Zeus Quick Start Guide

1. Introduction

Zeus software has been selected to provide a high-availability, application specific load balancing solution for use in conjunction with WANdisco Clustering products.

This brief quick start guide shows you how to set up the Zeus software to load balance between nodes in a Subversion MultiSite cluster.

1.1 Before you begin

> **!** You **must** install, configure and start Zeus software as the Root user. Root privileges are necessary to bind to the restricted lower ports.

You may login as the Root user with the following:

```
su
Password: ********
```

> **!** Ensure that you have your **Zeus license key** saved to your installation directory (e.g. `/usr/local/zeus`) before starting.
> We would have sent you the license key via email, contact WANdisco sales if you're unable to find your license key.
> See Installing a new Zeus license

2. Downloading Zeus Software

This sections shows you how to get the Zeus software.

- **2.1** Download the Zeus software from the WANdisco download website to your installation server.

Software Download Page

Name	Download		Size	MD5 Checksum
Subversion MultiSite v3.7 build 2616	svnrep.tar.gz	Release Notes	8.0 MB	0b1c18b2ec4695249a25eab2817c1818
Zeus Load Balancer 6.0r4 - Linux x86_64	ZeusTM_60r4_Linux-x86_64.tgz		48 MB	146bbd2acd77d6e9b173f26c53d9a99d
Zeus Load Balancer 6.0r4 - Linux x86	ZeusTM_60r4_Linux-x86.tgz		47 MB	9a54726526d9b04152d1037836f0a26b

By using software of WANdisco, Inc. or its subsidiaries ("WANdisco"), you agree to the terms and conditions of the license agreement you have entered into with WANdisco. For more details, please refer to that license agreement.

Ensure you download the appropriate (32-bit or 64-bit) version.

> **!** Zeus software requires approximately **250MB** of disk space during installation.
> Removing temporary installation files cuts the required drive space to about **100MB**.

- **2.2** Extract the archive file to the install directory (i.e. `/usr/local/zeus`), where you saved your license key.
  You might use the tar command:

  ```
  tar -zxvf ZeusTM_60r3_Linux-x86.tgz
  ```

- **2.3** Change to the new Zeus directory:

  ```
  • cd ZeusTM_60r3_Linux-x86
  ```

```
total 101048
-rw-rw-r-- 1 root sys  8355840 2010-01-20 07:42 admin-6.0r3.tar
drwxrwxr-x 4 root sys     4096 2010-01-20 07:42 common
-r--r--r-- 1 root sys    24677 2010-01-20 07:42 LICENSE
-rw-rw-r-- 1 root sys     1801 2010-01-20 07:42 MANIFEST
-r--r--r-- 1 root sys     5105 2010-01-20 07:42 README
-r--r--r-- 1 root sys   122416 2010-01-20 07:42 RELEASE_NOTES
-r--r--r-- 1 root sys   838058 2010-01-20 07:42 Zeus_6.0_Software_Getting_Started.pdf
-r--r--r-- 1 root sys  3700472 2010-01-20 07:42 Zeus_6.0_User_Manual.pdf
-r-xr-xr-x 1 root sys     9008 2010-01-20 07:42 zinstall
-rw-rw-r-- 1 root sys 54958080 2010-01-20 07:42 zxtm-6.0r3.tar
-rw-rw-r-- 1 root sys 16916480 2010-01-20 07:42 zxtmadmin-6.0r3.tar
-rw-rw-r-- 1 root sys    10240 2010-01-20 07:42 zxtmadmin_lang_en_gb-6.0r3.tar
-rw-rw-r-- 1 root sys 18503680 2010-01-20 07:42 zxtmadmin_lang_en_us-6.0r3.tar
```

3. Installing Zeus Software

This section covers the software installation.

- **3.1** From the Zeus install directory (see step 2.3), run the installer by entering the command

  ```
  ./zinstall
  ```

- **3.2** Read through the product license, press return to read to the end. Type in "accept" to continue with the installation.

```
12.10  Contracts (Rights of Third  Parties) Act.   The Contracts (Rights
       of Third Parties) Act 1999 shall not apply to this Agreement and
       nothing in this  Agreement confers or purports to  confer on any
       third party any benefit or any right to enforce any term of this
       Agreement  or operates  to give  any  third party  the right  to
       enforce any term of  this Agreement except as expressly provided
       herein.

Enter `accept' to accept this license, or press return to abort: accept
```

- **3.3** You'll be prompted for an installation path. Press **Enter** to accept the default path `/usr/local/zeus`.

  ```
  Enter `accept' to accept this license, or press return to abort: accept

  Where should the product be installed? [/usr/local/zeus]:
  ```

  > **!** You can install the software anywhere on your file system, but you should not install it in the same directory as any other Zeus products.

- **3.4** The Zeus software is now installed, you're prompted to continue with the setup. Click **Enter** to proceed.

  ```
  This program will install the Zeus Traffic Manager product.
  Installing zxtm-6.0r3...
  Installing admin-6.0r3...
  Installing zxtmadmin-6.0r3...
  Installing zxtmadmin_lang_en_us-6.0r3...
  Installing zxtmadmin_lang_en_gb-6.0r3...

  Zeus Traffic Manager is now installed in /usr/local/zeus.

  Are you ready to perform the initial configuration now ? (Y/N) [Y]:
  ```

  If you choose to complete the configuration later, you can return to this point in the setup by running

  ```
  <ZEUSHOME>/zxtm/configure
  ```

- **3.5** Enter the absolute path to the Zeus software license key (we'll have provided this in an email) and click **Enter**.

```
Are you ready to perform the initial configuration now ? (Y/N) [Y]: Y

Running /usr/local/zeus/zxtm/configure

Zeus Configuration Program - Copyright (C) Zeus Technology 2010

This program will perform the initial configuration of the
Zeus Traffic Manager.

This product requires a valid license key file to run.
It will run in unlicensed mode if none is supplied.

Enter the key filename, or leave blank for unlicensed mode: /usr/local/zeus/ztm.key

Copying license key... done
```

! If you continue to install without referencing a license key, you'll complete the installation in "**unlicensed mode**", in which the software will start, but will not allow you to configure and run any services.

- **3.6** Enter an owning *user* and *group* for the zxtm process, or click **Enter** to leave it unrestricted.

```
Copying license key... done

Choose a UNIX user for the zxtm process to run as [nobody]:

Choose a UNIX group for the zxtm process to run as [nobody]:
```

! The Zeus software must be configured and started as root, but it can be run as any user. Running the process with no privileges ensures that it can never be used to compromise the security of your system.

- **3.7** The management of the Zeus software can be restricted to a single IP for improved security.
  To restrict management access to a single IP, enter **Y**. Otherwise enter **N**.

```
Zeus Traffic Manager can be configured to only allow management on one specific IP
address. This restricts all admin server access, SOAP management and
other control information to this IP. This setup is useful if you want
to completely separate your public and private networks.
Would you like to restrict Zeus Traffic Manager management to one IP? Y/N [N]: Y
```

- **3.8** If you selected **Y** in step **3.8** you'll be prompted for the IP address on which the Zeus software can be managed.

```
Please enter the IP address to use: 10.2.5.62
```

- **3.9** For the first installation you'll be creating a new cluster, option "**C**". Just press **Enter**.

```
Searching for Zeus Traffic Manager clusters... done

Which Zeus Traffic Manager cluster should this installation be added to?

C) Create a new cluster
1) Cluster 1:localhost:9090
S) Specify another machine to contact
R) Refresh the cluster list

Select option [C]: ▮
```

The Zeus installer is able to detect pre-existing Zeus clusters on the network. When installing additional load balancers, you're able to add them automatically to a pre-exiting cluster. If you add the load balancer to an existing cluster, it will automatically inherit the settings of the load balancers already in the cluster.

- **3.10** Select a password to use when logging in to the Zeus Administration Server. The Username is automatically "**admin**".

```
Please choose a password for the admin server:
Re-enter:
```

- **3.11** To set the Zeus software to automatically start when the server boots, enter "**Y**". Otherwise, enter "**N**".

```
Zeus Traffic Manager can be installed so that it automatically runs
when this computer boots.

Would you like Zeus Traffic Manager to start at boot time? Y/N [Y]: Y

Start script linked into /etc/rc5.d/S85zeus

Configuration successful

Starting Zeus Traffic Manager Software... █
```

- **3.12** The setup configuration is now complete. The Zeus software will start up and you'll be directed to the web interface of the Zeus Administration Server.

```
Configuration successful

Starting Zeus Traffic Manager Software... OK

**
** To configure the Zeus Traffic Manager, please go to
** localhost:9090
** and login as 'admin' with your admin password
**

Please read the release notes (/usr/local/zeus/zxtm/RELEASE_NOTES)

[root@Fed11-2 ZeusTM 60r3 Linux-x86]# █
```

Open a browser and point it at

```
https://<Server IP or hostname>:9090/
```

When you access the website for the first time you will see an error message because of the invalid SSL certificate. Nevertheless, the connection is completely encrypted and you can safely confirm the error message.

4. Integrate Zeus Software with WANdisco

This section covers the software installation.

- **4.1** Enter the Zeus Administration Server with the Username "**admin**" and the password that you provided in step **3.11**. Click **Login**.
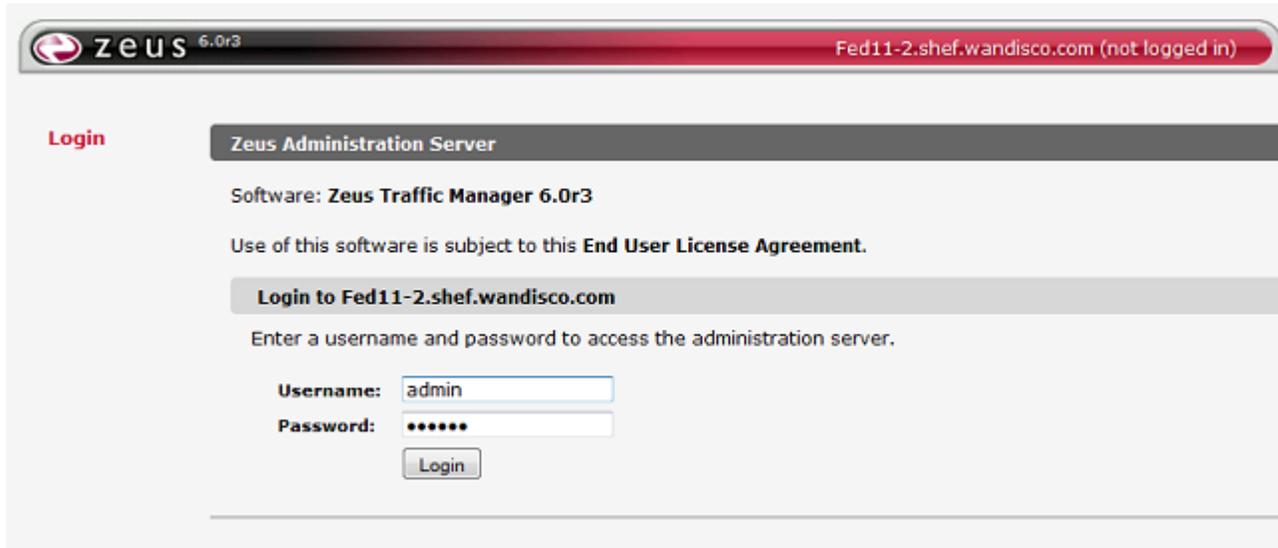
- **4.2** The Zeus Administration Server is broken down into four areas, The *Menu bar*, *Traffic Managers Bar*, *Services* and *Events Log*.
  Click on the **Help** button on the menu bar for a brief explanation of what everything does.
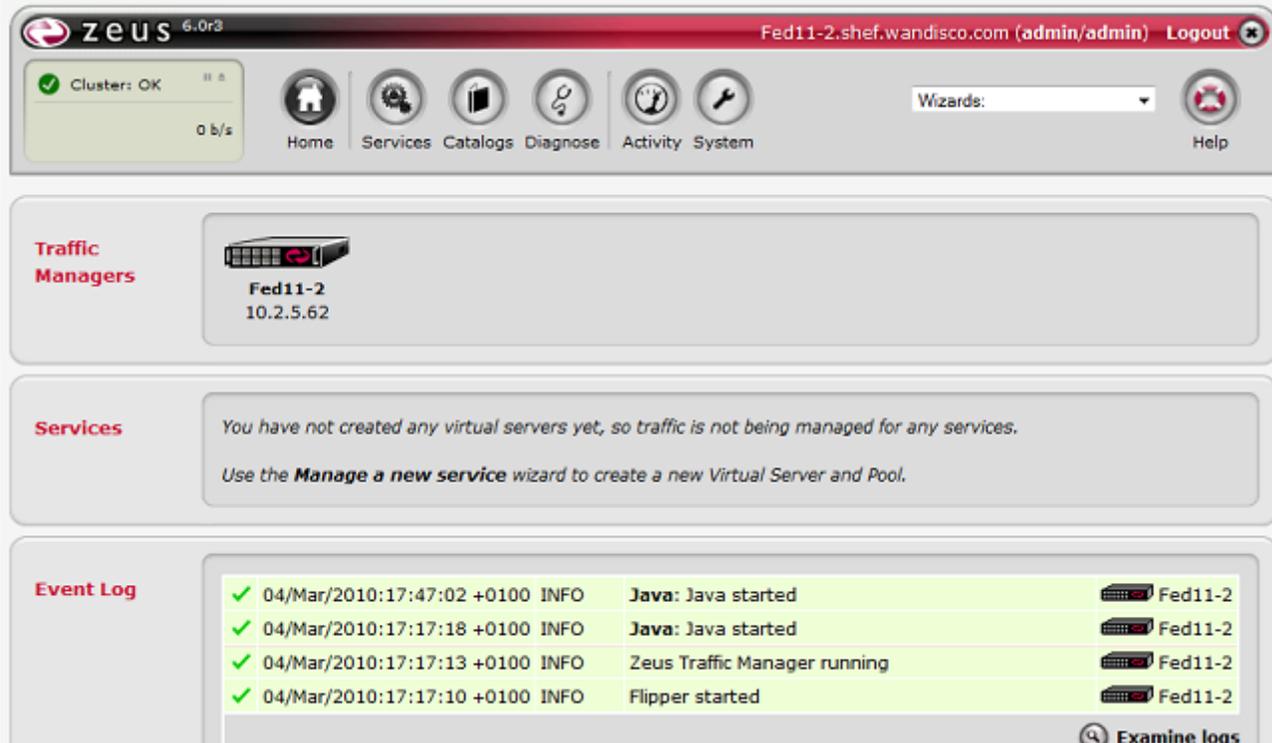
- **4.3** Next, add a service, using the first option "**Manage a new service**" from the "*Wizards:*" drop-down menu.

- **4.4** A pop-up window will appear, beginning a series of 4 steps for adding a new service (virtual server). Click **Next**.

- **4.5** Enter a name for the service, and confirm what protocol and port it will use.

Manage a new Service, step 2 of 4

2. Specify the service

Please enter a brief name to identify the service you would like to balance.

Name: WANdisco SVN Traffic

Please select the protocol that the service uses.

Protocol: HTTP

Please specify the port that the protocol listens on.

Port: 80

- **4.6** Enter the IP address and port for each of your WANdisco nodes.

Manage a new Service, step 3 of 4

3. Specify the back-end nodes

Please enter the hostname and port of each node:

Hostname: 10.2.5.25   Port: 80   Add Node

Nodes:

To remove a node from the list, select it and press 'Remove node': Remove Node

- **4.7** The wizard ends with a Summary of your settings. In example shown below it confirms that web (port80) traffic will be load balanced across the cluster on a selected port (in this case, port 5000). Click **Finish** to close the wizard and return to the main screen.

Manage a new Service, step 4 of 4

4. Summary

You have chosen to create a virtual server with the following settings:

Description: Wandisco SVN Traffic

Protocol: http, port 80

This virtual server will balance traffic onto the following nodes:

Nodes: 10.2.5.25:80

To create this service, press 'Finish'. To change your settings, press 'Back'.

- **4.8** You need to make a change to the default settings of the WANdisco service you just created. Click on the title link on the *Default Pool*.

!WANdisco's replication technology doesn't support the load balancing of a single session, applying IP-based session persistence ensures that each client session is pinned to a single node in the cluster.

- **4.9** On the Pool's settings, click **Edit** on the **Session Persistence** bar.

- **4.10** Click on the **Create New Session Persistence Class** link.

- **4.11** Enter a name, such as "**IP Persistence**", click on the checkbox to associate the persistence with the WANdisco pool, then click the **Create Class** button.

- **4.12** Set the basic settings of the Persistence, by assigning the following values using the radio buttons.

    o   Which session method should be used? **IP-based persistence**
    o   What action should the pool take if the session data is invalid or cannot contact the node specified by the session? **Choose a new node to use**
    o   When a session failure occurs, should the session be deleted? **Yes**

- **4.13** Click the **Update** button to Apply Changes.

- **4.14** Confirm that the configuration update has been accepted.

The Zeus software has been successfully set up. You should repeat the process for any additional load balancers you wish to add to the cluster.

- **4.15** Back on the Pool's settings screen, **edit** the **Timeout Settings**.
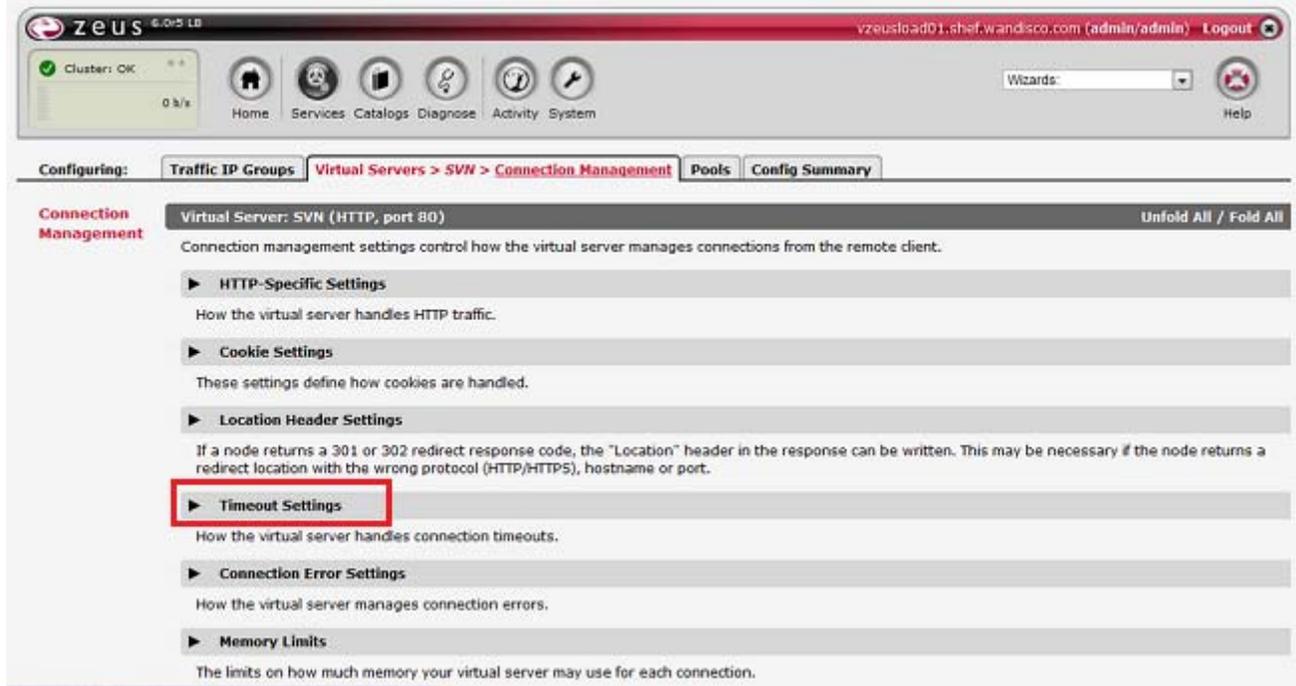
- **4.16** Update the **connect_timeout**, **keepalive_timeout** and **timeout** values to **0**.
  Then click **Update** under the 'Apply Changes' at the bottom of the screen.
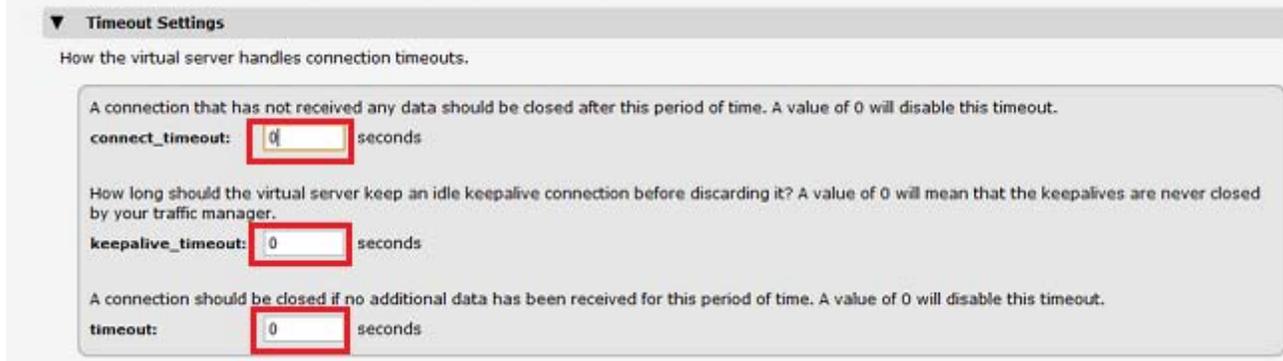
- **4.17** Test that the Zeus software is handling traffic. Browse to one of your WANdisco
  nodes, using the port you assigned for load balancing (port 80 was used as an
  example in step **4.5** although it can be any port).

  You'll be able to access the node on the load balancing port, and also see the traffic
  management details by viewing the **Connections** tab on the **Activity** section of the
  Zeus Administration Server screen.
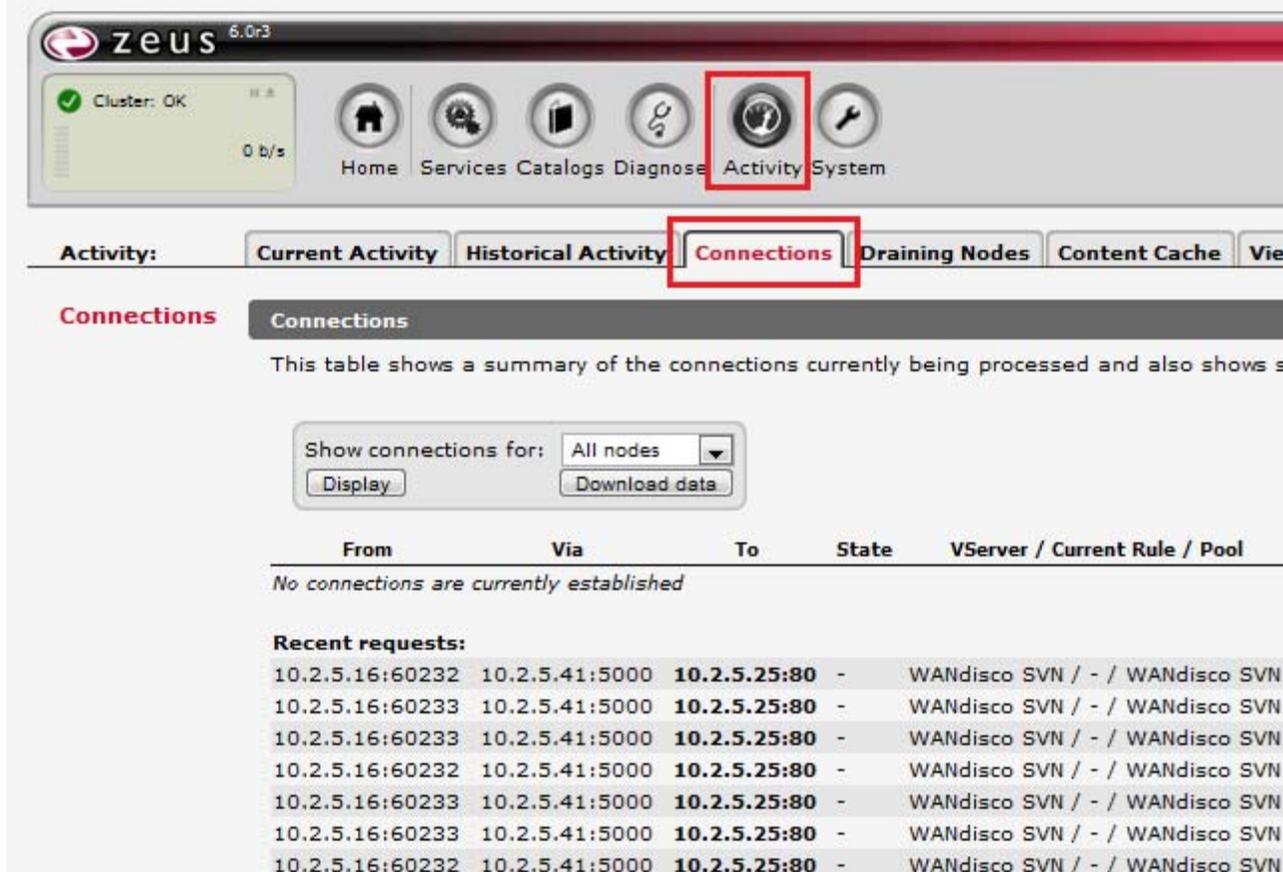
The Zeus software has been successfully set up. You should repeat the process for any additional load balancers you wish to add to the cluster

5. Basic Operations

Stopping Zeus Software

You can stop the software running by running the following command (as root):

```
<ZEUSHOME>/stop-zeus
```

Starting Zeus Software

The Zeus software starts automatically at the end of the configuration sequence. Having stopped the software you can restart it using the following command (as root):

```
<ZEUSHOME>/start-zeus
```

Changing the Zeus Software configuration

You can re-run the configure script to change any or all of the settings that were chosen in section 4. or you can use it to remove the software cleanly from your machine and any cluster it was in, before clearing the installation files from your machine.

```
<ZEUSHOME>/zxtm/configure
```

Installing a new Zeus license

You don't need to have a valid license installed in order to start the Zeus service or web interface, however, you should use this procedure to install your license before going into production.

1. Open the Zeus web interface and click on the **System** button on the top menu bar.

2. Click on the **Licenses** tab.

3. Click on **Browse** and find your license key file. Then Click **Install Key**.

4. You can now view your license details by clicking on the small triangle next to the license entry. Should you need to, you can remove the license by clicking on the

checkbox and clicking the **Removed Selected Keys** button.

The following license keys are installed on your traffic manager:

License Serial	Details	Remove
200 ▼	Used by traffic managers: localhost.localdomain	
	Product: Zeus Traffic Manager	
	Platforms: Linux	
	Issued: Wed Feb 24 00:00:00 2010	
	Expires: Tue Aug 31 11:00:00 2010	☐
	Cluster size: unlimited	
	Additional Info: ▶	
	Customer Info: NFR License	
	Customer ID: CCPI	

Remove Selected Keys

6. Setting up IP Sharing

With IP sharing you can ensure that the multi-hosted IP module shares incoming data traffic for an IP address across multiple hosts in a cluster. This has the advantage of evening out the load distributed across every active node, even when some nodes have failed.

Single-hosted traffic IPs often end up with an uneven distribution of load when failure occurs, as an entire IP's load is transferred to a single machine when the original host fails.

Requirements

- **Operating system:** Linux
- **Kernal Versions:** 2.6.8.1 - 2.6.31
- **Zeus Software Version:**
  - **IP Transparency:** 4.0 or higher
  - **Multi-hosted IPs:** 6.0 or greater
- **IP Transparency module (ztrans)** (click to download)

6.1 Install Zeus on two machines.

6.2 Install the IP Transparency module: (**ztrans**)

6.3 Ensure the kernel headers package is installed for the kernal/distribution you are using.

6.4 Unpack the Zeus modules tarball, and cd into the directory created:

```
# tar -xzf zeus_modules_installer-2.1.tgz; cd
  zeus_modules_installer-2.1
```

6.5 To install all modules, login as root, run the installation script "*install_modules.pl*":

```
# ./install_modules.pl
```

6.6 The script will attempt to build and install both the kernel modules, and should give you a helpful error message if it fails. If you have problems, see the Kernel Modules installation guide PDF provided by Zeus.

6.7 Restart Zeus on both nodes:

```
# /etc/init.d/zeus restart
```

6.8 Check both Zeus nodes are running, then from the Zeus Administration Server click on the drop-down wizard and select **Join a cluster**
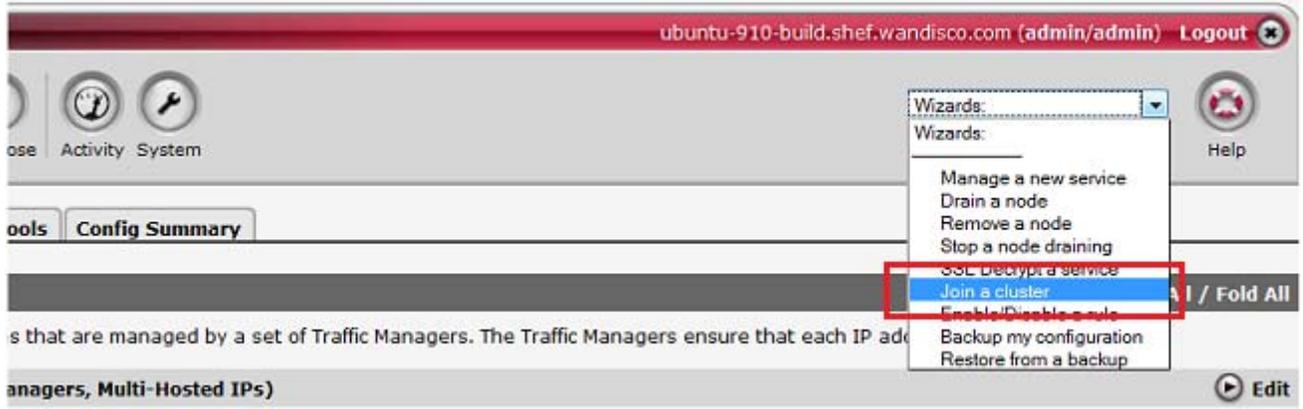
6.9 Follow the wizard to complete the clustering, selecting which other Zeus node you wish to join in the new cluster.

6.10 It's now time to configure a traffic IP group. From the Zeus Administration Server go to **Services > Traffic IP Groups**.

6.11 Under the "*Create a new Traffic IP Group*" section fill in as a per this screenshot:

6.12 Once you have a traffic IP group you can bind services to it as shown below:

6.13 IP Sharing is now set up.
For more information visit the [Zeus Knowledge Hub](#)

Troubleshooting

The following articles may help you if you problems relating to your Zeus IP Sharing:

[Why Can't users connect to my multi-host?](#)
[Multi-hosted IP addresses with Zeus Software](#)
[Zeus Timeout Settings](#)

7. Installing the node monitoring script

We provide a script, `zeus_read_only_monitor.pl` that can be used to monitor the status of your cluster nodes, should a node become read-only, the Zeus software will then drop the node from the pool to ensure continued load balancing of the remaining nodes. Once you have the script, follow this procedure to install it.
The monitoring script has been tested on Zeus Software up to version 3.7.10. Contact us if you need to run the monitor on a later version.

7.1 Copy the script `zeus_read_only_monitor.pl` to your Zeus server, placing it here:

```
/usr/local/zeus/<zxlb-(version) or zxtm-
(version)>/conf/scripts/
```

e.g. /usr/local/zeus/zxtm-6.0r4/conf/scripts

7.2 Go to the Zeus web interface, e.g.

```
https://<Server IP or hostname>:9090/
```

7.3 Click on the **Catalogs** link.

7.4 Click on the **Monitors** tab.

7.5 Go to the bottom of the Monitors screen and complete the **Create new monitor** form.

Name: Enter a name for the monitor.
type: Select **External program monitor...** and then select the **read_only_monitor.pl** script from the dropdown.
scope: Select **Monitor each node separately**, then click **Create Monitor**. The page will refresh to confirm that the configuration has been updated.

7.6 Click on the **Services** button.

7.7 Click on the **Pools** tab.

7.8 Click on your chosen pool's **Edit** link.
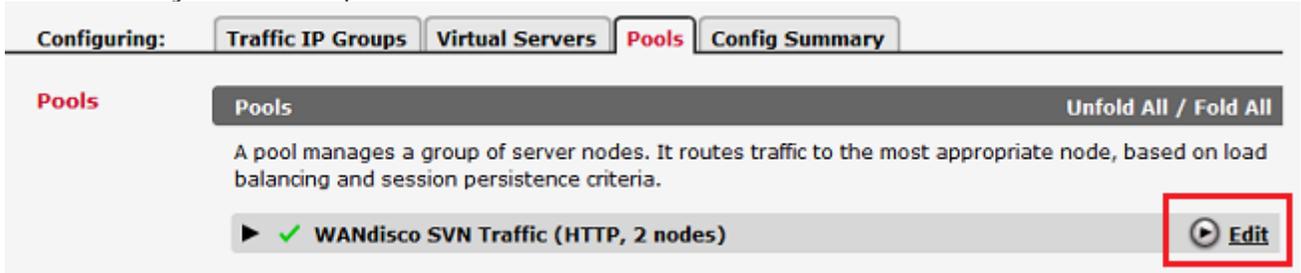
7.9 Click on the **Edit** link for the Health Monitoring section.

7.10 Select your new monitor from the dropdown and click **Add Monitor**. Ensure that the Passive monitoring is set to **Yes**, if not select it and click **Update**.

The monitor script is now installed. It's important that if you upgrade your version of the Zeus software that you check back with WANdisco to ensure that the script remains compatible

8. Getting more help

Documentation

You can download a copy of the **Zeus software User Manual** for information about advanced configuration, function and troubleshooting.

Knowledge Hub

Go to the Zeus Knowledge Hub **http://knowledgehub.zeus.com/docs** for support, knowledgebase articles and further documentation.