Deploy a Cluster

An Augur cluster is two or more Augur servers networked together by one or two cluster servers. All Augur servers in a cluster share a configuration tree that is synchronized by the cluster server(s). Clusters are are useful to add capacity, to isolate workloads, and to create hot-swap backup servers.

Each Augur server will differ only by which gateways and paging messengers they host, as defined by you in the configuration tree. Other than that, each Augur server looks like the same system to end-users. A user can launch the client from any Augur server in the cluster and see the same alerts, per their permissions. Data are automatically proxied to/from whichever Augur server contains the alerts. However, to optimize your network bandwidth, you should instruct users to connect to the Augur server that most likely contains the majority of the alerts they need.

Only one cluster server is necessary, but for three or more Augur servers, a second cluster server is an option for additional fault tolerance. One cluster server is labeled as the *primary*, and if there is another, it is the *secondary*. This designation coordinates the communication between cluster servers.

It is important that all the Augur and cluster servers have good network connections between themselves. Servers must not have NAT firewalls between each other, although NAT is OK facing clients. The following default ports must be open: **1140-1145, and 1166**.

A client only needs to communicate with one of the Augur servers. It is OK if the client reaches the server through a NAT firewall. The client must be able to access the same same ports listed above, as well as **port 8400** (the HTTP server). Additionally, the server's name should be both forward (name-to-IP) and reverse (IP-to-name) resolvable from your client's DNS. If this is not possible, then the client should launch Augur with a URL that only uses the server's accessible IP address, not the host name. (Otherwise, a security manager may periodically freeze the Augur client for 5-minutes or more while it tries to verify an IP-to-name resolution.)

Installation

The general procedure is: (1) install the cluster server(s) with your starting configuration, (2) install each Augur server, (3) "boot-strap" each Augur to connect it to the cluster. From then on, any configuration changes are automatically synchronized between all servers.

In the directions below, most pathnames will have the prefix "**`~/`**". This means the directory where the software is installed (its home). This does not have to be the home of a user account. On Windows, programs are usually installed in a subdirectory under "`C:\Program Files\`".

Part 1: Install the Cluster Server(s)

The cluster software can be installed on the same machine as an Augur server, or on a separate machine. It should be installed in its own directory, but it does not need its own dedicated user account.

1. The IP address of each cluster server is stored in the configuration license. Send the IP address(es) to Augur System Support.

FTP

If you use FTP to transfer files between machines, be sure to set "**binary**" mode (8-bit). Some versions of FTP will default to "ASCII text" mode (7-bit), which will corrupt the file.

Get Java

You can get Java via: http://java.com/

You only need the Java Runtime Edition (JRE), but the full Java Software Developer's Kit (SDK) will work too.

Java Home (Unix only)

Augur and cluster servers will automatically use the '`java`' executable found on the PATH.

On Unix systems, if you need to direct the server to use a different Java, you can edit the file "**`~/bin/.home.sh`**" Note that this file is created when you run the '**`~/bin/install`**' command. You can add the following lines to the file:

```
JAVA_HOME=<JavaHomeDir>
export JAVA_HOME
```

You will be sent a small binary file with a name that ends with the "`.ser`" extension. This file contains the license that you will import into the configuration. Move it to a temporary location on the cluster server(s).

2. Ensure that Java™ version 1.5 or newer is installed, and accessible from the user account that will run the cluster server.

3. Download the latest version of the cluster server at:
   http://www.AugurSystems.com/

4. On Unix, Unzip/untar the file (e.g. **`tar xvfz cluster.tgz`**). On Windows, execute the MSI file.

5. On the cluster server(s), import the license file you received:

   ```
   cd ~/bin
   ./licenseUtil -import <license.ser>
   ```

6. Start the primary cluster server: **`./cluster -start pri`**
   On the secondary server (if any): **`./cluster -start sec`**

7. You can check the status in the log files (`~/logs`), and with the command: **`./cluster -status`**

Part 2: Install the Augur Servers

You can install Augur servers on any Unix or Windows machines, including a mix of both.

1. Ensure that Java™ version 1.5 or newer is installed, and accessible from the user account that will run the cluster server.

2. Download the latest version of Augur at:
   http://www.AugurSystems.com/

3. On Unix, Unzip/untar the file (e.g. **`tar xvfz augur.tgz`**). On Windows, execute the MSI file.

Part 3: Bootstrap the Augur Servers

The bootstrap process really just downloads a copy of the current configuration from the cluster server(s) and stores it for local reference by Augur. With this local copy of the configuration, Augur can lookup the cluster server(s) and all the other Augur servers.

1. Bootstrap an Augur server. Use the hostname or IP address of the primary cluster server.

   ```
   cd ~/bin
   ./augur -bootstrap <clusterHost>:1166
   ```

2. Start Augur: **`./augur -start`**

3. Launch the Augur client at: **`http://<augurHost>:8400/`**

4. Login with the default user **`Admin`**, password **`augur`**.

5. Launch the **Configuration Editor** and make the following changes, but do not commit any changes until you are all done. Delete the default server named **local** and add all your Augur servers under the **/Topology/Servers/** folder. For each server, provide a name and set the **host.address** property. Be sure to use addresses that are accessible by all other servers (e.g. Do not use **`localhost`** or **`127.0.0.1`**.). When you commit the change the Augur server will shutdown (after 60-seconds), so you should close the client too.

6. Restart the first Augur server, then repeat just steps 1 and 2 for the remaining Augur server(s).

7. You can check the status in the log files (`~/logs`), and with the command: **`./augur -status`**

Upgrading from Stand-Alone Augur

If you are upgrading a stand-alone Augur to a cluster, there are a few additional notes:

1. Stop your existing Augur before starting the three-part procedure above.

2. Since you'll probably install one of your new Augur servers on the same machine as your old Augur, you should install it in a new directory to avoid file conflicts and so that you can revert back to the old stand-alone system if something goes wrong.

3. Immediately after Part 1, Step 4, you should copy your existing configuration to the cluster server's **`~/data/main/`** directory. You only need to copy the last **`T*.ser`** file from your existing Augur's **`~/data/main/`** directory.

4. In Part 3, Step 5 you will rename your existing Augur server from its default name (**`local`**). In that step, you should also reconfigure your existing gateways and messengers to reference one of the new Augur server names.