BroadCloud™ Examinet™ & PacketSmart™

Assessment and Monitoring tools, all part of Wavenet's Full UC service

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Examinet & PacketSmart

- Identify network issues prior to deployment of services
- Ensure appropriate ports are open to support the service
- Reduce deployment costs by validating network capabilities
- Standardised progress to baseline all BroadCloud services
- Incorporate proactive tools to ensure quality is maintained

Unique 2-stage approach to delivering reliable, quality services for your business:

- Examinet - Initial soft client to confirm basis ports are open, DHCP, DNS and Firewall
- PacketSmart - Deeper assessment for call capacity and 24x7 monitoring with proactive alerts based on a per call basis

Examinet

Examinet is a readiness assessment application that will conduct a series of basic network tests, the results of which will be used to identify potential network issues that should be addressed before the BroadCloud service can be supported on your local area network.

The tests performed generate nominal low level network traffic, and the results of the test are securely stored for review by our technical staff.

Examinet Features

- Simple Java-based web application

- Spot checks key LAN characteristics - Cloud Ports (SIP and RTP)
  - DHCP
  - Firewall
  - Bandwidth - Jitter
  - Latency
  - Packet Loss

PacketSmart

- Assessment
  - Baseline Network Infrastructure
  - LAN
  - WAN

- Verification
  - Acceptance and Turn-Up
  - End-to-End MOS Test Results

- 24x7 Monitoring
  - SLAs
  - Automated Reports

- Diagnostics
  - Proactive Alerts
  - On-Demand Reports
  - LAN Discovery

Benefits of Examinet & PacketSmart

- Identify network issues prior to deployment of services
- Ensure appropriate ports are open to support the service
- Reduce deployment costs by validating network capabilities
- Standardised progress to baseline all BroadCloud services
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BroadCloud™ PacketSmart™ for Assessment

BroadCloud PacketSmart for Assessment helps installers identify networking problems and improve quality control by assessing and validating wide area network (WAN) and local area network (LAN) to ensure successful installation of communications services like VoIP and video.

PacketSmart Solution

BroadCloud PacketSmart for Assessment combines probes positioned in the WAN and LAN with a BroadCloud-based analytics platform that generates a rich set of analytics from synthetic calls and assessment reports.

Unlike many solutions that require investment in an analytics system, BroadCloud PacketSmart analytics are delivered through a cloud-based SaaS subscription. This reduces the capital expenditures (CapEx) needed to deploy BroadCloud PacketSmart and the operating costs associated with maintaining systems while using BroadCloud PacketSmart for LAN and WAN assessments. PacketSmart probes exchange RTP media traffic across the LAN and WAN to stress networks, to establish Quality of Service (QoS) and concurrent call capacity for VoIP and video.

Probes used on the customer network are packaged as the Field Service Kit (FSK) which holds two probes per kit offering Assessment and Monitoring services. The probes consist of two compact router-agnostic devices that an installer plugs into the customer network to:

1. Generate synthetic RTP media traffic
2. Inspect synthetic media traffic and live voice, video and IT traffic
3. Send performance data to a BroadCloud-based analytics platform

To assess the LAN, one probe is positioned off the LAN-facing Ethernet port on the access device. The second probe is placed across the LAN and exchanges data with the first probe to stress and test network capacity, configurations and performance based on packet loss, jitter and QoS supported. To assess larger call-handling capacities, BroadCloud PacketSmart offers greater call generation capabilities, starting with the PI-500 appliance server.

Installer Benefits

- Fewer follow-up truck rolls at the installer's expense

- Clearly identifies network professional service engagement opportunities

- Faster and more effective installations - for both basic installs and multi-step engagements

Service Provider Benefits

- Network verification reduces customer service calls

- Establishes a network baseline for customer service reference

- Openly identifies the need for additional, potential revenue-generating WAN capacity

BroadCloud™ PacketSmart™ for Monitoring

BroadCloud PacketSmart Monitoring observes your networks and live calls 24x7x365 to identify the source of local area network (LAN) and wide area network (WAN) issues that may impact VoIP quality. By using proactive alerting with automated reporting, PacketSmart for Monitoring enhances service provider ability to see systematic problems before they impact the network. Having proactive alerts and reporting enables service providers to address issues prior to customer complaints surfacing into support groups, thus reducing overall trouble tickets.

BroadCloud PacketSmart

BroadCloud PacketSmart for Monitoring combines site-based probes with an analytics engine in the cloud. The site-based probes inspect Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) traffic by sniffing packets from the LAN and WAN networks. Live traffic analysis and packet performance are sent to the BroadCloud PacketSmart analytics engine hosted within BroadCloud's network operations centre.

The analytics engine examines call signalling, call metrics and call route analysis in conjunction with top ten data flows, which are measured and displayed within our dashboard. Historical data is stored for 30 days and processed and the information is provided for a wide range of stakeholders:

• Network-wide, daily summary reports for service provider executives and operations team members
• Reports targeted toward end-customers that highlight issues in the LAN/WAN
• Email alerts for network engineers
• Troubleshooting tools for customer service

BroadCloud PacketSmart for Monitoring requires the deployment of a probe or a gateway/router with an embedded PacketSmart application on the end- customer's network.

PI-150 probe is a non-intrusive, fail-safe 4" x 6" micro-appliance that can monitor up to 50 concurrent calls. Maximum throughput full-duplex is 130Mbps UDP and 120Mbps for TCP.

PacketSmart Features & Benefits

Features:

• 24x7x365 monitoring of all VoIP calls
• Proactive alerting of VoIP quality issues
• Traffic flow analysis to detect LAN congestion
• Network behaviour analysis

Benefits:

• Proactive notifications and automated reports
• Identify low MOS calls, call signalling distribution and network latency problems

The PI-150 uses Ethernet connectivity and is typically connected onto the customer's LAN switch either in an inline connection (fail-safe) or non-intrusive in a span or mirror port. This design enables the probe to analyse all voice and data traffic on the network without introducing an additional point of failure or source of variability.

Positioning the PI-150 is simple, the device will function with any vendor's LAN switch or access device and there is no integration or interop required.

If a higher capacity is required, we offer a PI-500 using industry standard hardware which can monitor up to 200 concurrent calls. The BroadCloud PacketSmart appliance will also be available as an embedded application on se- lect access device vendors. Customers using OneAccess or AudioCodes can make use of the embedded PacketSmart application, eliminating the need for a separate hardware appliance.

BroadCloud™ PacketSmart™
PI-100 and PI-500

PacketSmart PI-150 Specifications

Power Supply	100 to 240V AC with output to MA 5Volts
Display	LCD and LED
Interface Type / Speed (A, B & C)	Fast Ethernet / 10/100 base T
Ethernet Cable Type	Straight-through or cross-over cables (CAT 5, 5e and 6)
VoIP Protocols Monitored	SIP, UDP
VoIP Call Generation Protocols	SIP, RTP, UDP
Data Upload Protocol	HTTP / HTTPS
SIP Ports Monitored	All UDP ports
SIP Ports Used for VoIP Call Generation	UDP por ts 5060 & 5061
RTP Ports Used for VoIP Call Generation	UDP por ts 15000 through 16000
Network Discovery / Trace Route Ports	UDP por ts 33434 through 33534
VoIP Concurrent Call Generation (Call Load)	From 1 to 30 calls depending on Product Type
VoIP Monitoring Speeds	100 base T
VoIP Concurrent Call Monitoring Limit	30 calls, can support 50 calls if no TCP data traffic
Bandwidth Throughput (With 30 calls)	20Mbps for TCP and 5.2 for UDP traffic loads
Bandwidth Throughput (Single direction Without calls)	91.2Mbps f or TCP and 95.5Mbps for UDP
Bandwidth Throughput (Bi-direction Without calls)	45Mbps f or TCP and 50Mbps for UDP
Data Pass-Through Performance on Ports A & B	100 base T switching speeds
NAT Support	Yes
Fail-Safe	Yes
CE/FCC/ROHS Marked	Yes

PacketSmart PI-500 Specifications

Power Supply	100 to 240V AC with output to MA 12 Volts
Display	LED
Interface Type / Speed (A, B & C)	Gigabit Ethernet / 1000 BaseT
Ethernet Cable Type	Straight-through or cross-over cables (CAT 5, 5e and 6) MDI/MDIX
VoIP Protocols Monitored	SIP (TCP/UDP)
VoIP Call Generation Protocols	SIP, UDP-RTP
Data Upload Protocol	HTTP (80) / HTTPS (443)
SIP Ports Monitored	All UDP Ports
IPV4 and IPV6 Support	Yes
SIP Ports Used For VoIP Call Generation	UDP ports 5060 & 5061 (configurable)
RTP Ports Used For VoIP Call Generation	UDP ports 15000 through 16000 (configurable)
VoIP Concurrent Call Generation	From 1 to 50 for 72 hours
VoIP Monitoring Speeds (Call Load)	50 calls with 30 Mbps for UDP & 20 Mbps for TCP
Data Pass-Through Performance On Ports A & B (Single Direction)	950 Mbps for UDP & 935 for TCP
Data Pass-Through Performance On Ports A & B (Bi-Direction Without Calls)	470 Mbps for UDP & 460 for TCP
Monitored Throughput Performance	130 Mbps for UDP & 120 Mbps for TCP
NAT Support	Yes
Fail-Safe	Yes
CE/FCC/Intertek/ROHS	Yes

BroadCloud™ PacketSmart™ Summary

BroadCloud PacketSmart for Assessment Summary

BroadCloud PacketSmart is a proven solution that enables clear performance of VoIP services prior to customer turn up. BroadCloud PacketSmart assessment testing helps installers and service providers make sure that real-time application services are turned up right the first time.

Using BroadCloud-based analytics, BroadCloud PacketSmart helps reduce the cost to deploy and operate the solution.

Equipping your installers with BroadCloud PacketSmart brings immediate operational savings by reducing the time to deploy services and the amount of non-chargeable rework or truck rolls. PacketSmart for Assessment makes setup of the BroadCloud service clear and simple.

BroadCloud PacketSmart for Monitoring Summary

VoIP deployments are growing at an aggressive pace. Having a comprehensive quality monitoring service enables service providers to scale their business without being burdened by service quality problems or by the cost of a large support organisation. Service providers and end-customers both lose when a quality problem persists, leading to repeated calls into customer care and long troubleshooting sessions - even truck rolls.

BroadCloud PacketSmart for Monitoring is designed to improve customer satisfaction, minimise cost of customer care operations, and reduce churn. With a low upfront cost, service providers can quickly determine the impact of PacketSmart, starting with their toughest and most valuable customers.

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