Network Description Language
Introduction

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• 2005: Started research on making applications network-aware.
  – Step 1: Create a description of the network
  – After extensive research we found no suitable solution for optical networks
  – Work started on NDL
Existing Solution
Applications
More Applications
Multi Layer Networks

• Separate schemas:
  – Topology
  – Layer
  – Capability
  – Domain
Layer

Layer

Adaptation Property

Interface Class

Label Value

Label Set

property

ingress property

egress property

label

ingress label

egress label

client count

server count

client capacity

server capacity
Capability

Switch Matrix: has switch matrix, switching capability, with adaptation, properties

Potential Interface: can adapt, swapping capability, capacities, ingress properties

Cast Type: can adapt into, has cast type, labels, egress properties

Memory buffer
Domain
Current Work

• Domain Abstractions
• Emulation
• With SARA: Interdomain lightpath monitoring
• Multi-Layer schemas