

http://www.opengroup.org/qos

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#### **QoS Implies Different Things to Different Constituents...**

- QoS means certain things to the Enterprise
  - Fail-safe, Availability, Reliability, Load Balancing, Applications competing for Enterprise Resources...
- Network Concept of QoS is what many think of...
  - Guaranteed Bandwidth, Jitter, Latency, End-to-End, Internet Applications competing for Bandwidth
- True End-to-End QoS includes more than Networks and the Internet
  - Extends from the Enterprise, through WANs, to Remote Services
- The Open Group QoS Task Force Focus
  - Work with Customers and Vendors to achieve End-to-End QoS with emphasis on linking Enterprise QoS with Network QoS.

## **QoS Task Force Vision**

THE Open GROUP

Facilitate QoS solutions that are standards oriented and capable of propagating and measuring QoS requirements End-to-End in order to provide quality of service assurance throughout the entire QoS delivery path.

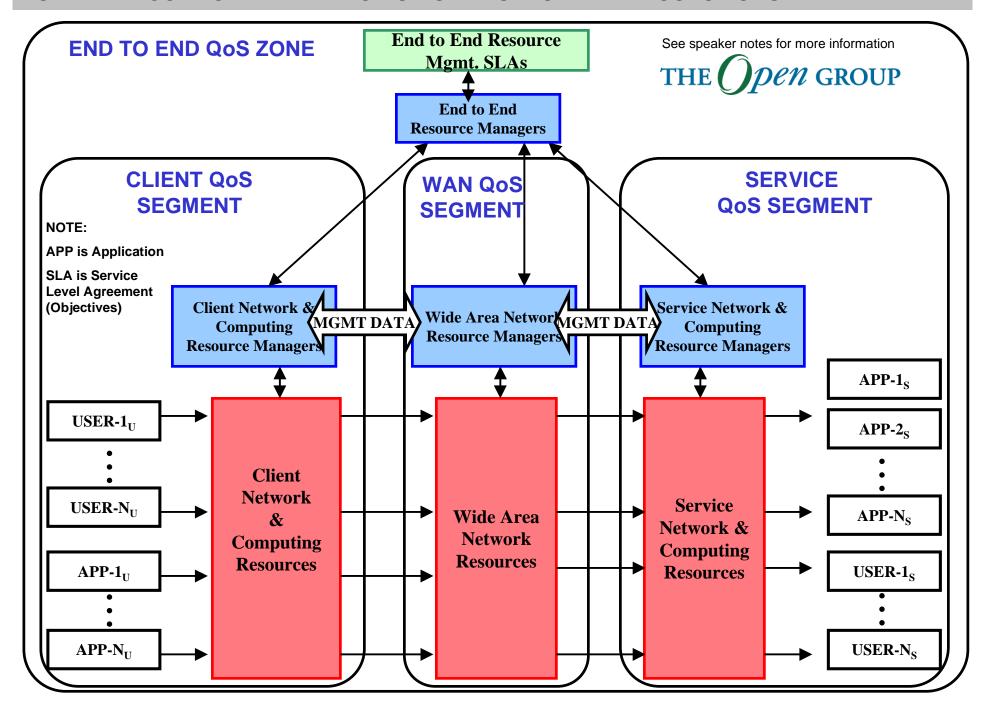
# **QoS Task Force Objectives**

- Bolster existing standardization and policy efforts by gathering requirements from organizations who don't have time/resources to insure their individual organization's requirements are being incorporated into standards but can afford to interface with Task Force in order to drive them as a collective set with collective force behind it.
- Identify areas where there are no existing standardization/policy efforts that meet specific requirements and initiate those efforts - whether it is our own standard/plolicy effort or whether we produce RFCs for: IETF, DMTF, MPLS etc.
- Facilitate Interoperability, whether through publicizing APIs, developing test suites that verify compliance with APIs, or developing certification programs that provide a good housekeeping seal of approval for conformant technology.

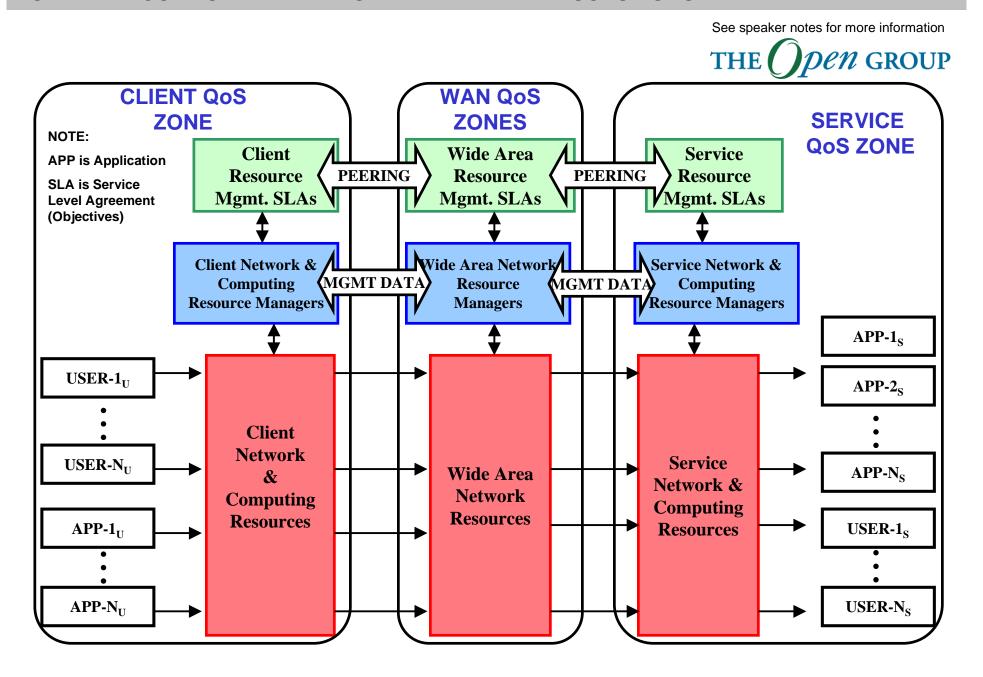
### **QoS Task Force Component Model – Starting Point**

- Major Deliverable over past Quarter Component Model
- Objective for Component Model Point of Reference
  - Provide a reference for constituents involved in end-to-end QoS.
  - Provide a reference of functional components and QoS architecture from system-wide level and further detailed at a unit level.
- Work in Progress shaped and validated by Members

#### TOP LEVEL COMPONENT MAP FOR SINGLE AUTHORITY E2E SOLUTIONS

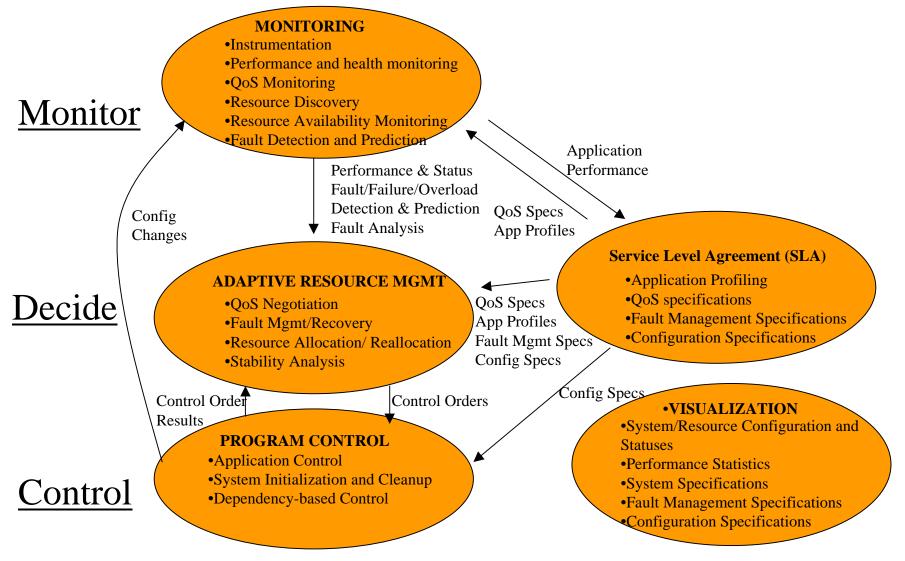


#### TOP LEVEL COMPONENT MAP FOR FEDERATED E2E SOLUTIONS



#### **MID-LEVEL COMPONENT MAP** THE *pen* GROUP Exchange with other authoritative QoS zones (e.g. other service providers) Resource **SLA ADMIN Peering** Mgmt. Policies Measurements **SLAs** As policies move from more senior N-layers of senior policy-driven to junior resource managers they **Mgmt Data** are more decomposed in terms a **Resource Managers** breadth of control within the zone. **Policies** Measurements Resource Measure & Manager Network & Control **Decision Point** Not all components shown **Policies Computing** are in every resource Resource manager instance **Provision Classification** Provision Active **Managers Policy** Measure **Update** ment Active Active Active Classification Metering **Control Rules Policies Policies** Classifier Marker **Control** Meter **Network** & *Traffic* (identifier action tag measurement **Computing** Flow Resources

# **SLA Driven Resource Arch**





### **Definition Phase - What Exists**

- Many Consortia working on Standards/Policy:
  - IETF, DMTF, GMDFokus, Euro-Commissioned Projects, OMG, MPLS, TMF (Telcos) etc.
- Do NOT want to duplicate efforts that already have market adoption
- After prioritizing members' requirements identify and evaluate pertinent efforts in other consortia
- Populate Component Map with Existing standards efforts; interfaces protocols etc.
- White Paper for QoS Task Force

### **Evaluation Phase**

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Given the Standards & Policies that are out there, What is the Level of Applicability to Customers' & Vendors' Requirements?

- What does the Standard/Policy achieve how well does it fit Member's Requirements?
- Level of Support & Market Adoption for Particular Standards?
  - Working Group (Who's involved?)
  - Specification (Is it a Draft/Standard/Revision?)
  - Implementations (Prototype/Product?)
  - Evolution of Implementations (Beta, Major Revs?)
  - Interoperability of Implementation (Do they work with other Vendor's Products)

### **Decision Phase**



- Given what is discovered in the Evaluation phase –
   Decide what is most important to Members to determine which areas to put resources toward:
  - Which existing standardization efforts should we support via gathering & driving requirements?
  - Which consortia to have partner with and how closely to work with?
  - Initiate efforts to increase market awareness and adoption of QoS solutions?
  - Initiate efforts to provide testing, interoperability, certification for existing standards?
  - Initiate new efforts for QoS architecture, standards, policies?
- Publish Roadmap Q3

## Implementation Phase – Q4

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Based on Definition, Evaluation, Decision
Phases
and According to Roadmap – To Be published in
Q3

## **Working Groups**



#### Re-Organized from Tech/Business => Vertical QoS Segments

- QoS Edge & Core (Routers) Technology
- QoS Real-Time (Joint Working Group Time, Measurement, Embedded Systems & O/S)
- QoS Storage (SLAs for Data Store High Reliability, Redundancy, Performance in Accessibility)
- QoS Customer (SLA requirements, Business Scenarios, Measurements & Monitoring requirements)
- QoS Architecture (Ties all Working Groups Together )
- QoS Business (Increase Membership, Promote QoS solutions & Members who Implement QoS Standards)
- QoS Service Provider (SLAs, Qos Measurements, Dynamic Controls/Allocation, Interfaces to Enterprise)

# **Working Group Actions**

- Identify current standards, I/F, protocols that exist for their particular area of interest
- Identify where the holes are
- Identify what pertinent policies/service level agreement parameters they envision for their areas.
- Populate Component Map with findings
- Define, Evaluate & Decide what initiatives/standards/policies to support or initiate for their particular WG segment
- Evolve architecture of component map to insure fit for their working groups components

# **Progress Since Last Conference**

- Regional Meetings
  - March 2001, Sponsored by Hewlett-Packard
  - March 2001, Sponsored by Sun Microsystems
- □ Berlin Conference (April 25<sup>th</sup> 26<sup>th</sup>)
- Regional Meeting Sponsored by Quarry Technologies (April 30<sup>th</sup>)
- Working Groups Established
- Component Map Evolved and Definition Phase Begun

# Today's SLA Round Table Discussion

- Why The Open Group is Here
  - SLA Critical throughout End-to-End
  - Standards Efforts in this Area are just Beginning
  - Want to Drive SLA standards and policies with real world requirements
  - Gather Requirements Bring Back to QoS Task Force
    - Document
    - Extend & Evolve
    - Drive Standards/Policies that meet Requirements

# **QoS Membership**

THE Open GROUP

#### **QoS Task Force Membership**

**Allot Communications** 

**Compaq Computer Corp.** 

**Hewlett-Packard** 

Hitachi

**IBM** 

**NetReality** 

**Predictive Systems AG** 

**Sitara Networks** 

**Teknowledge** 

**Aurema** 

Consignia (UK Post Office)

Boeing

DISA

**MEGAXESS** 

The MITRE Corporation

**NeTraverse** 

**Quarry Technologies** 

**Sun Microsystems** 

SIAC (Securities Industry Automation Corporation) S/TDC (Systems/Technology Development Corporation)

For more information on Membership Contact: Birgit Hartje – <u>b.hartje@opengroup.org</u>