

TF-NGN meeting

GN2-JRA3 Update

Bandwidth Allocation and Reservation

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JRA3 Overview

- *GN2-JRA3 is the Joint Research Activity within GN2 focussed on the research and development of end-to-end, connection-oriented, Bandwidth on Demand (BoD) services in the European R&E networking environment*
- Work items
 1. JRA management and coordination
 2. Requirements gathering and state-of-the-art
 3. Service specification
 4. Implementation
 5. Testing and service validation

Status

- Work item 2
 - Deliverable D J3.2.1 “BoD User and Application Survey” finalised and GN2 review process started
 - Deliverable D J3.2.2 “Initial Review of BoD-Related Technologies” near to completion
- Work item 3
 - Framework and architecture discussions are ongoing
 - Face-to-face meeting held 13th April in Zürich

WI-02: BoD Users and applications Projects



- European VLBI Network
- DEISA
- GRID projects
 - EGEE, SeeGrid, etc.
- MUPBED
 - European GMPLS/G.ASON testbed
- GN2 testbed
- LOFAR
 - Array of antennas for astronomical observations
- Evergrow

WI-02: BoD Users and applications Projects



- Connectivity of research infrastructures
 - High End Computing (HEC) facilities
 - Earth Observation
- Connectivity with special networks/sites
 - CERN
 - USA & Starlight

WI-02: BoD Users and applications Requirements of advanced applications

- A questionnaire was sent to 12 projects to extract requirements for a BoD service
 - 6 projects responded
- Questionnaire was organised as follows
 - *General Issues*, description of the application
 - *Control Issues*, requirements on BoD system and its interfaces
 - *Network Issues*, capacity requirements, service duration, etc.
 - *Reliability Issues*, latency, security, restoration, etc.
 - *Other Issues*, accounting, participation in a BoD pilot, etc.

WI-02: BoD Users and applications Conclusions



- Try to get information from other potential user groups during initial project phases
- The need for BoD-like services exists today for a number of different communities/projects/users groups
- BoD users/applications should be provided with standardized interfaces for resources reservations and service monitoring
- Bandwidth requirements range from 10 Mbps to 10 Gbps
- A number of the projects/user groups contacted have expressed their interest to test the BoD system during its deployment phases

WI-02: BoD related technologies

- Available transport technologies
 - SONET/SDH, VCAT/LCAS, GFP, L2VPN, VLAN
- Capacity management middleware
 - BMP, CATI, DRAC, DRAGON, ODIN, Operax, SBM, Tequila, UCLP
- Signalling protocols and frameworks
 - RSVP
 - UNI
 - TL1, SNMP
- AAA services, architectures and infrastructures
- Control plane survey
 - G.ASON
 - GMPLS
 - UCLP
 - Other

WI-03: Face-to-face meeting

- Discussion on general framework
 - scope of the BoD
 - glossary and terminology
 - services, modules and blocks
 - functional specification (draft)
- Take into account
 - Heterogeneous technologies
 - Domains with GMPLS control planes
 - Possibility of integrating existing domain managers into the framework

WI-03: Face-to-face meeting

- BoD is a layer 2 service
- Service needs to be requested to the first domain
- High level functional blocks
 - Interdomain manager
 - Domain manager
 - Technology proxies
- Pathfinder
 - Interdomain pathfinder (sequence of domains)
 - Intradomain pathfinder (path through domain) based on bandwidth constraints and possibly other constraints
- Started with making sequence diagrams

WI-03: Proposed Framework

