Control Center 4.0

Administrator's Guide

ClearCube Technology, Inc.

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Revision Date: 08-23-04, based on Control Center Release 4.0.10

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Introduction

What is Control Center?

Control Center is the management center for the ClearCube enterprise. It is a feature rich console that gives administrators the ability to manage PC Blade assets, monitor Blade health, build and deploy agents to Blades throughout the enterprise.

ClearCube's Control Center provides centralized management capabilities for all systems on the network that have the Blade Manager 4.0 Client running on them. It provides the ability to:

- Graphically display the entire enterprise in a tiered hierarchy
- Display health and inventory information of each Blade in the enterprise
- Perform remote systems management tasks including wake up, shutdown, and reboot of Blades
- Graphically create and deploy custom agents to a single machine or the entire enterprise
- Log and export all events reported to the console from Blades

A major advantage of using ClearCube's Control Center is the Graphical Agent Builder. The agent builder makes it easy to create and deploy custom agents to a single Blade or an entire organization. The agents make it easy to perform Blade health checks and automatically take the appropriate action. Control Center also contains an alerting engine that can proactively notify an administrator of potential Blade health problems. Finally, Control Center can launch all other components in the ClearCube Management Suite (CMS) making it the ideal console for the entire enterprise.

Packaging

This manual is the most current version as of the initial release ship date for Control Center 4.0. For free updated manual versions, please visit the Tech Docs section at http://support.clearcube.com.

Control Center requires that some components be installed prior to installation. All required components are included on the Control Center 4.0 install CD.

The ActiveState Repository has a large collection of modules and extensions in binary packages that are easy to install and use. To view and install these packages, use the Perl Package Manager (PPM), which is included with ActivePerl.

Installing Control Center

Installation

Modules

Control Center 4.0 can be installed on machines running Windows 2000 or Windows XP. The entire package can be installed on one machine, and the management interface can be installed on multiple machines so the Control Center database and alert server can be accessed remotely. Note the required software listed below that must be installed, in the order listed, for Control Center to function properly.

- **Java SDK version 1.4.2_03** - The correct Java version is provided on the Blade Manager CD shipped from ClearCube. The version of a previously installed Java SDK can be checked in Add or Remove Programs from the Control Panel or by running the following command at the DOS prompt: "`Java –version`". This should provide you with the installed Java version. Blade Manager 4.0 requires Java version 1.4.1_02 or later. The Java 2 Enterprise Edition 1.4 SDK adds support for EJB's, JSP's, XML, and Web Services API's in a single bundle.
- **Active State Perl 5.6.1** - The correct Perl version is provided on the Blade Manager CD shipped from ClearCube. This should provide you with the installed Perl version. Blade Manager 4.0 requires that Active State Perl 5.6.1 be installed on your machine. The ActiveState Repository has a large collection of modules and extensions in binary packages that are easy to install and use. To view and install these packages, use the Perl Package Manager (PPM) which is included with ActivePerl.
- **ClearCube Distributed Computing Infrastructure (DCI)** - The correct DCI version (2.0.8) is provided on the Blade Manager CD shipped from ClearCube. Before installing Blade Manager 4.0, please make sure that the current DCI is installed. The installed DCI version can be verified through the Add or Remove Programs from the Control Panel.
- **Apache Tomcat 4.1.27** - The Blade Manager Server and Alert Server components of Control Center require an existing Apache Tomcat Server. Please make sure prior to installing these components on a machine, the Apache Tomcat is already installed and configured.

Each prerequisite application listed above is included on the Blade Manager CD. To use the alerting features of Blade Manager, ClearCube Control Center is also required.

Install Control Center

1. Install Control Center by running Setup.exe from the Control Center folder on the ClearCube Control Center 4.0 CD.

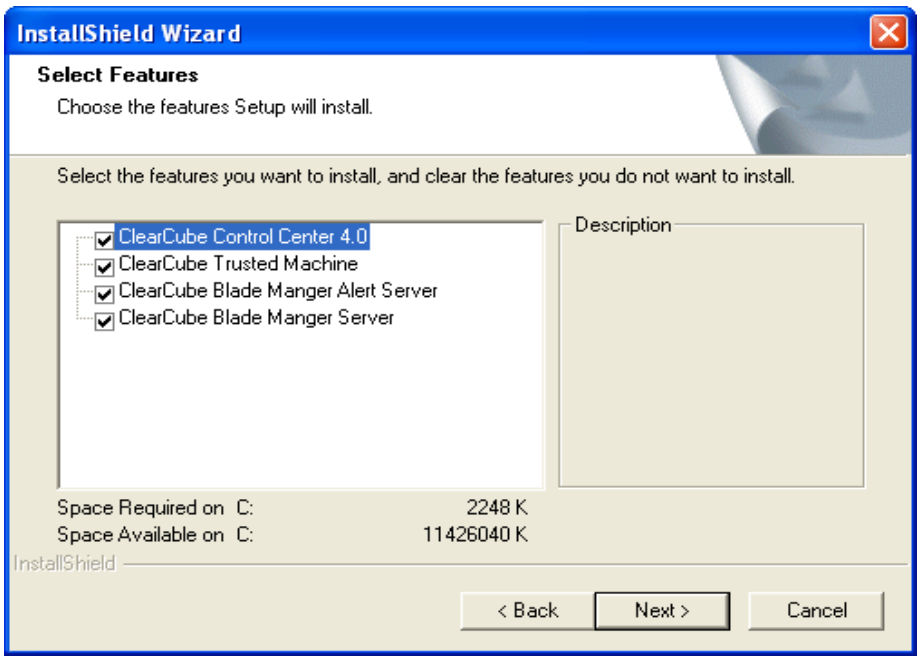
2. The InstallShield Wizard will determine the disk location of installed DCI software to install Control Center 4.0 Client.
3. Click the **Next** button to continue.
4. The Control Center License Agreement Screen will be displayed. Click the **Yes** button to accept the license agreement.
5. On the Setup Type screen, choose the type of installation. To install all components, select Typical. To choose specific components to install, select Custom. For example, select Custom if a full Control Center installation is already installed on another machine and only a management interface is needed. Click **Next** to continue.
6. The next screen will be the **Select Features** screen. Uncheck the boxes of any components that are not needed. Below is a description of each component:

ClearCube Control Center 4.0 - This component is the management interface needed to view the groups of machines, create and deploy agents, reboot machines, etc. This interface can connect to a locally installed deployment or a remote machine. This is the only interface the administrator sees.

ClearCube Trusted Machine - This component provides a layer of security. This security module is a required path for creating, storing, and deploying agents. Agents cannot be deployed to remote machines unless they are configured (in Blade Manager) to accept updates from the Trusted Machine.

ClearCube Blade Manager Alert Server - This component sends alerts via email or SNMP. The Alert Server is an independent component that has a web services interface that allows alerts to be sent when certain thresholds are met on machines running Blade Manager.

ClearCube Blade Manager Server – This component is the central management repository for all Blades running Blade Manager. All data saved through the console is actually kept in the Blade Manager Server repository and is then queried by a Control Center Console during a session.



Control Center Installation – Select Features

7. Check the appropriate boxes click Next to continue.
8. The next screen is the Choose Destination Location screen. If Apache Tomcat is installed somewhere other than the default location, click the Browse button to find the webapps directory under '..\Apache Group\Tomcat 4.1\'. Control Center components must be installed in this directory. When the correct path is selected, click Next and installation will begin.
9. Once the installation is complete, click the Finish button. A system reboot will be required before the installation is complete.

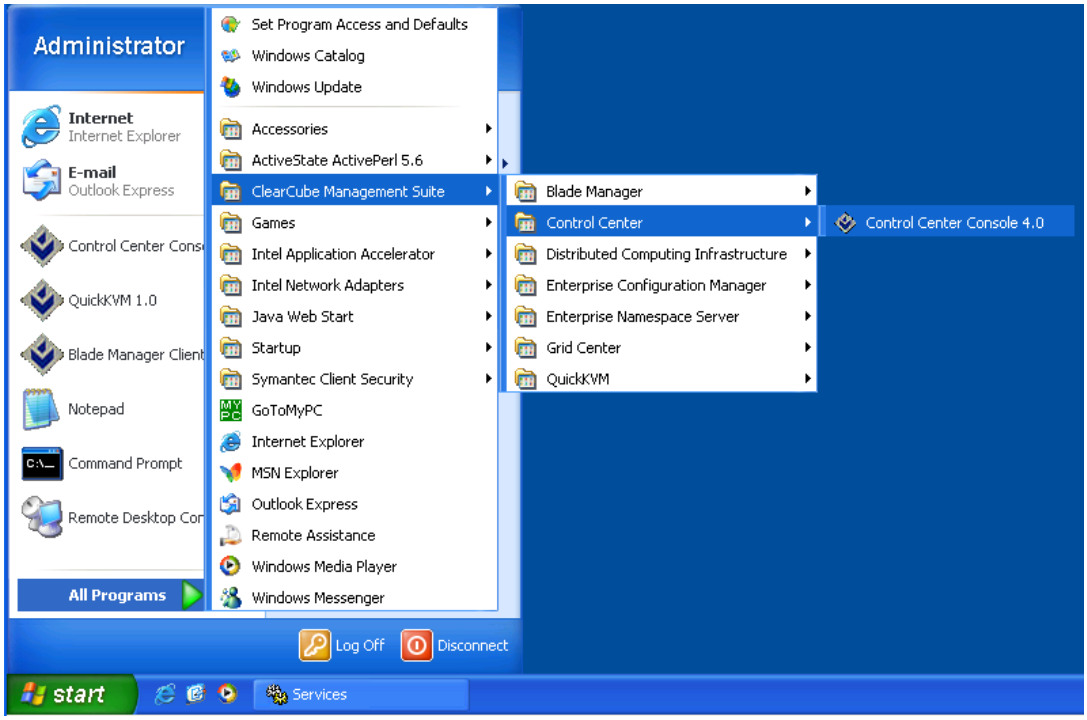
Uninstalling Control Center

1. To uninstall Control Center, from the Control Panel choose Add or Remove Programs.
2. Select **ClearCube Control Center 4.0** from the list of programs.
3. Click the **Change/Remove** button.
4. Select the radio button for **Remove**. Click the **Next** button.
5. Once the removal is complete, click the **Finish** button.

Setting Up Control Center

Launching Control Center

1. Launch Control Center by selecting **Start Menu → All Programs → ClearCube Management Suite → Control Center 4.0**, as shown in the figure below:



Launching Control Center

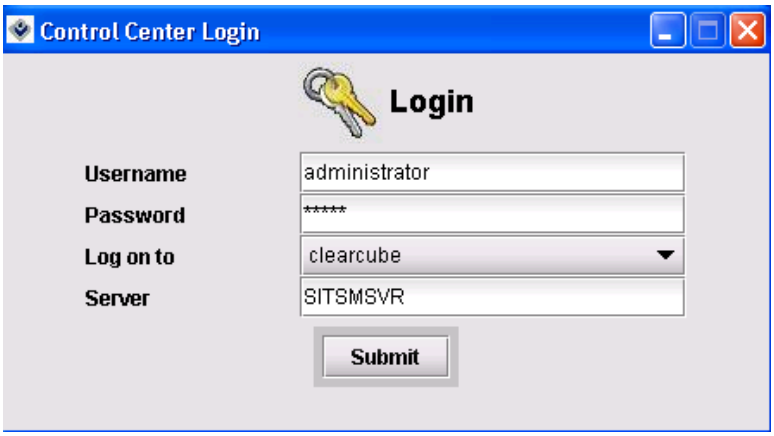
Login to Control Center

The first screen in Control Center is the login screen. When logging in, there are two options for authentication:

- **Local Authentication**
- **Domain Authentication**

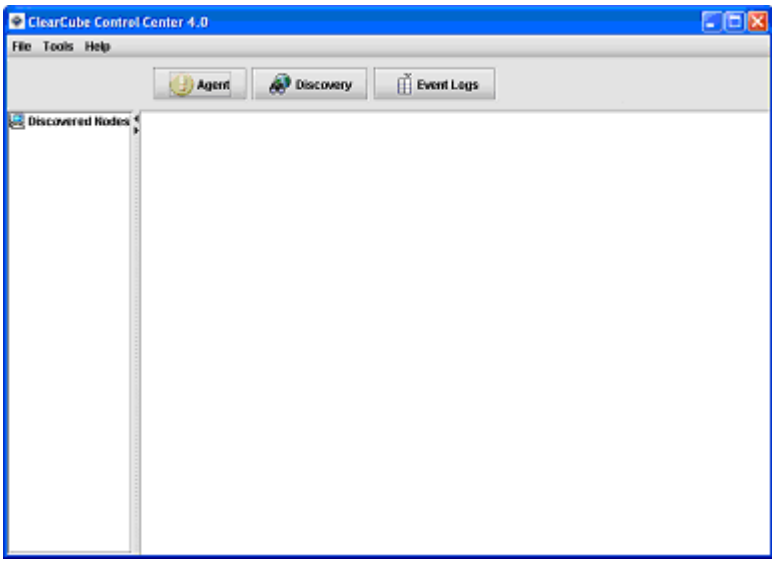
Control Center will automatically detect the presence of a Domain Controller and will populate the 'Log on to' pull down menu with the discovered domain(s), as well as the local machine name. By default only a member of the Local Administrators group or the Domain Users group can log in to Control Center.

Once in Control Center, you can elect to perform authentication locally or with domain credentials by choosing Authentication from the File menu. Enter the username and password, and then choose the appropriate authentication mechanism by specifying the local machine or the domain from the 'Log on to' pull down menu. Next, in the Server field, enter the name of the host where the Blade Manager Server is installed. Click the **Submit** button to log in.



Control Center Login Screen

Control Center will connect to the server and the following screen will appear.

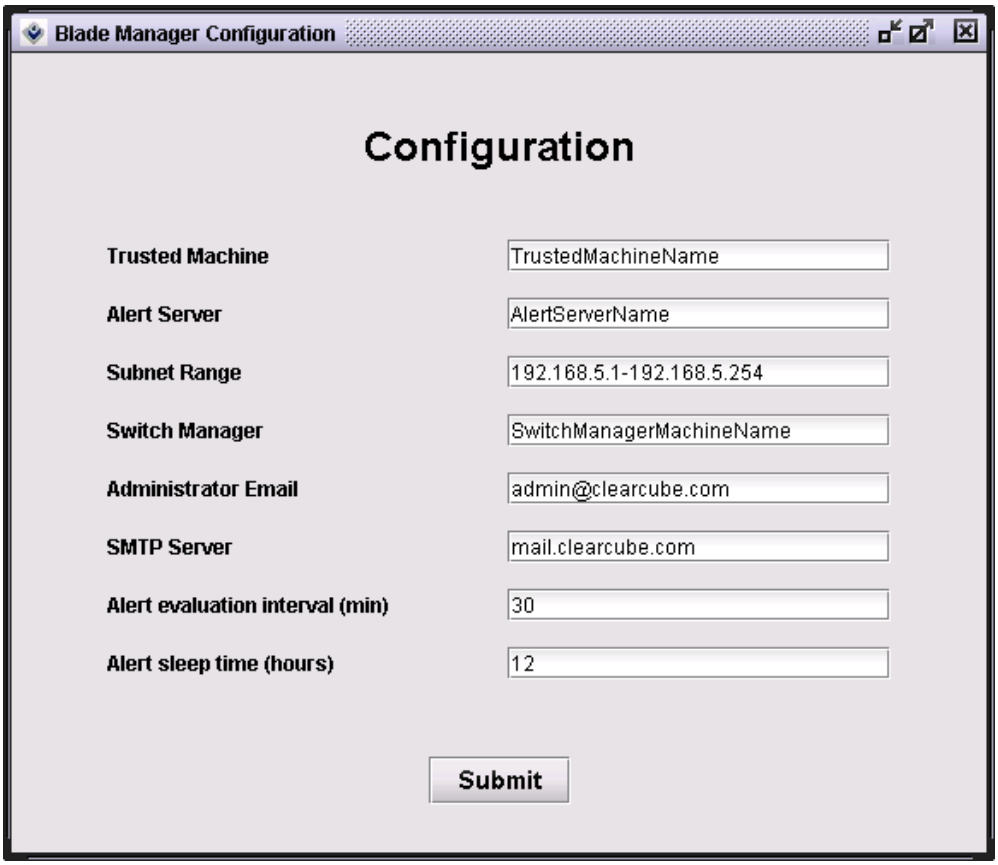


Control Center Default Screen

Configuration

Blade Manager Server Configuration

Before Control Center can be used, the proper configuration must be entered. From the Tools menu, select Configuration. The following screen window will appear in the main frame.



BM Configuration screen

The information needed in each field is listed below. All fields are required with the exception of the Switch Manager field. Holding the mouse over each field will give a brief description of the information required in that field. If all components of Control Center were installed on the local machine, Trusted Machine and Alert Server should both contain the hostname of the local machine.

Trusted Machine	Enter the hostname or IP address of the machine where the Blade Manager Server is installed.
Alert Server	Enter the hostname or IP address of the machine where the Alert Server is installed.
Subnet Range	Enter the subnet range of the machines you wish to manage with this server. The format is shown above; to enter more than one Class C subnets, separate the subnets with a '+'. **NOTE:** As a security measure, to send Agents across multiple subnets, the DCI service must run under Local Administrator or Domain User login credentials.
Switch Manager	Enter the hostname or IP address of the Switch Manager server. This field is not required.
Administrator Email	Enter the email address where you want to receive alert emails.
SMTP Server	Enter the SMTP server hostname or IP address if you want to use the email alerting feature.
Alert evaluation interval (min)	The value in this field tells Control Center how often to check Blades for alert conditions. If the value is 30, it will check each node every half hour.
Alert sleep time (hours)	The value in this field tells Control Center how often to send an alert (e.g. email) if a Blade has crossed an alert threshold and stays in an alert condition. If the value is 1, it will send one email every hour.

Click the **Submit** button to save the configuration

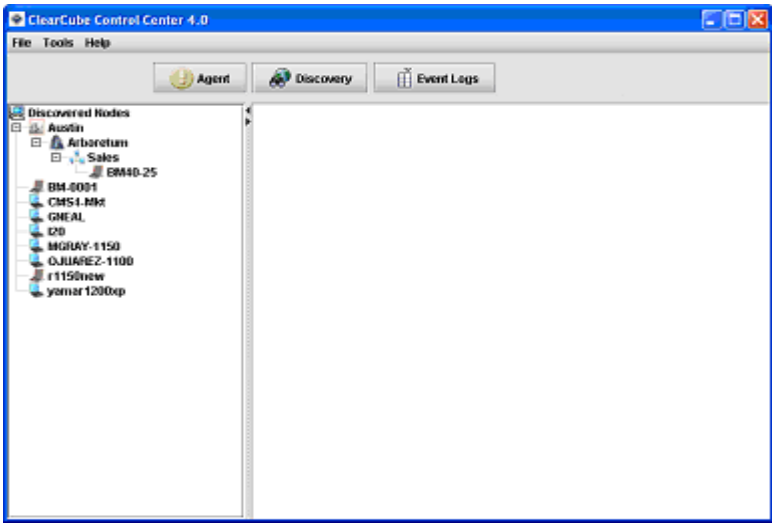
Using Control Center

Performing a Discovery

Before performing a discovery, the subnet field must be populated in the Tools->Configuration page. **NOTE:** As a security measure, to send Agents across multiple subnets, the DCI service must run under Local Administrator or Domain User login credentials.

To populate the console with Blades on the network, a discovery must be performed. When a discovery is performed, all machines running Blade Manager 4.0 in the configured subnet will be shown in a sorted tree in the left pane. To discover machines click the **Discovery** button at the top of the window or select Discovery form the Tools menu

.



Control Center Discovery

After the initial discovery, all node icons will have a blue screen and will face right. If at some point a Blade becomes unreachable (powers down or loses network connectivity) it will appear with a gray screen and will face left. Even after communication drops, Blades will remain in the list unless they are deleted.

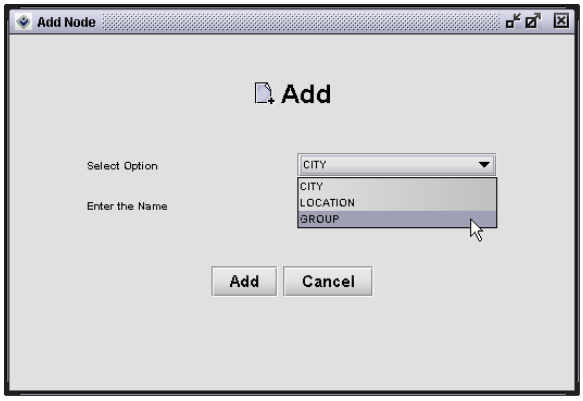
Adding Tiers

To more easily identify and locate systems, Control Center provides a three-tiered hierarchy of groups. The Tier hierarchy is as follows:

- City
- Location
- Group

Adding a City

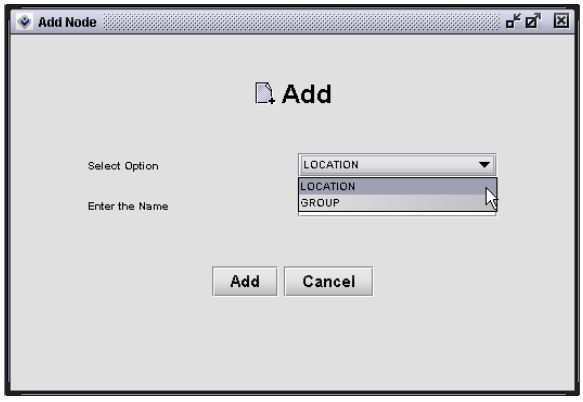
In the tree of discovered machines on the left, right click on Discovered Nodes at the top of the tree. Select City from the pull-down menu. The following screen will appear. Type in the city name (e.g. Chicago) and click the **Add** button.



Add City Node

Adding a Location

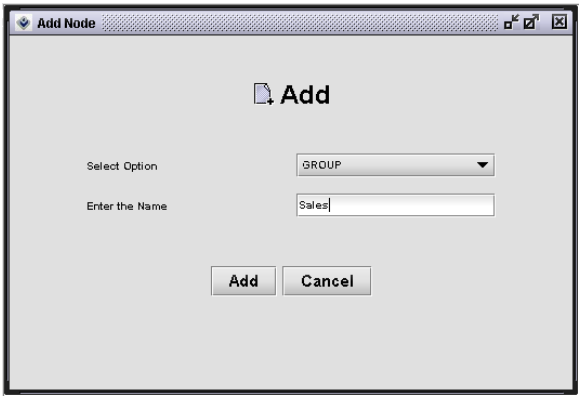
Right click on the city for which you want to create a new location and select Add from the pull-down menu. Select Location from the drop-down menu. Enter the Location (e.g. Northwest) and click **Add**.



Add Location Node

Adding a Group

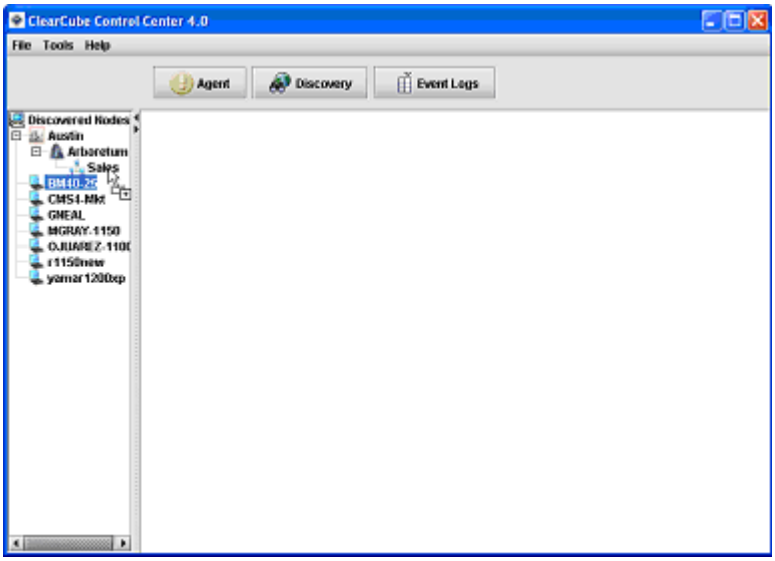
Right click on the city for which you want to create a new location and select Add from the pull-down menu. Select Group from the pull-down menu. Enter the group name (e.g. Sales) and click **Add**.



Add Group Node

Adding Nodes to Tiers

Once the Tiers have been created, you can add systems to each Tier. Click and drag the node to the Tier where it should be added.



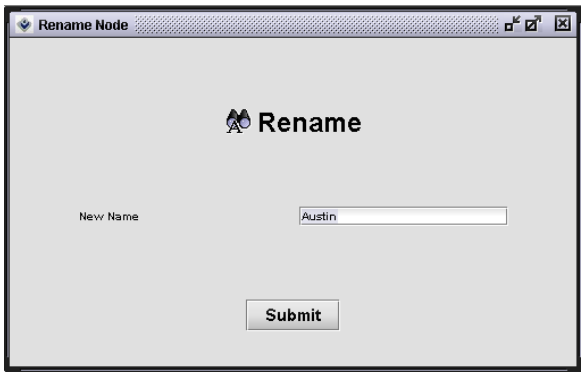
Adding systems to a Node

Deleting Tiers

To delete a Tier, simply right click on the Tier and select **Delete** from the pull-down menu.

Renaming Tiers

To rename a Tier, right click on the Tier and select **Rename** from the pull-down menu.

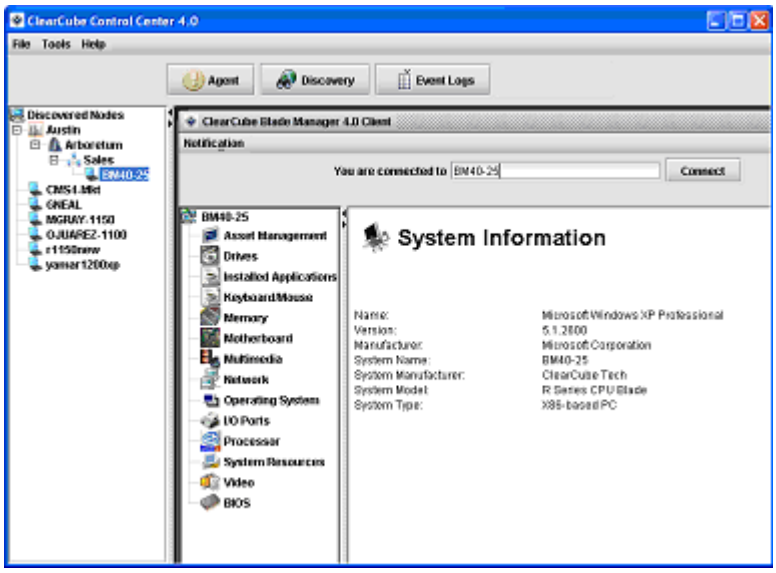


Rename a Tier

Enter the new name. Click the **Submit** button.

Connecting to a System

To connect to any node to view health and inventory information, double click on the node in the left tree, or right click on the node and choose Connect form the pull-down menu.



Viewing Connection

The Blade Manager Client screen for that system will appear in the right pane. You can use the selected system's Blade Manager Client features from this screen. See the Blade Manager Administrator's Guide for more information on using the Blade Manager interface.

Systems Management

Waking Systems

To wake a system that is shut down, right click on the node and select Wake on LAN from the pull-down menu. The Wake on LAN command can also be sent to a group of machines. Right click on the Group/Location/City name and select Wake on LAN. This will send the Wake on LAN command to all machines in that Group/Location/City. NOTE: Some network switches block Wake on LAN packets by default. This is a security measure many networking vendors are implementing. If issues arise when using Wake on LAN features, please ensure that all networking devices between hosts are configured to allow Wake on LAN packets.

Restarting Systems

To restart a system, right click on the node and select Restart from the pull-down menu. The Restart command can also be sent to a group of machines. Right click on the Group/Location/City name and select Restart. This will send the Restart command to all machines in that Group/Location/City. A warning message will appear on the clients machine giving the user thirty seconds to save before the system restarts.

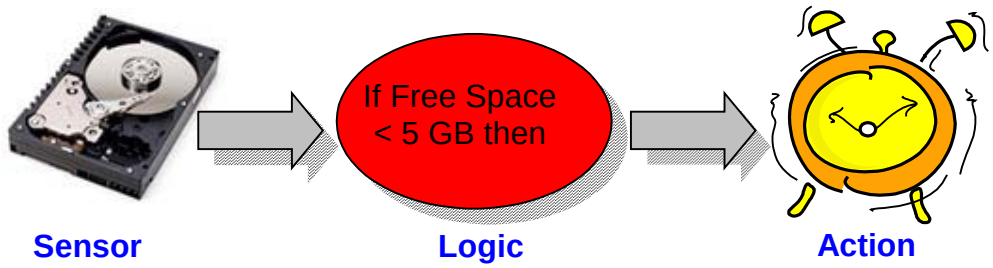
Shutting Down Systems

From the left pane, click on any system name to select it. The background will be highlighted as shown. Right click on the highlighted system and select Shutdown from the pull-down menu. The Shutdown command can also be sent to a group of machines. Right click on the Group/Location/City name and select Shutdown. This will send the Shutdown command to all machines in that Group/Location/City. A warning message will appear on the clients machine giving the user thirty seconds to save before the system shuts down.

Agents

Creating Agents

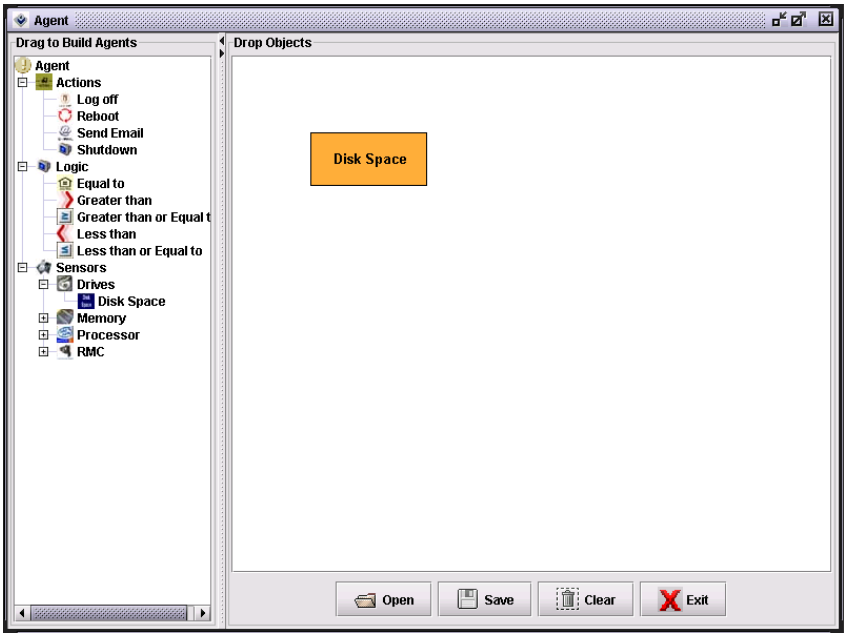
The agents within Control Center make it easy to monitor a Blade's status and automatically take the appropriate self-healing and notification actions such as shutting down a system or sending an email to the administrator. Agents are composed of three elements: sensors, logic operators, and actions.



There are two types of Agents. The first type is a basic agent, which consists of one comparison. The second type is a complex agent, which includes two comparisons, which act as an "AND" condition for comparison purposes.

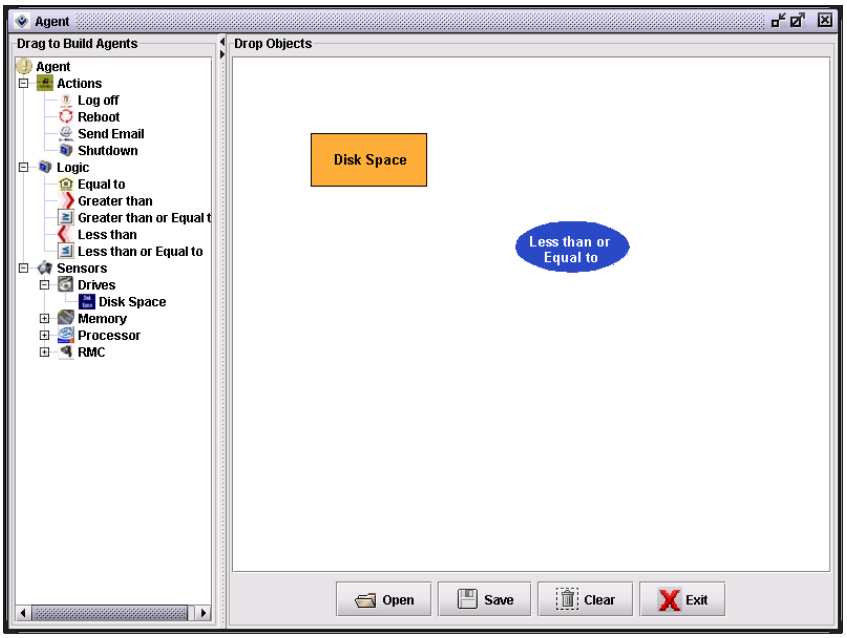
Creating an Agent

Click the **Agents** button. The Agent window will appear in the main frame. After choosing which component should be monitored, begin by clicking on a Sensor object and dragging it to the canvas on the right.



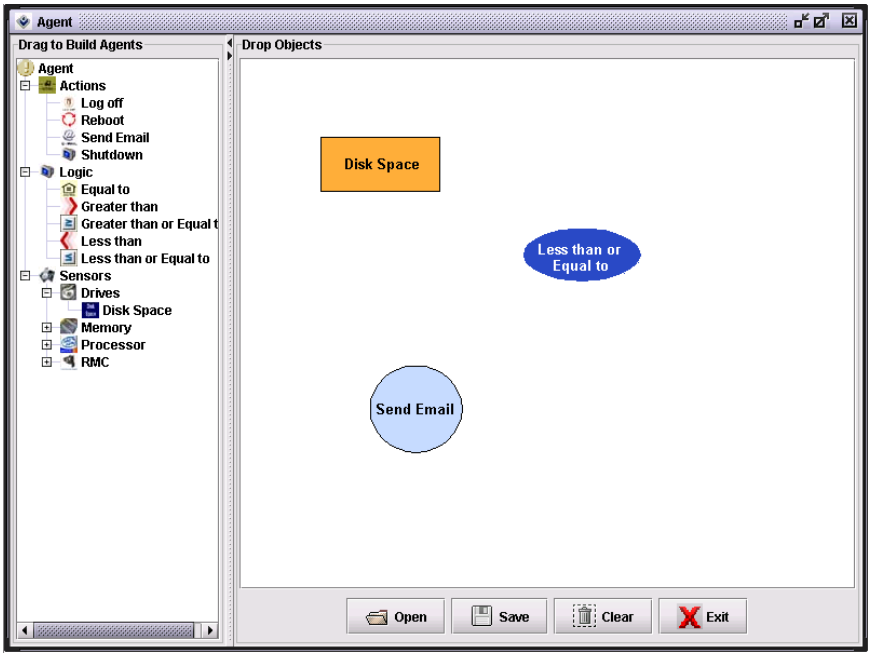
Select a Sensor

Next, drag the Comparison component onto the canvas.



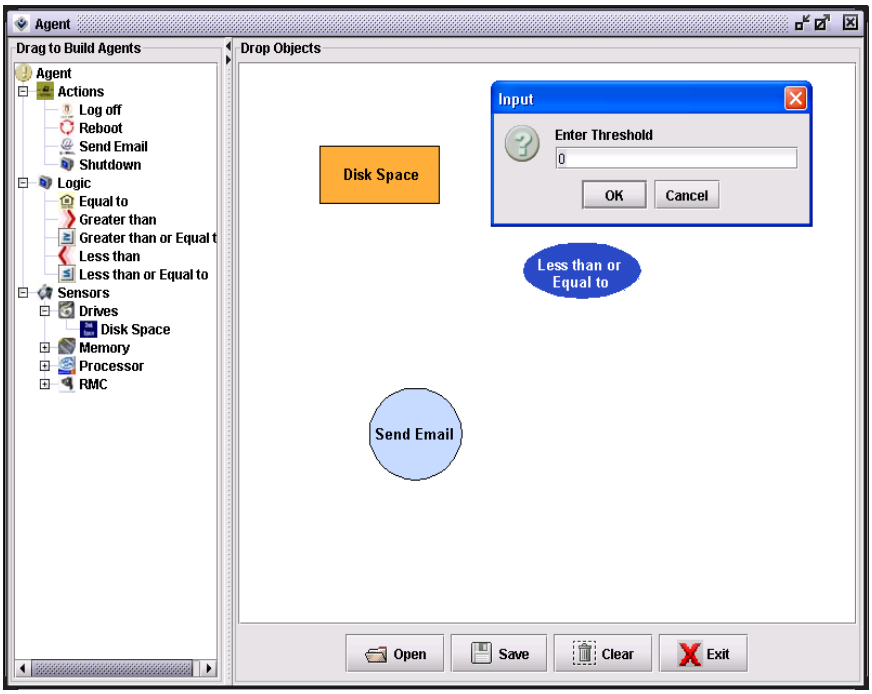
Select a Comparison

Drag the appropriate **Action** onto the canvas.



Select an Action

Now the objects must be linked together and the thresholds must be set. Begin by clicking on the Sensor object; then right click on the Comparison object and select Draw a Line. Next, click the Comparison object and then right click on the Action object; select Draw a Line. Right click on the Comparison object and select Configure. Enter a value for the threshold.



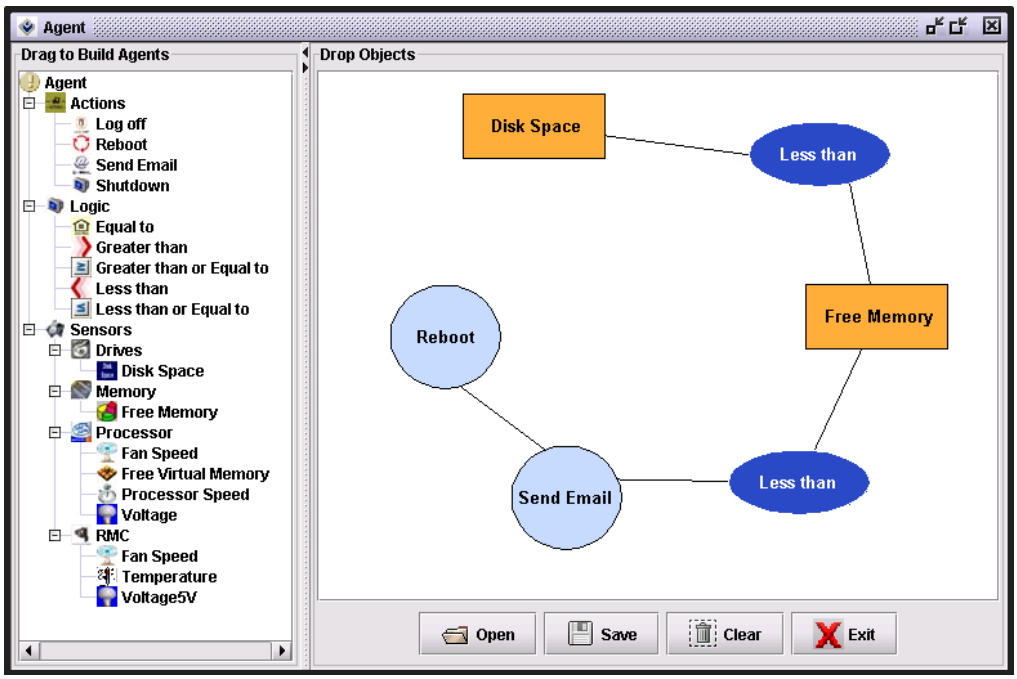
Type in Threshold

The final step is choosing an action. Right click on the Action object and select Configure. Enter the email address and click the **OK** button.

The agent must be saved or the configuration will be lost. Click the **Save** button at the bottom of the pane to save the agent.

Complex Agent Example

The following is an example of a complex agent which represents an “AND” condition, e.g. disk space is less than the threshold AND Free Memory is less than the threshold; send an email and reboot the machine.

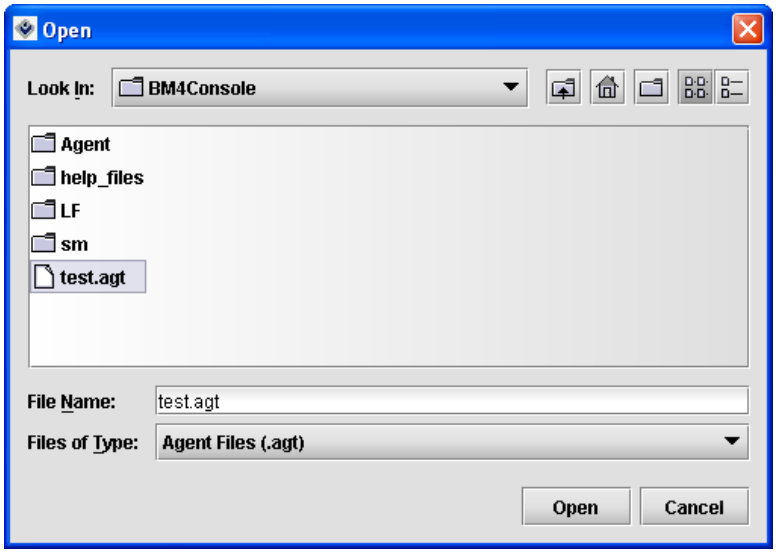


Complex Agent Example

For an “OR” condition, you can deploy multiple agents (i.e. if disk space is less than 10, send email; if memory is less than 256, send email). Once you have multiple agents, named descriptively, you can deploy them to multiple machines (city, location or group) simultaneously.

Deploying Agents

Agents can be deployed to one machine at a time or can be deployed to many machines at once. To deploy an Agent to one machine, right click on the node select Deploy Agents from the pull-down menu. To deploy an Agent to multiple machines, select multiple machines using the Ctrl or Shift keys, then right click and choose Deploy Agents from the pull-down menu.

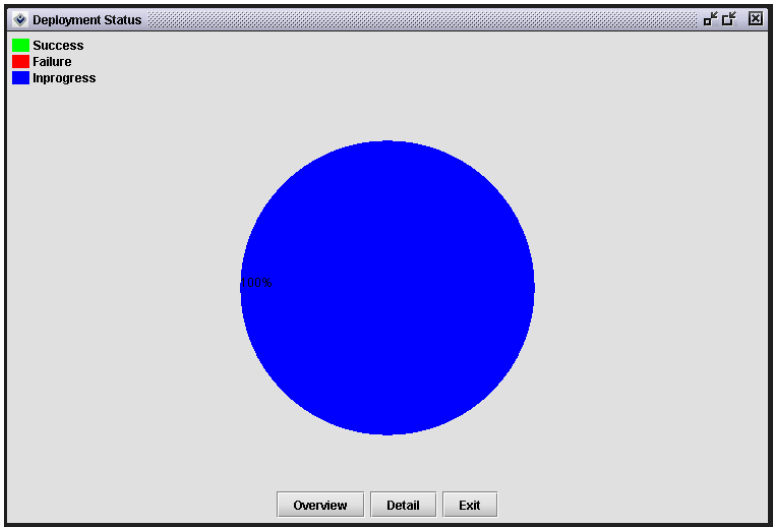


Select an Agent

Select the appropriate agent to be deployed and click the **Open** button. When the Open button is clicked, Control Center will allow you to view the progress of the Agents being deployed. Click the **Yes** button to view the deployment log window.

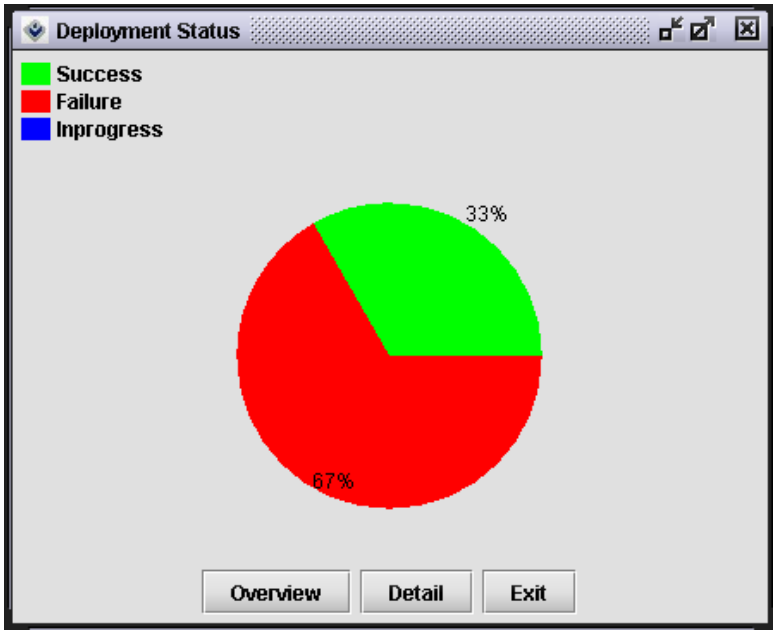
Deployment Log Dialog

While the agent is being deployed, a pie chart will appear.



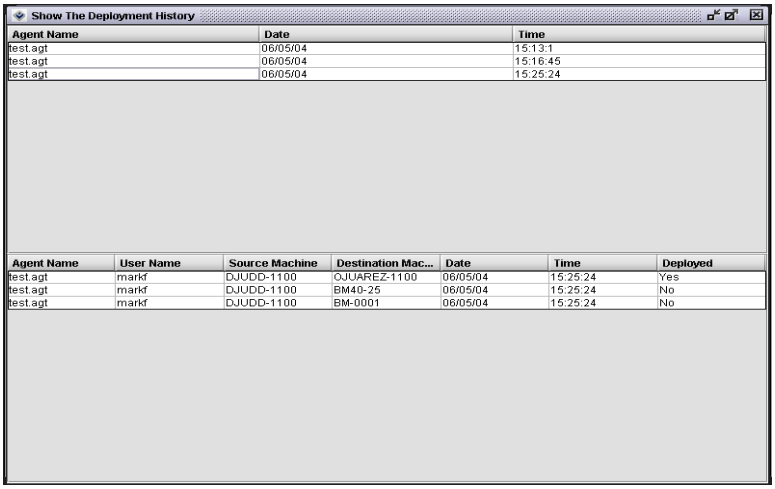
Deployment in Progress

Once the agent has deployed, the pie chart will reflect success and failures in the deployment.



Deployment Status

Click the **Detail** button to view details of the successes and failures. Click an Agent record in the upper pane to view complete details on a system by system basis in the lower pane.

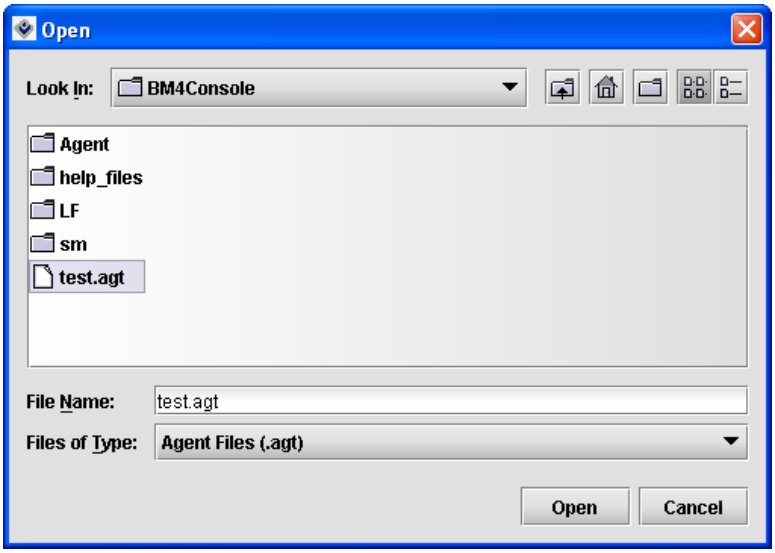


Details of Agent Deployment

NOTE: For email actions, the alert system will send an email according to the interval set in the configuration (Tools->Configuration).

Modifying Agents

Once an agent has been modified, you must re-deploy it to the appropriate systems. If the name is retained, the agent will overwrite the original agent. To modify an existing Agent, Click the **Agents** button. When the Agents window appears, Click the **Saved Agents** button.



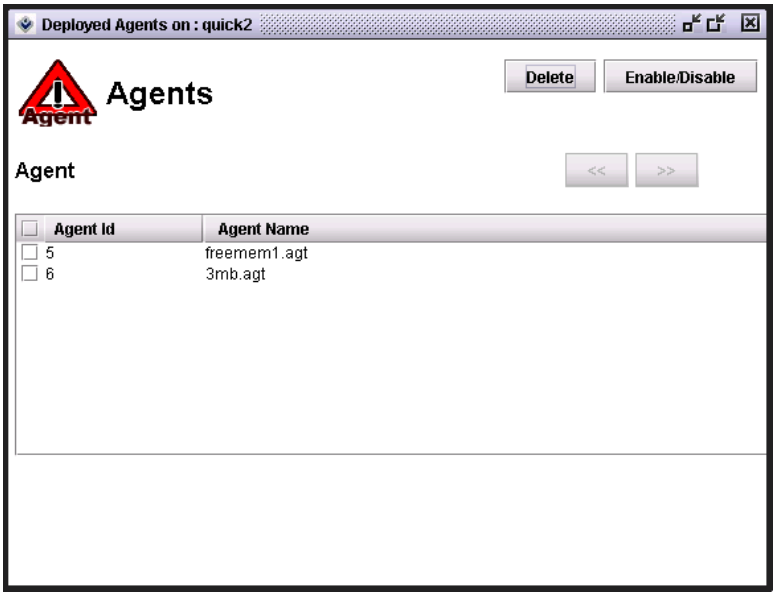
Open a Saved Agent

Select the appropriate agent to be deployed and click the **Open** button. Make any changes to the agent and click the **Save** button.

Viewing Deployed Agents

To view Agents deployed on a machine, right click on the node in the left tree and select Deployed Agents from the pull-down menu.

Right click on the highlighted system and select **Deployed Agents** from the pop-up menu. The following screen will appear:

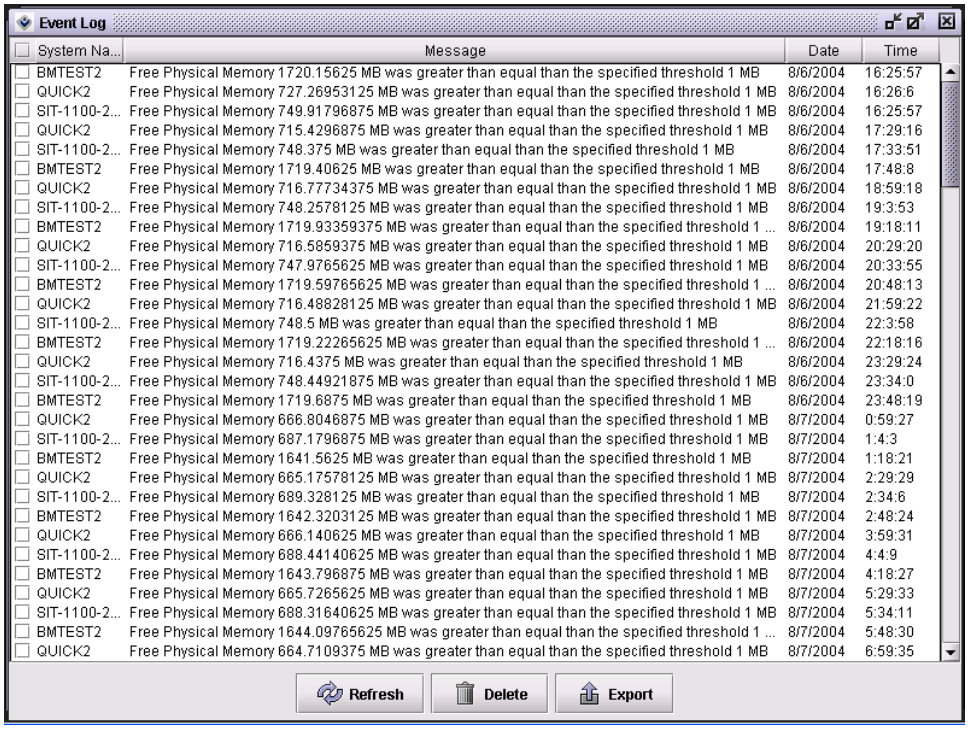


Viewing Deployed Agents

This view allows the administrator to delete deployed agents from a machine. It also allows the administrator to disable or enable certain deployed agents on the selected machine.

Viewing Event Logs

From the main screen, click the **Event Logs** button. The Event Logs screen gives an overview of all the agents and alerts that have been triggered on machines that have Blade Manager 4.0 installed. The Events Log view also allows you to clear out selected or all events by clicking the **Delete** button. It also provides the ability to export the event logs to a text file in a CSV format.



Viewing The Event Log

Adding Navigation Buttons

Additional buttons can be added to the navigation area of Control Center 4.0. In order to add more buttons to the top navigational area of Control Center, please edit the SkinDefinition.config file at the following location:

`%CC_INSTALL_DIR%\BM4Console\LF\xx`

Where %CC_INSTALL_DIR% is the location for the DCI installation. Follow the following steps to add additional buttons.

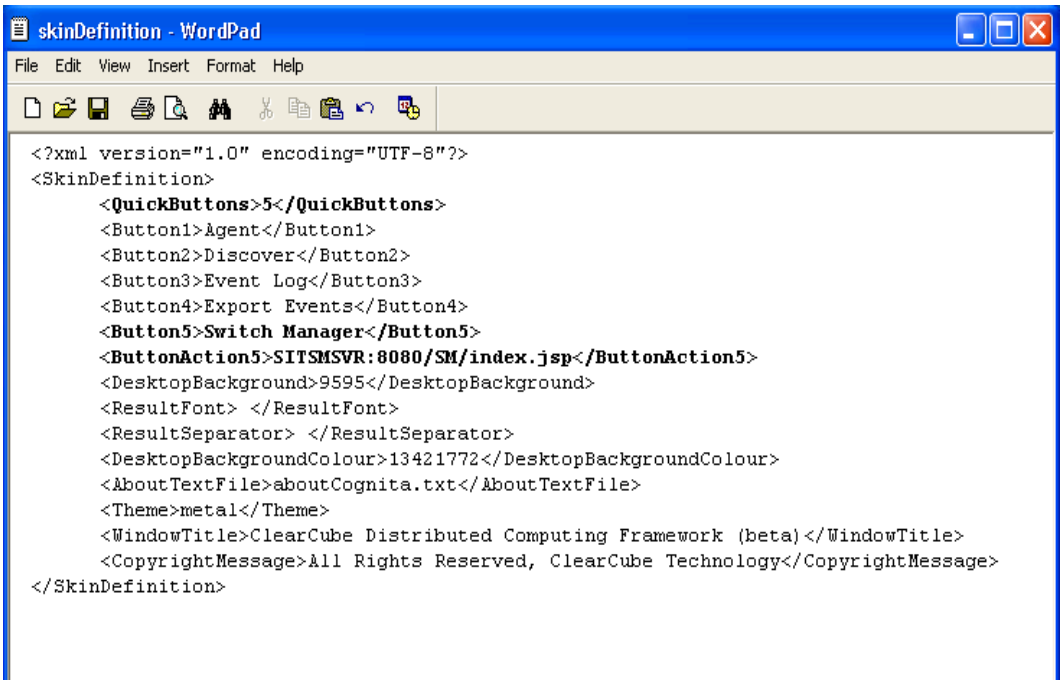
Step 1: Open SkinDefinition.config file in a text editor such as WordPad.

Step 2: Increment the QuickButtons number by the number of additional buttons to be added.

Step 3: Add the following line after the last Button:
<Button5>Button Label</Button5>
where Button Label is the label for the button.

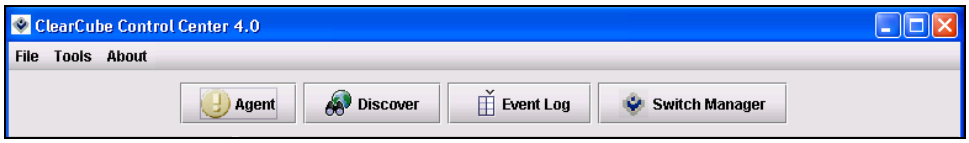
Step 4: Add the link associated with the button:
<ButtonAction5>link</ButtonAction5>
where link is the URL for the application you want invoked upon clicking the button. **Note:** Do not add " http://" to the beginning of the URL link, it will be pre-pended automatically.

Step 5: Restart Control Center 4.0.



View of the SkinDefinition.config file

Once the changes have been made to the skinDefinition.config file and Control Center has been restarted, the new button will appear in the navigational area of Control Center.



Adding Buttons To Control Center

Clicking on this button will open the associated URL in a new browser.

How to Contact Support

ClearCube Technology

In the event you have any problems with your ClearCube software, please refer to our Web site or contact ClearCube Technical Support for guidance.

support@clearcube.com	Email address to ClearCube Technical Support
support.clearcube.com	ClearCube Support Website
(866) 652-3400	Direct line in the US
+1 (512) 652-3400	Direct line from outside the US

Active Perl

Commercial support for ActivePerl is available through ActiveState at:
http://www.ActiveState.com/Support/Enterprise/

For peer support resources for ActivePerl issues see:
http://www.ActiveState.com/Support/

Acknowledgements:
ClearCube Blade Manager 4.0 utilizes ActiveState Perl technology.

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ActivePerl is the up-to-date, quality-assured Perl binary distribution from ActiveState. Current releases, and other professional tools for open source language developers are available at http://www.ActiveState.com.

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ActivePerl - The ActiveState Repository has a large collection of modules and extensions in binary packages that are easy to install and use. To view and install these packages, use the Perl Package Manager (PPM) which is included with ActivePerl.

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