

Juniper Networks SRC and Microsoft CSF

Delivering Intelligent, Application-driven Control of Network Resources

Challenge

The need for carriers to differentiate the experience level of users receiving their applications not based on Best-Effort delivery, but on real time network and application needs.

Solution

Allowing carrier network to seamlessly and intelligently interoperate with applications and services at much higher levels of control.

Benefits

- Creating innovative, revenue-generating services
- Delivering numerous on-demand services to subscribers
- Tracking services with intelligent accounting applications
- Containing and Reducing OPEX and increasing ARPU

Today's Service Providers are facing a major watershed. They must deliver new applications faster, cheaper, and tailor them for specific users, or risk the loss of those customers and accompanying revenues. Microsoft and Juniper Networks, both leaders in their respective markets, have teamed to deliver a powerful new set of "building blocks" to facilitate the delivery of innovative Web 2.0 services or applications. Basic integration has been implemented between Microsoft's CSF (Connected Services Framework) and Juniper's SRC (Session and Resource Control) Portfolio. The combination of these two service-enablement systems via standards-based signaling bridges the application and network domains. This enables service providers to intelligently control the end-to-end service infrastructure (applications through network) resources in a cohesive, real-time manner based on application delivery requirements. Such integrated functionality between these domains serves as a cornerstone for emerging Next-Generation Network Architectures. The ability to coordinate applications dynamically with network-based resources, security, and identity, will allow Service Providers to offer true differentiated services.

The Challenge

Web 2.0 is the latest buzzword to hit the telecom industry, and as new age applications evolve, carriers face the daunting task of not only managing subscribers and effectively utilizing existing infrastructure resources, but also delivering the best possible user experience. As new applications and user trends emerge, the need for carriers to differentiate the experience level in which users receive their applications will be a crucial piece for not only the successful delivery of new services, but for the overall viability of the service provider in general.

The service provider's ability to manage basic bandwidth and network attachment is only one essential element. When multiple applications and users are competing for the same network resources, a new layer of service intelligence must be added to dynamically map together the user, the network, and the application, to provide assurance that the network will deliver an appropriate experience to any individual user accessing a specific premium service.

The Juniper Networks SRC / Microsoft CSF Solution

The integration of Microsoft's Connected Services Framework (CSF) and Juniper's Session and Resource Control Portfolio (SRC) is aimed at exactly this set of challenges. By allowing the carrier network to seamlessly and intelligently interoperate with applications and services at a much higher level of control, the CSF/SRC integration provides core functions that are crucial for service delivery:

- Identity management
- Resource network management
- Application resource management
- Complex policy decisions

The application exposure points that these two systems create provide a foundation that can support a variety of CSF-enabled applications requiring special handling from any SRC-enabled network.

Features and Benefits

The combination of CSF with the SRC is designed to simplify the three major steps in the service life-cycle process:

- Creating innovative, revenue-generating services
- Delivering numerous on-demand services to subscribers
- Tracking services with intelligent accounting applications

Via the SRC, subscribers are provided mechanisms for requesting new services and indicating specific needs that will support applications and services, including multicast audio and video applications, QoS-enabled streaming media, video telephony, residential voice over IP (VoIP), interactive gaming, bandwidth on demand/variable bandwidth ("Turbo button") peer-to-peer controls and protection services.

The types of services that can be leveraged are not specific to residential or business markets. Both segments offer great opportunity to deliver high value, billable, premium services such as:

- Gaming (Xbox Live)
- IPTV (Microsoft Mediaroom)
- Rapid download of content, programs/software (Windows Live)
- Enhanced quality for streaming media applications (Window Media)
- Collaboration tools (Microsoft Office Online/ Groove)
- 2-way user interactions (Live Meeting)

These are just a few of the areas that benefit greatly from a Service Intelligence Layer-enabled network.

So how does it work? As consumers request new web content, additional IPTV streams, or gaming content, the application domain via the CSF makes a request of the SRC's Web Services interface, ensuring that the necessary resources are available to deliver an acceptable user experience for the specific session. The SRC will manage the available resources, and if the resources are not available at that time, it will respond back to the CSF, and deny the resource request. If the resources are available, then the SRC will make any necessary changes in the network and simple reply back to the CSF with an 'OK'. This high level knowledge of what is REALLY going on the network allows the CSF to appropriately control the applications resources and the consumer's expectations, and protect the experience for users already using the network.

What this means is that any application that leverages the CSF can not only deliver a rich set of content to the user, but the application can also ensure that the user receives that content in the most appropriate manner. Meaning that if the content requires a steady 2Mbps flow of packets (perhaps video) to be valuable to the user, the network will deliver exactly the 2Mbps required. The application knows what it needs from the network in order for the user to truly enjoy or make effective use of the application. With this Web Services bridge between the Microsoft CSF and the Juniper SRC, the applications can now be assured that the user will receive their content exactly as required.

One application example in the business services market leverages the award-winning Microsoft Office Family of products. Consider how the integration between Microsoft Outlook, the CSF, and SRC can automate the allocation of network resources for a video call at the time of the call. In response to a specific video call calendar entry, the calendar application sends an XML message to the CSF requesting specific network (Bandwidth/QoS/Latency/Jitter) resources for the video conference. The CSF triggers the SRC at the time of the meeting to reserve the resources needed for the call and assure a high-quality experience. The ability for real-time events and non-real-time events to be coordinated in this way is just one example of the combined power of CSF and SRC. There are boundless possibilities of new services that can be created and deployed once this new architecture has been activated.

Solution Components

Microsoft CSF

Microsoft CSF is a server product that manages common functions of Web service control and aggregation. Common sets of interfaces and software logic connecting to back-end systems a Web services development and deployment framework simplify adding new services, and simplify adapting existing services for operation in a connected services environment.

A Connected Services Framework implementation provides the environment required for service creation, session-based service aggregation and service management. You access the Connected Services Framework aggregation environment through familiar Visual Studio–based .NET languages. The Standard Business Events (SBE) layer provides normalization to standards-based interfaces for custom and proprietary definitions of entities in business flows (such as service activation, billing and so on). Connected Services Framework is based on a Service Oriented Architecture (SOA) and therefore all the components of Connected Services Framework are also themselves services.

Connected Services Framework features standards-based interfaces, and is platform-independent and programming-language–independent. It provides a flexible architecture that offers integration with a variety of operational support systems (OSS), business support systems (BSS), and network service products based on industry standards, including the advanced Web services definitions driven by the Web Service Interoperability (WS-I) organization.

The Connected Services Framework environment enables operators to leverage existing service assets by integrating them into a collaborative framework, and is not intended to be a “rip and replace” solution. Neither is Connected Services Framework restricted to Microsoft devices or to Microsoft services and products.

Juniper Networks SRC Portfolio

Juniper Networks SRC Portfolio consists of advanced hardware and sophisticated software that extend Juniper’s network layer expertise to the policy and control layer. The portfolio includes the widely deployed SDX-300 Service Deployment System, as well as the SRC Software Module family and the high performance C-series Controllers.

SRC Software Modules are a task focused advanced software modules that build on the functions of the SDX-300 and Service Provider AAA platforms, and are designed to run on purpose built high performance C-series Controller platforms.

As key components of the Session and Resource Control Portfolio, the SRC modules and C-series Controllers offer a carrier grade policy and control solution that, together with integrated third-party platforms and applications, support the delivery of high value differentiated services across multi-vendor network infrastructures and enable the smooth migration to next generation Cable, 3GPP IMS and ETSI TISPAN network architectures. Independent of or in combination with the other products and solutions, the SRC modules and C-series Controllers provide Juniper customers with a broad set of open, agile and customizable policy and control options to address their diverse and unique business and technical requirements.

Summary – Achieving Intelligent, Application-driven Control of Network Resources

As new network service delivery models are being deployed, the integration of the CSF and SRC allows a breadth of control and overall coordination of resources driven by application needs across the end-to-end service infrastructure. Employing these powerful tools allows service providers to deliver the right CSF-enabled applications at the right time, increasing customer loyalty, maximizing average revenue per user (ARPU), and offering their customers truly differentiated services.

CORPORATE HEADQUARTERS
AND SALES HEADQUARTERS
FOR NORTH AND SOUTH AMERICA
Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or 408.745.2000
Fax: 408.745.2100
www.juniper.net

EAST COAST OFFICE
Juniper Networks, Inc.
10 Technology Park Drive
Westford, MA 01886-3146 USA
Phone: 978.589.5800
Fax: 978.589.0800

ASIA PACIFIC REGIONAL
SALES HEADQUARTERS
Juniper Networks (Hong Kong) Ltd.
Suite 2507-11, 25/F
ICBC Tower
Citibank Plaza, 3 Garden Road
Central, Hong Kong
Phone: 852.2332.3636
Fax: 852.2574.7803

EUROPE, MIDDLE EAST, AFRICA
REGIONAL SALES HEADQUARTERS
Juniper Networks (UK) Limited
Building 1
Aviator Park
Station Road
Addlestone
Surrey, KT15 2PG, U.K.
Phone: 44.(0).1372.385500
Fax: 44.(0).1372.385501

Copyright 2007 Juniper Networks, Inc. All rights reserved. Juniper Networks, the Juniper Networks logo, NetScreen, and ScreenOS are registered trademarks of Juniper Networks, Inc. in the United States and other countries. JUNOS and JUNOSe are trademarks of Juniper Networks, Inc. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Features	Advantages	Benefits
Pre-packaged solution	Provides a solution that is easy to dimension, test, install, configure, upgrade, troubleshoot and spare.	Simplifies the operations environment.
Intelligent Admission Control	Considers multiple criteria (user authentication, subscriber privileges and service profile, application requirements and network resource availability) to make per-session admission control decisions.	Ensures high service quality and subscriber quality of experience.
Real-time Bandwidth Management	Tight integration with the network layer enables SRC Software Modules to allocate and reserve network resources and bandwidth end-to-end across the access, edge, and core network.	Ensures high service quality and the efficient use of network resources.
Dynamic Bandwidth Adjustment	Policy-based dynamic traffic engineering mechanisms create and resize MPLS LSPs (Liquid LSPs) in response to dynamic subscriber and application requests.	Adjusts network resources based on real-time network state information to efficiently provide quality of service to session requests.
Synchronized Accounting	Tracks and accounts for dynamically initiated services for OSS/BSS handoff.	Support for unique service models.
Flexible Service Activation	Identity-based, application-based and subscriber self-service selection.	Provides mass service customization, stronger customer relationships, and competitive differentiation without increasing operational complexity or costs.
Open Interfaces	Supports the integration of third-party network elements and applications to enable end-to-end, application driven network resource control.	Enables application-driven resource control over multi-vendor network.
Subscriber Auto-Provisioning and Service Creation Tools	Policy-driven subscriber and service automation at carrier scale.	Decreased time to market, reduced cost to roll-out new services.
C-series Controller	Purpose-built, task optimized appliance provides carrier grade performance, scale and reliability for SRC Software Modules.	Easily dimensioned solution, with predictable performance and scale.

About Microsoft

Founded in 1975, Microsoft (Nasdaq “MSFT”) is the worldwide leader in software, services and solutions that help people and businesses realize their full potential.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

To purchase Juniper Networks solutions, please contact your Juniper Networks sales representative at 1-866-298-6428 or authorized reseller.

