



i n v e n t

**speeding toward
the instant-on web**



fast. easy. personal.

Customer Loyalty is the Key to Your Future

Surviving in the e-retail space is becoming
a war for customer loyalty

Web Site Performance Impacts Loyalty

- Customers click away after 6 seconds or less
- **46% of customers abandoned a preferred site due to poor performance** of the site—and 24% of those clicked away to a competitor before returning

Web Site Performance Impacts Loyalty

- First time shoppers to a site who were **satisfied** with their experience **spent** an average of **over \$500 over the next year**; disgruntled first-timers spent only \$120 over the same period

Even the fastest and most efficiently built web sites are vulnerable to unpredictable spikes in demand



There's No Such Thing as "Enough" Server Capacity

- Holiday '99 saw a rash of outages due to surges in demand
- Ironically, it's the most successful brick and mortar techniques (advertising, promotions) that backfire in the online world

what's the end-user problem?

customers are leaving websites frustrated and angry due to slugtime and downtime

what's the business problem?

moving from customer acquisition to customer retention:

twelve months to recover the \$80 acquisition cost

what's the source of the problem?

cyber attacks, users more active than expected, component failures, sites more successful than planned ...

your challenge:

**getting to the top with
high service quality**

- offering strong and meaningful service-level agreements
- delivering consistent service quality
- measuring your service quality
- capacity planning
- reporting and billing on differentiated services

announcing the HP WebQoS vision of: the instant-on web

fast

“i can conduct my
business quickly”

easy

“the system is intuitive”

the instant-on web

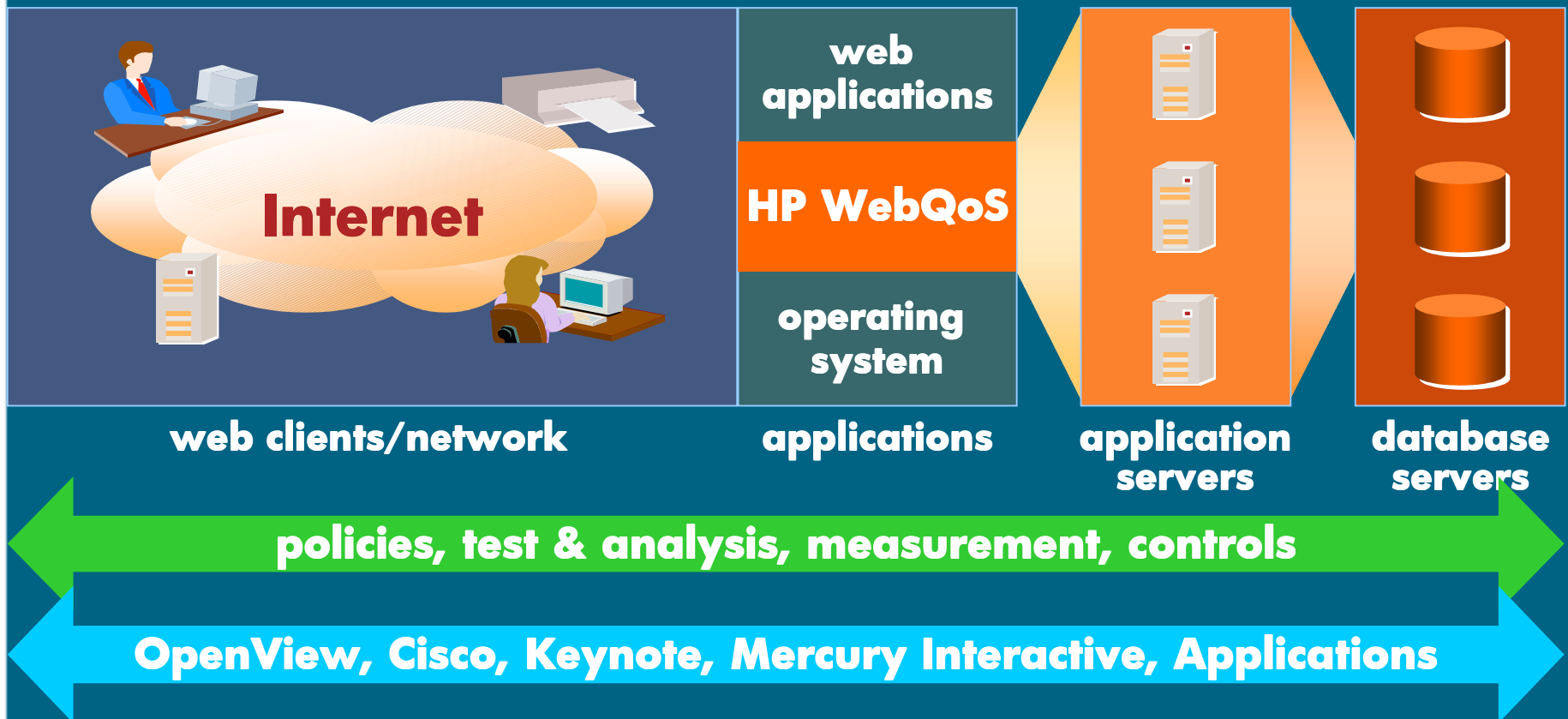
personal

“the service is tailored
and secure”

Web QoS

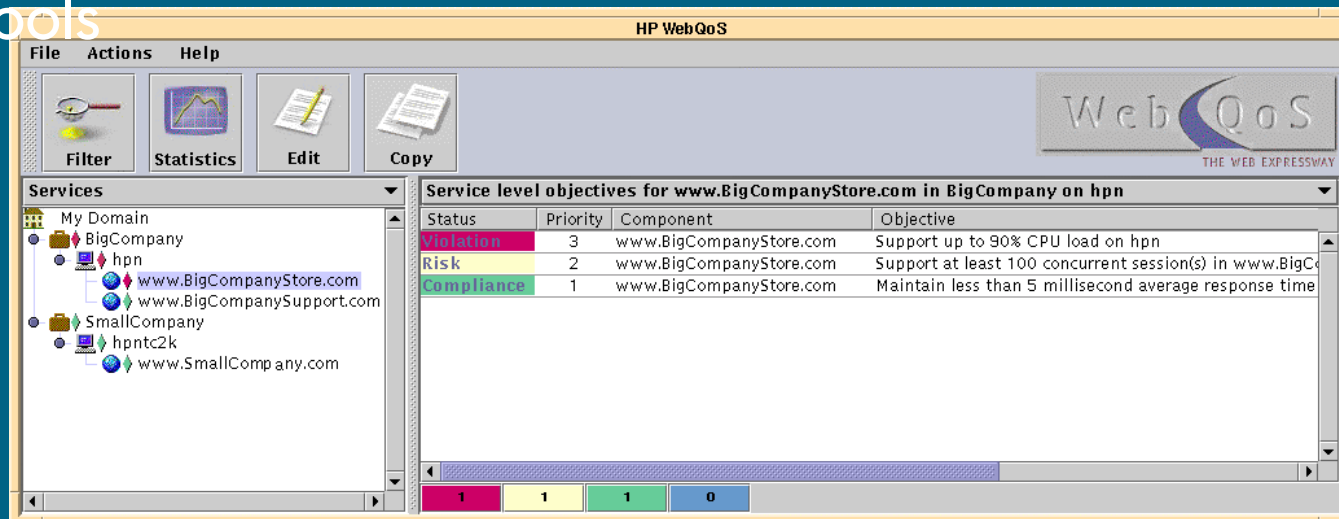
HP WebQoS Roadmap

HP is developing a complete set of products, services and partnerships to deliver QoS end-to-end



HP WebQoS: giving you control of your web-site performance

- server-based software that runs transparently to web applications
- policy-based service monitoring and control
- meaningful performance measurements
- integrates with leading management and analysis tools



HP WebQoS: mâitre d' technology

a restaurant maître d'
ensures a high level
of service for customers
under his care

- admission control
"right now we're very busy, but I can guarantee you a table in five minutes."
- user differentiation
"welcome, Mr. VIP. of course we have a table for you."
- activity differentiation
"I see you've ordered the Dom Perignon. I'll prioritize your order."
- performance measurement
"boss, we need more waiters."

introducing HP WebQoS 2.2



- available on HP -UX, Solaris, Windows 2000 and Windows NT



- integrates with HP OpenView IT Operations, MeasureWare, and PerfView



- measures web-site demand and performance



- mitigates HTTP DoS attacks



- site drain and transition

HP WebQoS features

performance and capacity-based policy administration

- flexible service level objective (SLO) configuration
- policy-based user and activity prioritization

performance control system

- tiers user performance by configured policy
- optimizes Cisco LocalDirector
- integrates with network qos

session-based peak load management

- controls admission of new sessions
- supports several peak-management strategies

performance and capacity measurement

- measures user counts and response-times
- integrates with HP OpenView

denial-of-service (DoS) mitigation

- discards invalid requests

site slow-start and drain

- can gracefully limit number of users

HP WebQoS benefits

fast

- builds customer trust and retention with dependable service quality
- increases sales and transaction throughput

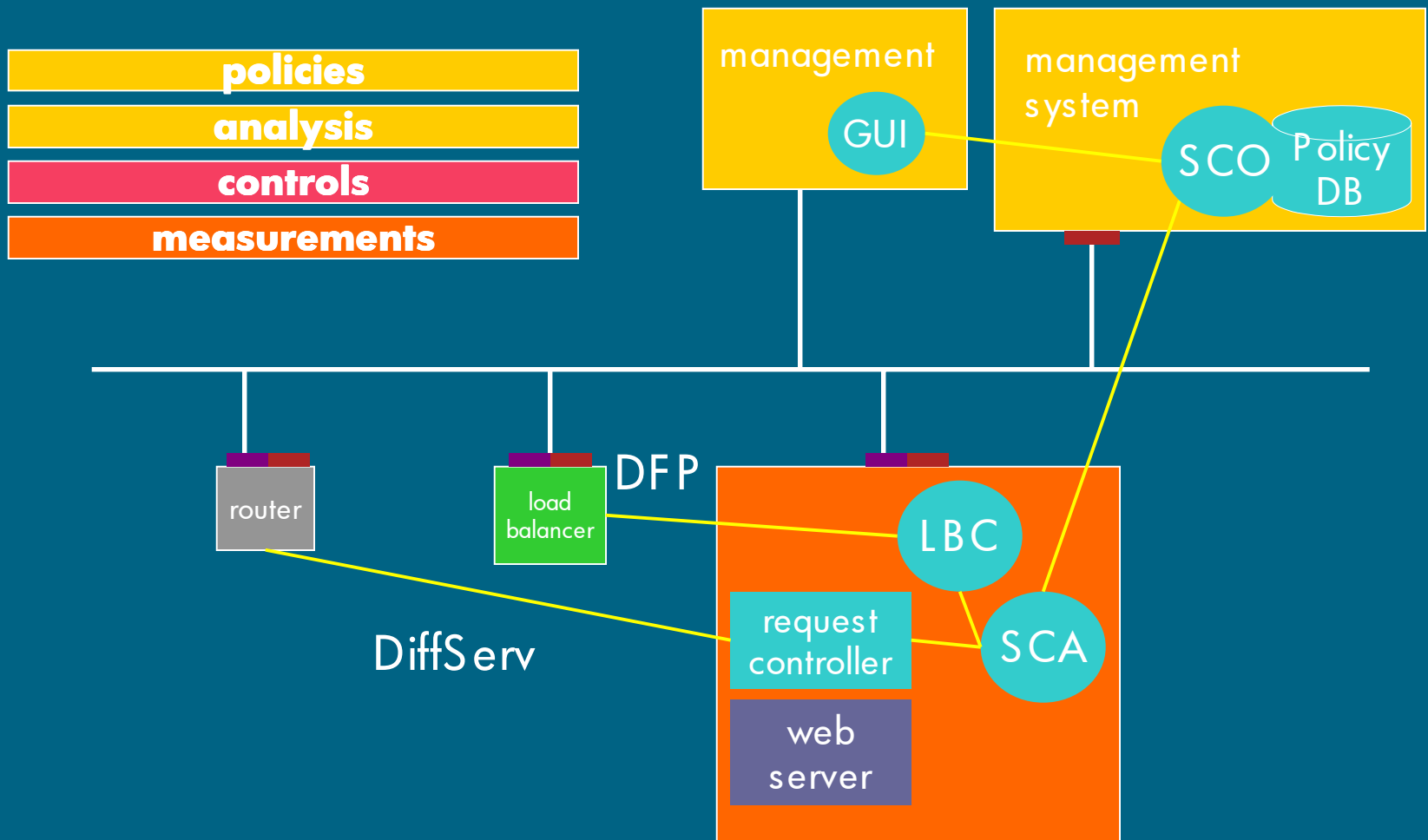
easy

- lowers risk of site failure
- improves business scalability through reduced operational and administration costs

personal

- gives you the ability to control your customers' experience

HP WebQoS management architecture



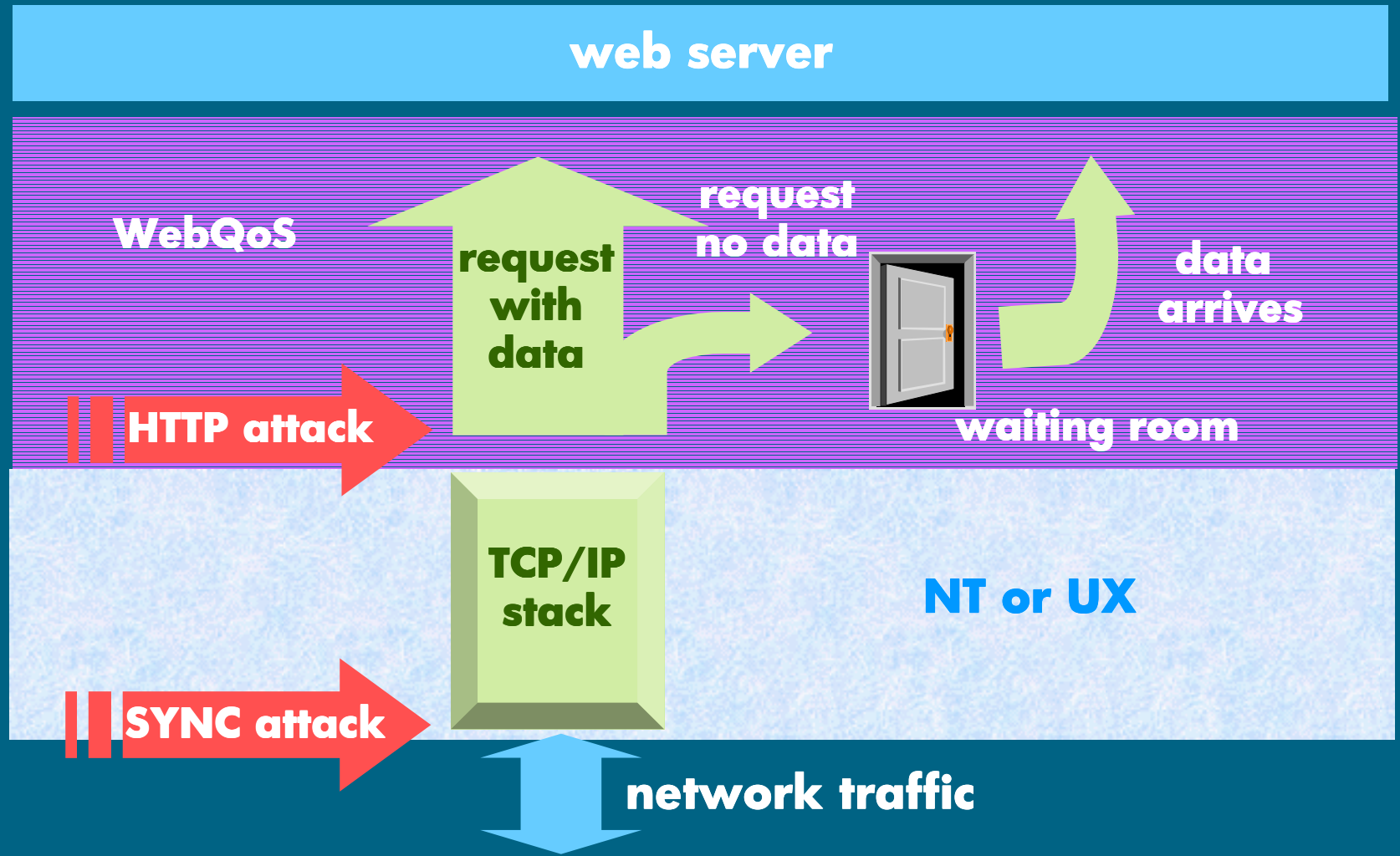
HP WebQoS Service Level Objectives

- Define Classifications
- Configure SLOs based on capacity & response time
- Set Admission Control-based Action Policies
- Set Queuing Policies
- Monitor compliance with management alerts

HP WebQoS SLOs For Monitoring or Controlling

- Ensure CPU is no more than <n> percent busy
- Ensure the <class> user class queue is no more than <n> percent full
- Maintain less than <n> sec average response time for <class> user class
- Support at least <n> concurrent sessions

WebQoS and HTTP DoS mitigation



complete service quality management from HP

best-in-class products,
technologies, partnerships,
and services

- HP WebQoS
 - measuring and assuring web-site performance and reliability
- HP OpenView IT Operations
 - leadership operations management technology
- HP OpenView Network Node Manager
 - the undisputed market leader
- HP PerfView
 - powerful performance analysis

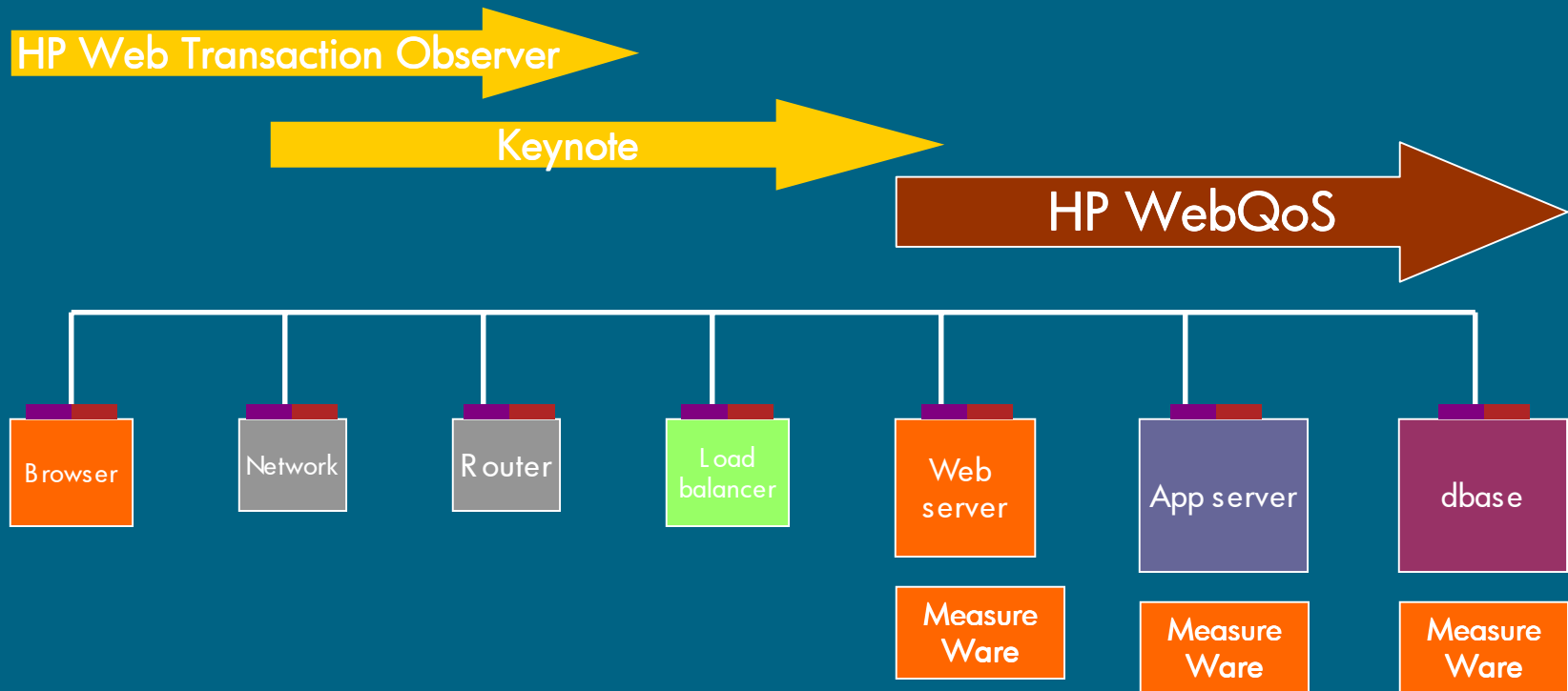


HP OPENVIEW



Performance and Usage Measurements

- Performance measures response-time and throughput
- Usage measures percent capacity or quantity used
- Various tools measure from different locations
- Select the tool that meets your business objective



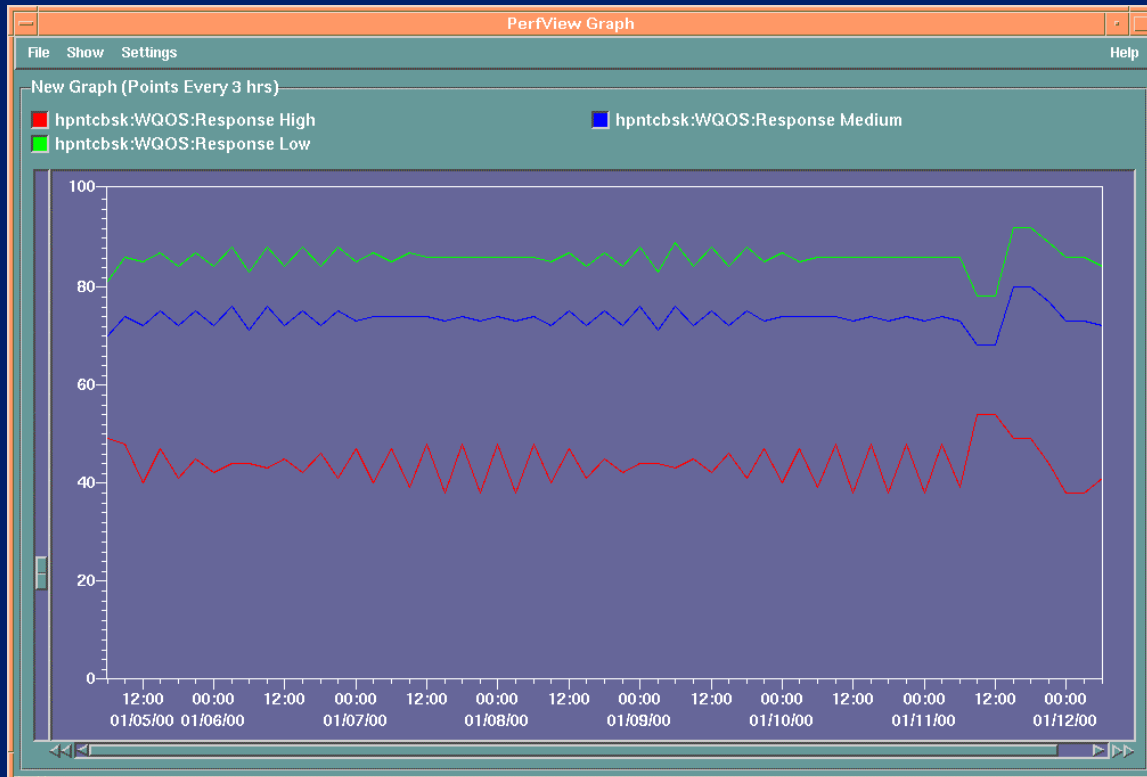
WebQoS & MeasureWare

Statistics Collected per Service Class at Configurable Sampling Interval:

- Average Response-Time
- Number of Active Sessions
- Number of Newly Admitted Sessions
- Number of Deferred Sessions
- Average Deferral Time
- Number of Redirected Sessions
- Number of Rejected Sessions

WebQoS & PerfView

- Graph and Analyze WebQoS Service and Site Measurements



WebQoS & IT Operations

- SLO and Threshold Violation Events
- Corrective Actions
- Proper Operation

The screenshot displays two windows from an IT Operations management system. The 'Message Browse' window shows a log of events with columns for severity, SUIAONE, date, time, node, application, and message. The 'ITO Node Group Bank' window shows a graphical representation of nodes, including 'net devices', 'ITO Management Server', and 'Web QoS'.

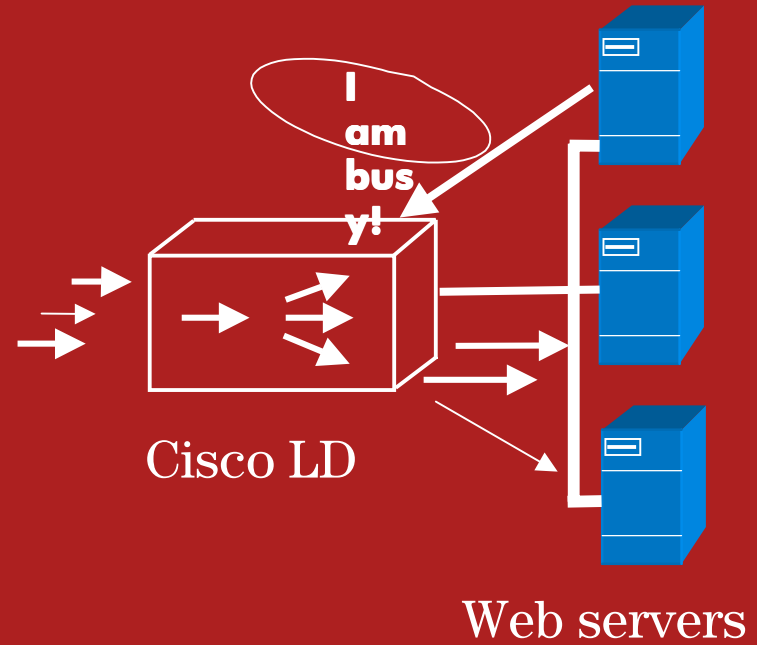
Sev.	SUIAONE	Date	Time	Node	Application	Message
Warn	--X----	12/20/99	13:08:46	b46t88.cup	Web QoS	Perf...
Warn	--X----	12/20/99	13:08:57	b46t88.cup	Web QoS	Perf...
Norm	--X----	12/20/99	13:12:47	b46t88.cup	Web QoS	Perf...
Min	--XR---	12/20/99	13:20:50	b46t88.cup	Web QoS	Perf...
Norm	--X----	12/20/99	15:44:56	b46t88.cup	HP IT/Opera	Op...
Warn	--X----	12/20/99	15:45:25	b46t88.cup	Web QoS	Perf...
Warn	--X----	12/20/99	15:45:25	b46t88.cup	Web QoS	Perf...
Norm	--X----	12/20/99	15:45:25	b46t88.cup	Web QoS	Perf...
Warn	--X----	12/20/99	15:50:14	b46t88.cup	Web QoS	Perf...
Warn	--X----	12/20/99	15:50:14	b46t88.cup	Web QoS	Perf...
Norm	--X----	12/20/99	15:50:14	b46t88.cup	Web QoS	Perf...
Norm	--X----	12/20/99	15:55:17	b46t88.cup	Web QoS	Performan sco_ef System b46t102: SLO compliance.
Warn	--X----	12/20/99	15:56:18	b46t88.cup	Web QoS	Performan sco_ef System b46t102: defer corrective action taken (cl...
Warn	--X----	12/20/99	15:56:18	b46t88.cup	Web QoS	Performan sco_ef System b46t102: response_time event occurred (cla...
Warn	--X----	12/20/99	16:01:20	b46t88.cup	Web QoS	Performan sco_ef System b46t72: defer corrective action taken (cla...
Warn	--X----	12/20/99	16:01:20	b46t88.cup	Web QoS	Performan sco_ef System b46t72: response_time event occurred (clas...
Warn	--X----	12/20/99	16:01:20	b46t88.cup	Web QoS	Performan sco_ef System b46t102: SLO compliance.
Warn	--X----	12/20/99	16:06:23	b46t88.cup	Web QoS	Performan sco_ef System b46t72: response_time event occurred (clas...

Active Messages: 0 0 1 171 26 0

Buttons: Own, Highlight, Details..., Perform Action, Annotations..., Acknowledge

WebQoS Corrective Action Event

HP WebQoS LB Controller



customer
examples

WAL★MART[®]
—online—

Telefonica

REMOTE**NET**
CORPORATION

gazelle.com

HP WebQoS Improves Business at All Levels

- Business Managers
 - Customer Retention
 - Premium Services
- Site Architects
 - Performance, Scalability, Availability, Simplicity
- Site Administrators
 - Capacity Planning and Optimization
- Operations
 - Real-time status and adjustments
 - Graceful site maintenance



back-up slides

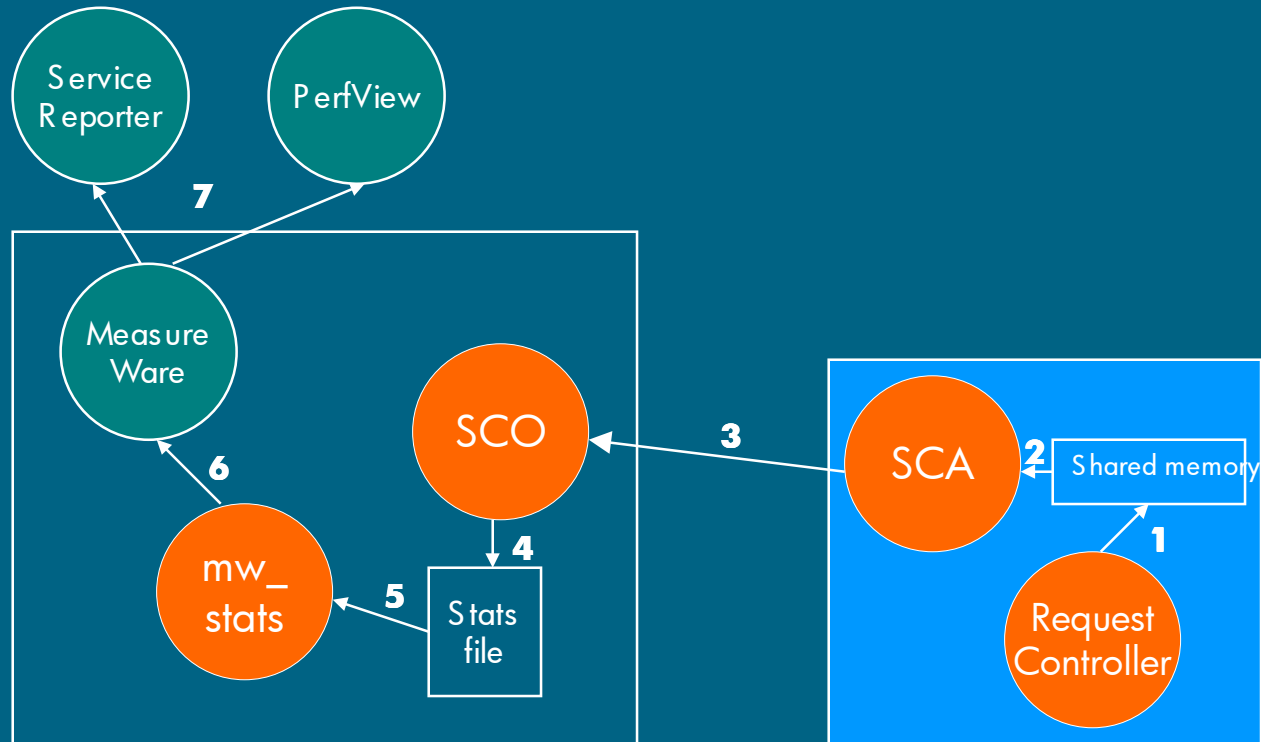
WebQoS Session Marking & Classification

- Sessions and priority marked by cookie or URL encoding and DiffServ
- For differentiating **access** and **performance**
- Distinguished by
 - source IP address
 - destination IP address
 - virtual server
 - URL
 - hostname
 - DiffServ/Type of Service (TOS)
 - API
- Maintained for the duration of the session or until re-classified

HP WebQoS Admission Control Actions

- Redirect to node in cluster
 - cluster nodes automatically determined
- Redirect to URL
 - send user to remote site or to alternate content
- Redirect with deferral
 - redirect and set timer for auto-reconnection
 - Example: allocate 600 sessions/minute by incrementing counters 1 second for every 10 deferred session requests
- Reject with or without customized error
 - may improve security

HP WebQoS Performance Measurement Data Flow Diagram



-  WebQoS Component
-  OpenView Component

WebQoS & Service Reporter Predefined Report Templates

- Response Time
 - Average Response Time per Class
- Summaries
 - Admission Control Session-Handling
 - Admissions
 - Deferrals
 - Redirections
 - Rejections
 - Corrective Action Outcome
- Time-series Details
 - Session Outcome
 - Corrective Action Outcome
 - Admitted Sessions per Class
 - Deferred Sessions per Class
 - Redirected Sessions per Class
 - Rejected Sessions per Class