

# IEPM-NIIT Task List 2007-02-01

## Maggie-NS Tasklist

**NEXT MEETING: 8:00 AM** California, USA Time, Thursday February 15st, 2006, call 92-51-928-0443

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

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

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

Awaits something, also provides start of wait date

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. **Working on password protection: Abdullah**
  - v. **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**
  - vi. **Get account (has this been done 11/29/06?): Abdullah**
  - vii. 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 (Umar is trying to reach Asma 1/2/07), 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 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: 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 needed (Shahryar has done and waits Asma updates 2/1/07): Les, Shahryar, Asma**
  - v. **Change from 90 to 120 days - Asma**
  - vi. Look at adding visualization of uptime: Asma
  - vii. 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
  - viii. Look at using Smokeping to determine the quality of home links in Pakistan: Asma
  - ix. 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) [After talking to NTC does not sound likely this will be restored, 1/11/07]: Azher, Jerrod~~
    2. **COMSATS do not ping (Azher reports that COMSATS is very unreliable operation of PingER host): Azher**
    3. **PERN does not ping and reverse traceroute server is down (need to decide whether to give up on this host and remove it from our list of hosts to use for PingER and TULIP): Azher**
    4. **PERN would like to provide own archive analysis host (Les has sent URL describing tools needed on archive /analysis host, it maybe that iepm-bw would be more useful to them):**

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 TULIP HTTP requests to ping to see which landmarks are not responding (agreed 11/16/06, do we really need it, if so can we reduce its priority): Faran**
  - c. Provide option 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, is it done 1/31/07): Faran**
  - e. Look into Mathematics of Singular Vector Decomposition technique. (agreed 11/16/06): Faran
  - f. **SLAC account for Faran (Faran need to report if password changed): 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 landmarks for TULIP:
    - i. **Sent email Latin America (5/7/06, 11/25/06): Les**
      1. **Follow up on positive response from CUDI Mexico (reminded 1/12/07, it is there but still await the URL, sent reminder 1/27/07): Les**
    - ii. China (sent email to ctsnet 7/26/06, reminded 12/6/06, 1/27/07): 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. **Provide tool to geolocate all PingER sites, analyze results to see what landmarks never respond; Faran**
  - d. Problem Landmarks:
    - i. pinger.ntc.net.pk denies access (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
    - ii. **Enable landmarks that only work for IP addresses: Faran**
4. Apply to PingER node database to check the lat/longs are roughly correct (tried with 300-400 sites but cannot get results due to fragile Internet at NIIIT, 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. **Measure landmarks from landmarks: Faran**
  - c. Document Faran's algorithm, try new algorithm with optimized alpha that does not require destination to be inside triangle: Faran, Umar
  - d. Analyse the effect of passing IP addresses to landmarks rather than names: Faran
  - e. **Compare Faran's algorithm with Bamba's, Octant & simple triangulation, GeoIP tools (in progress 2/1/07)**
    - 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
    - v. Effect/need to vary alpha: Faran
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. **Document 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: Fareena, Adnan

- ii. Try with longer time base: Fareena
    - iii. Get time estimates : Fareena
  - b. Detailed Graphs description: Fareena
  - c. Regularization
  - d. Look at moodss (<http://fontain.free.fr/statistics.htm>): Fareena
  - e. **Send results/documentation to SLAC (will send 8/31/06): Fareena**
  - f. Automate procedures
    - 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 (done 2/1/07, needs cert): 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](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](mailto: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. **Try call via IP video (this will illustrate the improved performance of the network for HEC): Les, Akbar**
- 3. Visits
  - a. The convocation is March 10, 2007
  - b. Umar visit February for 2 weeks, will arrive Feb 14, 4:30pm UA931
    - i. **Set up agenda: Shahryar, Les, Umar**
- 4. **Case study to S. Asia: Shahryar, Les**
  - a. **When did NIIT switch from NTC to PTCL: Shahryar, Azher**
  - b. **Is Micronet still used: Azher**
  - c. **Waht do other Univerties in Pak use: Azher**
- 5. **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 (done for US, trying Pak thru Atta): Arshad, Les**
  - c. **Submit proposal to HEC (due 2/2/07): Arshad, Umar**
  - d. **Develop new proposal with more a Grid Health viewpoint: Yee, Arsha, Les**

## Wiki

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