Next Generation Gateway (NGG)

A solution brief from HP

Network and Service Provider Solutions
Central control and management of mobile communications

HP Next Generation Gateway solution

Operators and network service providers are adapting to the reality that the telephone and its supporting network has been permanently redefined. The telephone has evolved into a multimedia device with video and data capabilities in addition to traditional voice functionality, and the telephone network now serves as a global services infrastructure that is revolutionizing the way people communicate. Today, people don’t just want to talk on the phone. They want to send text messages, take pictures or even update Web sites from their telephone.

The bottom line is that the market has changed. People want to customize and personalize their own communications reality. Service providers must leverage existing telecommunications infrastructure and deliver voice, data, text, video and other mobile applications to many types of end-user devices. Service providers that understand the dynamics of today’s market have upgraded their infrastructure to meet these customer needs and expectations. Others are just now embracing this new telecommunications reality.

From an overall business perspective, service providers have three distinct requirements:

- Provide data services that increase average revenue per user (ARPU). Industry analysis shows that over time revenue from voice services will decline and revenue from data services will increase.
- Provide a variety of data services and manage an ecosystem of third party providers.
- Introduce new services rapidly and cost effectively.

NGG overview

The Next Generation Gateway (NGG) solution integrates 724 Solution’s X-treme Mobility Gateway (XMG) with the HP world-class software, hardware, consulting, support and training programs to deliver a true multifaceted solution to help service providers meet their business and customer requirements.

The NGG solution redefines and expands the capabilities of a key network component known as the data gateway. Leveraging its proximity on the network, the HP NGG solution capabilities enable the gateway to intelligently manage business rules and communications between devices, regardless of media, network or communication protocol. The NGG solution provides a central intermedia-
tion point to route and control traffic across and between multiprotocols including Wireless Application Protocol (WAP), Short Messaging Service (SMS) and Multimedia Messaging Servers (MMS) and enables content rendering for all types of devices, including traditional handsets and Personal Digital Assistants (PDAs), and new mobile appliances like vending machines, gaming devices, video displays, television sets, even microwave ovens and refrigerators.

By adding services and increasing the level of processing and integration that occurs at the gateway level, the HP NGG solution helps simplify network management, eliminate redundancy, speed new application deployment and reduce operating costs. The NGG solution is flexible and can be used as a standard WAP 2.0 gateway, incorporating the latest in Internet standards developed by the World Wide Web Consortium (W3C) including XHTML Basic, TCP/IP, Hypertext Transfer Protocol (HTTP/1.1) and Transport Layer Security (TLS) while maintaining backward compatibility. This functionality reduces the time and effort required to create and test applications and provides a common subset of language elements and development tools for both Web and WAP clients, reducing developmental costs.

One of the unique capabilities of the NGG is its ability to separate push and pull proxy components. This offers service providers unique ways to save money. For example, to deploy MMS services you need a WAP gateway with push proxy capability. The NGG push proxy component can be configured to work with an existing WAP 1.X gateway and virtually any MMS/C. Therefore, network assets are leveraged and new customer services can be deployed without the overhead of a complete WAP 2.0 upgrade or new MMS server. This is just one example of how the NGG can reduce costs and expand services for customers.

The NGG solution provides advanced capabilities for access control, billing intermediation, request routing, and blacklisting. Access control facilities enable users to be grouped based on almost any type of criteria. For example, customers can be assigned to applications based on the type of service they have subscribed to, their age or other personalization characteristics. The NGG extensible solution architecture enables integration of user profile data, billing data and other operations/business support system information rapidly, without massive amounts of custom coding. An internal rules engine in the NGG solution provides facilities to intelligently route requests to enhance system performance by routing requests directly to their destination. The blacklisting capability offered by NGG enables banning or automatic redirection of specific URL (Universal Resource Locator) requests to limit or block access to undesirable sites for certain user groups as in the example of minors and pornographic material.
Another facet of the NGG solution is its integration with the world class HP OpenView platform. This gives the NGG extensive service management capabilities, including:

- More than 75 alerts tuned for fast problem resolution
- Metrics on request status and processing performance
- Predefined reports tuned for operators, administrators and line of business managers
- Autodiscovery of application topology showing physical nodes and functionality deployed to those nodes

The NGG solution also fits seamlessly into the HP Mobile Service Delivery Platform (MSDP). The HP MSDP platform allows mobile network operators to develop, deploy, deliver and manage converged voice and data e-services. By equipping MSDP with Web services-based interfaces to gateway functions, NGG services—such as push messaging—become part of the infrastructure and can be used by multiple applications running on the MSDP, reducing application development time. In addition, the NGG solution can off-load processing tasks from the MSDP. For example, access control and routing capabilities of the NGG can be used for simplified provisioning, activity logging and intermediation of chargeable events. This can enhance the performance of MSDP and applications.

**Benefits**

- Provides an enriched gateway infrastructure environment and the application interface capabilities of XHTML—such as the ability to add color, graphics and scripting—that is inherently better for most data services and helps to increase the subscriber base.
- Leverages the traditional Internet and browser technologies and reduces developmental costs. A readily available pool of XHTML developers can use tools and already familiar techniques.
- Decreases provisioning complexity and reduces the amount of time it takes to provide new services to users.
- Delivers carrier-grade availability of applications through innovative load-balancing and fault-tolerance techniques.
- Lowers costs by providing simplified intermediation for chargeable events and activity logging.
- Uses open standards-based technologies for easy integration with all other HP network and service provider solutions.
- Uses a broad range of network applications such as HP OpenCall to enable advanced converged voice and data applications.
- Uses virtually any third party revenue generating applications and content provider services that are part of the HP Mobile Bazaar product suite.
Features

- Fully compliant to WAP 2.0 Specification: Includes Push Proxy Gateway (WAP 1.x and 2.0), support for XHTML Basic, XHTML Mobile Profile, WML 1 & 2, HDML, cHTML, XML, WAP 1.2, WAP 2.0, supports J2ME, BREW, iMode, HTTP, PocketPC, Symbian.
- Patented fault tolerance, scalability and transaction integrity:
  - Unique underlying architectural layers incorporate over 16 patents for interobject and interprocess communication, ensuring that wireless services are always available with up to 99.999% uptime.
  - Component architecture enables unparalleled distribution and replication for both vertical scaling across central processing units (CPUs) and horizontal scaling.
- Integrated with HP solutions
  - Preintegrated with HP OpenView providing full logging, metrics and reporting.
  - Seamlessly integrates with Mobile Service Delivery Platform (MSDP).
  - Integrates with Integrated Usage Manager (IUM) for advanced logging, call detail record (CDR) analysis and pre- and post-paid billing integration.
  - Integrates with the HP MMS solution providing full gateway access.
- Advanced easy to use features including:
  - Separate push and pull proxy gateways
  - Robust access control facilities
  - User profile system
  - Mark-up language translation
  - Automatic image protocol conversion
  - URL redirect capability
  - Blacklisting capability
  - Session management facility with both session and persistent cookie management
  - Integrated rules engine for business process management
  - Easily extensible with xml and SOAP based access to gateway services and callouts to advanced business logic

Partner—724 Solutions

724 Solutions Inc. delivers reliable, scalable technology and solutions that allow mobile network operators to rapidly deploy flexible and open next-generation IP-based network and data services. Additionally, the company provides a series of actionable alerting solutions to financial institutions to assist them in increasing revenue, lowering operating costs and improving customer satisfaction and retention. 724 Solutions is a global company with development operations in North America, Switzerland and Germany with headquarters in Toronto, Canada.

HP advantage

Communications solutions are highly complex, and service providers must deliver even more innovative services to the market while keeping customers loyal and insulated from the complexities behind the services. In order to achieve this, service providers need strategic partners who can do more. HP offers a range of targeted, seamless solutions, integrated with partners, delivered quickly and efficiently. HP systems and solutions are open and flexible, empowering customers to customize or create value-added services. Our service capabilities provide the expertise to develop, integrate, test, install and support the most complex service launches. This one-stop shopping approach lets service provider’s focus on their customers—not their suppliers.

HP focuses more than 25 years of telecommunications expertise into a powerful integrated team, the Network Service Provider Business Unit (NSPBU). The NSPBU, along with 500 valued solutions partners, assists the world’s top 200 service and equipment providers, and meets the voice and data needs of hundreds of millions of wireless and wire line subscribers.

With solutions, technologies and services including: HP OpenCall and HP OpenView telecommunication capabilities arrayed across network infrastructure, network services, operations and business support, mobile and rich-media solutions, and end-user access, the HP NSPBU is a major player that is leading change in the network and service provider industry.

For more information go to www.hp.com/communications

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