

Performance Monitoring

TF-NFN meeting
30th of September, Lisbon (PT)

Agenda

- **Perfmonit update**
- **GN1y4 work preparatory to GN2 JRA1**
- **GN2 JRA1**

Perfmonit update

- <http://www.dante.net/server/show/nav.00100q003002>
- **Analyser module implemented**
 - Emulation of multi-domain exchange of information
 - In charge of making decision about contacting other domains based on path finder response.
- **Path finder implemented**
 - Input: traceroute, Output: list of <MP, domain>
 - Uses DNS to find out the domain name. Find out the associated domain controller based on a static list. (ideally want to have an entry in the DNS).
 - Contact the associated domain controller (web-services), and ask for the list of MPs.
 - http://www.dante.net/upload/pdf/SYS-2004-03_Cross-Domain_Monitoring.pdf
- **Proposed (with Paul Mealor – UCL) to GGF NM-WG the way to implement document literal based web services method instead of the SOAP RPC method.**
- **Would like to add some more RIPE TTMs.**

Perfmonit (2)

- **Work in collaboration with Internet2**
 - Meeting between I2, GN2 and Canarie at DANTE
 - Joint white paper describing a joint architecture or how both architecture could inter-operate (December 2004).
 - Document describing how joint development could be done.
 - Investigate how the “lightpath/point-to-point links” services could be monitored.
- **EGEE**
 - Student from ULg will enhance the perfmonit with an IP available bandwidth (5 min avg) for Q4/04, Q1/05.

Experiences from Perfmonit

- **Web Services technology is the way forward to allow measurement data retrieval by external entities.**
- **Some efforts should be concentrated in the Data Storage area.**
- **MPs should be “intelligent”**
 - Good interfaces
 - Fast data retrieval

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GN1y4 work

- **Several NRENs agreed to start early to work on topics related to JRA1.**
 - Cesnet, DFN, GARR, Nordunet, Renater, PSNC and Dante.
- **Requirement questionnaire**
 - Essential need to understand the requirements of all partners for the measurement system
 - Make use of the experiences of all involved NRENS and GÉANT
 - Assess the monitoring tools deployed by the NRENs in order to take those into account in our developments.
 - Requirement questionnaire drafted – Renater.
 - Three groups targetted: NRENs, Projects and end-users
 - Send to project partners and APM of other NRENs.
 - Answers received, it was expected per „JRA1“ NREN : one NRENs, two projects and two end-users answers.

GN1y4 work

- **State-of-the-art and tool evaluation**

- Performance Monitoring Infrastructure Evaluation Guidelines - Dante
- Tools evaluation guidelines – PSNC
- Aims
 - Evaluation of **existing** infrastructure
 - **Discovery** of technologies
 - Feedback **for** Design for infrastructure verification
- Evaluation of
 - IPPM
 - OWAMP
 - BWCTL
 - I2 “glue”
 - Perfmonit
- Form for collections of tools for state-of-the art analyses has been set-up by Cesnet
- Installation of IPPM, OWAMP and BWCTL.

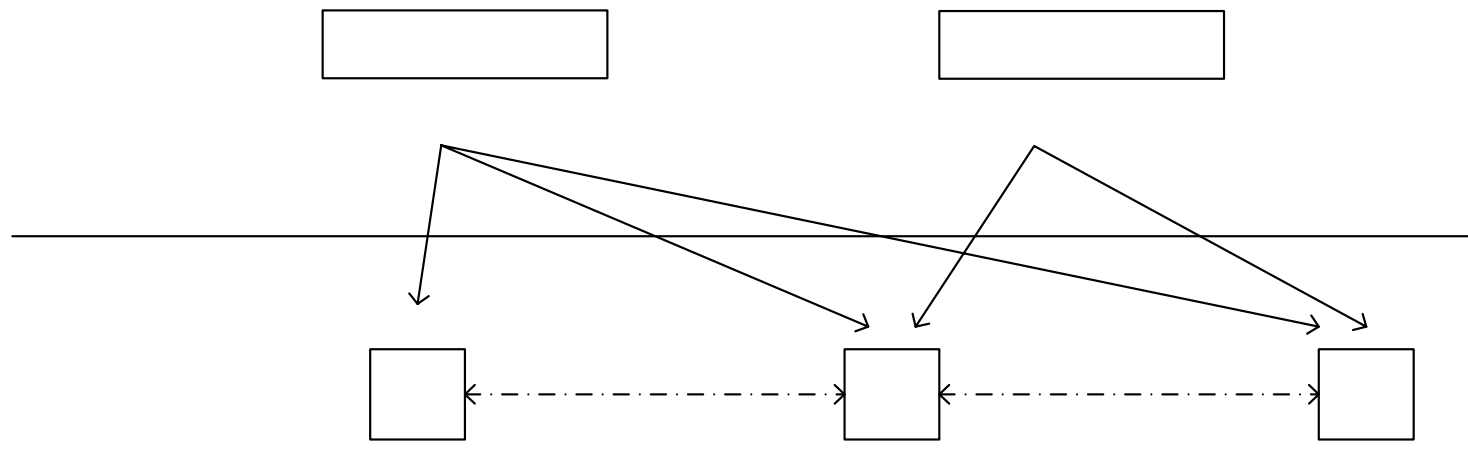
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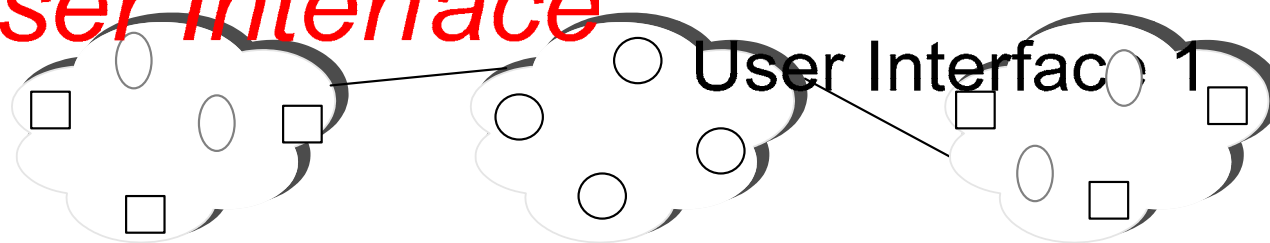
Objectives

- **Provide monitoring data to various communities NOCs**
 - PERT
 - Projects (GRIDs, eVLBI, etc)
 - Researchers
 - End-users
- ***Data retrieved from a domain through the domain measurement controller layer.***
 - This layer aims at giving the basic functionalities needed by such infrastructure and at providing data independently of the type of MP chosen.
- **Modify and Improve measurement tools.**
 - OWD, throughput, netflow, packet capture and network equipment information.
- **Build visualisation tools to suit some users needs.**

Three layers



User Interface



Domain

Controllers

Use cases example

- **PERT - the need of addressing the end-to-end problem and provide for the network side tools for the PERT group (divide and conquer).**
 - PERT stands for Performance Emergency/Enhancement Response Team (<http://www.dante.net/server/show/nav.00100q003003/>)
 - Will most likely need to start TCP achievable throughput tests between domains and to end-sites to identify where the problem is located (network or end-site), to correlate their measurement, they could need to have access to the IP link utilisation, interface errors, etc on all the links along the path.
- **EGEE middleware could have some decision to take regarding the best way to perform a job**
 - A job need to be performed by next Tuesday. This requires to transfer GBs of data replicated in several places, several cpu farms available
 - Which is the best combination of <src-datastore – dest-cpu-farm – network path>? They need to access some bandwidth information.

Use cases example (2)

- **Provide means to the e-VLBI community to assess where the problem is coming from (their end-site or the backbone).**
 - Achievable TCP throughput (divide and conquer)
- **Provide to the user a bit more transparency on the black box that the network is.**
 - Better feel of involvement.
 - Promote the network by showing its status.
- **NOCs provided with more information which allow them to assess what the network is like along a path or to re-insure its deductions on what a problem can be.**

Status - update

- **R1 – Requirement**
 - Collect the answers (12 received so far)
 - Requirement report due in December.
- **R2 – State of the art**
 - Gathering of measurement and visualisation tools
- **R4 – AA needs**
 - Warren Daly discussing with GN2-JRA5.
- **D2 – Framework Design**
 - Collaboration with Internet2 piPEs on the writing up of a white paper for December.
 - Main functionalities are being identified.
 - Investigate different architectures.
 - List uses cases and requirements.