20110810 SLAC SEECS Meeting

Minutes for SEECS/SLAC Meeting August 10, 2011.

- **Bold face topics are to be addressed in the meeting**

Upcoming

SEECS has an IPV6 Live IP through cybernet. They are currently testing the compatibility issues of Pinger Node/software on it.

The mechanism may start as: take a new host and set it up as IPV6. Then we will monitor hosts on IPV6 like ipv6 google etc. Once data is available then we will work on how to analyze it and use it.

Anjum asks; If we have IPV6 and it monitors IPV4, will that work or there will be some problem with that. Les thinks it will work fine. we might first put up a seperate copy on a host such that it monitors another IPV6 host and then check how it monitors IPV4.

Anjum is going to ask Joun to configure it. Zafar if available, would be helping Joun in that case.

Future & Publicity

- Amber has put together an email list of PingER contacts to send the video to. **We need to use it to announce motion metrics once they work again. However motion script is failing, we await help from Umar.**
- Public Data Explorer next Gen Motioncharts. **Amber has written a Perl script, which is dual of Faisal's PHP script, to turn the PingER data into the right format.**
- Public Data Explorer is working now. **Need to add node count per country**. For that, first we need to synchronize the new country list from World Bank with the old country list of Pinger. The Old country list has 167 countries and 2 alphabet of country code. However, the new list has 245 countries and 3 alphabet country code. Country names are also spelled differently in the two lists. After this is done, a script will be written to take the node count for each country from pingtable or node.cf. This can also be taken from the script sites-per-country.pl (around line 245 in the code) which takes the list from pingtable and guthrie database.
- **Color for regions has to be added in explore data.**

Pakistani case study - Amber, Anjum

1. **2 monitoring nodes have been added in the month of August and host count has reached 49 in Pakistan.**
2. **Has Dr. Anjum presented the case study to HEC? Do we have to do anything else for this case study? That has been presented. HEC is shifting the intercity links on Pern2 (so far intracity links are on Pern 2 while intercity are not on pern2 , they are on PTCL). HEC is expecting to have an analysis on what is the effect on min rtt and other metrics after the links are shifted from PTCL to Pern2. (POP to POP is on PTCL).**
3. **No progress on PERN map in Pakistan as they don't have it yet.**
4. **Amber keep a track of POP to POP links, additional POP links will be intracity. (intercity POPs and intracity POPs analysis. We are about to add 7 more POPs).**

Latest PERN network map

Anjum got latest PERN map. Notes from Anjum: The provided map is better than the existing one but its still not complete in information and not immediately useable for our purposes. HEC PERN topology maps have yet not been received.

Status of Pakistani PingER hosts

As updated on 8/9/2011.

Node	Status	Comments
pinger.ustb.edu.pk	Down	Pinging by another IP, data not shown. Troubleshooting in progress.
monitor.niit.edu.pk	UP	IP changing.Troubleshooting in progress.
vle.iiu.edu.pk	Down	Wrong IP in data. Troubleshooting in progress.
pinger.giki.edu.pk	Down	Troubleshooting in progress.

Responsible people:

- Muhammad Talal Hussain
- Joun Muhammad

PingER Management

Before Farhan, Bilal and Ghulam Nabi leave, a documentation and demonstration will have to be given to the others. We need some continuity for the next few months.

PingER traceroute archive site

- **Sadia is working on extending to traceroutes from SLAC to the Beacon sites. The autotrace.pl for collecting the traceroutes from SLAC to all the nodes is completed, however it is not on cronjob.**
- **Traceroute.cgi still needs to be tested because it requires cgi wrap directory which is currently not accessible to Sadia.**

PingER archive site - FYP (Ghulam, Farhan, Zafar)

- The archive site based on relational database is complete and is ready to be deployed on the server.
- Issues related to speed and performance (in pingtable.pl) are solved by using MySql database features like **Indexing** and **Cashing queries**.
- Daily, monthly as well as yearly analysis scripts are developed based on relational database and now all the flat-files based architecture is removed.
- Daily and Monthly analysis results (for DB) are prepared and their comparison graphs with flat-files are also prepared.
- Newly obtained advantages of using databases (which are not obtained through flat-files) will be discussed. (results are got from memory and not from database thats y it is more efficient. In flat file we ran 4 different versions of the same script just to calculate daily data and monthly data. Howver in this case we only run one script. In flat files version, on 25th September if we are running daily data then it calculated daily data for all 25 days which takes a lot of time. However now it only runs on the data for 25th September and hence its time efficient. If it fetches result from database, it take time however if it fetches result from cache that takes lesser time.)
- Deployment of new Relational archive site on Server will be discussed. This will be deployed on SEECS whenever the access to the server is provided to farhan.
- A next step is to port to SLAC. This will be done by Sadia, once she is done with pcm.pl. Les is looking at the SEECS getdata.pl.

Adding MOS and Alpha to pingtable.pl

- Analysis scripts to add Mean Opinion Score and Alpha, some things need to be correctly configured. It has been deployed at http://pinger.seecs. edu.pk/cgi-bin/pingtable.pl for testing.
- Alpha and MOS to be implemented at SLAC site. Sadia will be doing this with the help of Zafar. Currently Ghulam and Farhan are working on synchronizing the SLAC and SEECS scripts.

TULIP

- **TULIP (reflector.cgi) is faster since Zafar added some more parallelism. There are a couple of errors being reported which Zafar should look at.**

CBG TULIP Integration -- FYP (Bilal)

- **Bilal is facing a trouble and will discuss with Dr. Les in email. He has observed that if he gives more than three targets simultaneously in different tabs then SLAC only provides data for two instance others don't get data from SLAC. It may be a connection pooling limit problem. Les has replied him in email.**
- TULIP setup on maggie2 server and CBG is running on PERN machine.
- CBG is modified to talk to TULIP. TULIP is modified for integration. (Email Bilal to know the update. And ask him to)
- CBG TULIP integration is almost done. user request will be forwarded to the server(clients java code not server), and then it goes back to CBG code and displays the result in CBG browser.
- Bestline requires much larger data and the data remains same for one week, so to speed up tulip using bestline we are trying to save the data separately (not picking the data runtime). Once this is done, it will speed up the TULIP.
- **Matlab licence is here; Sadia, Les, Nick and Justus need to meet to discuss the installation issues.**

Best Line Approach CBG-TULIP (Zafar and Bilal)

First thing is the need of landmark sets and their RTT that can be fetched from a DB (They will be designing this DB).

Currently working on bestline approach. With bestline TULIP has 70% efficiency. Bestline will run before tiering and then reflex.cgi will be used.

Next Task is to enhance bestline.m so as to read data from table and use it for calculating geographical locations.

PerfSONAR (Pakistan)

- **PerfSONAR at SEECS:** Problems were fixed. NTP servers were causing considerable clock delay. Added close-by Stratum 1 NTP servers to solve the problem. Nodes were updated to PerfSONAR version 3.2 (Fedora distro). Nodes however are offline since they were disrupting normal traffic. We are waiting for 10 Mbps dedicated connection to switch the nodes back on. **We have a 1 Mbps link for PerfSONAR (on temporary purposes). NUST is purchasing a 2 Mbps dedicated link from WorldCall. No progress yet .. routing issues are showing live IPs as inaccessible.**
- PERN will deploy perfSONAR at HEC/Quetta. Someone is working on this. The university is close by HEC/Quetta. Hope in 4 weeks to have PingER monitoring node in 4 universities in the Quetta region.
- **Dr. Anjum is trying to get some live IPs for deploying PerfSONAR, however, no progress yet.**

PerfSONAR (USA)

1. Zafar: Yee will meet Jason in person (at Joint Techs in Alaska in July) to tell him about SNMP-MA extensions. He thinks emailing is not a good idea. :P
2. **Les needs to ask Yee if he has met Jason and the progress on SNMP-MA extensions.**
3. Zafar: Currently working on extending FTMA (which is a new PerfSONAR service and currently under developement) to add in support for MySQL.
4. Faisal is fixing bugs with the new perfSonar mashup that Yee put up.

Possible projects

- **The problem is that many hosts do not give high priority to pings and many block it. This results in high RTT for pings. It is a big difference for closer hosts than far hosts. Note the response time of pings vs HTTP hosts from slac to other hosts.**
- **There can be a paper kind of talking on Pinger if we could just find the right conference. MCN, ICC and Globecomm do provide network monitoring topics. We can talk of GEO-Location experiences. For example within Pakistan it works fine, however as we go within regions or continents this gets worse. We can publish some stats on that for example. We are yet not ready for Tulip paper.**
- See [https://confluence.slac.stanford.edu/display/IEPM/Future+Projects].
- Extend the NODEDETAILS data base to allow entry support for whether the host is currenty pingable.
- Extend Checkdata to provide emails automatically, see [https://confluence.slac.stanford.edu/display/IEPM /Extend+checkdata+to+make+it+more+useful]. Many of the ideas in the script node-contacts.pl are a step in this direction.
- Improve the PingER2 installation procedures to make it more robust. This might be something for the person(s) in Pakistan who are responsible for installing PingER2 at the Pakistani monitoring sites. They probably have found where the failures occurs. Also look at the FAQ, and ping_data. pl which has been improved to assist in debugging, could it be further improved (e.g. provide access to the httpd.conf file so one can see if it properly configured)? There are 2 students working on the PingER archive. Is this something they could work on?
- [Fix PingER archiving/analysis package to be IPv6 conformant|IEPM:Make PingER IPV6 compliant]. Will build a proposal for an IPv6 testbed. They will try various transition techniques. A proposal has been prepared and that has been submitted to PTA. Adnan is a co PI. It is being evaluated today. A small testbed has been established in SEECS and the plan to shift some of the network to IPv6. Bilal is part of 3 students involved with PingER and they will be involved with IPv6. They are porting the PingER archive site site to using a database. They have redeveloped the archive site using Umar's documentation. They have set up a small test archive site. They have gathering, archiving, analysis. They will design a new database. They will also try a port of PingER to IPv6.
- Look at RRD event detection based on thresholds and how to extend, maybe adding plateau algorithm. Umar's algorithm did not work in a predictable manner.
- Provide near realtime plots of current pinger data using getdata_all.pl/wget. It will work as a CGI script with a form to select the host, the ping size, and the time frame to plot. It will use wget or getdata_all.pl to get the relevant data and possibly RRD/smokeping to display the data.

Future meeting time - Les

1. **Next meeting will be on Wednesday 17th August at 8:30 pm in US and Thursday 18th August at 8:30am in Pakistan.**