



traffix
systems

PRODUCT BROCHURE

Traffix Signaling Delivery Controller™ (SDC)

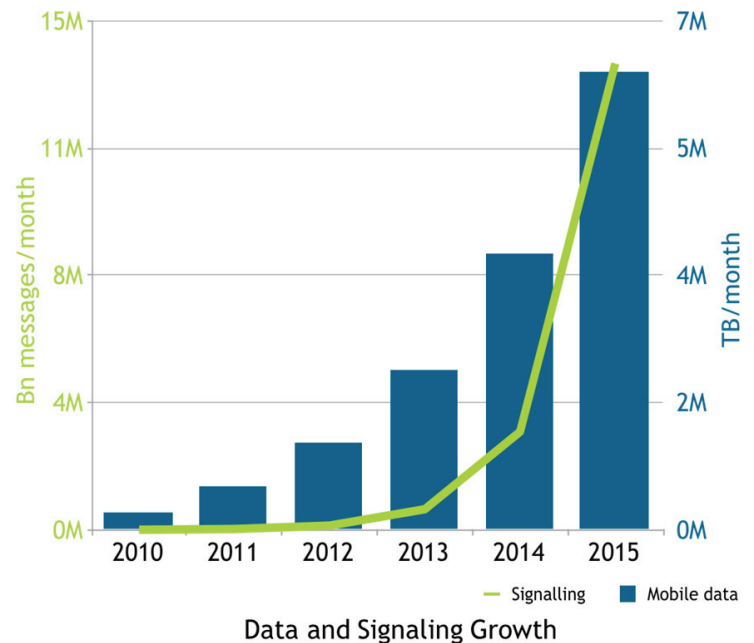
Diameter Signaling Control: The Next Frontier in Network Architecture

The mass market penetration of smart phones has skyrocketed the use of mobile data. Mobile applications create many signaling transactions in operators' networks, sometimes hundreds of messages per session, and each application has specific signaling behaviors. This massive signaling growth creates major network management and scalability issues for operators and needs to be handled properly.

The addition of 4G network elements to support advanced services and better broadband causes unprecedented network fragmentation that ultimately leads to poor network operation. However, 4G networks can maintain high quality, top performance service despite the many potential pitfalls if network engineers place a renewed emphasis on the control plane with Diameter signaling solutions. Significant revenues will be generated to those operators who understand the critical need for innovative signaling solutions to support both network and business strategies. Diameter signaling solutions have transformed to become the enabler in launching reliable, top performing data service to unlimited subscribers.

Traffix, the 4G & Diameter expert, has been developing innovative Diameter solutions in anticipation of operators' pain points for the new challenges of next generation networks since 2005. Traffix expertise in Diameter for more than seven years has imparted the company's talented workforce of software engineers with a familiarity and knowledge of working with Diameter in designing robust solutions to meet all the challenges in existing and upcoming use cases. In line with the company's vision of Diameter as the primary technological driver behind the most effective implementation, service launch and performance of 4G networks, Traffix has brought to market the most advanced, robust and cost-effective Diameter product, the Signaling Delivery Controller™ (SDC), a single solution for Diameter routing, load balancing and gateway connectivity.

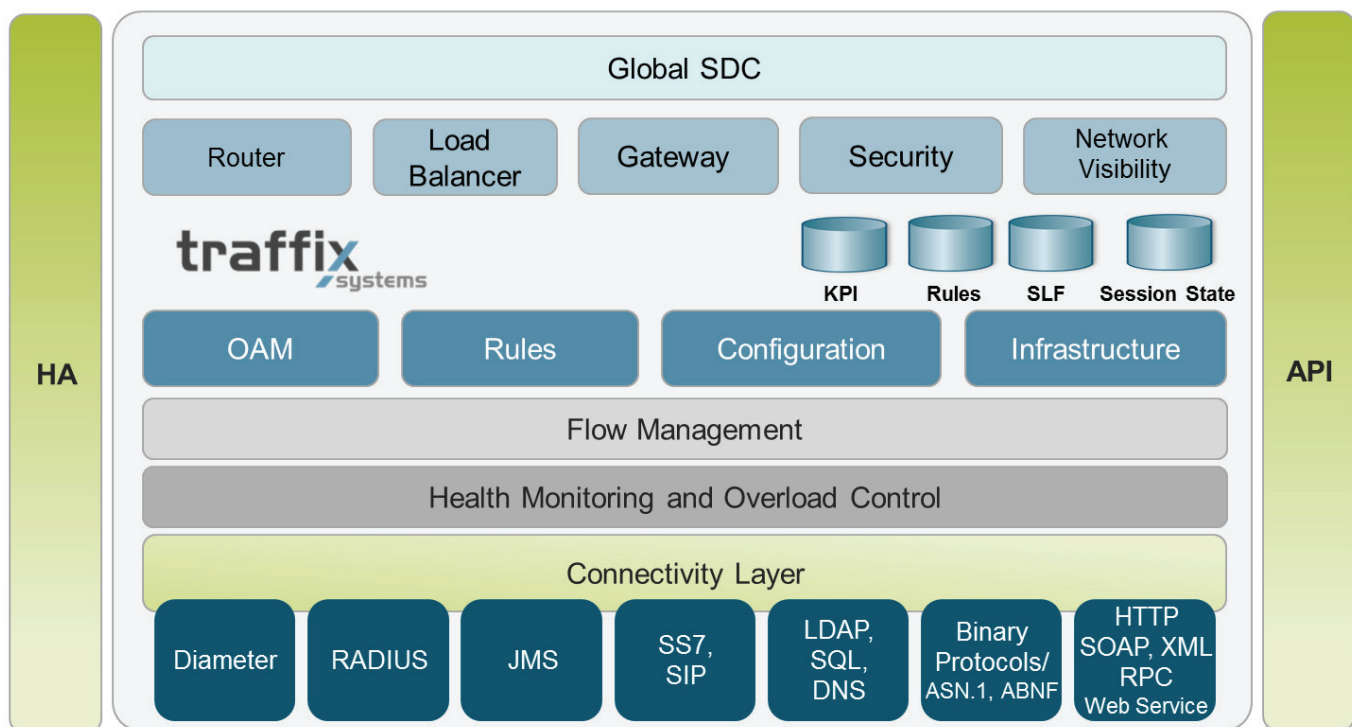
By deploying the Traffix Signaling Delivery Controller™ operators world over have been able to meet multiple challenges of data such as implementing policy & charging policies and enforcement, enabling network roaming despite the interoperability of incompatible technologies and protocols, supporting online and offline charging with multiple vendors and protocols, and connectivity between legacy and LTE elements.



The Distinguishing Technological Capabilities of The Signaling Delivery Controller™ (SDC)

The Traffic SDC is a 3rd generation Diameter signaling solution that has unmatched product maturity in its three years as a commercial router and dozens of live deployments. As the market's only full Diameter routing solution combining DRA, DEA and IWF, the SDC platform goes far beyond industry standards' requirements. With unbeaten performance and ROI ratios of value/cost and capacity/footprint, it benefits operators' balance sheets as well as operational requirements. Technically surpassing all, here is a short list of its outstanding capabilities:

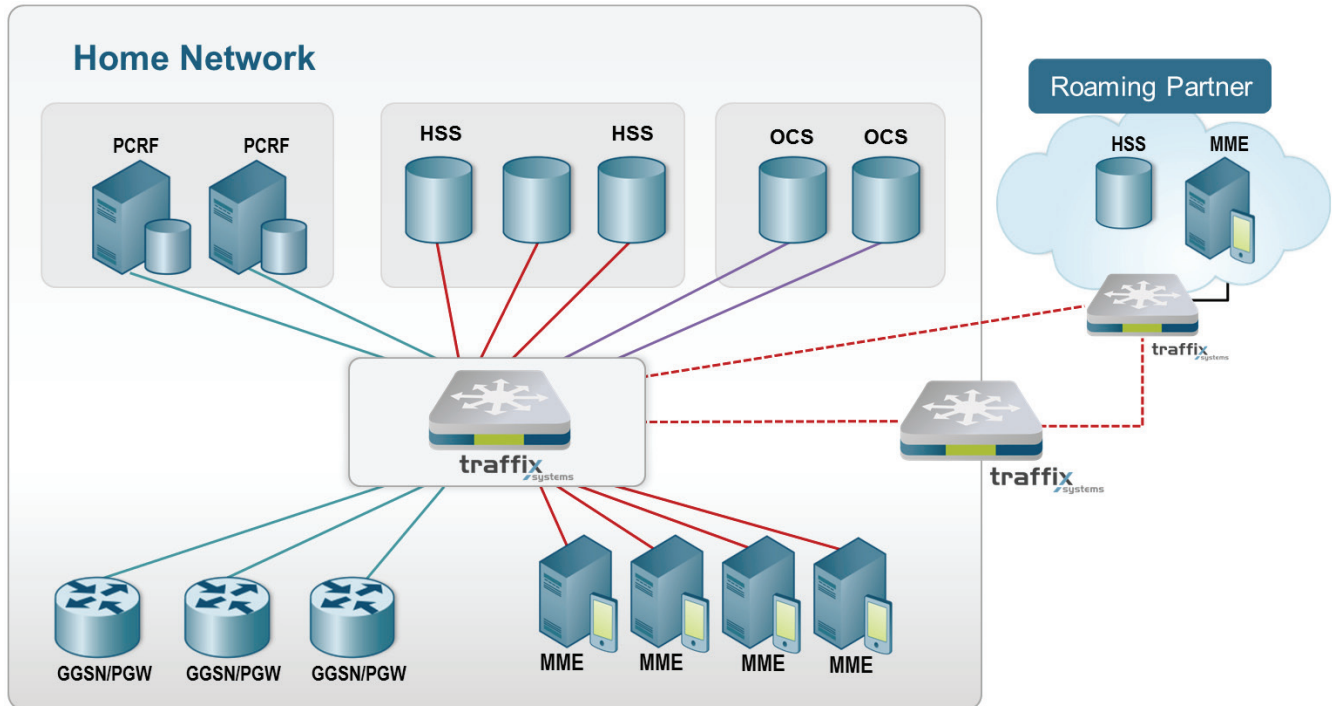
- Enhanced congestion and flow control mechanisms
- Advanced context-aware routing, based on any AVP combination and other parameters like network health or time
- Advanced Session Binding capabilities beyond Gx/Rx binding
- Comprehensive tool for testing automation including stress and stability of all Diameter scenarios
- Supports all existing Diameter interfaces (50+) and seamlessly supports new ones
- Supports widest range of message oriented protocols for routing and transformation (e.g. SS7, SIP, RADIUS, HTTP/SOAP, LDAP, GTP, JMS and others)
- Top-down, purpose-built architecture design for network-wide Diameter signaling
- Field-proven, highly scalable solution, Active/Active configuration with N+K, single node from connected peers perspective, linear scalability
- Supports SCTP, TCP, TLS, IP-Sec, IPv4, IPv6
- Runs on off-the-shelf hardware



Deploying the Signaling Delivery Controller™ (SDC)

When operators deploy the Signaling Delivery Controller, they benefit from an “all-in-one platform” consisting of:

- Core Router with a DRA (Diameter Routing Agent) for failover management and efficiency
- Edge Router with a DEA (Diameter Edge Agent) for roaming and interconnecting with security
- Diameter Load Balancer for unlimited scalability enabling cost-effective growth
- Diameter Gateway for seamless connectivity between all network elements, protocols, and interfaces
- IWF (interworking function) to enable multi-protocol routing and transformation
- WideLens™ to benefit from network visibility for immediate identification and root cause analysis of network problems, capacity planning and providing KPIs to marketing
- Network analytics for signaling context-awareness and subscriber intelligence
- Diameter testing & simulation suite for continual monitoring of network performance and operation



Network Topology For Network Reliability with SDC

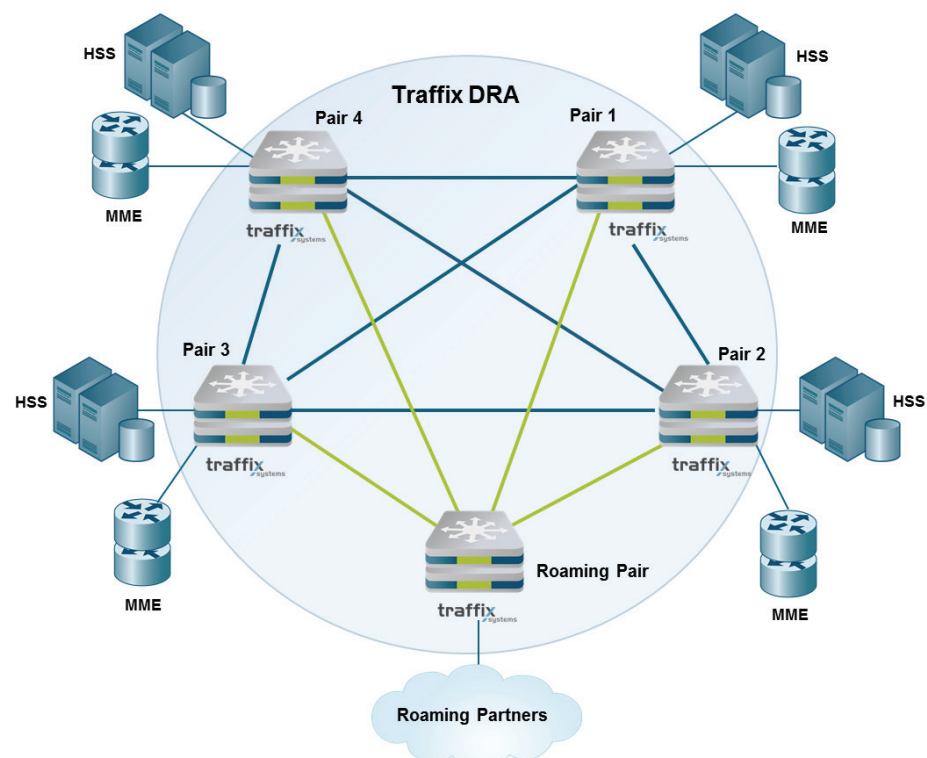
Traffix SDC Diameter Router: Solving Traffic Control Challenges in an Environment of Growth and Complexity

As networks become more complex, operators deploy the Traffix Diameter Router to comprehensively control signaling according to business oriented decisions. The Traffix Diameter Router fully complies with 3GPP Diameter Router Agent (DRA) for policy, 3GPP Interworking Function (IWF) requirements and GSMA Diameter Edge Agent (DEA) guidelines for roaming, plus many more for further simplification and better control. The Traffix Diameter Router serves as a smart Diameter-hub, connecting between various network entities, preventing the need for complex integration and customization, cutting costs, reducing time of implementation and increasing reliability and scalability.

Large networks with complex network architectures and multiple Diameter nodes require an advanced Diameter contextual routing engine which provides the flexibility to implement a wide range of routing rules and policies required to satisfy all business and operational requirements.

Operator Benefits:

- Central maintenance and management of routing and failover
- Routing based on any AVP content (Host, Realm, Rating, Service, Q&S, Location)
- Subscriber and service context-aware routing for network and subscriber analytics
- Reduced time of implementation
- Topology hiding
- Network visibility for real-time troubleshooting and reduced downtime
- Fully IETF and 3GPP compliant Diameter Relay, Proxy and Redirect agent
- Minimal risk in deployment of a field proven product



DEA for Tighter Security & Normalized Functionality

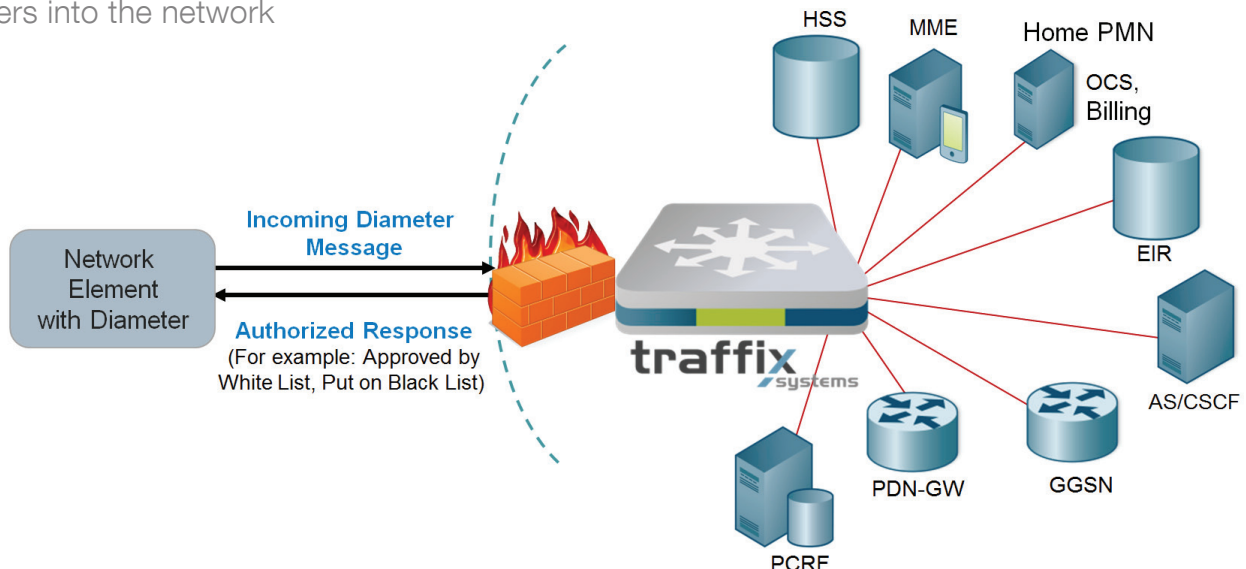
In addition, the SDC offers an enhanced Diameter Edge Agent (DEA) that extends its capabilities in network signaling for tighter security and normalized functionality in roaming, billing and third party content scenarios.

Operator Benefits:

- Normalization engine ensuring that only supported AVPs (attribute-value pair) and content enter the network
- High security and failover protection by masquerading the network to prevent unauthorized access by ensuring that external sessions are routed according to policies set by the service provider
- Guaranteed accuracy of incoming and outgoing messages with mechanisms to either fix or reject the message if the message presents a problem
- Network protection from both overload and drain of network resources
- Increased security by hiding multi-node server topology and transparently adding clients and servers into the network

Generic Context-Awareness for Network and Subscriber Analytics

Signaling messages are the optimal source for network intelligence, analysis and user behavior monitoring. The signaling path offers a rich and granular source of information which the SDC's routing engine builds upon with its context-aware capabilities to analyze and provide operators with information about the network and subscribers; such as subscribers' location, their services, the technology supporting the user's mobile device, allocated resources, charging and rating and much more. The SDC makes this subscriber data available in real-time to enable the service provider to use alternative business models with personalized offerings, tailored marketing campaigns, and other targeted promotions.



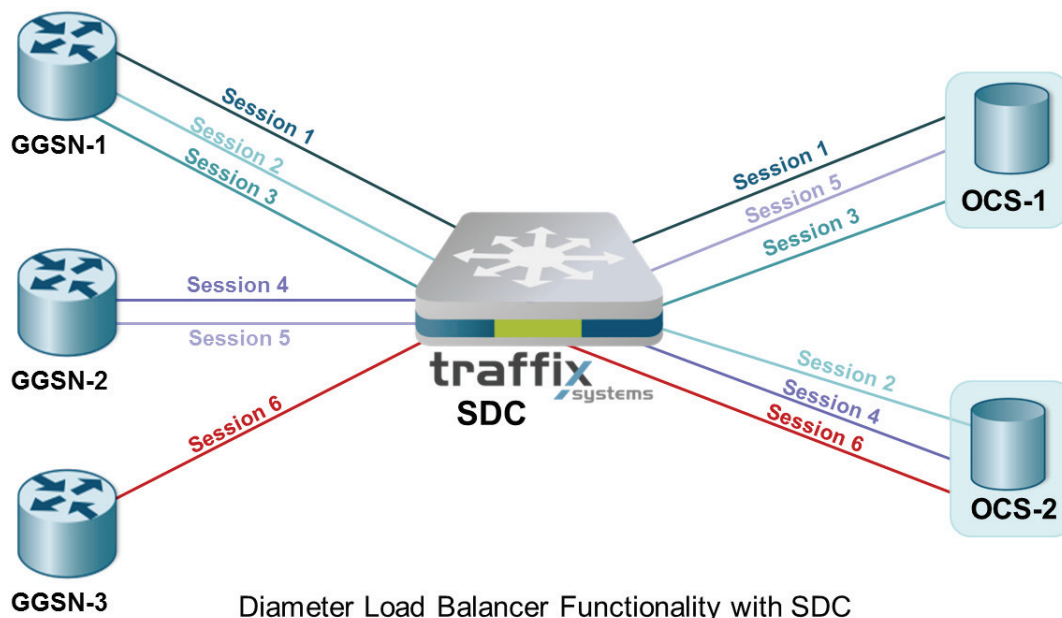
DEA for Security

Traffix SDC Diameter Load Balancer: Solving Scalability Issues for Cost-effective Growth

Telecom operators deploy the Traffix Diameter Load Balancer to achieve linear, non-disruptive scalability, high availability and service assurance by efficient use of the relevant network elements. Traffix native-Diameter session-oriented load balancing technology enables operators to distribute Diameter signaling traffic across multiple servers based on various load balancing policies, including support for session stickiness and business decisions, and subscriber and service aware contextual load balancing strategies. Empowering operators with virtually unlimited network scalability, Traffix Diameter Load Balancer gives operators the most cost-effective and operationally efficient path to predictable growth of a profitable network in the short and long term.

Operator Benefits:

- The market's first native Diameter load balancer
- Simplified network management and increased security
- Minimal risk in deployment of a field proven product
- Support for over 50 Diameter interfaces, future proof with Diameter base support (RFC 3588 bis), and easily adapted to support new or proprietary Diameter interfaces
- Multiple layer 5-7 aware load balancing schemes
- Support for session stickiness and multiple levels of session correlation
- Load balance Diameter traffic based on any AVP field, combination or content
- Advanced dynamic health monitoring, load detection, sharing and avoidance algorithms
- Legacy protocol support and mapping for legacy network connectivity

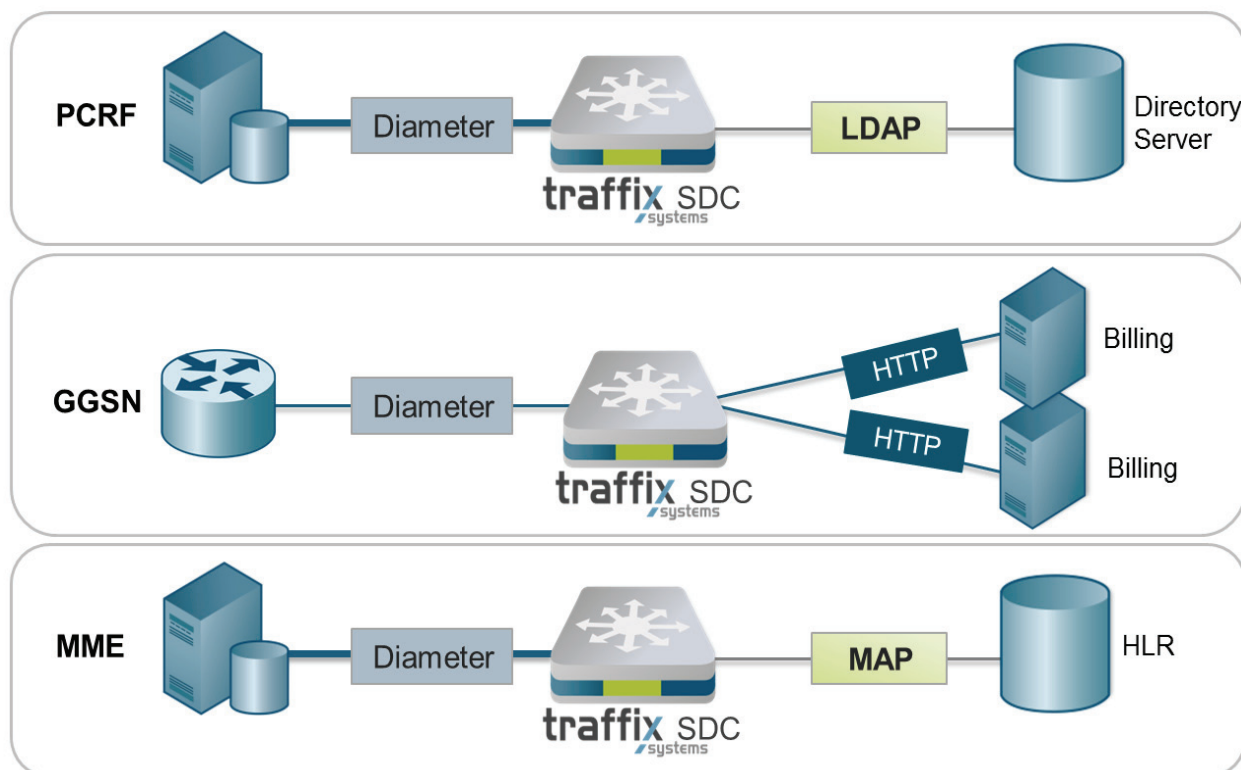


Traffix Diameter Gateway: Solving Connectivity Challenges for Increased Revenues

Operators who deploy the Traffix Diameter Gateway enjoy instant and cost-effective, any-to-any connectivity between Diameter-based interfaces and many legacy signaling protocols. With seamless connectivity among all Diameter network elements to legacy network elements and to an unlimited variety of 3rd party vendors, operators now have an easy migration path with countless opportunities to enter alternative business models and introduce additional revenue sources.

Operator Benefits:

- Interoperability in a multi-vendor environment
- Instant connectivity to telecom signaling protocols: Diameter, SS7, SIP, RADIUS, LDAP, CORBA, GTP, HTTP, Web-Services, JMS, SQL
- Support for over 50 Diameter interfaces
- Operationally efficient and cost-effective implementation
- Reduced integration time
- Reduced time to service launch
- Reuse of legacy investments
- Minimal risk in deployment of a field proven product



Diameter, RADIUS, LDAP, SQL, HTTP, COPS, GTP', Web-Services, JMS, CAMEL, MAP, CORBA, SIP

See into your Network with Traffic WideLens™ Network Visibility Tool

Only the Traffic Signaling Delivery Controller provides total Diameter level visibility in real time within your signaling network. When using the Traffic WideLens' simple web-based dashboard, operators benefit from a wide range of options to zoom in and immediately identify and repair any connectivity or signaling problem. Above and beyond troubleshooting, WideLens offers easy-to-extract business intelligence statistics and analysis reports so operators can keep a finger directly on the pulse of their network. In addition, WideLens provides valuable statistics on users and their network usage which can be used to enhance marketing promotions and campaigns.

Traffic Traffic Diameter Testing & Simulation Suite

In response to the need for rapid network rollout and new service deployment, the Traffic Diameter Testing & Simulation Suite was developed as part of the SDC package offering. The Traffic Diameter Testing & Simulation Suite is a comprehensive environment for testing automation including validation of stress

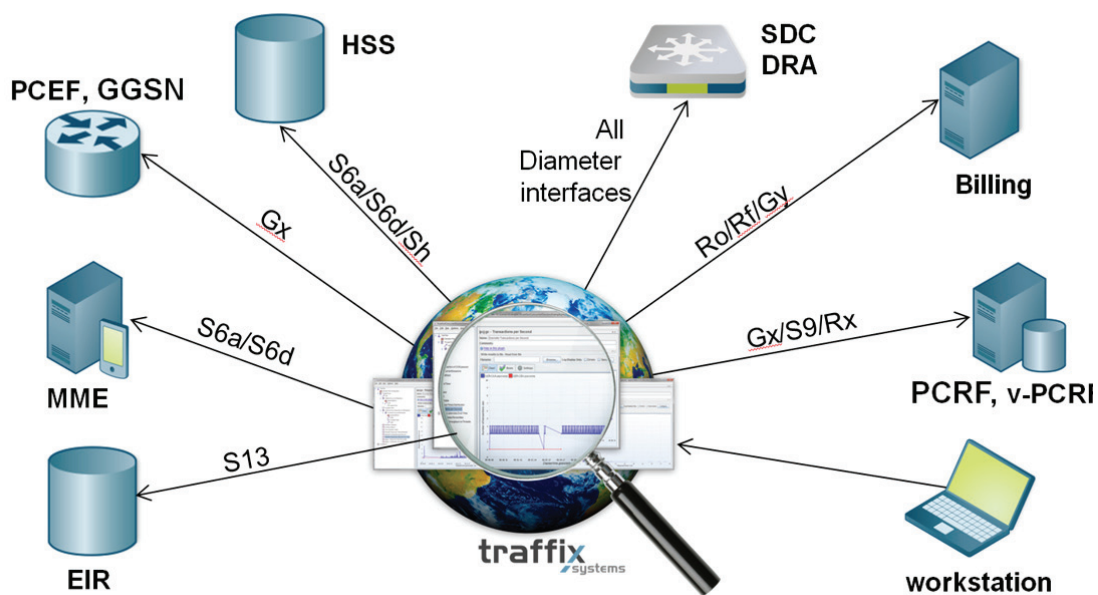
and the stability of all Diameter scenarios. It enables operators to simulate real world, complex scenarios for rapid service implementation and upload several standards simultaneously. It enables stability testing of all vendors for all 4G network elements. It can test roaming scenarios, Diameter over SCTP/TCP testing, and others. Equipped with a user-friendly and easy-to-use GUI, the Suite is easily configurable and complete testing environment with customized graphics and reports.

Operator Benefits:

- Network assurance: Test your network for both current and future Diameter signaling needs
- Cost effective: Avoids purchase of a separate testing suite as the SDC supplies it as part of the package
- Maintain high network performance, availability
- Maintain quality customer experience
- Constant visibility to network operation
- Multi-platform support
- Prevention of network problems and validation of entire 4G architecture

Diameter in Traffic DNA

The Traffic SDC is a 3rd generation, fully-mature,



Performance/Load/Stress/Scalability Testing & Simulation of Diameter Network Entities

feature-rich, field-proven product reflecting the Diameter DNA of Traffix. When deploying the Traffix SDC, operators receive better ROI from its technical, operational and business advantages, including:

- Unlimited scalability for continual growth
- Flexibility to adapt to a diverse range of operators' requirements
- Minimal integration efforts and seamless connectivity of new network elements, protocols and interfaces
- End-to-end interoperability between various vendors, other service providers and legacy infrastructure and elements
- Unmatched product performance
- Mitigated risk from deploying a proven product
- Simplified and safe routing for roaming with visiting networks
- Subscriber context-awareness, subscriber intelligence
- Full visibility of signaling network operation including 24/7 troubleshooting
- Rapid service introduction
- Positive branding and competitive advantage for providing constant top-quality performance and innovative 4G service
- Carrier grade and deployment models ranging from standalone to full network deployment to manage network load in the most efficient manner possible today and for future growth.

Why Traffix: The 4G & Diameter Experts

Catapaulted by the use of mobile applications, the market has come to a point during which service providers must rise to meet the challenges in signaling management by understanding the centrality that the control plane plays in the network in 4G to achieve both operational and business goals. Despite the promises of sophisticated services, huge bandwidth, tiered pricing, tuned policy and charging schemes, 4G technologies cannot be operational until service providers change their perception on signaling management and make it the number one priority. Built for Diameter from the ground up to fully support the different Diameter specifications, Traffix Signaling Delivery Controller is the only commercially available, field-proven product capable of meeting all the challenges that 4G presents to operators.

About F5 Traffic

Traffic Systems is part of F5 Networks, the global leader in Application Delivery Networking (ADN). Traffic, the 4G & Diameter experts lead the market with a range of Diameter products deployed at over 100 locations worldwide. Powered by the largest workforce dedicated only to Diameter signaling solutions, Traffic supports service providers as they build high-capacity, high-performance 4G networks. The Traffic Signaling Delivery Controller™ (SDC) platform enables full connectivity, unlimited scalability, and comprehensive control for operators to upgrade their control plane for the demands of a data-dominated world. For more information, visit www.traffixsystems.com or www.F5.com.



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