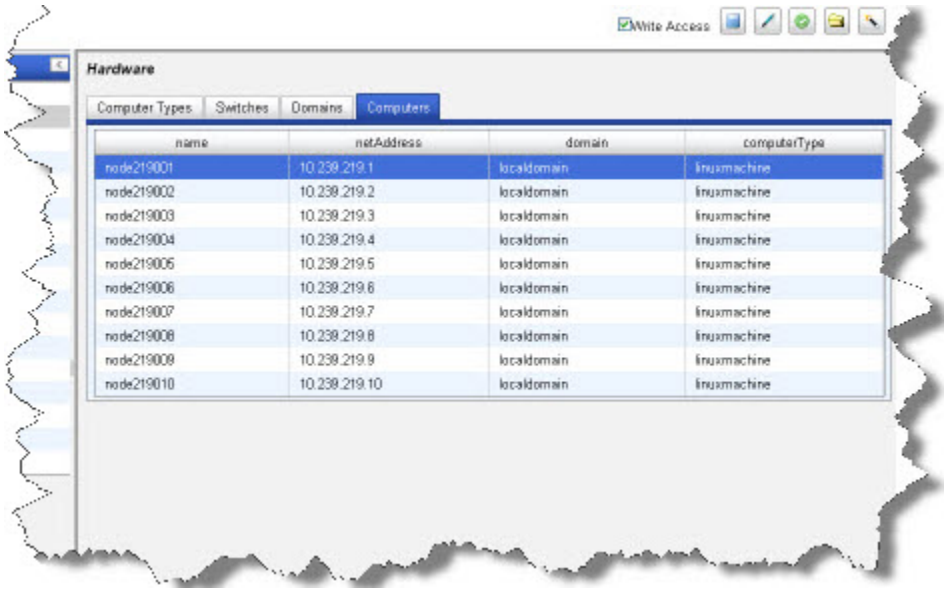
4. Specify the following:

   - Name Prefix - any name that will help you to identify the node or range
   - Start IP Address
   - Stop IP Address

   The IP Addresses can be specified in a range if all your host IP addresses are consecutively numbered. If the IP addresses are not sequential you should repeat the process for each individual IP address and just add the IP address in both the start and stop IP address field. You will then need to repeat the process for each node.

5. Press the **OK** button.

   The list of nodes now displays with the nodes that you just added.



Next, edit each System Server component instance and set it to a newly defined node.

6. Click the  disk icon to save

7. Expand the **Software** section, if necessary, in the Navigator panel on the left side, by clicking on the ▸ button.

Software Section

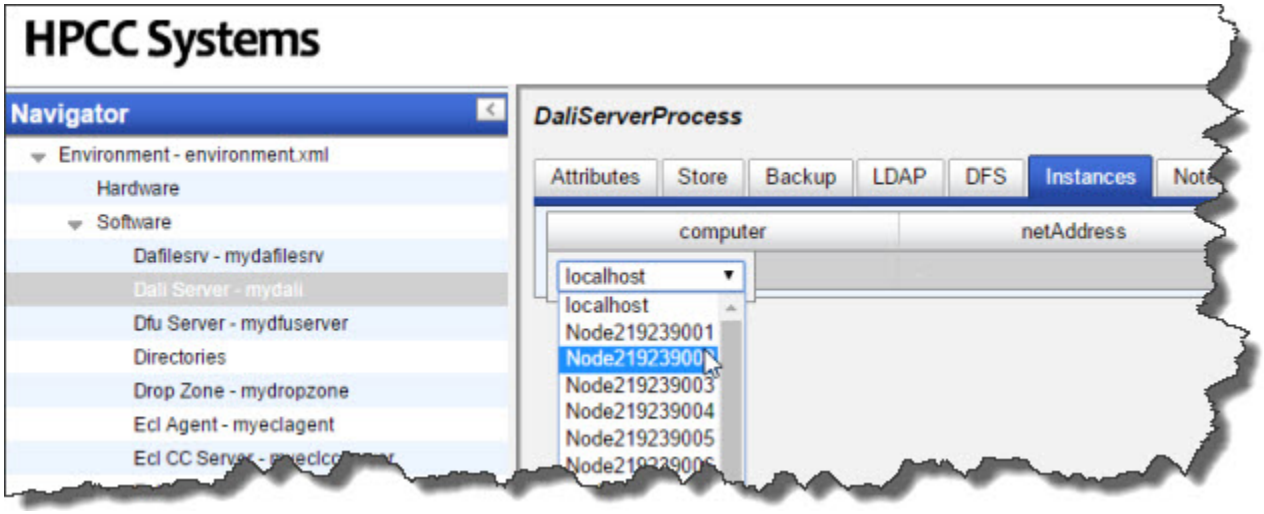
Use the software components section to configure software components of the HPCC platform. Most software components are actual running processes; however, some are just definitions used by the system. These definitions are used by the configuration generator.

Items that appear in red indicate optional values. They are only written to the environment if you add to or change that value. If untouched, they will not appear in the environment XML file.

Dali

Instances

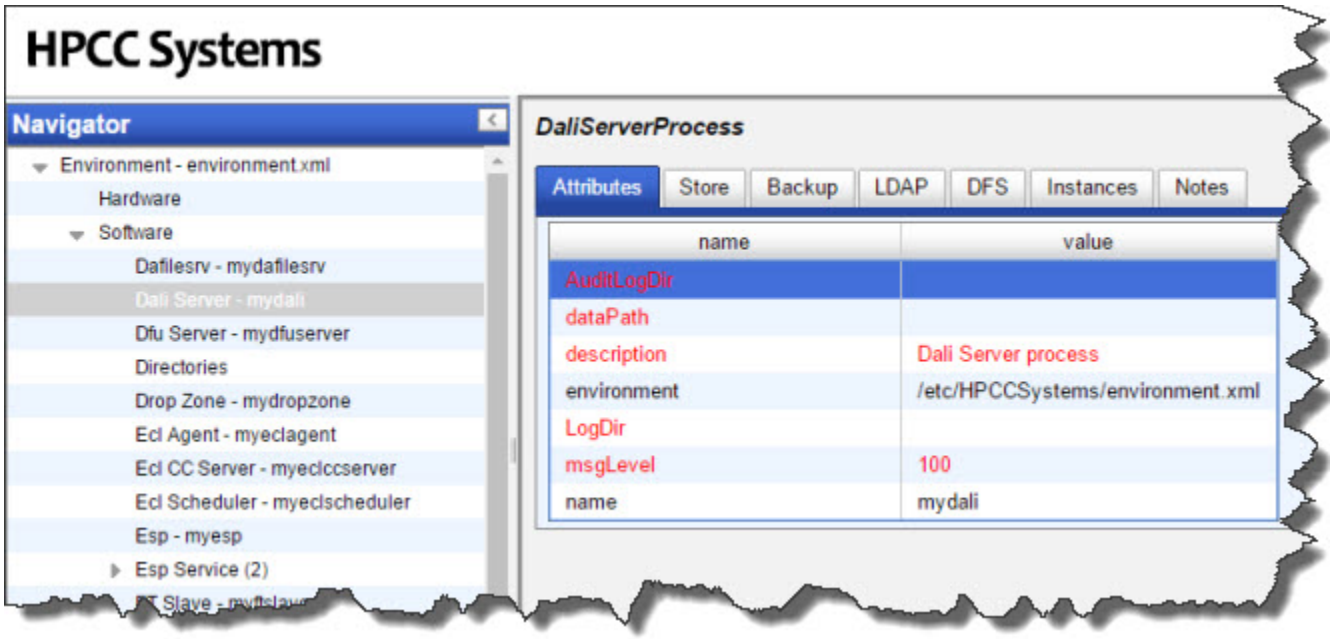
1. Select **Dali Server** in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

DaliServer attributes

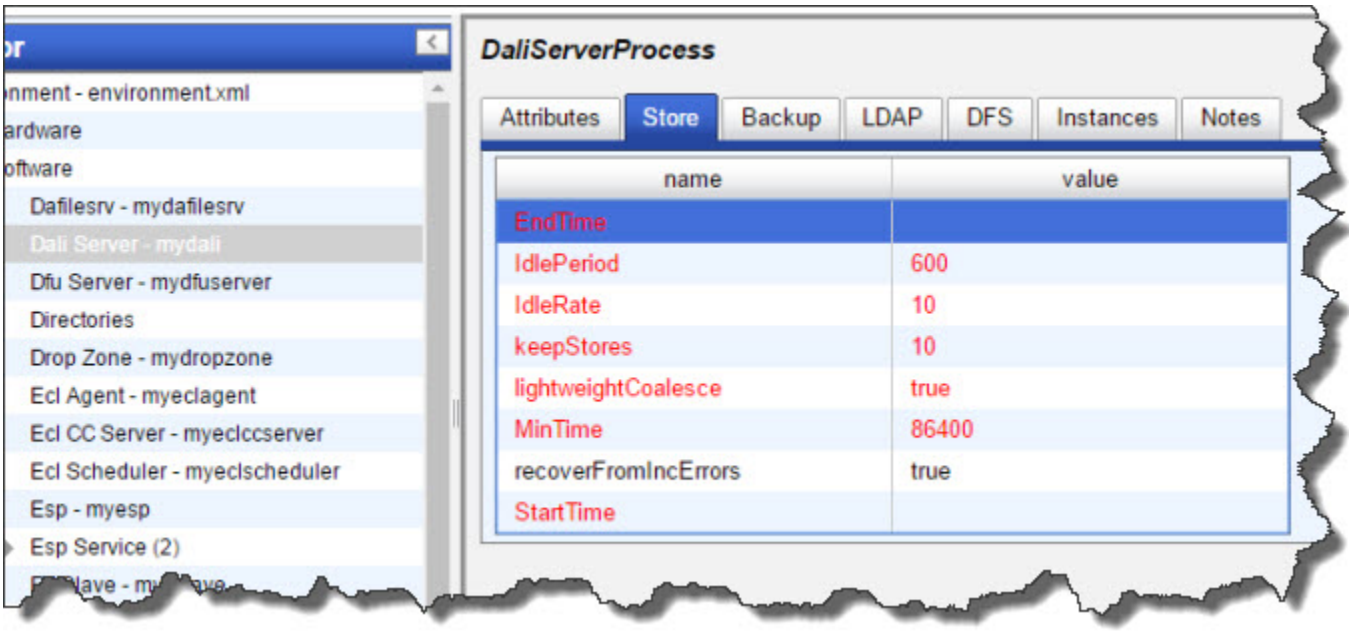
This section describes the DaliServer attributes.



<xi:include></xi:include>

DaliServer store

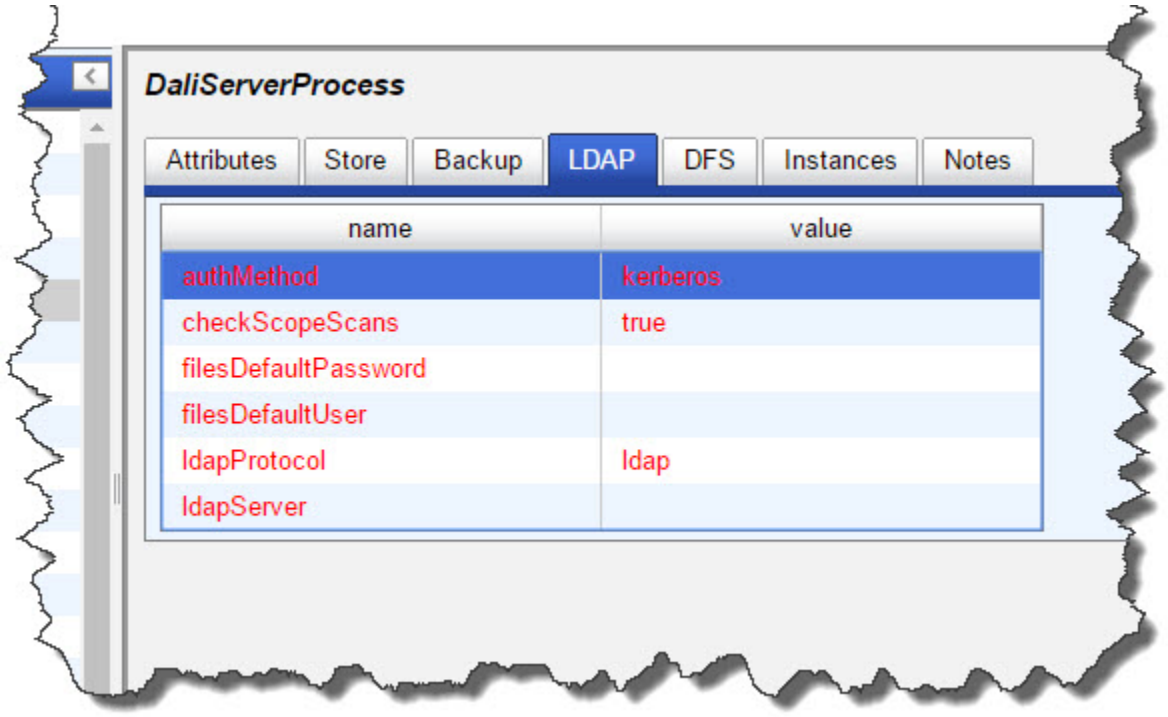
This section describes the attributes configuring how Dali handles the system data store.



<xi:include></xi:include>

DaliServer LDAP options

This section describes the DaliServer LDAP tab.



<xi:include></xi:include>

DaliServer Notes

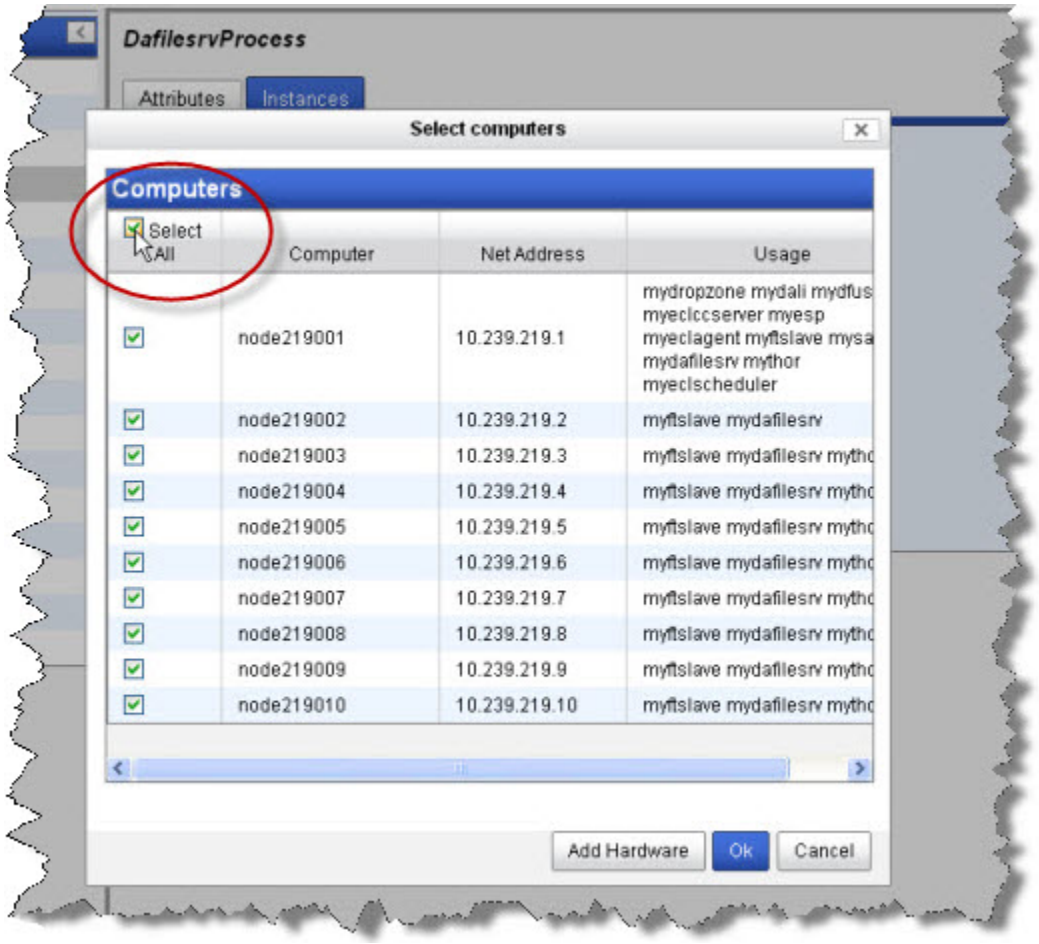
This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

Dafilesrv Process

Dafilesrv Instances

Dafilesrv is a helper process that every node needs.

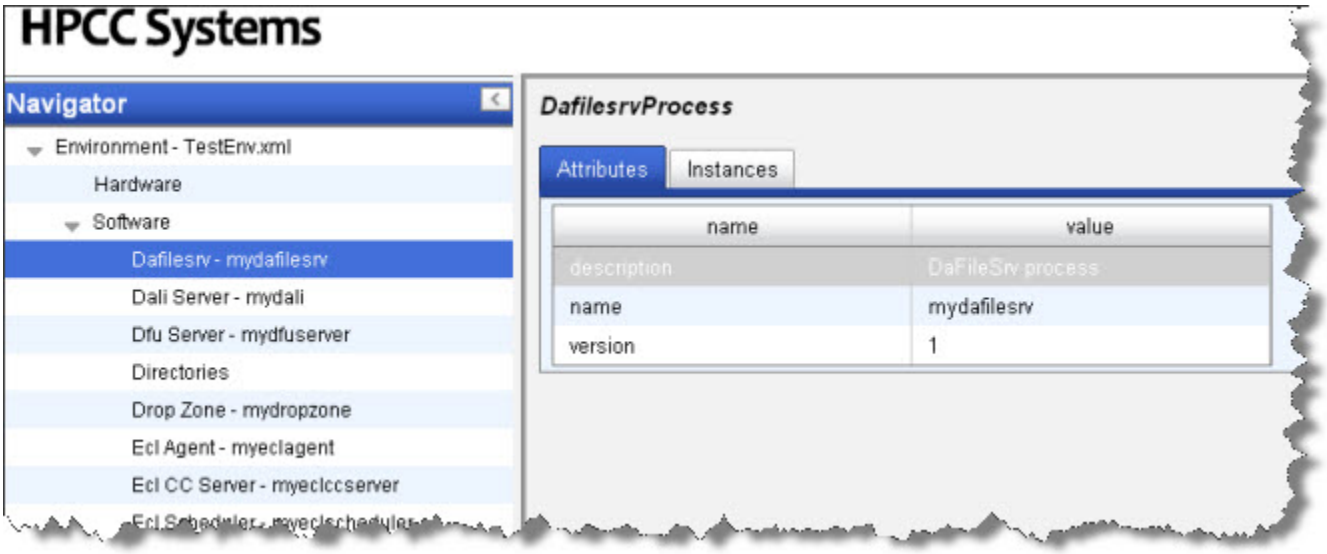
1. Select Dafilesrv in the Navigator panel on the left side.
2. Select the Instances tab.
3. right-click on a computer in the computer column, and select Add Instance .
4. Select all computers in the list by checking the **Select All** box, then press the **OK** button.



5. Click the  disk icon to save

Dafilesrv attributes

This section describes the Dafilesrv attributes.

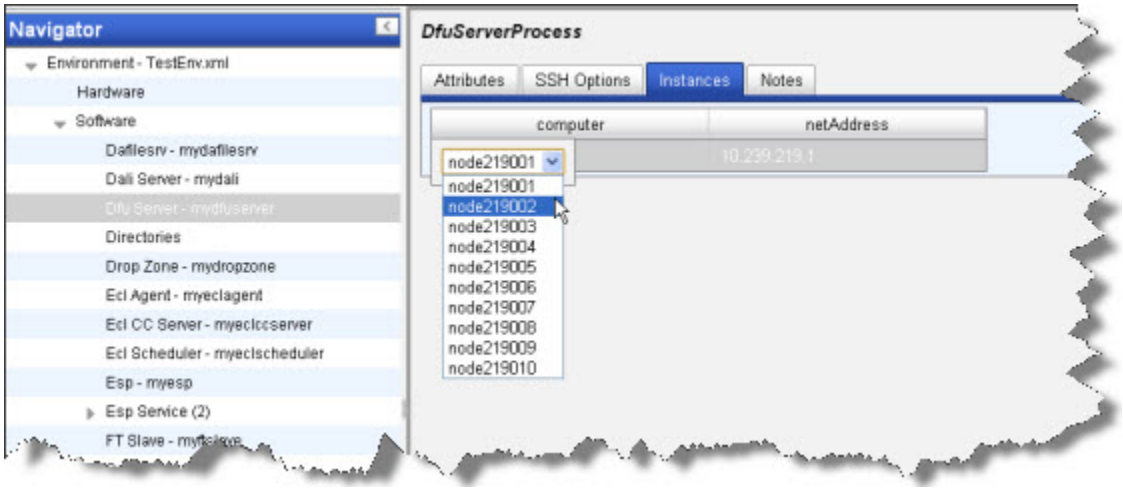


<xi:include></xi:include>

DFU Server

DfuServer Instances

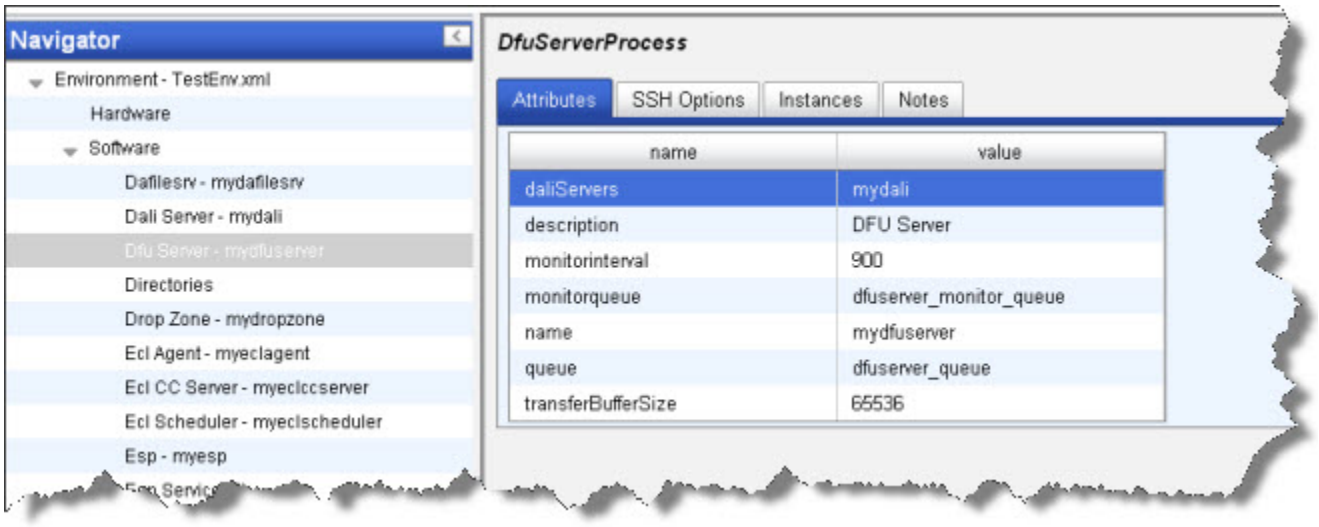
1. Select **DFU Server** in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

DfuServer Attributes Tab

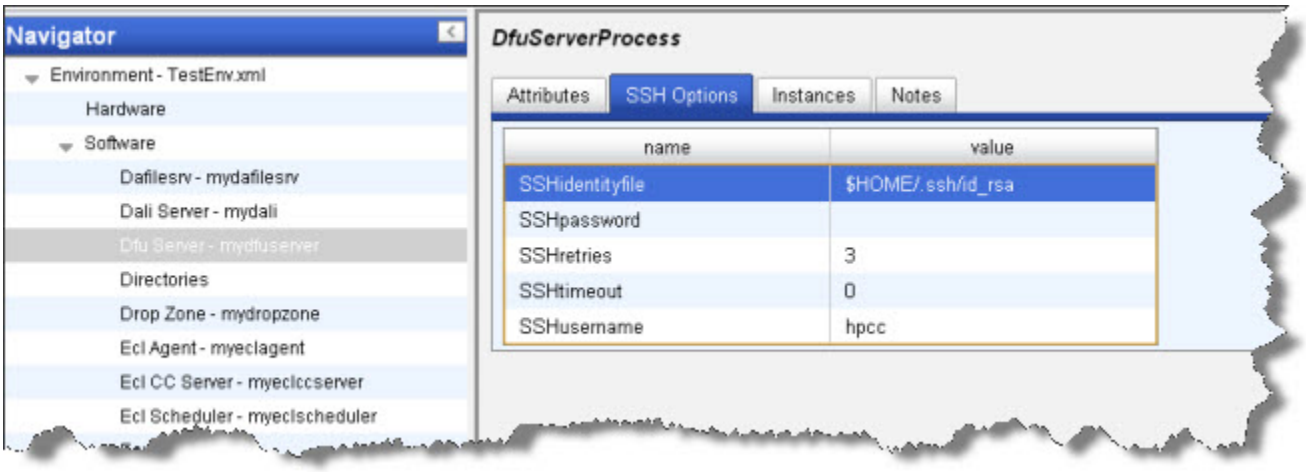
This section describes the DfuServer attributes.



<xi:include></xi:include>

DfuServer SSH Options

This section describes the DfuServer SSH Options..



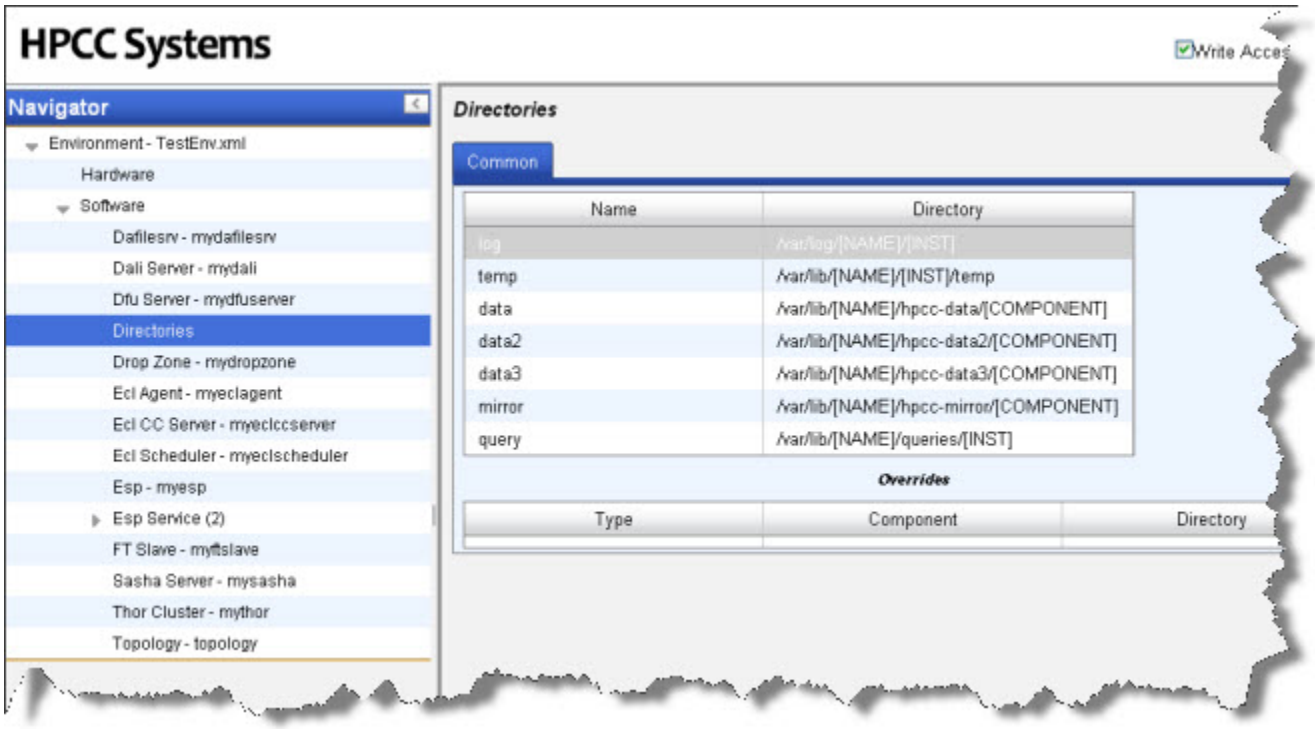
<xi:include></xi:include>

DfuServer Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

Directories

The Directories component is a global definition used by other components to determine the directories they will use for various functions.



Name	Directory	Description
log	/var/log/[NAME]/[INST]	Location for Log files
temp	/var/lib/[NAME]/[INST]/temp	Location for temp files
data		Base Location for data files
data2		Base Location for 2nd copy of roxie data
data3		Reserved for future use
mirror		Base Location for mirror data files
query		Base Location for Queries

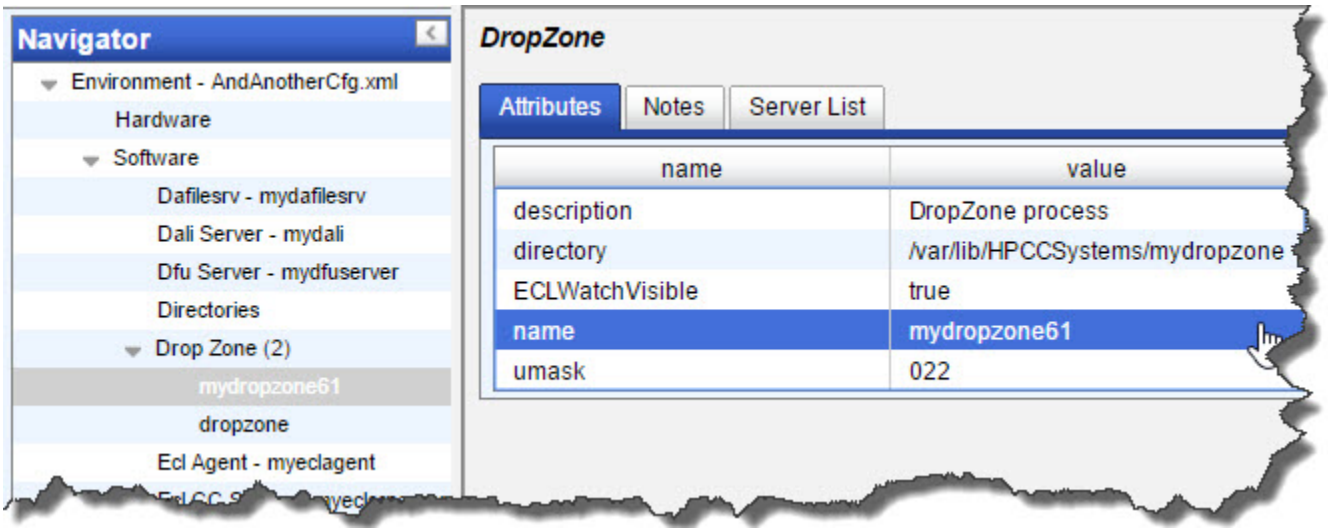
Drop Zone

A Drop Zone (or landing zone) is a location where files can be transferred to or from your HPCC system. A drop zone is comprised of one or more server nodes, and you should specify at least one server in the server list. You can configure multiple drop zones, if necessary. You can also add folders to each drop zone to help organize your data. Multiple drop zones are also useful to allow different permissions for users or groups.

To add another drop zone, right-click on the Navigator panel on the left side, and choose **New Components** then **Drop Zone** from the ensuing dialog.

DropZone Attributes

You can change the configuration of your drop zone using the attributes tab. If you have multiple drop zones, select the drop zone to configure from the Navigator panel on the left side. To change one of the drop zone attributes, double-click on the value on the right side of the attribute table.



<xi:include></xi:include>

DropZone Server List

This tab allows you to add any servers that you wish to configure as a part of this drop zone. To add a server to the current drop zone.

1. Select the **Drop Zone** to configure from the Navigator panel on the left side.
2. Select the **Server List** tab.
3. RIght-click on the Server Address field and choose **Add**.
4. Enter the hostname or IP address of the server.
5. Optionally, you can select the **Attributes** tab, and modify some attributes for this drop zone.

   For example, select the name attribute, double click on the value column and provide the drop zone with a more meaningful name.
6. Click the disk icon to save.

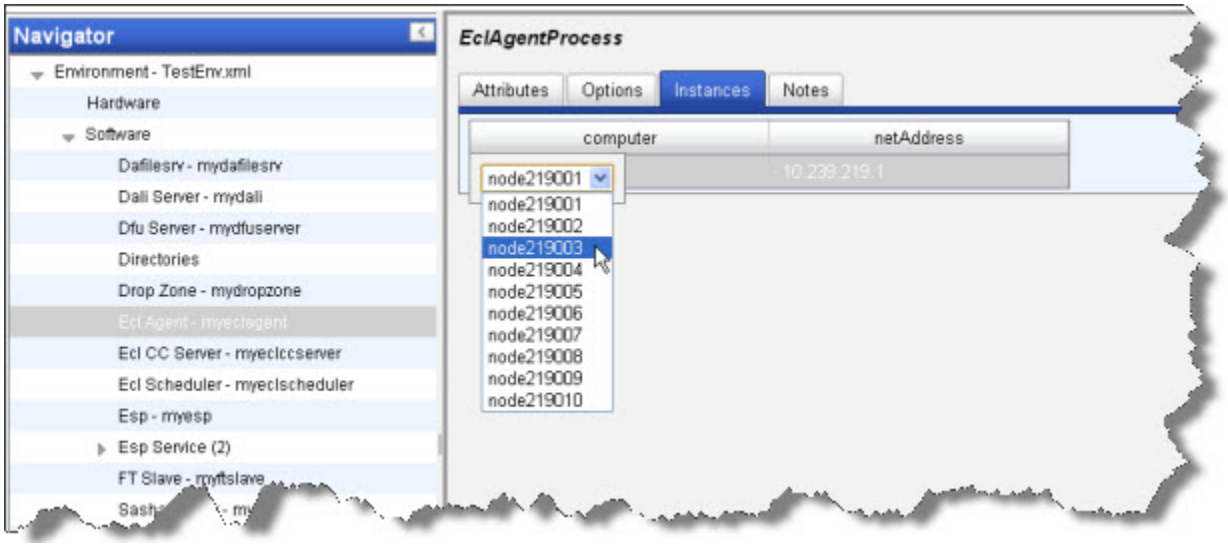
DropZone Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

ECL Agent

instances

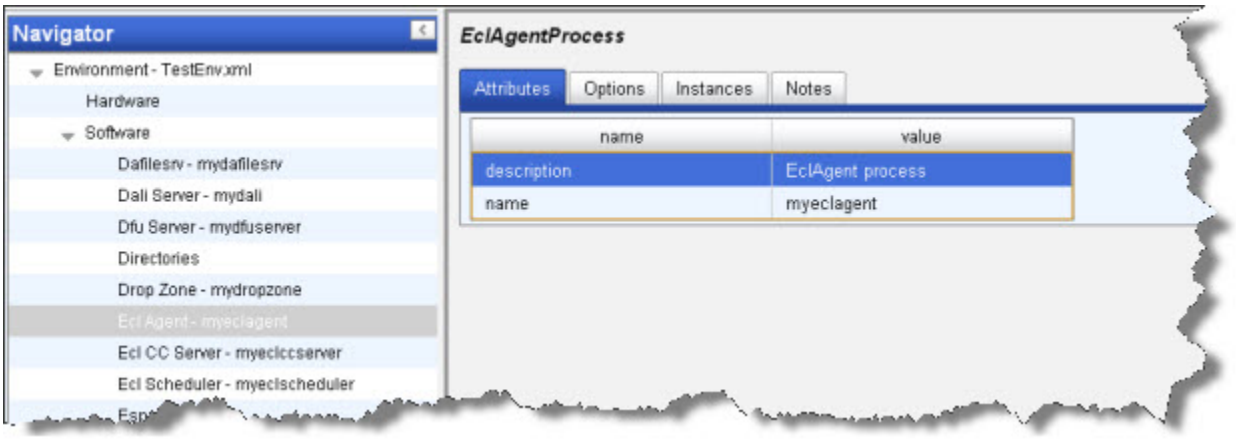
1. Select ECL Agent in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

EclAgent Attributes Tab

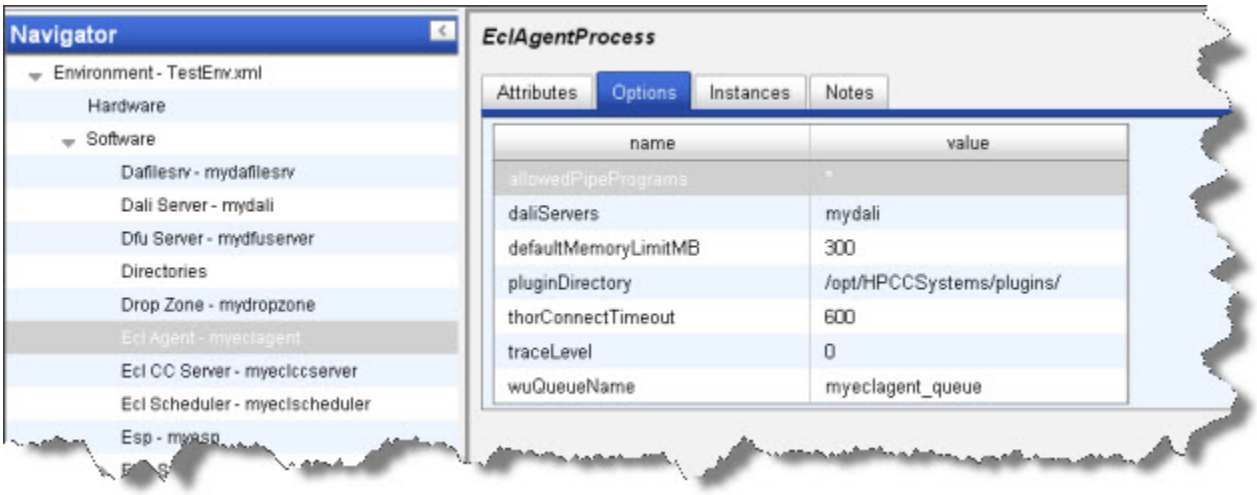
This section describes the EclAgent Attributes tab.



<xi:include></xi:include>

EclAgent Options Tab

This section describes the EclAgent Options tab.



<xi:include></xi:include>

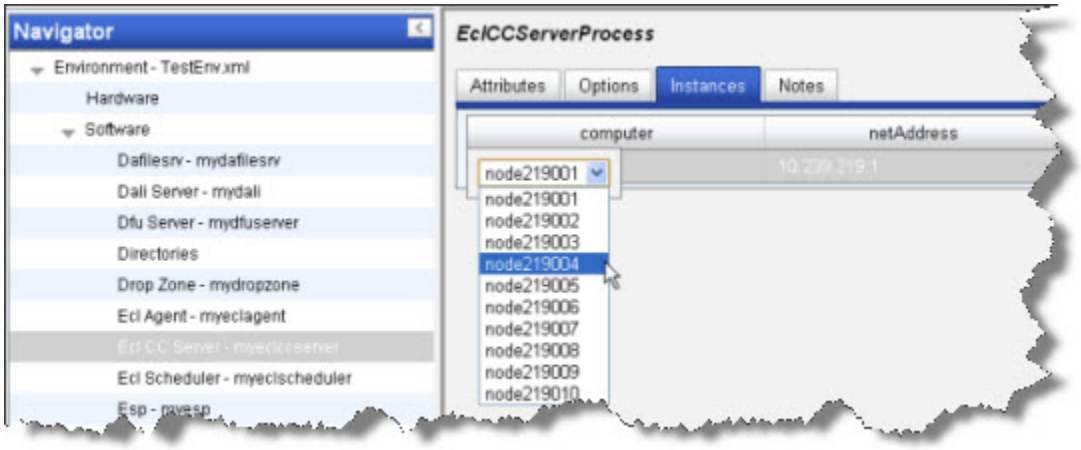
EclAgentProcessNotes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

ECL CC Server Process

Ecl CC Server Instances

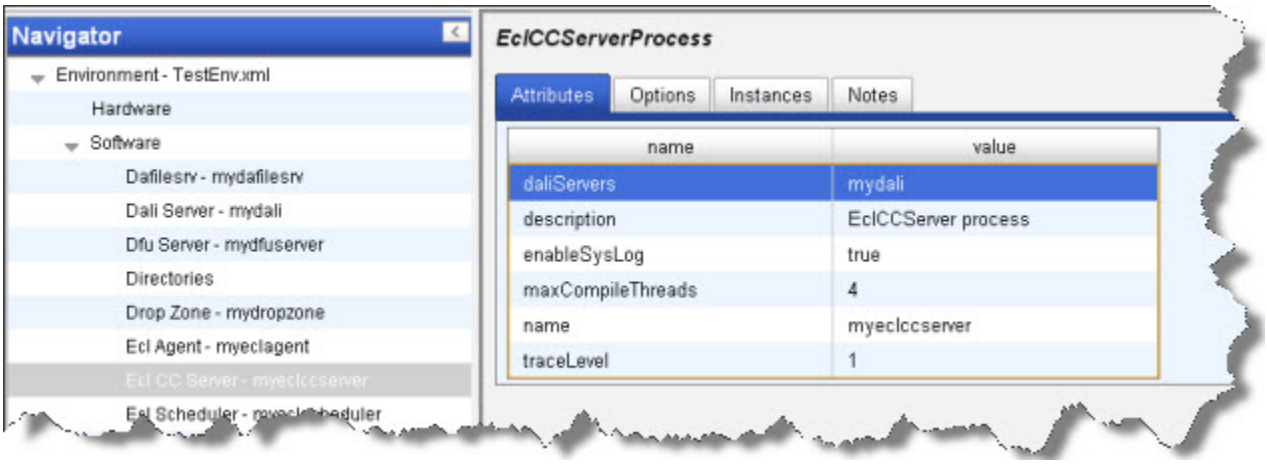
1. Select Ecl CC Server - myeclccserver in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

Ecl CC Server Attributes Tab

This section describes the Ecl CC Server Attributes tab.



<xi:include></xi:include>

EclCC Server Process Options

To add a custom option, right-click and select add. These options are passed to the eclcc compiler.

See the ECL Compiler chapter in the **Client Tools** manual for details.

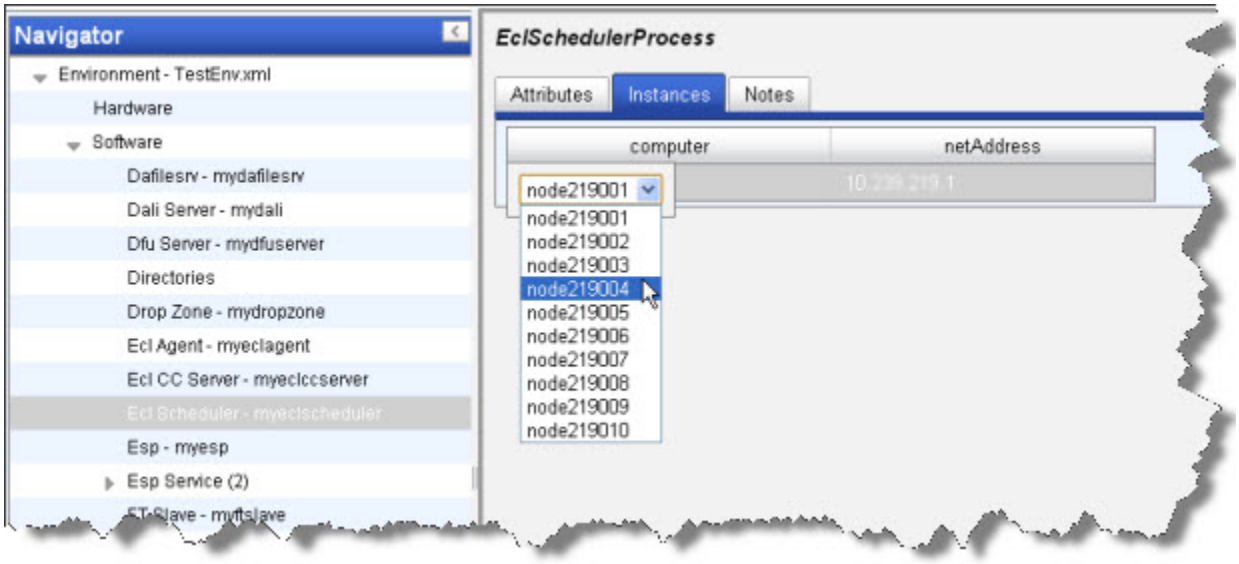
EclCC Server Process Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

ECL Scheduler

instances

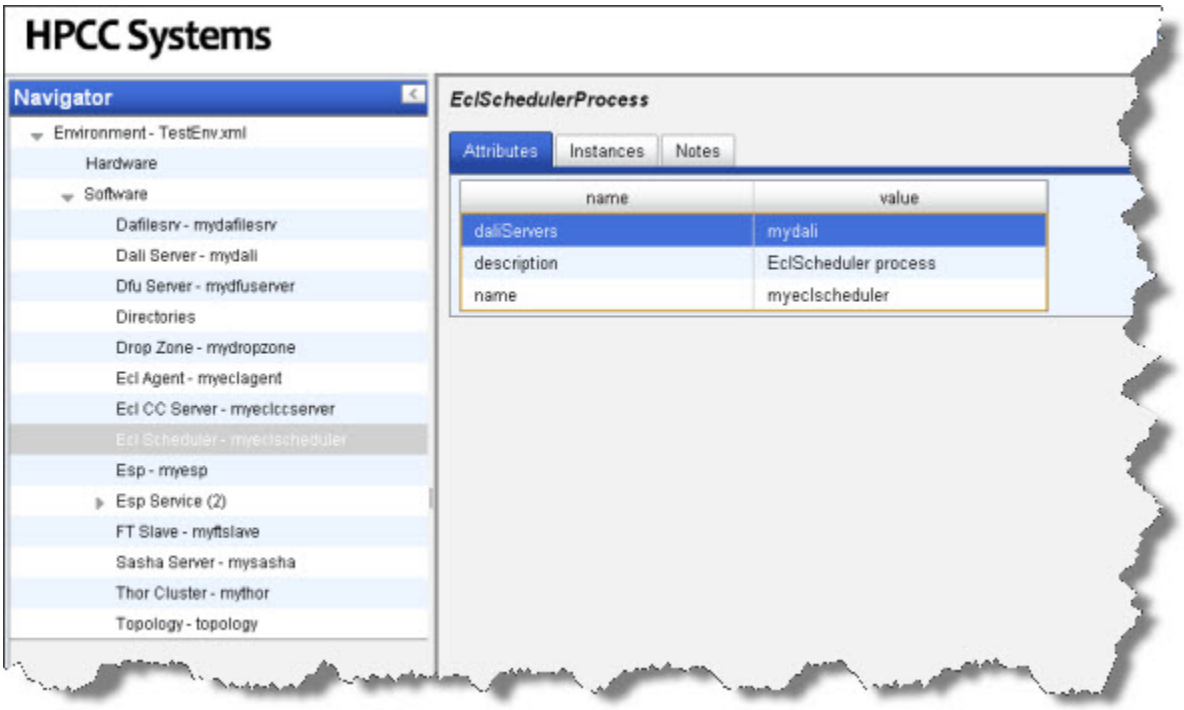
1. Select **ECL Scheduler** in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

EclScheduler Attributes Tab

This section describes the EclScheduler Attributes tab.



<xi:include></xi:include>

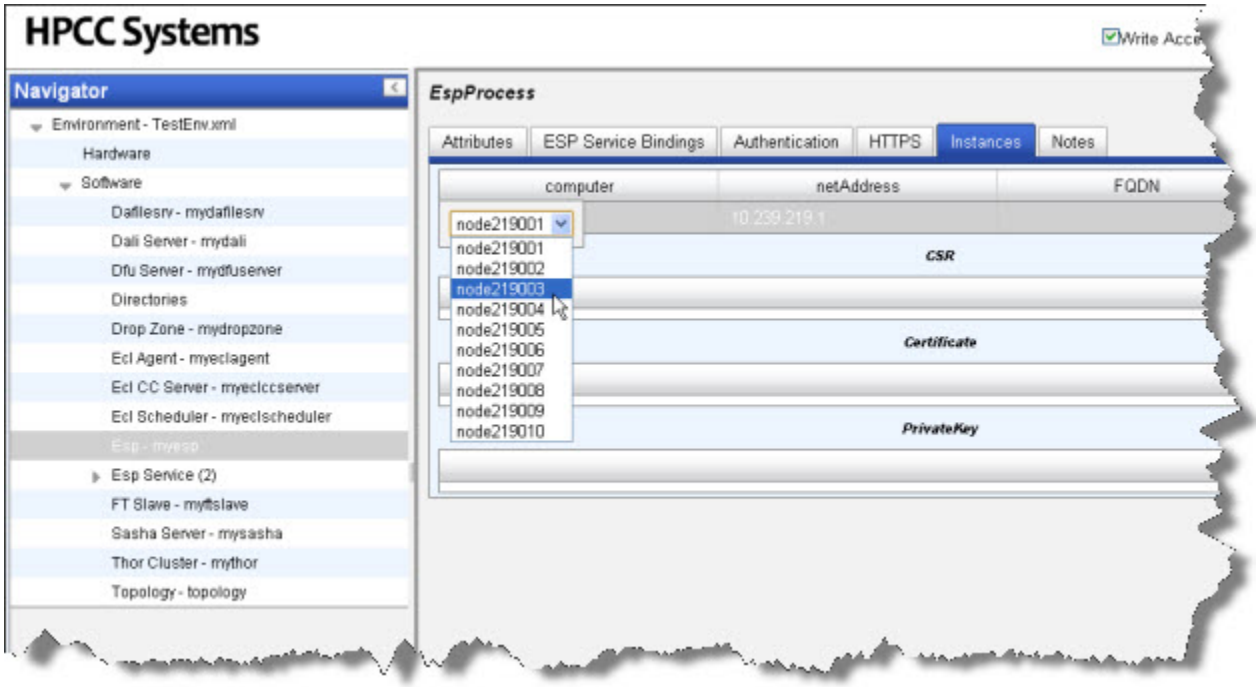
EclScheduler Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

ESP Server

Esp Process Instances

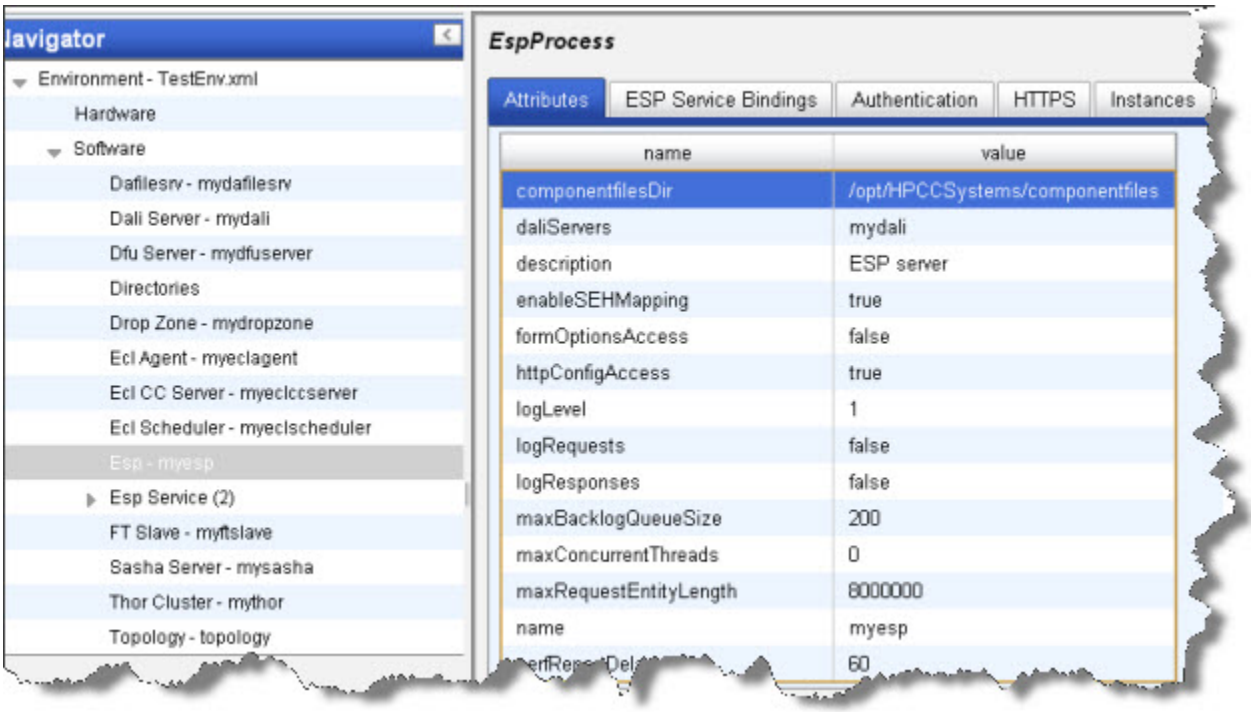
1. Select **ESP - myesp** in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

Esp - myesp Attributes Tab

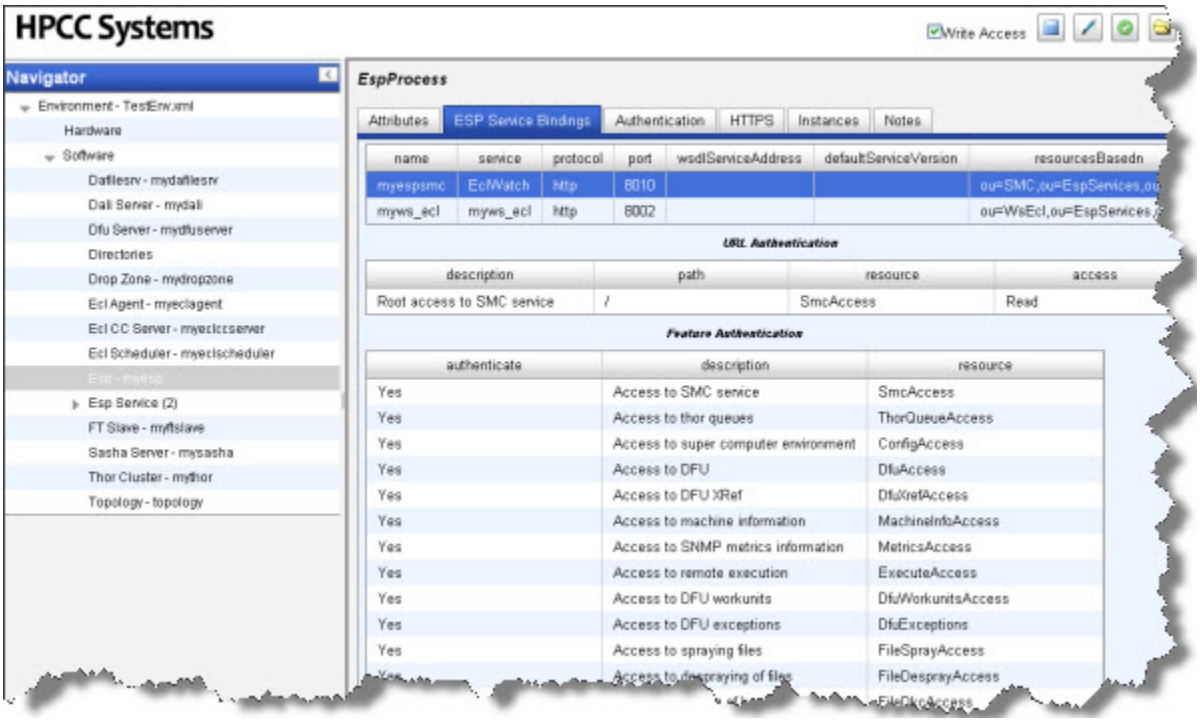
This section describes the Esp - myesp Attributes tab.



<xi:include></xi:include>

Esp - myesp Service BindingsTab

This section describes the Esp - myesp Service Bindings tab. This tab requires additional steps to configure the service bindings.



You must first add the service bindings in the first table (Right-click, add). Then you would configure the attributes in the other tables on that tab. The next table describes the **URL Authentication** table.

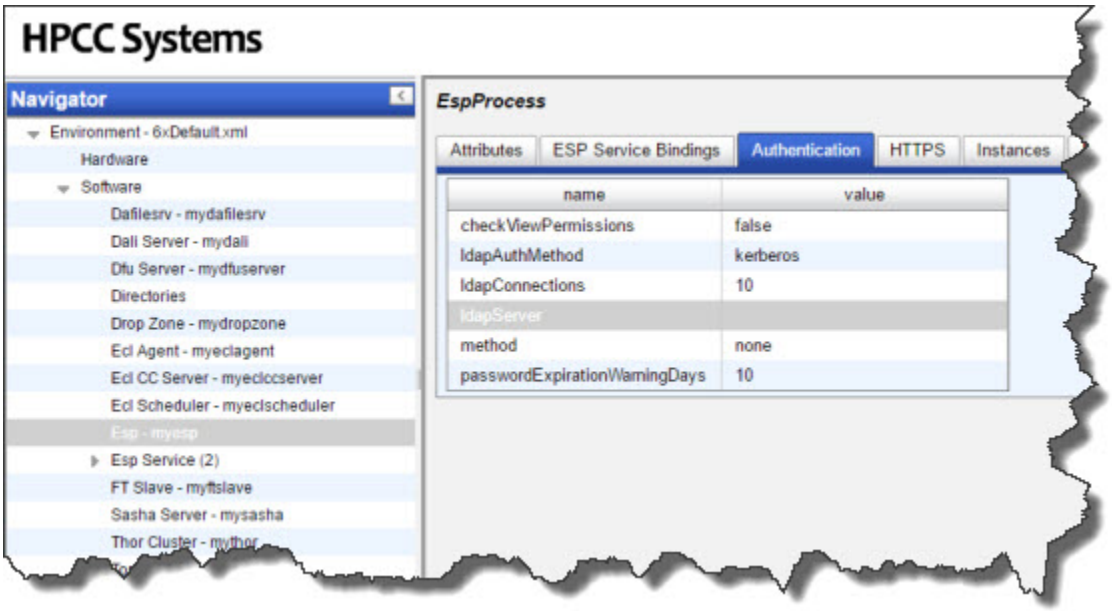
<xi:include></xi:include>

The following tables describe the ESPProcess Service Bindings, **Feature Authentications**.

<xi:include></xi:include>

Esp - myesp AuthenticationTab

This section describes the Esp - myesp Service Authentication tab.



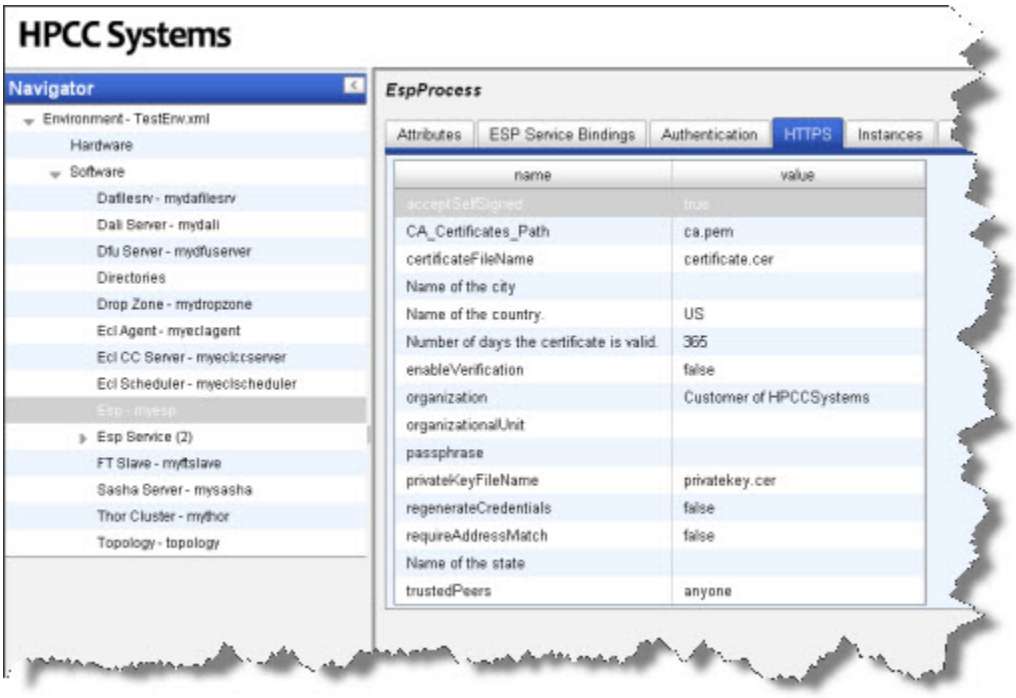
<xi:include></xi:include>

Additional information about the available Authentication methods:

none	uses no authentication
local	uses the local credentials for the server running the ESP
ldap	uses Lightweight Directory Access Protocol for authentication
ldaps	similar to LDAP but uses a more secure (TLS) protocol
secmgrPlugin	uses the security manager plug-in

Esp - myesp HTTPS Tab

This section describes the Esp - myesp HTTPS tab.



<xi:include></xi:include>

EspProcess Notes

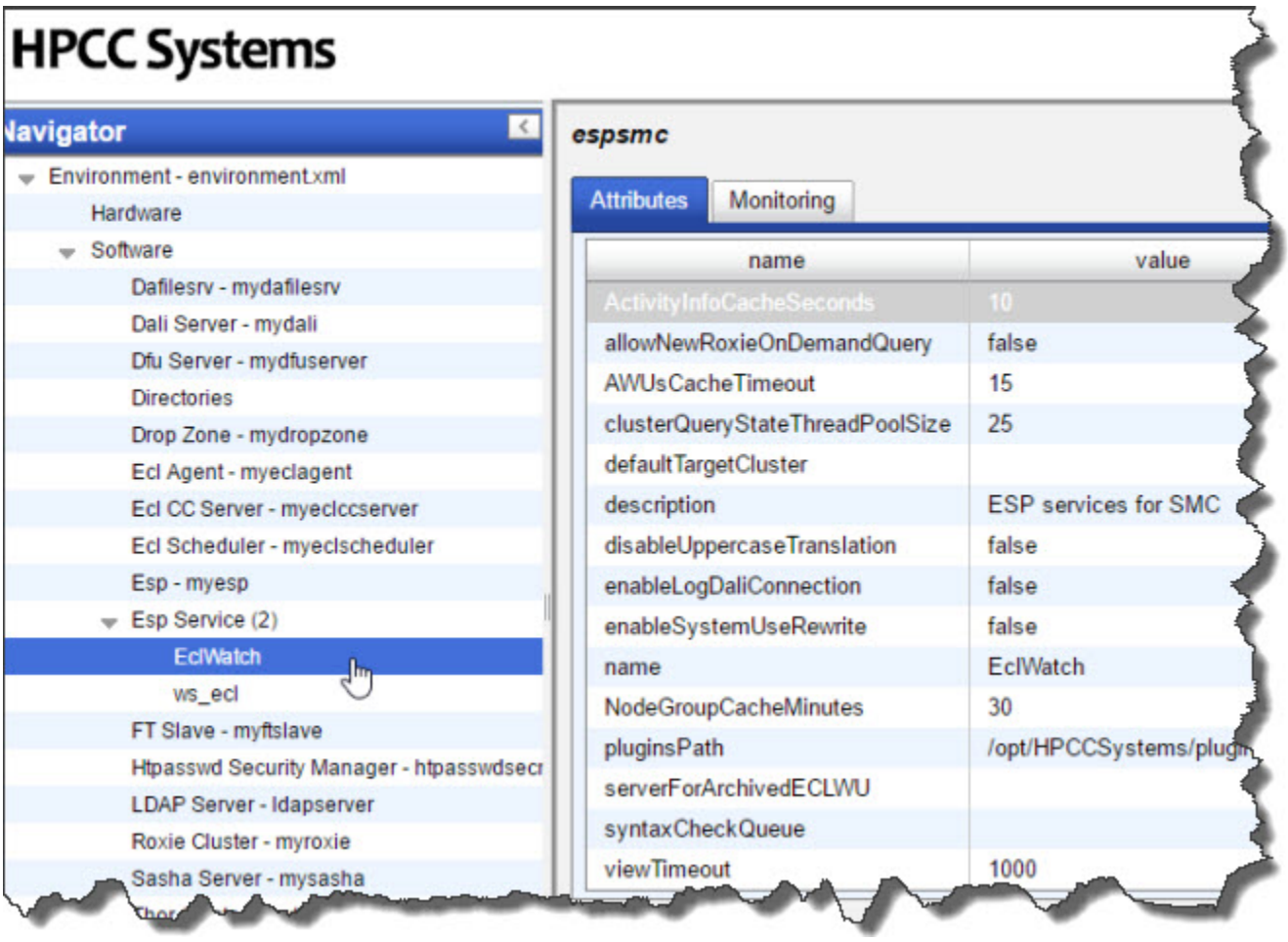
This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

ESP Services

ESP Services provide a means to add functionality to an ESP Server.

ECL Watch Service

Ecl Watch allows you to configure options for the ECL Watch utility.



ECL Watch Attribute definitions.

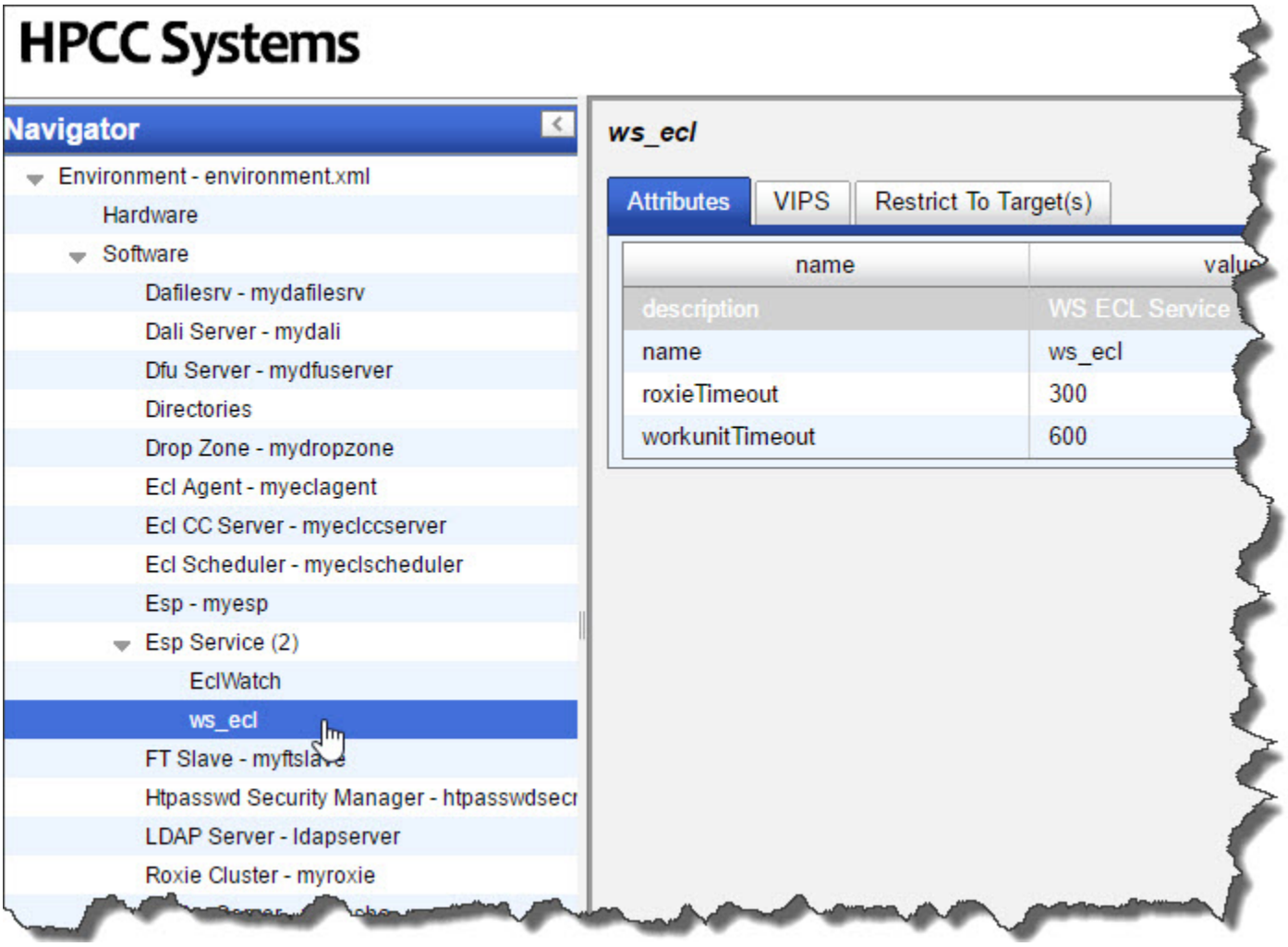
<xi:include></xi:include>

ECL Watch Monitoring attributes.

<xi:include></xi:include>

WsECL Service

The WsECL service allows you to configure options for the WsECL utility.



The Ws ECL configuration attributes.

<xi:include></xi:include>

Ws ECL VIPS option attributes.

<xi:include></xi:include>

Ws ECL Target Restrictions table.

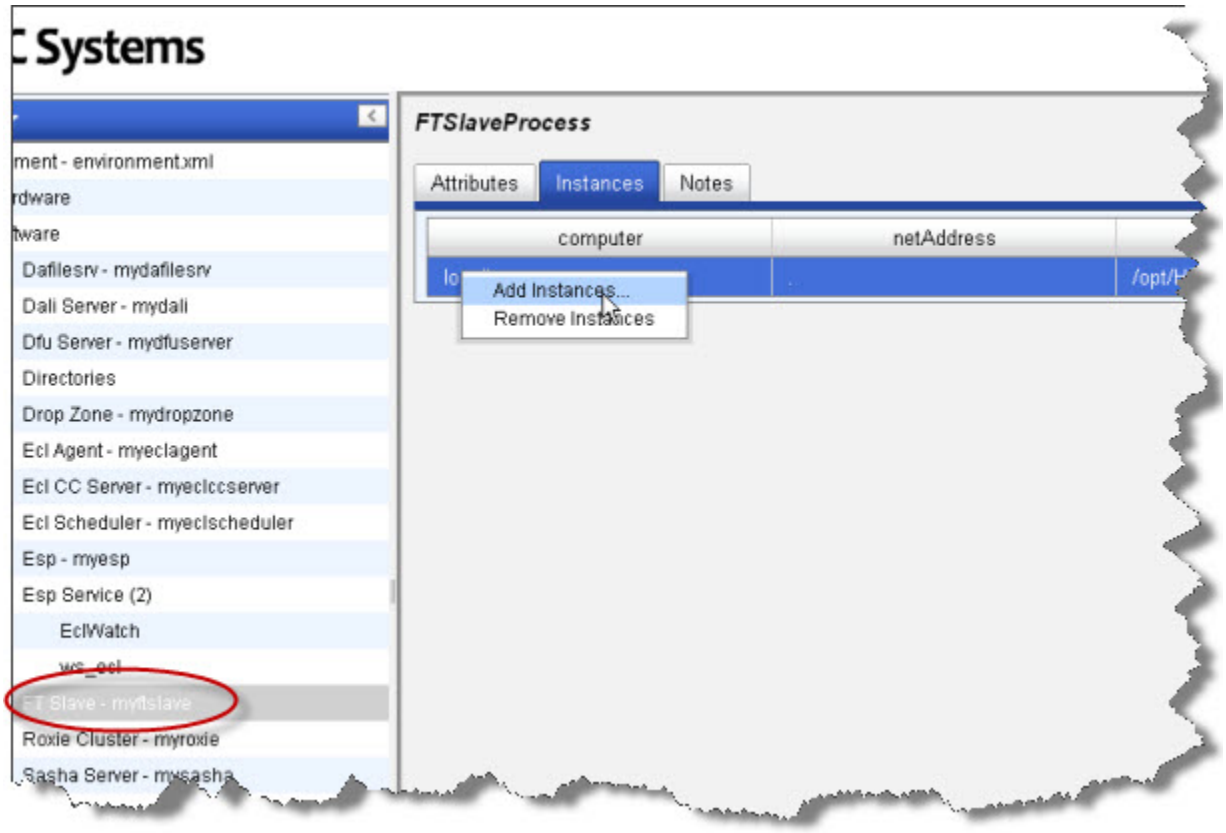
<xi:include></xi:include>

FTSlave Process

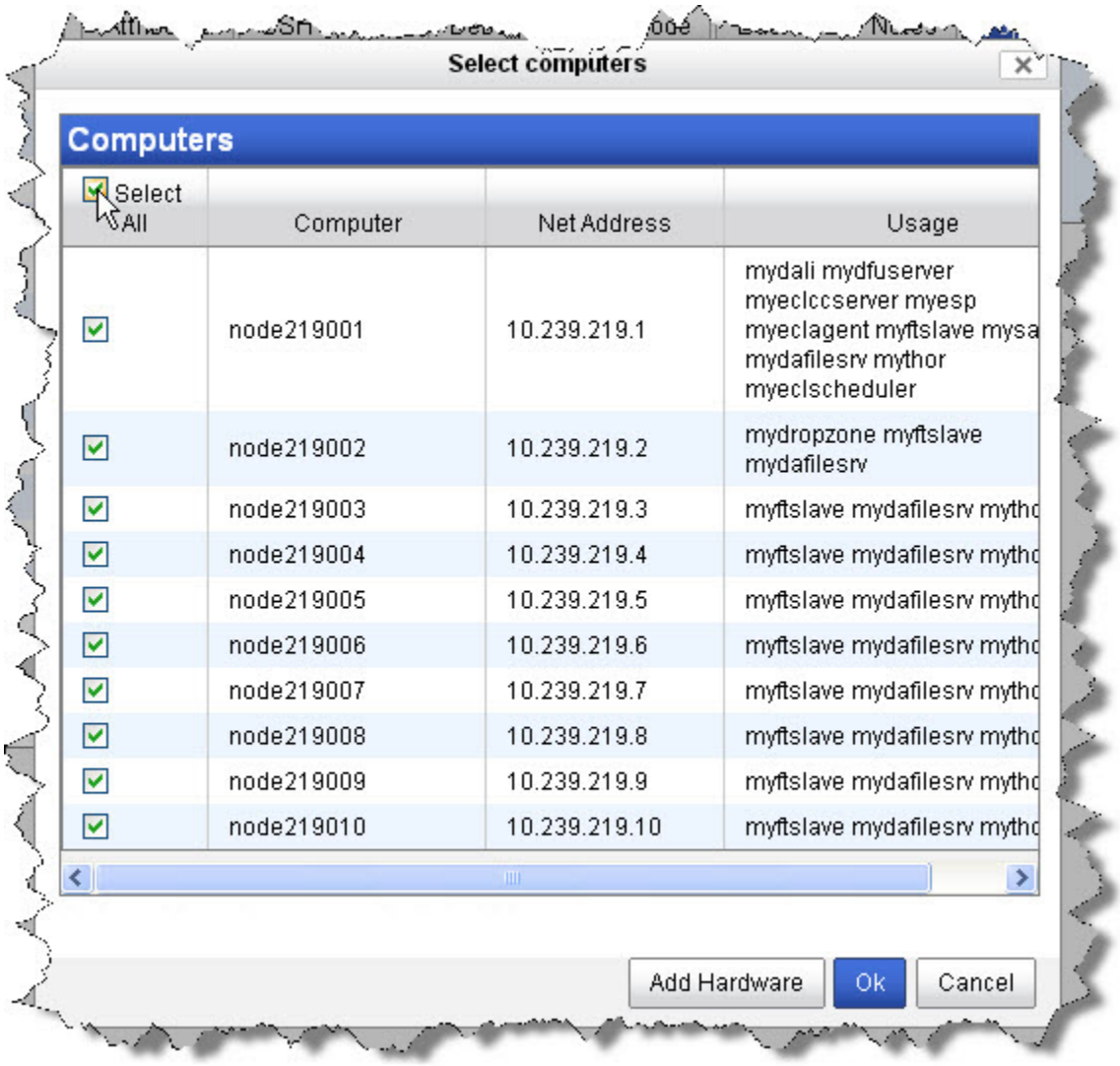
FTSlave is a helper process that every node needs. This section depicts an FTSlave installation.

Instances

1. Select FTSlave in the Navigator panel on the left side.
2. Select the Instances tab.
3. right-click on a computer in the computer column, and select Add Instance.



4. Select all computers in the list, then press the **OK** button.



5. Click the  disk icon to save

FtSlave attributes

This section describes an FTSlaveProcess attributes tab.

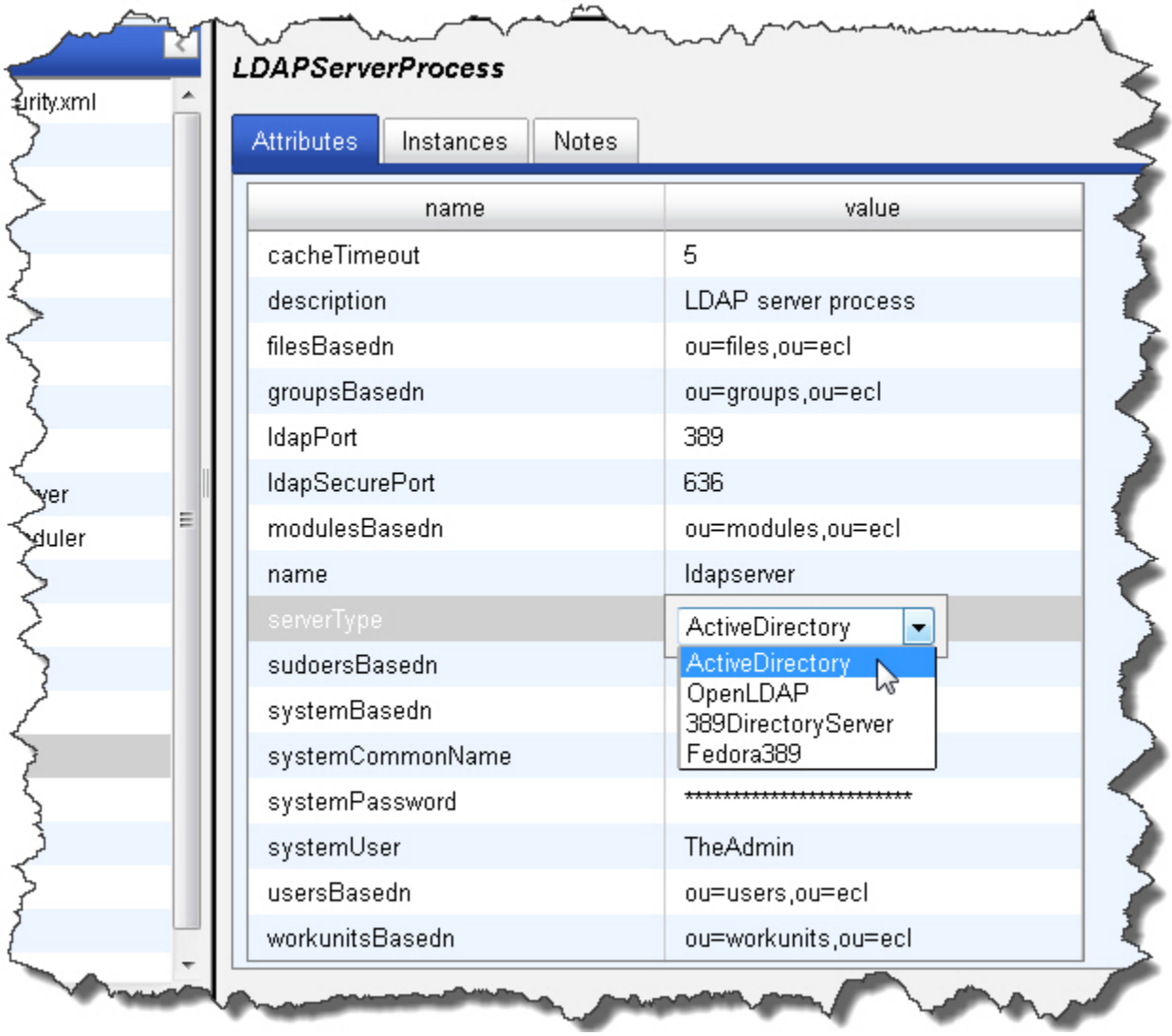
<xi:include></xi:include>

FtSlave Process Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

LDAP Server Process

This section describes the configuration attributes of an LDAPServer Installation in ConfigManager. For a complete description of how to add LDAP Authentication see *Using LDAP Authentication* section in the **Installing and Running The HPCC Platform** document.



<xi:include></xi:include>

LDAP Server Process Instances

This tab allows you to add instances to your LDAP Configuration. In order to add instances you would have previously added the LDAP computers in the Hardware section. For a complete description of how to add LDAP Authentication see *Using LDAP Authentication* section in the **Installing and Running The HPCC Platform** document.

1. On the **Instances** tab, right-click on the table on the right hand side, choose **Add Instances...**

2. Select the computer to use by checking the box next to it.

   This is the computer you added in the **Hardware** / **Add New Computers** portion earlier.

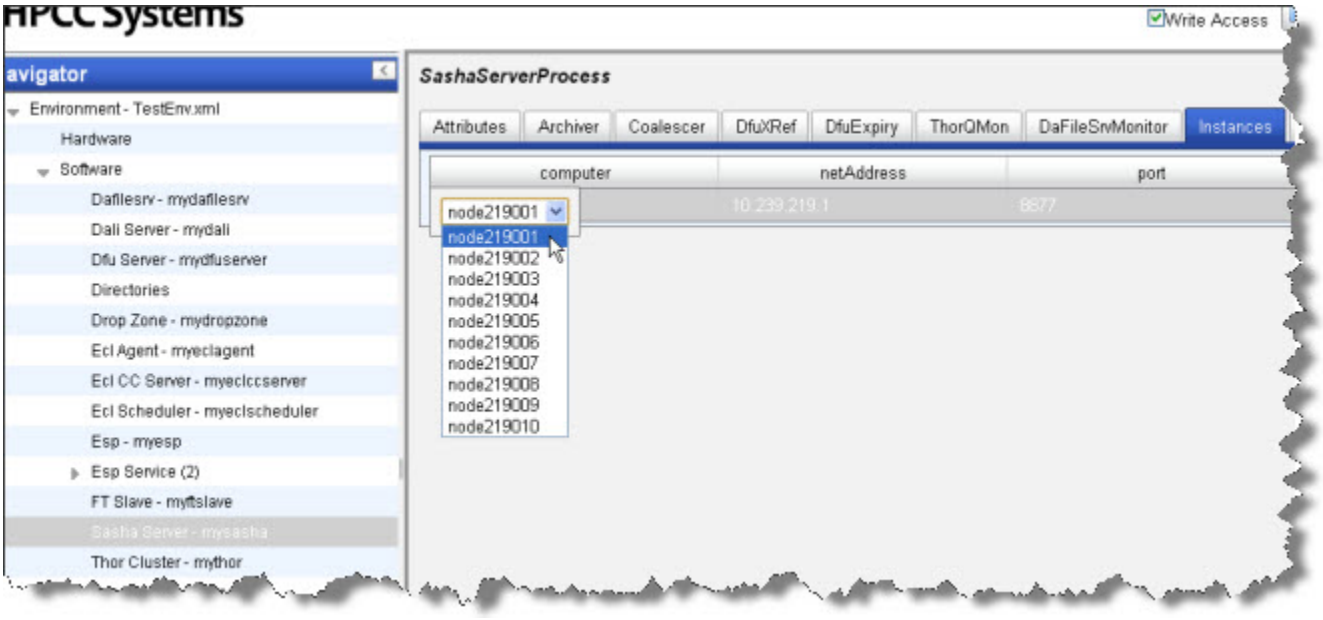
LDAP Server Process Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

Sasha Server

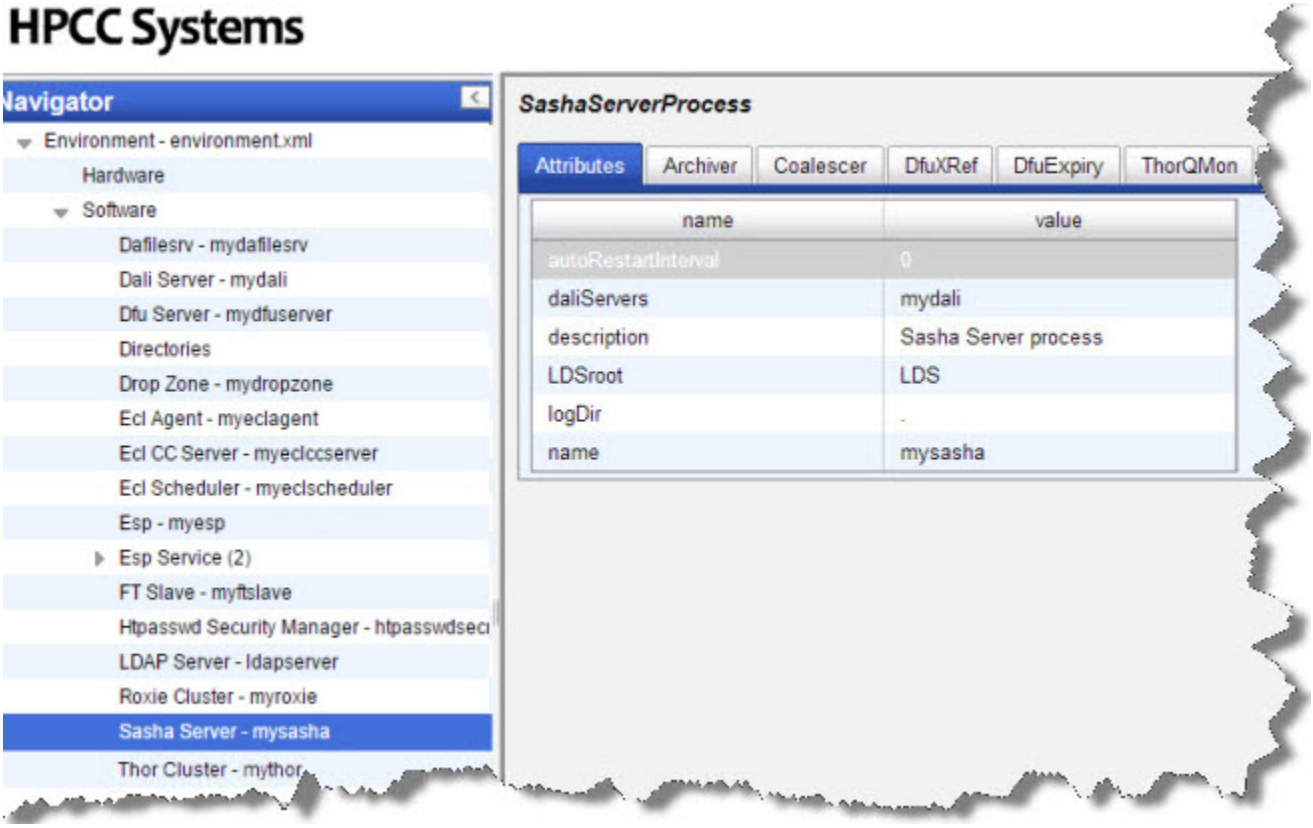
Instances

1. Select Sasha Server in the menu on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



Sasha Server Attributes

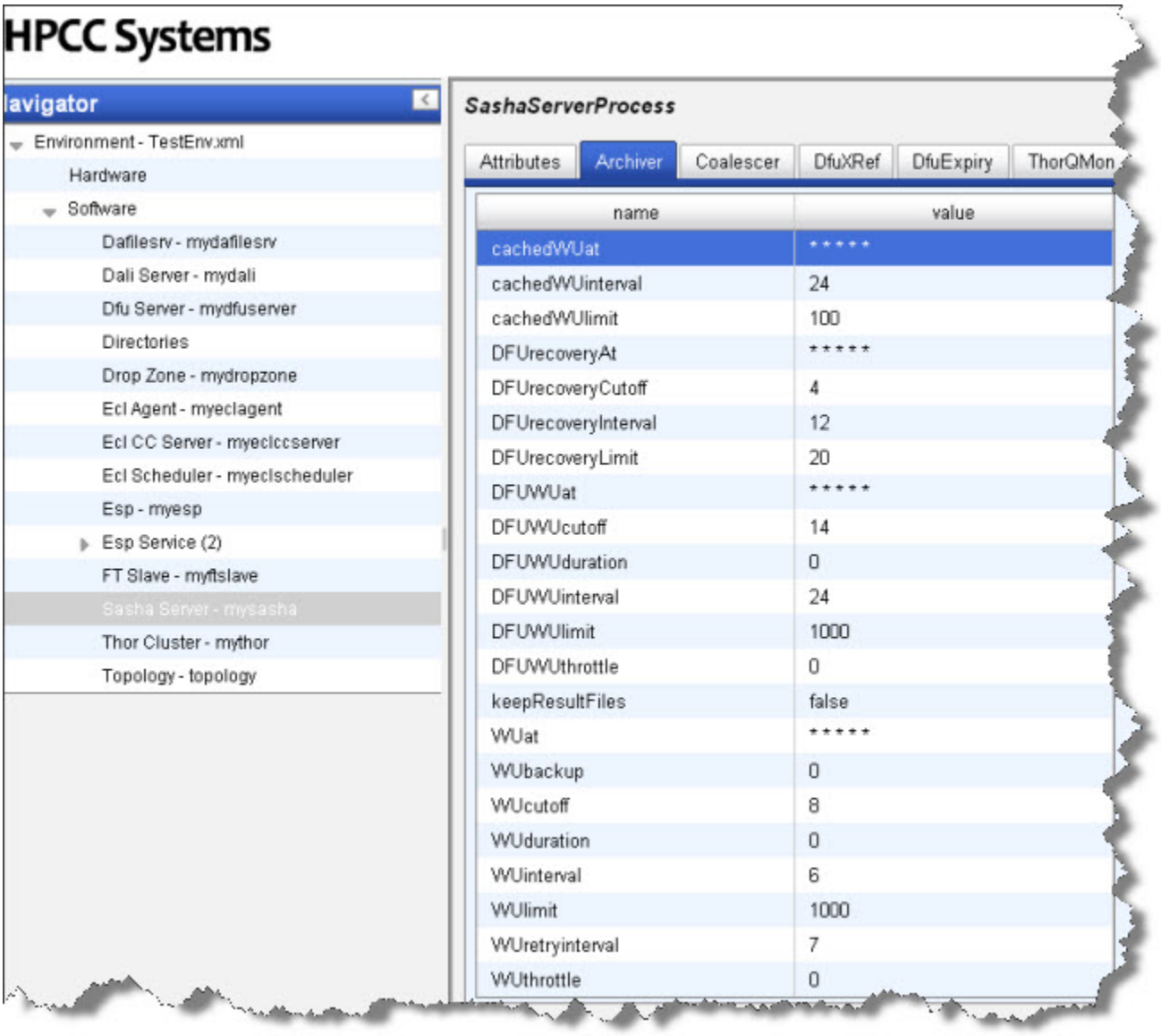
This section described the SashaServerProcess **Attribute** tab values.



<xi:include></xi:include>

SashaServer Process Archiver

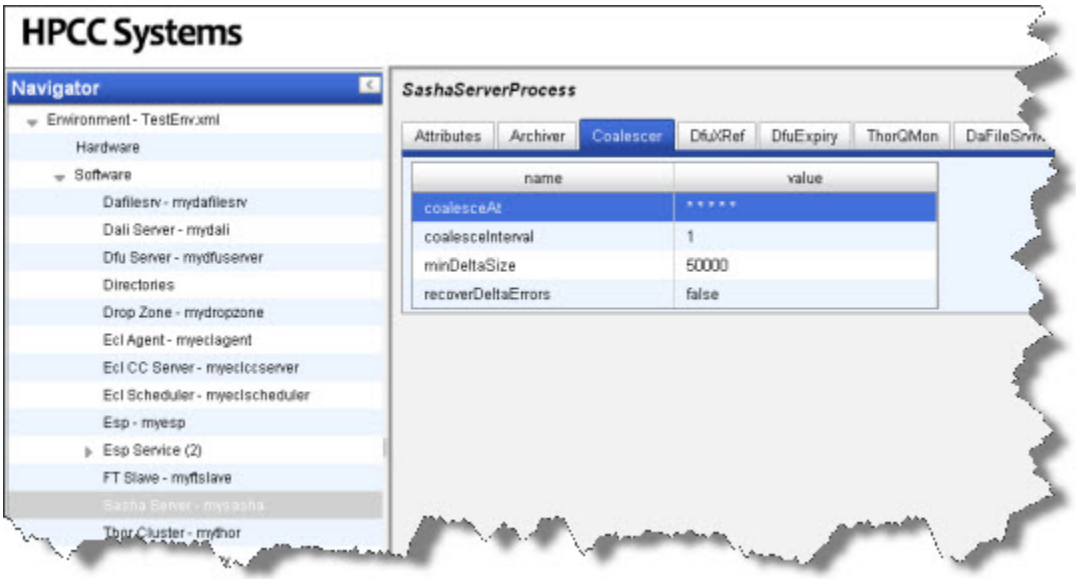
This section describes the SashaServer Process Archiver tab.



<xi:include></xi:include>

SashaServer Process Coalescer

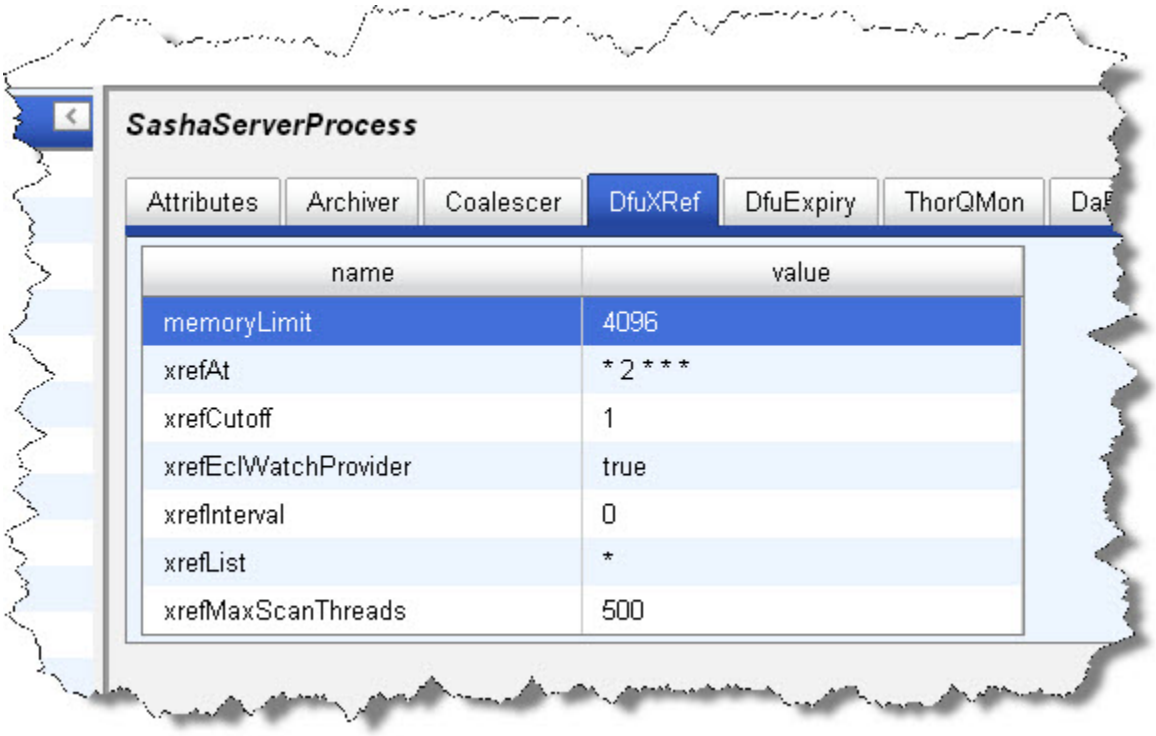
This section describes the SashaServer Process Coalescer tab.



<xi:include></xi:include>

SashaServer Process DfuXRef

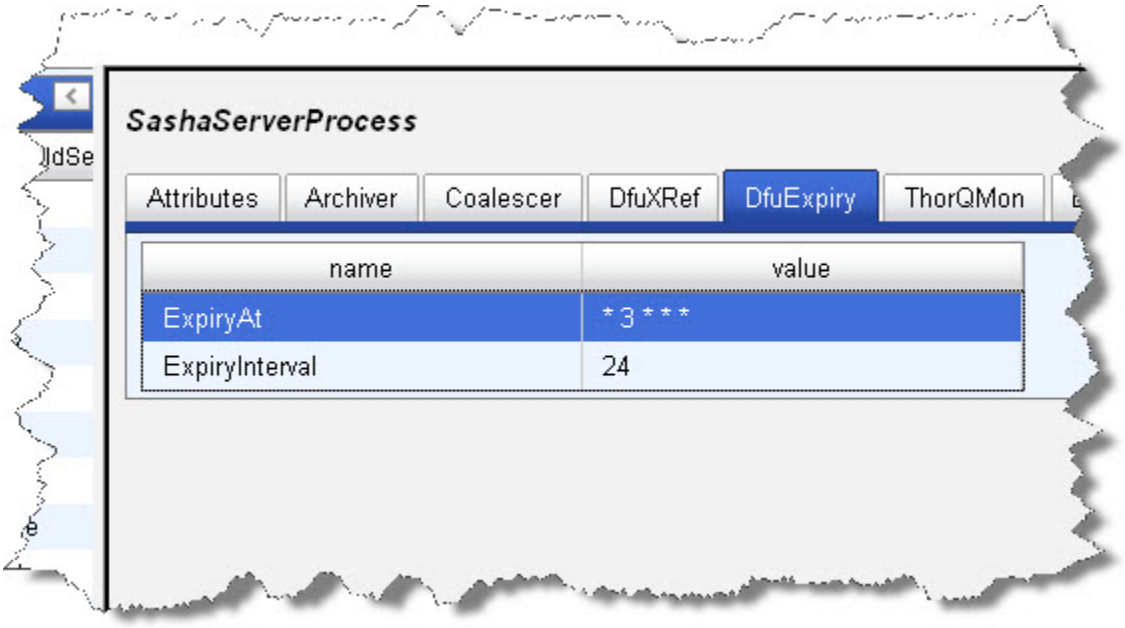
This section describes the SashaServer Process DfuXref tab.



<xi:include></xi:include>

SashaServer Process DfuExpiry

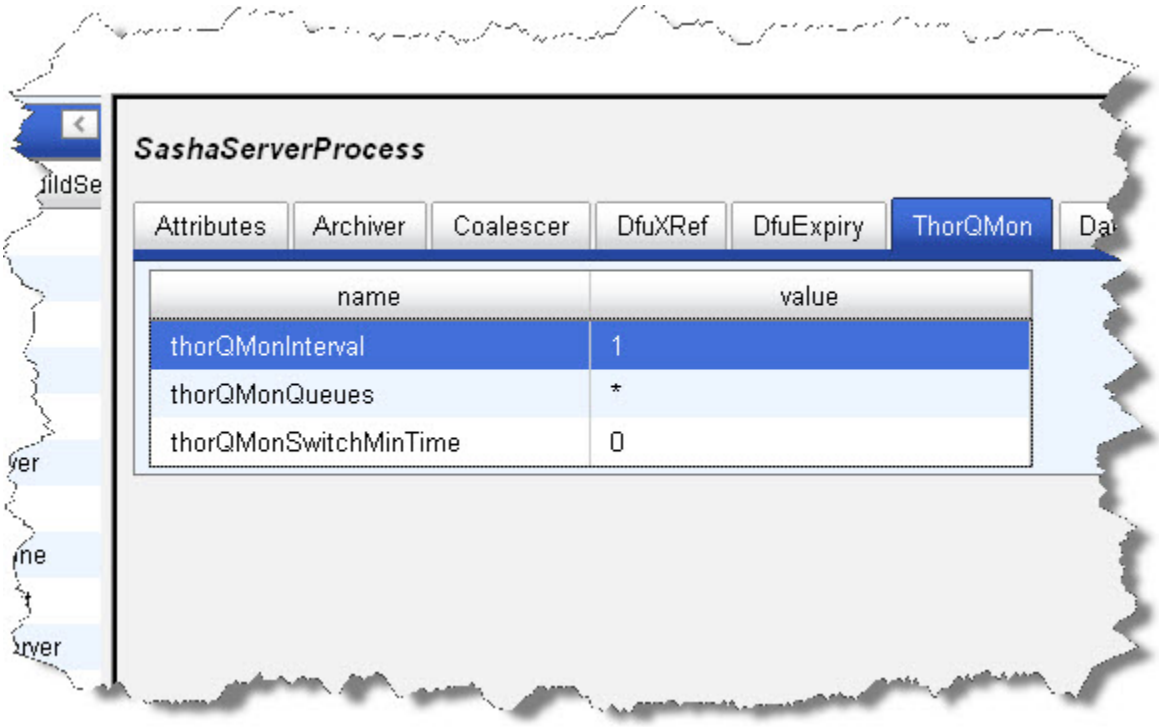
This section describes the SashaServer Process DfuExpiry tab.



<xi:include></xi:include>

SashaServer Process ThorQMon

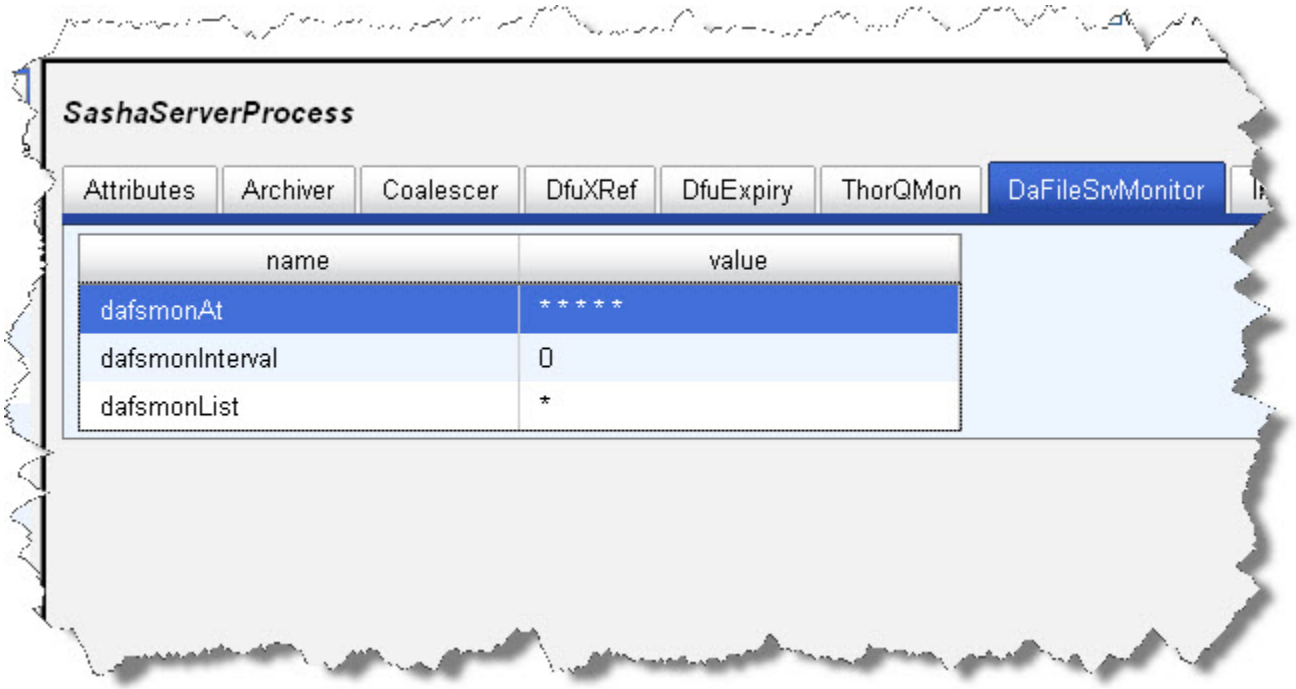
This section describes the SashaServer Process ThorQMon tab.



<xi:include></xi:include>

SashaServer Process DaFileSrvMonitor

This section describes the SashaServer Process DaFileSrvMonitor tab.



<xi:include></xi:include>

SashaServer Process Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

Thor

This section details how to define a Data Refinery (Thor) cluster. Before you begin, you should decide the width of the cluster (i.e., how many slave nodes will you have).

1. Select **Thor Cluster - mythor** in the Navigator panel on the left side.

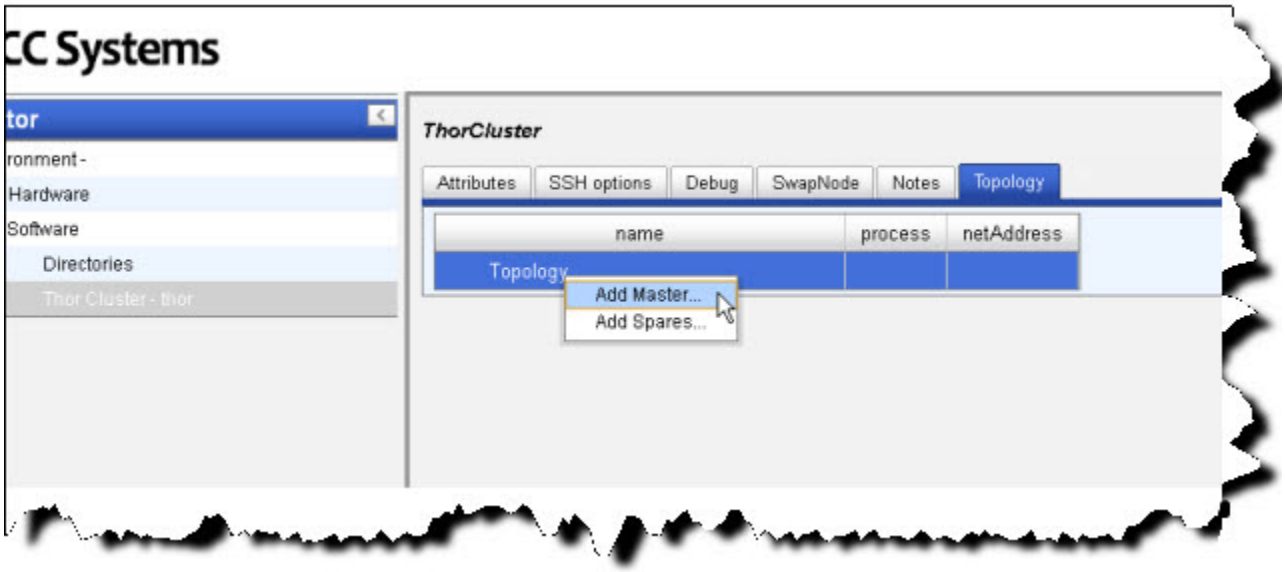
2. Select the **Topology** tab.

3. Expand the Topology, if needed, then right-click the Master and select Delete.

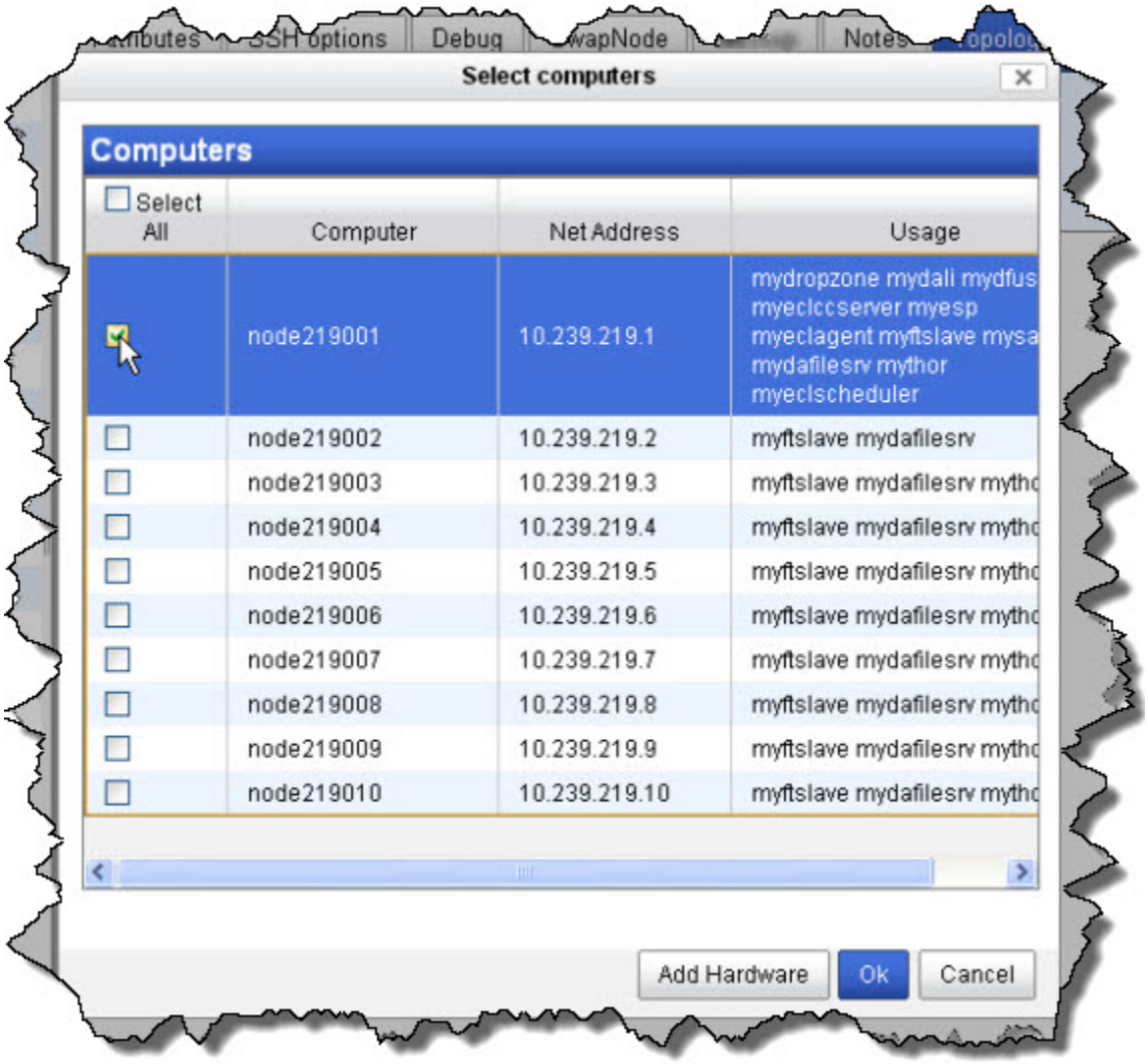
This deletes the sample one-node Thor.

You will replace this with a multi-node cluster.

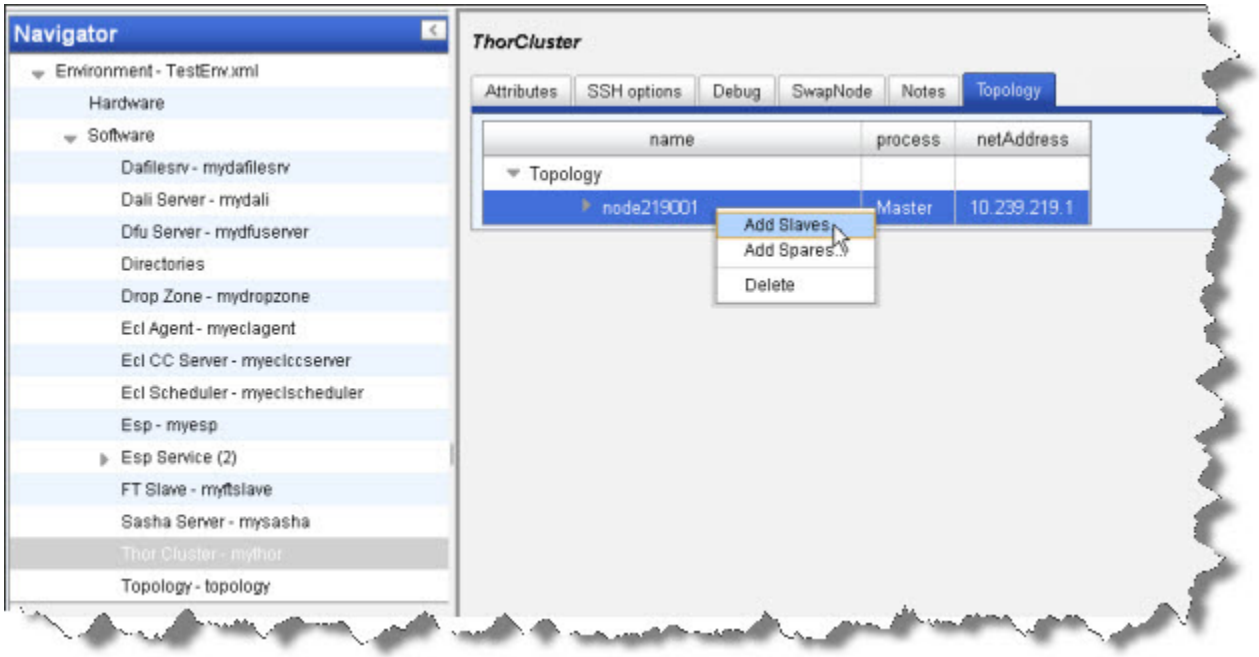
1. right-click on the Topology and select Add Master.



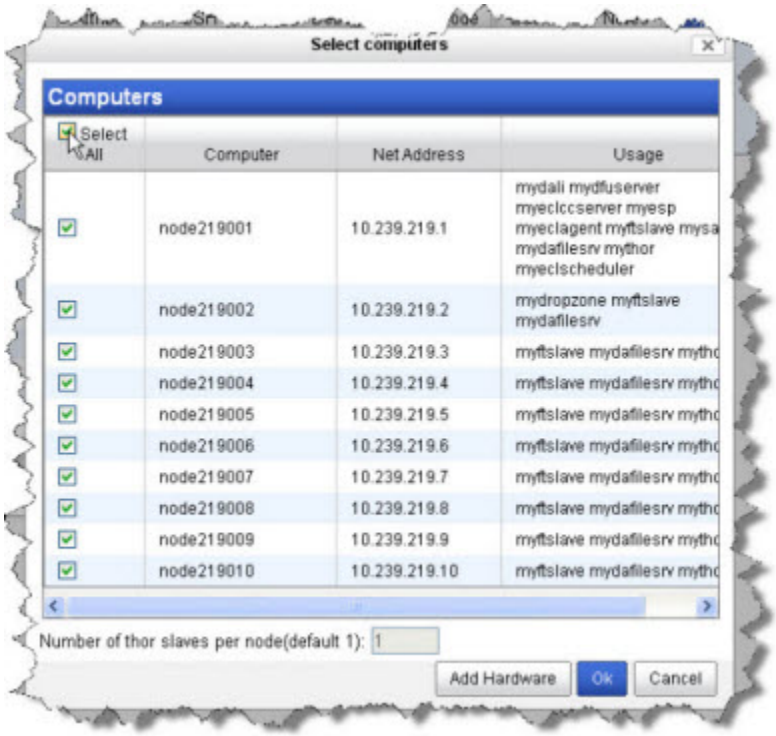
2. Select a computer from the list, then press the OK button.



3. Right-click on the Master and select Add Slaves.



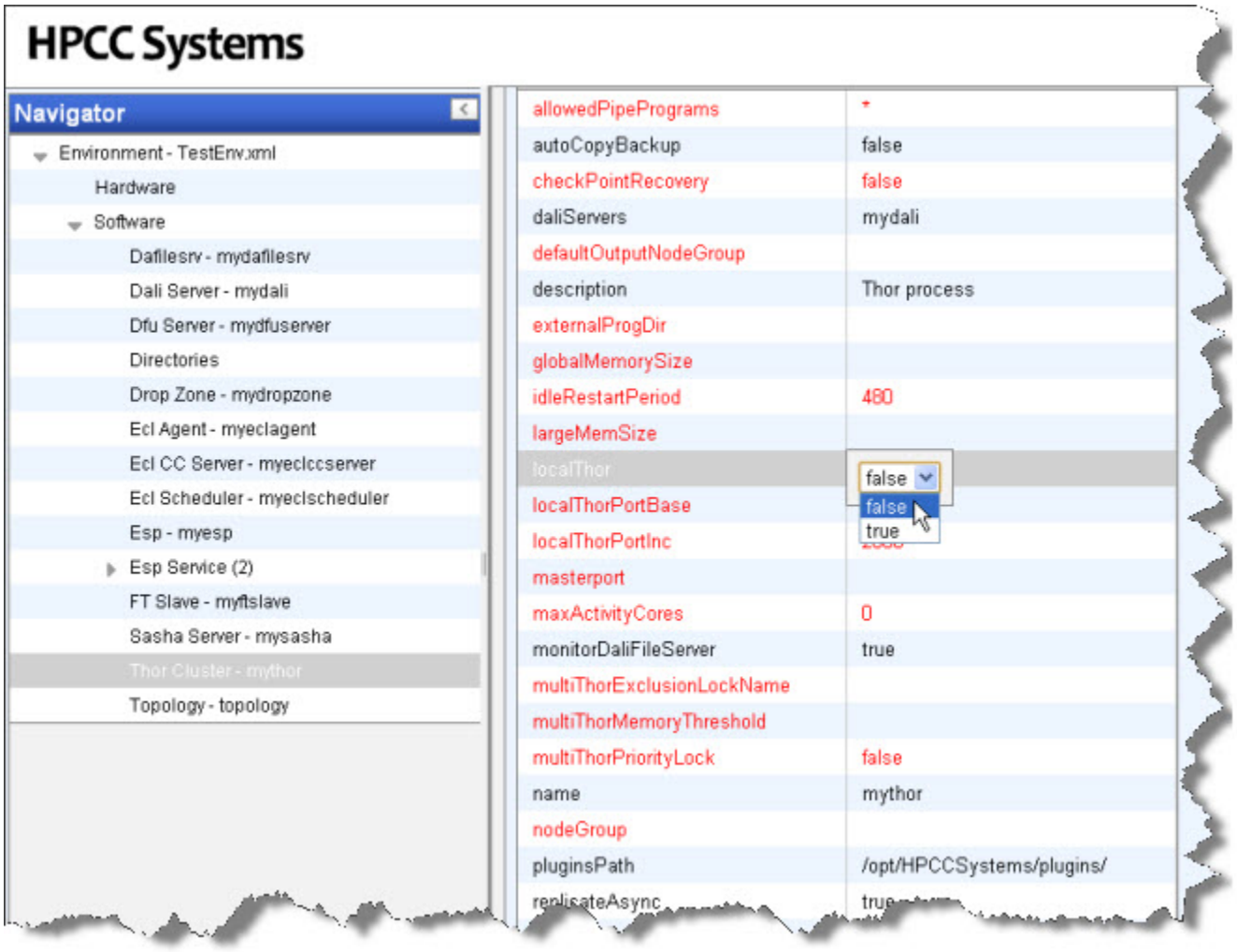
4. Select the computers to use as slaves from the list, then press the OK button. Use CTRL+CLICK to multi-select or SHIFT+CLICK to select a range.



The Nodes now display below the Thor Master node.

5. Select Thor Cluster - mythor in the Navigator panel on the left side.

6. Select the Attributes tab.



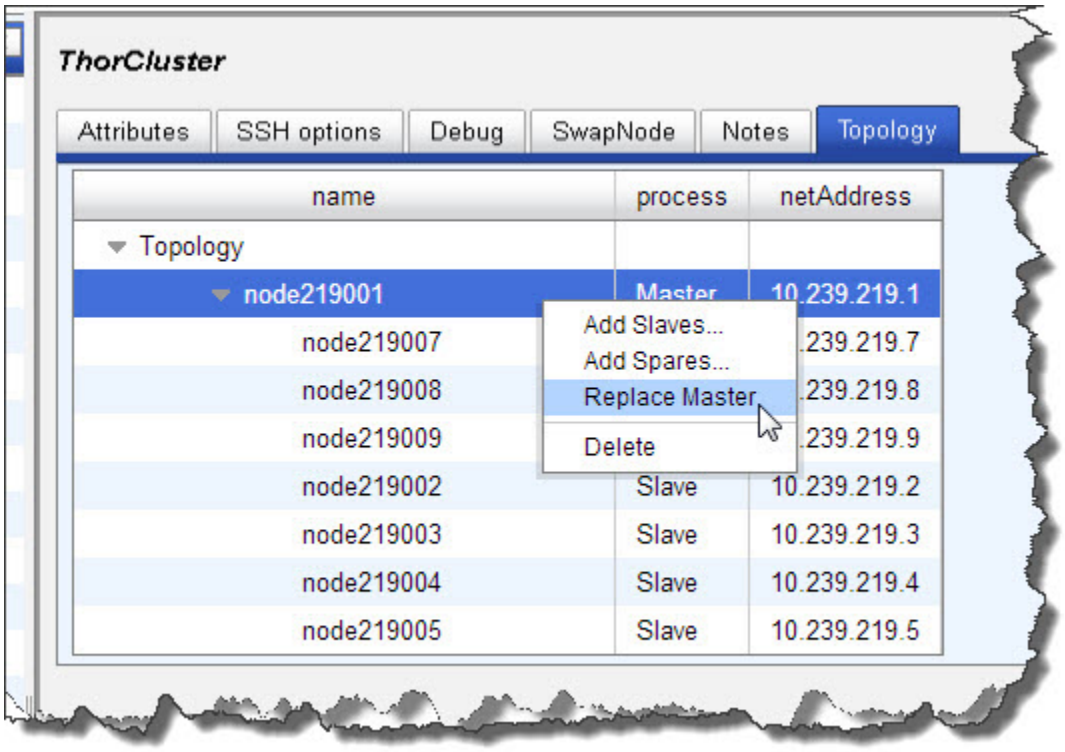
7. Change the value of the localThor to **false**

8. Click the  disk icon to save

Changing Thor topology

If you want to designate a different node as the Thor master when setting up a multi-node system, follow these steps.

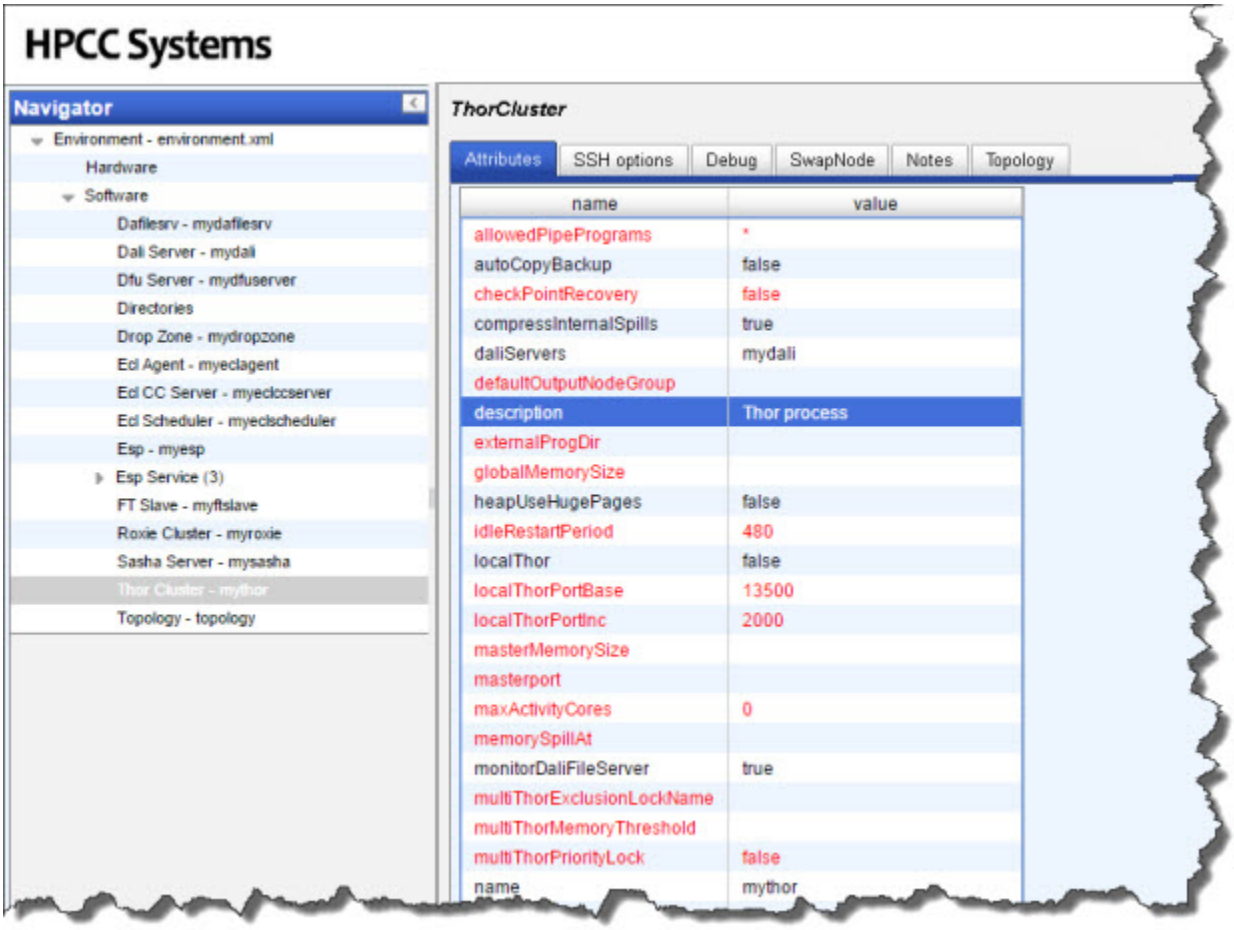
1. Select **Thor Cluster - mythor** in the Navigator panel on the left side.
2. Select the **Topology** tab.
3. right-click on the Master node
4. Select the **Replace Master** option.



	You should only use this feature when initially setting up your system. If there is data on the nodes when attempting to Swap Master, you run the risk of losing or corrupting some data.

ThorCluster Attributes

This section describes the Thor Cluster Attributes tab.



Thor Memory Settings

If **globalMemorySize** is left unset, Thor[master] detects total physical memory and allocates 75% of it. If there are multiple slaves per node (slavesPerNode>1) it divides the total among the slaves. If globalMemorySize is defined, then it allocates that amount of memory to each slave. The masterMemorySize attribute allocates memory for the Thor master. If omitted, Thor master uses globalMemorySize, or the default 75% of memory.

On systems with a lot of memory, the default 75% of physical memory is probably too conservative and reserving total physical minus 2GB (for the OS and other processes) is sensible. You should then divide that number by the number of slavesPerNode.

If there are multiple Thors sharing the same nodes, then globalMemorySize must be configured to take that into account.

For example, if there are 2 Thors each with 2 slaves per box, that will mean there are 4 slaves per physical node. So you should use a formula similar to the following in your calculations when configuring globalMemorySize:

```
globalMemorySize = (total-physical-memory)-2GB / (2*2)
```

Without any specified setting, Thor assumes it has exclusive access to the memory and would therefore use too much (because each Thor is unaware of the other's configuration and memory usage).

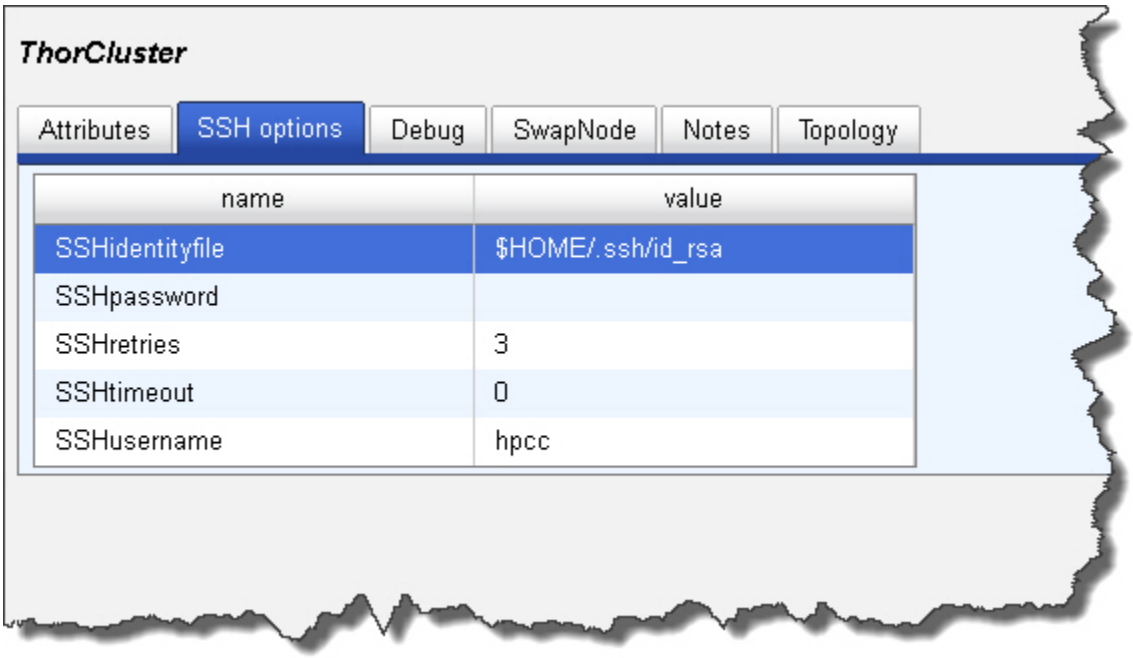
if **localThor** is set to true and **masterMemorySize** and **globalMemorySize** are unspecified, then the defaults will be 50% for **globalMemorySize** (divided by **slavesPerNode**) and 25% for **masterMemorySize.**

Although a configuration may be set using upper memory limits that exceed total physical memory, Thor will not actually reserve the memory ahead of time and will only hit memory problems when and if your jobs use all of memory. So, for example, two Thors that are configured to use all available memory could peacefully co-exist until a query on each are simultaneously using more memory than the node has available.

<xi:include></xi:include>

ThorCluster SSH Options

This section describes the ThorCluster SSH Options tab.



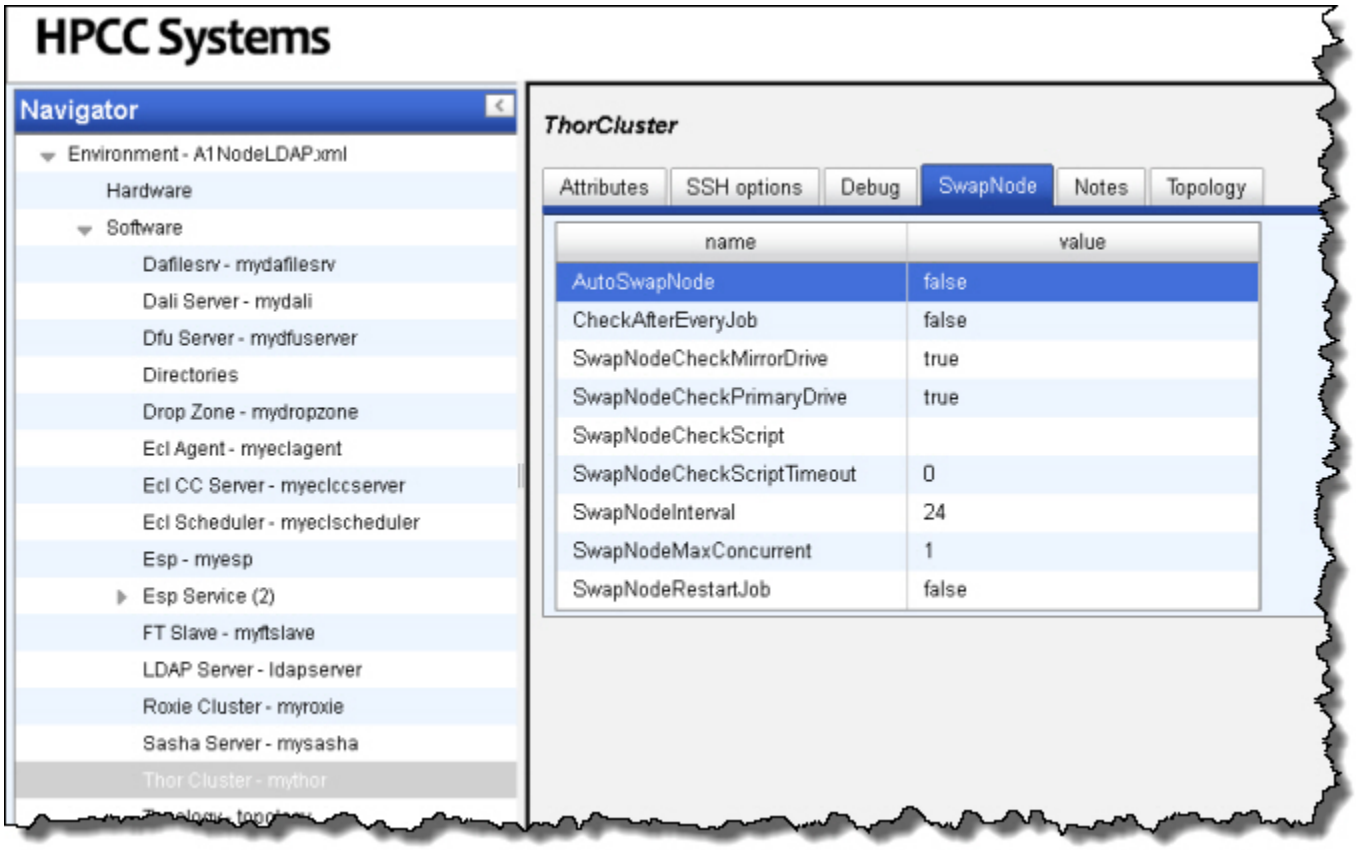
<xi:include></xi:include>

ThorCluster Debug

The debug tab is for internal use only

ThorCluster Swap Node

This section describes the ThorCluster Swap Node tab.



<xi:include></xi:include>

ThorCluster Notes

This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

Roxie

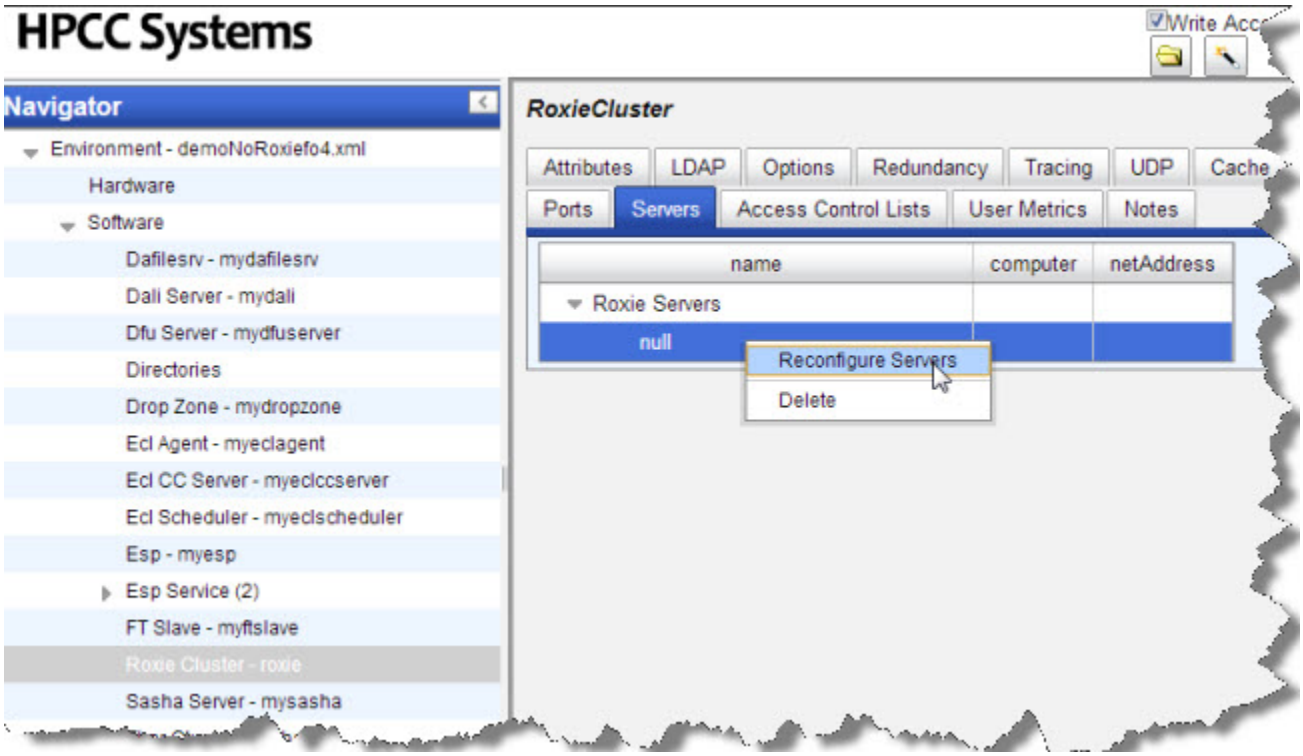
This section details how to define a Rapid Data Delivery Engine (Roxie) cluster. Before you begin, you should decide the width of the cluster (i.e., how many agent nodes will you have).

1. Select **Roxie Cluster** in the Navigator panel on the left side.

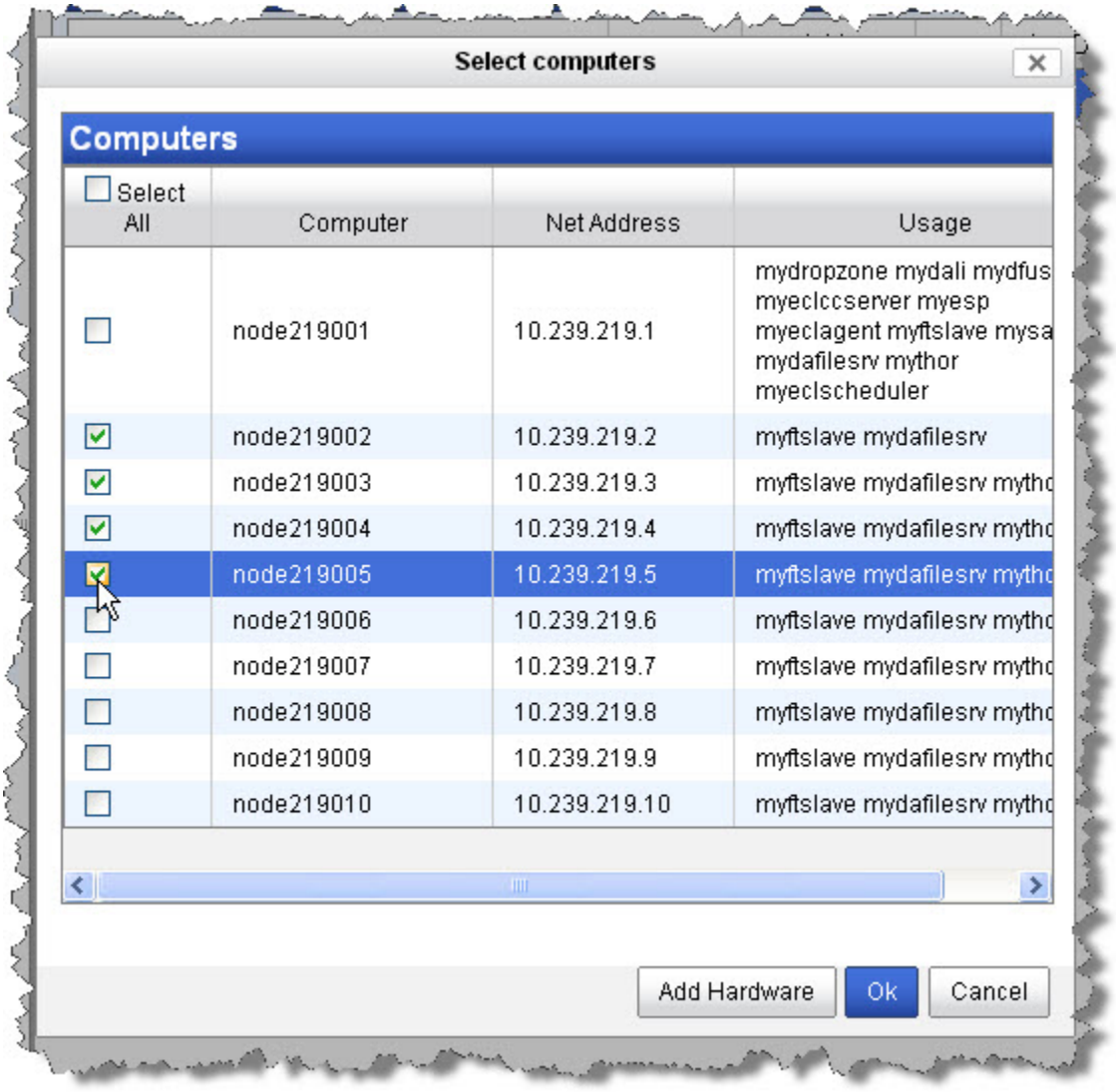
   Note: If you did not specify a value in the *Number of nodes for Roxie cluster* field when you first set up your environment, you will not have a Roxie Cluster. To add a Roxie Cluster component: Right-click on the **Software** component in the Navigator Panel, then select **New Components** then **roxie** from the drop lists.

2. Select the **Servers** tab.

3. Right-click the Roxie Servers and select Reconfigure Servers.

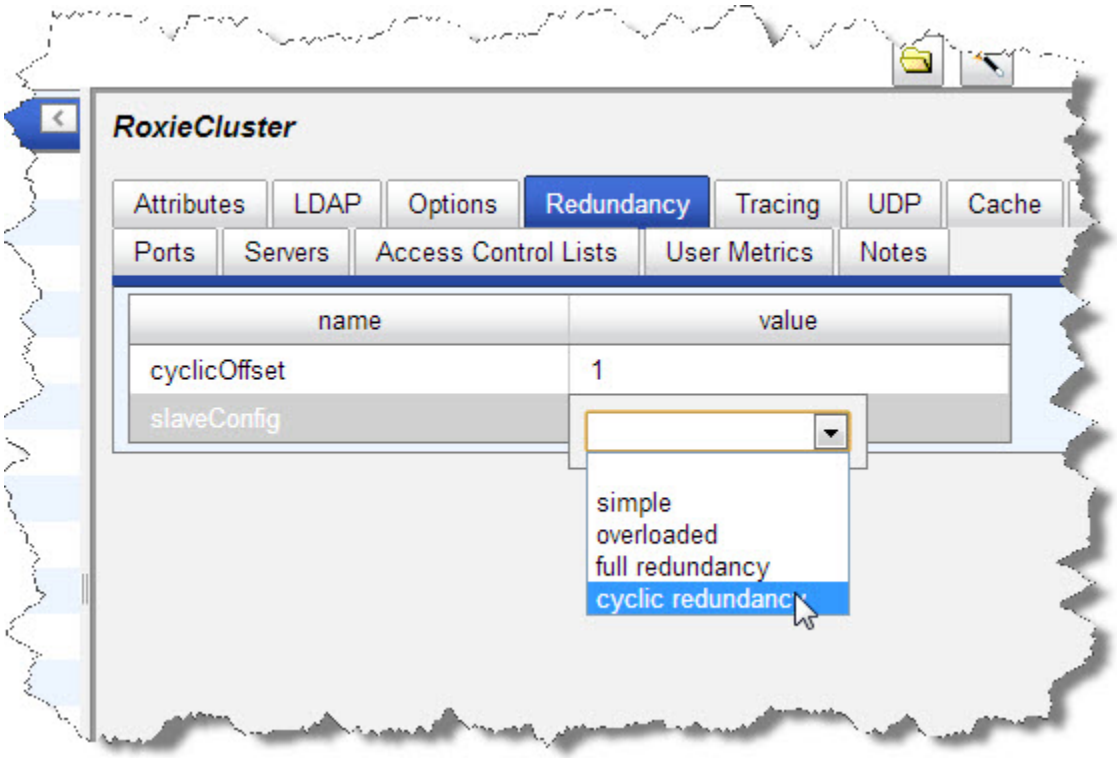


4. Select the computers to use as Servers from the list, then press the OK button.



5. Select the **Redundancy** tab.

6. Select the redundancy scheme to use. Typically, this is cyclic redundancy, as shown below.



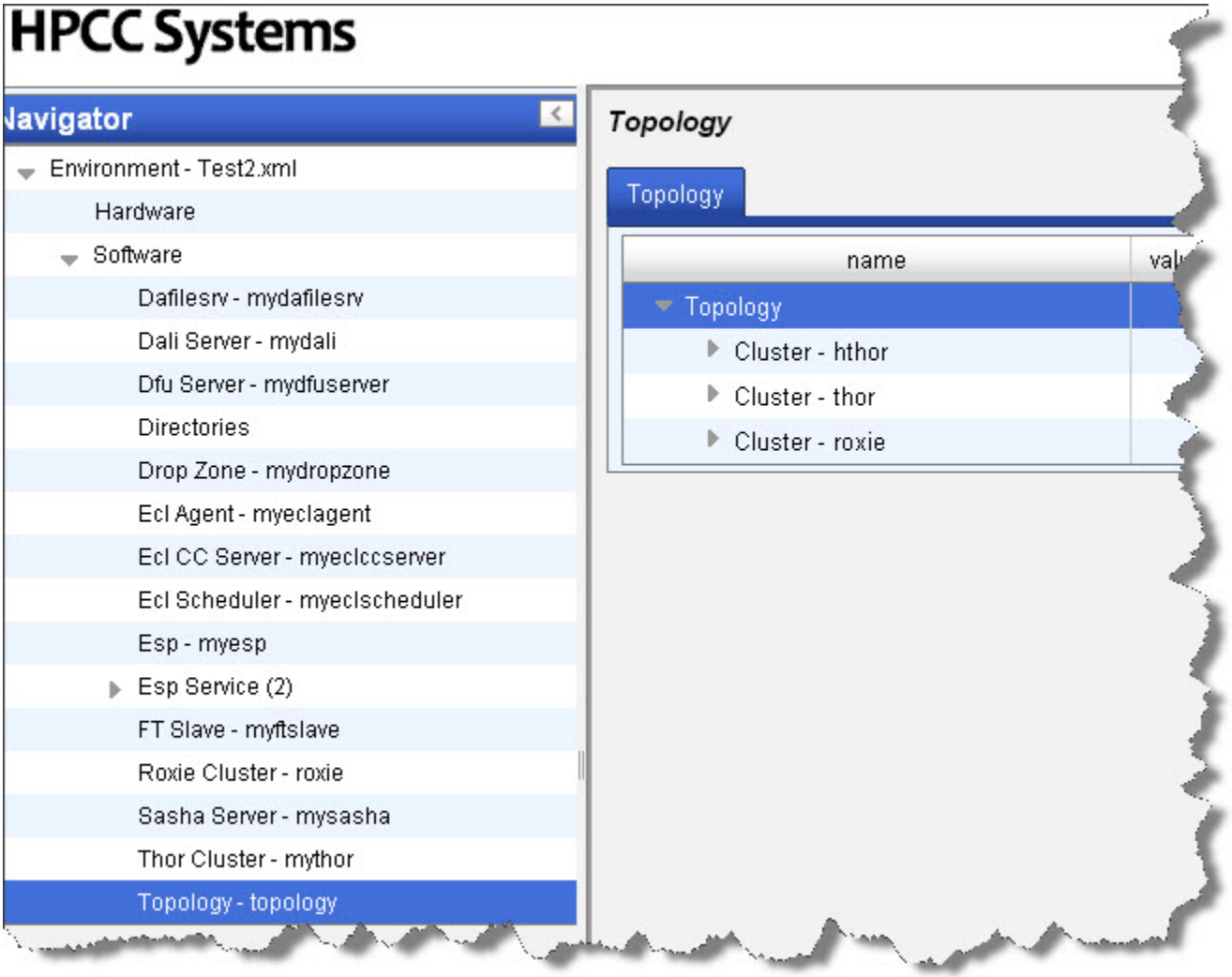
7. Click the  disk icon to save

8. Close Configuration Manager by pressing ctrl+C in the command window where it is running.

```
<xi:include></xi:include>
```

Topology

This section describes the topology tab.



Attribute name	Definition
Topology	describes the system topology
Cluster - thor	describes the Thor clusters
Cluster - hthor	describes the hthor clusters
Cluster - roxie	describes the Roxie clusters

Distribute Configuration Changes to all Nodes

Once your environment is set up as desired, you must copy the configuration file to the other nodes.

1. If it is running, stop the system

   Be sure system is stopped before attempting to copy the Environment.xml file.

2. Back up the original environment.xml file

   ```
   # for example
   sudo -u hpcc cp /etc/HPCCSystems/environment.xml /etc/HPCCSystems/environment.bak
   ```

   Note: the "live environment.xml file is located in your **/etc/HPCCSystems/** directory. ConfigManager works on files in **/etc/HPCCSystems/source** directory. You must copy from this location to make an environment.xml file active.

3. Copy the NewEnvironment.xml file from the source directory to the /etc/HPCCSystems and rename the file to environment.xml

   ```
   # for example
   sudo -u hpcc cp /etc/HPCCSystems/source/NewEnvironment.xml /etc/HPCCSystems/environment.xml
   ```

4. Copy the /etc/HPCCSystems/environment.xml to the /etc/HPCCSystems/ on every node.

5. Restart the HPCC system

   You might prefer to script this process, especially if you have many nodes. See the Example Scripts section in the Appendix of the Installing_and_RunningtheHPCCPlatform document. You can use the scripts as a model to create your own script to copy the environment.xml file out to all your nodes.