

PingER2 at SLAC

Introduction

PingER2 at SLAC resides under `/afs/slac/package/pinger/pinger2/share/pinger/`. This directory contains all the scripts, needed by PingER2 except for `wget`, `ping`, `ping6`, `dig`, and other similar standard Linux binaries. The directory contains:

pinger.xml

- These files contain the configuration values for pinger2. They are created atomically every 6 hours from the Oracle NODEDETAILS database as a result of running [write_offsitenodes.pl](#) from the `pinger@pinger.slac.stanford.edu` [trscronjob](#). There are actually two files:
 - For the SLAC monitoring host: `/afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pinger.xml`
 - For other (non-SLAC) monitoring hosts: <http://www-iepm.slac.stanford.edu/pinger/pinger.xml>
 - Non-SLAC hosts by default update their beacons every 30 days.
- The last update time can be found by:

```
cottrell@pinger $ ls -l /afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pinger.xml
```

```
-rw-r--r-- 1 fahad sg 233552 Dec 27 09:51 /afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pinger.xml
```

- This file has four parts:
 - Beacon List, containing a list of all the beacon sites.
 - Beacon List Config, containing configuration values for the beacon list. This includes:
 - BeaconListURL: Location of beacon.txt file
 - HttpGetBin: Location of lynx
 - RefreshInterval: Used to determine, when the list should be refreshed.
 - DataDirectory: Indicating where the data gathered by PingER2 should reside.
 - DefaultHost: Values here determine what a default host looks like. For the host list, any value that is not in there for a host is picked up from here.
 - It is advised that DNS Caching be turned off, to cause PingER2 to do a new DNS request every time.
 - PingER2 throws all the error messages at the same time when the time to the notification is achieved. The default value is 12 hours. If you wish to store this information instead, in a log file, replace the

```
<AlarmCmd>echo &quot;%message\n-----\n&quot; &gt;&gt; /afs/slac.stanford.edu  
/package/pinger/pinger2/share/pinger/pinger.log </AlarmCmd>
```

- HostList: List of hosts, PingER2 gathers data from.
- Final Configuration values:

```
&nbsp; <MaxProcessCount>25</MaxProcessCount>  
&nbsp; <PingV4Cmd>/bin/ping \-n \-w %deadline \-c %count \-i %interval \-s %packetsize %  
destination</PingV4Cmd>  
&nbsp; <PingV6Cmd>/bin/ping6 \-n \-w %deadline \-c %count \-i %interval \-s %packetsize %  
destination</PingV6Cmd>  
&nbsp; <SrcName>pinger.slac.stanford.edu</SrcName>  
&nbsp; <Version>2.0.1</Version>  
&nbsp; <dnsV4Cmd>/afs/slac/package/pinger/pinger2/share/pinger/dnsV4Cmd.pl %destination</dnsV4Cmd>  
&nbsp; <dnsV6Cmd>/usr/bin/dig \-t aaaa \+short %destination</dnsV6Cmd>  
&nbsp; <doRandomWait>false</doRandomWait>  
&nbsp; <modifiedTime>Tue Feb&nbsp;&nbsp;&nbsp; 9 17:17:31 2010</modifiedTime>  
&nbsp; <waitInterval>30</waitInterval>
```

pinger2.pl

The main, perl script to do all the PingER2 tasks, including ping. There is [detailed information on the Pinger data Flow](#).

- Example of IPv6 output:

```
saqibali ~ ubuntu@iaas-2017-12-01-19-23-23: /usr/local/share/pinger/data — ssh ubuntu@2001:da8:270:2018:f816:3eff:fe3:bd3 — 177x47  
2001:da8:270:2018:f816:3eff:fe3:bd3 2001:da8:270:2018:f816:3eff:fe3:bd3 www.internetsociety.org 2001:41c8:20:b31a:100 1512548462 10 10 294.181 301.760 316.978 1 2 3 4 5 6 7 8  
9 10 296 298 316 295 306 294 301 301 318 296  
2001:da8:270:2018:f816:3eff:fe3:bd3 2001:da8:270:2018:f816:3eff:fe3:bd3 www.he.net 2001:470:8:76::12 100 1512548462 10 10 164.468 169.851 180.676 1 2 3 4 5 6 7 8 9 10 167 164 1  
65 165 171 166 168 168 179 180  
2001:da8:270:2018:f816:3eff:fe3:bd3 2001:da8:270:2018:f816:3eff:fe3:bd3 www.ipv6tf.org 2001:470:1f1d:275::17 100 1512548462 10 10 320.591 327.358 340.644 1 2 3 4 5 6 7 8 9 10 3  
21 320 323 323 324 320 331 340 334 332  
2001:da8:270:2018:f816:3eff:fe3:bd3 2001:da8:270:2018:f816:3eff:fe3:bd3 www.tunnelbroker.net 2001:470:0:63::12 100 1512548463 10 10 164.400 169.779 179.525 1 2 3 4 5 6 7 8 9 10  
165 168 168 171 167 165 168 179 179 164  
2001:da8:270:2018:f816:3eff:fe3:bd3 2001:da8:270:2018:f816:3eff:fe3:bd3 www.deus-exmachina.net 2001:470:1:9::b 100 1512548463 10 10 164.400 171.403 185.128 1 2 3 4 5 6 7 8 9 1  
0 166 164 168 167 165 174 185 180 174 167
```

Logs

There are logs at:

- `/afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pinger.log`
- `/afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pingerCronStat.stderr`

- /afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pingerCronStat.stdout

[slaonly]pinger_startup.pl

This script alleviates the need to pass multiple arguments to PingER2 every time it needs to be run. It verifies that the pinger2.pl script exists, that pinger.xml is > 100Bytes, and that pinger2.pl is not still running. It has some default values, that make the cronjob and the whole running a clean process. It also has various options to assist in debugging etc.

Without this script a typical run would look like this:

```
cd /afs/slac.stanford.edu/package/pinger/pinger2/share/pinger ;
perl /afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pinger2.pl >
/afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pingerCronStat.stdout;
```

However using pinger_startup.pl, this becomes:

```
/afs/slac/package/pinger/pinger2/share/pinger/pinger_startup.pl
```

dnsV4Cmd.pl

This Command utilizes the Perl utility gethostbyname() to determine, the ip address of a host, given a hostname.

Pinger2 Data Flow

- PingER2 collects and stores data in the directory defined inside pinger.xml configuration file (in SLAC pinger.xml can be found at /afs/slac.stanford.edu/package/pinger/pinger2/share/pinger/pinger.xml). At SLAC this sets the data directory via <DataDirectory>/nfs/slac/g/net/pinger/pinger2/data/</DataDirectory>

```
$ ls -l /nfs/.../pinger/pinger2/data/
total 365528
-rwxrwxr-x 1 ... .. 163965926 Oct 31 16:40 ping-2009-10.txt\*
-rwxrwxr-x 1 ... .. 43266107 Nov 19 11:05 ping-2009-11.txt\*
-rwxrwxr-x 1 ... .. 103447435 Jan 31 15:39 ping-2010-01.txt\*
-rwxrwxr-x 1 ... .. 63376205 Feb 10 16:40 ping-2010-02.txt\*
```

- Each file contains data of the form:

```
pinger.slac.stanford.edu 134.79.240.29 www.ipc.bf 196.28.248.26 1000 1264982436 10 10 423.911 473.670
507.699 0 1 2 3 4 5 6 7 8 9 442 450 499 507 423 432 482
491 498 506
pinger.slac.stanford.edu 134.79.240.29 195.24.192.47 195.24.192.47 1000 1264982436 10 10 431.108 431.668
432.337 0 1 2 3 4 5 6 7 8 9 431 431 432 432 431 431 4
31 431 431 431
```

This indicates, the hostname and the ip address of the node running pinger2, remote host to which ping tests are run, size of ping packets, timestamp of test, number of pings sent, number of pings returned,min rtt, avg rtt, max rtt, id number of returned pings, rtt for each returned ping.
----**Do not Copy these commands directly, these commands wont work.**