



Integrated platform for network management.

Tivoli/Netcool suite for Network Assurance

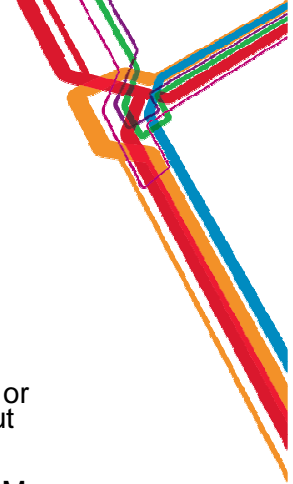
PCTY2012



Pulse Comes to You

Optimizing the World's Infrastructure
15 Maggio 2012 - Roma

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Agenda

- Network & Service Assurance Overview
- Fault Management Session
- Network Monitoring and Configuration Management Session
- Performance Management Session

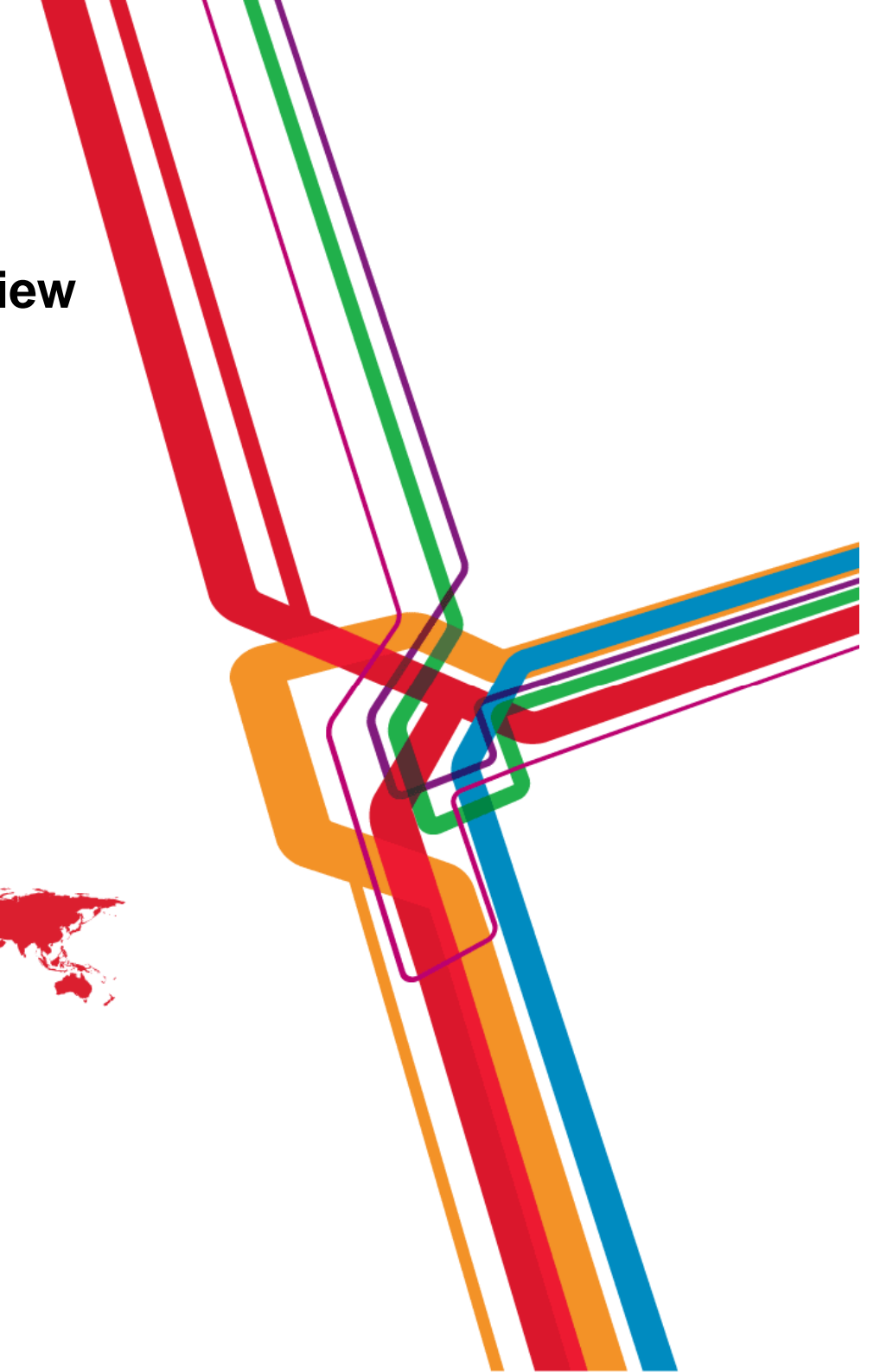
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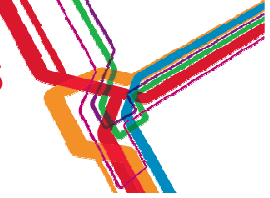
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Tivoli Network and Service Assurance Portfolio – Components



Portal: Business Service Management and Consolidated Operations

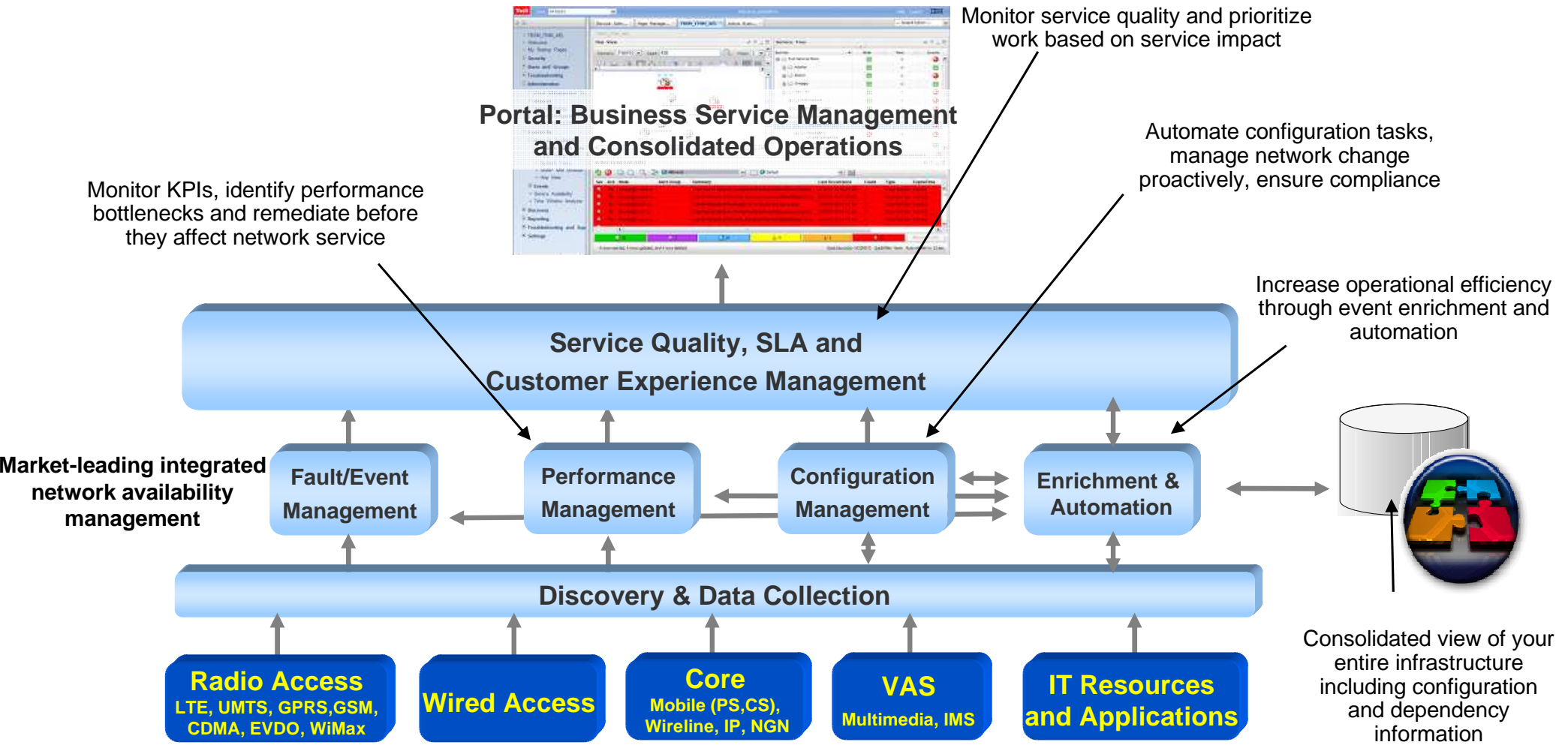
Monitor service quality and prioritize work based on service impact

Automate configuration tasks, manage network change proactively, ensure compliance

Monitor KPIs, identify performance bottlenecks and remediate before they affect network service

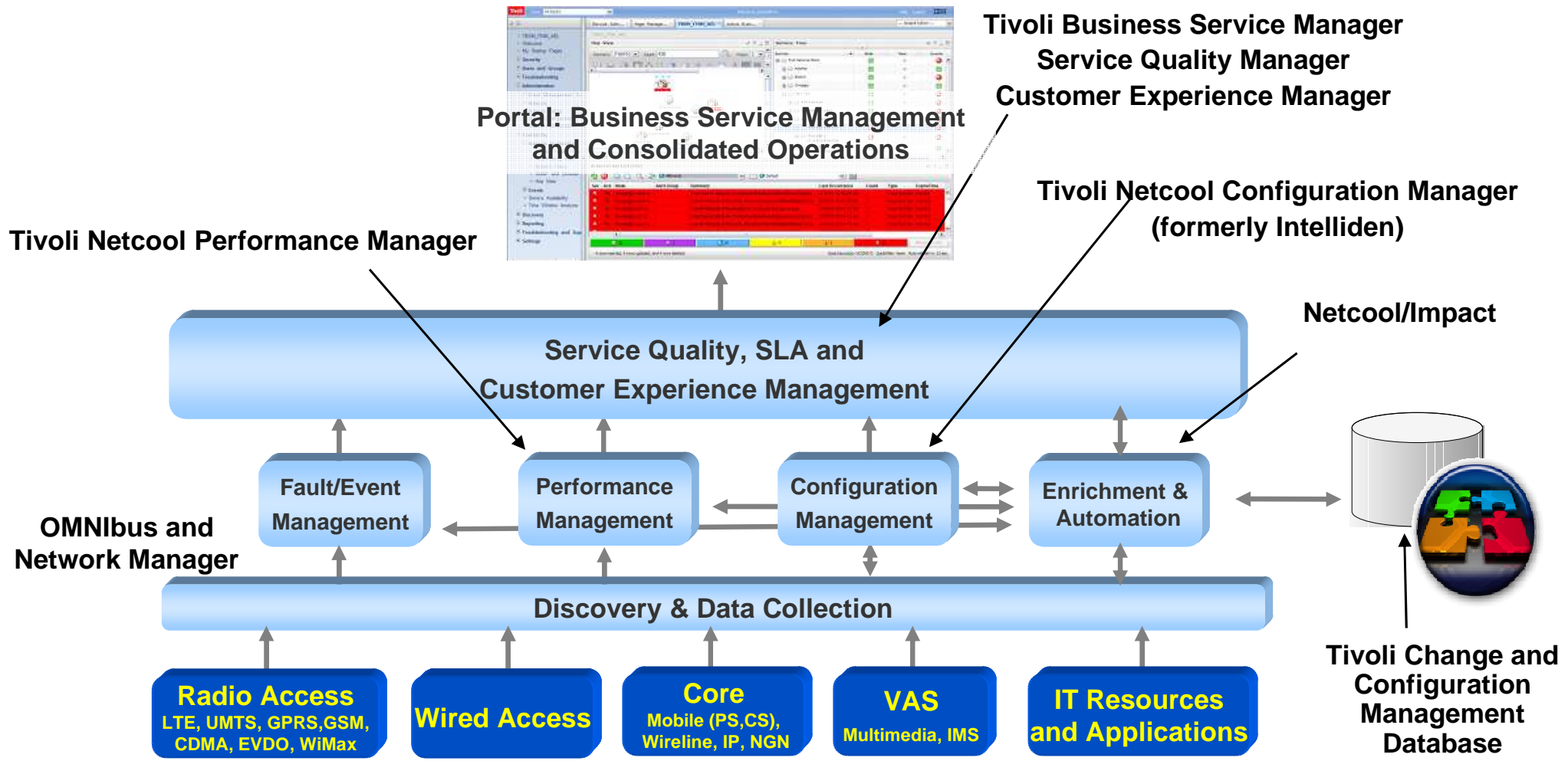
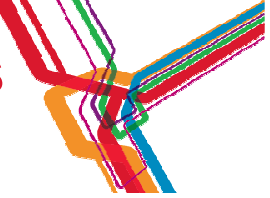
Increase operational efficiency through event enrichment and automation

Market-leading integrated network availability management



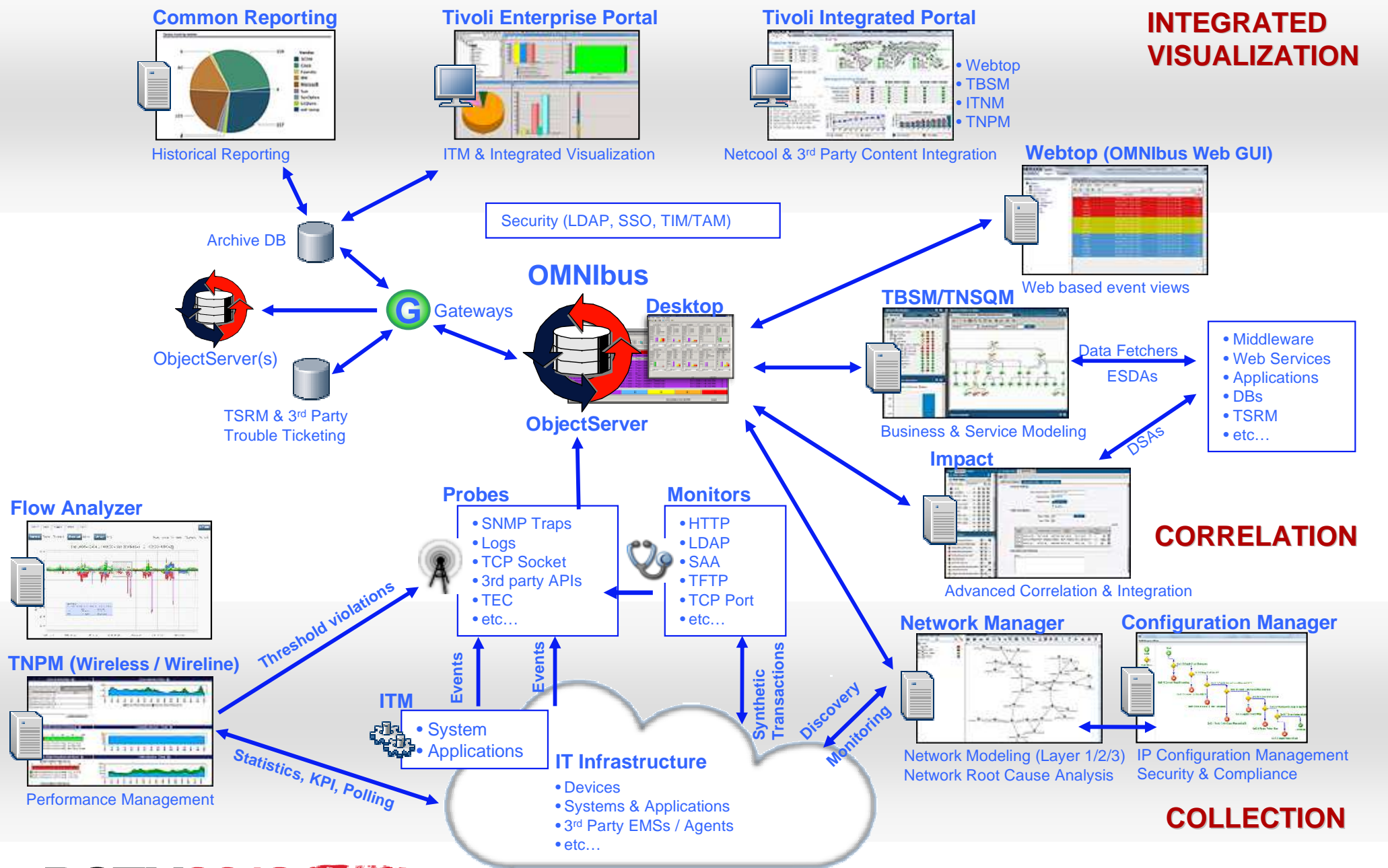
...All aligned to your service management goals

Tivoli Network and Service Assurance Portfolio – Components



...All aligned to your service management goals

Tivoli Netcool Service Assurance - Architecture

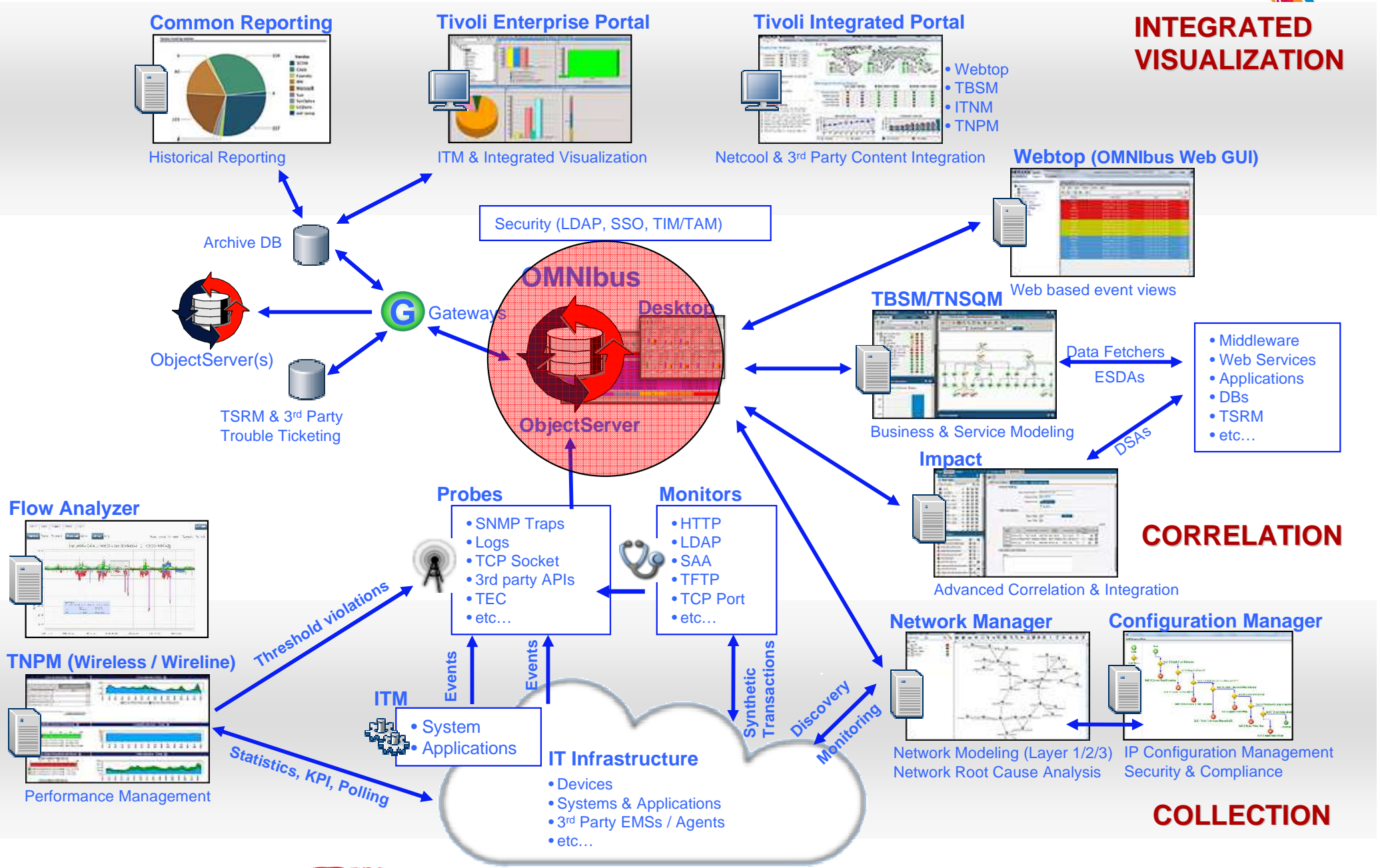


Agenda

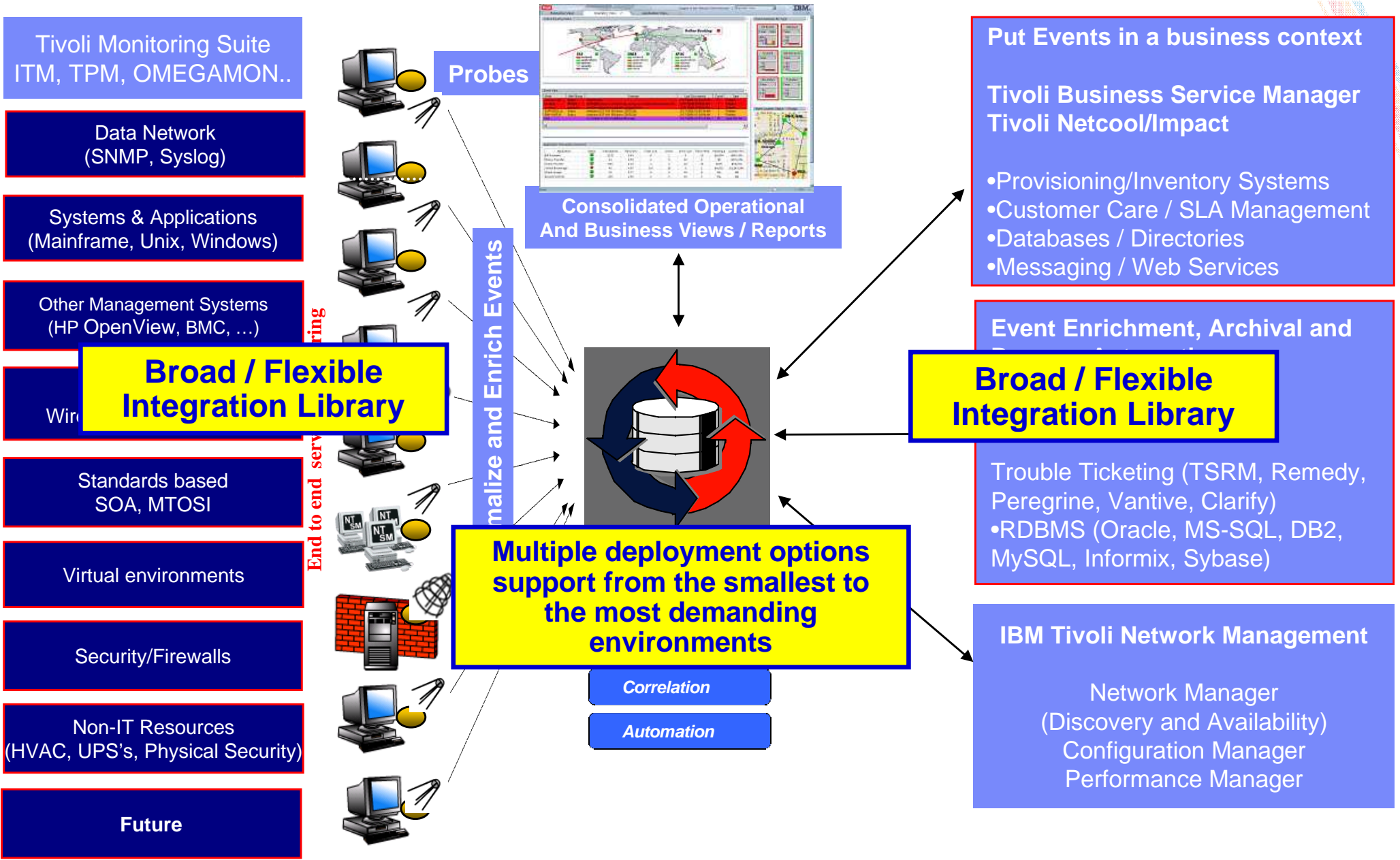
- Network & Service Assurance Overview
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Tivoli Netcool/Omnibus



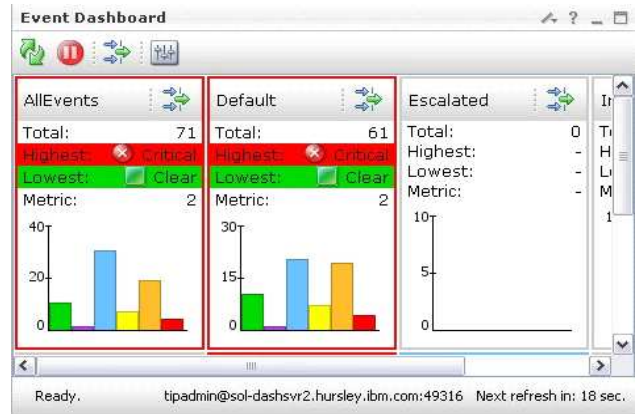
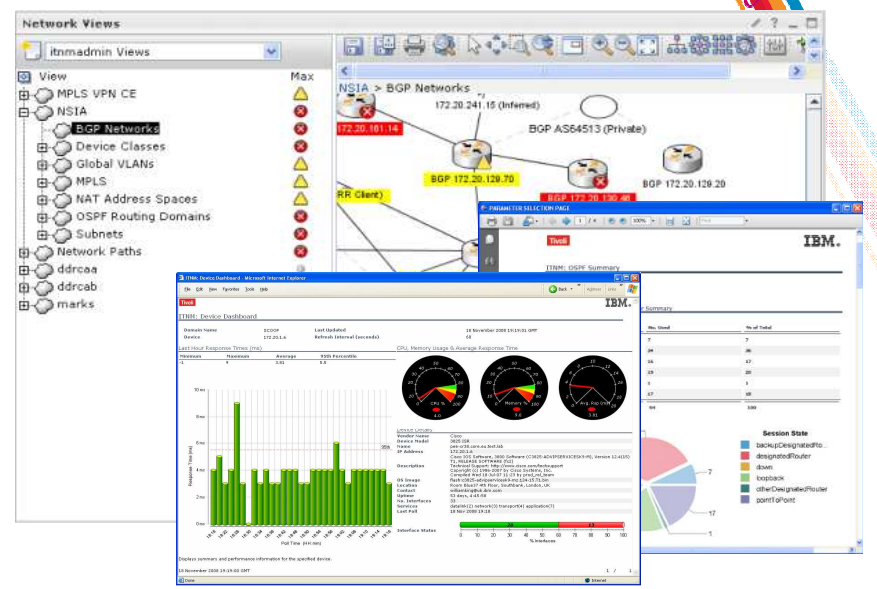
Tivoli Netcool/OMNibus Solution



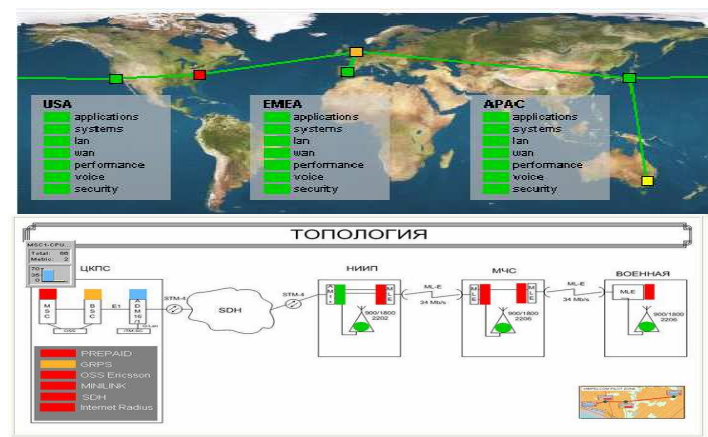
The Web GUI is more than just an Event List...

Node	TrendDirection	Summary	DaysToCritica...
Beijing	Raising	Prediction from Beijing with confidence 90. Time to critical 1. Time t...	2
Tokyo	Raising	Prediction from Tokyo with confidence 90. Time to critical 1. Time t...	2
London	Raising	Prediction from London with confidence 80. Time to critical 1. Time ...	1
Shanghai	Raising	Prediction from Shanghai with confidence 80. Time to critical 5. Tim...	5
Tokyo	Constant	Prediction from Tokyo with confidence 80. Time to critical 5. Time t...	5
Washington DC	Constant	Prediction from Washington DC with confidence 80. Time to critical...	5
Abuja	Constant	Prediction from Abuja with confidence 80. Time to critical 5. Time t...	5
London	Constant	Prediction from London with confidence 80. Time to critical 5. Time ...	5
Berlin	Raising	Prediction from Berlin with confidence 80. Time to critical 5. Time t...	5
Beijing	Constant	Prediction from Beijing with confidence 75. Time to critical 7. Time t...	7
Sydney	Constant	Prediction from Sydney with confidence 75. Time to critical 7. Time ...	7

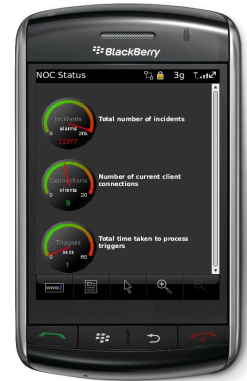
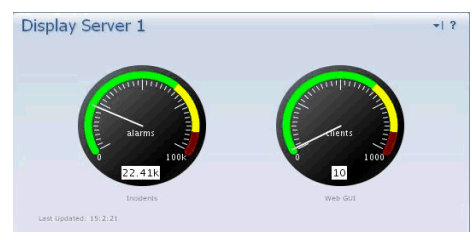
Active Event List (AEL)



Event Dashboard and Charts



Web GUI Maps



Web GUI Gauges

+ a dedicated XML based API for additional flexibility (WAAPI)

Enhanced visualization with Tivoli Netcool/OMNIBus WebGUI including service views driven by event enrichment



COMPANY NAME View: All tasks Welcome: stephen IBM Tivoli Help | Logout

YCN Availability Details and Journals Performance Active Event List (AEL) Select Action

YCN Availability

COMPANYNAME

HOME SUPPORT

Web Tier App Tier Backend Resources

- Security
- Web
- Application
- Network
- Database
- Server
- Storage
- Mainframe

Events By Severity

Incidents 1.34M

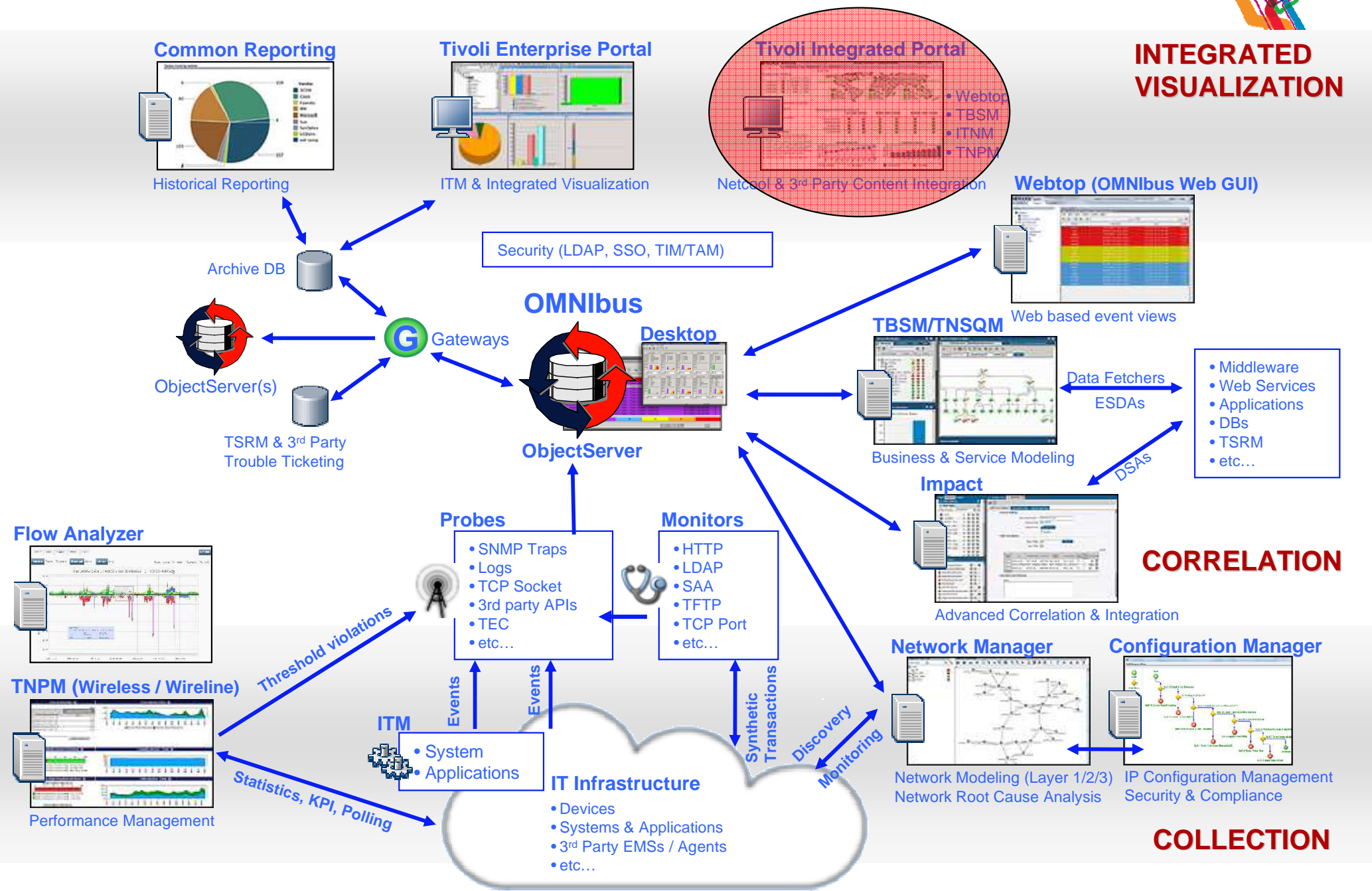
Average Acknowledgement Times (sec) - Past 24 hrs

NOC Escalated Ack'd Tickets

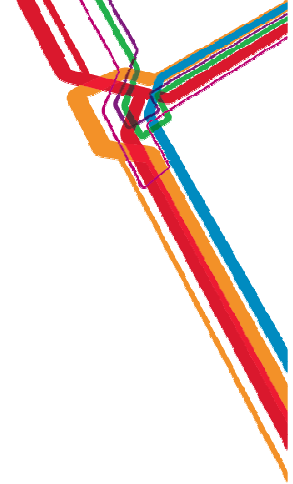
Powered by Tivoli

Created by Gwyn Samuel

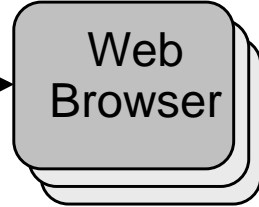
Tivoli Integrated Portal



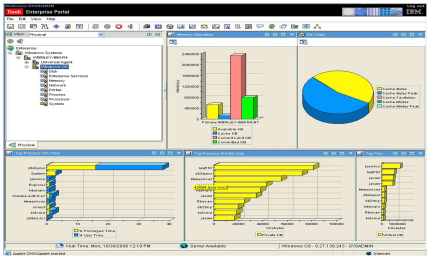
Visualization Convergence



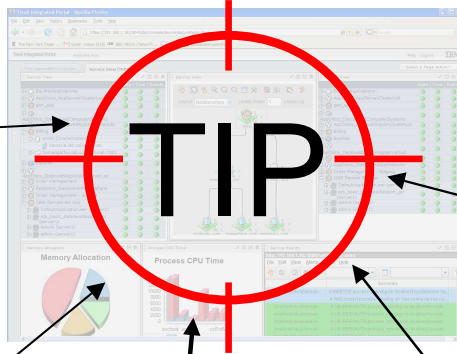
Tivoli Integrated Portal



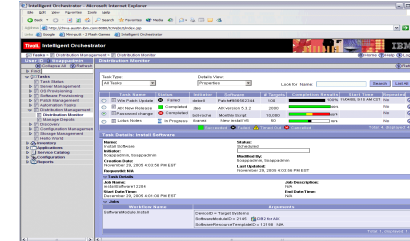
ITM



TEP based

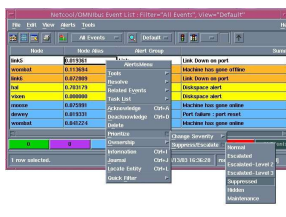
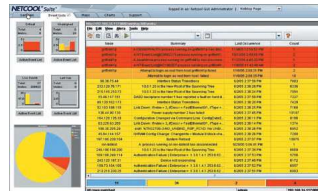
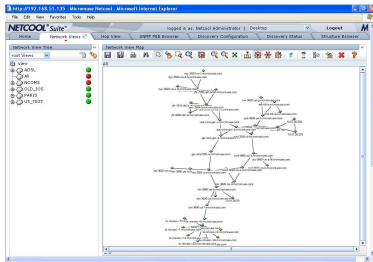


TNPM

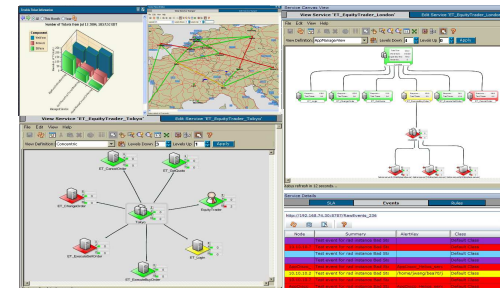


OMNibus GUIs

ITNM



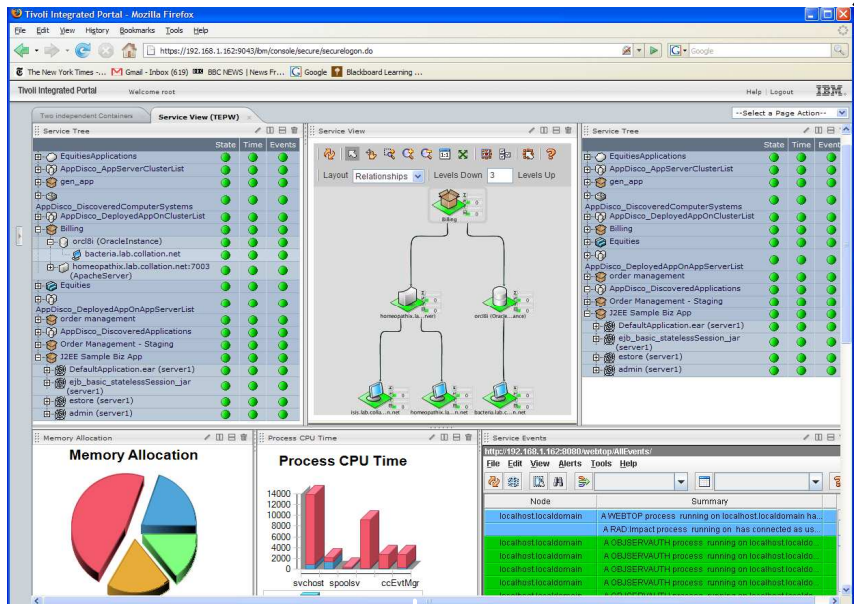
TBSM



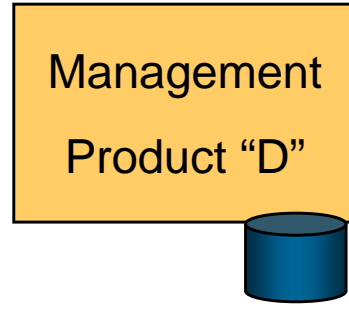
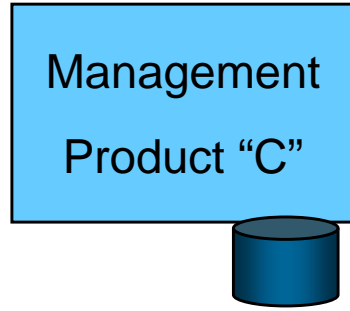
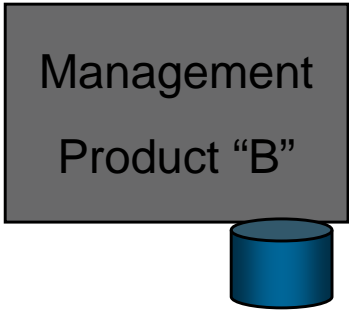
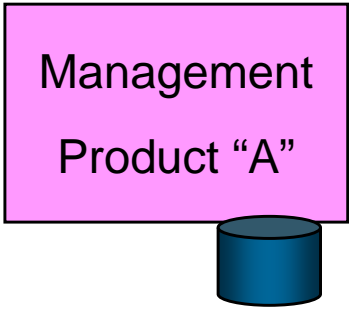
Tivoli Integrated Portal (TIP) - Web Console For Integrated User Experience

Integration through:

- Views, data and operations from multiple products interacting on a TIP page
- Actions and context shared between views and pages
- User customizable pages
- Product boundaries eliminated for user

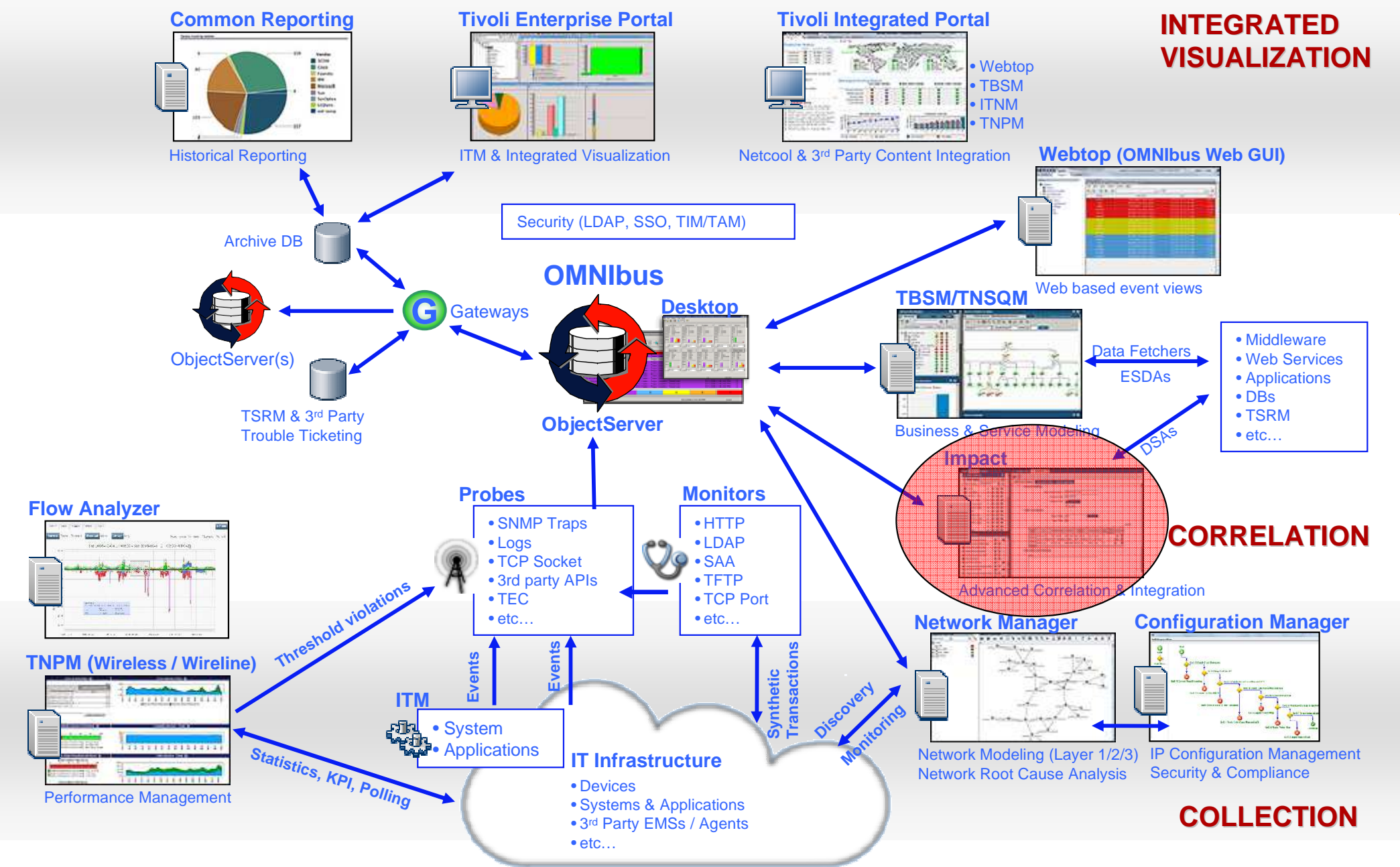
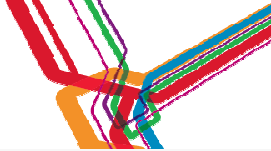


TIP Web Console



Products provide their specific functions, features and data

Netcool/Impact



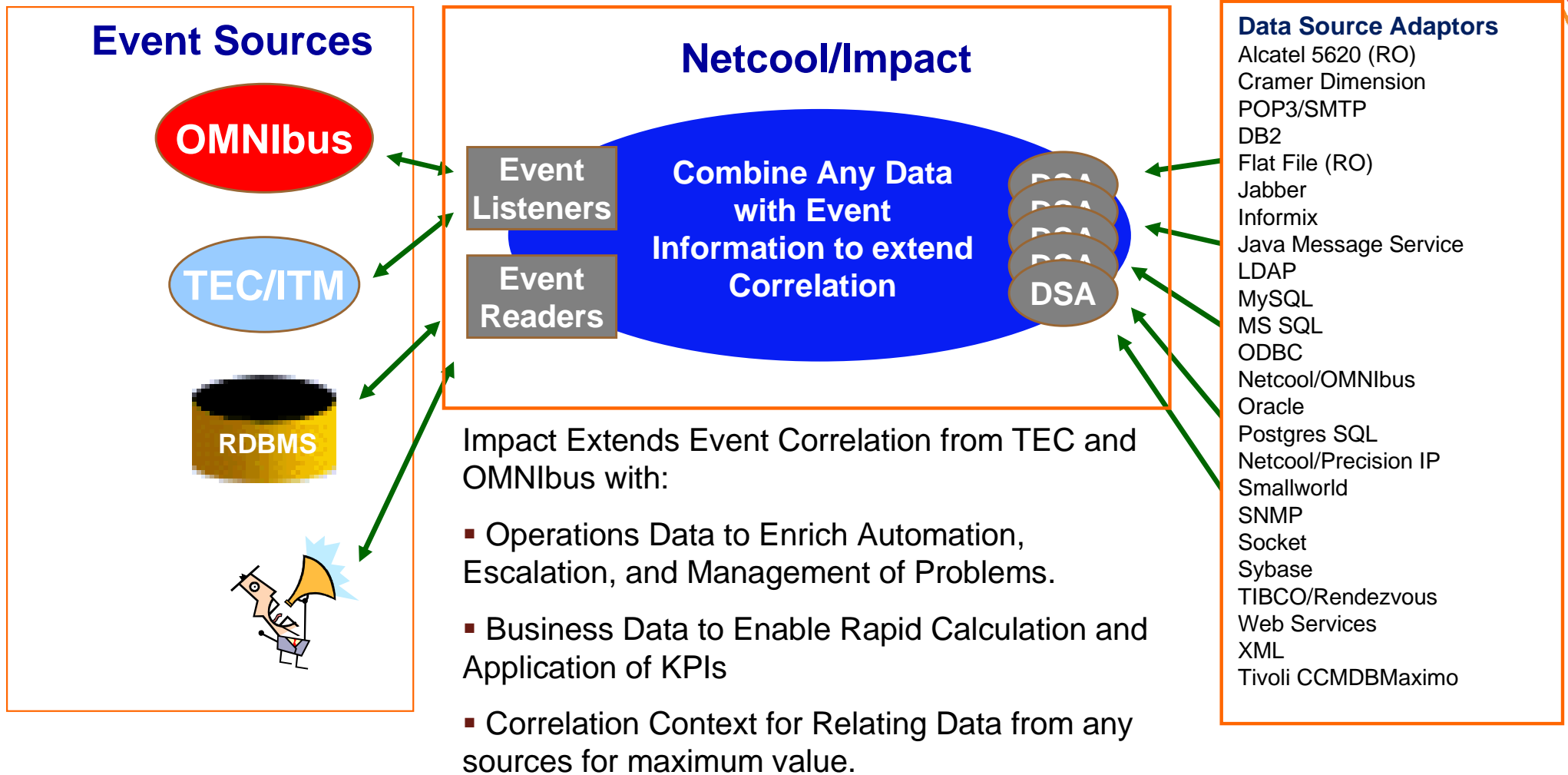
Typical Uses of Netcool/Impact



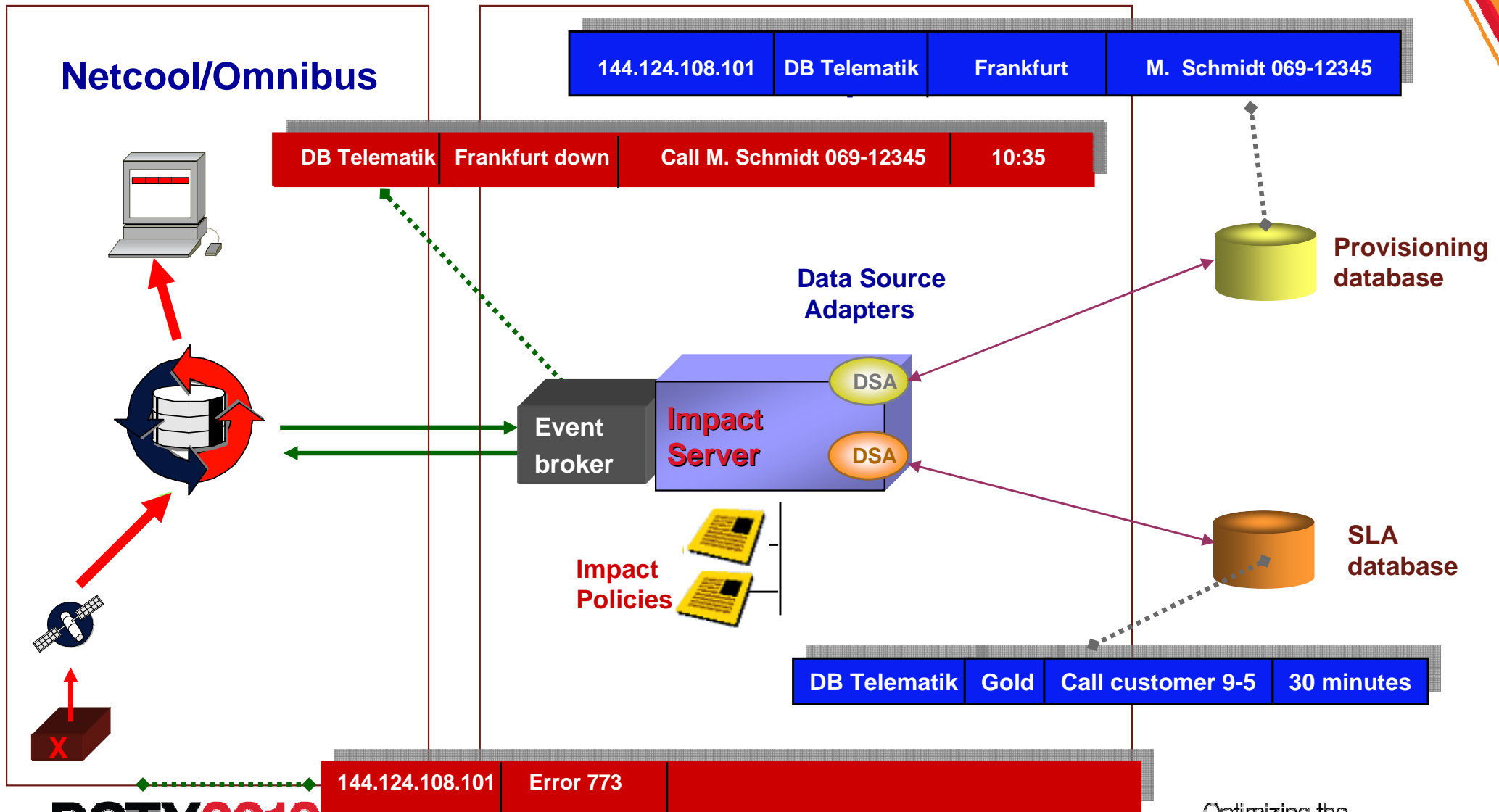
- Customers use Impact to process high-volume event streams and:
 - Gather additional information about an event (“**enrichment**”)
 - Decide which events should be filtered out (“**suppression**”)
 - Set markers in diverse data sources (“**correlation**”)
 - Take action on devices (“**auto-correction**”)
 - Alert staff about a high-priority condition (“**notification**”)
 - And escalate, if none of the above actions produced the desired results (“**escalation**”)

Netcool/Impact

Increased Correlation Value



The Event Lifecycle with Tivoli Netcool Impact

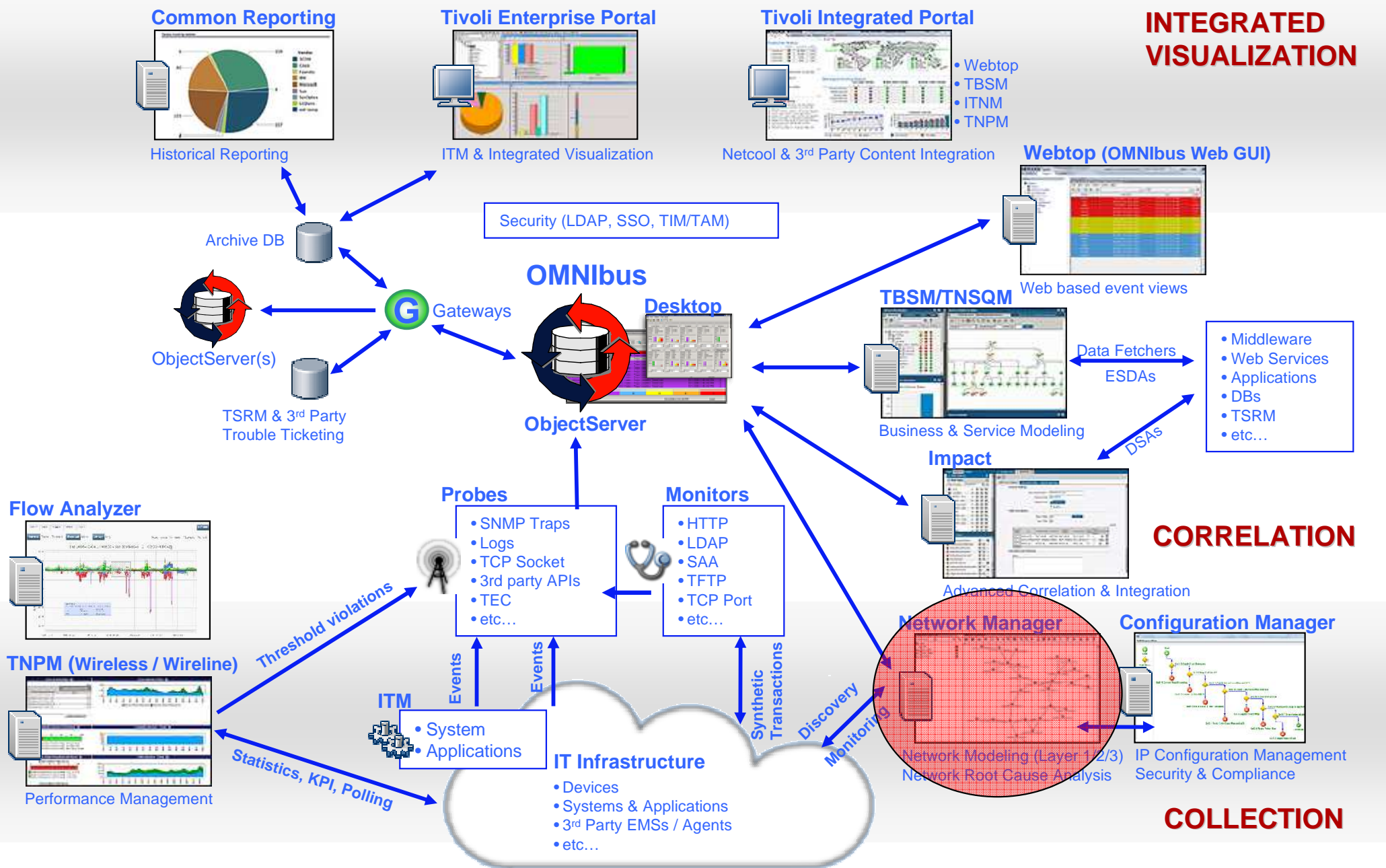


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IBM Tivoli Network Manager



IBM Tivoli OMNibus and Network Manager

Industry-leading network availability solution

Provides the key discovery, monitoring, and root cause analysis for your network infrastructure

Scalable Flexible Network Discovery

- Layer 1, 2 and 3 network technology
- support including IPv6, MPLS and Ethernet Services
- Dynamic, always active and event driven
- Centralized Open Network Data Repository

Real time web-based Network Visualization

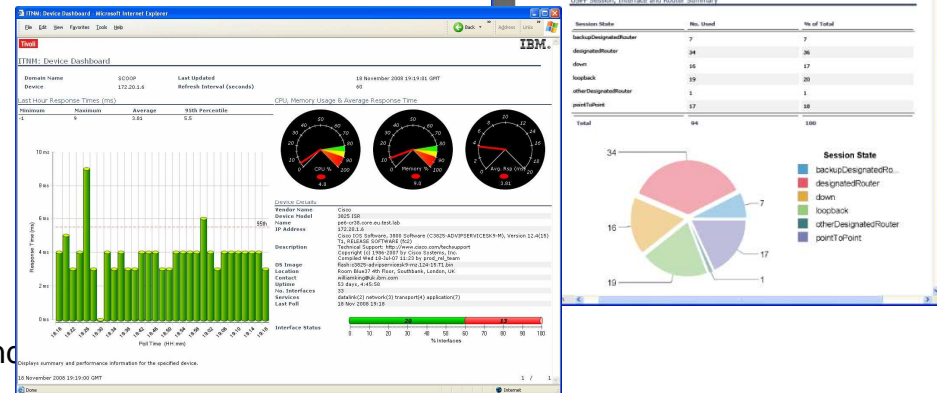
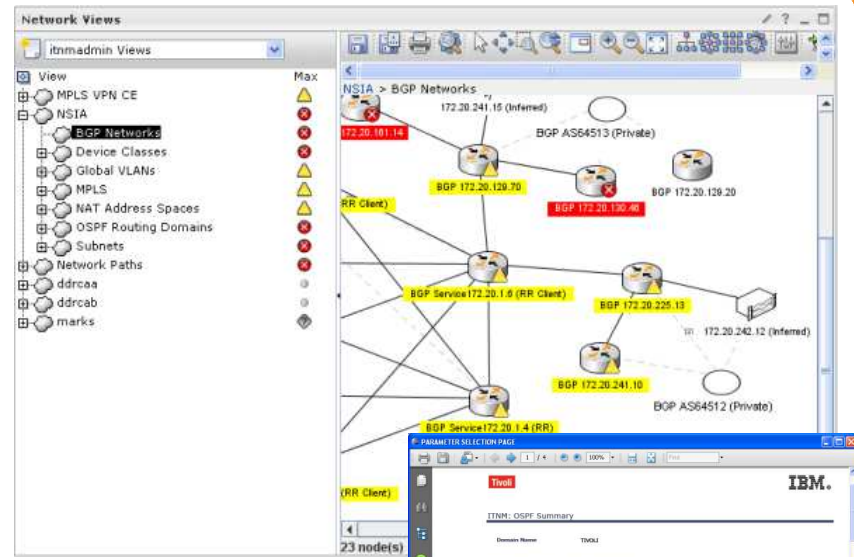
- Task-oriented UI helps operations staff locate, troubleshoot and resolve network problems
- Integrated fault, topology and performance views
- Launch 3rd party tools for further diagnostics

Accurate Monitoring and Root-cause Analysis

- Automatic targeting & configuration of network monitoring
- Correlation of events based upon the network connectivity
- Identification and isolation of root cause & symptom events

Unique technology advantages

- #1 Fault Management Solution fully integrated with discovery, monitoring and
- Flexible Network Discovery with broadest technology coverage
- Open standards-based Network Topology Model



IBM Tivoli Network Manager – Root Cause Analysis

Root Cause Analysis is switched on using ITNM IP's Topology-based Event Correlation

Something fails in network – lots of devices are unreachable. No Root cause analysis is available

Root Cause Device

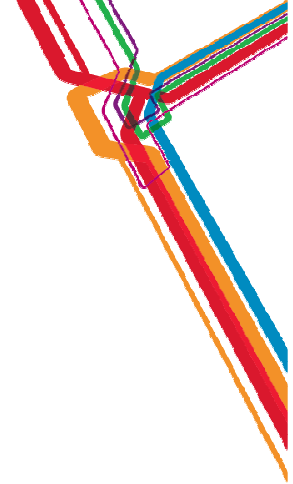
http://194.203.200.205/AllEvents/

Node	Summary	CauseType	Last
172.20.1.3	Link Down, Keepalive failed (FastEthernet1/2)	Root Cause	9/10/02 8:37:34 PM
172.20.1.174	DVC Failed - Pings Complete: Timed out	Symptom	9/10/02 8:38:15 PM
172.20.4.12	DVC Failed - Pings Complete: Timed out	Symptom	9/10/02 8:37:57 PM
172.20.2.12	DVC Failed - Pings Complete: Timed out	Symptom	9/10/02 8:37:55 PM
172.20.1.20	DVC Failed - Pings Complete: Timed out	Symptom	9/10/02 8:37:41 PM
172.20.18.41	DVC Failed - Pings Complete: Timed out	Symptom	9/10/02 8:37:50 PM
172.20.18.13	DVC Failed - Pings Complete: Timed out	Symptom	9/10/02 8:37:49 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:54 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:56 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:48 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:13 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:09 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:08 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:39 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:10 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:04 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:47 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:06 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:00 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:12 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:01 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:05 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:59 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:03 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:07 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:53 PM
	s Complete: Timed out	Symptom	9/10/02 8:38:14 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:58 PM
	s Complete: Timed out	Symptom	9/10/02 8:37:40 PM

Symptom events showing Impacted devices

IBM Tivoli Network Manager

Integrated Event and Topology Views



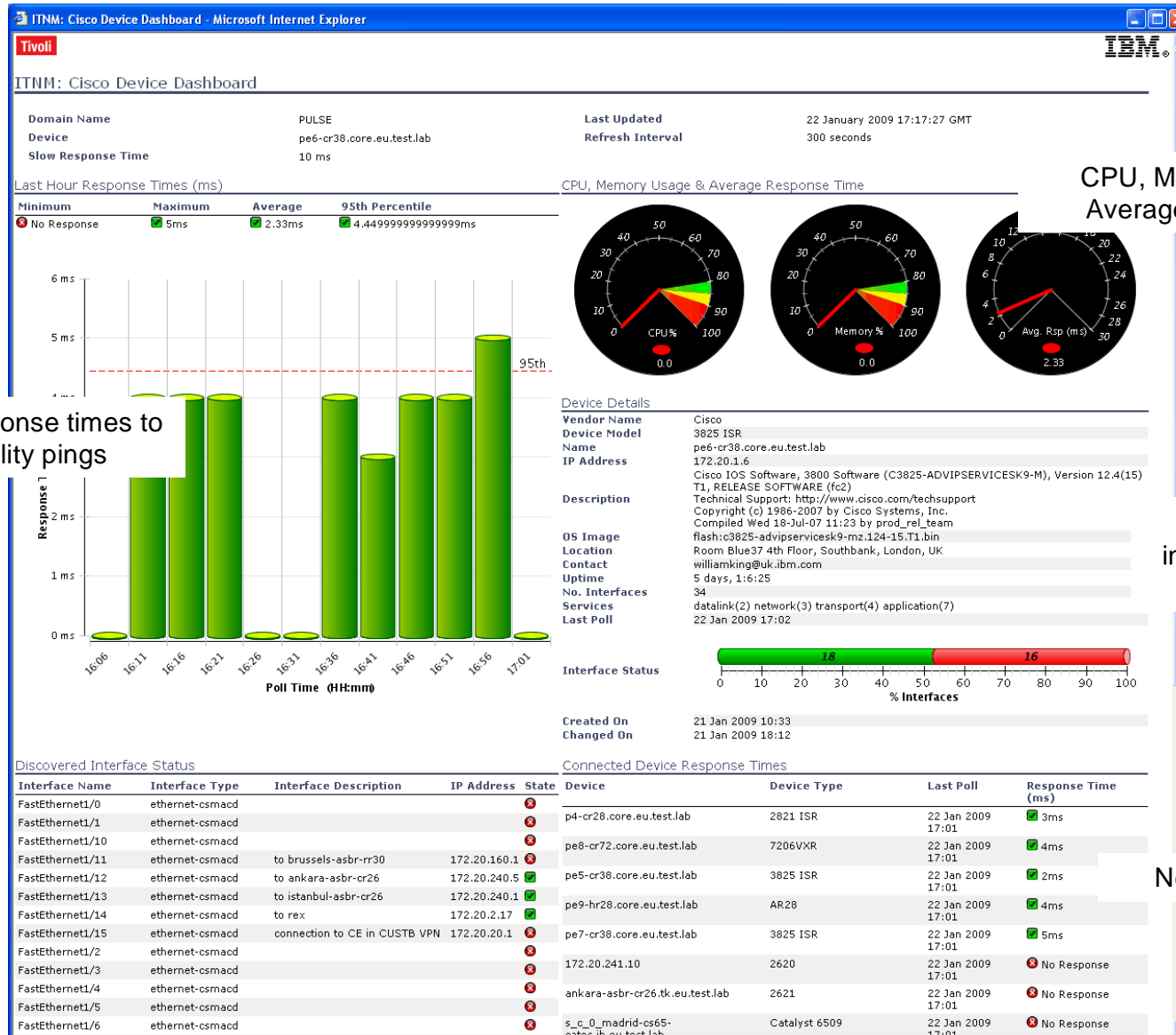
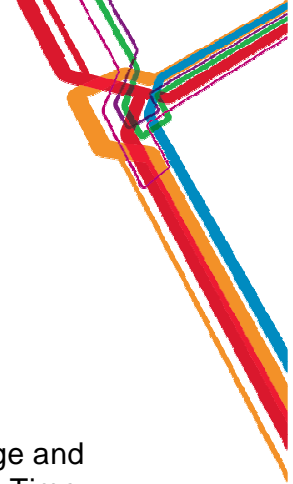
The screenshot displays the IBM Tivoli Network Manager interface within a Microsoft Internet Explorer browser window. The interface is divided into several sections:

- Network View Tree (Left):** A hierarchical tree structure showing the network configuration. A callout box points to this section with the text: "Filter views: user-defined or automatically created".
- Network View Map (Center):** A network topology diagram showing connections between nodes. A callout box points to this section with the text: "Network Topology Maps". The diagram includes nodes like "lon-3000-ce-f.micromuse.com", "gb-core7200-a.micromuse.com", "lon-3000-pe-b.micromuse.com", and "-3000-pe-b.micromuse.com", all connected to a central "MPLS CORE" node.
- Active Event List (Bottom):** A table displaying a list of active events. A callout box points to this section with the text: "Active Event List".

Node	Summary	Last Occurrence	Count
sf01337w.uk.dev.micromu...	A Probe process running on sf01337w.uk.dev.micromu...	08/03/05 11:51:58	1
sf01337w.uk.dev.micromu...	snmpnet probe on sf01337w.uk.dev.micromuse.com. Goin...	08/03/05 11:51:58	1
sf01337w.uk.dev.micromu...	Attempt to login as user root from host sf01337w.uk.dev...	04/08/05 13:45:01	4
192.168.34.223	Link Down on port	08/03/05 11:51:54	42
	Diskspace alert	08/03/05 11:51:48	14
	Machine has gone offline	08/03/05 11:51:54	8
	Diskspace alert	08/03/05 11:51:53	2

Summary: 2 (blue), 2 (yellow), 3 (orange), 2 (red) All Events (9)
0 rows inserted, 0 rows updated, and 0 rows deleted. root 192.168.34.223:8080

IBM Tivoli Network Manager Network Dashboards

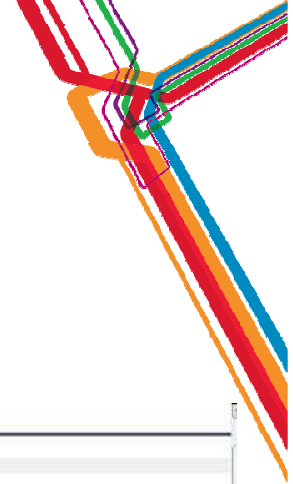


CPU, Memory Usage and Average Response Time

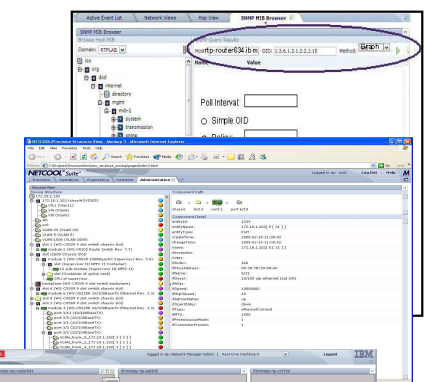
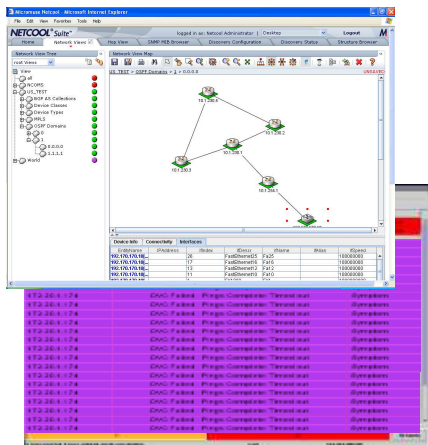
Device details including device type, address, uptime

Neighbour Status

New network health reports



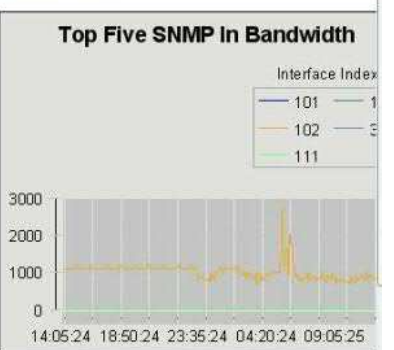
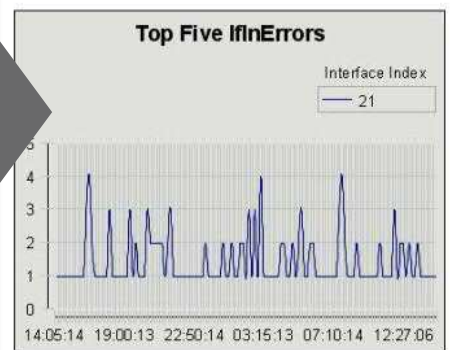
Network Operations can quickly diagnose network health and take corrective action



Launch in context

Network Manager: Device Ingress Traffic Health Summary

Domain Name	DCUT4	Vendor Name	Cisco
Device	172.30.130.1	Device Model Name	7604
Last Updated	June 17, 2010 2:00:31 PM EDT	IP Address	nc-cr-7604e.na.test.lab 172.30.130.1
Refresh Interval	300 seconds	Description	Cisco IOS Software, c7600rsp72043_rp Software (c7600rsp72043_rp-ADVIPSERVICESK9-M), Version 12.2(33)S RELEASE SOFTWARE (fc3) Technical Support: http://www.cisco.com/techsupport Copyright (c) 1986-2007 by Cisco Systems, Inc. Compiled Fri 01-Jun-07 0
		OS Image	bootdisk:c7600rsp72043-advipservicesk9-mz.122-33.SRB1.bi
		Location	B510/3D32 3rd Floor Lab
		Contact	williamking@uk.ibm.com
		Uptime	Unknown
		No. Interfaces	116
		Services	datalink(2) network(3) transport(4) application(7)
		Created On	May 28, 2010 10:18 AM
		Changed On	May 28, 2010 5:01 PM

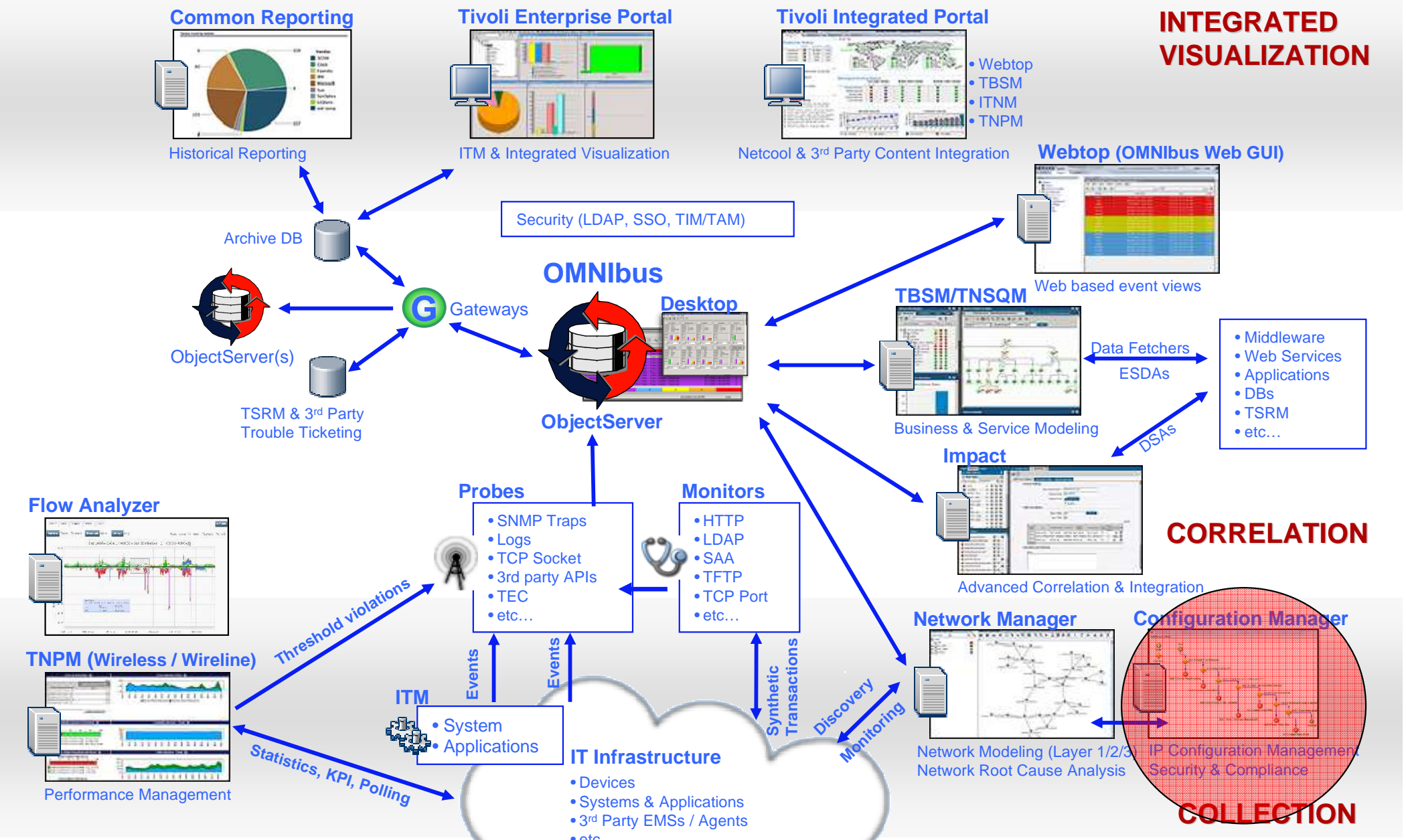


Device Traffic Utilization

Interface Index	Interface Name	Current In Bandwidth	Current IfInDiscards	Current IfInErrors
1	Gi1/1		111,4545	
101	Tu6	2.00		
102	Tu7	1033.75		
111	Tu8	1.00		
120	Gi3/28.512	1.00		
127	Gi2/5		1,3333	
15	Gi3/13		1.25	



Tivoli Netcool Configuration Manager

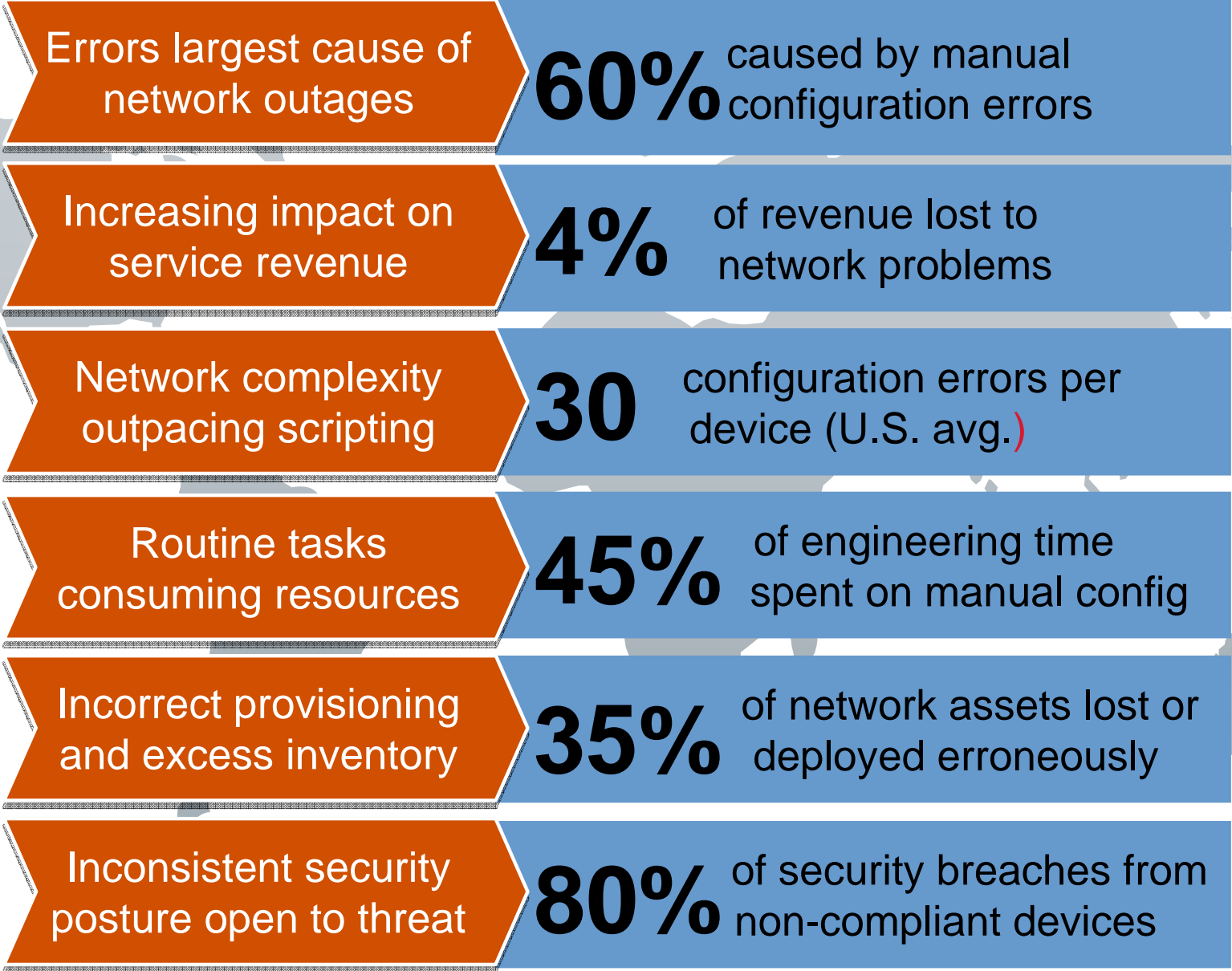


INTEGRATED VISUALIZATION

CORRELATION

COLLECTION

Cost of Network Complexity



Sources: Dataquest, EMA, Yankee, Infonetics Research

IBM Tivoli Netcool Configuration Manager

- Automate routine configuration management task
- Understand how network changes may affect service and your customers, and proactively manage the impact of these changes
- Improve adherence to corporate and regulatory standards through ongoing network policy enforcement
- Comprehensive provisioning of networks, servers, storage and applications

Unique technology advantages

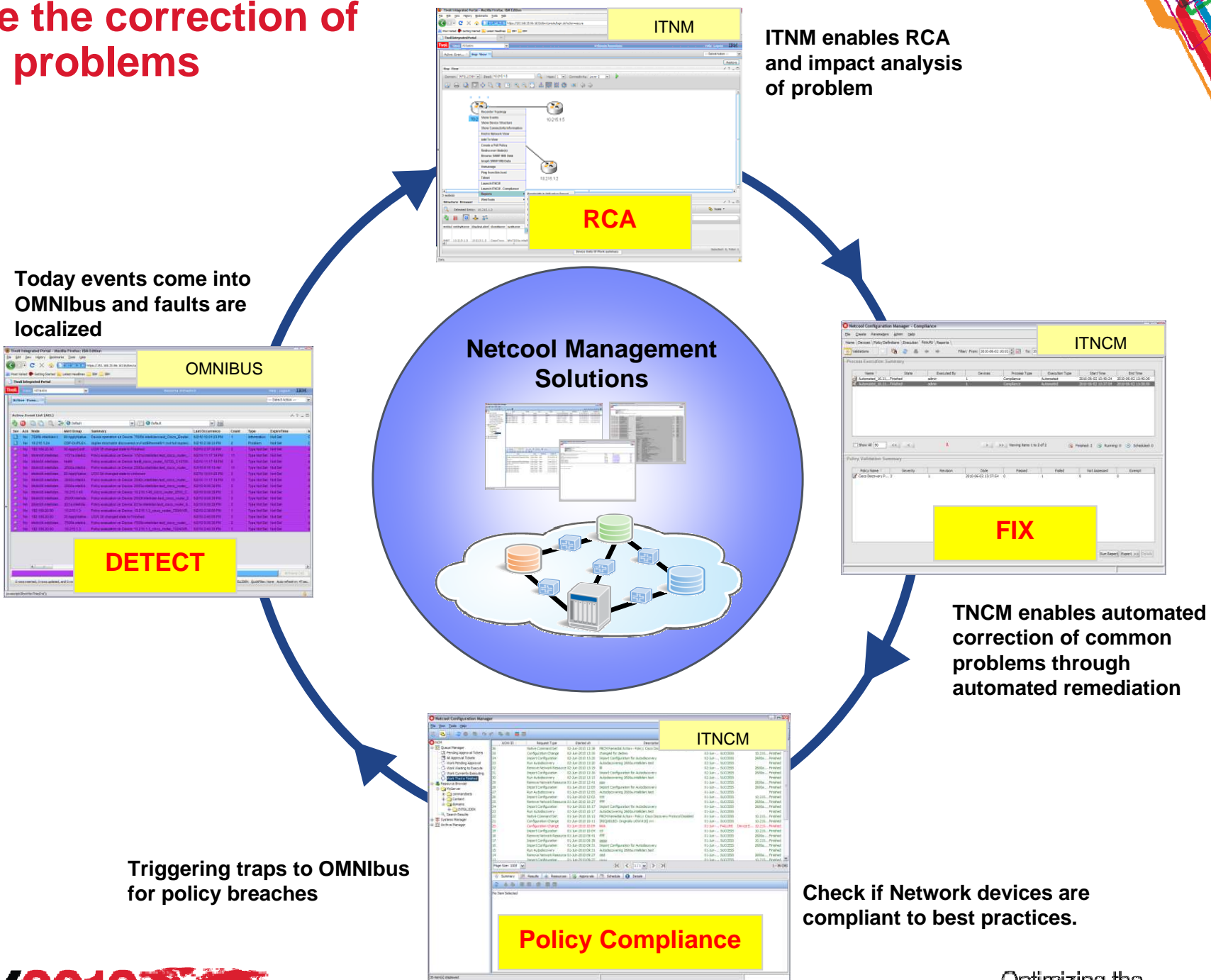
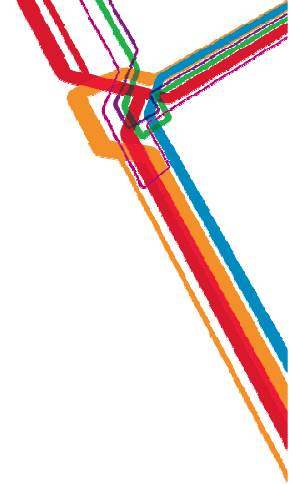
- Proven Scalability
- Revolutionary SmartModel™ Technology
- Multiple Automation Modes for different skills and needs
- Comprehensive Compliance Management
- Open APIs

INTELLIDEN
Acquisition



Closed Loop problem Resolution

Automate the correction of common problems



OMNIBUS

DETECT

ITNM

RCA

ITNCM

FIX

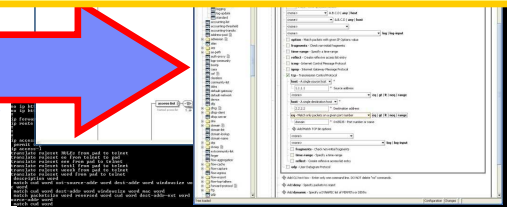
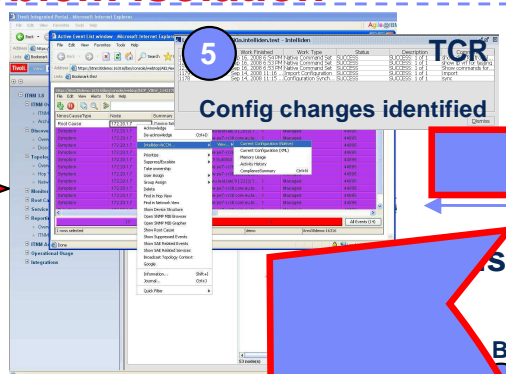
ITNCM

Policy Compliance

Exploiting configuration information for problem isolation

With the addition of ITNCM the problem is localized to a config change directly, identifying who made what change when?

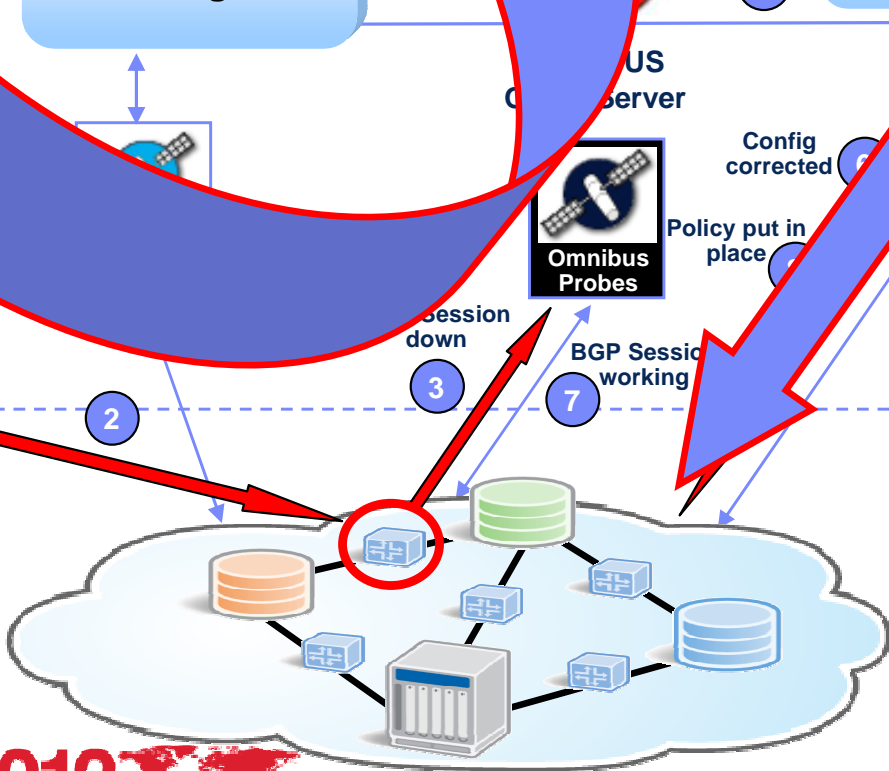
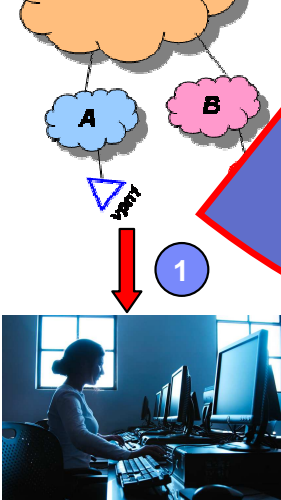
Control: Manage your Business
Automation: Improve your Business



Configuration Error directly causes an impact on an end users service availability.
 Operator is notified immediately



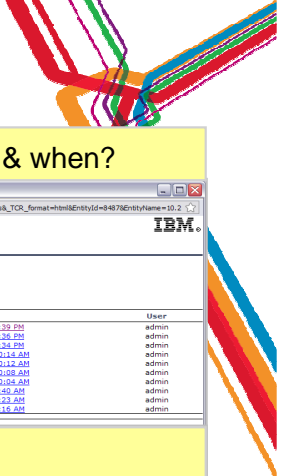
Netcool Configuration Manager



Roll back to a previous working configuration to make the service available again to the end customer.

- ITNCM accelerating problem isolation:**
1. ACME, is expanding & is doing reconfigurations so they can peer with other ISPs at an Internet eXchange Point (IXP) in London
 2. A configuration error on one of the routers which results in a BGP session with a peer-network not being established, impacting customer VPNs.
 3. Routers in the network generate alarms identifying that the BGP session is down.
 4. ITNCM detects configuration changes made to the router and generates changes events to OMNIBUS.
 5. The NOC operator launches the TCR reports and identifies that configuration changes have occurred on the device in question.
 6. A ticket gets created for further investigation, where current and previous config's get compared, and corrects the problem.
 7. The remedial actions clear re-establish the BGP session, and the alarms are cleared.
 8. A policy is configured in ITNCM to ensure similar misconfigurations do not occur.

Identify who made what changes when?



- Provides Netcool users with single-click access to ITNCM.
- Prebuilt TCR (Tivoli Common Reporting) reports which can be **launched in context** leveraging configuration data within OMNIBus and Network Manager.
- Helping to **diagnose problems quicker** resulting from configuration changes in the network.
- If permitted, Netcool users can perform configuration changes to resolve faults

OMNIBUS

Ack	Node	Alert Group	Summary	Last Occurrence	Count	Type	ExpireTime
No	7505a.intelidsl	80 apply/active	Device operation on Device: 7505a.intelidsl.testCisco_router	6/2/10 10:12:23 PM	1	Information	Not Set
No	10.215.1.3	CCDR-DUPLEX	duplex mismatch discovered on Fa0/12ethernet0/1 (not full duplex)	6/2/10 2:38:33 PM	2	Problem	Not Set
No	192.168.20.90	35 apply/lock	UOW 35 changed state to Finished	6/2/10 2:27:30 PM	3	Type Not Set	Not Set
No	3080a6.intelidsl	1721a.intelidsl	Policy evaluation on Device: 1721a.intelidsl.testCisco_router	6/2/10 11:17:19 PM	11	Type Not Set	Not Set
No	3080a6.intelidsl	test8	Policy evaluation on Device: test8Cisco_router_10720_C10700	6/2/10 11:17:19 PM	8	Type Not Set	Not Set
No	3080a6.intelidsl	2505a.intelidsl	Policy evaluation on Device: 2505a.intelidsl.testCisco_router	6/2/10 9:16:13 AM	11	Type Not Set	Not Set
No	3080a6.intelidsl	83 apply/active	UOW 83 changed state to Unknown	6/2/10 10:21:23 PM	1	Type Not Set	Not Set
No	3080a6.intelidsl	3540c.intelidsl	Policy evaluation on Device: 3540c.intelidsl.testCisco_router	6/2/10 11:17:19 PM	11	Type Not Set	Not Set
No	3080a6.intelidsl	2605a.intelidsl	Policy evaluation on Device: 2605a.intelidsl.testCisco_router	6/2/10 9:09:39 PM	3	Type Not Set	Not Set
No	3080a6.intelidsl	10.215.1.46	Policy evaluation on Device: 10.215.1.46Cisco_router_2590_C	6/2/10 9:09:39 PM	3	Type Not Set	Not Set
No	3080a6.intelidsl	2505b.intelidsl	Policy evaluation on Device: 2505b.intelidsl.testCisco_router	6/2/10 9:09:39 PM	3	Type Not Set	Not Set
No	3080a6.intelidsl	831a.intelidsl	Policy evaluation on Device: 831a.intelidsl.testCisco_router	6/2/10 9:09:39 PM	3	Type Not Set	Not Set
No	192.168.20.90	10.215.1.3	Policy evaluation on Device: 10.215.1.3Cisco_router_7204VXR	6/2/10 2:40:00 PM	1	Type Not Set	Not Set
No	192.168.20.90	35 apply/active	UOW 35 changed state to Finished	6/2/10 2:40:00 PM	1	Type Not Set	Not Set
No	3080a6.intelidsl	7505a.intelidsl	Policy evaluation on Device: 7505a.intelidsl.testCisco_router	6/2/10 9:09:39 PM	2	Type Not Set	Not Set
No	192.168.20.90	10.215.1.3	Policy evaluation on Device: 10.215.1.3Cisco_router_7204VXR	6/2/10 2:40:39 PM	1	Type Not Set	Not Set

Last 'n' device changes, who made the changes & when?

ITNCM: Device Configuration Changes - Mozilla Firefox: IBM Edition

ITNCM: Device Configuration Changes

Device Name	Vendor	Model	OS
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3

Work Type	Status	Date	User
Native command set Modified Configuration (nocdprun)	current	Jun 2, 2010 1:39 PM	admin
Apply Config Imported Configuration (ForDemo)	locked	Jun 2, 2010 1:38 PM	admin
ForDemo	locked	Jun 2, 2010 1:38 PM	admin
Native command set Modified Configuration (nocdprun)	versioned	Jun 1, 2010 10:14 AM	admin
Apply Config Imported Configuration (NOCDPRUN)	versioned	Jun 1, 2010 10:12 AM	admin
NOCDPRUN	locked	Jun 1, 2010 10:08 AM	admin
Imported Configuration	versioned	Jun 1, 2010 10:06 AM	admin
Imported Configuration	versioned	Jun 1, 2010 9:40 AM	admin
Imported Configuration	versioned	Jun 1, 2010 9:23 AM	admin
Imported Configuration	versioned	Jun 1, 2010 9:16 AM	admin

Configuration detail report

ITNCM: Device Configuration

Device Name	Vendor	Model	OS	Date
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	2010-06-02 13:39:24

Device terminal audit log

ITNCM: Device Terminal Audit Log

Start Time	Event Type	Keyboard Input	Device Output	User Id	Device Protocol
Jun 1, 2010 1:59 PM	IDT_CONNECT			admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		User Access Verification	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		Username: gogo	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		Password:	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		% Login invalid	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DISCONNECT			admin	TELNET
Jun 1, 2010 1:59 PM	IDT_CONNECT		User Access Verification	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		Username: go	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		Password:	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		bf0720a@term len 0	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		bf0720a@term width 100	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_DEVICE_OUTPUT		bf0720a>	admin	TELNET
Jun 1, 2010 1:59 PM	IDT_KEYBOARD_INPUT			admin	TELNET
Jun 1, 2010 2:00 PM	IDT_DEVICE_OUTPUT		Enter configuration commands, one per line. End with CTRL/Z.	admin	TELNET
Jun 1, 2010 2:00 PM	IDT_DEVICE_OUTPUT		bf0720a(config)#	admin	TELNET
Jun 1, 2010 2:00 PM	IDT_KEYBOARD_INPUT	show cdp		admin	TELNET
Jun 1, 2010 2:00 PM	IDT_DEVICE_OUTPUT		% Invalid input detected at '^' marker.	admin	TELNET
Jun 1, 2010 2:00 PM	IDT_DEVICE_OUTPUT		bf0720a(config)#exit	admin	TELNET
Jun 1, 2010 2:00 PM	IDT_KEYBOARD_INPUT	show ?		admin	TELNET

Device Unit of Work (UOW) Summary

ITNCM: Device Unit of Work summary

Device Name	Vendor	Model	OS	Task Id	UOW Description	User Description	Start Time	End Time	Task Result	User
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	13task000	Import Configuration	uuuu	Jun 1, 2010 9:22 AM	Jun 1, 2010 9:23 AM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	17task000	Import Configuration	gggg	Jun 1, 2010 9:39 AM	Jun 1, 2010 9:40 AM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	19task000	Import Configuration	ttt	Jun 1, 2010 10:04 AM	Jun 1, 2010 10:04 AM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	20task000	Configuration Change	kkkk	Jun 1, 2010 10:09 AM	Jun 1, 2010 10:09 AM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	21task000	Configuration Change	[REQUIRED]: Originally UOW#20 rrrr	Jun 1, 2010 10:11 AM	Jun 1, 2010 10:12 AM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	22task000	Native Command Set	PBCH Remedial Action: Policy: Cisco Discovery Protocol Disabled	Jun 1, 2010 10:13 AM	Jun 1, 2010 10:15 AM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	35task000	Configuration Change	changed for dedmo	Jun 2, 2010 1:39 PM	Jun 2, 2010 1:37 PM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	36task000	Native Command Set	PBCH Remedial Action: Policy: Cisco Discovery Protocol Disabled	Jun 2, 2010 1:39 PM	Jun 2, 2010 1:39 PM	Success	admin
10.215.1.3	Cisco	7204VXR	C7200-ADVENTERPRISEK9-M-12.2(33)SRD3	8task000	Import Configuration	Import Configuration for Autodiscovery	Jun 1, 2010 9:15 AM	Jun 1, 2010 9:16 AM	Success	admin

Displays a list of units of Work and Tasks on this device grouped by UOW

Success Failure Dequeued S: Single M: Multiple

June 3, 2010 9:59:02 AM BST

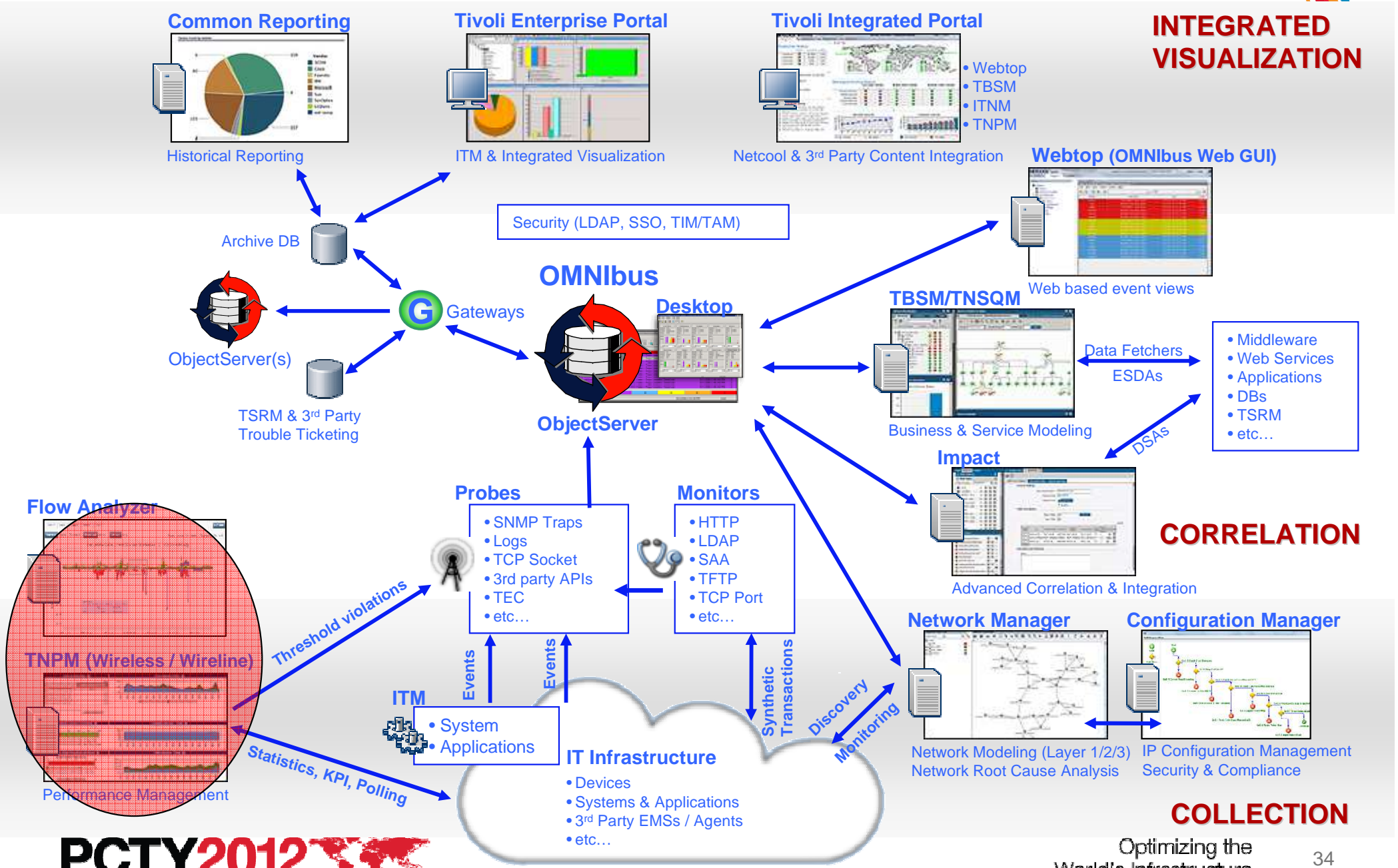
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Agenda

- Network & Service Assurance Overview
- Fault Management Session
- Network Monitoring and Configuration Management Session
- **Performance Management Session**

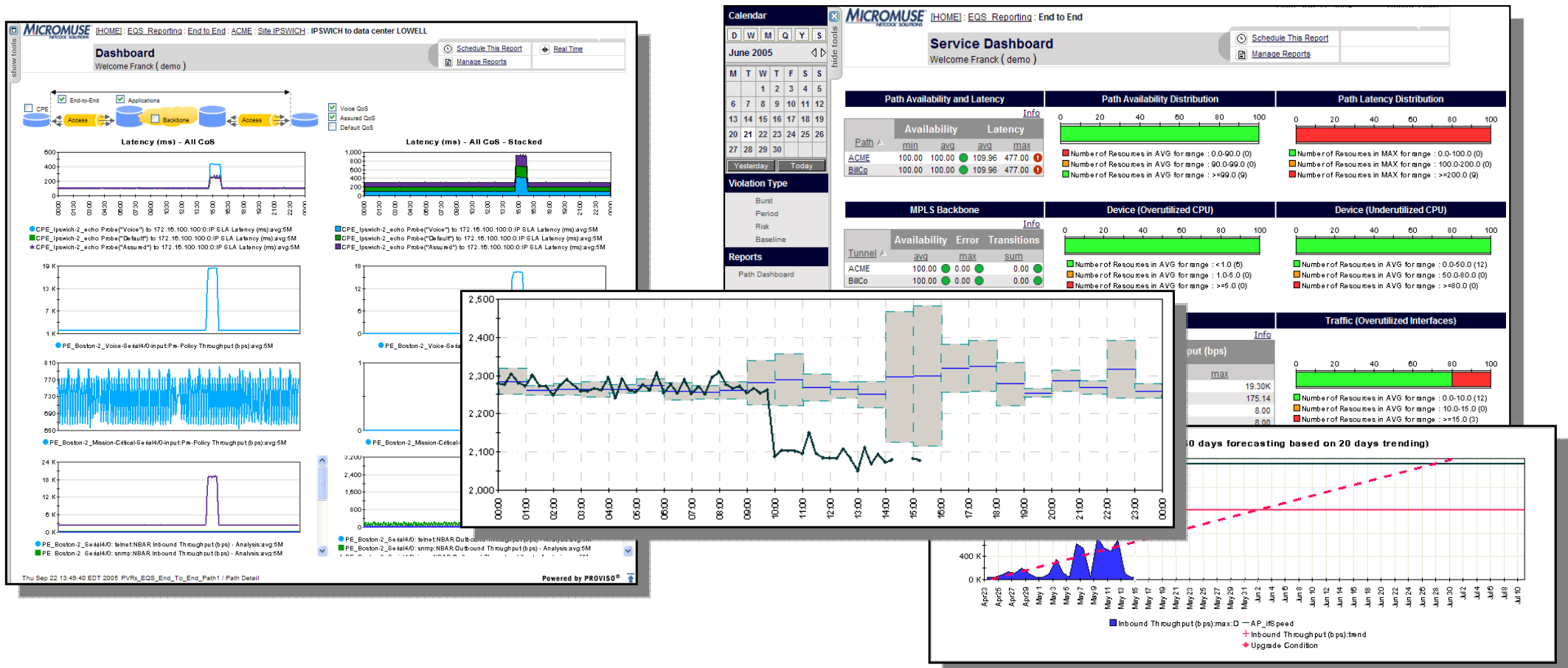
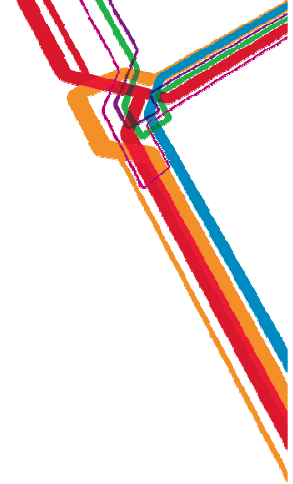


Tivoli Netcool Performance Management



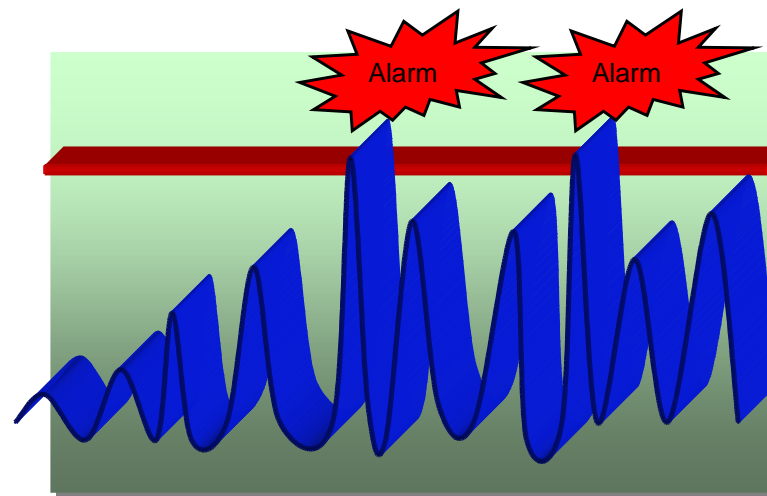
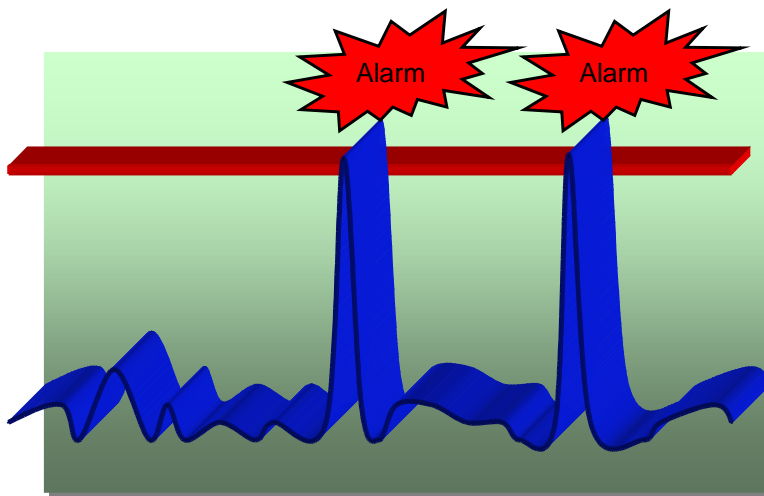
What is Netcool/ITNPM?

- Product: Scalable Performance and Service Reporting system
- Target Market: Tier 1-2 Service Providers and Large Enterprises



What is Performance Management?

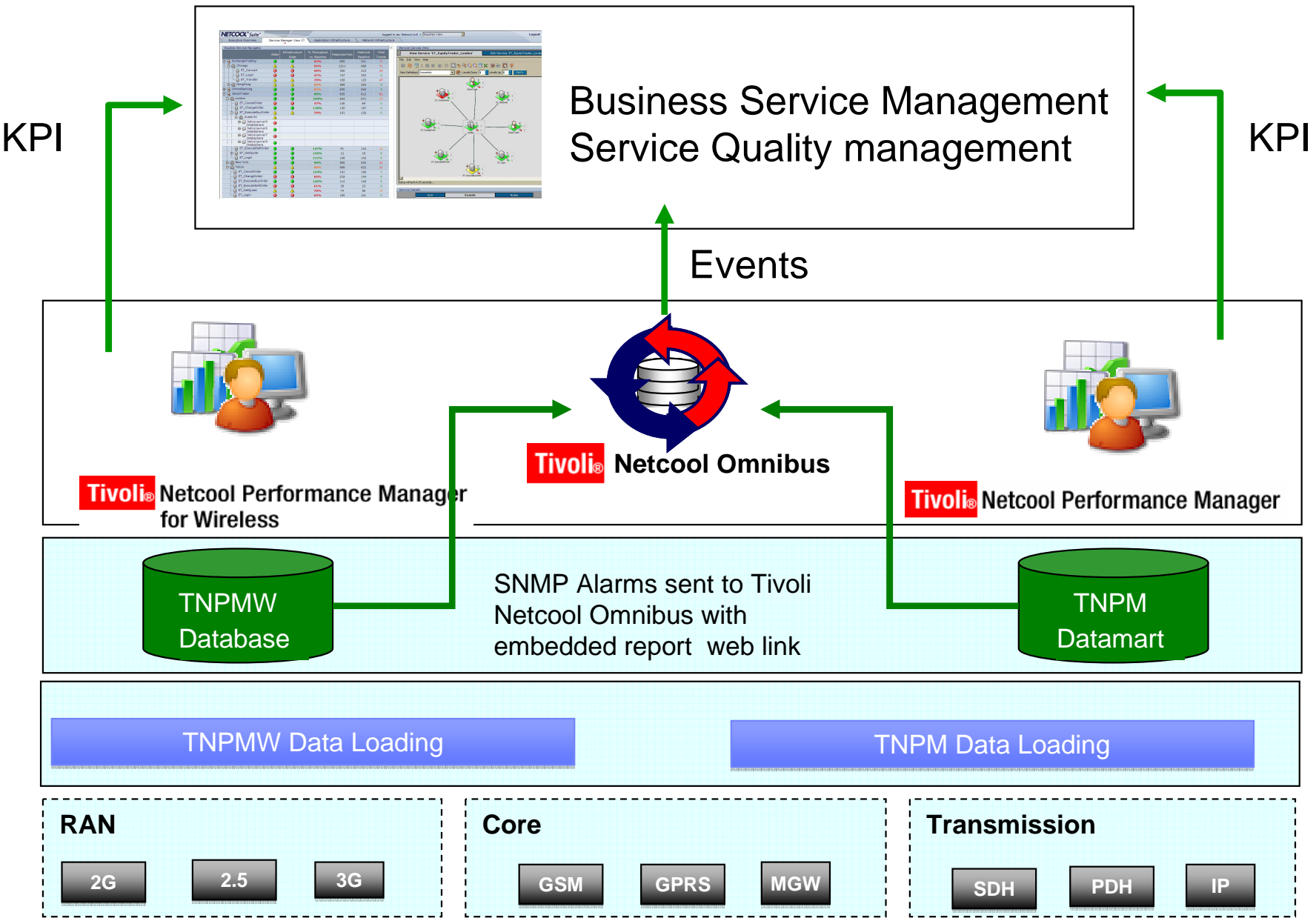
- The ability to collect, store and report on historical data
- What is collected?
 - Periodic metrics
 - Availability, volume, traffic & error rates, usage data etc. (NOT EVENTS!!)
- What do we do with it?
 - Store and report
 - Detect real-time threshold violation



The same two traps are received...

But are the underlying problems the **same severity?**

Tivoli Netcool Performance Manager



Tivoli Netcool Performance Manager

Sample reports

- Service Overview across huge network / IT
 - SLA/SLO Reports, Dashboard, Executive views
 - Single report characterizes Service, Resources and Traffic
 - On-Demand statistics (not batched)



Calendar
 June 2005

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

[HOME] : EQS Reporting : End to End

Service Dashboard

 Welcome Franck (demo)

[Schedule This Report](#)
[Manage Reports](#)

Path Availability and Latency

Path	Availability		Latency	
	min	avg	avg	max
ACME	100.00	100.00	109.96	477.00
BillCo	100.00	100.00	109.96	477.00

Path Availability Distribution

Path Latency Distribution

MPLS Backbone

Tunnel	Availability	Error	Transitions
	avg	max	sum
ACME	100.00	0.00	0.00
BillCo	100.00	0.00	0.00

Device (Overutilized CPU)

Device (Underutilized CPU)

Traffic (Flow per Application)

Application Flow	Inbound Throughput (bps)	
	avg	max
PE_Boston-2_Serial4/0: icmp	3.18K	19.30K
PE_Boston-2_Serial4/0: snmp	128.36	175.14
PE_Boston-2_Serial4/0: telnet	8.00	8.00
PE_Boston-2_Serial4/0: unknown	8.00	8.00
PE_London-2_Serial4/0: http	8.00	8.00

Traffic (Overutilized Interfaces)

Thu Sep 22 11:45:58 EDT 2005 PVRs_EQS_Dashboard_E2E / Path Dashboard

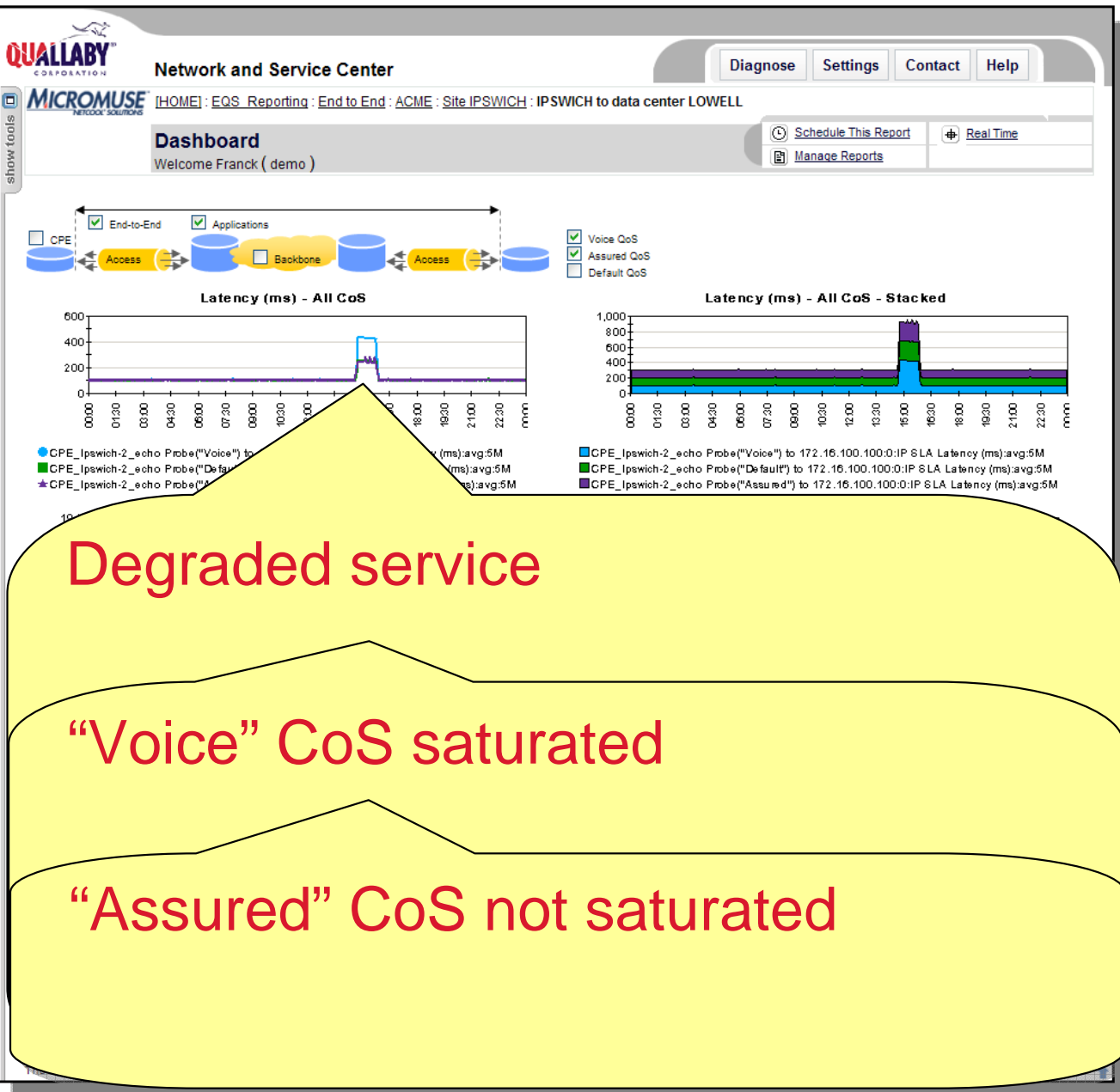
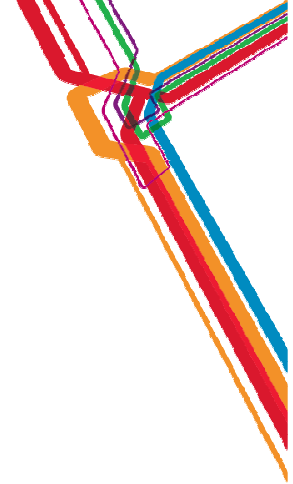
Powered by PROVISOR

Service

Resources

Traffic

Troubleshooting degraded service

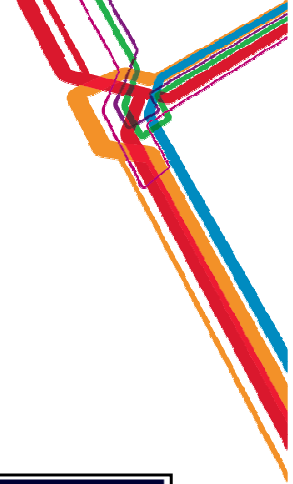


Degraded service

“Voice” CoS saturated

“Assured” CoS not saturated

Unwanted traffic



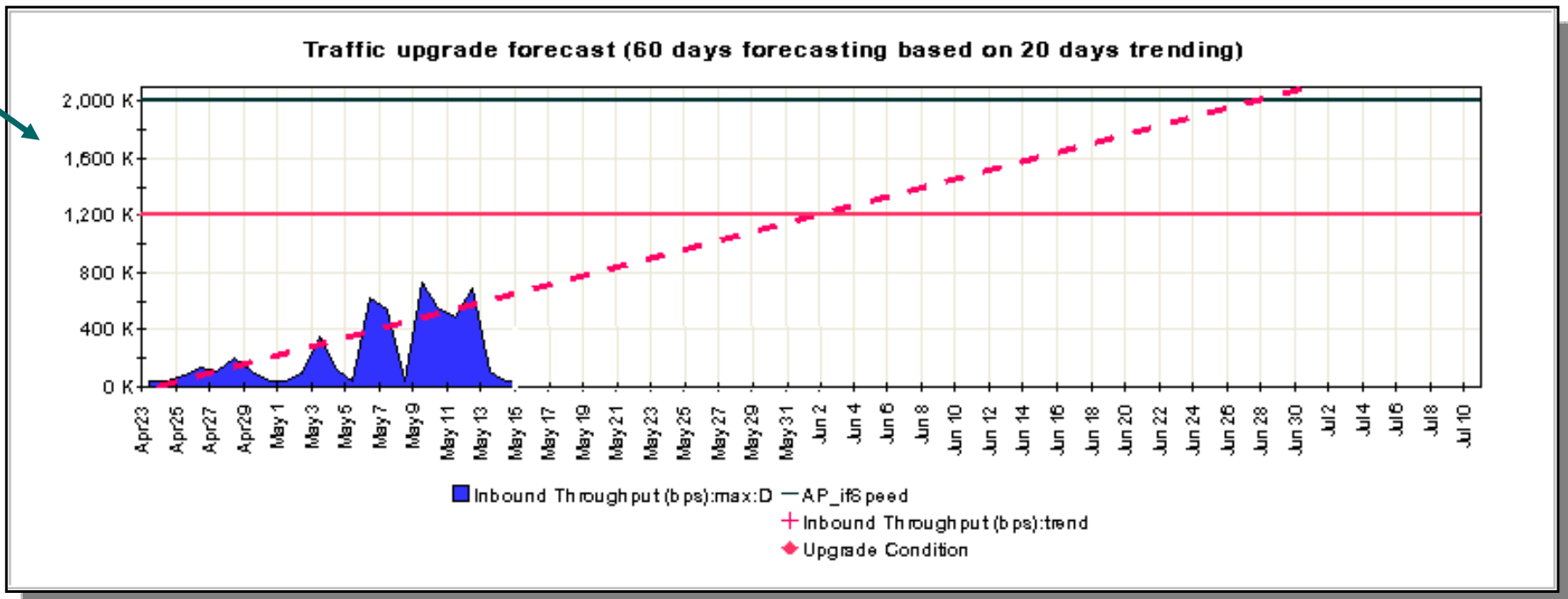
Tivoli Netcool Performance Manager

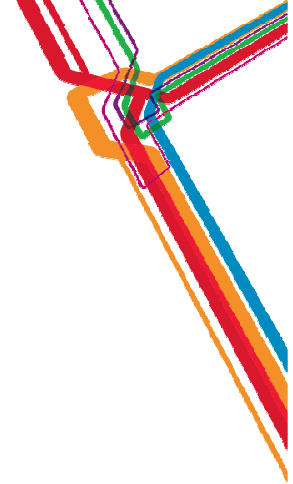
Predicting service degradation

- Performance / Service Trending and Forecasting
- Catches progressive service degradation
- SLA violation forecast or capacity planning

Inbound Traffic Upgrade Forecast						Outbound Traffic Upgrade Forecast					
Name	Capacity	Throughput	Rate	Saturation	Upgrade Date	Name	Capacity	Throughput	Rate	Saturation	Upgrade Date
		max	%					max	%		
training1.quallaby.com-2 IF: 2 "100 Mbps" "hme0"	100.00M	--	0.6	60.00M	05/16/05 10:21	PE Boston-2 IF: 12 "9 Kbps" "Tu1 HeadEnd_LSP_Boston"	9.00K	4.65K	0.6	5.40K	05/7/05 10:19
192.168.1.3-2 IF: 5 "2 Mbps" "Tu0 "	2.00M	692.37K	0.6	1.20M	06/2/05 1:38						

60 days forecasting based on 20 days trending





THANK YOU

Alessandro Proia

BA Client Technical Professionals

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