

SOLUTION BRIEF

An Integrated Dynamic Network Automation (DNA) Solution for Next Generation Networks

Leveraging New Opportunities with Broadband Services



Faced with rising competitive pressures and eroding margins on core services, Communications Service Providers (CSPs) are launching next generation broadband services such as IPTV/Video-on-Demand (VoD), online gaming, and streaming video. These new network resource-intensive applications present a major opportunity for service providers to create new revenue streams, and serve as a path to premium bundled multi-play services that encompass voice, video, internet, wireless, and other applications.

Delivering services such as IPTV involves tight integration of heterogeneous components, access systems, middleware, and various other hardware and software technologies. Ensuring quality of service (QoS), performance, scalability, and reliability, while providing a customized user experience over such a diverse architecture, remains a daunting challenge. However, simply adding more equipment and bandwidth may not be an economically viable option, nor does it guarantee service quality. Service providers must get the most out of existing network resources, while delivering a high quality of experience to subscribers.

CHALLENGES:

In particular, CSPs face the following operational challenges:

Creation of a meaningful link between services/applications and the network

- Networks are provisioned based on estimated or anticipatory service requirements, which may or may not meet application needs.
- Applications have little or no awareness of the state of the network.

Dynamic allocation of network resources across the end-to-end network

- QoS and bandwidth management issues have traditionally been addressed in the last mile, by-passing the need for greater intelligence within the network core.

Implementation of automated, non-disruptive exception and recovery mechanisms

- Current systems lack the ability to effectively respond to, and automatically recover from, exception situations such as policy violations and link/node failures without disrupting existing network services.

An Integrated Solution for Multi-play Services from Juniper Networks and Intelliden

Juniper Networks, the leader in secured and assured communications over a single IP network and Intelliden, a leading provider of intelligent networking solutions, offer service providers a cost-effective, integrated solution for delivering IPTV and other demanding multi-play services. **Dynamic Network Automation (DNA)** is an advanced policy management solution that enables CSPs to intelligently and dynamically coordinate applications and network resources to provide service assurance for IPTV and other resource-intensive applications on today's multi-service networks.

DNA ensures that deterministic, delay-sensitive applications such as video-on-demand always get the required network resources to enable a high quality user experience. With DNA, services/applications and network resources no longer exist in separate policy control and operational management silos. DNA is the first network automation solution to extend network intelligence into the core, making the entire network more application-aware. This enables end-to-end dynamic bandwidth allocation, optimization of network resources, and enforcement of policy across the network.

DNA CONSISTS OF THREE KEY COMPONENTS:

■ Juniper Networks Session Resource Control (SRC) Portfolio

The SRC portfolio offers a carrier grade policy and control solution that, together with integrated third party platforms

and applications, supports the delivery of high value, differentiated services across multi-vendor network infrastructures and enables the smooth migration to next generation Cable, 3GPP IMS and ETSI TISPAN network architectures. Independently of or in combination with the other products and solutions of the Session and Resource Control portfolio, the SRC modules provide Juniper customers with a broad set of open, agile and customizable policy and control options. The options enable centralized IP service policy management that spans the network infrastructure—from application servers through to access/CPE, addressing their diverse, and unique, business and technical requirements.

■ **Intelliden Dynamic Resource Provisioning Solution**

Intelliden Dynamic Resource Provisioning solution provides dynamic allocation of IP network resources such as network elements, MPLS service paths (LSPs) and SRC Platform, as well as bandwidth management. Based on its R-Series® platform and patented technology, the Intelliden solution enables initial resource provisioning, real-time on demand allocation of network resources and exception management. This helps to ensure reliable and scalable service delivery as resource and bandwidth requirements shift dynamically across the network.

■ **SRC Platform / Intelliden Integration Module**

The SRC Platform/Intelliden Integration Module manages the connection between the two market leading solutions from Juniper and Intelliden. This module supports open standards-based (XML, web services) communications between the two applications.

How the Integrated Solution Works

The Dynamic Network Automation (DNA) solution performs the initial provisioning and allocation of network resources based on the type of service. As service demands ebb and flow based on increased volume of video/content requests, variances in traffic and other subscriber-initiated requests, DNA can automatically and dynamically respond to provision the required network resources (e.g. elements, paths, and bandwidth). DNA can also respond to exceptions and unanticipated changes in the network state, such as potential path saturation, device failure, or link failure and provide mechanisms for automated network recovery and reconfiguration. This helps to enable an assured service delivery and a high-quality user experience, by significantly improving network resiliency and overall service reliability.

DNA supports provisioning of both SIP and non-SIP based applications, and represents a meaningful step for CSPs toward the creation of an IMS-compliant multi-services infrastructure.

BENEFITS

DNA simplifies the provisioning and management of advanced broadband services such as IPTV by providing integrated policy management for service and network resources across the end-to-end network, including the core. It delivers advanced real-time capabilities that enable the network to dynamically evolve to accommodate changing service types, network capacity and subscriber demands.

Specific benefits include:

Assured Service Delivery and Network Resiliency

- Provides dynamic, automated, policy-based network configuration and resource management for demanding resource-intensive services
- Assures a high quality user experience for delay-sensitive applications
- Coordinates network, policy, and OSS domains to facilitate faster recovery from network disruptions

Increased Operational Efficiencies

- Reduces operational costs by automating manual, repetitive, and error-prone tasks
- Optimizes deployment of existing service infrastructure to reduce capital costs

Faster Service Deployment

- Enables the rapid and repeatable configuration of network elements and paths for launching new services and turning up new customers on a large scale
- Facilitates the addition of new applications and network resources through a common service management solution

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