The etomic active probing infrastructure

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History

- The European Traffic Observatory Measurement Infrastructure (etomic) was created in 2004-05 within the Evergrow Integrated Project launched by the Future and Emergent Technologies Programme of the European Union.

- Its goals:
  - to provide an open access, public test bed for researchers investigating the Internet with active measurement methods
  - to serve as a Virtual Observatory active measurement data on the European part of the Internet
Founders

- Its Central Management System (CMS) has been developed by the Grupo de Redes, Sistemas y Servicios Telemáticos Departamento de Automática y Computación Universidad Pública de Navarra.

- Its hardware infrastructure has been designed and built by the Cooperative Center for Communication Network Data Analysis in Collegium Budapest Institute for Advanced Study.

- The measurement stations are hosted by European research groups collaborating in the Evergrow project.
• Each measurement station consists of:
  – Standard server PC architecture
  – DAG 3.6 GE card with packet sending capability
  – own GPS antenna (Garmin 35 HVS) for time synchronization

• Repository and data processing:
  – Everlab IBM blade center (112 blades)
Measurement sites
Central management system

The ETOMIC Active Probing Infrastructure www.etomic.org
Web interface

- Available via [www.etomic.org](http://www.etomic.org)
  - Account application -> own measurement design
  - Free access to periodic measurement end-to-end data
- Measurement time slot reservation for registered users
- Programming DAG card via the user friendly Application Programming Interface
- Measurements are distributed automatically to the measurement stations
Introduction

The European Traffic Observatory is a European Union VI Framework Program sponsored effort, within the Integrated Project EVERGROW, that aims at providing a pan-European traffic measurement infrastructure with high-precision, GPS-synchronized monitoring nodes.

This is the current status (place the cursor over the nodes to get information).
Open repository

The ETOMIC Active Probing Infrastructure www.etomic.org
The ETOMIC Active Probing Infrastructure www.etomic.org

Experimental bundle

New bundle: etomic_demo

Next step is defining which files will be used in each agent. An agent will run a program or eventually more than one.

Name: ericsson
Description: N/A
Country: Sweden
Organization: Ericsson
Interfaces:
- ericsson.etomic.org - 192.168.20.150
- ericsson-dag.etomic.org - 192.168.20.151

DAG

Binary file: etomic_check.bash <parameters>

Data files: etomic_check.tar.gz <tar.gz etomic_check.tar.gz>

Description:
### Requested experiments

**Select Month:**

- **Month:** 2006 April
- **Results per page:** 10

#### 2006 April

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#### 2006 March

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<td>Wed 29th 9:49:00</td>
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<td>Tue 28th 10:39:00</td>
<td>Tue 28th 10:49:00</td>
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Tracking topology changes
One way delay
Remote router fingerprinting

- With our high precision measurements the clock skew of routers can be detected and interfaces of the same router can be identified.
ETOMIC Active Probing Infrastructure

Visualization

- Data Type: Mean
- Topology: End to End
- Source Node
- Destination Node
- Mean
- Standard Deviation

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Visualization

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Thanks!

IST Future and Emerging Technologies