

Performance Verification Update

Jerry Sobieski (NORDUnet)

GLIF Tech

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- Performance must be Verifiable...
- We DO need Performance Verification

(still)

What is the backdrop?

- Performance Verification is becoming more obviously necessary in many areas:
 - We have had monitoring of IP services for some time
perfSonar – two versions... US & EU
other tools: iperf, nuttcp, ...
basic collection of information
 - Need convergence in terms of perf/mon concepts
 - And expansion to include new service concepts
- And automation of processes to analyze and act upon performance data
- Emerging applications are depending upon service guarantees:
 - Capacity guarantees (jitter)
 - Scheduling/availability guarantees
 - Path / Flow requirements
 - Fault localization

New aspects emerging:

- Emerging services are offering new types of attributes:
 - Cloud services
 - Testbed services
 - SDN/SDX prospects
 - Topology evolution
 - AAI (Federation) services
 - Spectrum and wireless/mobile services
 - Information security and privacy

Where should we go...

- The current PVA TF is missioned to address primarily the emerging performance guaranteed flows: Connection Services
 - Big field Many issues
- We need to continue down this road – urgently(!)
 - Do we need a new chair? (Is it me? Or is oversubscription a systemic flaw of everyone in this room?)
- But we also need to bring these new aspects into the present PV discussion:
 - How does Performance Verification apply to these new service paradigms? E.g. testbeds? Clouds? SDN?
 - And since these new paradigms rely on and/or interoperate with existing service concepts (e.g. NSI connection service) where do their PV characteristics overlap or intersect?
- **What do we need to propose a comprehensive and well integrated Performance Verification Architecture?**
- **(or even a Performance Monitoring, Measurement, and Verification Architecture?)**

- As GEANT3plus moves toward GN4 ..
 - SA4 Network Support Services
 - Performance Monitoring
 - Security
 - Hardening
 - Expect these activities to be key parts of GN4
 - 2015-> ~2022
 - Performance Verification
 - Requested <x> EUR for connection oriented Performance Verification technologies
 - Expecting a significant boost in personnel and facilities to pursue PVA development and testing

- We hold the Task Force open, and continue/restart the discussions
 - Explore convergence of existing performance measurement components
 - Define/prototype/demo new aspects required for present services (NSI, clouds, etc.)
 - Explore requirements of a integrated PV architecture that can address new services in a manner consistent with the way these new services interoperate with each other..
 - SDN/SDX, Testbeds, ...
- Report progress in GLIF Oct 2014. (NZ)

- Questions?
- Suggestions?