Orion™ | Interconnect Services

Service Assurance for Converged Networks

Interconnection Opportunities and Challenges

An increasing number of voice minutes between carriers are completely bypassing the legacy PSTN and using end-to-end IP connections. This approach is enabling service providers to realize improved call quality, control and cost savings through lower termination rates or bill and keep commercial models. From an industry-wide perspective, there has been double-digit growth in the amount of international minutes terminated over IP facilities as service providers are increasingly adopting application layer peering methodologies to hand off traffic between networks. The future trend for the handoff of termination and origination traffic in next-generation networks will be through application layer peering at public or private inter-carrier peering points.

Interconnect Carrier Summary :: ASR

Interconnect Carrier		IP	
		Inbound	Outbound
B-Mobile	✖	71.81	N/A
NeON	✖	74.89	N/A
PacificTel	✖	73.95	N/A
Worldfone	✖	73.14	N/A
Marathon	✖	71.62	N/A

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Dest Region Summary :: ASR

Dest Region		IP	
		Inbound	Outbound
Brazil	✖	74.02	N/A
Chile	✖	72.55	N/A
Egypt dest4	✖	72.11	N/A
France		74.05	N/A
Greece dest5	✖	74.03	N/A

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Country Summary :: ASR

Country		IP	
		Inbound	Outbound
Brazil	✖	74.02	N/A
Chile	✖	72.55	N/A
Egypt	✖	72.11	N/A
Finland		N/A	N/A
France	✖	74.05	N/A

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Personalized, dashboard portlets allow individual users to select specific carriers, countries and regions to monitor at a glance.

Orion | Interconnect Services can help service providers manage the complexities of VoIP interconnection as well as provide unmatched visibility and reporting on performance issues and proactive problem detection and isolation for interconnection traffic.

With the shift in approach to interconnection, service providers face significant technical and operational challenges. To be successful, carriers must be able to do the following.

- Support the multiple protocols used by different carriers as well as variants within the same protocol stack.

- Transcode different codecs at the network boundaries.

- Ensure end-to-end performance and call quality especially when part of the call may be carried on a partner's network.

- Proactively address customer satisfaction issues and SLAs.

- Maintain reachability to multiple destinations.

- Efficiently manage security and capacity issues.

- Troubleshoot and isolate problems across network boundaries.

Tektronix® Communications

Product Capabilities

Orion | Interconnect Services for Converged Networks meets the needs of competitive service providers with applications designed to deliver the following benefits.

Proactive Monitoring

- Near real-time monitoring provides a comprehensive view of interconnect partner and destination route performance.
- Market destinations to your interconnect carrier partners based on actual performance.

Roadblock Identification:

- Extensive reporting and near real-time call-flow analysis enables the identification of roadblocks and revenue barriers.
- Identify problematic carriers and termination routes.
- Uncover intra- and inter-network failures, interconnect partner provisioning changes and route congestion.
- Analyze problems by focusing on key performance metrics per carrier.
- Further analyze issues with guided drill-down paths to failed call log summaries and call trace tools with APM™ layer integration.

Enhanced Security

- Continual monitoring of activity and performance enhances security and reduces risk.
- Identify performance anomalies as they occur and take immediate action to resolve issues and minimize costly trouble tickets.
- Proactive identification of affected routes and/or interconnect carriers allows for the rerouting of traffic to alternate carriers or the initiation of network controls to manage potentially harmful traffic.

Unmatched Performance Measures

Orion | Interconnect Services has an unmatched set of KPIs (Key Performance Indicators) that can be used to report on both call signaling and quality of service performance.

- Optional intelligent KPI correlation capabilities allow for customizable KPI combinations and extensive fine-tuning.

With Orion, service providers can not only report on the performance of the traffic they are providing their termination partners, but can also assess the quality of service on the traffic inbound to their network at the demarcation point.

Personalized, Actionable Information

Unified Assurance for Converged Network application users can customize service views with My Homepage dashboard portlets.

- Top-level Interconnect Carrier, Country and Destination Region views ensure at-a-glance performance reporting.
- Drill-down views guide users from portlets to detailed views of KPIs, alarms and reports.
- Access failed call logs and enable further drill down into a multi-protocol call trace summary.

Extensive Reporting Capabilities

Orion provides extensive historical reporting capabilities through flexible OLAP cubes, pre-defined Management Reports and optional ad hoc reporting functions. Filter on carriers, protocols, country code, gateway nodes and regions to perform pinpoint analysis of usage trends, problem areas and capacity requirements. Optional route by destination cubes enhances IP and PSTN reporting capabilities.

- Call Signaling and Media QoS Performance by Interconnection Carrier, Country and Region
- Element Response Code and Response Code Category

Visibility Based on Real-Time Monitoring of Traffic Across Network Boundaries

Orion inspects and analyzes both signaling and media of VoIP interconnect traffic. Leveraging the highly scalable and superior network monitoring capabilities of Tektronix' GeoProbe®, Orion can provide visibility on the performance of actual customer traffic across network boundaries, session border controllers or interconnect border gateway elements even when topology hiding is in effect.

Proactive Interconnection Supply Management

Orion allows service providers to proactively spot performance problems in high traffic areas and take corrective action through re-routes and network controls. An extensive array of KPIs and the ability to view them simultaneously across network boundaries can help to quickly identify problematic termination routes and associated carriers, and what routes are failing over and why to proactively manage critical performance SLAs and ensure maximum customer QoE (Quality of Experience).

Through near real-time monitoring of inbound and outbound traffic, service providers can quickly identify problems due to interconnect partner provisioning changes or route congestion. Orion provides near real-time KPIs and alarms that can warn operators that a problem is occurring. Early detection allows for traffic rerouting to alternate carriers or initiation of network controls to manage potentially harmful traffic before it results in network outages or costly customer trouble reports.

Orion | Interconnect Services for Converged Networks Benefits Multiple Organizations

Network Operations:

- Automatically monitor and correlate traffic across network interface boundaries.

Network Planning and Engineering:

- Optimize network capacity and manage just-in-time deployments for growth with minimal CapEx.

Customer Care:

- Enhance SLA (Service Level Agreement) management processes and streamline trouble ticket and customer support processes with interconnect partners.

Marketing and Sales:

- Tailor products and plans based on actual usage patterns.
- Provide reports that characterize how customers are using your products.

Product Marketing:

- Ensure end-to-end performance of services from rollout to revenue.
- Identify customer usage patterns and destinations with high traffic volumes.

Interconnection Partner Satisfaction

- Proactive detection and analysis of termination provider performance provides the insight needed to increase partner satisfaction levels.
- Provide high value interconnect carriers with a view into your superior service with proof of performance reporting or minute-by-minute web portal displays.

Reduction in Customer Churn

- Track the number of affected users with specialized reporting capabilities to identify events that could potentially contribute to customer dissatisfaction and churn.
- Tracking failures with reference to the subscriber enables you to see how many unique users are affected by a specific conditions like a route failure.

Increased Margins

- Flexible per carrier and destination reporting capabilities facilitate network optimization efforts and least cost routing rules.
- Take advantage of volume-based pricing and interconnect carrier incentives.
- Collect real-world usage and carrier costs data in order to re-evaluate baseline pricing strategies.

Operations Streamlining

- Long term historical performance reporting, graphing, data retention, trending and impact analysis enables thorough management of IP application layer interconnections.
- Alarms, KPI Forwarding and Web Services* interfaces facilitate OSS integration efforts.
- Single application to manage voice interconnections over packet and circuit switched networks reduces multi-vendor complexities.

Targeted for future release.

Orion | Interconnect Services for Converged Networks
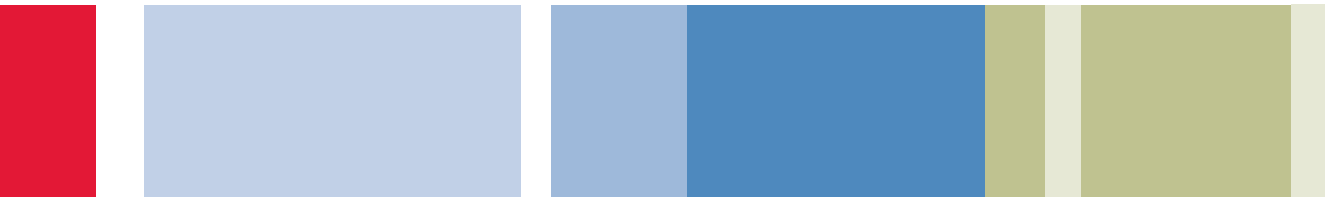
Call Signaling Measures (SIP, ISUP, H.248, H.323, MGCP)

- Call Attempts
- Call Answers
- Call Completions
- Call Setup Failures and Call Failures Ratio
- Call Drops and Call Drop Ratio
- Call Failures and Call Failure Ratio
- ASR
- NER
- Total MOU
- Average MOU
- Post-Dial Delay
- Average Post Dial Delay
- Average Hold Time
- Average Call Time

- Call Setup Time
- Average Call Setup Time
- Average Call Delay
- Average Dial Tone Delay
- Disconnect Time
- Average Disconnect Time
- Affected Subscribers
- Abnormal Releases
- Overload
- Command Attempts
- Command Failures and Command Failure Ratio
- Command Latency
- Border Policy Failures and Border Policy Failures Ratio

Quality of Service Measures (RTP, RTCP, H.248 EOCQ)

- Session Attempts
- Session Completed
- Session Failures
- Total Packets Sent
- Total Packets Lost
- Packets Lost Ratio
- Octets Sent

- Bin Count (Excellent, Good, Fair, Poor and Unacceptable)
- Average Kilobits
- Average R-Factor Score
- Average MOS Score
- Average Packet Latency
- Average Packet Jitter
- Projected MOS-CQ

About Tektronix Communications:

Tektronix Communications provides network operators and equipment manufacturers around the world an unparalleled suite of network diagnostics and management solutions for fixed, mobile, IP and converged multi-service networks.

This comprehensive set of solutions support a range of architectures and applications such as LTE, fixed mobile convergence, IMS, broadband wireless access, WiMAX, VoIP and triple play, including IPTV.

For Further Information:

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology.

Please visit www.tektronixcommunications.com

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