HPCC Systems®

HPCC Configuration Manager

Boca Raton Documentation Team

LexisNexis® Risk Solutions

HPCC Configuration Manager

Boca Raton Documentation Team

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2016 Version 6.2.0-1

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.

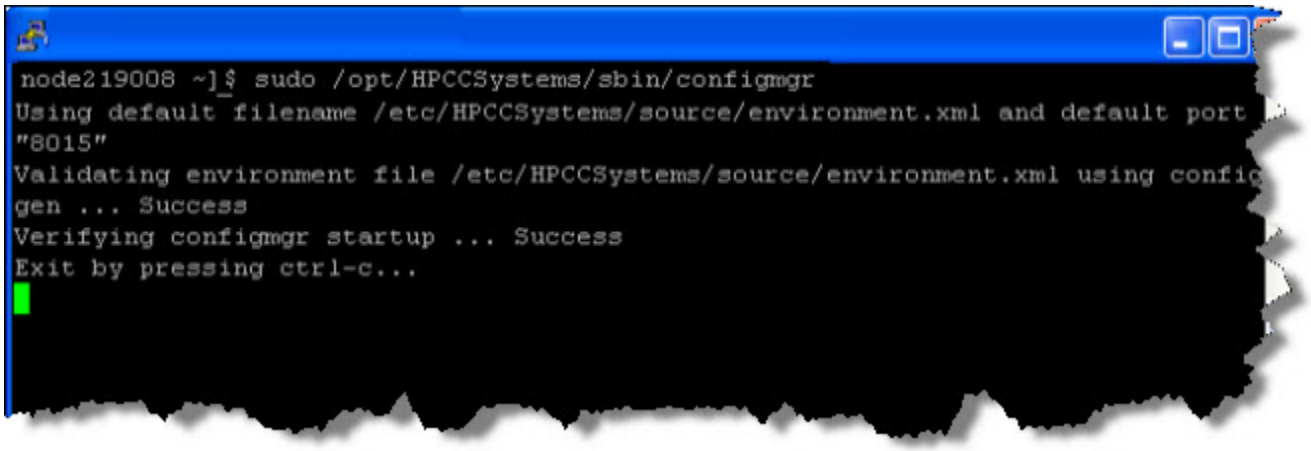
The HPCC package should already be installed on ALL nodes.

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:

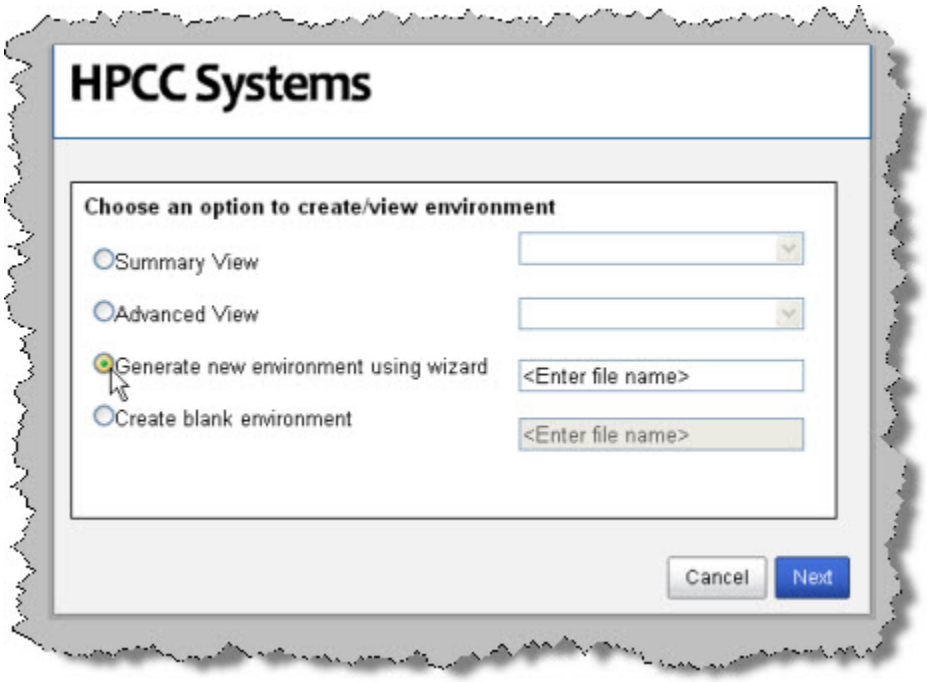
   ```
   http://<ip of installed system>:8015
   ```

   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.

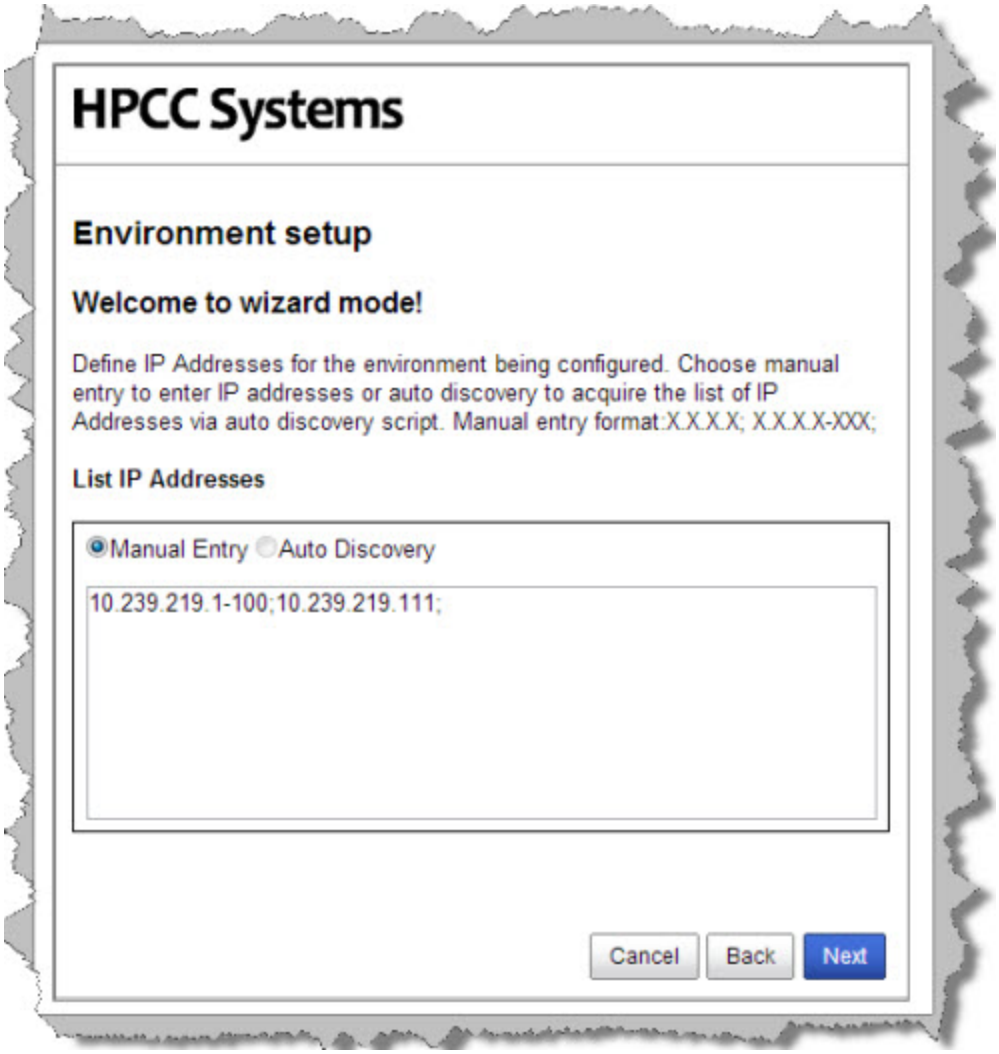
   This will then be the name of the configuration XML file. For example, we will name our environment *NewEnvironment* and this will produce a configuration XML file named *NewEnvironment.xml* that we will use.

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.

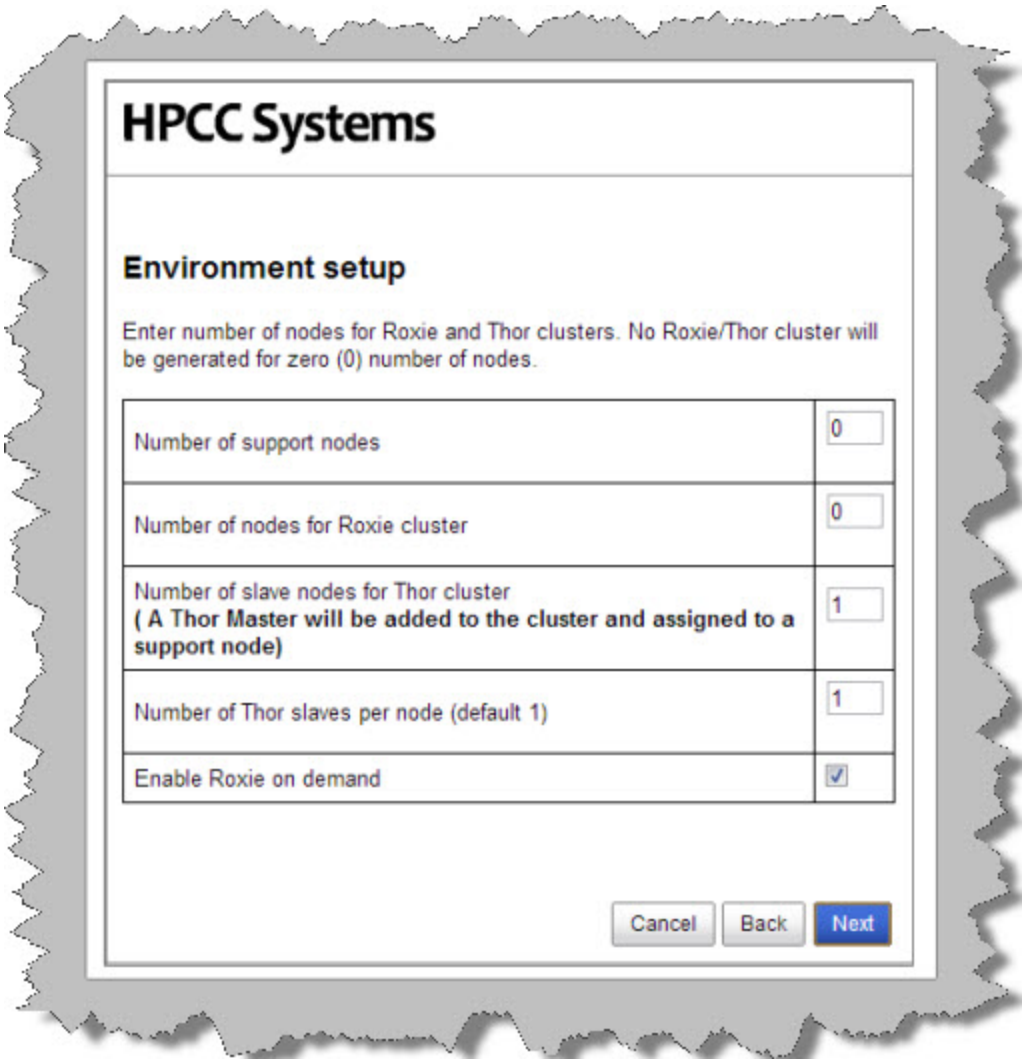
   IP Addresses can be specified individually using semi-colon delimiters. You can also specify a range of IPs using a hyphen (for example, nnn.nnn.nnn.x-y). In the image below, we specified the IP addresses 10.239.219.1 through 10.239.219.100 using the range syntax, and also a single IP 10.239.219.111.



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.

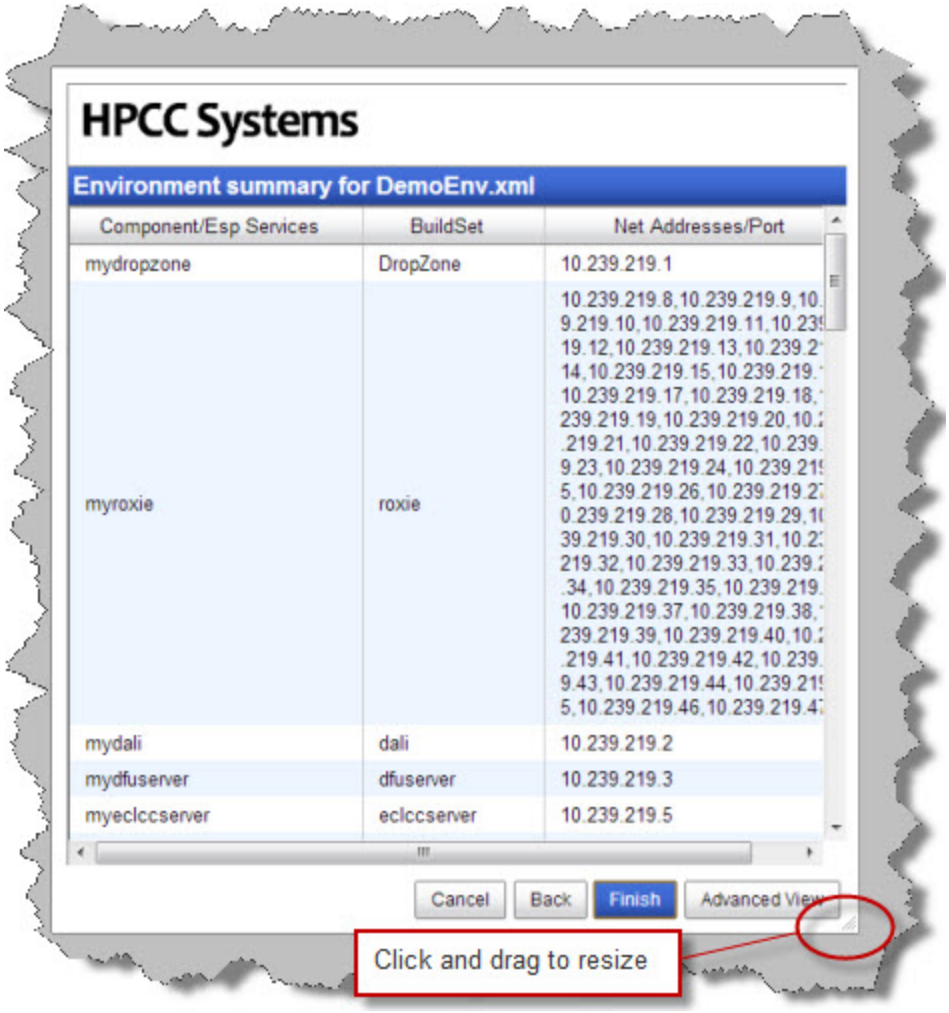
Number of Thor slaves per node (default 1) Specify the number of Thor slave processes to instantiate on each slave node. Enter zero (0) if you do not want a Thor cluster.

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
```

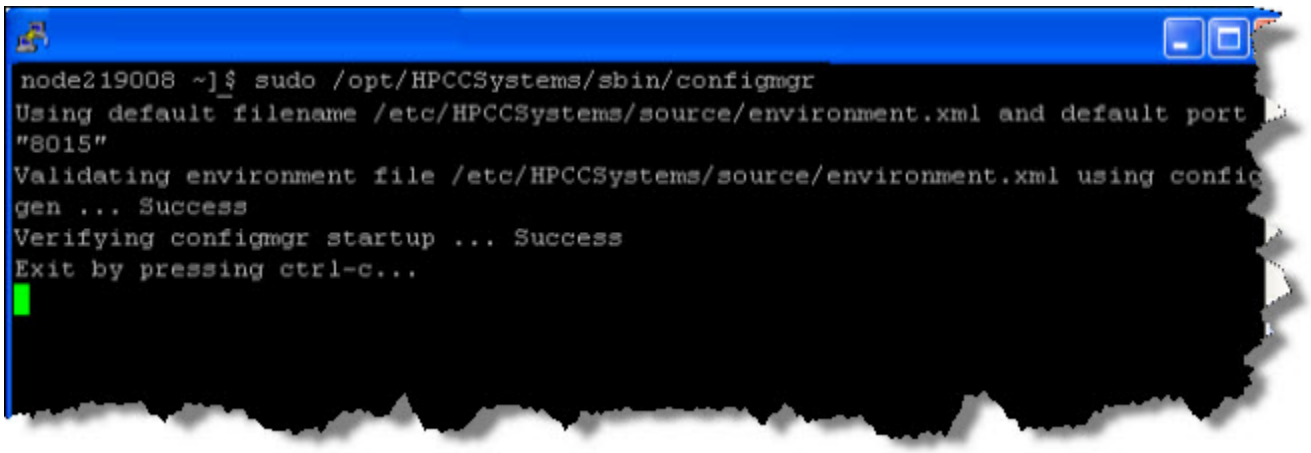
Note: If you have a large system with many nodes, you may want to use a script to perform this step. See the *Example Scripts* section in the Appendix of the **Installing and Running the HPCC Platform** document.

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.

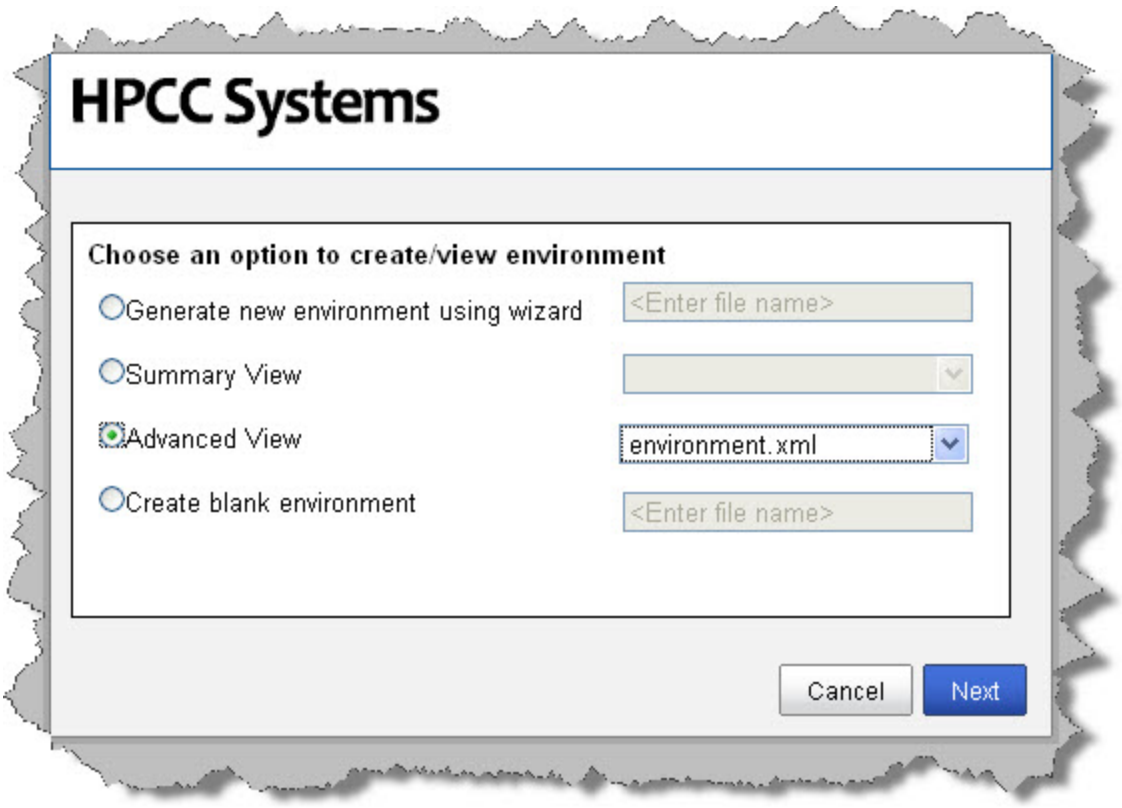
There are a few different ways to configure your system. If you are not an experienced user you can use the Generate environment wizard discussed in the previous section.

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.

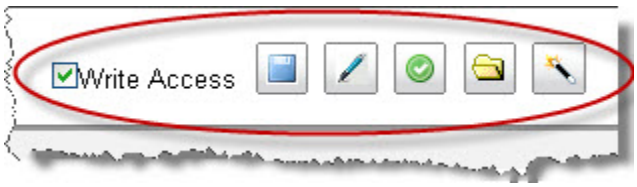
7. Press the **Next** button.



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.

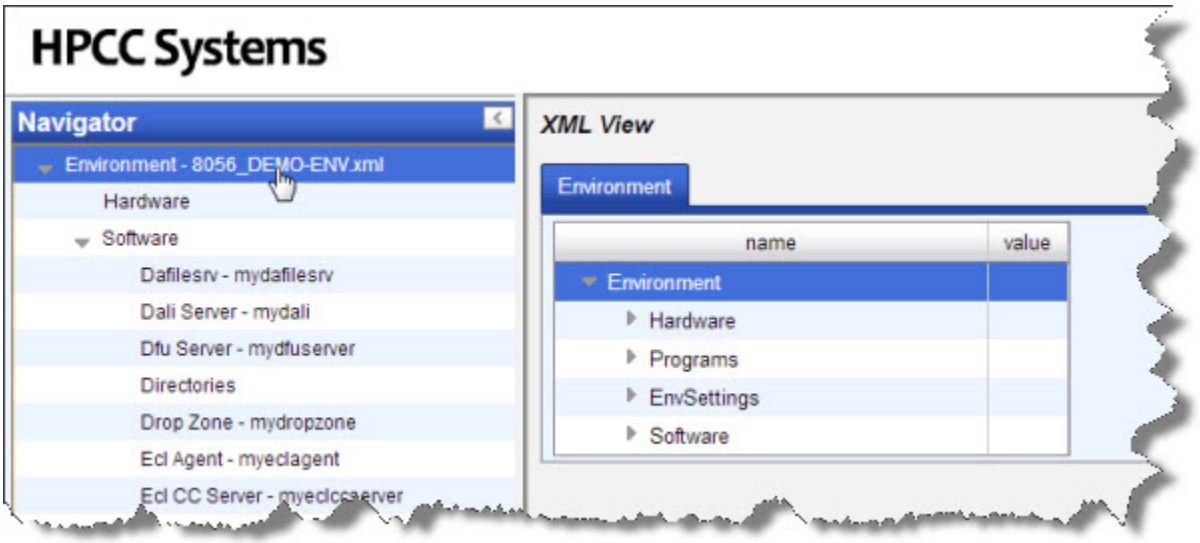
The **Wizard** button  will bring up the Configuration Manager chooser form which will allow you to create or view an environment file where you can also launch the configuration wizard.

These buttons are only enabled in Write Access mode.

XML View

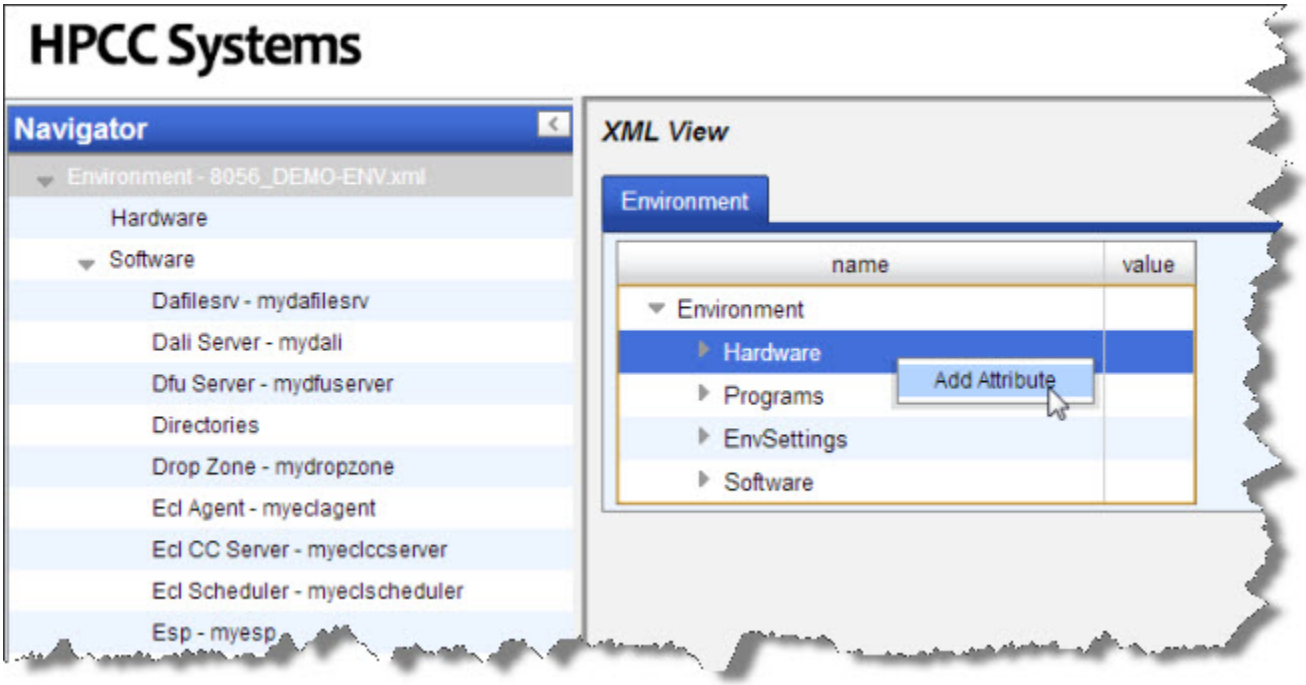
In the advanced view of Configuration Manager, you can optionally choose to work with the XML View.

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.

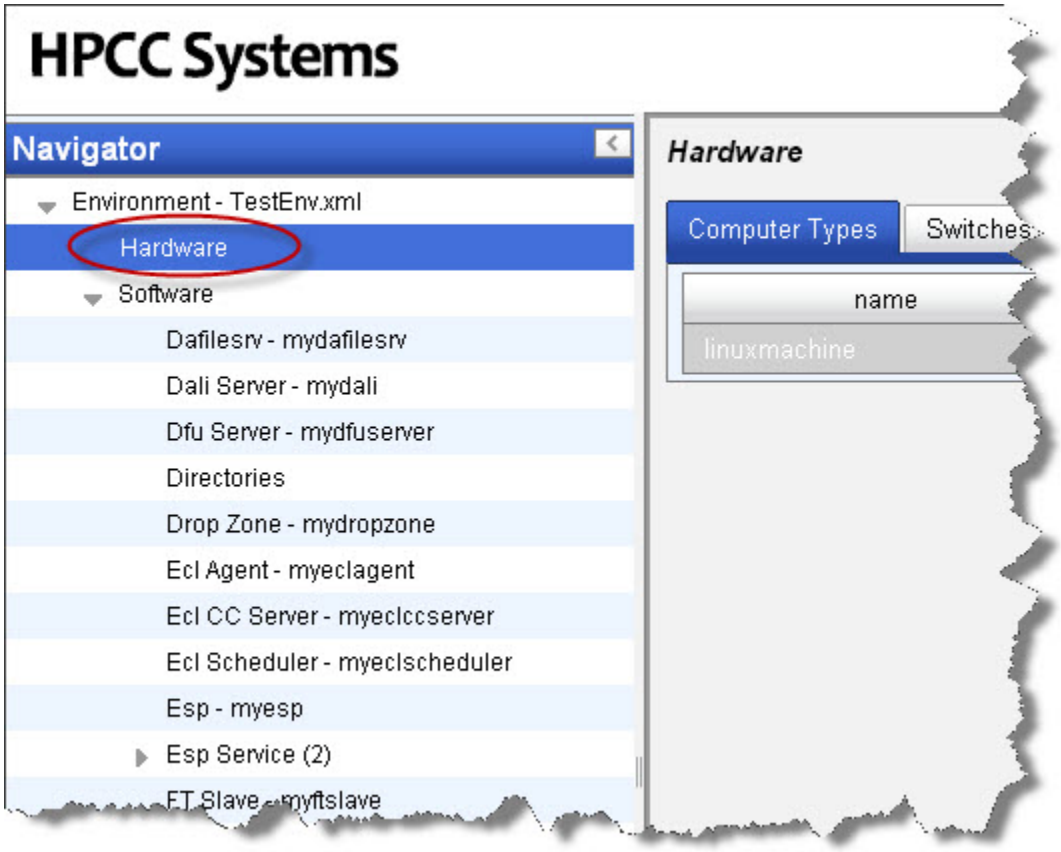
If you wish to add an attribute that does not exist, right-click on one of the components then you can choose to add an attribute.



Hardware Section

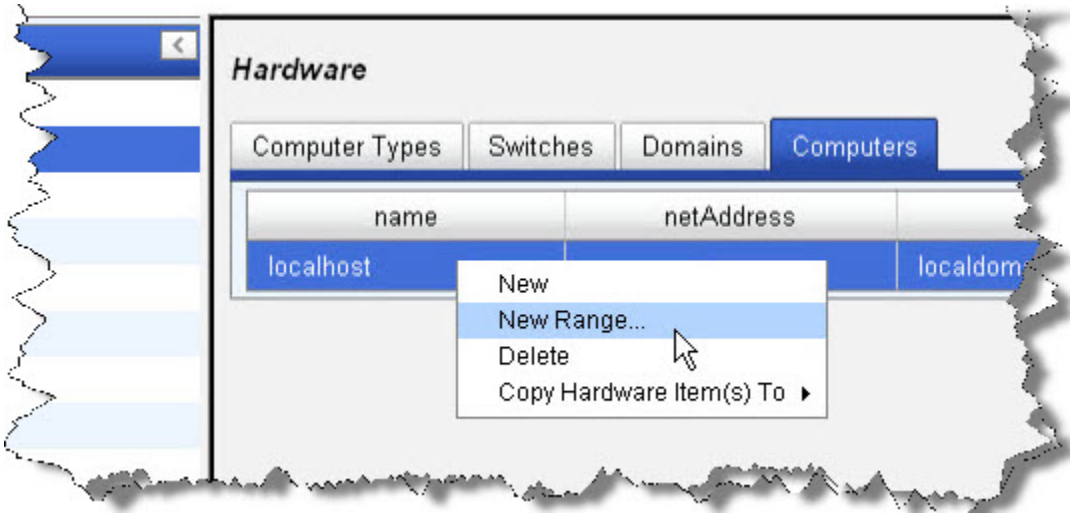
This section allows you to define your list of servers. When defining instances of components, you will choose from servers in this list.

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.



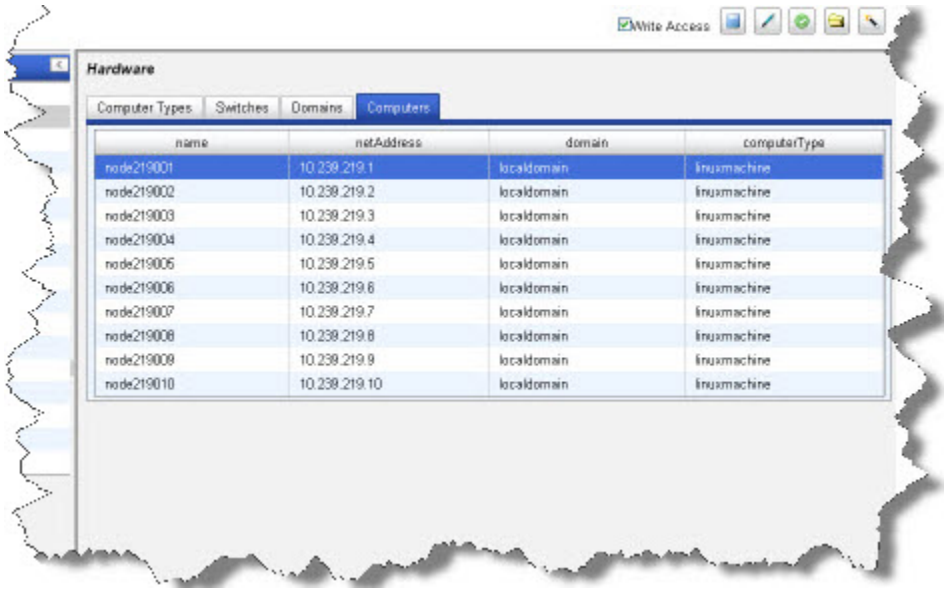
4. Specify the following:

   - 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.

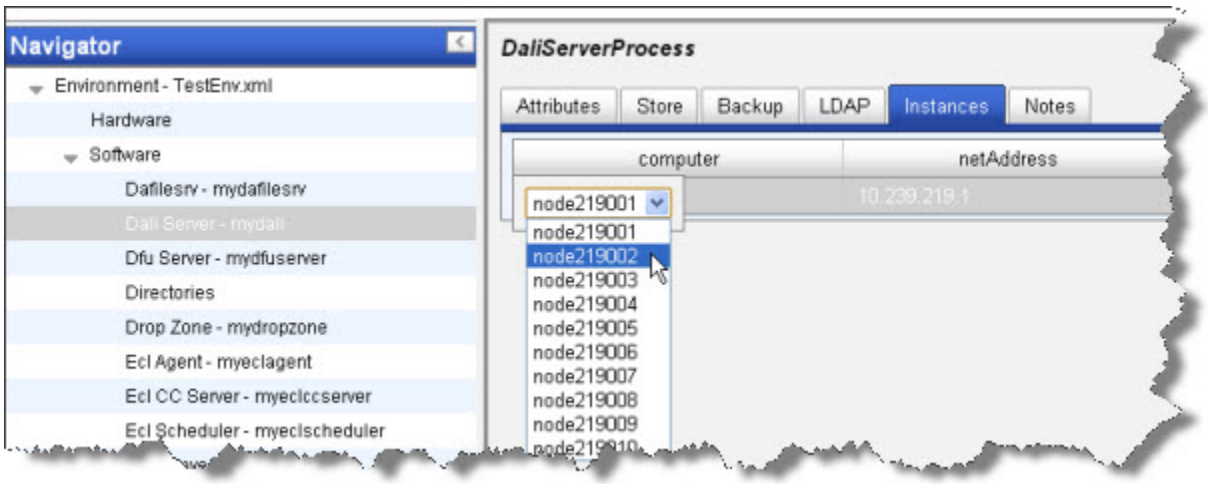
Dali

Instances

1. Select **Dali Server** in the Navigator panel on the left side.

2. Select the Instances tab.

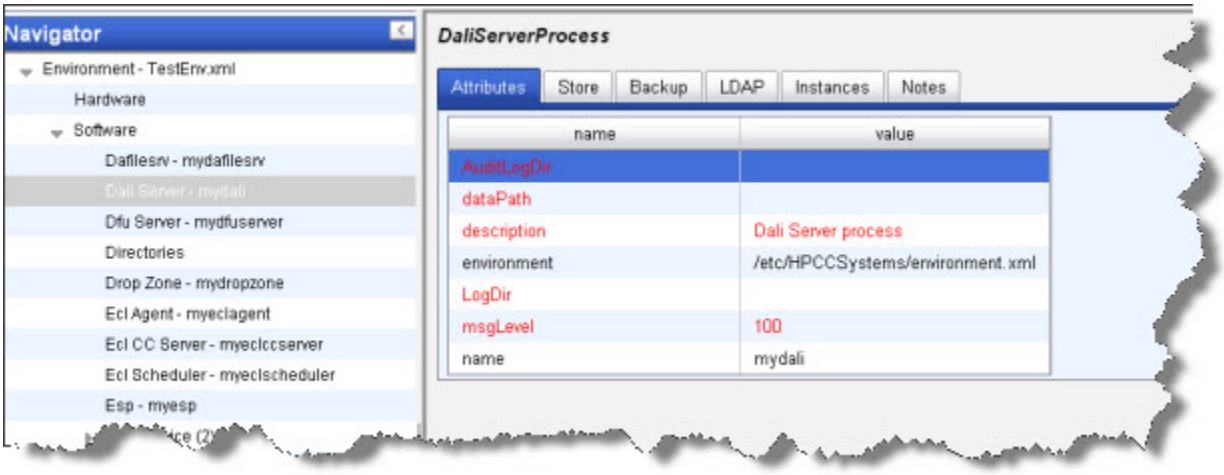
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

DaliServer attributes

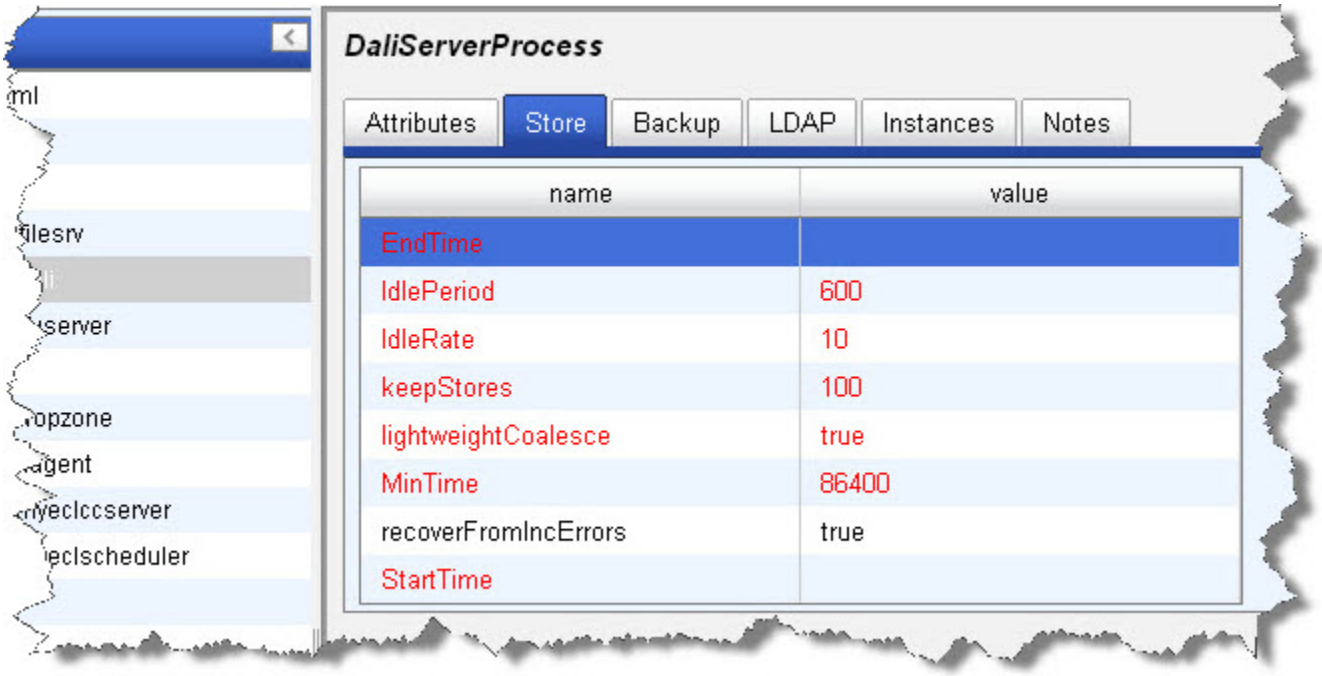
This section describes the DaliServer attributes.



attribute	values	default	required
name	Name for this process		optional
description	Description for this process	Dali Server process	optional
msgLevel	Severity threshold for reporting errors in log file	100	optional
dataPath	Directory in which dali's data files will be written to		optional
LogDir	Directory in which to store server log files		optional
AuditLogDir	Directory in which to store audit log files		optional
environment	Path to an xml file containing an Environment to use		

DaliServer store

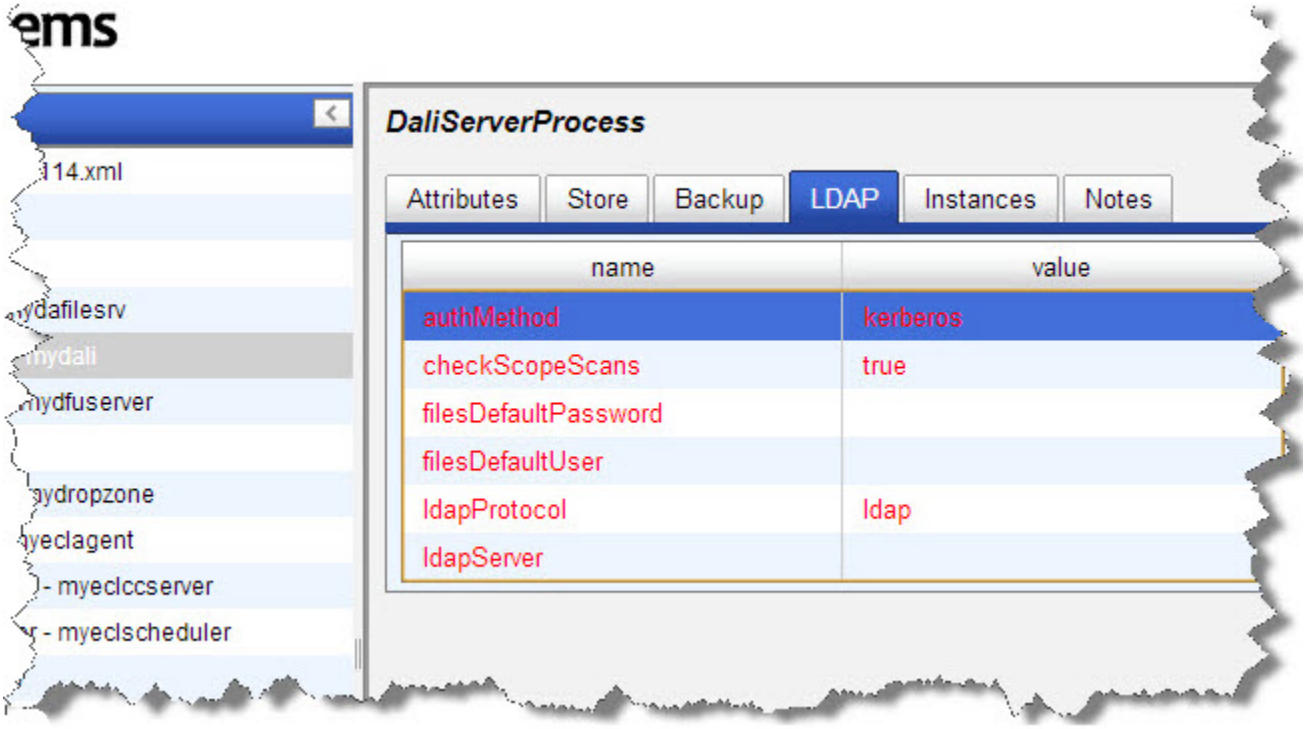
This section describes the attributes configuring how Dali handles the system data store.



attribute	values	default	required
lightweightCoalesce	Enable non memory loaded consolidation of store	true	optional
IdlePeriod	Period of client to server quiet time to trigger store save	600	optional
IdleRate	Number of transaction per minute to be considered quiet time	10	optional
MinTime	Minimum amount of time between lightweight store saves	86400	optional
StartTime	Start time of lightweight coalesce checking		optional
EndTime	End time of lightweight coalesce checking		optional
keepStores	Number of old saved stores to keep	10	optional
recoverFromIncErrors	Switch on to auto recover from corruption to delta files on load	true	

DaliServer LDAP options

This section describes the DaliServer LDAP tab.



attribute	values	default	required
ldapServer	The ldap server to be used for authentication.		optional
ldapProtocol	The protocol to use - standard ldap or ldap over SSL.	ldap Choices are: * ldap * ldaps	optional
authMethod	The protocol to use for LDAP authentication.	kerberos Choices are: * kerberos * simple	optional
filesDefaultUser	The default username for Files access (ActiveDirectory).		optional
filesDefaultPassword	The default password for filesDefaultUser.		optional
checkScopeScans	Enable LDAP checking for all logical file listings	true	optional

DaliServer Notes

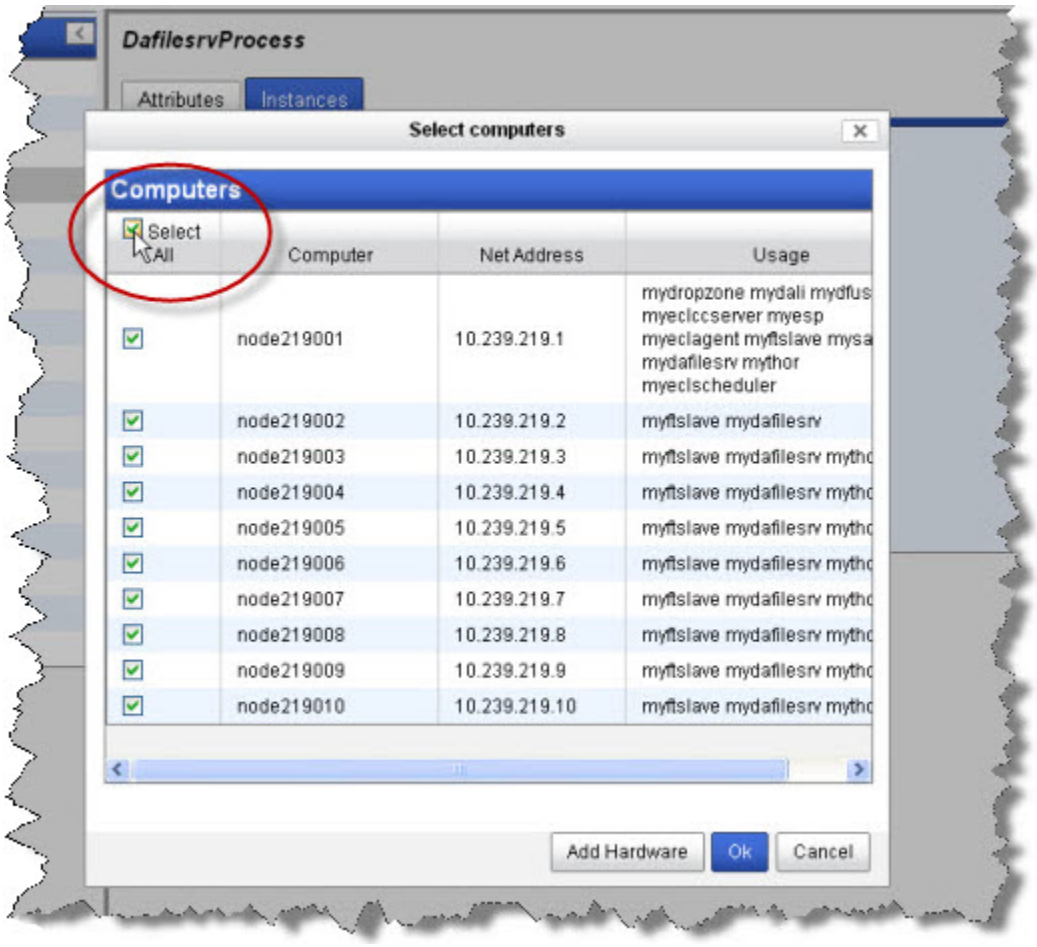
This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

Dafilesrv Process

Dafilesrv Instances

Dafilesrv is a helper process that every node needs.

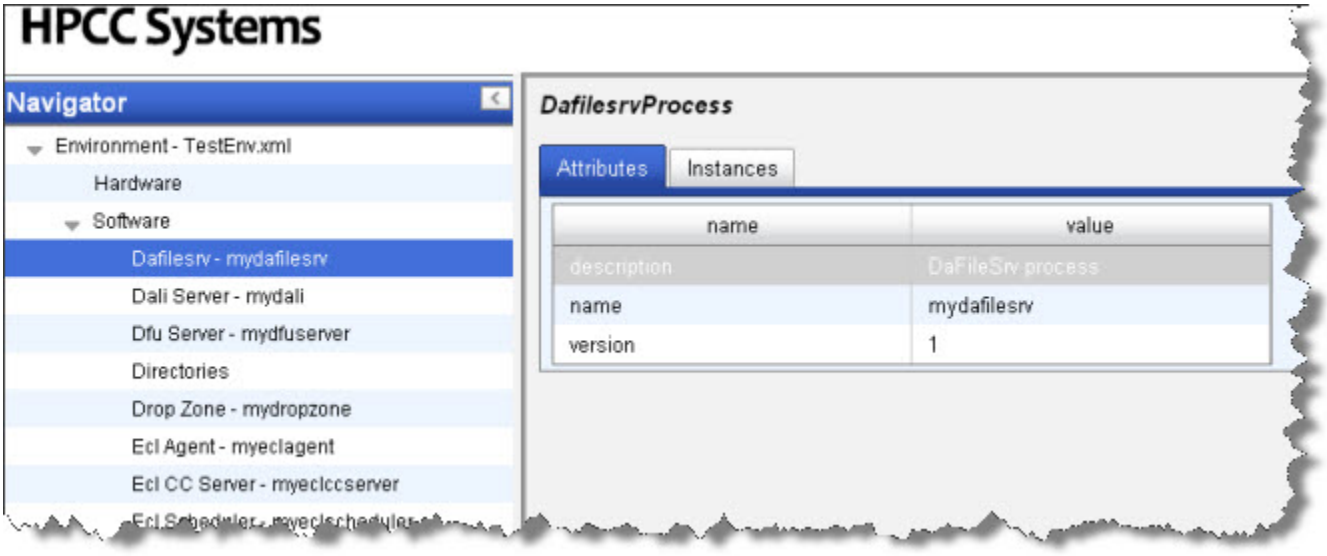
1. Select Dafilesrv in the Navigator panel on the left side.
2. Select the Instances tab.
3. right-click on a computer in the computer column, and select Add Instance .
4. Select all computers in the list by checking the **Select All** box, then press the **OK** button.



5. Click the  disk icon to save

Dafilesrv attributes

This section describes the Dafilesrv attributes.



attribute	values	default	required
name	Name for this process		required
description	Description for this process	DaFileSrv process	optional
version	Version identifier used to select which process will be started	1	optional
parallelRequestLimit	Defines the maximum number of concurrent dafilesrv requests allowed. Requests that exceed the limit will be delayed. A value of 0 disables throttling. This a global setting.	20	optional
throttleDelayMs	Defines how many milliseconds delayed requests will be delayed by. This a global setting.	5000	optional
throttleCPULimit	If after the initial delay, the CPU % falls below this setting, the transaction will be allowed to continue, i.e. the limit can be exceeded this way. This a global setting.	75	optional

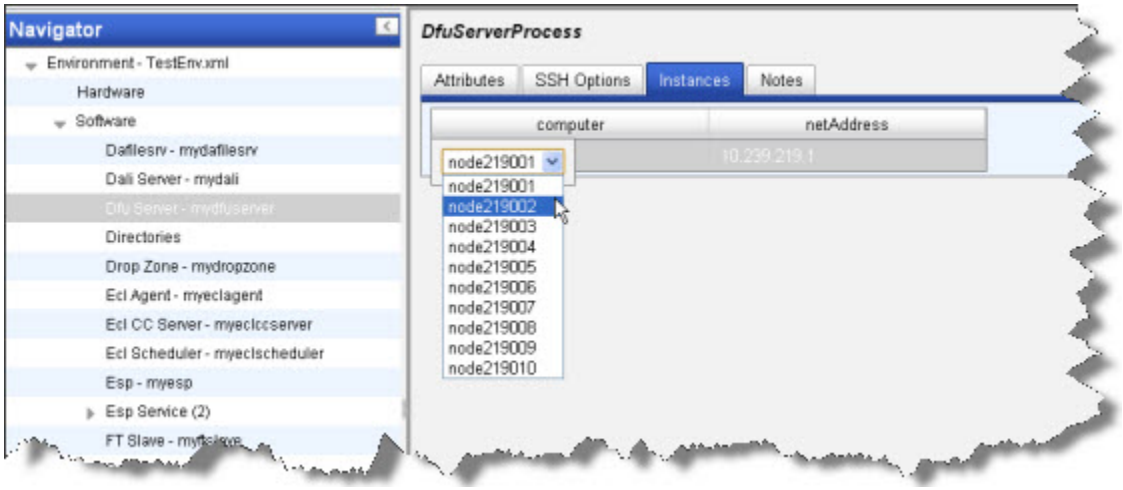
DFU Server

DfuServer Instances

1. Select **DFU Server** in the Navigator panel on the left side.

2. Select the Instances tab.

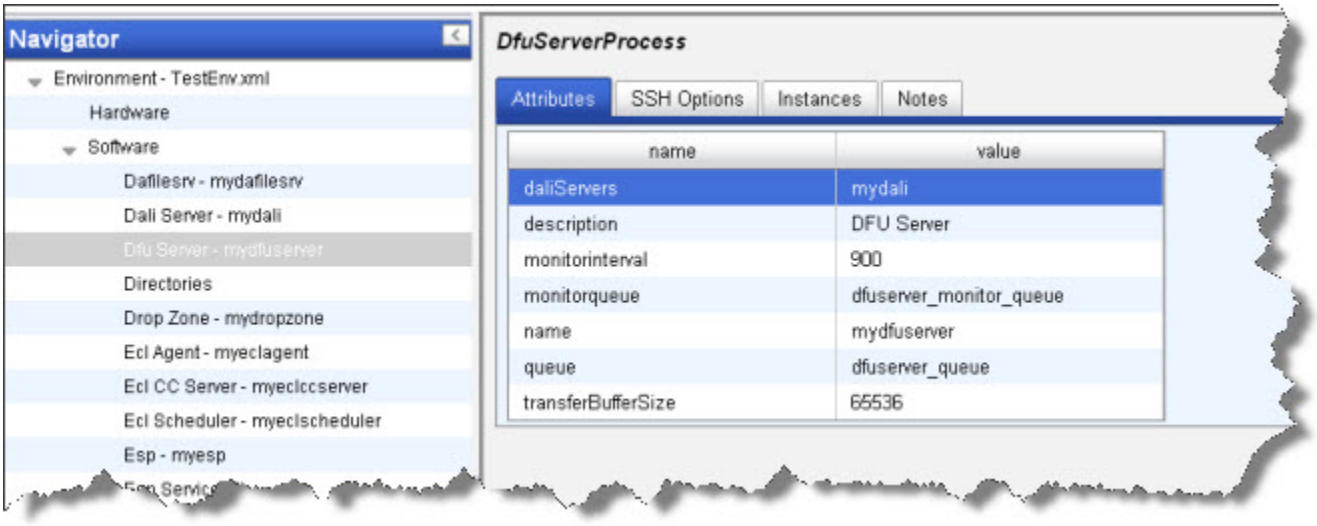
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

DfuServer Attributes Tab

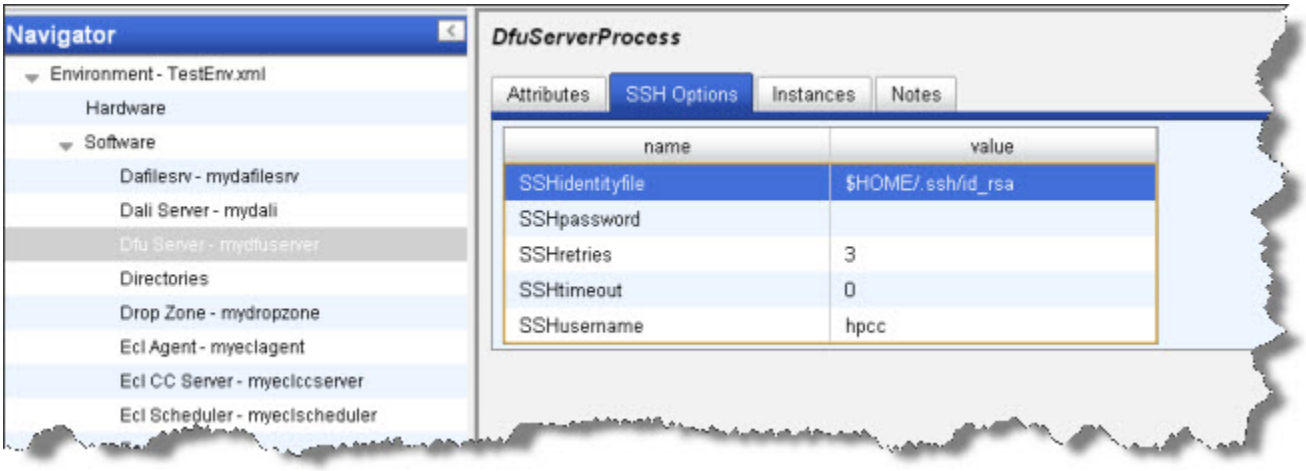
This section describes the DfuServer attributes.



attribute	values	default	required
name	Name for this process	dfuserver	optional
description	Description for this process	DFU Server	optional
daliServers	Specifies the dali server to which this DFU server is attached.		required
queue	Specifies the queue name to send DFU Server jobs to.	dfuserver_queue	optional
monitorqueue	Specifies the queue name to send DFU monitoring jobs to.	dfuserver_monitor_queue	optional
monitorinterval	Specifies the polling interval for DFU monitoring (in seconds).	900	optional
transferBufferSize	Default buffer size used when transferring data.	65536	optional

DfuServer SSH Options

This section describes the DfuServer SSH Options..



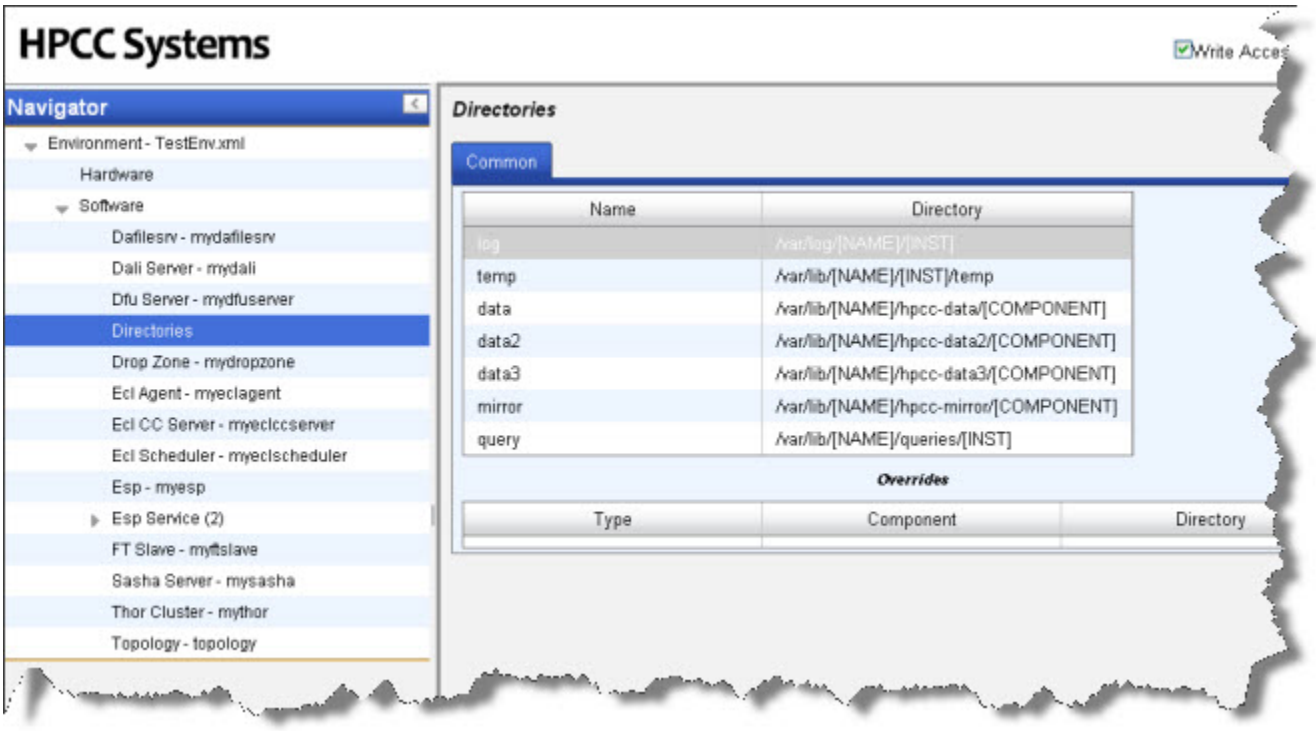
attribute	values	default	required
SSHidentityfile	location of identity file (private key) on Thor master	$HOME/.ssh/id_rsa	optional
SSHusername	Username to use when running Thor slaves	hpcc	optional
SSHpassword	Fixed password - only required if no identity file present NB **insecure**		optional
SSHtimeout	Timeout in seconds for SSH connects	0	optional
SSHretries	Number of times to retry failed connect	3	optional

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.

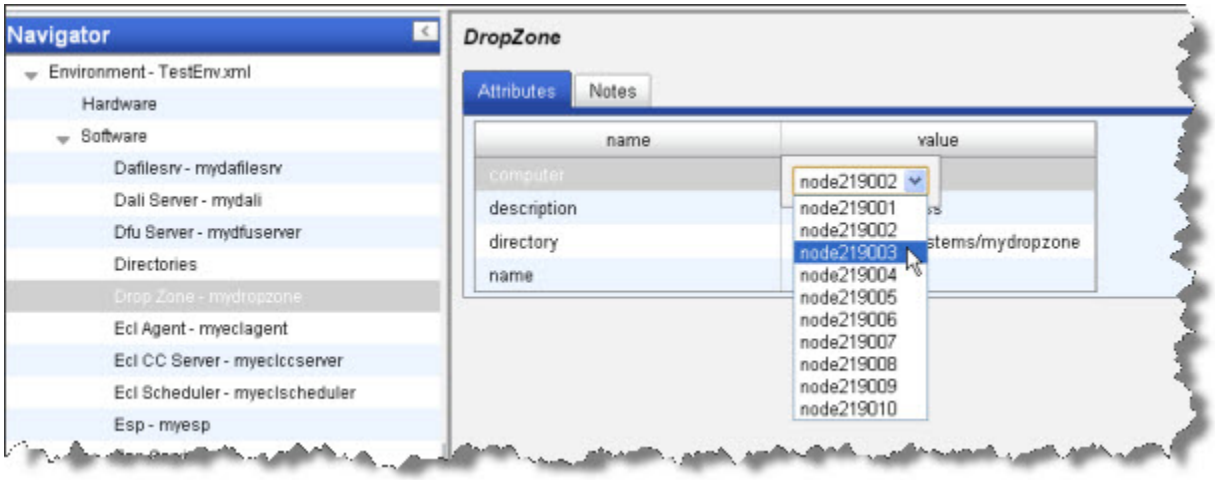


Name	Directory	Description
log	/var/log/[NAME]/[INST]	Location for Log files
temp	/var/lib/[NAME]/[INST]/temp	Location for temp files
data		Base Location for data files
data2		Base Location for 2nd copy of roxie data
data3		Reserved for future use
mirror		Base Location for mirror data files
query		Base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

Drop Zone

DropZone Attributes

1. Select Drop Zone in the Navigator panel on the left side.
2. Select the Attributes tab.
3. In the Value column of the Computer row, choose a node from the drop list as shown below:



4. Click the  disk icon to save

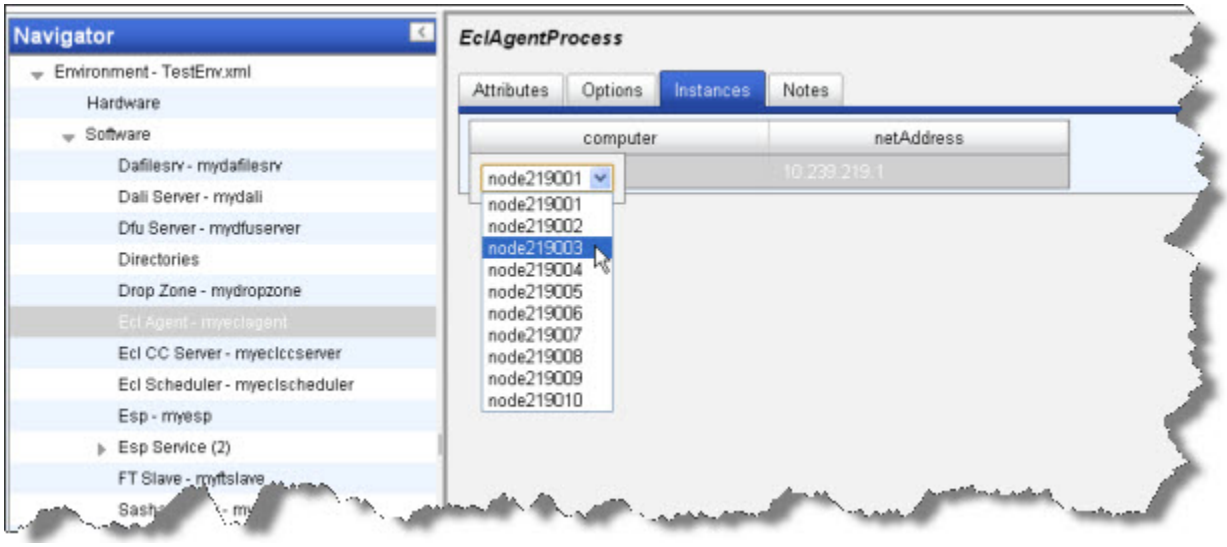
DropZone Notes

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

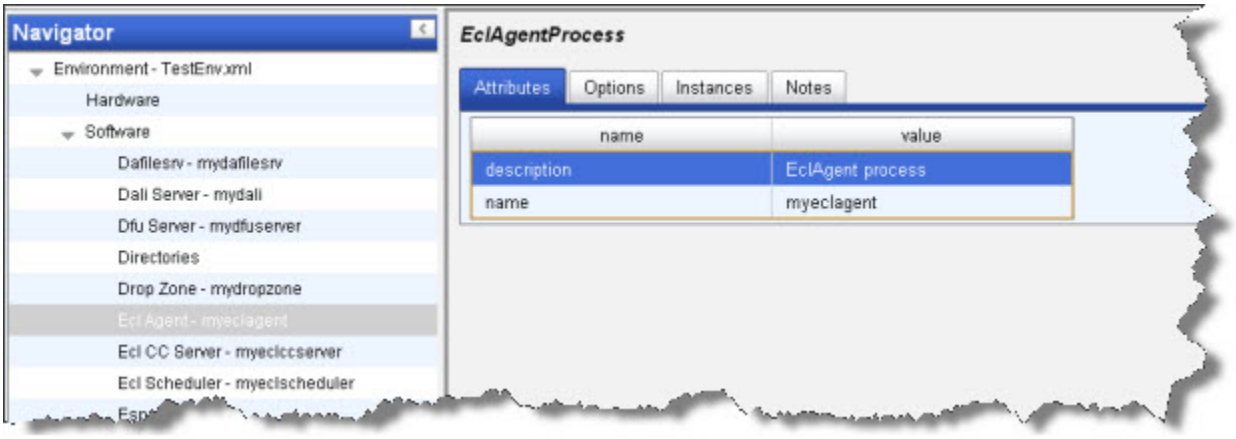
1. Select ECL Agent in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

EclAgent Attributes Tab

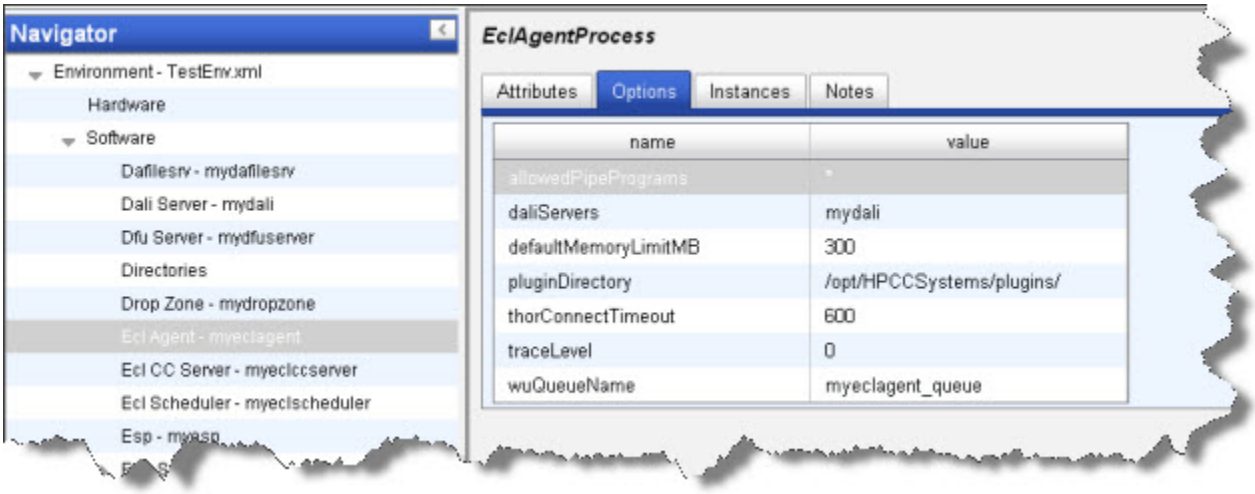
This section describes the EclAgent Attributes tab.



attribute	values	default	required
name	Name for this process		required
description	Description for this process	EclAgent process	optional

EclAgent Options Tab

This section describes the EclAgent Options tab.



attribute	values	default	required
allowedPipePrograms	Comma separated list of allowed PIPE programs (* for allow all)	*	optional
daliServers	Specifies the dali server to which this eclagent is attached.		required
defaultMemoryLimitMB	Default memory limit in MB for eclagent	300	optional
heapUseHugePages	Use memory from huge pages if they have been configured.	false	
heapUseTransparentHugePages	Use memory from transparent huge pages.	true	
heapRetainMemory	Retain and do not return unused memory to the operating system.	false	
pluginDirectory	Directory where plugins are located	/opt/HPCCSystems/plugins/	optional
traceLevel	Trace level	0	optional
thorConnectTimeout	Default connection timeout when sending query to Thor	600	optional
wuQueueName	eclAgent Workunit Execution Queue Name		optional

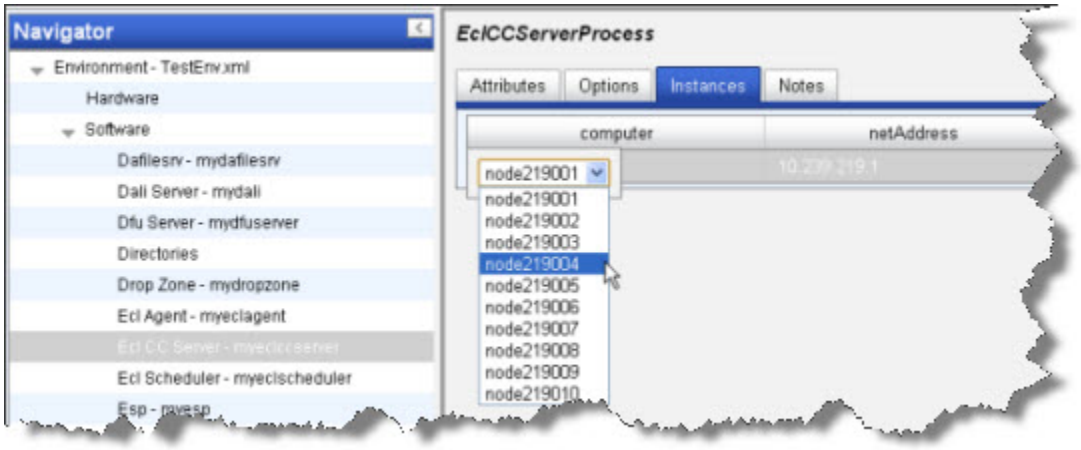
EclAgentProcessNotes

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

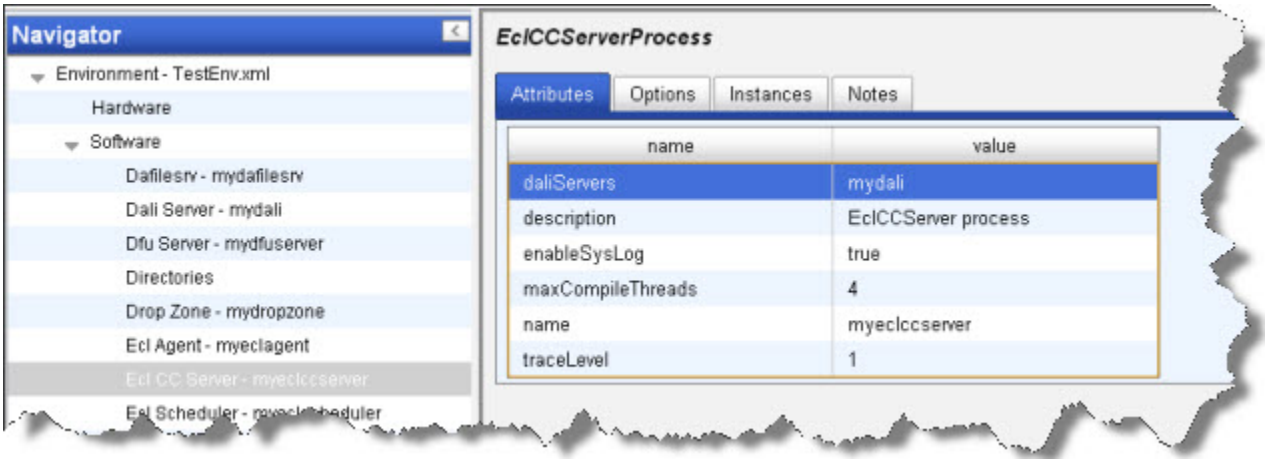
1. Select Ecl CC Server - myeclccserver in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

Ecl CC Server Attributes Tab

This section describes the Ecl CC Server Attributes tab.



attribute	values	default	required
name	Name for this process	eclccserver	optional
description	Description for this process	EclCCServer process	optional
daliServers	Specifies the dali server to which this eclccserver is attached.		required
enableSysLog	Enables syslog monitoring of the eclcc-server process.	true	optional
generatePrecompiledHeader	Generate precompiled header when eclcc-server starts.	true	optional
traceLevel	(null)	1	optional
maxEclccProcesses	Maximum number of instances of eclcc that will be launched in parallel.	4	optional

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.

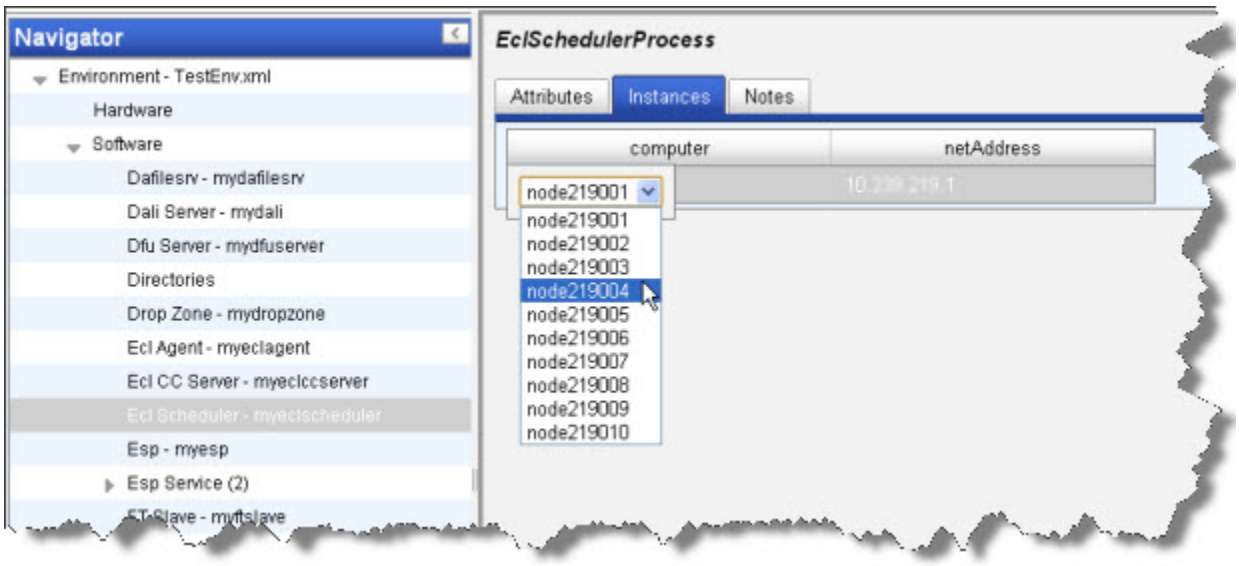
EclCC Server Process Notes

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

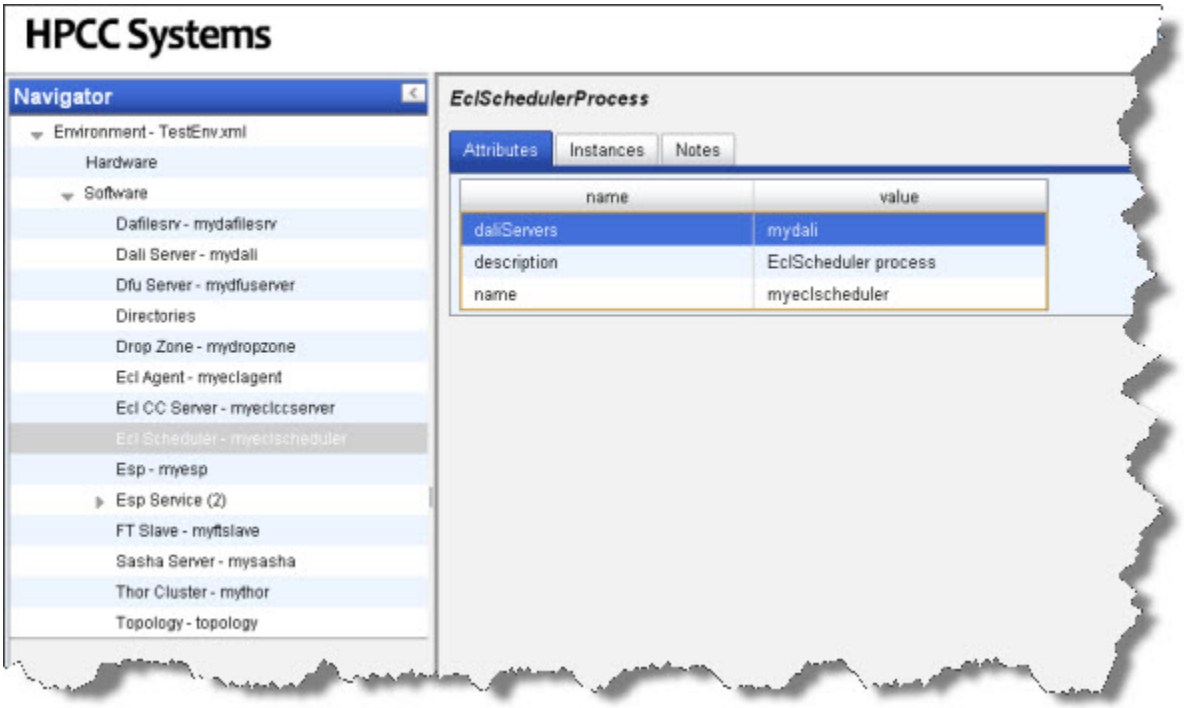
1. Select **ECL Scheduler** in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

EclScheduler Attributes Tab

This section describes the EclScheduler Attributes tab.



attribute	values	default	required
name	Name for this process	eclscheduler	optional
description	Description for this process	EclScheduler process	optional
daliServers	Specifies the dali server to which this eclscheduler is attached.		required

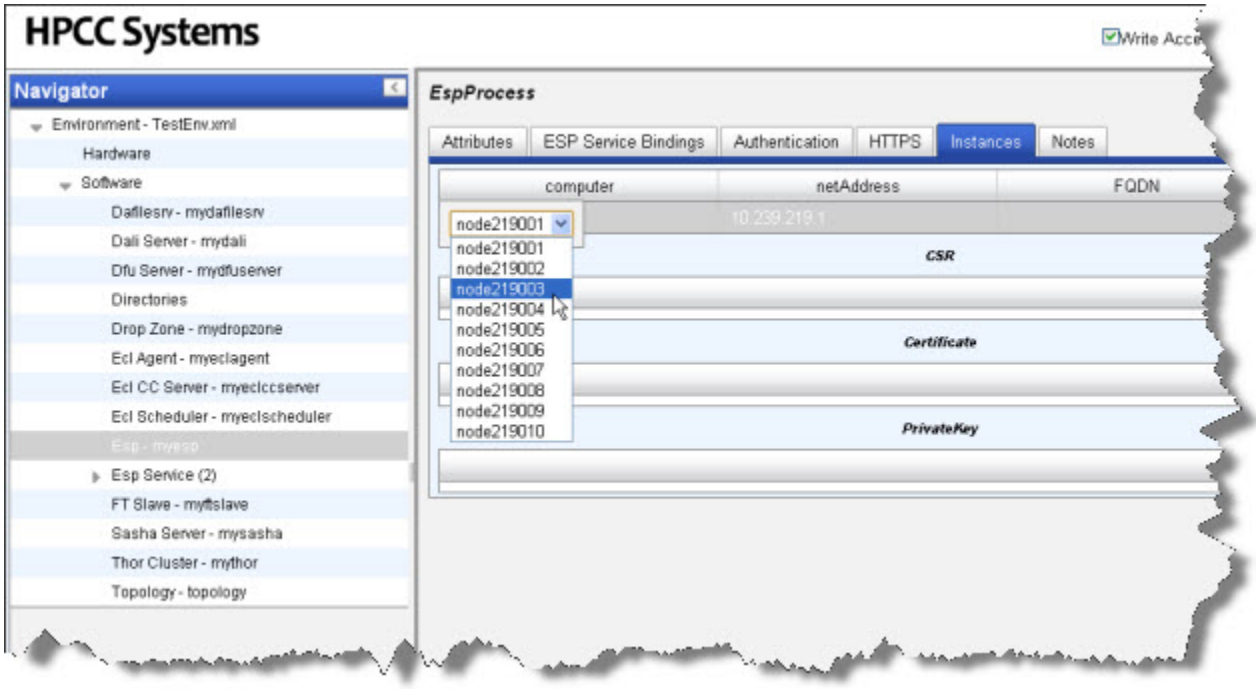
EclScheduler Notes

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

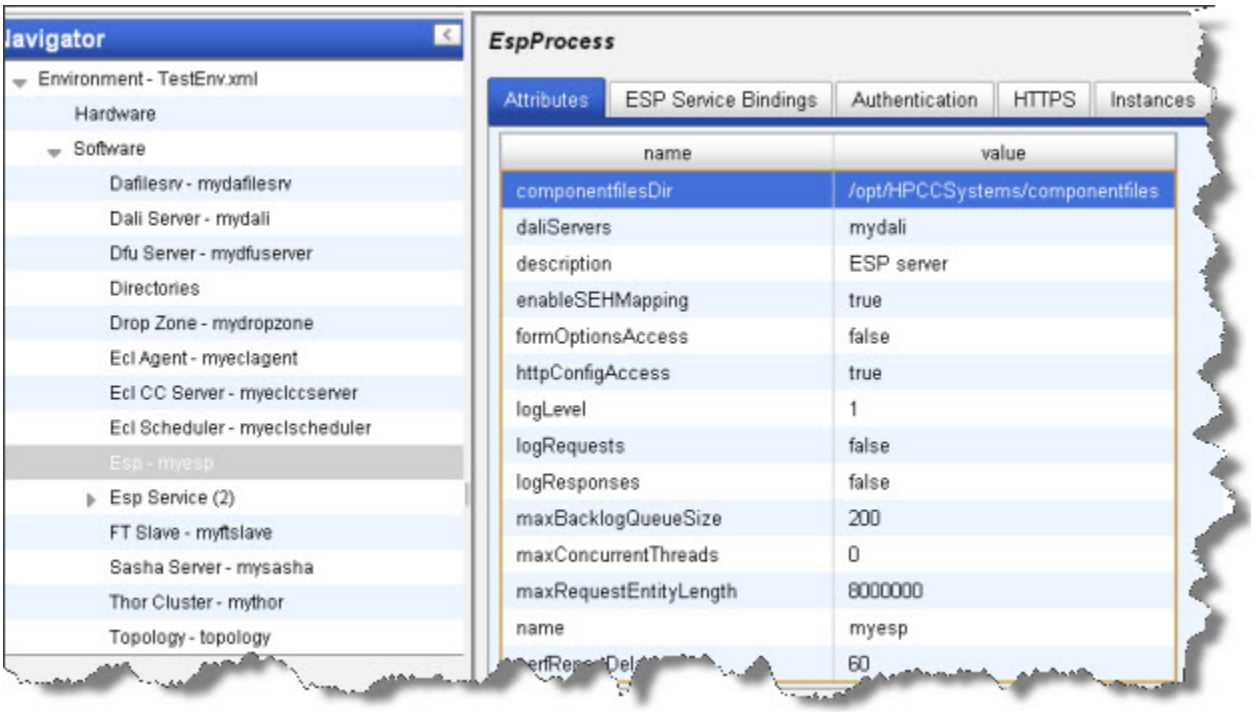
1. Select ESP - MyEsp in the Navigator panel on the left side.
2. Select the Instances tab.
3. In the computer column, choose a node from the drop list as shown below:



4. Click the  disk icon to save

Esp - myesp Attributes Tab

This section describes the Esp - myesp Attributes tab.

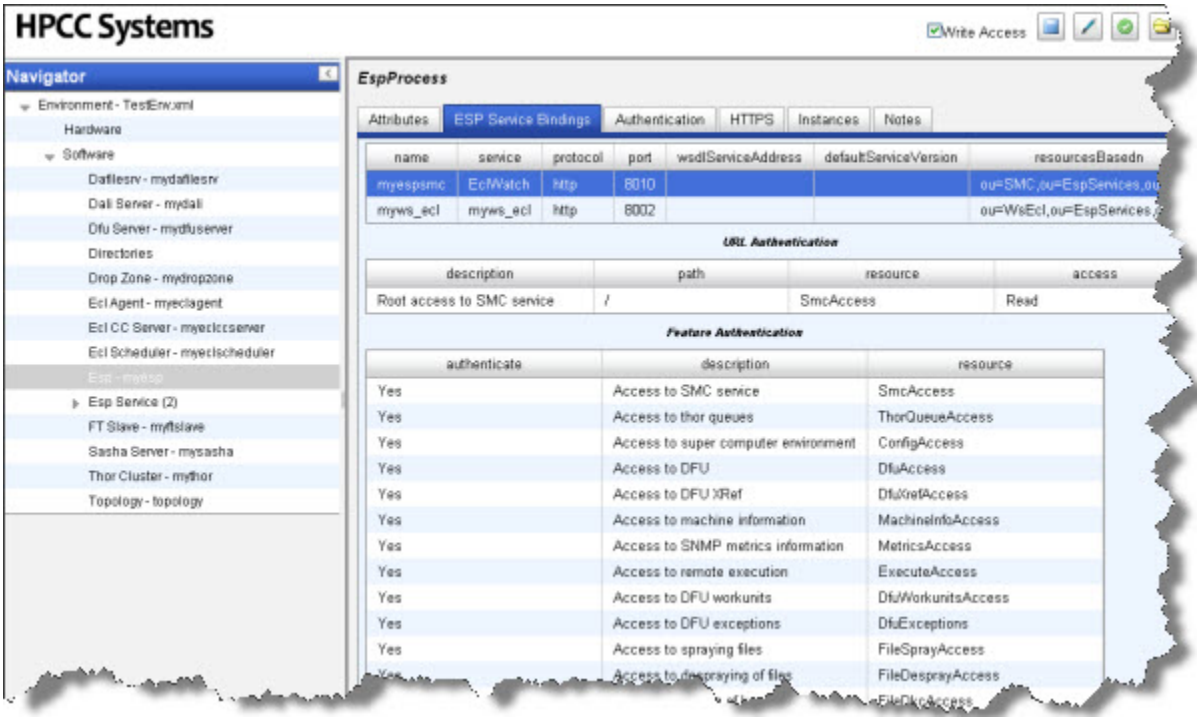


attribute	values	default	required
name	Name for this process		required
description	Description for this process	ESP server	optional
daliServers	Specifies the dali server to which this ESP is attached.		required
enableSEHMapping	Enables SEH to exception mapping.	true	optional
httpConfigAccess	Allows esp config file to be viewed via a web browser.	true	optional
formOptionsAccess	Allows show Options in test form page.	false	optional
maxRequestEntityLength	The maximum length of request entity allowed	8000000	optional
maxConcurrentThreads	The maximum number of concurrent threads. 0 means unlimited.	0	optional
maxBacklogQueueSize	Sets the sockets parameter for the maximum number of backlogged requests.	200	optional
perfReportDelay	Sets the frequency for logging resource usage stats.	60	optional
controlPort	Sets the network port for ESP control	8010	optional
logLevel	Sets the log level [0: none, 1: min, 5: noraml, 10: max]	1	optional

attribute	values	default	required
componentfilesDir	Sets the componentfiles directory.	/opt/HPCCSys-tems/componentfiles	optional
logRequests	(null)	true	optional
logResponses	(null)	false	optional

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.

attribute	values	default	required
description			optional
path	The logical path of a resource used for authentication.	/	optional
resource	The physical resource for which access is checked.		required
access	The access level required to the sepcified resource.	Read Choices are: * * Access * Read * Write * Full * None	optional

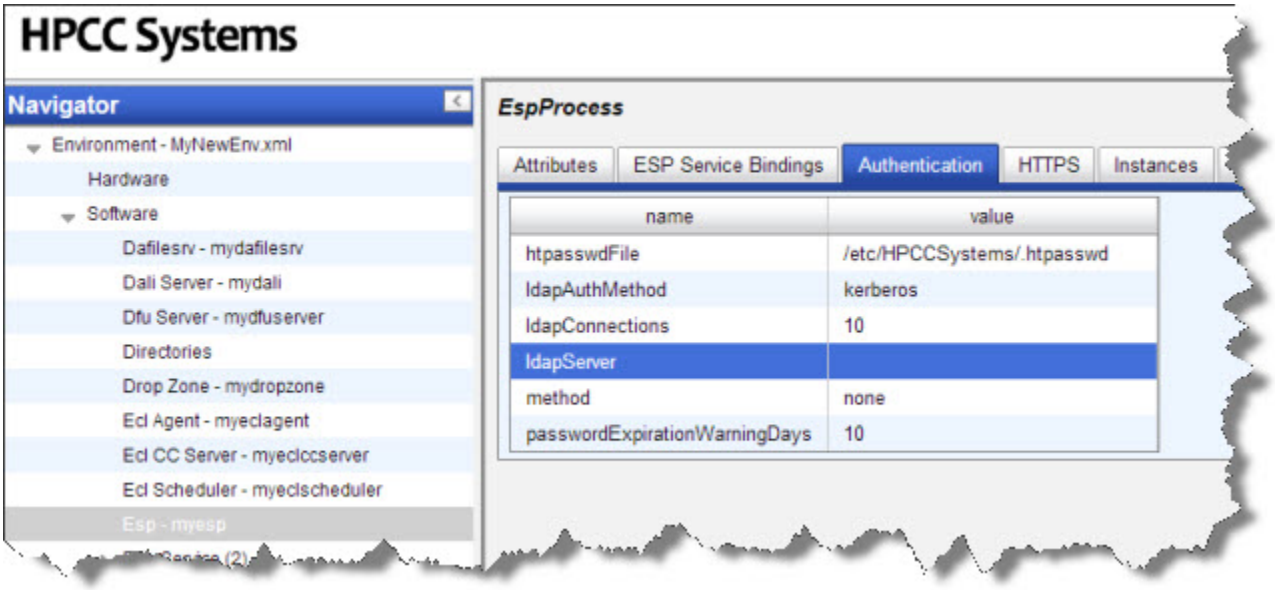
The following tables describe the ESPProcess Service Bindings, **Feature Authentications**.

attribute	values	default	required
authenticate	Validate access rights for this capability?	Yes	optional

attribute	values	default	required
		Choices are: * Yes * No	
description			optional
resource	The physical resource for which access is checked.		required

Esp - myesp AuthenticationTab

This section describes the Esp - myesp Service Authentication tab.



attribute	values	default	required
method	The protocol to use for authenticating the service	none Choices are: * none * local * ldap * ldaps * secmgrPlugin	optional
ldapServer	The ldap server to be used for authentication.		optional
ldapAuthMethod	The protocol to use for LDAP authentication (kerberos or simple).	kerberos Choices are: * kerberos * simple	optional
ldapConnections	The maximum number of connections to the LDAP server.	10	optional
passwordExpirationWarningDays	In this time period, ESP displays a warning about password expiration.	10	optional
checkViewPermissions	Enable file and column access permission checking for all view enabled queries	false	optional

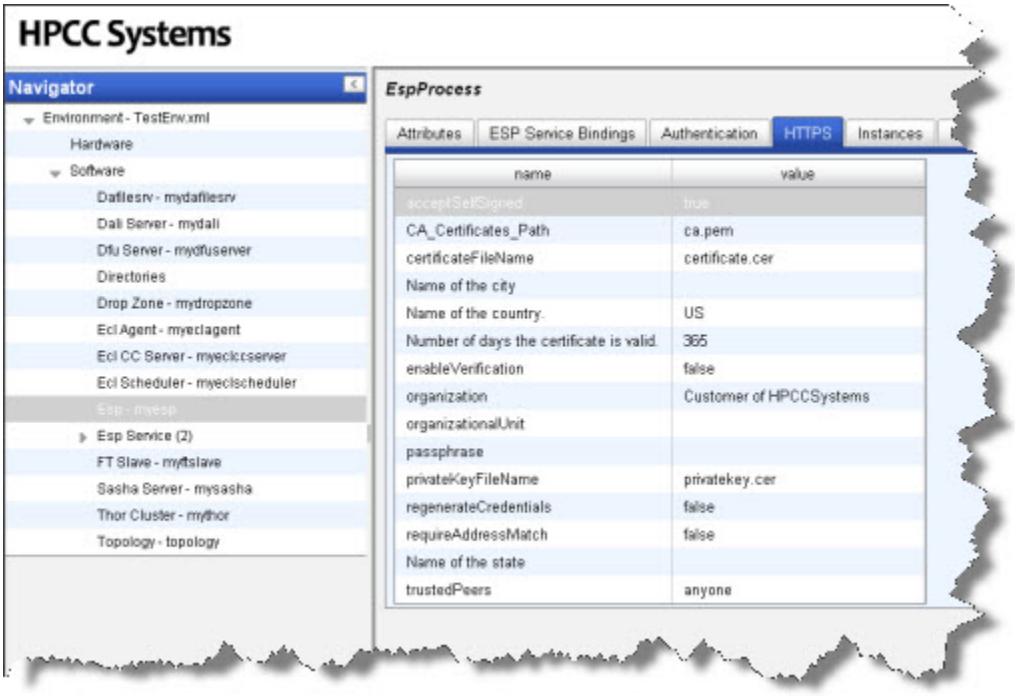
Additional information about the available Authentication methods:

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.



attribute	values	default	required
cipherList	Sets the ordered list of available ciphers for use by openssl. See openssl documentation on ciphers for information on use and formatting.	ECDH +AESGCM:DH +AESGCM:ECDH +AES256:DH +AES256:ECDH +AES128:DH +AES:ECDH +3DES:DH +3DES:RSA +AESGCM:RSA +AES:RSA+3DES:! aNULL:!MD5	optional
certificateFileName	Name of destination file in which the certificate will be written.	certificate.cer	optional
privateKeyFileName	Name of destination file in which the private key will be written.	privatekey.cer	optional
passphrase			optional
enableVerification	whether to enable verification or not.	false	optional
requireAddressMatch	whether to require the source address of the request match that of the certificate.	false	optional
acceptSelfSigned	whether to accept self-signed certificates.	true	optional
CA_Certificates_Path	path to the file that contains CA certificates.	ca.pem	optional

attribute	values	default	required
trustedPeers	List of trusted peers, in smartsocket format.	anyone	optional
organization	Name of company or organization	Customer of HPCCSystems	optional
organizationalUnit			optional
Name of the city			optional
Name of the state		Choices are: * Alabama * Alaska * Arizona * Arkansas * California * Colorado * Connecticut * Delaware * District Of Columbia * Florida * Georgia * Hawaii * Idaho * Illinois * Indiana * Iowa * Kansas * Kentucky * Louisiana * Maine * Maryland * Massachusetts * Michigan * Minnesota * Mississippi * Missouri * Montana * Nebraska * Nevada * New Hampshire * New Jersey * New Mexico * New York * North Carolina * North Dakota * Ohio * Oklahoma * Oregon * Pennsylvania * Rhode Island * South Carolina * South Dakota	optional

attribute	values	default	required
		* Tennessee * Texas * Utah * Vermont * Virginia * Washington * West Virginia * Wisconsin * Wyoming	
Name of the country.		US	optional
Number of days the certificate is valid.		365	optional
regenerateCredentials	Set this to true to regenerate the private key, certificate and CSR.	false	optional

EspProcess Notes

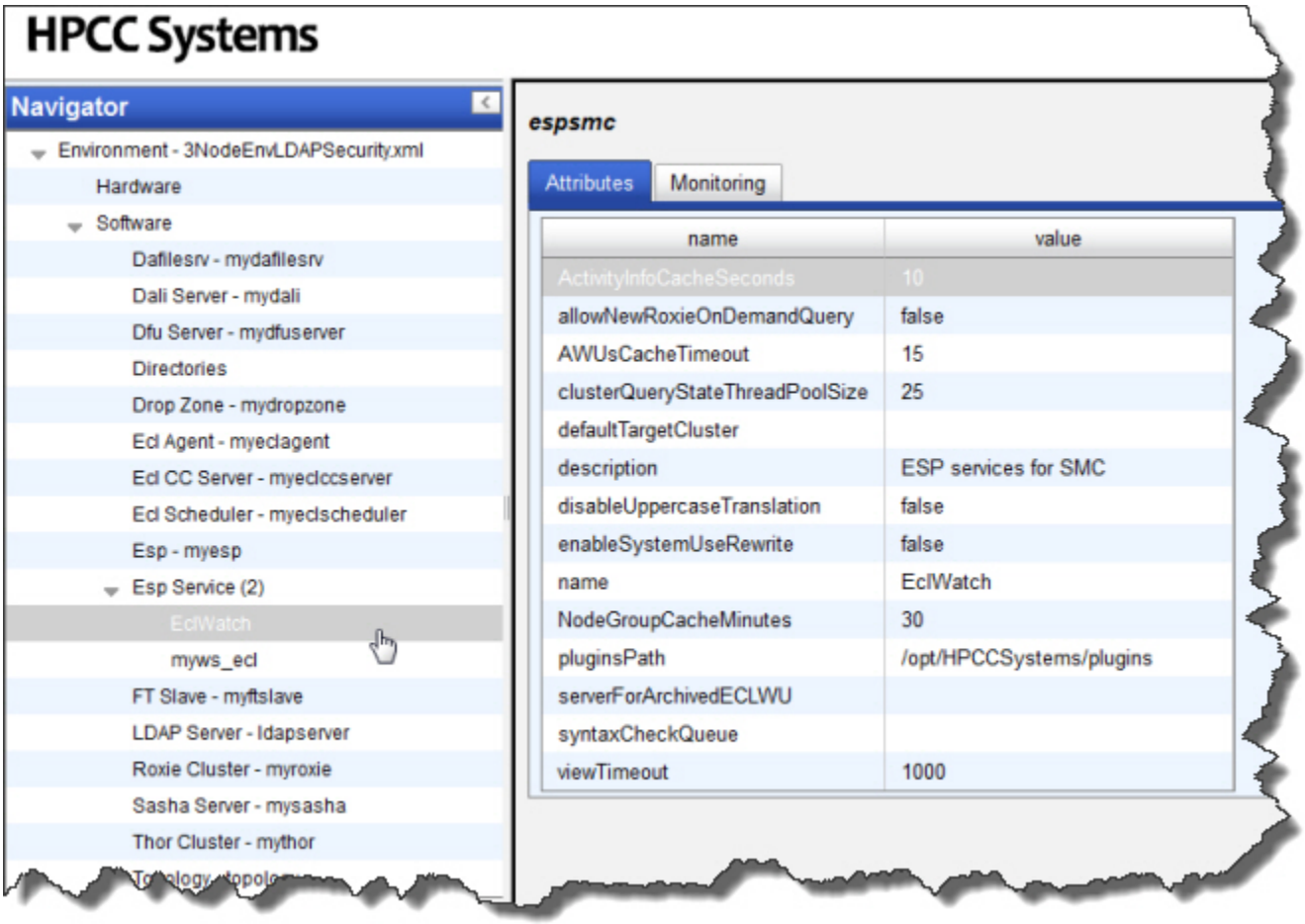
This tab allows you to add any notes pertinent to the component's configuration. This can be useful to keep a record of changes and to communicate this information to peers.

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.

attribute	values	default	required
name	Name for this ESP service	espsmc	optional
description	Description for this process	ESP services for SMC	optional
syntaxCheckQueue	Queue Name of ECL server which is used for ECL Syntax Check		optional
pluginsPath	Path where plugin files are deployed	/opt/HPCCSys-tems/plugins	optional
viewTimeout	timeout for XXXX (in seconds).	1000	optional
clusterQueryStateThreadPoolSize	Default thread pool size for checking query state on clusters	25	optional

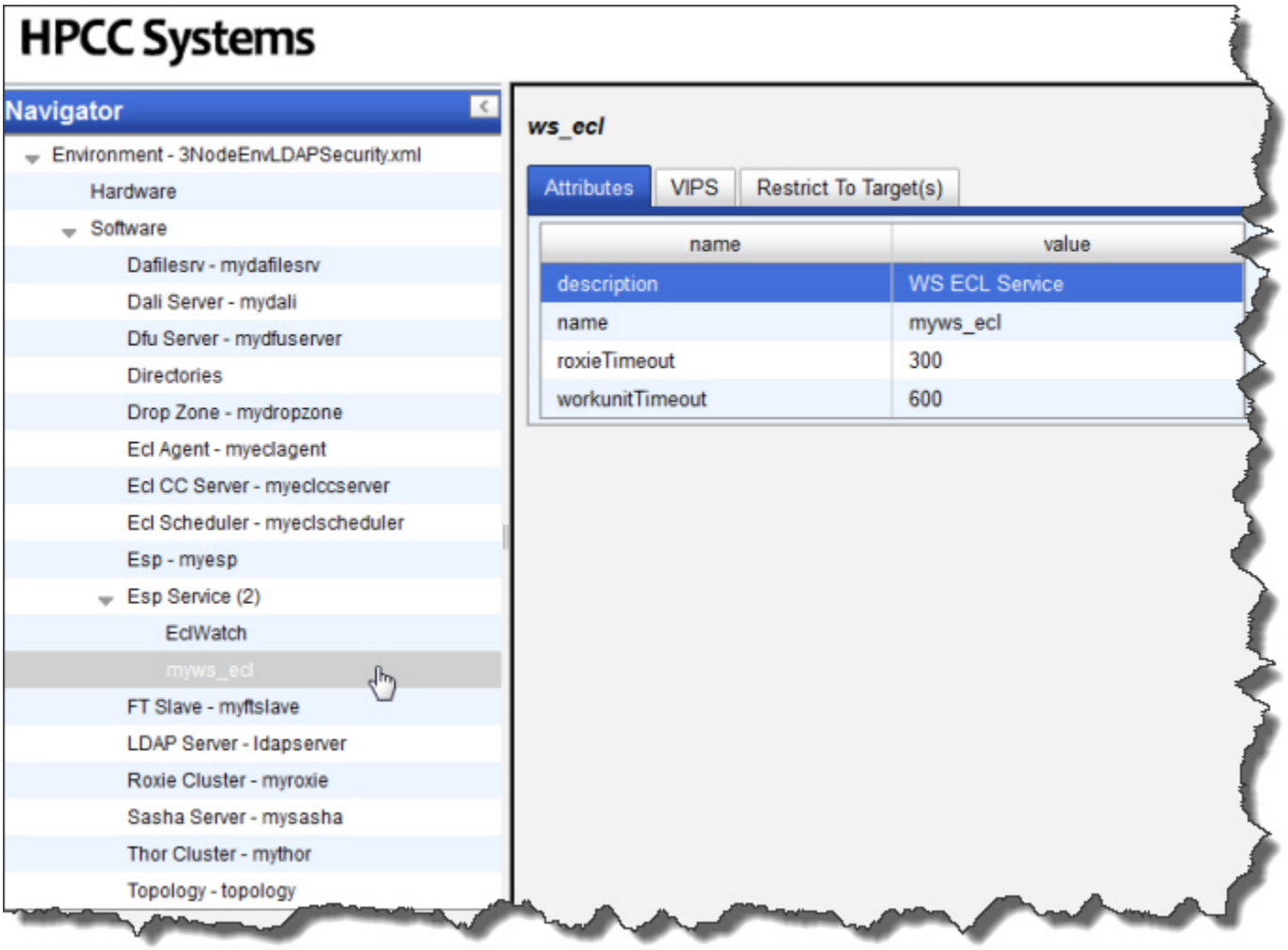
attribute	values	default	required
AWUsCacheTimeout	timeout for archived WU search cache (in minutes).	15	optional
NodeGroupCacheMinutes	timeout for node group cache (in minutes).	30	optional
ActivityInfoCacheSeconds	timeout for activity info cache (in seconds).	10	optional
serverForArchivedECLWU	Specify Sasha server for archiving ECL workunits		optional
enableSystemUseRewrite	To disable ESP Service links for System Servers that use rewrite rules.	false	optional
defaultTargetCluster	Default target for published queries		optional
disableUppercaseTranslation	To disable upper case translation for filter values in ViewKeyFile function.	false	optional
enableLogDaliConnection	Enable ESP/Dali Connection ID to be logged into esp.xml.	false	optional
allowNewRoxieOnDemandQuery	allow new queries to be used by roxie on demand and roxie browser	false	optional

ECL Watch Monitoring attributes.

attribute	values	default	required
monitorDaliFileServer	Warn if dafilesrv process is not running on computers	false	optional
excludePartitions	Comma, space or semicolon delimited list of partitions not to be monitored for free space	/dev*,/sys,/proc/*	optional
warnIfCpuLoadOver	CPU load over this value is flagged as warning in monitoring output	95	optional
warnIfFreeStorageUnder	Available disk storage space under this value is flagged as warning in monitoring output	5	optional
warnIfFreeMemoryUnder	Available memory under this value is flagged as warning in monitoring output	5	optional

WsECL Service

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



The Ws ECL configuration attributes.

attribute	values	default	required
roxie			required
vip			required
DNS Cache timeout interval	DNS lookup cache timeout in seconds. Set to 0 to resolve DNS for every transaction. Set to -1 (default) to keep DNS lookup cached indefinitely.	-1	optional
Send Target To Roxie	Send roxie the target from which to run query (disable for backward compatibility issues)	true Choices are: * true * false	optional

Ws ECL VIPS option attributes.

attribute	values	default	required
name	WsEcl will only display specified targets, if none specified WsEcl will display all targets.		required

Ws ECL Target Restrictions table.

attribute	values	default	required
name	Name for this ESP service	ws_ecl_service	optional
description	Allows creation of web services using ECL language	WS ECL Service	optional
roxieTimeout	Timeout (in seconds) for WsEcl connections to roxie (0 == wait forever)	300	optional
workunitTimeout	Timeout (in seconds), for WsEcl to wait for workunit to complete (0 == wait forever)	600	optional

FTSlave Process

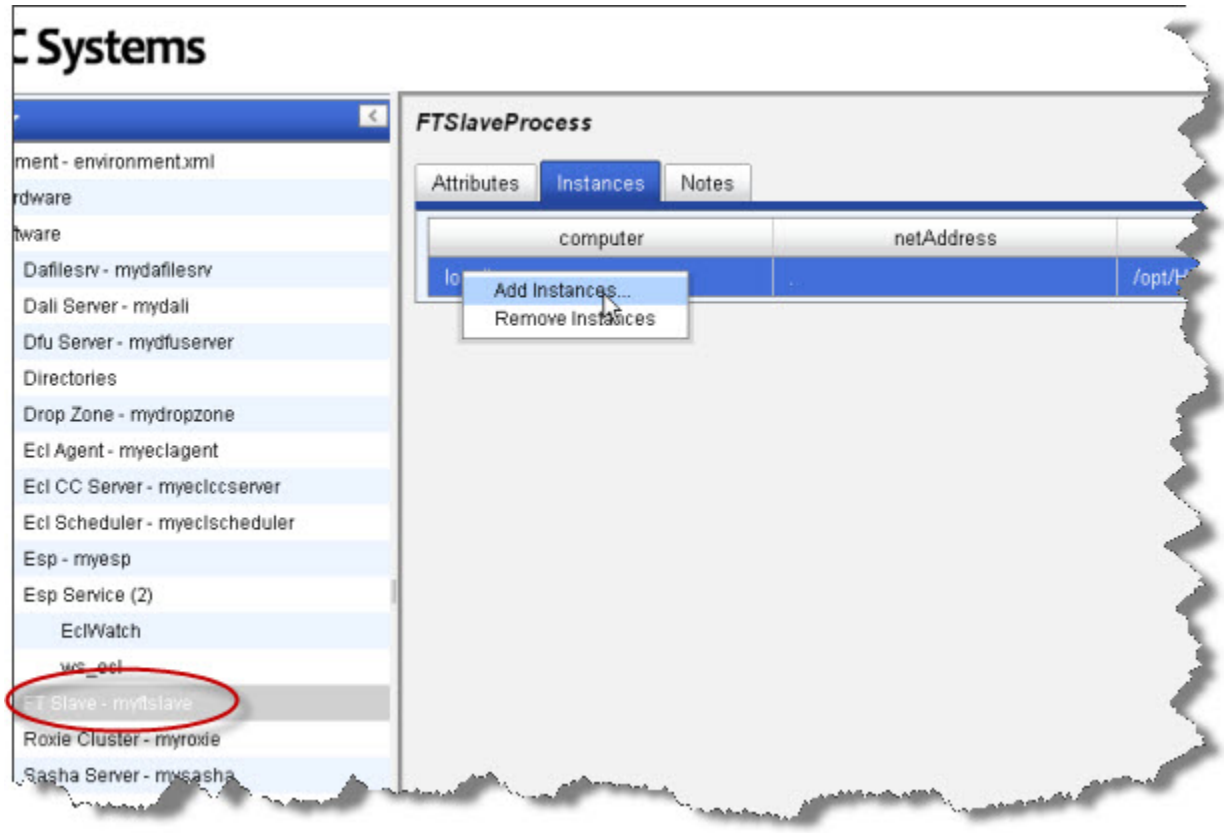
FTSlave is a helper process that every node needs. This section depicts an FTSlave installation.

Instances

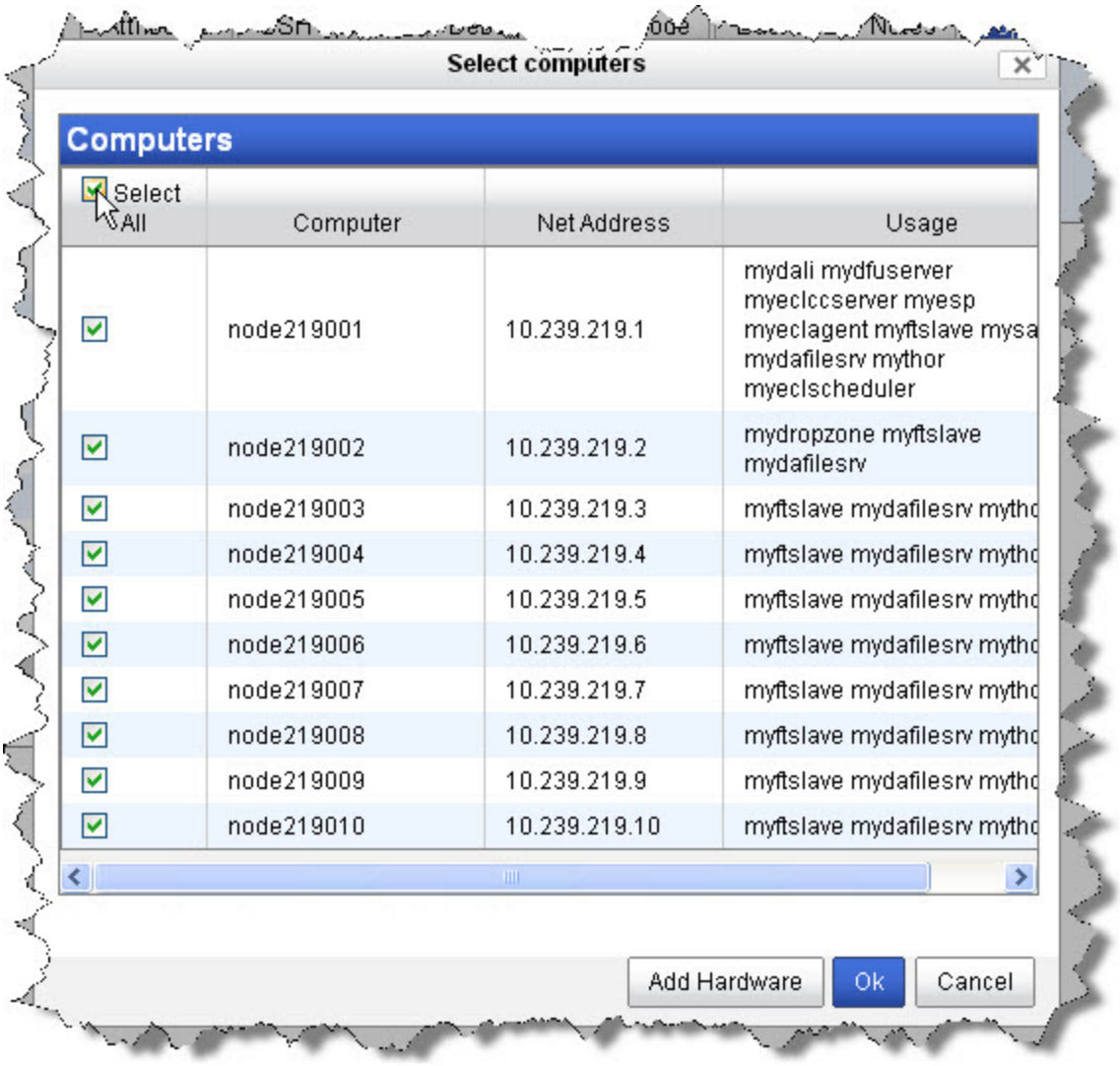
1. Select FTSlave in the Navigator panel on the left side.

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.

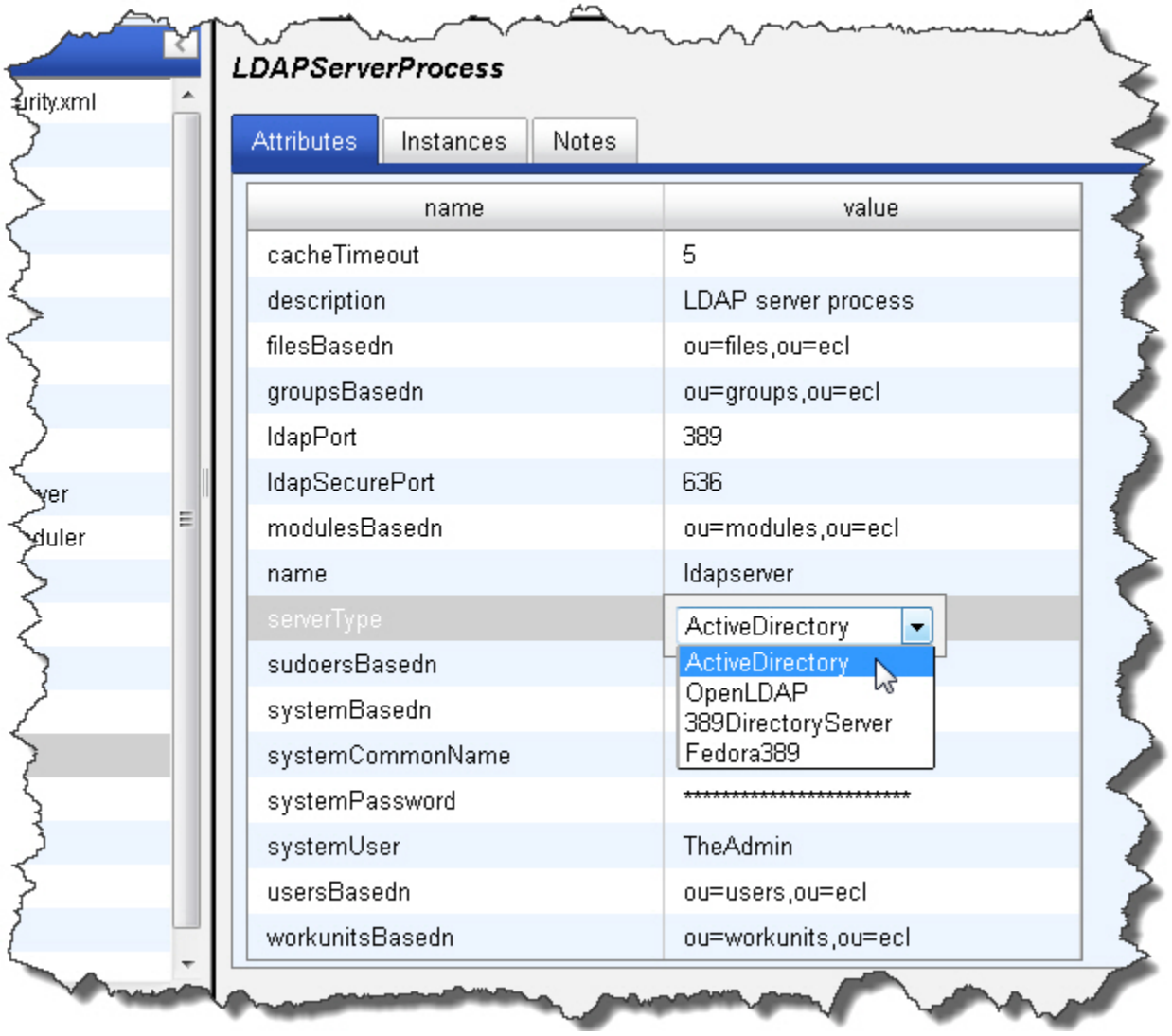
attribute	values	default	required
name	Name for this process		required
description	Description for this process	FTSlave process	optional
version	Version identifier used to select which process will be started	1	optional

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.



attribute	values	default	required
name	Name for this process		required
description	Description for this process	LDAP server process	optional
ldapPort	The port of the ldap (Active Directory) server.	389	optional
ldapSecurePort	The port of the ldap (Active Directory) server.	636	optional
cacheTimeout	Time in minutes after which the cached security information should expire.	5	optional

attribute	values	default	required
sharedCache	Use a single, shared LDAP cache.	true	optional
systemUser	An LDAP administrator account id to be used by HPCC to create and manage HPCC-specific LDAP branches.		optional
systemPassword	The password for the systemUser.		optional
systemCommonName	Required if systemUser is specified. The LDAP Common Name (cn) for the systemUser account as specified on the LDAP server.		optional
systemBasedn	The ldap "base distinguished name" of the systemUser.	cn=Users	optional
groupsBasedn	The ldap "base distinguished name" that ecl server should use when looking up groups in the ldap (Active Directory) server.	ou=groups,ou=ecl	required
viewsBasedn	The ldap "base distinguished name" that ecl server should use when looking up views in the ldap (Active Directory) server.	ou=views,ou=ecl	required
usersBasedn	The ldap "base distinguished name" that ecl server should use when looking up users in the ldap (Active Directory) server.	ou=users,ou=ecl	required
modulesBasedn	The ldap "base distinguished name" that ecl server should use when looking up modules in the ldap (Active Directory) server.	ou=modules,ou=ecl	required
workunitsBasedn	The ldap "base distinguished name" that ecl server should use when looking up workunit scopes in the ldap (Active Directory) server.	ou=workunits,ou=ecl	optional
filesBasedn	The ldap "base distinguished name" that ecl server should use when looking up file scopes in the ldap (Active Directory) server.	ou=files,ou=ecl	optional
sudoersBasedn	The place to hold the sudoers entries.	ou=SUDOers	optional
serverType	LDAP Server Implementation Type	ActiveDirectory Choices are: * ActiveDirectory * OpenLDAP * 389DirectoryServer * Fedora389	required

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.

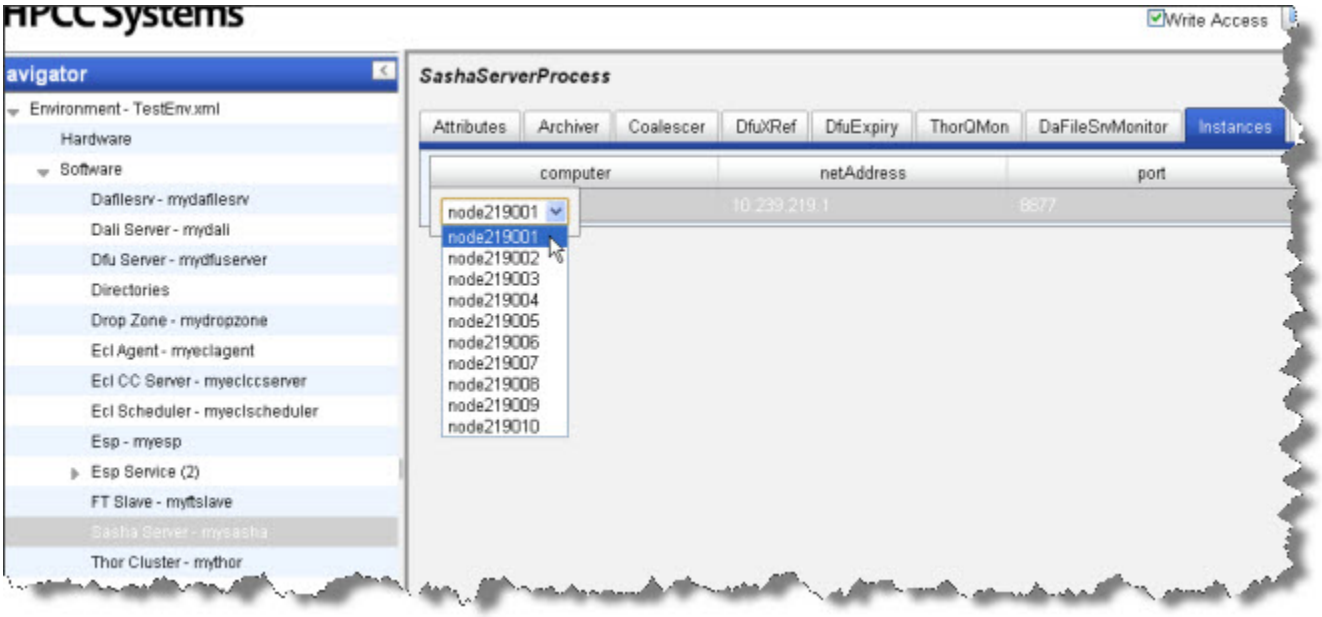
Sasha Server

Instances

1. Select Sasha Server in the menu on the left side.

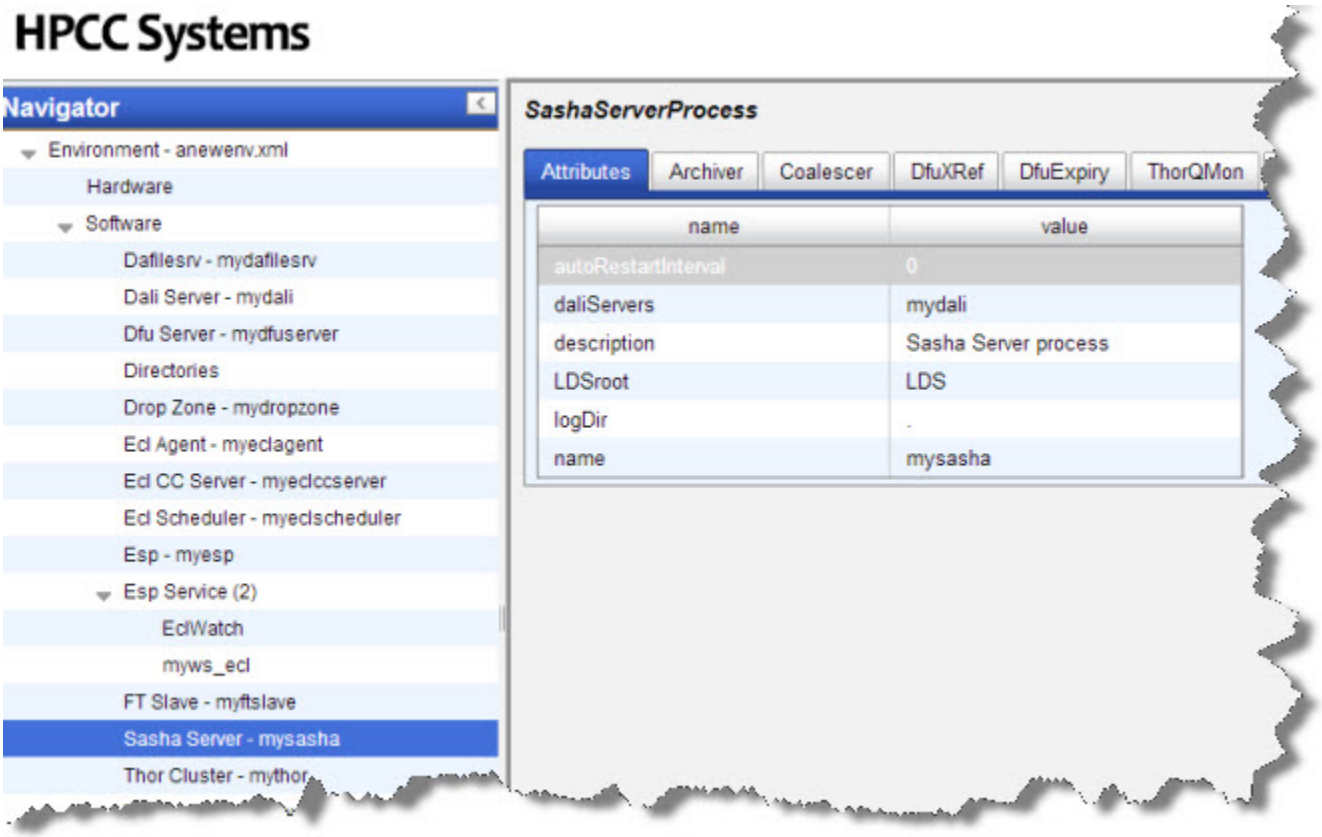
2. Select the Instances tab.

3. In the computer column, choose a node from the drop list as shown below:



Sasha Server Attributes

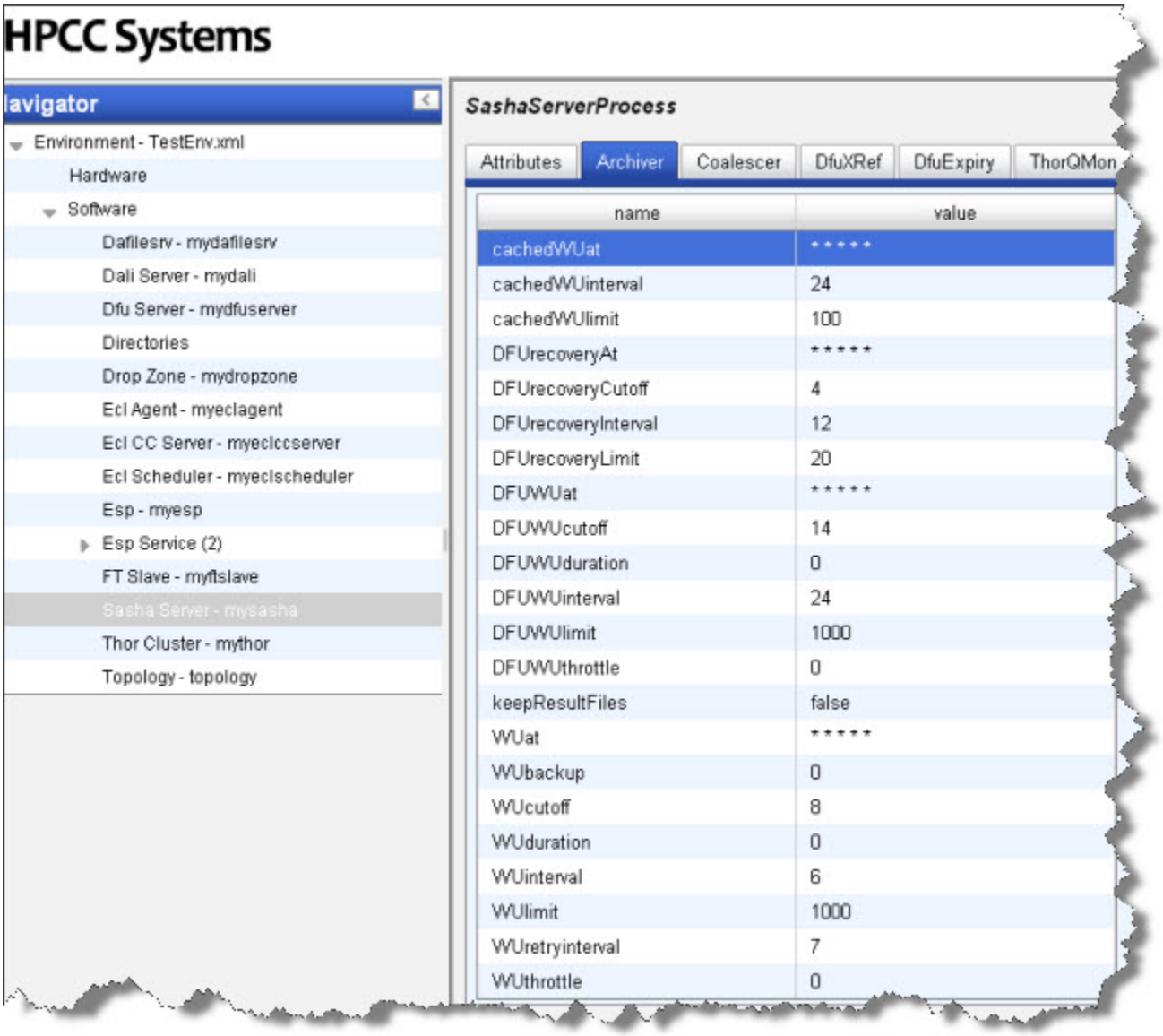
This section described the SashaServerProcess **Attribute** tab values.



attribute	values	default	required
name	Name for this process		required
description	Description for this process	Sasha Server process	optional
daliServers	Specifies the Dali server to which this Sasha server is attached.		required
logDir	Specifies the Sasha server log directory.	.	optional
autoRestartInterval	Specifies interval between sasha server auto-restart (hours, 0 no auto restart (default))	0	optional
LDSroot	Specifies the Sasha data store root directory.	LDS	optional

SashaServer Process Archiver

This section describes the SashaServer Process Archiver tab.

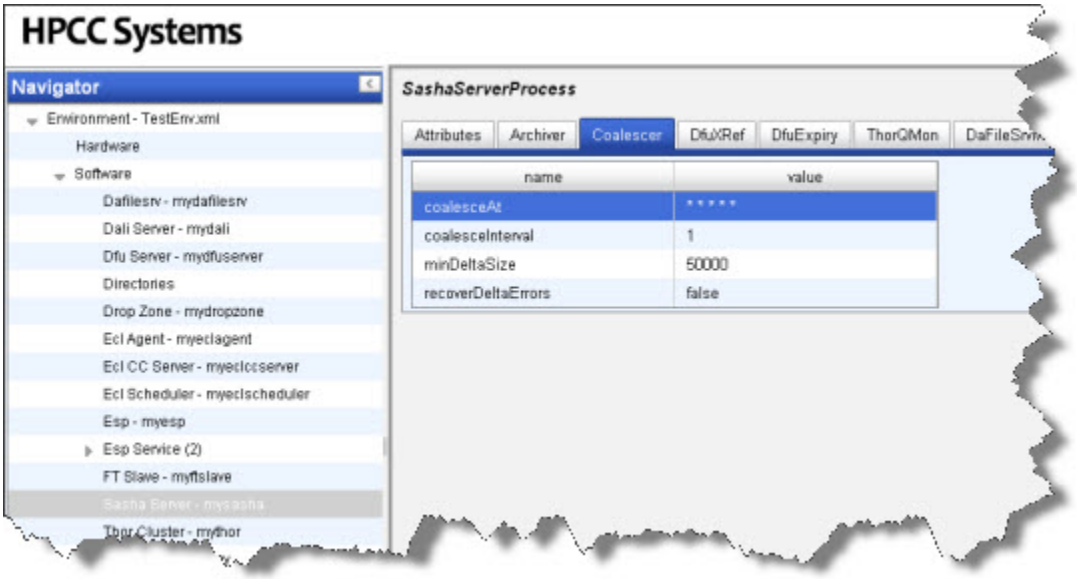


attribute	values	default	required
WUlimit	threshold number of workunits before archiving starts (0 disables).	1000	optional
WUcutoff	minimum workunit age to archive (days).	8	optional
WUbackup	minimum workunit age to backup (days, 0 disables).	0	optional
WUinterval	minimum interval between running WorkUnit archiver(in hours, 0 disables).	6	
WUat	schedule to run WorkUnit archiver (cron format).	* * * * *	optional

attribute	values	default	required
WUduration	maximum duration to run WorkUnit archiving session (hours, 0 unlimited).	0	optional
WUthrottle	throttle ratio (0-99, 0 no throttling, 50 is half speed).	0	optional
WUretryinterval	minimal time before retrying archive of failed WorkUnits (days).	7	optional
keepResultFiles	option to keep result files owned by workunits after workunit is archived	false	optional
DFUrecoveryLimit	threshold number of DFU recovery items before archiving starts (0 disables).	20	optional
DFUrecoveryCutoff	minimum DFU recovery item age to archive (days).	4	optional
DFUrecoveryInterval	minimum interval between running DFU recovery archiver(in hours, 0 disables).	12	
DFUrecoveryAt	schedule to run DFU recovery archiver (cron format).	* * * * *	optional
DFUWUlimit	threshold number of DFU workunits before archiving starts (0 disables).	1000	optional
DFUWUcutoff	minimum DFU workunit age to archive (days).	14	optional
DFUWUinterval	minimum interval between running DFU recovery archiver (in hours, 0 disables).	24	
DFUWUat	schedule to run DFU workunit archiver (cron format).	* * * * *	optional
DFUWUduration	maximum duration to run DFU WorkUnit archiving session (hours, 0 unlimited).	0	optional
DFUWUthrottle	throttle ratio (0-99, 0 no throttling, 50 is half speed).	0	optional
cachedWUlimit	threshold number of cached workunits before removal starts (0 disables).	100	optional
cachedWUinterval	minimum interval between running cached workunit removal(in hours, 0 disables).	24	
cachedWUat	schedule to run cached workunit removal (cron format).	* * * * *	optional

SashaServer Process Coalescer

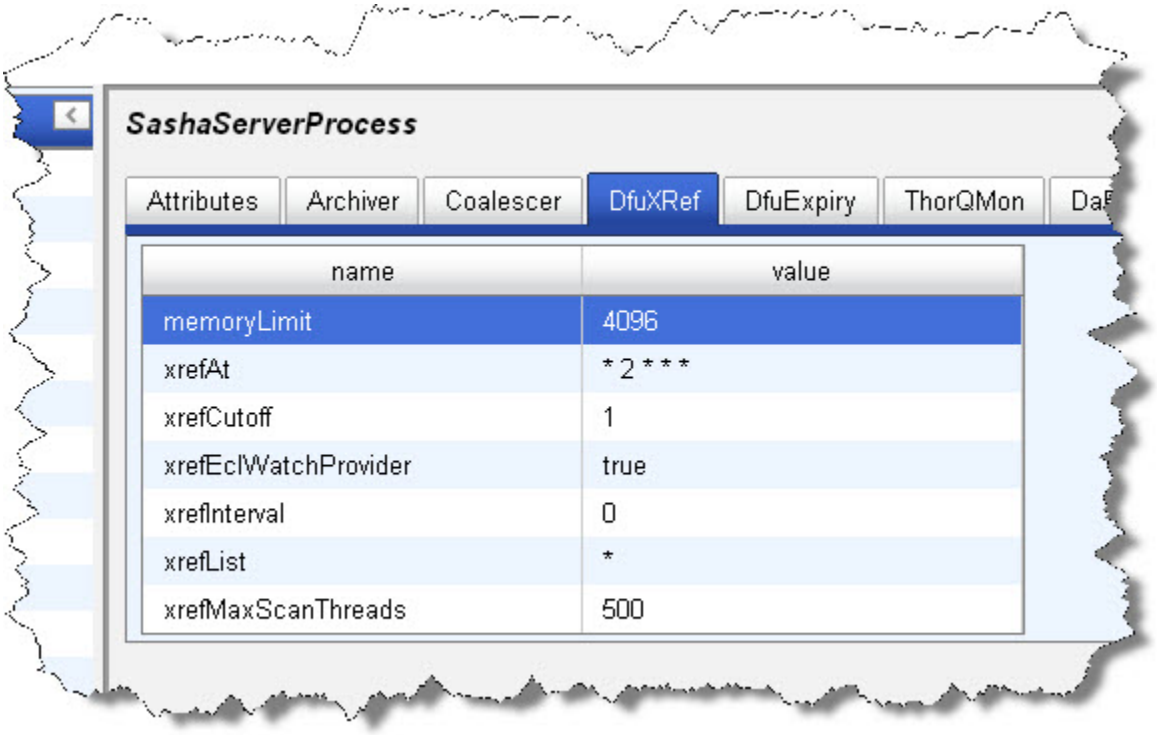
This section describes the SashaServer Process Coalescer tab.



attribute	values	default	required
coalesceInterval	minimum interval between running Dali datastore coalescer (in hours, 0 disables).	1	
coalesceAt	schedule to run Dali datastore coalescer (cron format).	* * * * *	optional
minDeltaSize	Coalescing will only begin, if the delta size is above this threashold (K)	50000	optional
recoverDeltaErrors	Switch on to auto recover from corruption to delta files on load	false	optional

SashaServer Process DfuXRef

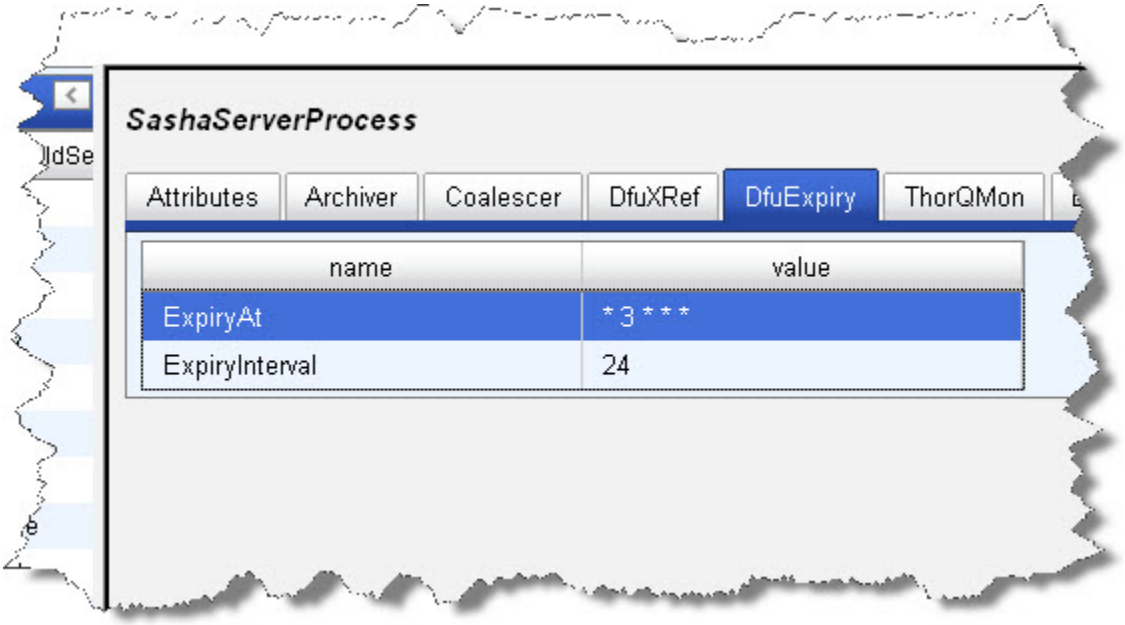
This section describes the SashaServer Process DfuXref tab.



attribute	values	default	required
xrefInterval	minimum interval between running DFU XREF (in hours, 0 disables).	672	
xrefAt	schedule to run DFU XREF (cron format).	* 2 * * *	optional
xrefList	comma separated list of clusters to xref (* for all clusters).	*	optional
xrefCutoff	cutoff (in days) to ignore recent files.	1	
xrefMaxScanThreads	maximum thread count for scanning directories	500	
xrefEclWatchProvider	use sasha for EclWatch initiated xref.	true	optional
xrefMaxMemory	The upper memory limit that xref can use.	4096	optional
suspendCoalescerDuringXref	Suspend the coalescer whilst xrefing.	true	optional

SashaServer Process DfuExpiry

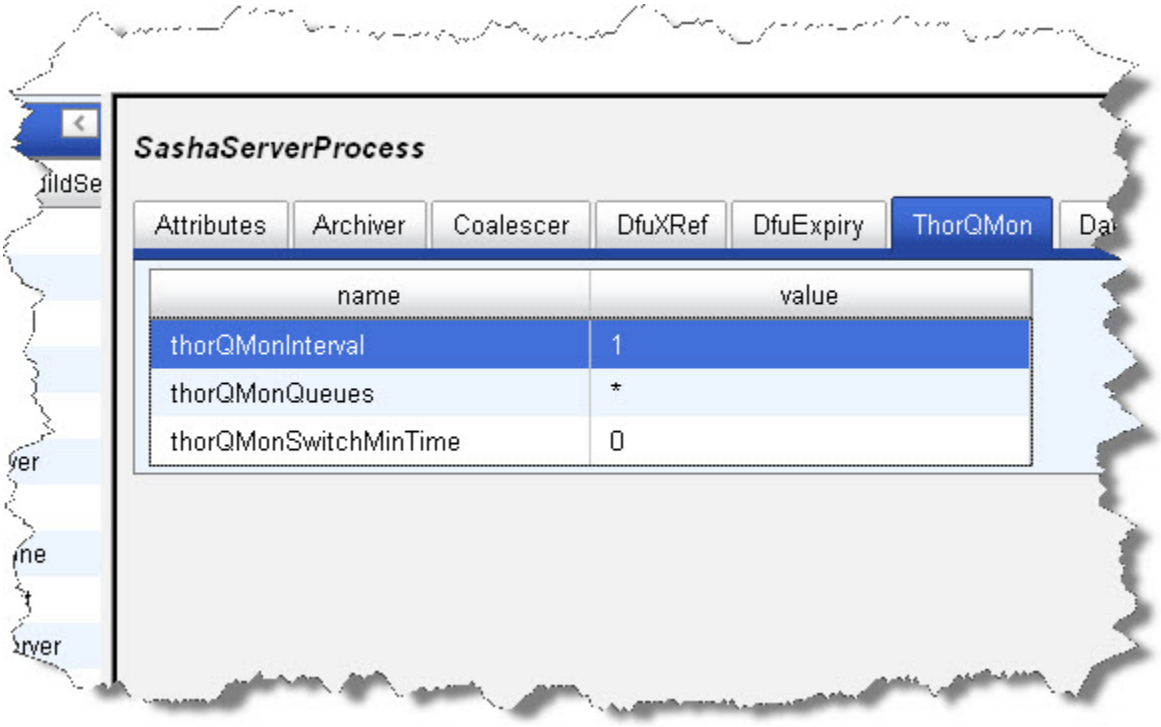
This section describes the SashaServer Process DfuExpiry tab.



attribute	values	default	required
ExpiryInterval	minimum interval between checking for distributed file expiry (in hours, 0 disables).	24	
ExpiryAt	schedule to check for distributed file expiry (cron format).	* 3 * * *	optional
PersistExpiryDefault	Default number of days to delete unused persist files	7	optional
ExpiryDefault	Default number of days to delete unused standard files that are flagged with EXPIRY	14	optional

SashaServer Process ThorQMon

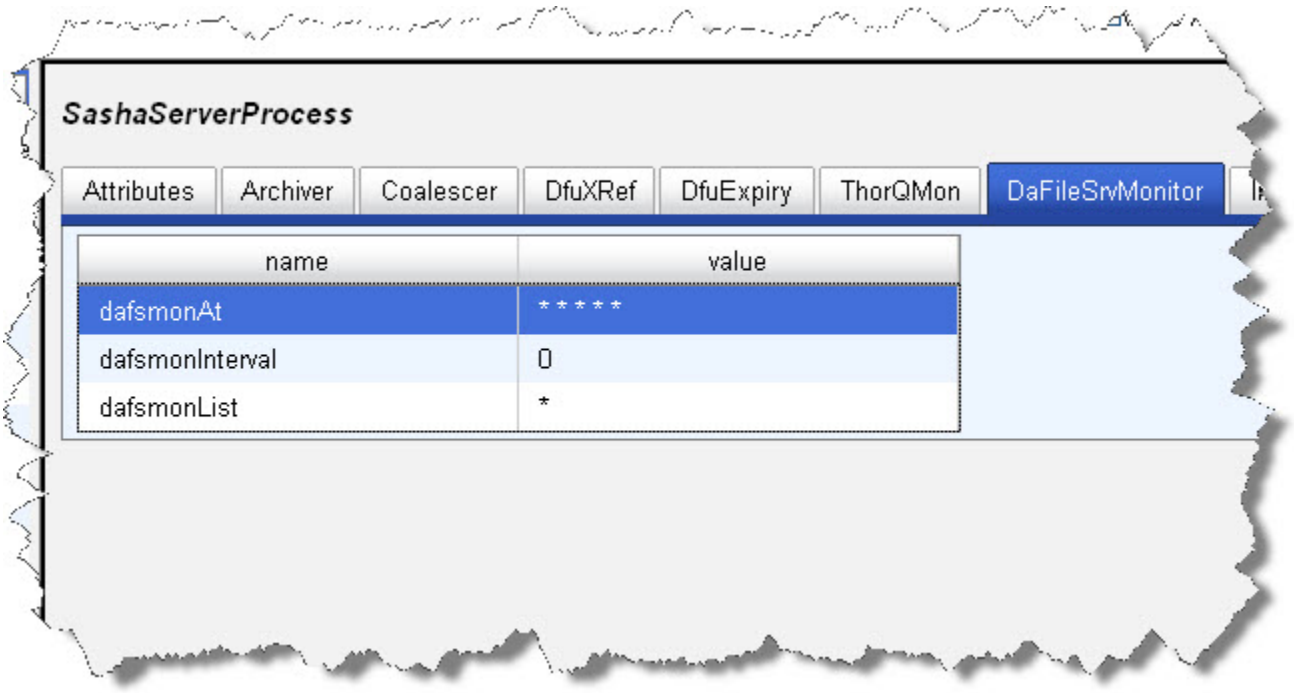
This section describes the SashaServer Process ThorQMon tab.



attribute	values	default	required
thorQMonQueues	comma separated list of Thor queues to monitor (* for all).	*	optional
thorQMonInterval	interval to monitor and log queue activity (in minutes).	1	
thorQMonSwitchMinTime	minimum idle time before job will switch queues. (in minutes, 0 disables)	0	

SashaServer Process DaFileSrvMonitor

This section describes the SashaServer Process DaFileSrvMonitor tab.



attribute	values	default	required
dafsmonInterval	minimum interval between running DaFileSrv monitor (in hours, 0 disables).	0	
dafsmonAt	schedule to run DaFileSrv monitor (cron format).	* * * * *	optional
dafsmonList	comma separated list of clusters and IPs to monitor (* for all clusters).	*	optional

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.

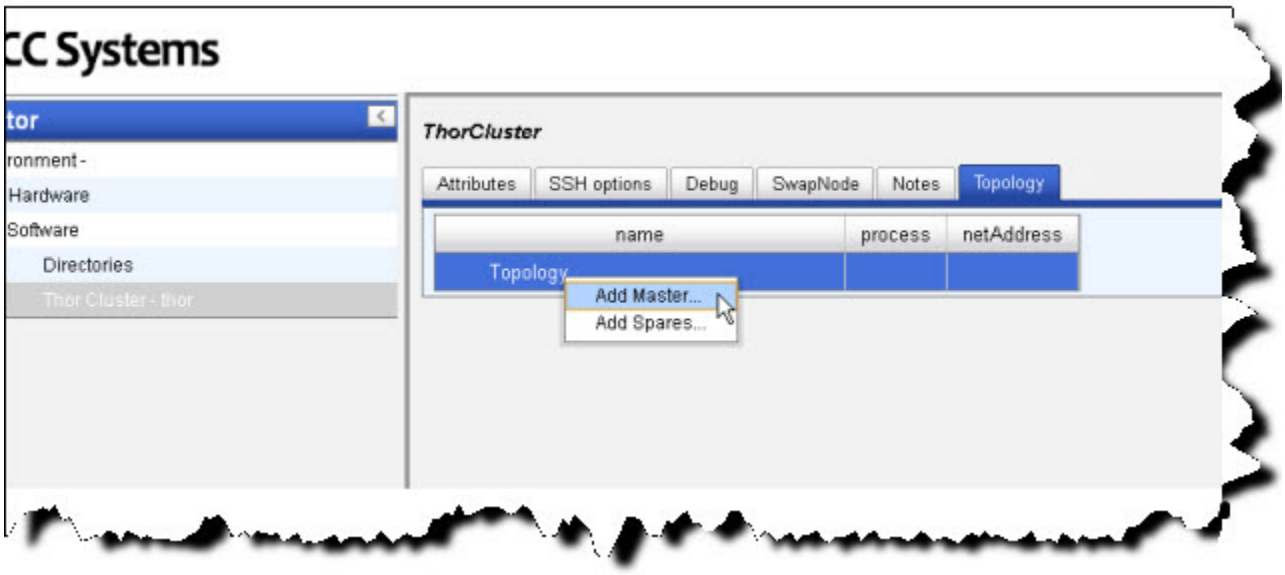
2. Select the **Topology** tab.

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

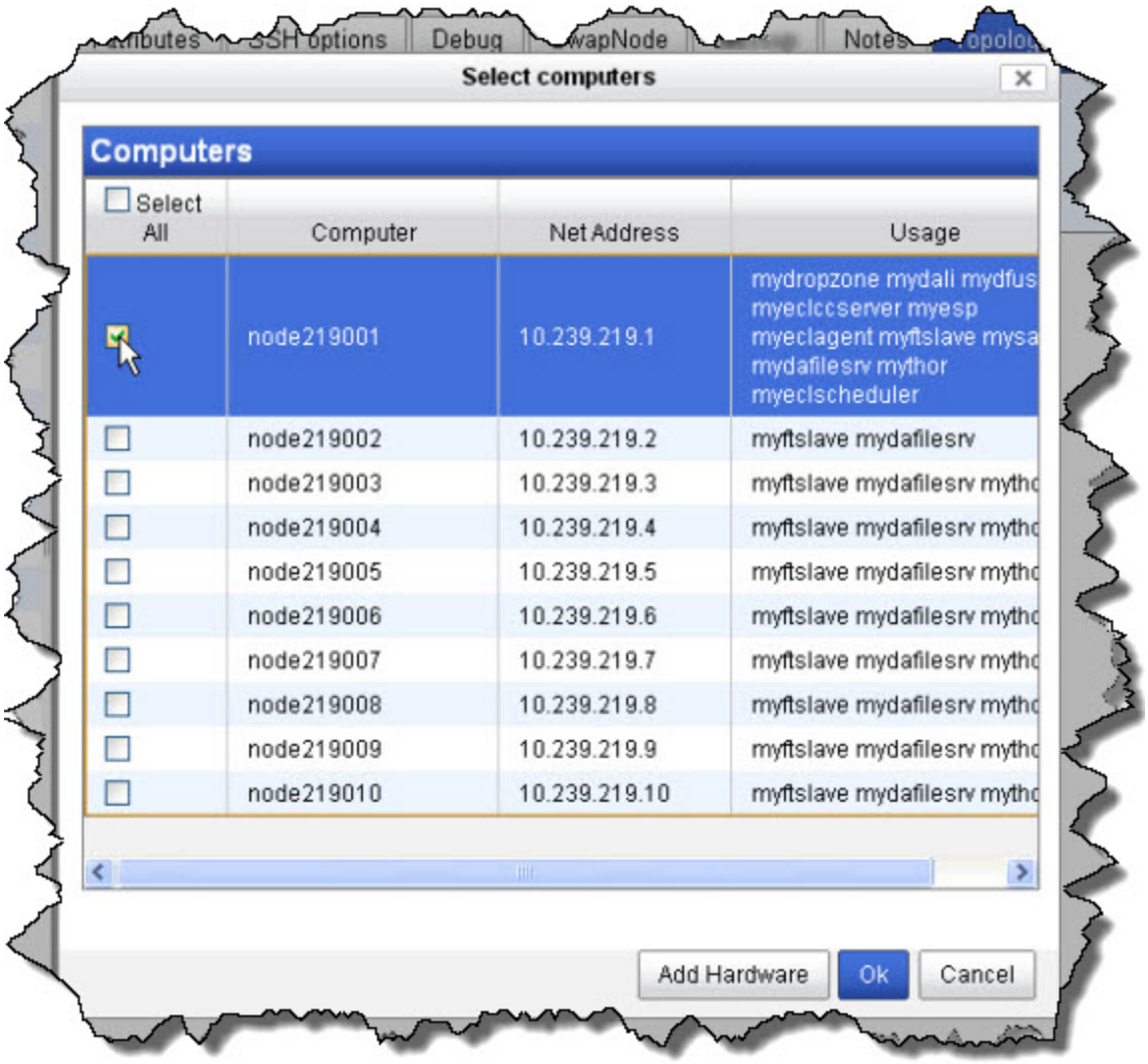
This deletes the sample one-node Thor.

You will replace this with a multi-node cluster.

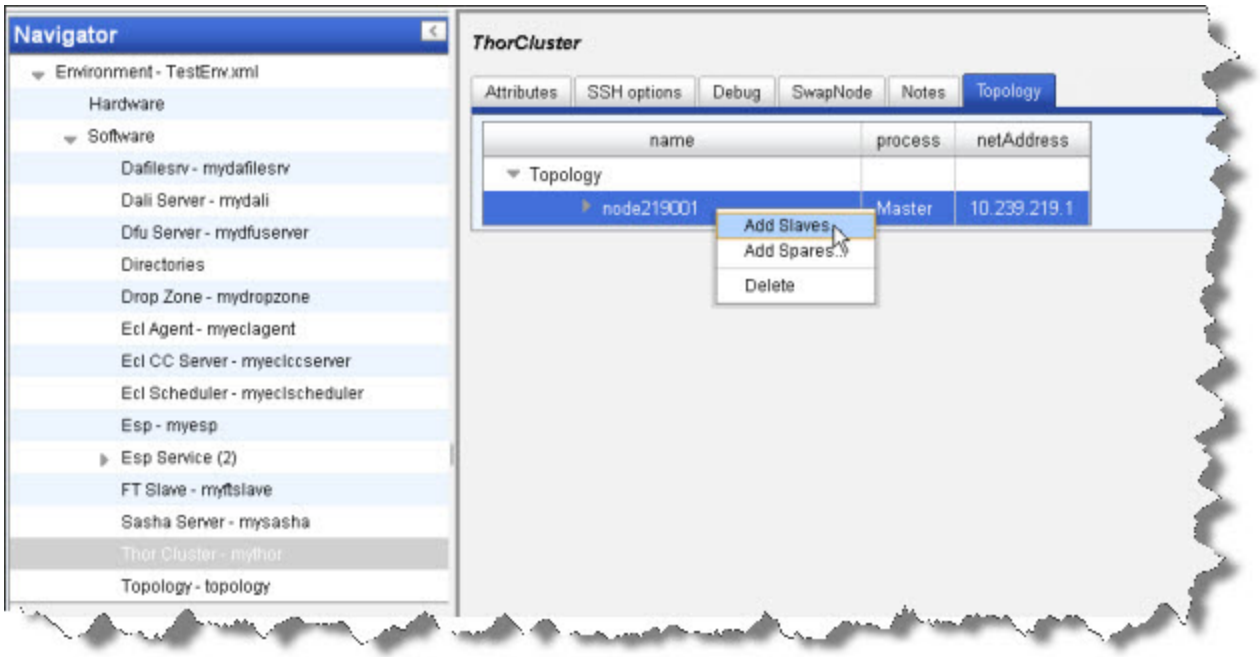
1. right-click on the Topology and select Add Master.



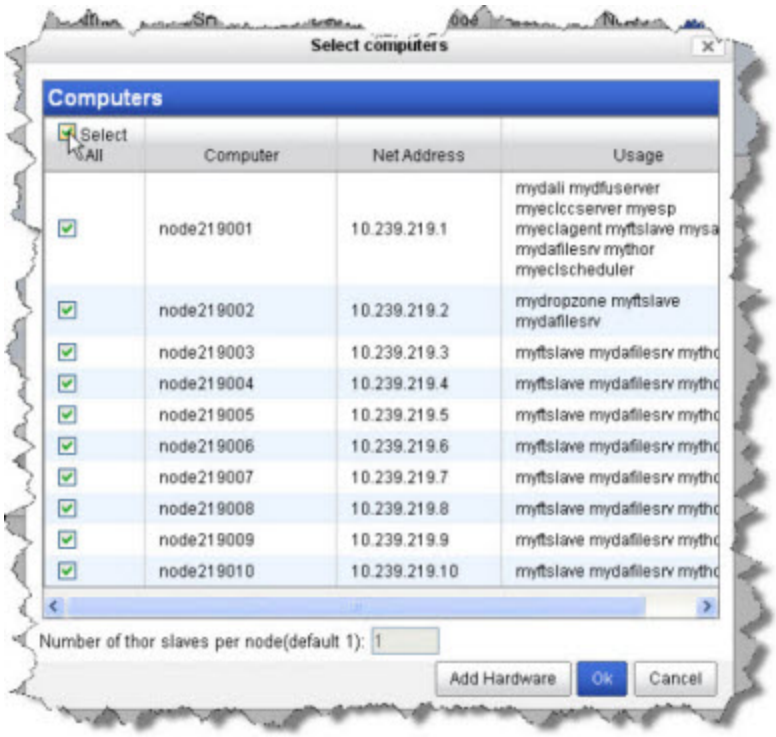
2. Select a computer from the list, then press the OK button.



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



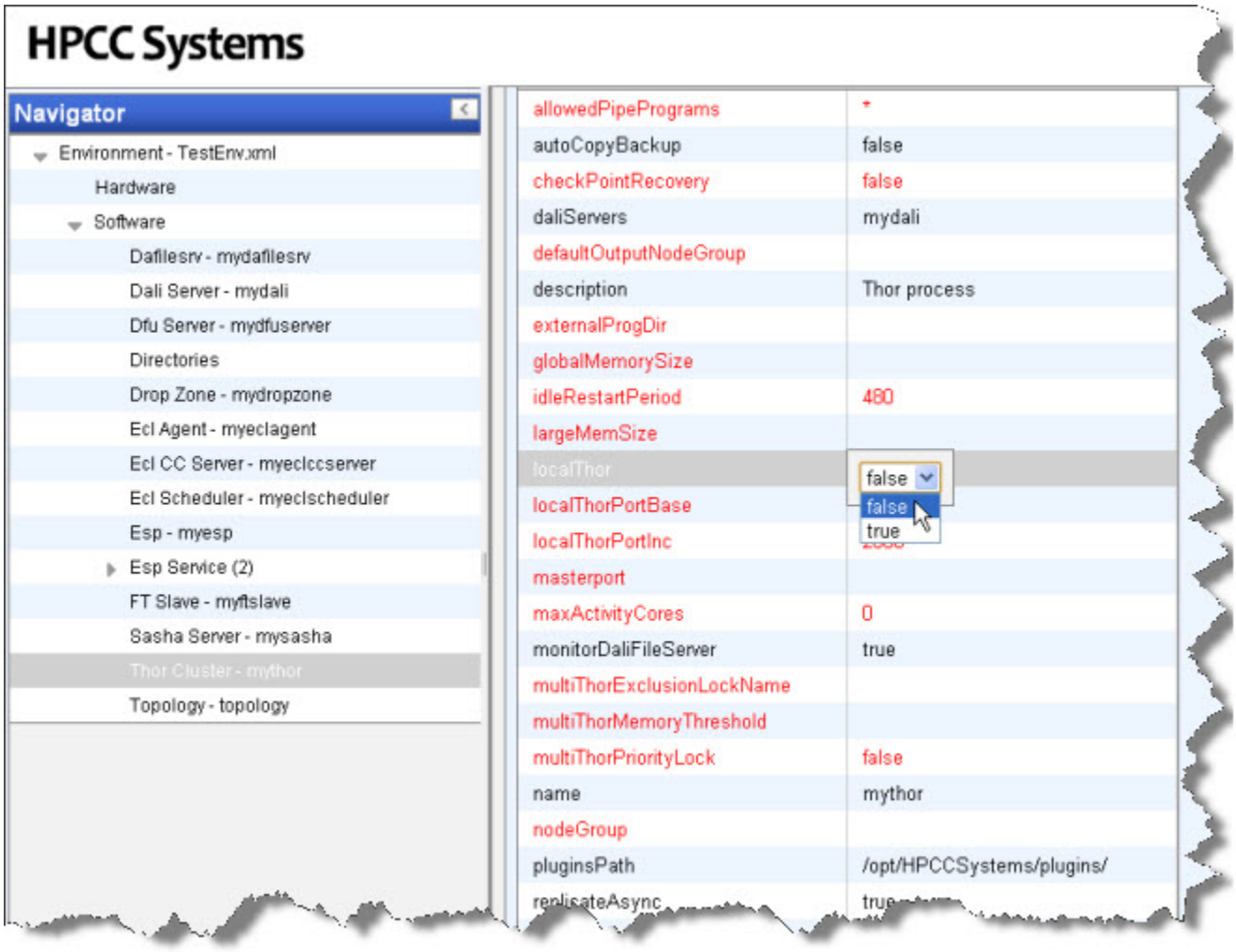
4. Select the computers to use as slaves from the list, then press the OK button. Use CTRL+CLICK to multi-select or SHIFT+CLICK to select a range.



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.



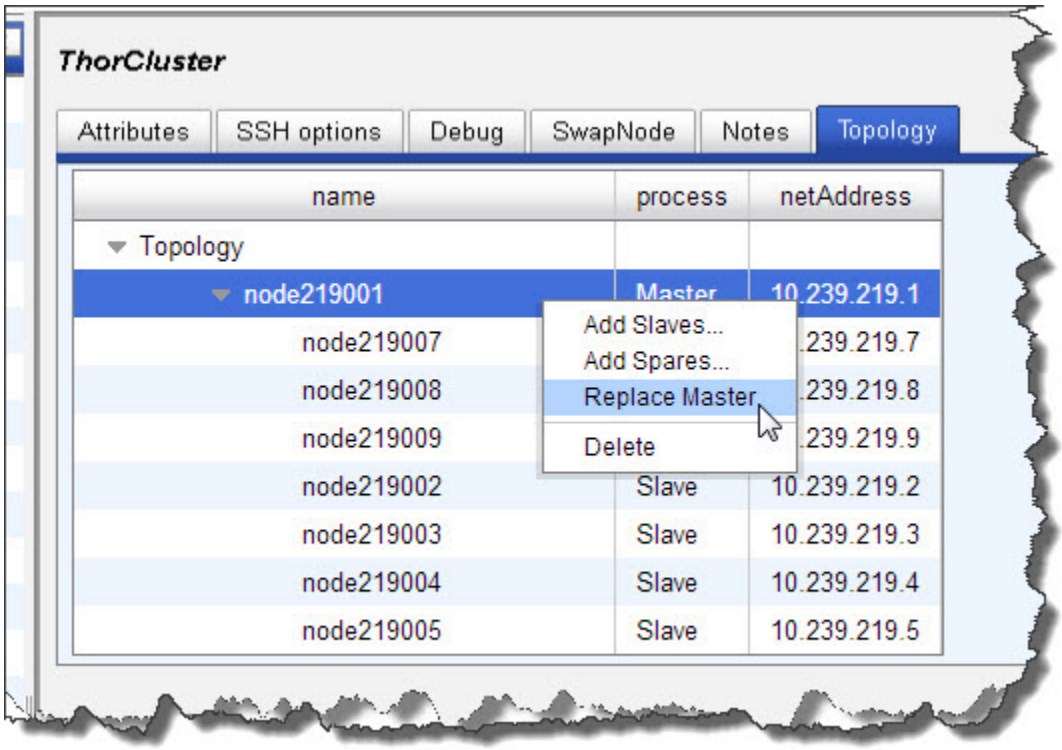
7. Change the value of the localThor to **false**

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.

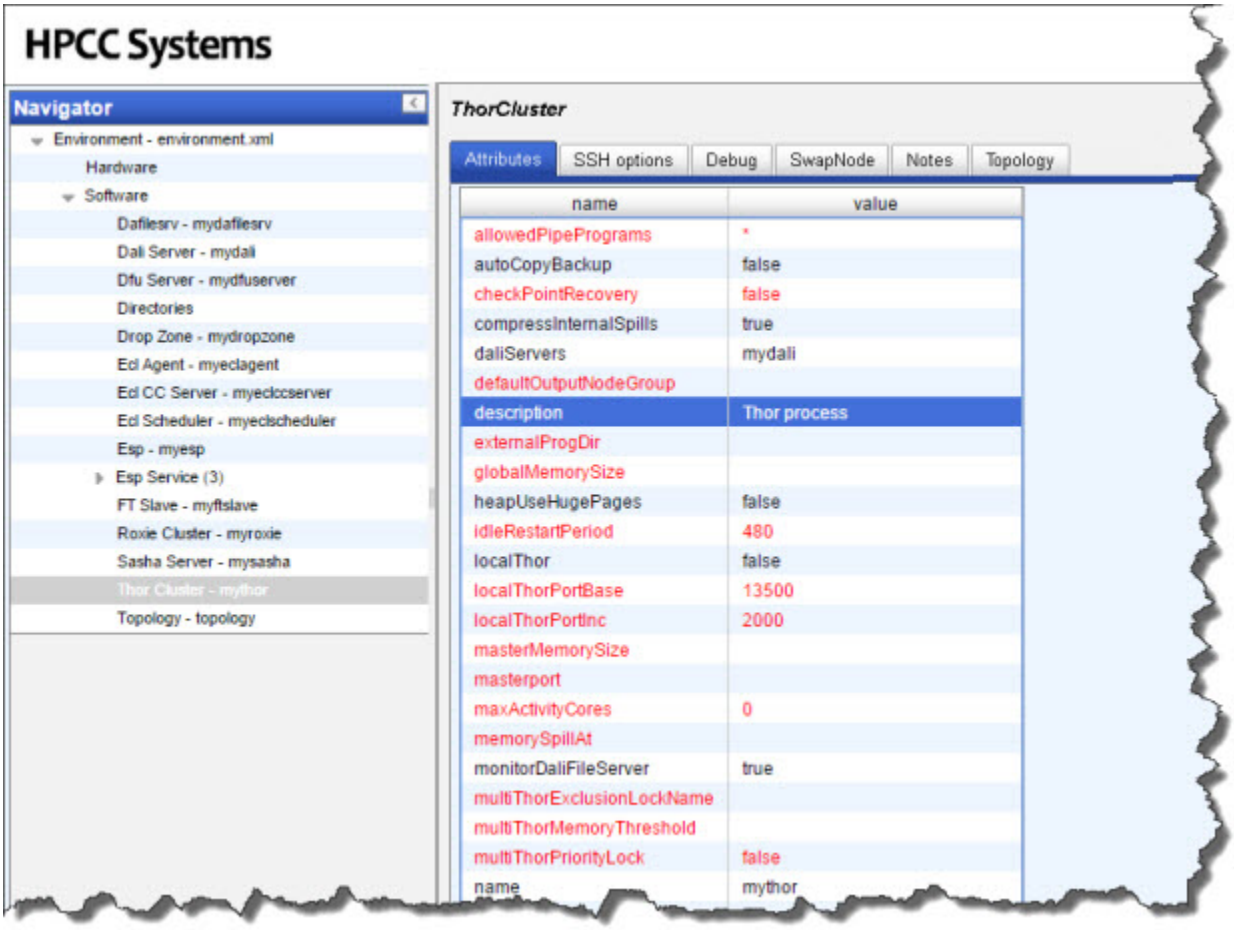
1. Select **Thor Cluster - mythor** in the Navigator panel on the left side.
2. Select the **Topology** tab.
3. right-click on the Master node
4. Select the **Replace Master** option.



	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.

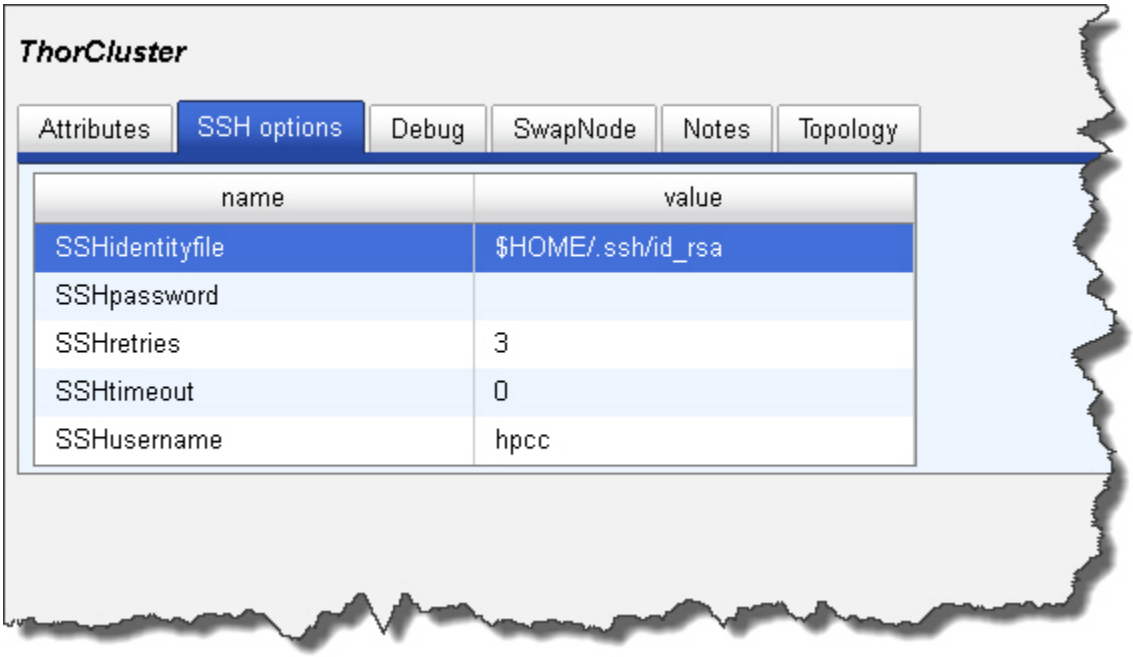
attribute	**values**	**default**	**required**
name	Name for this process		required
description	Description for this process	Thor process	
daliServers	Specifies the dali server to which this thor is attached.		required
externalProgDir	If specified, external programs executed via PIPE will be started in the named directory		optional
masterMemorySize	Memory (in MB) to use for rows on thor master. It will default to globalMemorySize if unset		optional
fileCacheLimit	File Cache limit (in MB). It will default to 1800 if unset	1800	
globalMemorySize	Memory (in MB) to use for rows per Thor slave process. If unset, default = [75% of physical memory] / slavesPerNode		optional
memorySpillAt	Threshold that the memory manager should start requesting memory to be freed (percentage)		optional
heapUseHugePages	Allow Thor master and slave to use memory from huge pages if they have been configured.	false	
heapMasterUseHugePages	Allow heapUseHugePages to be overridden for the master. Useful to disable if running on a single machine.		optional
heapUseTransparentHugePages	Allow Thor master and slave to use memory from transparent huge pages.	true	
heapRetainMemory	Retain and do not return unused memory to the operating system.	false	
pluginsPath	(null)	/opt/HPCCSystems/plugins/	
nodeGroup	Name of a node group running Thor slaves. (if omitted uses same name as Thor)		optional
defaultOutputNodeGroup	Default group to output to. Leave blank if output defaults to local cluster.		optional
masterport	Base port to use for master	20000	
slaveport	Base port to use for slaves	20100	

attribute	values	default	required
localThor	Assume all slaves are local to this machine rather than started via agent	false	
slavesPerNode	Defines how many slave processes there are on each node	1	
channelsPerSlave	Defines how many slave channels per slave process	1	
localThorPortInc	Port increment between slaves on same node	200	
multiThorMemoryThreshold	Memory usage (in MB) beneath which multiple Thors will run in parallel. Leave blank if no limit.		optional
multiThorPriorityLock	If set true, prevents lower priority jobs starting on a multithor	false	optional
multiThorExclusionLockName	Prevents other thors (on any queue) sharing the same multiThorExclusionLockName name from running jobs at the same time		optional
replicateOutputs	Replicate output files	true	
replicateAsync	Perform output replication in the background, allowing thor to process next task	true	
autoCopyBackup	If files at primary location are missing, copy into place from backup location	false	
checkPointRecovery	Enable support for continuing failed workunits from point of failure	false	optional
watchdogEnabled	Enable/disable watchdog process (periodically checking slaves are still alive)	true	
watchdogProgressEnabled	Enable/Disable graph progress reporting in watchdog process	true	
watchdogProgressInterval	Graph progress reporting interval (seconds)	30	optional
slaveDownTimeout	A slave will be marked down after the specified elapsed time period (seconds)	300	optional
verifyDaliConnectionInterval	Interval between verification of thor to dali connection (seconds)	300	optional
idleRestartPeriod	Period of idle time after which to initiate an auto restart (minutes)	480	optional
smallSortThreshold	Sort size threshold for thor global sorting on multiple nodes (MB)	1024	optional
maxActivityCores	Maximum number of cores to use per activity (only currently used by sorting activities). Default equals all available	0	optional
monitorDaliFileServer	Warn if dafilesrv process is not running on computers	true	

attribute	values	default	required
allowedPipePrograms	Comma separated list of allowed PIPE program (* for allow all)	*	optional
compressInternalSpills	Compress internal writes to disk when spilling	true	
affinity	A comma separated list of cpu ids (and ranges) to bind all thor slaves to		optional
autoAffinity	Automatically bind slave processes to a single cpu socket, if multiple slaves are running on a multi socket machine	true	
numaBindLocal	Restrict allocations to memory attached to the cpu sockets the slave process is bound to	false	

ThorCluster SSH Options

This section describes the ThorCluster SSH Options tab.



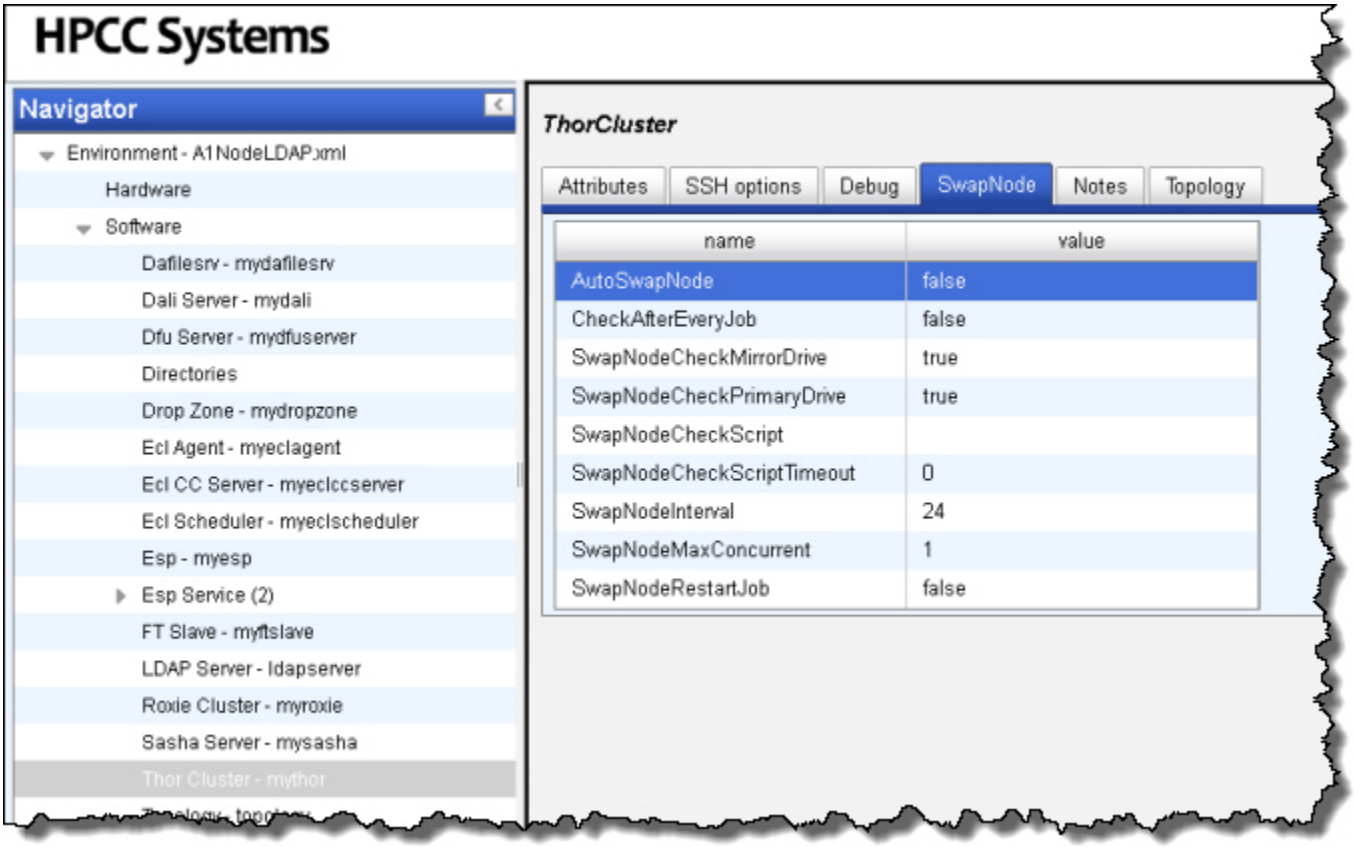
attribute	values	default	required
SSHidentityfile	location of identity file (private key) on Thor master	$HOME/.ssh/id_rsa	
SSHusername	Username to use when running Thor slaves	hpcc	
SSHpassword	Fixed password - only required if no identity file present NB **insecure**		
SSHtimeout	Timeout in seconds for SSH connects	0	
SSHretries	Number of times to retry failed connect	3	

ThorCluster Debug

The debug tab is for internal use only

ThorCluster Swap Node

This section describes the ThorCluster Swap Node tab.



attribute	values	default	required
AutoSwapNode	Failing nodes will be automatically swapped for spare nodes	false	
SwapNodeCheckPrimaryDrive	Primary drive is checked for read/write	true	optional
SwapNodeCheckMirrorDrive	Mirror drive is checked for read/write	true	optional
SwapNodeMaxConcurrent	Maximum number of concurrent automatic swaps (within the swap interval)	1	optional
SwapNodeInterval	Interval (in hours) for maximum concurrent swaps	24	optional
SwapNodeRestartJob	Restart job that failed prior to swap	false	optional
CheckAfterEveryJob	Check nodes after every job (if false, only check after failed jobs)	false	optional
SwapNodeCheckScript	Script to run to check node functioning (non zero exit from script indicates not.)		optional
SwapNodeCheckScriptTimeout	Interval (in seconds) beyond which check node script must return (if 0 disable check node script)	0	optional

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

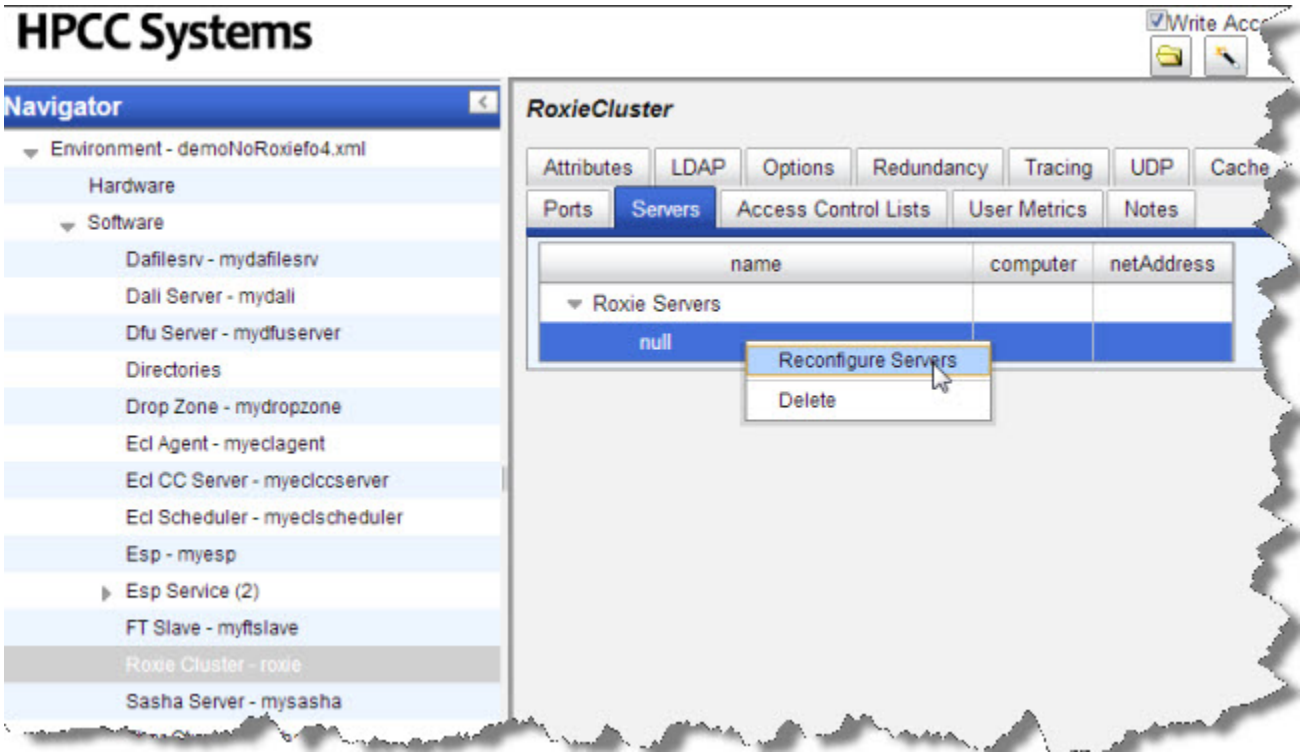
This section details how to define a Rapid Data Delivery Engine (Roxie) cluster. Before you begin, you should decide the width of the cluster (i.e., how many agent nodes will you have).

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

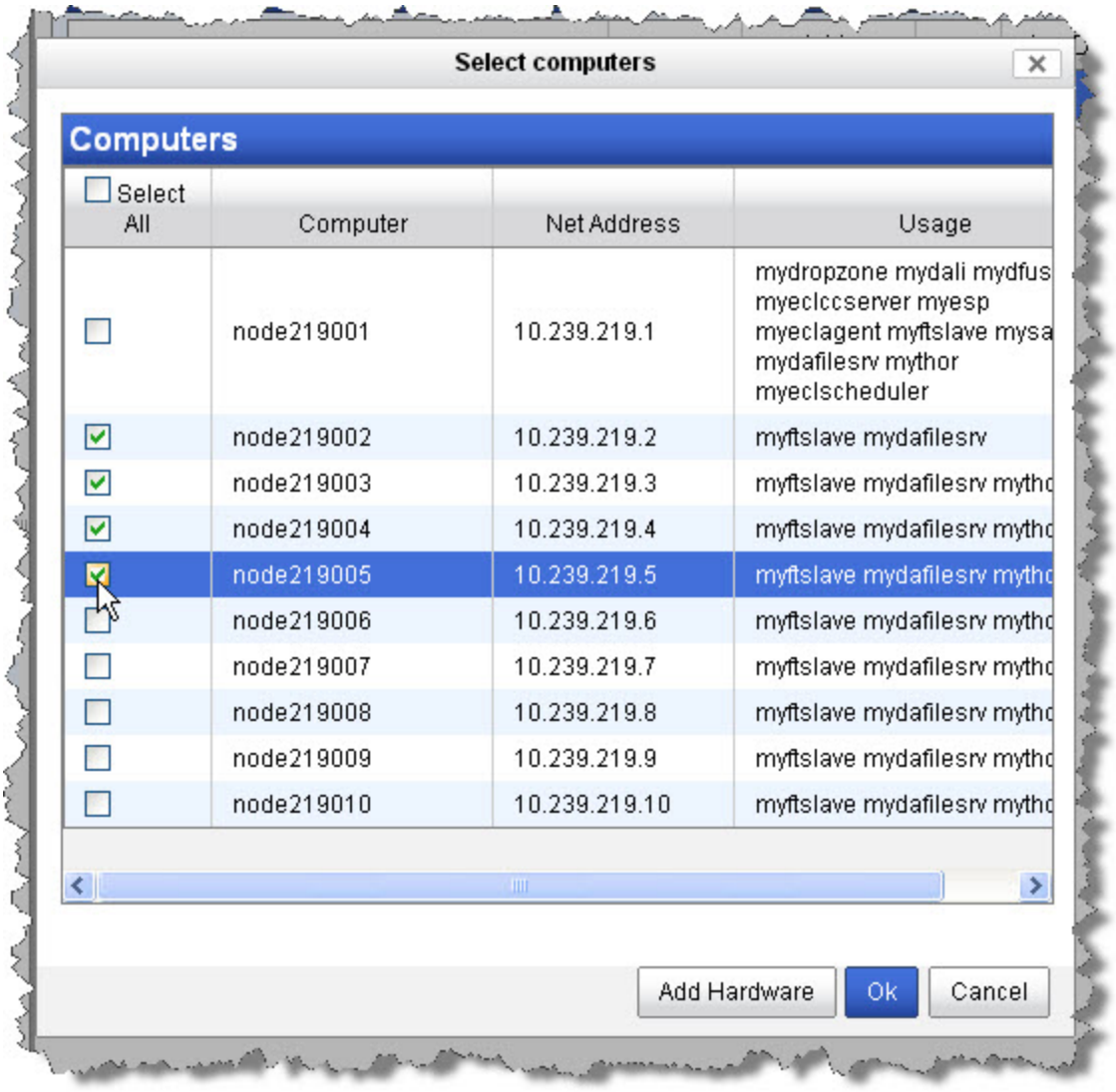
   Note: If you did not specify a value in the *Number of nodes for Roxie cluster* field when you first set up your environment, you will not have a Roxie Cluster. To add a Roxie Cluster component: Right-click on the **Software** component in the Navigator Panel, then select **New Components** then **roxie**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

2. Select the **Servers** tab.

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

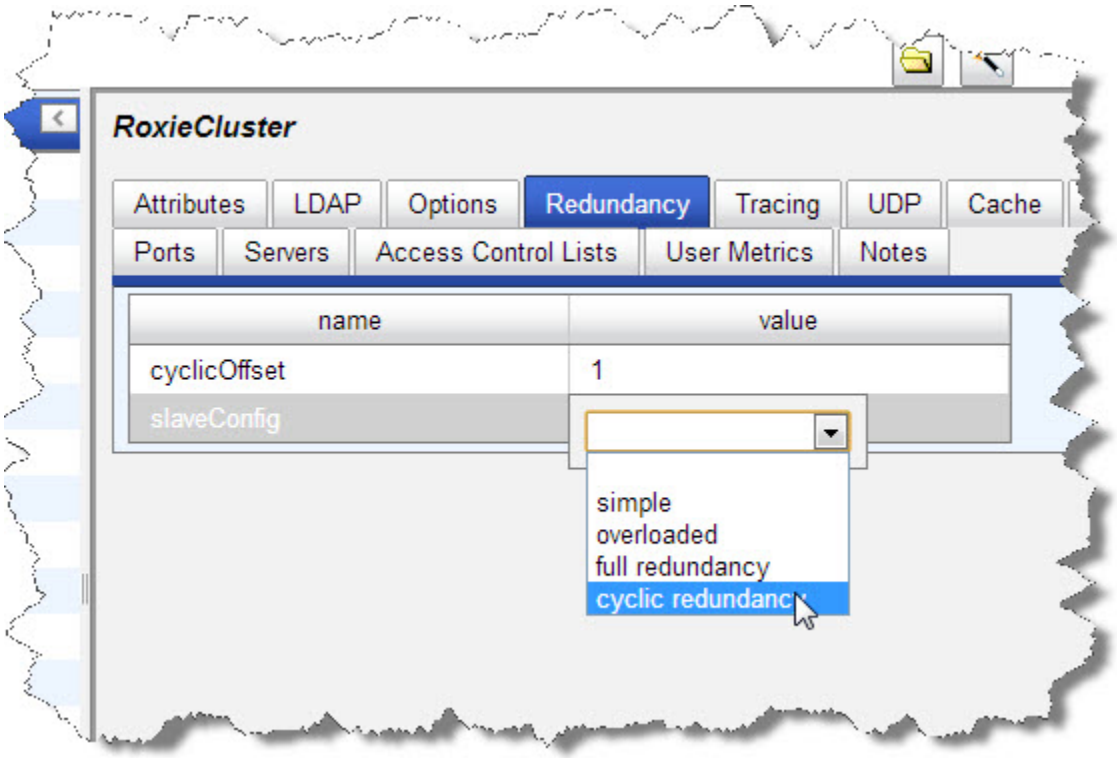


4. Select the computers to use as Servers from the list, then press the OK button.



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.

RoxieCluster

Describes a roxie cluster

Attributes

attribute	values	default	required
name	Name for this process		required
description	Description for this process	Roxie cluster	optional
daliServers	Specifies the dali server to which this roxie is attached.		optional
lockDali	If set, Roxie will use cached info from dali only, and will not connect to dali or refresh the cache.	false	optional
multicastBase	The base multicast IP for this roxie cluster. Multicast ranges must not overlap for any roxie clusters in the same multicast domain.	239.1.1.1	optional
multicastLast	The last multicast IP available for this roxie cluster. Multicast ranges must not overlap for any roxie clusters in the same multicast domain.	239.1.254.254	optional
multicastTTL	The multicast TTL (Time To Live) setting for this roxie cluster. Zero means do not explicitly set TTL, and use the default OS setting.	1	optional
directory	Specifies the directory to which the software will be deployed.	/var/lib/HPCCSystems/roxie/	optional
pluginsPath	Alternate path where plugin files are deployed (./plugins is assumed if not specified)	/opt/HPCCSystems/plugins	optional

Ports

Attributes

attribute	values	default	required
port	the network port on which the Roxie servers accept connections	9876	optional
numThreads	Number of simultaneous queries Roxie servers will accept on this port	30	optional
listenQueue	Number of pending connections that can be accepted	200	optional
requestArrayThreads	Number of simultaneous queries Roxie servers will process using the MERGE option of SOAPCALL	5	optional
ACL	Name of any Access Control List to use		optional

Servers

Attributes

attribute	values	default	required
computer	(null)		required
netAddress			

Access Control Lists

Base Access Control Lists (Ordered List)

Attributes

attribute	values	default	required
Name	Name of another Access Control List to extend		required

Access Rules (Ordered List)

Attributes

attribute	values	default	required
Allow	Whether or not to allow the access	Yes	required
I.P. Address	I.P. Address	0.0.0.0	optional
Internet Mask	Internet address mask	255.255.255.255	optional
Query Wildcard	wildcard for queries to allow/disallow	.*	optional
Error Code	optional error code to associate with the query		optional
Name	Name of this Access Control Rule.	ACLrule	required
Error Message	optional error message to associate with the query		optional

Attributes

attribute	values	default	required
Name	Name of this Access Control List.	acl	required

Preferred Clusters

Attributes

attribute	values	default	required
name	Name of the cluster		required
priority	Priority (negative to disable)		required

User Metrics

Attributes

attribute	values	default	required
name	Name of this metric.		required
regex	Expression to match.		required

LDAP

attribute	values	default	required
ldapUser	Specifies the user name for LDAP file access checking.	roxie	optional
ldapPassword	Specifies the password for LDAP file access checking.		optional

Options

attribute	values	default	required
affinity	If non-zero, binds the roxie process to use the specified cores only (bitmask)	0	optional
allFilesDynamic	If enabled, files will be resolved per-query and not locked between queries	false	optional
callbackRetries	Number of retries before callbacks from agents to server are aborted	3	optional
callbackTimeout	Timeout (in ms) before callbacks from agents to server are resent	5000	optional
checkFileDate	Compare file dates of physical files with the information in DFS.	true	optional
copyResources	Copies any missing data files/keys from the position they were in when query was deployed.	true	optional
coresPerQuery	If non-zero, binds each incoming query to use the specified number of cores only	0	optional
debugPermitted	Allow the ECL query debugger to attach to queries on this Roxie	true	optional
defaultHighPriorityTimeLimit	Maximum run time (in ms) for any single active high-priority query (if not overriden)	0	optional
defaultHighPriorityTimeWarning	Time (in ms) before generating SNMP warning for a high-priority query (if not overriden)	5000	optional
defaultLowPriorityTimeLimit	Maximum run time (in ms) for any single active low-priority query (if not overriden)	0	optional
defaultLowPriorityTimeWarning	Time (in ms) before generating SNMP warning for a low-priority query (if not overriden)	0	optional
defaultMemoryLimit	Maximum amount of memory available for row data in any single active query (if not overriden)	0	optional
defaultSLAPriorityTimeLimit	Maximum run time (in ms) for any single active SLA-high-priority query (if not overriden)	0	optional
defaultSLAPriorityTimeWarning	Time (in ms) before generating SNMP warning for a SLA-high-priority query (if not overriden)	5000	optional

attribute	values	default	required
defaultStripLeadingWhitespace	Default value for stripping leading white-space in input XML values	1	optional
enableKeyDiff	Enable / Disable key diff functionality in roxie.	true	optional
enableSysLog	Enable use of syslog for monitoring.	true	optional
flushJHtreeCacheOnOOM	Should the index node memory allocation flush the cache and retry if memory allocation fails	true	optional
fieldTranslationEnabled	Enables translation (where possible) of mismatched index formats on-the-fly	false	optional
highTimeout	Timeout (in ms) before high priority requests are resent to agents	2000	optional
ignoreOrphans	Treat out-of-date local files as if they were not present.	true	optional
lazyOpen	Delay opening files until first use. Select smart to use lazy mode only after a restart	smart Choices are: * false * true * smart	optional
localFilesExpire	Period (in ms) of inactivity before a local datafile handle is closed	-1	optional
localSlave	All Roxie servers talk only to their embedded agent.	false	optional
lockSuperFiles	If enabled, superfiles will be locked while queries that use them are loaded	false	optional
lowTimeout	Timeout (in ms) before low priority requests are resent to agents	10000	optional
maxLocalFilesOpen	Maximum number of local files to keep open	4000	optional
maxRemoteFilesOpen	Maximum number of remote files to keep open	1000	optional
minFreeDiskSpace	Minimum amount of disk space needed to be available for file copy to succeed	1073741824	optional
minLocalFilesOpen	Minimum number of local files to keep open	2000	optional
minRemoteFilesOpen	Minimum number of remote files to keep open	500	optional
monitorDaliFileServer	Warn if dafilesrv process is not running on computers	false	optional
preferredSubnet	Preferred subnet to use for multi-NIC machines		optional
preferredSubnetMask	Preferred subnet mask to use for multi-NIC machines		optional

attribute	values	default	required
preloadOnceData	Evaluate : ONCE sections of queries at query load time	true	optional
prestartSlaveThreads	Prestart slave worker threads at startup	true	optional
reloadRetriesFailed	Retry loading of failed queries whenever QuerySet reloads	true	optional
remoteFilesExpire	Period (in ms) of inactivity before a remote datafile handle is closed	3600000	optional
serverThreads	Default number of threads processing Roxie server requests (if not specifed on Servers tab)	30	optional
siteCertificate	Name of the site certificate component that is used for security		optional
slaTimeout	Timeout (in ms) before SLA high priority requests are resent to agents	2000	optional
slaveQueryReleaseDelaySeconds	Delay before unregistering slave queries to allow in-flight to complete	60	optional
slaveThreads	Number of threads processing agent requests	30	optional
statsExpiryTime	Time (in seconds) that detailed reporting stats are kept	3600	optional
totalMemoryLimit	Maximum amount of memory available for row data in all active queries	1073741824	optional
heapUseHugePages	Allow roxie to use memory from huge pages if they have been configured.	false	
heapUseTransparentHugePages	Allow roxie to use memory from transparent huge pages.	true	
heapRetainMemory	Retain and do not return unused memory to the operating system.	false	
trapTooManyActiveQueries	should an SNMP trap get sent when too many active query error occurs	true	optional
useHardLink	If the data file exists on the current machine but in a different directory than roxie expects - create a hard link	false	optional
useMemoryMappedIndexes	Using memory-mapped files when merging multiple result streams from row-compressed indexes.	false	optional
useRemoteResources	Reads any missing data files/keys from the position they were in when deployed.	true	optional

Redundancy

attribute	values	default	required
cyclicOffset	Offset for cyclic redundancy mode	1	optional
channelsPerNode	Number of channels/data locations to use per node, in overloaded mode	1	optional

attribute	values	default	required
numDataCopies	Number of copies of the data in redundant modes	1	optional
slaveConfig	Roxie data redundancy mode	Choices are: * simple * overloaded * full redundancy * cyclic redundancy	optional

Tracing

attribute	values	default	required
traceLevel	Level of detail in reporting (set to 0 for none, 1 for normal, > 1 or more for extended)	1	optional
logFullQueries	Log full text (unless blindLogging) and resource usage of all queries received	false	optional
blindLogging	Suppress all logging of any data or query text	false	optional
memTraceLevel	Level of detail in reporting mem mgr information(set to 0 for none, 1 for normal, >1 or more for extended)	1	optional
miscDebugTraceLevel	Level of miscellaneous debug tracing unrelated to all other tracing(set to 0 for none, 1 for normal, >1 or more for extended)	0	optional
soapTraceLevel	Level of detail in reporting SOAPCALL information(set to 0 for none, 1 for normal, >1 or more for extended)	1	optional
traceEnabled	TRACE activity output enabled by default (can be overridden in workunit or query)	false	optional
traceLimit	Number of rows output by TRACE activity	10	optional
udpTraceLevel	Level of detail in reporting udp information(set to 0 for none, 1 for normal, >1 or more for extended)	1	optional
useLogQueue	Queue logs messages	true	optional
logQueueDrop	Specifies the number of log messages which will be dropped if the maximum length of the queue of unhandled messages is exceeded.	32	optional
logQueueLen	Specifies the maximum length of the queue of unhandled log messages. Messages will be dropped if this is exceeded.	512	optional

UDP

attribute	values	default	required
roxieMulticastEnabled	Controls whether multicast is used to communicate between nodes	true	optional
udpFlowSocketsSize	Controls the read socket buffer size of the UDP layer flow control sockets	131071	optional
udpInlineCollation	Controls whether UDP packets are collated on the reading thread or queued up for collation on a separate thread	false	optional
udpInlineCollationPacketLimit	Controls how many UDP packets requested at once when inline collation selected	50	optional
udpLocalWriteSocketSize	Controls the write socket buffer size of the local UDP sockets (Agent to Server on same node)	131071	optional
udpMaxRetryTimedoutReqs	Controls the Max number of agent "request to send" to be retried. 0 means keep retrying forever	0	optional
udpMaxSlotsPerClient	UDP transport layer slots per client	2147483647	optional
udpMulticastBufferSize	Controls the read socket buffer size of the UDP multicast sockets	131071	optional
udpOutQsPriority	Turns on/off Priority weight-based for output queues (0 round-robin no priority - old logic, 1 round-robin new logic, 2 and higher is factor of priority)	0	optional
udpQueueSize	UDP transport layer receive queue size	100	optional
udpRequestToSendTimeout	Controls the timeout value agent udp will wait for permission to send from a Roxie server, in milliseconds. Specify 0 to calcuate automatically.	0	optional
udpResendEnabled	UDP transport layer packet resend ability	false	optional
udpRetryBusySenders	Controls the number of times Roxie server will repeat search for an idle sender when requesting new data	0	optional
udpSendCompletedInData	Controls whether UDP completion packets are sent in data packets if possible	false	optional
udpSendQueueSize	UDP transport layer send queue size	50	optional
udpSnifferEnabled	Enable the UDP multicast sniffer for tracking which senders are busy	true	optional
udpSnifferReadThreadPriority	If non-zero, run the sniffer read thread at elevated priority level	3	optional
udpSnifferSendThreadPriority	If non-zero, run the sniffer send thread at elevated priority level	3	optional

Cache

attribute	values	default	required
blobCacheMem	Size (in Mb) of blob index page cache	0	optional

attribute	values	default	required
serverSideCacheSize	Number of agent results to cache on Roxie server	0	optional
leafCacheMem	Size (in Mb) of leaf index page cache	50	optional
nodeCachePreload	Prefill the node cache with all non-leaf pages from all indexes	false	optional
nodeCacheMem	Size (in Mb) of non-leaf index page cache	100	optional

SSH

attribute	values	default	required
SSHidentityfile	location of identity file (private key) on Thor master	$HOME/.ssh/id_rsa	optional
SSHusername	Username to use when running Thor slaves	hpcc	optional
SSHpassword	Fixed password - only required if no identity file present NB **insecure**		optional
SSHtimeout	Timeout in seconds for SSH connects	0	optional
SSHretries	Number of times to retry failed connect	3	optional

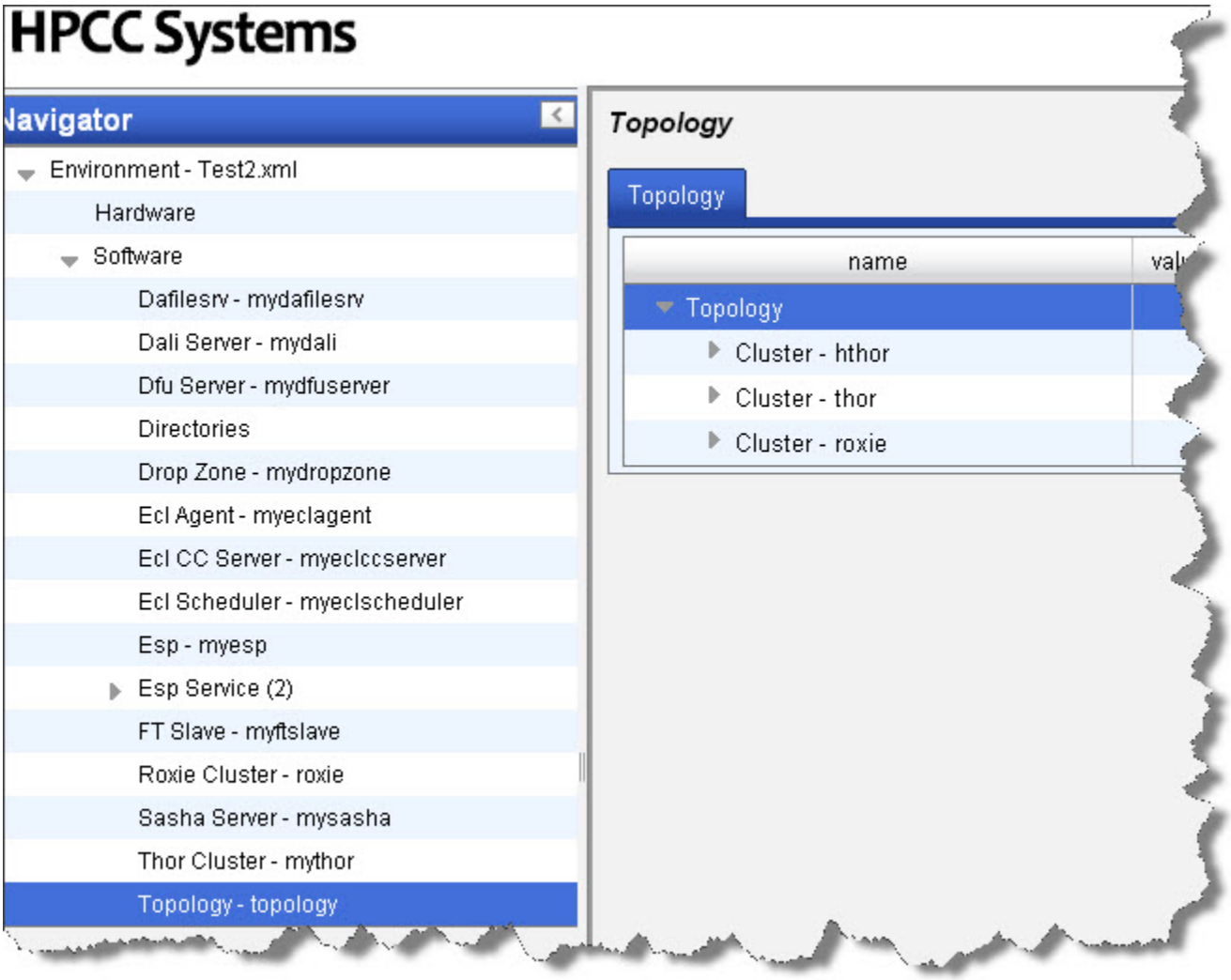
Debug

attribute	values	default	required
checkCompleted	Check pending replies when agent gets a retry request	true	optional
dafilesrvLookupTimeout	Maximum time (in milliseconds) dafilesrv will wait before timing out the first time through the list	10000	optional
defaultConcatPreload	Default concat preload	0	optional
defaultFetchPreload	Default fetch preload	0	optional
defaultFullKeyedJoinPreload	Default full keyed join preload	0	optional
defaultKeyedJoinPreload	Default keyed join preload	0	optional
defaultParallelJoinPreload	Default parallel join preload	0	optional
defaultPrefetchProjectPreload	Default prefetch value for PROJECT,PREFETCH activity	10	optional
diskReadBufferSize	Default buffer size for disk read operations	65536	optional
doIbytiDelay	Enables the IBYTI delay logic in the agents.	true	optional
enableHeartBeat	Enable HeartBeat messages to clients	true	optional
fastLaneQueue	special fast-lane queue for simple queries.	true	optional
forceStdLog	Force log output to stderr even when redirected to null	false	optional
ignoreMissingFiles	Ignore missing files	false	optional

attribute	values	default	required
indexReadChunkSize	Break up results from indexRead (and other remote activities) every N bytes	60000	optional
initIbytiDelay	Initial time (in milliseconds) a agent will wait for an IBYTI packet from a peer.	100	optional
jumboFrames	Set to true if using jumbo frames (MTU=9000) on the network.	false	optional
linuxYield	Yield to scheduler in some tight loops. May help latency on uniprocessor machines	false	optional
maxBlockSize	Max size of block read from client socket	10000000	optional
maxLockAttempts	Number of retries to get lock for global queries	5	optional
memoryStatsInterval	Interval (in seconds) between reports on Roxie heap usage	60	optional
memTraceSizeLimit	Generate stacktrace whenever a request is made for a row larger than this threshold (0 to disable)	0	optional
minIbytiDelay	Minimum time (millsec) a agent will wait for an IBYTI packet from a peer.	0	optional
parallelAggregate	Number of parallel threads to use for in-memory aggregate processing. Set to 0 to use one per CPU, 1 to disable parallel processing of in-memory aggregates	0	optional
perChannelFlowLimit	Number of pending queries permitted per channel (per active activity) before blocking	10	optional
pingInterval	Interval (in seconds) between Roxie server ping tests	60	optional
preabortIndexReadsThreshold	Use seek to precheck keyed limits (i.e. assume ,COUNT) on index reads if limit greater than this value	100	optional
preabortKeyedJoinsThreshold	Use seek to precheck limits on keyed joins if limit greater than this value	100	optional
simpleLocalKeyedJoins	Enable single-threaded local keyed joins	true	optional
socketCheckInterval	Interval (in milliseconds) between checks that client socket is still open	5000	optional
systemMonitorInterval	How often to send an "alive" message	60000	optional

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.