



PRESENTS

**NETWORLD INTEROP**

AN INTEROP EVENT

# Customer Based Service Delivery

---

Scott Stevens

Chief Strategy Officer

September 11, 2001

[www.interop.com](http://www.interop.com)



unisphere networks™



Hello, John.

Session started at  
4:57pm Feb. 27 2001

My News

edit

[Hubble sees stars after galactic collision](#)  
[How threatened strikes affect flight plans](#)  
[Privacy Issue Looms for Mobile Services](#)

My Sports

edit

[WWF Beats Beatles](#)  
[2002 FIFA World Cup Korea/Japan](#)  
[Celtics defeat the heat](#)

My Weather

edit

[Winter weather watch near coast](#)  
[Weather updates](#)  
[more snow on the way](#)

My Portfolio

edit

Dow 10695.81 +53.28 (+0.50%)  
Nasdaq 2285.88 -22.62 (-0.98%)  
S&P 500 1272.77 +5.12 (+0.40%)

get quotes

My Services

Surf the Net with



■ Bronze ■ Silver ■ Gold



Watch premium  
movies online!



■ Silver ■ Gold

Watch premium  
movies online!



AudioStore.com



Streaming CD-quality  
audio from AudioShop!

■ Silver ■ Gold

VideoConferencing.com



■ Silver ■ Gold

customer care center [click here](#)

Deal of the Month



Get DVD Quality premium sports  
through your OneWorld DSL service.

Subscribe Today!



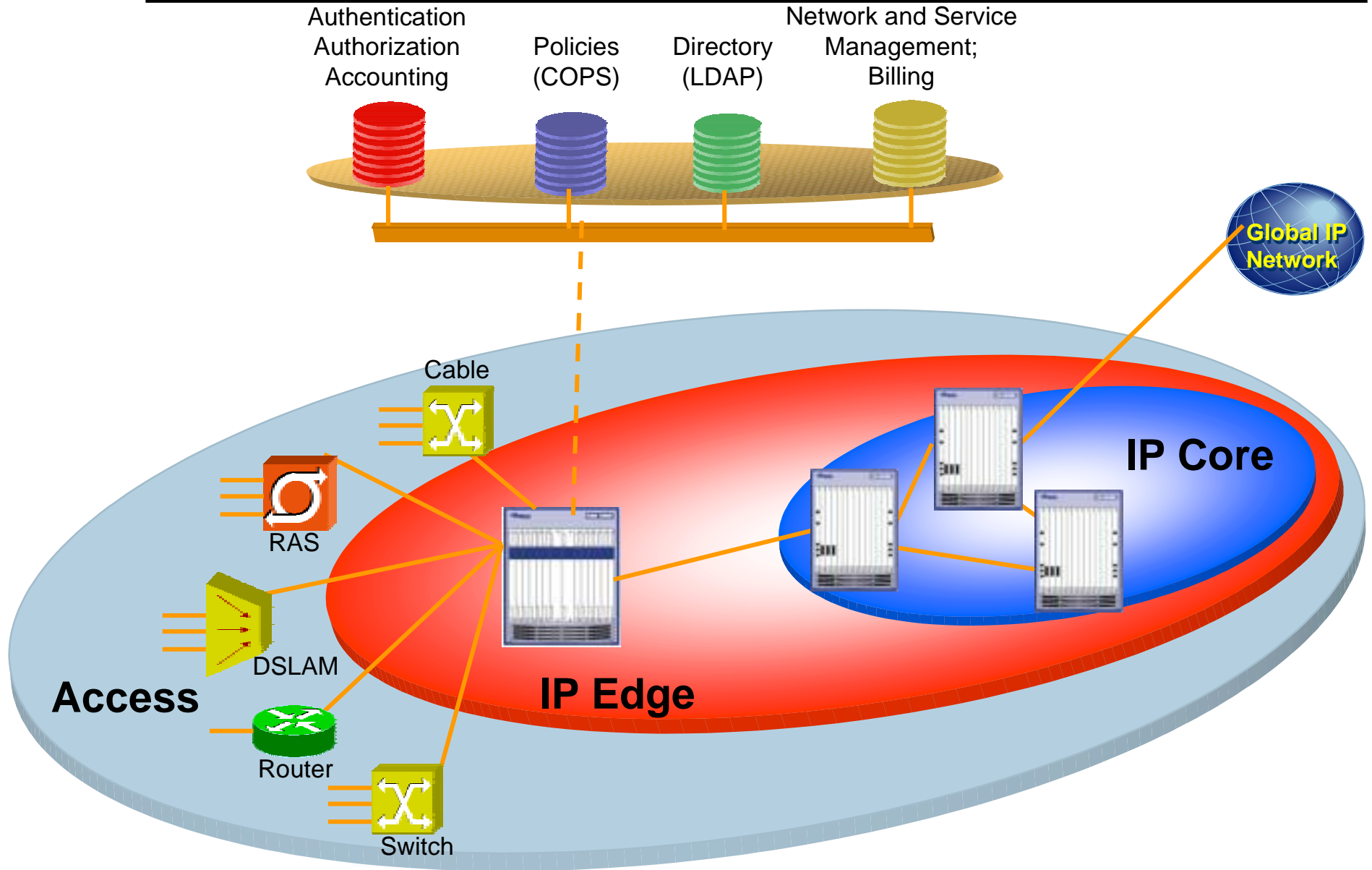
Tonight's event:  
Devils vs. Rangers



Click on any of the services  
below for more information:

- ◆ Family Web Surfing
- ◆ Business Applications
- ◆ Long Distance Voice
- ◆ Unified Messaging
- ◆ Virtual Private Networking
- ◆ Web Hosting
- ◆ Web Caching

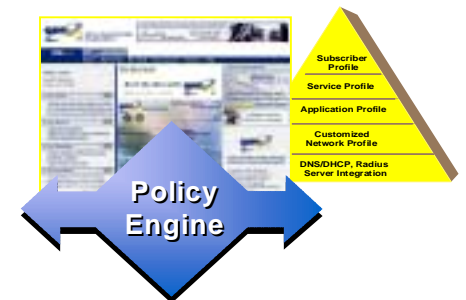
# Focus on IP Network Solutions



# Service Aware Networks

---

- Intelligence of the Back Office
- Dynamic ability to modify network behavior
- Scalable for millions of customers



**“A Flexible, Scalable, Dynamic Policy Server”**

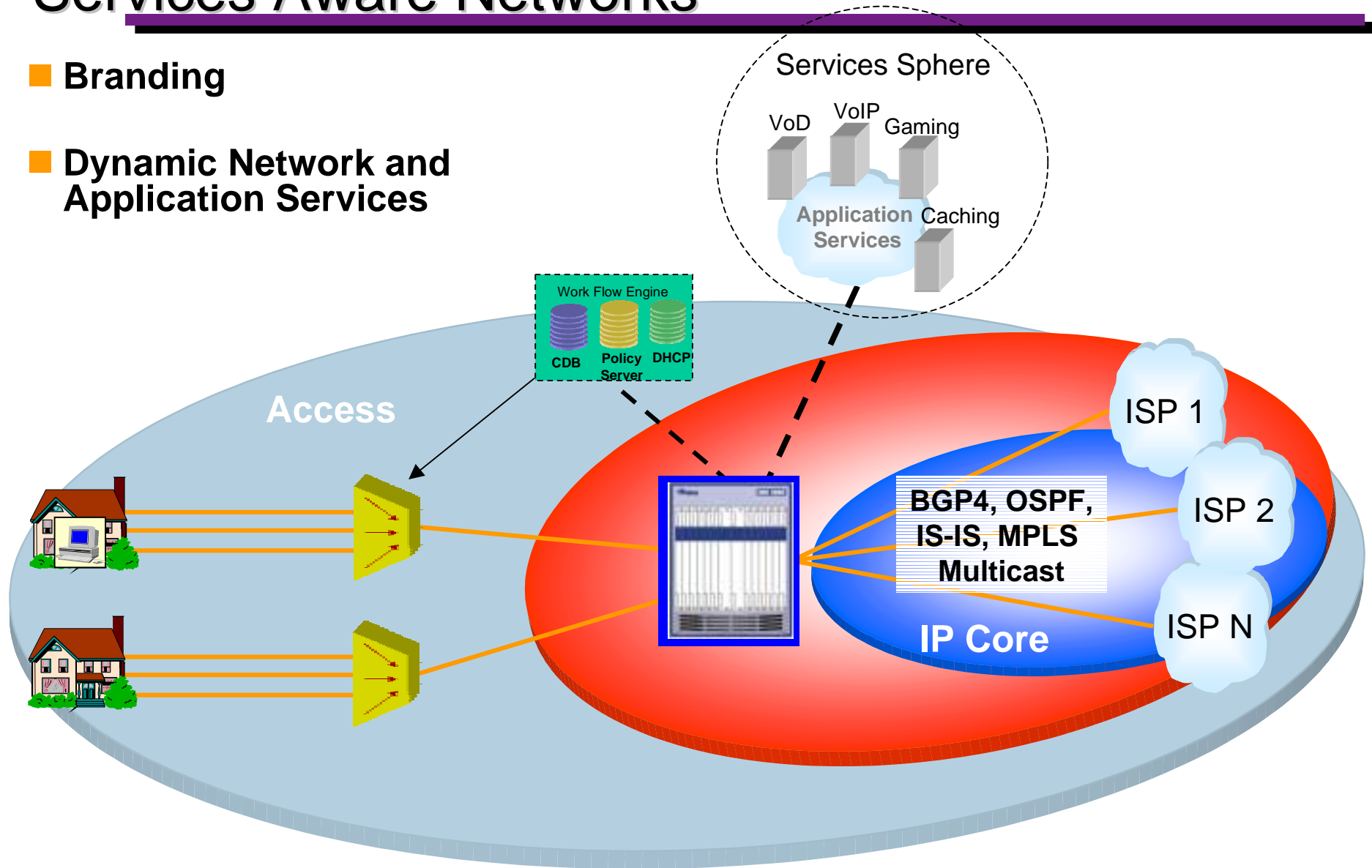
- Powerful Routing at the Edge of the provider network
- Network and Packet intelligence
- ASIC based scaling = wire speed performance

**“A Smart, Fast, Big-Iron Router”**



# Services Aware Networks

- Branding
- Dynamic Network and Application Services





# Services Definition

IP Network Services	Application Services
Routing Services Multicast Services IP QoS Differentiated Services Policy Enabled Networking Dynamic Network Based VPNs	Security Services: Firewalls Intrusion Detection Virus Scanning NAT Voice Services Unicast Video on Demand Multicast Streaming Video Application Hosting Gaming Storage Area Networks NetNanny Server Redundancy

*IP Network Services are fundamental to all Application Services*

**Two Requirements for Delivery**

# 1. Subscriber Management

---

- The network needs stateful knowledge of the identity of the customer
- Techniques:
  - L2 Encapsulations
    - PPP
    - PPPoE
    - L2TP
  - IP Techniques
    - Integrated DHCP Server with web login
- Authentication and authorization
  - RADIUS or RADIUS+LDAP

## 2. Network Awareness - Routing

---

- Internal Protocols – Network Reachability and QoS
  - OSPF, IS-IS, RIP
- External Protocols – Peering and VPN Management
  - (M)BGP
- Multicast Delivery – Video, streaming content
  - PIM, DVMRP, MBGP
- VPNs and QoS
  - MPLS (LDP, CR-LDP, RSVP-TE)



# How do we achieve this?

