

## SETTING UP DSH ON A CLUSTER

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DSH stands for both Distributed SHell or Dancers SHell and is very useful in the administration of several networked machines running (preferably password-less) ssh. It is especially useful in the administration of a computer cluster in which there is one master node and several slave nodes. DSH allows an administrator to run a command or script on several nodes at once, eliminating the need to ssh each node one at a time. Two instruction types are given: one for GNU/Debian based systems (this includes such distributions as Ubuntu) and one for other distributions. The regular install method has not been personally tested, but should work none-the-less. If you find an error, please contact us and let us know so tht it may be corrected.

### GNU/Debian Based:

This is done by running the command “apt-get install dsh”.

### Regular Install:

First, libdshconfig needs to be compiled and installed then dsh needs to be compiled and installed. The source tar balls can be obtained from the dsh home page at:

<<http://www.netfort.gr.jp/~dancer/software/downloads/list.cgi>>.

After downloading, run the following series of commands:

```
master$ tar xzf libdshconfig*.tar.gz;
master$ cd libdshconfig-*
master$ ./configure ; make
master$ make install
master$ tar xzf dsh*.tar.gz;
master$ cd dsh-*
master$ ./configure ; make
master$ make install
```

### Post-Install Configuration:

Of all the post-installation configuration changes that can be made, the most crucial and possibly only is to edit the list of machines to connect to. This file is ‘/etc/dsh/machines.list’ and should contain either a hostname or IP address entry per line for each of your machines. You can then make a symlink group file in the /etc/dsh/group/ directory. For example, you can place all the nodes in a group by running the command ‘cd /etc/dsh/group && ln -s ../machines.list nodes’. Other groups can be created manually by adding select ip addresses similar to a \*.list file similar setting up the machine list file and then creating a symlink file for the previous example.

Also, check the /etc/dsh/dsh.conf file to make sure that the remoteshell variable is set to

'ssh' instead of 'rsh' (assuming you are using ssh) and the waitshell variable to '0'.

### **Basic Use:**

The main format of executing a command with dsh takes the form:

```
master$ dsh [switch option] -- '[command/shell to exec]'
```

The common switch options are:

- a Uses all machines
- g Followed by group, only uses machines in specific group file
- c Uses concurrent connections
- w Waits for a machine to finish before moving to the next
- v Verbose output
- M Shows machine name

For example, the following command would be used to shut down all machines at 1 am:

```
master$ dsh -a -- 'shutdown -h 01:00'
```

### References:

- Maxwell, Doug. Geek Pit: Remotely Administering Groups of Servers With DSH and SSH. 12 Mar 2006. Accessed: 26 Dec 2006. <<http://geekpit.blogspot.com/2006/03/remotely-administering-groups-of.html>>
- Uekawa, Junichi. DSH - dancer's shell / distributed shell. 16 May 2005. Accessed: 10 Dec 2006. <<http://www.netfort.gr.jp/~dancer/software/dsh.html.en>>