



Load Balancing IBM Lotus Instant Messaging and Web Conferencing Servers with F5 Networks BIG-IP System

- Introducing BIG-IP load balancing for IBM Lotus Instant Messaging and Web Conferencing servers
- Configuring the BIG-IP for load balancing Instant Messaging and Web Conferencing (Sametime) servers

Introducing BIG-IP load balancing for IBM Lotus Instant Messaging and Web Conferencing servers

The BIG-IP load balancing solution for IBM® Lotus Instant Messaging and Web Conferencing (hereafter referred to as Sametime®), servers is a highly effective way direct traffic for Sametime servers with the BIG-IP® application traffic manager. The BIG-IP system also provides the top-level distribution that allows for simple and effective scalability of Sametime servers and ensures that customers maximize their investment.

Sametime consists of client and server applications that enable a community of users to collaborate in real-time online meetings over an intranet or the Internet. For more information on IBM Lotus Sametime, visit the IBM Web site at www.ibm.com.

F5 Networks BIG-IP system is a secure, highly available and scalable application traffic management device. For more information about the BIG-IP system, visit <http://www.f5.com/products/big-ip/>

Prerequisites and configuration notes

All of the procedures in this Deployment Guide are performed on the BIG-IP system. We highly recommend you use a redundant pair of BIG-IP devices.

The servers must be preinstalled first with IBM Domino and Domino must be replicating across all the servers. Then IBM Lotus Sametime must be installed on the servers. For more information on installing Domino and Sametime, refer to the IBM documentation.

The following items are prerequisites for this deployment:

- The BIG-IP system must be running version 4.5 or later
- The servers must be running IBM Domino version 5.0.10 or later
- The servers must be running IBM Lotus Sametime version 3.0 or later.

Configuration example

Using the configuration in this guide, the BIG-IP system is optimally configured to load balance traffic to IBM Lotus Sametime servers. Figure 1.1 shows a typical BIG-IP Sametime configuration.

◆ Note

For the rest of this Deployment Guide, we use the IP addresses in Figure 1.1 in our configuration examples.

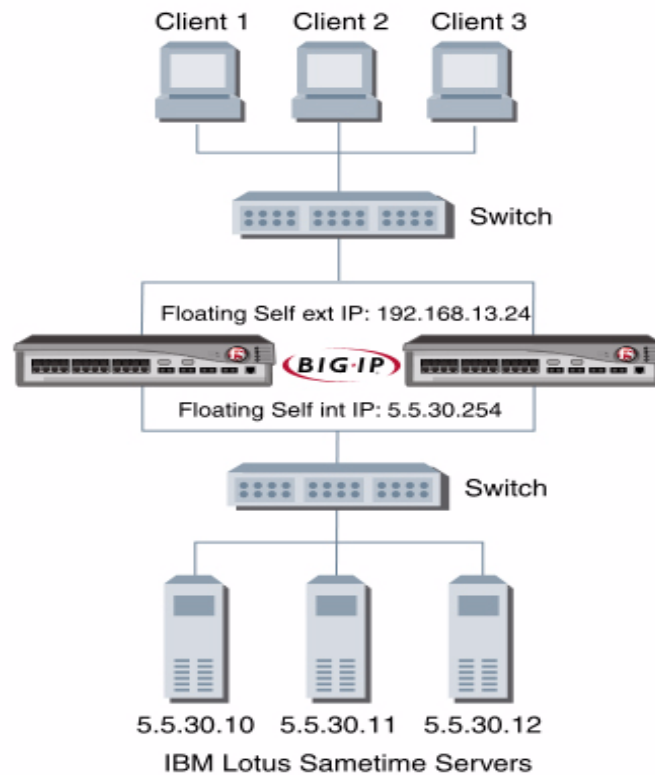


Figure 1.1 Example Configuration

Configuring the BIG-IP for load balancing Instant Messaging and Web Conferencing (Sametime) servers

To configure the BIG-IP product to load balance Sametime servers, you need to complete the following tasks:

- *Creating the pools*
- *Creating the virtual servers*
- *Enabling persistence on the pools*
- *Configuring health monitors*

Creating the pools

The first step is to define load balancing pools for the Sametime servers. In this configuration we create three Sametime pools, one for Chat (which uses port **1533**), one for Meetings (which uses port **8081**), and one for HTTP data on port **80**. You can define a pool from the Configuration utility (see Figure 1.2) or the command line.

To create a pool for Sametime Chat using the Configuration utility

1. In the navigation pane, click **Pools**.
The Pools screen opens.
2. Click the **Add** button.
The Add Pool screen opens.
3. In the **Pool Name** box, enter a name for your pool. In our example, we use **Sametime_chat**.
4. In the **Load Balancing Method** box, enter your preferred load balancing method.
We recommend the **Least Connections** load balancing mode. In Least Connections mode, the BIG-IP system passes a new connection to the node that has the least number of current connections.
5. In the **Resources** section, you add the Sametime servers to the pool.
 - a) In the **Member Address** box, type the IP address of the Sametime server. In our example, the first IP address we type is **5.5.30.10**.
 - b) In the **Service** box, type **1533**, which is the default service for Sametime Chat.
 - c) The **Member Ratio** and **Member Priority** boxes are optional.
 - d) Click the Add button (>>) to add the member to the **Current Members** list.
 - e) Repeat Steps a-d for each Sametime server. In our example, we repeat the Steps two more times for **5.5.30.11** and **5.5.30.12**.
 - f) The other fields in the Add Pool screen are optional. Configure these fields as applicable for your network. (For additional information about configuring a pool, click the **Help** button.)

6. Click the **Done** button.

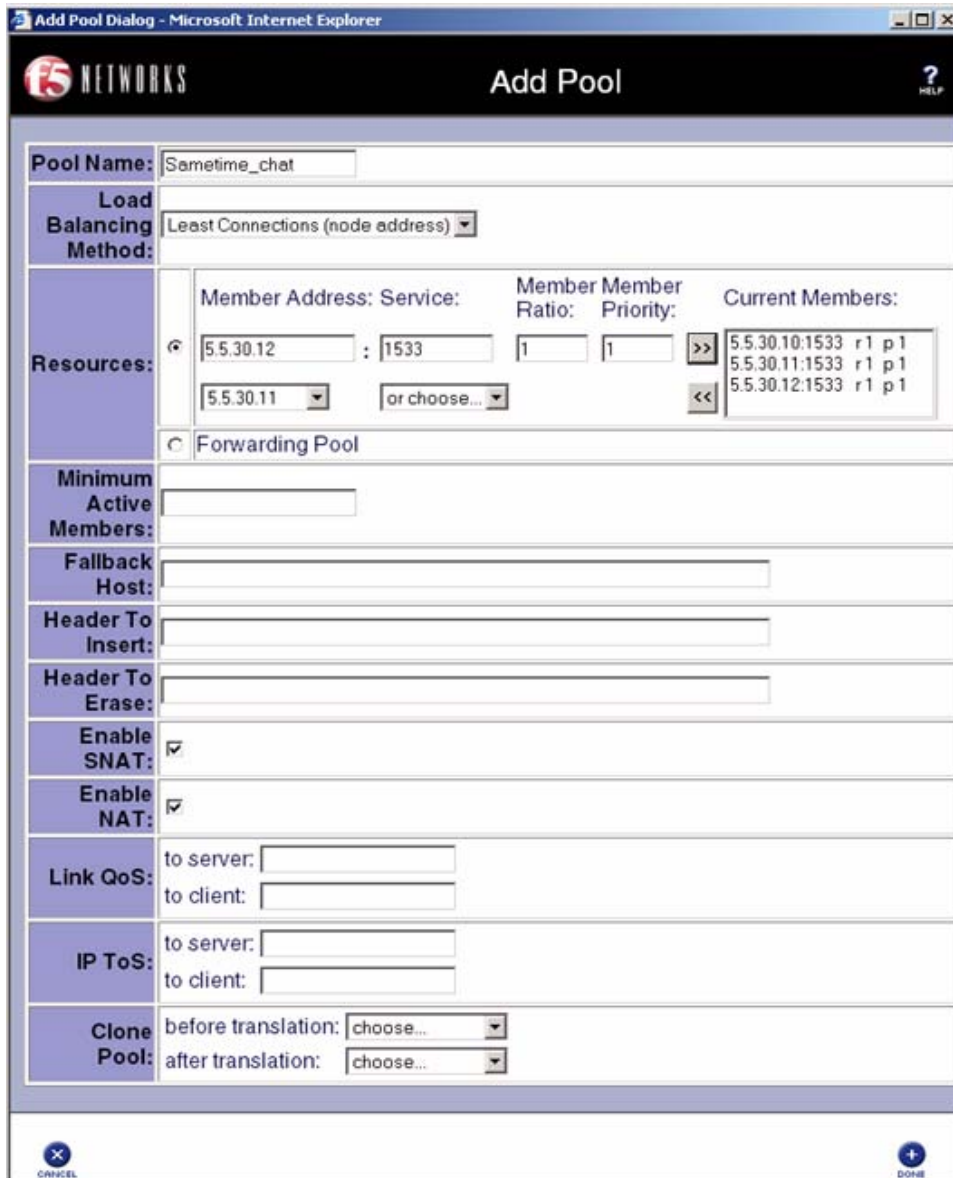


Figure 1.2 Add Pool screen

To create a pool for Sametime Chat from the command line

To create a pool from the command line, use the following syntax:

```
b pool <pool_name> {member <member_definition> ... member <member_definition>}
```

In our example, the command is:

```
b pool Sametime_chat { \
member 5.5.30.10:1533 \
```

```
member 5.5.30.11:1533 \  
member 5.5.30.12:1533 }
```

To create pools for Sametime Meeting and Sametime HTTP data from the Configuration utility

- ◆ To create a pool for Meeting, follow the procedure above, *To create a pool for Sametime Chat using the Configuration utility*, with the following exceptions:
 - In Step 3, we name the pool **Sametime_meeting**.
 - In Step 5b, type **8081** for the service.
- ◆ To create a pool for HTTP data, follow the procedure above, *To create a pool for Sametime Chat using the Configuration utility*, with the following exceptions:
 - In Step 3, we name the pool **Sametime_web**.
 - In Step 5b, type **80** for the service.

To create pools for Sametime Meeting and Sametime HTTP data from the command line

To create the Sametime Meeting and HTTP data pools from the command line, use the following syntax:

```
b pool <pool_name> {member <member_definition> ... member <member_definition>}
```

In our example, the command for creating the Sametime Meeting pool is:

```
b pool Sametime_meeting { \  
member 5.5.30.10:8081 \  
member 5.5.30.11:8081 \  
member 5.5.30.12:8081 }
```

In our example, the command for creating the Sametime HTTP data pool is:

```
b pool Sametime_web { \  
member 5.5.30.10:80 \  
member 5.5.30.11:80 \  
member 5.5.30.12:80 }
```

Creating the virtual servers

The next step is to define virtual servers that reference the pool. Again, you can define the virtual server from the Configuration utility or the command line.

To create a virtual server for Sametime Chat using the Configuration utility

1. In the navigation pane, click **Virtual Servers**.
The Virtual Servers screen opens.

2. Click the **Add** button.
The Add Virtual Server screen opens.
3. Enter the IP address and service for the virtual server, then click the **Next** button. In our example, we use **192.168.13.25** with service of **1533**.
The Configure Basic Properties screen displays.
4. On the Configure Basic Properties screen, leave **Enable Address Translation** and **Enable Port Translation** boxes checked. The other fields are optional, configure these fields as applicable to your network.
Note: In the **Disabled VLANs** section, be sure to disable any VLANs you do not want the virtual server accepting connections from.
Click the **Next** button.
The Select Physical Resources screen displays.
5. Click the **Pool** option button, and from the list, select the pool you created in the *To create a pool for Sametime Chat using the Configuration utility* section above. In our example, we select **Sametime_chat**.
Click the **Next** button.
6. On the Configure Redundant Properties screen, check the box for **Mirror Connections**. Click the **Done** button.
For additional information about configuring a virtual server, click the **Help** button.

To create a virtual server for Sametime Chat from the command line

Use the bigpipe **virtual** command as shown below. You can use standard service names in place of port numbers. If you have DNS configured, you can also use host names in place of IP addresses.

```
b virtual <virt IP>:<port> use pool <pool_name>
```

In our example, we use:

```
b virtual 192.168.13.25:1533 use pool Sametime_chat
```

To create virtual servers for Sametime Meeting and Sametime HTTP data from the Configuration utility

- ◆ To create a virtual server for Meeting, follow the procedure above, *To create a virtual server for Sametime Chat using the Configuration utility*, with the following exceptions:
 - In Step 3, use the same IP address, **192.168.13.25**, but for the service, type **8081**.
 - In Step 5, use the Pool you created in the *To create pools for Sametime Meeting and Sametime HTTP data from the Configuration utility* section above. In our example, we select the **Sametime_meeting** pool.

-
- ◆ To create a virtual server for HTTP data, follow the procedure above, *To create a virtual server for Sametime Chat using the Configuration utility*, with the following exceptions:
 - In Step 3, use the same IP address, **192.168.13.25**, but for the service, type **80**.
 - In Step 5, use the Pool you created in the *To create pools for Sametime Meeting and Sametime HTTP data from the Configuration utility* section above. In our example, we select the **Sametime_web** pool.

To create virtual servers for Sametime Meeting and Sametime HTTP data using the command line

To create the Sametime Meeting and Sametime HTTP data virtual servers from the command line, use the following syntax:

```
b virtual <virt IP>:<port> use pool <pool_name>
```

In our example, the command for creating the Sametime Meeting virtual server is:

```
b virtual 192.168.13.25:8081 use pool Sametime_meeting
```

In our example, the command for creating the Sametime HTTP data virtual server is:

```
b virtual 192.168.13.25:80 use pool Sametime_web
```

Enabling persistence on the pools

The next step in configuring the BIG-IP system to load balance Sametime servers is to configure Simple persistence on the pools. You can configure persistence from the Configuration utility or the command line.

To enable Simple persistence on the pools using the Configuration utility

1. In the navigation pane, click **Pools**.
The Pools screen opens.
2. In the **Pool Name** list, click the name of the pool you created in the *Creating the pools* section above. In our example, we first click **Sametime_chat**.
This displays the properties of that pool.
3. Click the Persistence tab at the top of the screen.
The Persistence Properties screen opens (see Figure 1.4).
4. If you have a BIG-IP redundant system, we recommend mirroring the persistence information. Mirroring provides seamless fail-over of client persistence information from an active BIG-IP unit to a standby unit.
In the Mirror Persistence section, check the box to enable mirroring.
5. In the Persistence type section, click the **Simple** button.

6. In the **Timeout** box in the Simple section, type the number of seconds for persistence on the pool. We recommend a Timeout setting that is at least 150% of the value of the keep alive setting on the Sametime clients (see Figure 1.3). In our example, we use **180** seconds.

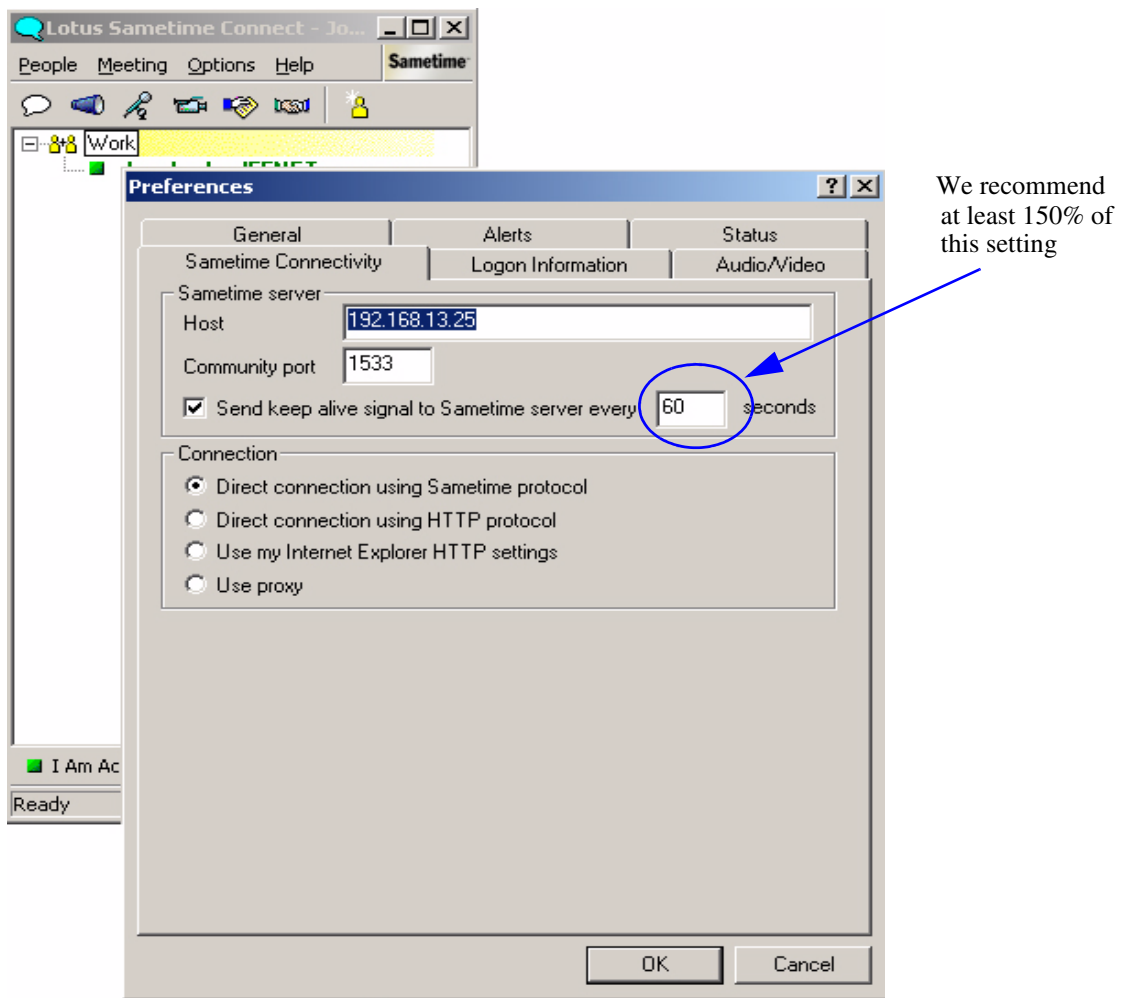


Figure 1.3 Sametime Client Preferences, Sametime Connectivity tab

7. Click the **Apply** button.
8. Repeat the steps above for the other two pools. In our example, we repeat the steps for the **Sametime_meeting** and **Sametime_web** pools.

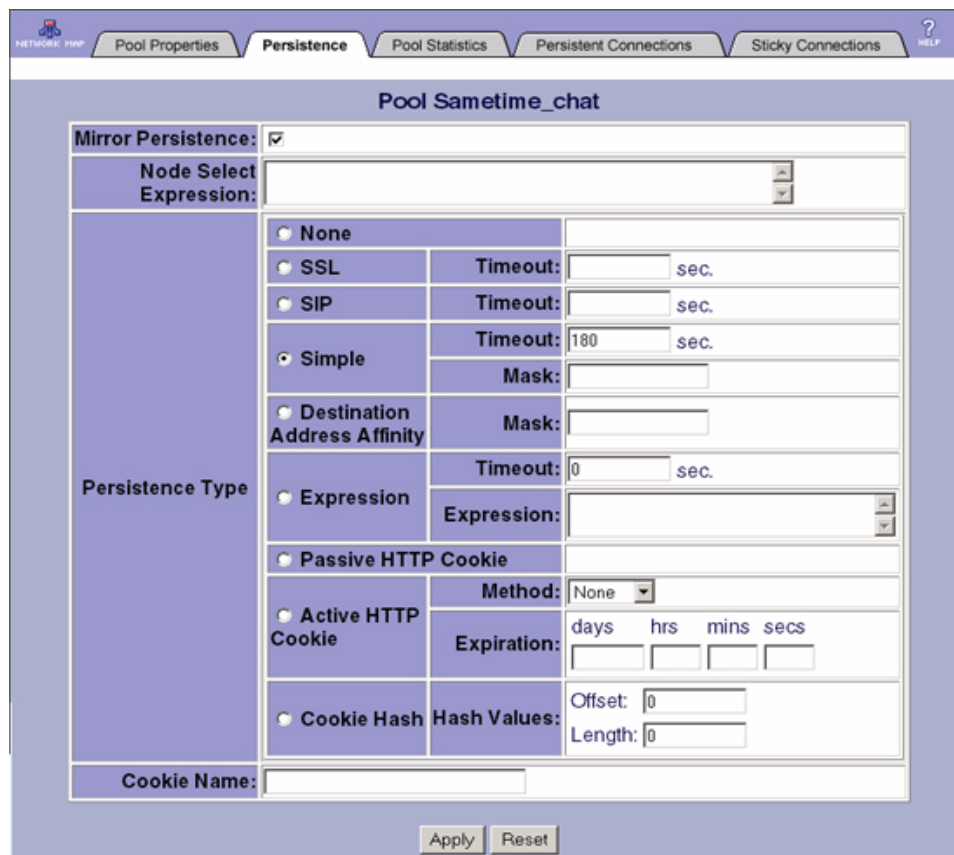


Figure 1.4 Configuring Simple persistence

To enable Simple persistence on the pools from the command line

To enable Simple persistence from the command line, use the following syntax:

```
b pool <pool_name> modify {persist simple simple_timeout <timeout> }
```

In our example, we would type three commands:

```
b pool Sametime_chat modify { persist simple simple_timeout 180 }
b pool Sametime_meeting modify { persist simple simple_timeout 180 }
b pool Sametime_web modify { persist simple simple_timeout 180 }
```

In a BIG-IP redundant configuration, we recommend mirroring the persistence information. Mirroring provides seamless fail-over of client persistence information from an active BIG-IP unit to a standby unit. To enable persistence mirroring, use the following syntax:

```
b pool <pool_name> persist_mirror enable
```

In our example, we would type three commands

```
b pool Sametime_chat persist_mirror enable
```

```
b pool Sametime_meeting persist_mirror enable
b pool Sametime_web persist_mirror enable
```

Configuring the Global Persistence Settings

There is one global persistence setting on the BIG-IP system that need to be configured to optimally direct traffic to the Sametime servers: **persist across_services**.

When **persist across_services** is enabled, all simple persistence connections from a client IP address that go to the same virtual server are sent to the same node, regardless of the service (port). This is ideal in a Sametime environment when the same virtual server is used for multiple ports.

To configure the global persistence settings from the Configuration utility

1. In the navigation pane, click **System**.
The Network Map screen displays.
2. Click the Advanced Properties tab.
The Advanced Properties screen displays.
3. In the **Persistence** table, check the box for **persist across_services**.
4. Click the **Apply** button.

Configuring health monitors

BIG-IP health and performance monitors verify connections and services on nodes that are members of a pool. Monitors are optional, but we highly recommend using the monitors below to verify that the nodes and services are available.

For this configuration, we will first create an Extended Content Verification (ECV) health monitor on the BIG-IP system for HTTP traffic . The ECV monitor goes much further than a standard ICMP health check, by actually using **send** and **recv** statements in an attempt to retrieve explicit content from nodes. In this case, the monitor sends a request for the Sametime server log in page, and is successful when the page is returned.

To configure an ECV monitor for HTTP traffic on the Sametime server using the Configuration utility.

1. In the navigation pane, click **Monitors**.
The Network Monitors screen opens.
2. Click the **Add** button.
The Add Monitor screen opens.
3. Type the name of your monitor (it must be different from the monitor template name). In our example, we type **Sametime_http**. In the **Inherits From** box, select the **http** monitor template from the list. Click the **Next** button.

- In the Configure Basic Properties section, type an Interval and Timeout value. We recommend a 1:3 +1 ratio between the interval and the timeout (for example, the default setting has an interval of 5 and an timeout of 16). Click the **Next** button.
- In the Configure ECV HTTP Monitor section, we recommend using the following Send String and Return Statements.

In our example, we use the following Send String (see Figure 1.5):

```
GET /names.nsf?login HTTP/1.1\r\n
```

This sends a request for the Sametime server log in page.

For the Receive Rule, we use:

```
Log on to Sametime
```

This is what the BIG-IP system expects to receive back from the Sametime server.

After completing the applicable information, click the **Done** button.

Important Note:

If you enter a **GET** send string, you must end the string by including the **HTTP** protocol at the end of the statement. Use the following syntax:

```
GET <fully qualified path name> HTTP/1.1\r\n
```

The screenshot shows the 'Configure ECV HTTP Monitor' window in the F5 Networks management console. The window has a title bar with the F5 Networks logo and 'Add Monitor' text. The main content area is titled 'Configure ECV HTTP Monitor' and contains several input fields and checkboxes. The 'Send String' field contains 'GET /names.nsf?login HTTP/1.1\r\n'. The 'Receive Rule' field contains 'Log on to Sametime'. The 'User Name' and 'Password' fields are empty. The 'Reverse' and 'Transparent' checkboxes are unchecked. At the bottom of the window, there are four navigation buttons: 'CANCEL', 'PREVIOUS', 'NEXT', and 'DONE'.

Figure 1.5 Configuring the ECV HTTP health monitor

Associating the Monitors with the Sametime nodes and services

The next step in configuring the monitors is to associate them with the proper nodes and services. In this Sametime configuration, we use the Sametime_http ECV monitor we created above for HTTP (port 80), the default BIG-IP TCP monitor for Chat and Meeting (ports 8081 and 1533), and an ICMP check on the nodes themselves.

To associate the monitors with the Sametime nodes and services

1. In the navigation pane, click **Monitors**.
The Monitors screen displays.
2. Click the Basic Associations tab.
The Basic Associations screen displays (see Figure 1.6).

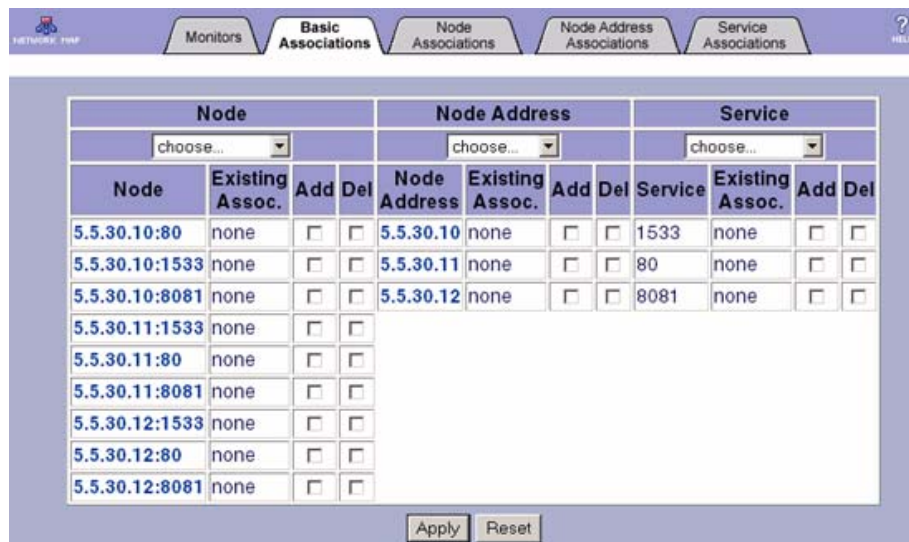


Figure 1.6 Monitors Basic Associations Tab

3. In the **Service** column, choose **TCP** from the list.
4. For Service **1533**, click to put a check in the **Add** box, then click the **Apply** button.
Notice that in the **Node** column, all Nodes with a Service of **1533** now have TCP in the **Existing Assoc.** sub-column.
5. Repeat for Service **8081**, choose **TCP** from the list, click to put a check in the **Add** box, then click the **Apply** button.
All Nodes with a Service of **8081** now have TCP in the **Existing Assoc.** sub-column.
6. Next, in the Service column, choose the monitor you created in Step 3 of the previous procedure for creating the ECV for HTTP traffic. In our example, we select **Sametime_http**.

7. For Service **80**, click to put a check in the **Add** box, then click the **Apply** button.
In the **Node** column, all Nodes with a Service of **80** have Sametime_http in the **Existing Assoc.** sub-column.
8. In the **Node Address** column, select **ICMP** from the list.
9. Click to put a check in the **Add** box of all of the Node Addresses, and click the **Apply** button. In our example, when we are finished, the Basic Associations tab now looks like Figure 1.7.

For additional information associating a monitor, click the **Help** button.

Node				Node Address				Service			
choose...				choose...				choose...			
Node	Existing Assoc.	Add	Del	Node Address	Existing Assoc.	Add	Del	Service	Existing Assoc.	Add	Del
5.5.30.10:80	Sametime_http	<input type="checkbox"/>	<input type="checkbox"/>	5.5.30.10	icmp	<input type="checkbox"/>	<input type="checkbox"/>	1533	tcp	<input type="checkbox"/>	<input type="checkbox"/>
5.5.30.10:1533	tcp	<input type="checkbox"/>	<input type="checkbox"/>	5.5.30.11	icmp	<input type="checkbox"/>	<input type="checkbox"/>	80	Sametime_http	<input type="checkbox"/>	<input type="checkbox"/>
5.5.30.10:8081	tcp	<input type="checkbox"/>	<input type="checkbox"/>	5.5.30.12	icmp	<input type="checkbox"/>	<input type="checkbox"/>	8081	tcp	<input type="checkbox"/>	<input type="checkbox"/>
5.5.30.11:1533	tcp	<input type="checkbox"/>	<input type="checkbox"/>								
5.5.30.11:80	Sametime_http	<input type="checkbox"/>	<input type="checkbox"/>								
5.5.30.11:8081	tcp	<input type="checkbox"/>	<input type="checkbox"/>								
5.5.30.12:1533	tcp	<input type="checkbox"/>	<input type="checkbox"/>								
5.5.30.12:80	Sametime_http	<input type="checkbox"/>	<input type="checkbox"/>								
5.5.30.12:8081	tcp	<input type="checkbox"/>	<input type="checkbox"/>								

Figure 1.7 Monitors Basic Associations tab, after associating monitors with Sametime nodes and services