Unified Service Delivery – Transforming Performance Management

Powered by NetScout

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What Impacts Service Delivery?

- Unexpected consequences of planned changes
- Consumerization, mobility, and cloud challenge IT control over user experience
- Symptoms and root cause are usually in different domains
- Unpredictable user behavior
- Cyber incidents compromise any and all services
What’s on your mind…

- Improving on the performance of existing services?
- Launching new applications and services on schedule?
- Reducing downtime risks on mission-critical services?
- Keeping the business and end-users happy?
- Coping with reductions in the IT Operations budget?

*It’s all about delivering services*
Limited overall visibility and collaboration between disciplines
Service Management Challenges

**No Problem Prediction**
- Unable to identify problems before users impacted

**No Effective Triage**
- 50% to 60% resources wasted chasing problems

**No Effective Diagnosis**
- Performance problem diagnosis can take days

- Ineffective insight into emerging performance problems
- Users’ calls to help desk triggers reaction
- Lack of unified end-to-end visibility of business services and service levels

- Common “rule-out” practices for incidents means too many IT staff are consumed to solve problems
- Difficult to identify root cause and provide evidence
- Support people are too busy putting out fires

- Lack of collaboration between groups to troubleshoot and identify and solve the problem
- Issues are diagnosed independently in technology silos
- Locating and identifying precise root cause is where most time is lost

Limited Automation, Effective Tools and Lack of Time and Resources
Successful Service Delivery Requires Visibility of All Services to All Users All The Time

Unified Service Delivery Management

Common Operational Procedures
Common Operational Metrics and Views

Network
Application
Voice/Video
Cyber Security
Rapid, Proactive Fault Isolation Process

Business User Communities

Unified Services Dashboard

Service Intelligence

Packet Analysis & Session Tracing

Component Management Tools
(CA, IBM, Microsoft, Cisco, Others)

Solved
Solved
Solved
Solved
Conventional Application Performance Testing

CONTROL PLANE (AAA, DNS, etc.)
The Network Monitoring Perspective

CONTROL PLANE
(AAA, DNS, etc.)

APPLICATION
MW

APPLICATION

APPLICATION

APPLICATION

C
C
C
C

S
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S
Instrumentation – Distributed Analytics – Contextual Displays

- Baselining
- Capacity Planning
- Troubleshooting
- Reporting

nGenius Service Delivery Manager

nGenius Performance / Voice Video Manager

- ArcSight
- HP – NNMi/BAC
- IBM – Tivoli/Netcool

MIB II

Forensic Intelligence

Voice and Video Engine

InfiniStreams & Continuous Packet Capture

Virtual Agents

Cisco Integrated Agents

NetFlow / IP-SLA

Packet Flow Switch
Adaptive Session Intelligence™ (ASI)

Delivering a Broad Spectrum of Service Intelligence
From the Network Vantage Point

Speeds up to 100Gbps.
All applications
All users

Voice Quality
Video Quality
Data Quality
User Experience
Application Errors
Application Usage
Session Reconstruction
Adaptive Session Intelligence™ (ASI) Technology

- **A-CDM** Flow Data → A-CDM based metrics & KPIs → nGenius Performance Manager
- **ASRs** Session/Transaction Metadata → Sessions, events, connections and transactions → nGenius InfiniStream Appliance
- **ASTs** Intelligent Packet Record → Virtualized packets created, indexed & stored → nGenius InfiniStream Appliance
- **V-CDM, Other**

**Adaptive Session Intelligence Engine**

- nGenius OS
- Live Packet Stream
- 1:1 relationship to physical packets

**nGenius OS**

- Adaptive Session Intelligence Engine
- Patent Pending

**Packet**

- Live Packets
- Metadata
- Virtual Packets
ASI Abstraction Model for Any Infrastructure

User Keys
- User ID
- Community
- Location

Server Keys
- App 1
  - Server ID
  - Server Location
- App 2
  - Server ID
  - Server Location

nGenius InfiniStream
- App ID
- QoS
- Session Attributes

ASI
- KPI (Key Performance Indicators)
- KTI (Key Traffic Indicators)
- KEI (Key Error Indicators)
- Session List and Events
- Intelligent Packet Records
- Alarms and Exceptions
ASI Data Sources in a Single Pane of Glass

- Super InfiniStream
  - Layer 7 ASI

- Mini InfiniStream
  - Layer 4 ASI
  - NetFlow + IPSLA

- Micro InfiniStream
  - Layer 2 ASI
  - Packet Flow
  - Switch
Multi-Tier Application Infrastructure

Web Servers

App Servers

Database Servers

Web Response Time

App Server Response Time

DB Server Response Time
Multi-Tier Application Analysis Using USDM
Use Case: Salesforce.com Rollout
Application Roll-out - Salesforce.com

- Salesforce.com
  - OKTA (Single Sign On)
    - OKTA Agent
      - Internal Sales Users
      - Pervasive
      - Oracle
      - Active Directory
    - SF.com Admin
- Public Cloud
- NetScout Cloud
UAT Test Case:

- 1 User created several sales orders with large attachments totaling ~60MB
- Total volume generated at next Pervasive pull from SalesForce ~70MB

• Data feeds every ~15 minutes showed consistent results
• Query statement incorrectly pulling everything every time rather than only changes
• Data totals would have compounded over time

• Once the query statement was corrected traffic pattern normalized
• nGenius Performance Manager identifies problem and validates corrective action
Use Case: Voice/Video and QOS
Voice / Video Successes – QOS

Clearly shows packets are set to “Best Effort” rather than proper QOS of “Expedite”

Retransmission threshold reached in Oak Conference Room
Voice / Video Successes – QOS

Problem # 1
There is no QOS set from the San Mateo conference room

Problem # 2
QOS from Oak is not being maintained across the WAN

Symptom Indicator
Packet Loss and Jitter for this call is high due to lack of Network QOS, which will result in poor video quality.
Use Case: Patching
Application Successes – Kace Patching

SDM showed a high number of retransmissions in the Westford site for Outlook Anywhere.

Drilling further, we see that 92.34Mbps of the 96.19Mbps between 10:03am and 10:04am was generated from ithelp.netscout.com.

Drilling into that interface through PM we see a spike in traffic.

This is our KACE Patching Server.

“Top 10 Applications” for a point in time during the spike showed 96.19Mbps of the total 100Mbps link was HTTPS traffic.
Application Successes – Kace Patching

According to our vendor, the patching process is designed to stagger or throttle patching, limiting connections to only 6-7 at a time.

However, when we drill deeper into “ALL AL Conversations” for a point in time in which saturation was evident, it shows 175 unique calls to KACE from remote clients in a one minute period.

Armed with this data we were able to escalate the ticket to their top engineer for review.
Operational Value: Move from Reactive to Proactive and Get Ahead of the Problem

- **Automated Analytics Alarm**
- **Threshold Alarm**
- **User Impact**
- **User Calls Help Desk**

**Business Impact**
- **Predictive**
- **Preemptive**
- **Responsive**

**Time**
- **Abnormal Condition Begins**
- **Problem is Recognized**
- **Root Cause Found**
- **Problem Resolved**

**Typical Problem Resolution Cycle**
- **Avoid User Impact**
- **Minimize User Impact**
- **Reduce User Impact**
Who Is NetScout?

Strategic performance management and service assurance solutions for market leaders

• 93% of F100 enterprise customers
• 148+ service providers
• Global presence

Strong financials

• NASDAQ: NTCT
• FY 2012 revenue $ 308M
• Cash: $ 200M+

Technology leadership

• 20+ years of experience
• 300+ R&D employees
• 60+ Patents