Geoserver Clustering and load Balancing with Haproxy and Tomcat servlets

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Apache Tomcat

Apache Tomcat is an open source software implementation of the Java Servlet and JavaServer Pages technologies. Apache Tomcat powers numerous large-scale, mission-critical web applications across a diverse range of industries and organizations.

HAProxy

HAProxy is a free, very fast and reliable solution offering high availability, load balancing, and proxying for TCP and HTTP-based applications. It is particularly suited for web sites crawling under very high loads while needing persistence or Layer7 processing. It is written in C and has a reputation for being fast and efficient (in terms of processor and memory usage)
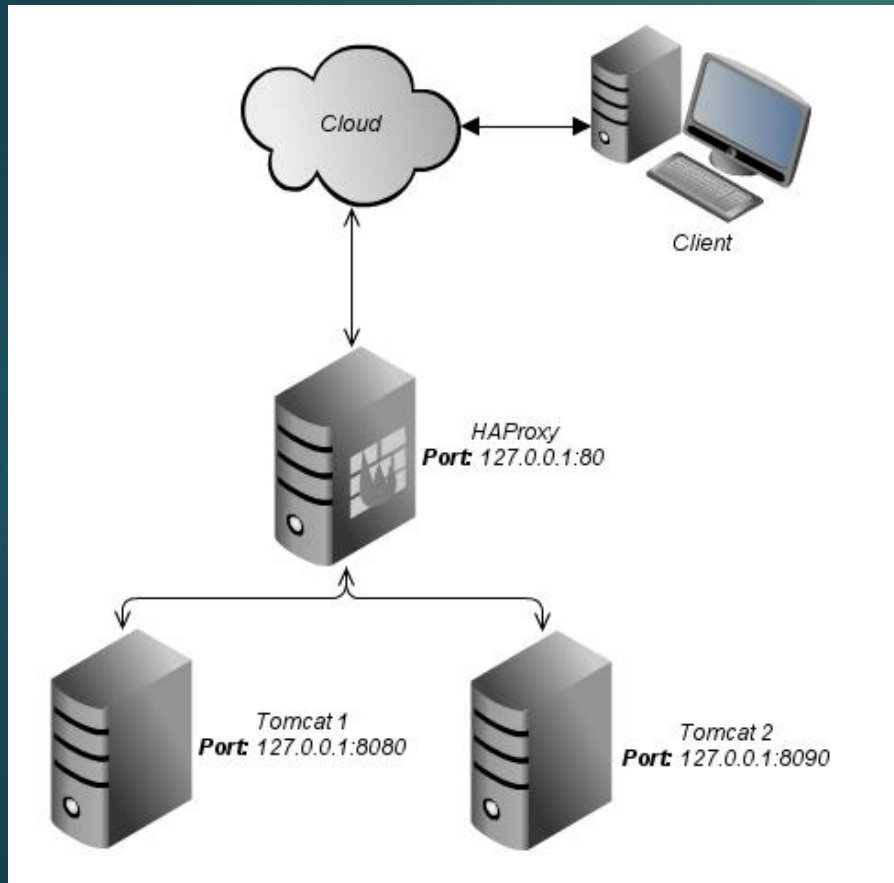
Geoserver

GeoServer is an open source server written in Java that allows users to share, process and edit geospatial data. Designed for interoperability, it publishes data from any major spatial data source using open standards. GeoServer has evolved to become an easy method of connecting existing information to Virtual Globes such as Google Earth and NASA World Wind as well as to web-based maps such as OpenLayers, Google Maps and Bing Maps.

Apache Jmeter

It is an open source software, a 100% pure Java application designed to load test functional behavior and measure performance. It was originally designed for testing Web Applications but has since expanded to other test functions.

Load Balancing with HAProxy

Methodology

- Setting up Java platform
- Installing Tomcat and running two Tomcat Instances independently at different ports
- Installing HAProxy and configuring it
- Configuring Tomcat to share sessions
- Installing Geoserver in Tomcat servelets
- Using Jmeter to test the load Balancing with HAProxy

```
mahesh@mahesh-X550CC: ~

mahesh@mahesh-X550CC:~$ cd Desktop
mahesh@mahesh-X550CC:~/Desktop$ cd tomcat1/bin/
mahesh@mahesh-X550CC:~/Desktop/tomcat1/bin$ ./startup.sh
Using CATALINA_BASE:   /home/mahesh/Desktop/tomcat1
Using CATALINA_HOME:   /home/mahesh/Desktop/tomcat1
Using CATALINA_TMPDIR: /home/mahesh/Desktop/tomcat1/temp
Using JRE_HOME:        /usr/lib/jvm/java-7-openjdk-amd64/
Using CLASSPATH:       /home/mahesh/Desktop/tomcat1/bin/bootstrap.jar:/home/mahe
sh/Desktop/tomcat1/bin/tomcat-juli.jar
Tomcat started.
mahesh@mahesh-X550CC:~/Desktop/tomcat1/bin$ cd ~
mahesh@mahesh-X550CC:~$ sudo haproxy -f /etc/default/haproxy.cfg
[sudo] password for mahesh:
mahesh@mahesh-X550CC:~$ haproxy
HA-Proxy version 1.4.24 2013/06/17
Copyright 2000-2013 Willy Tarreau <w@1wt.eu>

Usage : haproxy [-f <cfgfile>]* [ -vdVD ] [ -n <maxconn> ] [ -N <maxpconn> ]
        [ -p <pidfile> ] [ -m <max megs> ]
        -v displays version ; -vv shows known build options.
        -d enters debug mode ; -db only disables background mode.
        -V enters verbose mode (disables quiet mode)
        -D goes daemon
        -q quiet mode : don't display messages
        -c check mode : only check config files and exit
        -n sets the maximum total # of connections (2000)
        -m limits the usable amount of memory (in MB)
        -N sets the default, per-proxy maximum # of connections (2000)
        -p writes pids of all children to this file
        -de disables epoll() usage even when available
        -ds disables speculative epoll() usage even when available
        -dp disables poll() usage even when available
        -dS disables splice usage (broken on old kernels)
        -sf/-st [pid ]* finishes/terminates old pids. Must be last arguments.


mahesh@mahesh-X550CC:~$ █
```

Apache Tomcat/7.0.69 ✕   Apache Tomcat   Apache Tomcat/7.0.69 ✕   Apache Tomcat/7.0.69 ✕   Statistics Report fo... ✕   ➕

http://localhost:8081   http://localhost:8082   🔍 Search

Home Documentation   Home   Documentation   Configuration   Examples   Wiki   Mailing Lists

Apache Tomcat/7.0.69

The Apache Softw
http://www

If you're seeing this, you've successfully installed Tomcat. Congratulations!

Recommended Reading:

Security Considerations HOW-TO

Manager Application HOW-TO

Clustering/Session Replication HOW-TO

Developer Quick Start

Tomcat Setup	Realms & AAA	Examples	Servlet Specifi
First Web Application	JDBC DataSources		Tomcat Versior

Managing Tomcat

For security, access to the **manager webapp** is restricted. Users are defined in:

`$CATALINA_HOME/conf/tomcat-users.xml`

In Tomcat 7.0 access to the manager application is split between different users.

Read more...

Documentation

Tomcat 7.0 Documentation

Tomcat 7.0 Configuration

Tomcat Wiki

Find additional important configuration information in:

`$CATALINA_HOME/RUNNING.txt`

Getting Help

FAQ and **Mailing Li**

The following mailing li

tomcat-announce
Important announcemer
vulnerability notification

tomcat-users
User support and discuss

(Left window — partial)

Apache Tomcat/7.0

Rec
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Developer Quick Start

Tomcat Setup

First Web Application

Managing Tomcat

For security, access to the **man** is restricted. Users are defined

`$CATALINA_HOME/conf/tomcat-u`

In Tomcat 7.0 access to the ma application is split between diff
Read more...

Release Notes

Changelog

Apache Tomcat/7.0.69   Apache Tomcat/7.0.69   Statistics Report fo...

http://localhost/admin?stats

HAProxy

Statistics Report for pid 2464

> General process information

pid = 2464 (process #1, nbproc = 1)
uptime = 0d 0h01m18s
system limits: memmax = unlimited; ulimit-n = 8205
maxsock = 8205; **maxconn** = 4096; **maxpipes** = 0
current conns = 1; current pipes = 0/0
Running tasks: 1/3

- active UP
- active UP, going down
- active DOWN, going up
- active or backup DOWN
- active or backup DOWN for maintenance (MAINT)

- backup UP
- backup UP, going down
- backup DOWN, going up
- not checked

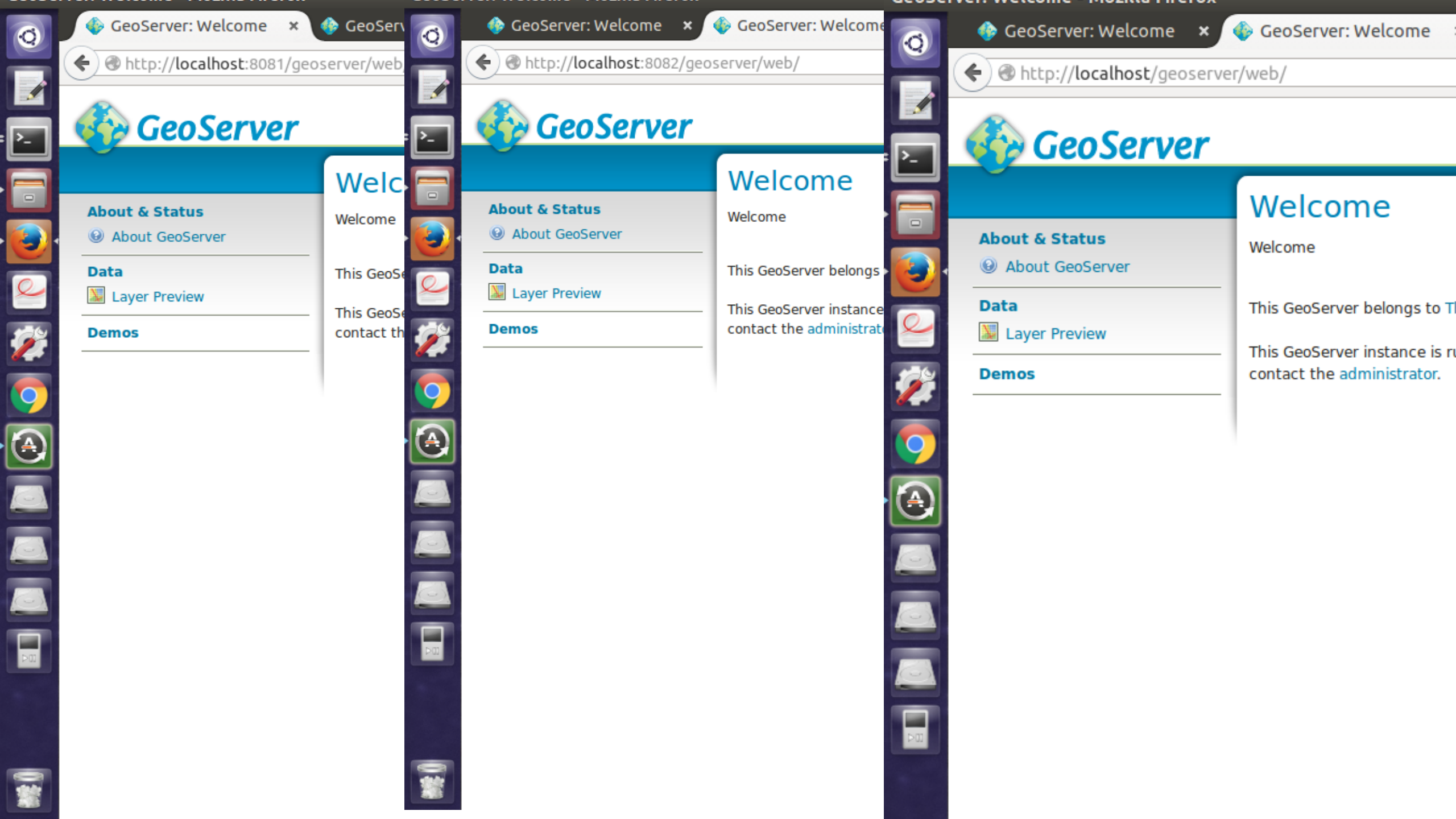Note: UP with load-balancing disabled is reported as "NOLB".

Display option:
- Hide 'DOWN' servers
- Disable refresh
- Refresh now
- CSV export

External resources:
- Primary site
- Updates (v1.4)
- Online manual

servers

	Queue			Session rate			Sessions					Bytes		Denied		Errors			Warnings		Server								
	Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status	LastChk	Wght	Act	Bck	Chk	Dwn	Dwntme	Thrtle
tomcat1	0	0	-	0	0	-	0	0	-	0	0	0	0		0		0	0	0	0	1m3s UP	L7OK/200 in 7ms	1	Y	-	0	1	10s	-
tomcat2	0	0	-	0	0	-	0	0	-	0	0	0	0		0		0	0	0	0	29s UP	L7OK/200 in 3ms	1	Y	-	0	1	41s	-
Backend	0	0		1	1		1	1	0	5	0	1 361	24 703	0	0		0	0	0	0	1m3s UP		2	2	0		1	7s	

Thank You

BY

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