IEPM-NIIT Task List 2007-01-11

Maggie-NS Tasklist

NEXT MEETING: 8:00 AM California, USA Time, Thursday February 1st, 2006

Team members: Abdullah*, Adnan*, Arshad*, Azher*, Fahan*, Faran*, Nouman*, Umar*

Akbar*, Asif*, Les*, Shahryar*, Yee

Mailing lists: maggie-niit@ns.niit.edu.pk; backup: maggie-niit@googlegroups.com

<u>Awaits something, also provides start of wait date</u>
~~Done or drop, remove < 2 months are task done~~
: Person doing the work
Bold face: task in progress, or for discussion at meeting
Recent progress/discussion. Need student to be assigned. Critical.

Action Items

PingER: Shahryar, Umar Khan, Les

1. **PingER web services: ?**
    a. PingER & AMP Integration (AMP/NLANR has run out of funding, AMP will shut down 8/31/06. ***Given the demise of AMP this may need to be changed to integration with PerfSONAR***): Asif
        i. Document work with AMP integration (hope to complete 11/18/06): Abdullah
        ii. Extend to provide perfSONAR data reading front end: Abdullah, Asif
        iii. Install & integrate code at SLAC: Abdullah
        iv. ***Improve code, make production quality, automate getting data (requested with suggestions 8/20/06, making progress hope to be done in 3-4 days 8/31/06, sent back to SLAC, SLAC responded further formatting etc. improvements needed 9/12/06): Abdullah***
        v. ***Get account (has this been done 11/29/06?):*** Abdullah
        vi. Integrate with pingtable.pl: Abdullah, Jerrod
            1. Create AMP file directory: Jerrod
            2. Set up daily crontab: Jerrod
            3. ~~Set up analyze hourly etc: (Done)Jerrod~~
            4. Add src & dst amp nodes to Guthrie: Jerrod
            5. Think about retrieving older data (find out how long ago there is data for): Jerrod, Adnan
            6. AMP and Pinger data comparison: Abdullah
    b. Smokeping & PingER Integration: Asma (***Asma plans to move on in coming months, need to complete current tasks 8/3/06, Umar is in contact via email***), Asma, Shahryar
        i. Look at how to input PingER data to Smokeping display module (sounds like we have to convert from PingER to RRD format, can this be done in realtime or do we need an RRD database too): Asma
        ii. Look at how to to take recent smokeping data and convert to PingER format (in progress 7/19/06, needs pingtable.pl to get all 12 metrics)
        iii. **Install on pinger2.niit.edu.pk (RRD problem fixed 11/30/06) - Asma**
        iv. **Install at SLAC (awaits ICFA/SCIC): Shahryar**
            1. **Make code available via FTP then Shahryar will download: Asma, Shahryar**
            2. **Install on test www server: Shahryar, Les**
            3. **Review code for security and update as neeeded: Les, Shahryar, Asma**
        v. **Change from 90 to 120 days - Asma**
        vi. **Integrate with Pingtable.pl: Asma**
        vii. Look at adding visualization of uptime: Asma
        viii. Look at how to dynamically change the config file for Smokeping to accomodate the step interval (maybe time consuming, may affect all users and be cumbersome): Asma
        ix. Look at using Smokeping to determine the quality of home links in Pakistan: Asma
        x. Will use as a top level access to PIngER and also as links from Pingtable to display last 45-90 days using smokeping: Asma, Yee
    c. Provide real-time display of PingER data:
        i. Export data to MonALISA from SLAC monitoring site:
        ii. Figure how to deal with non regular (non exact 30 min data)
        iii. Do for SLAC
            1. Decide on how to extend to other monitoring sites, try with NIIT: Akbar, Umer
            2. Hassan is looking into the code sent by Fawad (next step is to get ML web services client to get data): Akbar, Hassan
    d. Monitoring Hosts:
        i. ~~NTC hosts, they agreed to install PingER2 at their 3 backbone sites (NTC management has changed, NIIT shifted from NTC to PERN, does not look promising): Arshad, Azher~~
        ii. ***Pakistan hosts***
            1. **NTC is down since Oct 17th (*NTC management has changed, Arshad will contact upper management 12/4/06*): Azher, Jerrod**
            2. **PERN and COMSATS do not ping (Azher reports that COMSATS is very unreliable operation of PingER host): Azher**
            3. **PERN would like to provide own archive analysis host (Les has sent URL describing tools needed on archive /analysis host):**

Triangulate position of an unknown host (see http://www.slac.stanford.edu/comp/net/wan-mon/tulip, Faran Faran expects to be able to devote more effort to this following 25th Jan 2007): Faran, Les

1. **Deployment: Faran**
   a. ~~Provide a program API: Faran, Shahryar (dropped)~~
   b. ***Refine the list in Sites.txt by writing a script that will run ping request to see which landmarks are not responding (agreed 11/16 /06): Faran***
   c. Provide opotion so that Sites.txt can be modified from TULIP. (agreed 11/16/06, currently the master is kept at SLAC and one has to logon to SLAC to modify it): Faran
   d. ***Ignore comments in mid line (agreed 11/30/06): Faran***
   e. Look into Mathematics of Singular Vector Decomposition technique. (agreed 11/16/06): Faran
2. Visualization
   a. Make tables sortable (working on 5/25/06, re-agreed 8/3/06, re-requested 8/21/06, done for the RTTs 8/22/06, **can we do with buttons for all columns**): Faran
   b. **Can we add AS's to routes: Yee, Faran**
   c. Integrate with Google maps: Faran
   d. When zooming maintain size of dots: Faran
3. Landmarks
   a. Get more lanmarks for TULIP:
      i. **Sent email Latin America (5/7/06, 11/25/06): Les**
         1. **Follow up on positive response from CUDI Mexico: Les, Jerrod**
      ii. **China (sent email to ctsnet 7/26/06, reminded 12/6/06): Les**
      iii. **Try and get sites in Africa (Les sent email 11/28/06): Les**
      iv. ***COMTEC, Japan (Faran send email reminder 5/25/06, agreed to send another reminder 6/7/06, Umar will check with Farooq 11/16/06): Faran, Farooq***
      v. **Add traceroute/Looking Glass servers in critical areas, if they have a common format (asked for 11/15/06, Les did a manual look at traceroute.org and found about 20 potential landmarks 11/17/06): Faran**
   b. Add NetDiGi route servers (asked for 8/30/06): Faran
   c. **Landmarks:**
      i. pinger.ntc.net.pk denies accesss (email to Azher & Faran 7/25/06, Azher responded that he is checking 7/27/06, email sent again 8/21/06, Azher knows about will send person to repair 8/22/06) see also above for the PingER node at this site: Faran /Azher
4. **Apply to PingER node database to check the lat/longs are roughly correct (tried with 300-400 sites but cannnot get results due to fragile Internet at NIIT, will interact with Akbar to make tests at SLAC 8/31/06, exchanged emails on list of PingER hosts to locate 9/3/06): Faran**
5. **Analysis**
   a. Literature search on triangulation, multi-lateration: Faran
   b. ***Compare with GeoIP tools: Faran***
   c. ***Measure landmarks from landmarks: Faran***
   d. Document Faran's algorithm, try new algorithm with optimized alpha that does not require destination to be inside triangle: Faran, Umar
   e. Compare Faran's algorithm with Bamba's, Octant & simple triangulation
      i. Contact Bamba to find out if http://planetlab-01.ipv6.lip6.fr:10000/cbg.php works for any sites (email send 4/21/06): Aziz
      ii. Confidence estimates
      iii. Applied to PingER hosts
      iv. Outside triangles, area coverage
6. **Analysis of Accuracy and applicability**
   a. Accuracy vs known locations
   b. Effect of removing, adding landmarks, try for Bolivia:Faran
   c. Comparison with other sets of landmarks & methods (can't do Bamba since it is down), Octant, NetGeo for accuracy coverage etc.
   d. Provide bubble maps of accuracy: Faran
   e. Review difference between Guthrie and TULIP
      i. For US using Octant: Faran
      ii. Look at big discrepancies: Faran
      iii. Compare with GeoIP: Faran
   f. What area/population is covered by TULIP
   g. Document anomalies (e.g. root-servers): Faran
   h. Show accuracy by region and country: Faran
   i. **Come up with a way to estimate the accuracy/confidence of estimates: Faran**
      i. **Document in the TULIP web page: Faran**

NETRAT, SLAC contact: Adnan, Les

1. **Evaluate PCA multivariate method of Crovella: Waqar, Adnan,**
   a. Compare PCA results with Holt-Winters/plateau: Adnan
      i. ~~Fetch Data From SLAC, BNL, CALTECH (Pathchirp, Thrulay, Ping): Adnan~~
      ii. ~~Fetch data from CERN~~
      iii. ~~Apply PCA on same data and to get potential alerts: Adnan~~
      iv. ~~Comparison of Run-period results and PCA results: Adnan~~
      v. ~~Improve event detector: Adnan~~
      vi. ~~Docment findings on PCA: Adnan~~
2. Forecasting comparison of Active vs. passive data: Fareena, Adnan
   a. Look at eview implementation of ARIMA (QU has copy): Fareena
      i. Extend to more sites/metrics, see need for Integration & higher orders: Farena, Adnan
      ii. Try with longer time base: Fareena
      iii. Get time estimates : Fareena
   b. Detailed Graphs description: Fareena
   c. Regularization

<ol start="4" type="a">
<li style="list-style-type: lower-alpha">d. Look at moodss (http://jfontain.free.fr/statistics.htm): Fareena
e. **Send results/documentation to SLAC (will send 8/31/06): Fareena**
f. Automate procedures
  <ol type="i">
  i. Define project
  ii. Put together presentation for workshop (for Sep 2006): Fareena
  iii. Gather team

3. Automatic event isolation: Adnan, Yee
4. **Put together paper for E2E conference Munich Germany in May, due Jan 27th, 2007 (SLAC needs to review paper): Adnan**

IEPM data viz

1. Compress traceanal table - Nouman, Asif
2. Add node name in RH column
3. Make nodename clickable to view ping time-series
4. Add comment or help on how to find the real hostname
5. **Prepare distributable version of traceanal (assign to an NIIT student) - Asif, Yee**
6. **Provide ViPER like interface to IEPM data: Fahad, Shahryar**
   a. **Problem with Google maps**
   b. **Deploy at NIIT (due 1/12/07): Fahad**
   c. **Get account at SLAC**
   d. **Need to understand how to get updates from iepm in real-time (try accessing URL from web browser): Fahad, Shahryar**

Pathneck (see http://maggie.niit.edu.pk/website/projects/Topological_Analysis.html) Yee is the lead at the SLAC end: Asif

1. Try and get pathneck working from NIIT, study debug output, work with Ningning <hnn@cs.cmu.edu> (awaits site upgrade): Asif
2. Update production version at SLAC (12/106): Asif, Yee
3. Develop and install pathneck reverse server (would like to start at NIIT just to assure code works work with -y option): Les, Asif
   a. Modularize security of traceroute.pl: Asif, Yee
   b. **Add in PerfSonar: Asif, Yee**
4. Evaluate and understand how pathneck needs to be configured, the failure modes, the areas of applicability etc. using iepm-resp.slac.stanford.edu: Asif
   a. **Provide web site documenting failure modes: Asif**
5. Develop a vizualization
   a. Topology (currently with Touchgraph), color links, mouseover ID router, provide snapshot
   b. Click on link/router to get graph
   c. Incorporate location (e.g. via TULIP)
6. Investigate integration with traceanal and graphviz: Asif
7. Integrate topology map with pathneck: Asif
8. Look at using PerfSONAR router information (do not agree well, need to get more statistics, to enable multiple measures need API to get PerfSONAR data, look perfsonar UI): Asif
9. Try on Ultralight (problems if < 4 hops): Asif
10. Problem of 0 results (reported to author but not much happening 4/20/06): Asif
11. Add position and AS information to router database: Asif

Communications etc.

1. **Projects (see http://www-iepm.slac.stanford.edu/pinger/projects/)**
   a. get accouts for Nouman and Fahad: Asif, Shahryar
2. Visits
   a. The convocation is March 10, 2007
   b. Umar visit February for 2 weeks
      i. ~~Get invitation [Done 1/10/07]: Les, Shahryar~~
      ii. **Get visa (waiting 1/10/07, expect end Jan): Umar**
3. **Proposals**
   a. ~~HEC solicitation for International collaborations, due mid-Sept, Farooq PI (submitted 9/17/06, expect result Dec '06) [Our proposal was rejected Jan 07]~~
   b. **Get reviews of proposal (next call in March 2007): Arshad, Les**

Wiki

1. Create space for NIIT student reports and populate with initial reports - Yee, Les