

# IEPM-NIIT Task List 2007-03-22

## Maggie-NS Tasklist

**NEXT MEETING: 9:00 AM** California, USA Time, Thursday 12th April, 2007, VRVS video, call +1 92 321 9830406 or Arshad 92-51-928-0443

**Team members:** Abdullah\*, Adnan\*, Arshad, Asma, Azher, Fahad\*, 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, we need to either finish this up or say Abdullah is not going to do it 3/20/07, Abdullah agreed to complete and send 3/22/07): 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, Shahryar
  - i. **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**
  - ii. **Change from 90 to 120 days - Asma**
  - iii. Look at adding visualization of uptime: Asma
  - iv. 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
  - v. Look at using Smokeping to determine the quality of home links in Pakistan: Asma
  - vi. 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 access to cached data**
  - i. 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. Ping-data.pl form only shows beacons.
  - i. ~~Document in FAQ [Done 2/20/07]: Les~~
  - ii. Need to point \$sites\_fn to pinger.xml instead of beacons.txt & check if the file is xml or flat (for backward compatibility): Shahryar
  - iii. ~~Added item to FAQ to cover: Les~~
- e. 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. **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, awaits presentation to PERN/NTC, presentation to PERN made by Les 3/15/07, they are agreeable, need to move forward): Azher**
    3. 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, however installing iepm-bw is non-trivial, or revive the real time PingER plots):

**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. Look into Mathematics of Singular Vector Decomposition technique. (agreed 11/16/06): Faran
2. Improve web page
  - a. ~~Should the tables at NIIT web site be able to re-size themselves horizontally [The images do not work right in this case]: Faran~~
3. 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, agreed 2/27/07) [Done 3/22/07]: Faran~~
  - b. **Provide documentation (in progress 2/27/07, documented maths of selection 3/20/07, needs updating, agreed to update 3/22/07): Farhan, Faran**
  - c. Can we add AS's to routes: Yee, Faran
  - d. **DiscoveryStatistics => LandMark Analysis one gets SLAC with RTT 0.0 regardless (reported 3/20/07): Faran**
  - e. ~~If ping fails in Looking Glass Sites it shows as -5.0 RTT, should show as NAN (agreed 3/5/07, re-reported 3/20/07) [Done 3/22/07]: Faran~~
  - f. **When one double clicks on a row in Ping Results and the ping fails (e.g. host not responding) nothing shows in the pop-up window. I think some diagnostic or something should show (reported 3/20/07): Faran**
  - g. **% complete location window needs information to say pings done but traceroutes still in progress (reported 3/20/07): Faran**
  - h. ~~When zooming maintain size of dots (should we use Google maps, keep as a wish list item 2/27/07): Faran~~
4. **Evaluate whether using traceroute data helps (Suggested by Umar & Les 2/26/07): Faran**
5. Landmarks
  - a. Get more landmarks for TULIP:
    - i. China (sent email to ctsnet 7/26/06, reminded 12/6/06, 1/27/07): Les
    - ii. Try and get sites in Africa (Les sent email 11/28/06): Les
    - iii. **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**
    - iv. **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 not clear if one can automate 2/27/07, several are automateable, to prove it Les has added 8, Faran will work on): Faran**
    - v. **Working on 2 sites in Palestine: Les**
      1. ~~Resolve traceroute: icmp socket: Permission denied (reported 2/27/07) [Fixed 3/10/07]: Les~~
      2. **Gaza Strip host is down, reported 3/21/07: Les**
      3. ~~Added Al Quds to landmarks [Done 3/22/07]: Les~~
    - vi. **Get site in Korea (made contact, test case works, suggest case study on S.E. Asia): Umar**
  - b. Add NetDiGi route servers (asked for 8/30/06, is able to parse them, will look at adding appropriate hosts 3/22/07): Faran
  - c. **Brunsvigia appears not to accept names, need to modify TULIP to call with addresses: Faran**
6. **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 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**
7. Analysis
  - a. Literature search on triangulation, multi-lateration: Faran
  - b. ~~Measure landmarks from landmarks [Done 2/15/07]: Faran~~
  - c. **Optimize alpha by landmark (after have new location algorithm working, will try 1:2 for US, 1:3 for Europe, 2:15 Africa) : Faran**
  - d. Document Faran's algorithm, try new algorithm that does not require destination to be inside triangle: Faran, Umar
  - e. ~~Analyse the effect of passing IP addresses to landmarks rather than names: Faran~~
  - f. Look at impact of increasing number of pings for getting accurate min\_RTT: Faran
  - g. Compare with GeoIP Tools
  - h. **For US compare Faran's algorithm with Octant (no longer available 2/27/07), GeoIP & simple triangulation for PingER hosts (in progress 2/1/07)**
    - i. Confidence estimates
    - ii. Applied to PingER hosts
    - iii. Outside triangles, area coverage
    - iv. Effect/need to vary alpha: Faran
    - v. Look at big discrepancies
8. **Analysis of Accuracy and applicability**
  - a. Accuracy vs known locations (landmarks & PingER hosts): faran
  - b. Effect of removing, adding landmarks, try for Bolivia: Faran
  - c. Provide bubble maps of accuracy: Faran
  - d. What area/population is covered by TULIP
  - e. ~~Document anomalies (e.g. root servers): Faran~~
  - f. Show accuracy by region and country: Faran
  - g. **Come up with a way to estimate the accuracy/confidence of estimates: Faran**
    - i. **Document in the TULIP web page: Faran**
9. Find out more about GeoIP Tools
  - a. ~~Faran make contact with GeoIP people [Done 3/20/07]: Faran~~
  - b. Find a case where TULIP beats GeoIP Tool [Done 4.68.116.16]:

## 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, GATTECH (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 eviue 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 [Done]
  - d. Look at moodss (<http://jfontain.free.fr/statistics.htm>): Fareena
  - e. ~~Send results/documentation to SLAC [Done 3/15/07]: Fareena~~
  - f. Share documentation with COMSATS: Umar
  - g. Review write up, and send changes by FAX to +92-51-9280782: Les
  - h. 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

1. Traceanal
  - a. Get desk-side working to SLAC: Nauman, Azher, Umar
  - b. Compress traceanal table - Nouman, Asif
  - c. Add node name in RH column
  - d. Make nodename clickable to view ping time-series
  - e. Add comment or help on how to find the real hostname
  - f. **Prepare distributable version of traceanal (assign to an NIIT student) - Asif, Yee**
2. Re-install at NIIT to enable viz: Fahan
3. Provide installation package: Tanzeel (QAU), Nauman
4. **Provide ViPER like interface to IEPM data: Fahad, Shahryar**
  - a. ~~Problem with Google maps, overcome by FTP from remote host: Fahad~~
  - b. **Problem with node visibility with FireFox (OK with MSIE 6): Fahad**
  - c. **Deploy at NIIT (done 2/1/07, needs cert): Fahad**
  - d. ~~Get account at SLAC (Fahad has information 2/15/07): Fahad~~
  - e. **Need to understand how to get updates from iepm in real-time (try accessing URL from web browser): Fahad, Shahryar**
    - i. ~~Formats for ping and traceroute are different (will have to work around): Fahad~~
    - ii. **Write his own script which will access the data from IEPM-BW database or use Web Service which Asif will develop. So that historic data can be shown on the visualization**

## PerfSONAR

1. Provide Google maps interface to PerfSONAR: Shahryar, Qasim (Qasim with us 6 months starting 3/22/07)

**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 perfsnar 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. ~~Get video conferencing working echo cancelling mike is very helpful, NIIT does not appear to need one, if so Brooks has sent details 3/21/07 [Done 3/21/07]: Azher, Adnan, Les, Brooks~~
2. Projects (see <http://www-iepm.slac.stanford.edu/pinger/projects/>)
3. **Paper on event diagnosis (curent status, will hear results 2nd week April for SJC): Adnan**
4. **Proposals**
  - a. ~~HEC solicitation for International collaborations, due mid Sept, Fareeq 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 (Cisco raised issues, await resolution 3/22/07): Yee, Arshad, Les, Cisco
- e. **Proposal for perfSONAR (shown to Atta 3/15/07)**
  - i. **Write up (working on Outline, hope for draft weeken 3/24/07\_: Umar**

## Wiki

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