

Data Sheet: Bridgewater Policy Controller

The Bridgewater® Policy Controller is a highly flexible and scalable policy server specifically designed to help service providers manage the impact of mobile data growth on their networks and generate revenue from personalized services.

Combining sophisticated metering capabilities with a highly configurable business rules engine, the Policy Controller can apply a wide range of intelligent, real-time controls, including managing quality of service (QoS) changes, optimizing high bandwidth traffic, and enforcing usage quotas. These controls can be used to support an extensive set of use cases for both network optimization and service enablement, including tiered services, customer loyalty programs, video optimization, and more.

The Policy Controller is fully compliant with the Third Generation Partnership Project (3GPP) Release 7, 8 and 9 standards for the Policy and Charging Rules Function (PCRF) and can be deployed in HSPA, EVDO, WiMAX, and LTE networks as part of the evolved packet core (EPC). Within these environments, it can be rapidly deployed with many different types of policy enforcement points—such as access gateways, DPIs, and content optimization solutions—depending on the use cases to be supported.

Why the Bridgewater Policy Controller?

- Flexible support for multiple policy enforcement points in the network, including device client, deep packet inspection, access gateway, and content optimization servers.
- Proven and broad interoperability with all major network equipment vendors.
- Support for an extensive set of use cases for network optimization and service enablement.
- Leads in benchmark 3G and 4G performance testing as validated at the Light Reading megatest in 2010.
- Field proven in both 3G and LTE production environments supporting live traffic.
- Proven policy control across all access technologies.
- Integration with 4G intelligent broadband controls portfolio that features Bridgewater® Home Subscriber Server (HSS) and Bridgewater's Subscriber Data Broker™.

HIGHLIGHTS

The Bridgewater Policy Controller supports the broadest set of policy-driven use cases in the industry, which helps service providers manage network capacity intelligently and enable new revenue-generating services; including by not limited to:

- Real-time fair usage control for monthly and flat-rate data plans;
- Real-time metering to support service model innovation;
- Tiered services to increase customer loyalty and broaden appeal across multiple subscriber segments;
- RAN congestion control to manage simultaneous application sessions per RAN resource;
- Proactive notifications and subscriber management; and
- Roaming controls that enable metering of home and roaming usage thresholds.

The Smart Approach to Policy Control

Bridgewater has developed an innovative approach to policy that gives service providers a comprehensive set of controls for optimizing 3G and 4G networks and implementing a wide range of personalized services for customers. Bridgewater's Smart Approach consists of four key capabilities supported by the Bridgewater Policy Controller.

Smart Controls™ allows service providers to prioritize network resource usage for each cell site and for each individual subscriber. Smart Controls leverage a contextual view of subscribers, including attachment and location information, entitlements and service profiles, and dynamic cell conditions, to drive intelligent decisions that prioritize specific subscriber segments in real time.

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Smart Caps™ is a flexible, real-time approach to bandwidth caps that allows operators to implement different controls dynamically depending on a number of factors such as service tier, usage patterns, and time of day. Smart Caps improve ROI by removing the need for expensive upgrades to relieve congestion caused by heavy users. They also optimize the allocation of available bandwidth across subscribers, increasing fairness in network access and improving the user experience.

Smart Apps™ provides finer granularity in the control of the user experience, allowing the operator and the subscriber to further tailor the experience on the basis of the application requirements (e.g. streaming, gaming, downloads, email), while still taking into account real-time subscriber preferences and behavior, and network conditions.

Smart Client™ is a capability that allows operators to extend transparency and personalized controls to subscribers using a convenient and intuitive client application for smartphones and laptops thereby putting control where it belongs—in the hands of the customer—and improving transparency around data usage.

Features and Benefits

Centralized Business Rules Engine

Features a highly-configurable rules engine with a graphical user interface (GUI) for creating sophisticated policy rules governing subscriber data usage and application entitlements, enabling faster time-to-market for new services.

Real-Time Metering

Implements standard 3GPP Gx interface for performing real-time metering, including metering different traffic flows within an individual user session. Metering can be based on time, volume, application, or a combination of all three to provide support for differentiated service tiers.

Extensive Use Case Support

Supports the broadest set of use cases in the industry to help operators manage network performance and capacity intelligently and support new revenue-generating services.

Enforcement Point Support

Enables policy rules to be executed on many different enforcement points, including access gateways, DPIs, content optimization servers, and the subscriber device. This allows service providers to apply policy rules throughout the network—from the device to the radio access network (RAN) to the core network—and support a diverse set of use cases.

Subscriber Context Awareness

Enables service providers to apply intelligent controls based on real-time contextual information about the network, the subscriber, and the application, such as service plan entitlements, roaming status, network congestion, and traffic type.

Dynamic Mid-Session Modifications

Provides granular control over bandwidth usage and enables modifications to be initiated by subscribers or customer service personnel. Since the Policy Controller can manage data usage in real time on a per-session and per-subscriber basis, it minimizes costs associated with non-real-time analysis of subscriber usage and provisioning of usage limits, and reduces customer care calls from dissatisfied customers.

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Subscriber Transparency

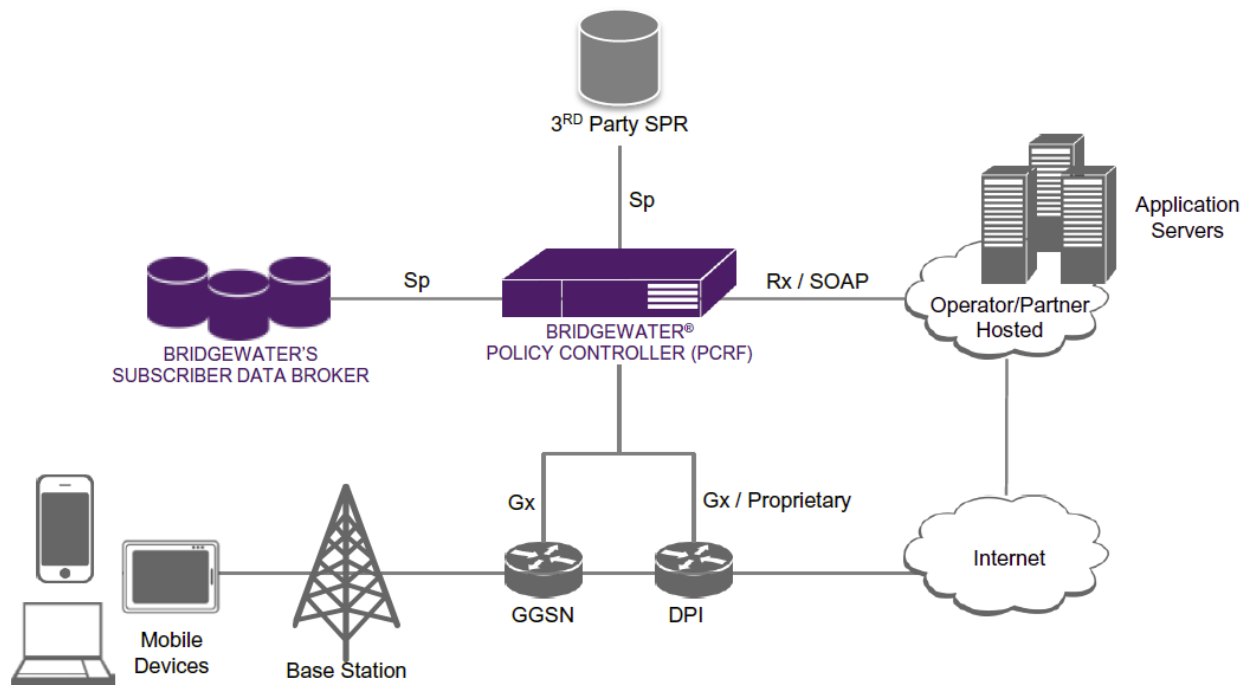
Provides real-time subscriber notifications via SMS, e-mail, or redirection to a customer portal. Notifications are triggered by real-time events, such as exceeding a usage threshold for a specific application, roaming to another network, or qualifying for a customer loyalty program. Improved transparency helps reduce operating costs and increase subscriber satisfaction.

Broad Multi-Vendor Interoperability and Standards Support

Fully compliant with 3GPP standards, with interfaces and performance requirements designed and tested for multi-vendor environments.

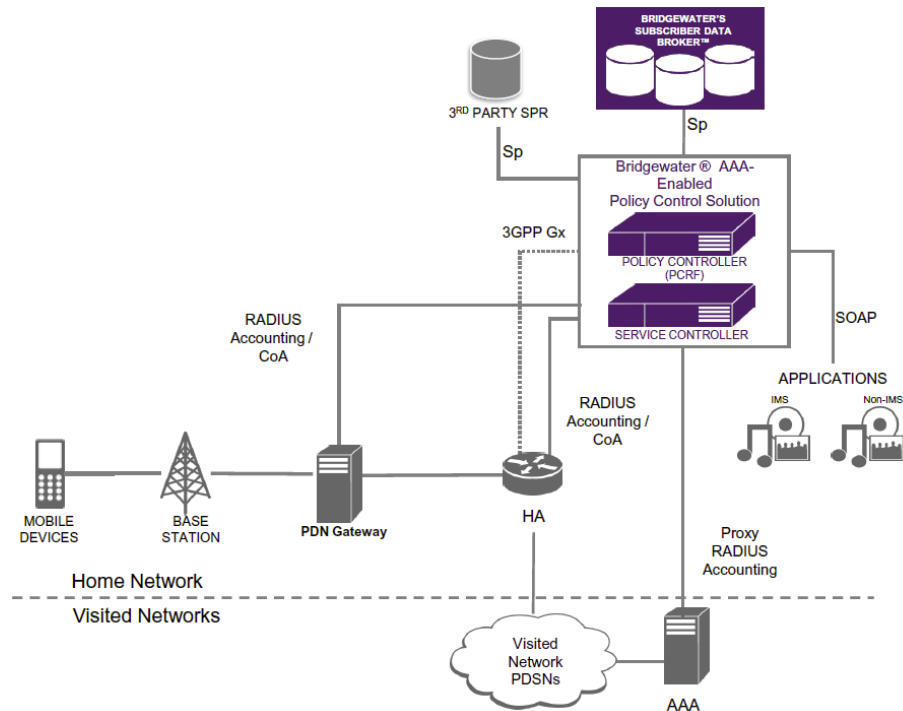
Deployment Examples

PCRF Network Deployment (3GPP R7)

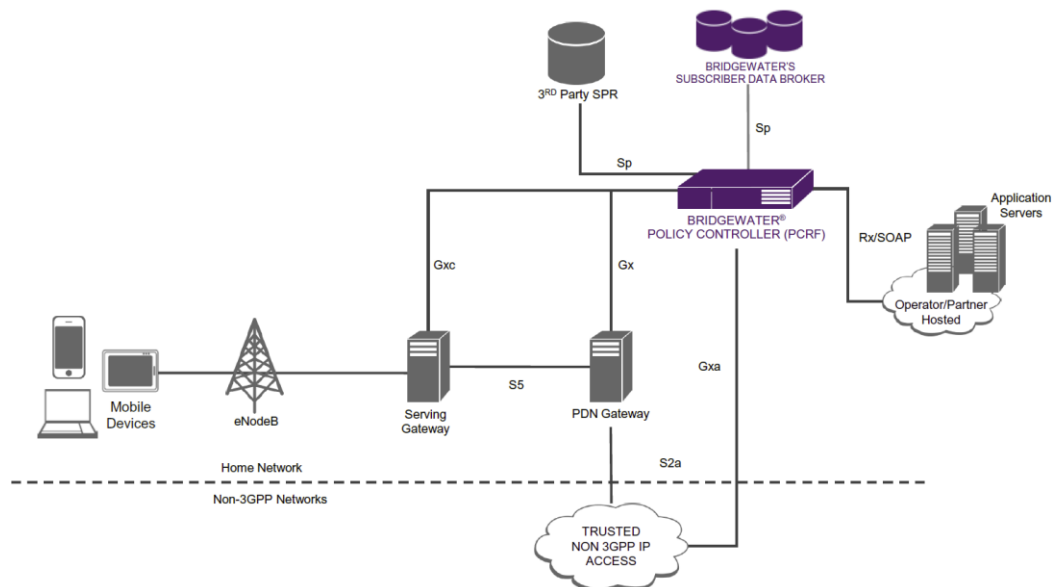


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Policy Controller for 3GPP2 Networks



LTE PCRF Network Deployment (3GPP R8, R9)



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Deployment Configurations

The Policy Controller is available as a software solution or as a pre-integrated network system. The PC network system reduces deployment costs, accelerates time-to-market, and provides a modular approach for adding network capacity. Pre-integrated on carrier-grade IBM servers, the PC network system can be rapidly deployed in a wide range of service provider environments and is available in the following configurations.

<p>Bridgewater EPC 500L IBM x3650 M3 Server</p>	<p>A complete, integrated control system comprising Bridgewater Home Subscriber Server (HSS), Bridgewater Policy Controller (PCRF), and Bridgewater's Subscriber Data Broker. Ideally suited for LTE EPC lab trials and small to medium sized deployments.</p>
<p>Bridgewater PC Server 500L IBM x3650 M3 Server</p>	<p>Policy Controller for small-scale deployments</p>
<p>Bridgewater PC Server 1000L IBM x3650 M3 Server (6 core)</p>	<p>Policy Controller for small- to mid-scale deployments</p>
<p>Bridgewater PC Server 3000L IBM x3650 M3 Server (12 core)</p>	<p>Policy Controller for mid- to large-scale deployments</p>
<p>Bridgewater PC Server 5000L IBM HS22 Blade Server</p>	<p>Policy Controller for mid- to large-scale deployments</p>

Technical Specifications

<p>Operating System Support</p>	<p>Linux Red Hat (RHEL 5.4 x 86.64)</p>
<p>Hardware Support</p>	<p>IBM x3650 M3 IBM HS22 Servers in BCH chassis</p>

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About Bridgewater Systems

Bridgewater Systems, the leader in intelligent broadband controls, provides pre-integrated solutions for mobile and converged operators to transform their networks, optimize mobile data growth, and innovate with new services. The Bridgewater portfolio of carrier-grade products includes Service Controller (AAA), Policy Controller (PCRF) and Home Subscriber Server (HSS), anchored by a common identity and device management system. More than 150 leading service providers worldwide leverage Bridgewater to create and deliver profitable services to consumer, enterprise, cloud and machine markets. For more information, visit us at www.bridgewater.com.

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