

R&D on Key Technologies and Future Application for NWGN and Future Network

Overlay Networks

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Roles of Overlay Networks

- Fast deployment of new services on IP
 - P2P, skype, ...
- Don't need the standardization
- Small start
- However,
 - Lead to “uncontrollable” networks
 - Difficult to dimension the network

Virtualization

- Broadly, overlay is an approach to “virtualize” network resources
 - GENI
 - NVLab at NICT
- What should be virtualized? And how?
 - BW, router’s CPU/memory, ...
 - Virtualization essentially means to reserve the resources for some network or service, *deterministically, statistically, or dynamically.*

Role in New-Generation Networks?

- Network virtualization is
 - Testbed facilitation for new-generation networks? or,
 - New-generation network architecture itself?
- Virtualization is now a trend in the IT field, too
 - Virtualizes server/data center
 - Implication and/or impact?