

GHPN RG Mtg on Thursday, June 26th, 2003
12 p.m. - 1:30 p.m. Pacific Time (US and Canada) Time
East Room

Chairs: Jon Crowcroft (University of Cambridge), Franco Travostino (Nortel, in attendance)
Secretary: Volker Sander (Forschungszentrum Jülich, in attendance), Nagi Rao (ORNL)

Session's Note Takers: David Martin (IBM) and Inder Monga (Nortel)

Agenda

1. Agenda Bashing and Administrivia

2. GHPN's draft-netheads: Discussion of open issues

The draft captures the "top ten things network engineers wish grid programmers knew".

3. GHPN's draft-net-issues-with-grids: Discussion of open issues

The draft describes the key pain points and lessons learned that the grid community (i.e., programmers and users) came up with, after successful/unsuccessful experiences in interfacing with the network.

4. New milestones: discussion

5. Short presentations:

"Wireless GRID Networks and Virtual Markets Sharing Resources in Dynamic Ad-hoc Environments," Lee W. McKnight et al.

"Grid Infrastructure," David Martin

Why Does This Group Exist – Franco

- To bridge gaps between networking and Grid advanced communities (grid requirements not yet understood by netheads, net rules ignored by gridheads), while countering any premature ossification around Grid/Net dominant scenarios

- Want to foster relationships with other communities

- High performance does not necessarily imply gigabit or terabits/s, includes highly effective or efficient networking and qualitatively different from established practice.

These can be in GHPN's scope

- Grids with wireless systems
- Grids exploiting optical networks
- Grids encompassing sensor-nets

But

- no tutorials, primers, 101s
- no "miniature-GGF" in a draft
- bumpy and tortuous road is somewhat expected due to material's novelty

- GHPN was to produce two drafts by GGF8

- "Top 10 Things Network Engineers Wish Grid Programmers Knew"
- "Top 10 Things Grid Programmers Wish Network Engineers Knew"
- Both efforts merged together
- Became Top N

Netissues Draft – Volker

- Volker is the editor, many authors

- supposed to reflect intersection of Grid developers and networking communities

Document Outline: introduction, scope and background, end-systems, access domain, support domains, general issues, considerations, end systems
comment: need to address virtual systems running on a common host

access domain: firewalls, NATs, middleboxes with L4-7 impact
comment: missing idea of edge devices. Should separate L4-7 section to have section on edge devices (as in protocol-aware edge device)

transport domain: service level agreements, over-provisioned networks
comment: network may be over-provisioned in some places, but not all
comment: does over-provisioned just mean bandwidth?
comment: not just bandwidth, but delay, jitter, etc...
comment: document is more oriented to bulk transfer, so we need to address transactions as well
comment: distributed MPI is a big challenge

general issues: service oriented and specification, programming models, support for over-provisioning, multicast, sensors
comment: applications don't typically know their bandwidth requirements
comment: P2P area is not covered enough in doc right now
comment: why include sensor networks?
comment: in "smart dust" communications is expensive (e.g., source routing through a sensor field, with API implications)
comment: maybe we could move the sensor section to the end system section (i.e., power-constrained end systems)
comment: though there are issues with routing plane and interface thereof, so sensors should also be outside of the end systems section (there is a volunteer for this new section)
comment: multicasting, scalability of the group can be an issue. Traffic engineering is another topic for the grid computing to deal with
comment: let's be careful not to dive straight into solutions since this is primarily an issues draft

Security: security gateways, authentication and authorization issues, policy issues
comment: we need to relate the different security systems to avoid duplication

Miscellaneous:
comment: active networks are missing, maybe in the overlay section
comment: address as Extensible and Programmable networks, rather than Active Networks (i.e., no "capsules")

Milestones – Franco

Two new initiatives above and beyond the published milestones:

- Wireless paper is an individual submission, it is not in our milestones now but could become one once the authors cleave out the pieces with GHPN relevance
- Optical Networks and Grids – a new initiative recently launched off of the GHPN reflector

By GGF9, first draft of a new GWD-I track document: actual demands of Grids on networks

By GGF10, combine feedback, submit two (now one) top-ten (now top N) draft
(see detailed milestones in RG page)

comment: when/how do we work on solutions rather than issues
comment: if we believe we need, say, an equivalent of gss-api to deal with VPN boxes, we should check whether there is momentum and energy to make that API happen. Make a BOF and see how many people are interested in that. New BOFs are encouraged.

Short Presentations

Wireless Grids – Lee McKnight and Mark Gaynor

Available as draft-ggf-lwmcknight-wgissues-0

comment: should not use draft-ggf as a prefix, since this is not an official GGF draft

Introduction to Wireless Grids

- wireless grids not measured just by compute cycles/sec
- very broad definition because we're not sure where wireless Grids are going
- characteristics of wireless Grids: small and low powered, mobile and nomadic, mesh capabilities, network of wireless sensors
- smart dust: transmitter and sensors on a tiny chip
- comment: mesh requirement would leave out cellphones and 802.11*
- How is a wireless Grid different from a regular Grid? Nodes quickly coming and going.
- Sharing protocols: need to enable the discover for nomadic ad hoc resource allocation
- Middleware for Wireless Grids, have a project underway
- Business models: virtual markets and wireless Grids
- Conclusions: ad-hoc service discovery and description are critical

comment: how does this fit into GPHN's charter?

comment: no time now, start discussion and comments on the GHPN reflector

Grid Infrastructure – David Martin

There are two models of the network to choose from, a “black box” or a “managed network”. What could and should we do to make the latter real?

comment: potential BOF-able activity

comment: BOF already happened, positive feedback

comment: it may not be at GGF that we take on such broad topics

comment: it may be way too much for a working group

comment: work with NSIS, or influence what is in the standards.