

Data Sheet: Bridgewater Service Controller

The Bridgewater® Service Controller is the industry’s leading service control product that allows operators to offer and control access to advanced and differentiated services across all network access technologies.

The most scalable and robust solution of its kind, Service Controller is widely deployed and proven in service provider networks around the globe. The Service Controller supports network access control services, including authentication, authorization, and accounting (AAA) for devices and subscribers in numerous networks.

Network access control functions, such as AAA, are business-critical functions that enable fast, efficient and secure access to data networks and services. The Service Controller provides a flexible underlying service control infrastructure required to support carrier-grade performance and scalability of mobile data services targeting consumer, enterprise, and machine markets.

Why the Bridgewater Service Controller?

- Best of breed pedigree, Service Controller is the leading AAA solution proven in more than 150 deployments in 3G and 4G WiMAX, with access network specific features and functions supported.
- Multi-access support provides simultaneous support—3G (CDMA, GSM/HSPA), WiMAX, Fixed, Wi-Fi—to future proof operator’s choice in AAA.
- The most extensive interoperability with multiple network equipment vendor types to access time to market and reduce deployment costs.
- Proven policy engine provides flexible policy-driven service control decisions based on entitlements, dynamic state, device type, location, and other parameters.
- Supports WiMAX Forum, 3GPP2, 3GPP, and ETSI standards.
- Carrier grade performance and scalability, the Service Controller is Tier 1 proven, from 5000 to 100M+ subscribers and devices.
- Deployable in weeks not months to achieve time to market advantage.
- Multi-market support for M2M, femtocell devices, enterprise-delegated administration, wholesale/MVNO business models, and flexible consumer services.
- M2M device service control supports more than 10M M2M device connections today, providing carrier-grade scalable device AAA support.

HIGHLIGHTS

The Bridgewater Service Controller supports network access control services, including authentication, authorization, and accounting (AAA) for devices and subscribers in the following networks:

- Machine to Machine (M2M);
- Fixed;
- Convergent;
- WiMAX;
- GSM/HSPA; and
- CDMA.

Bridgewater Service Controller supports the following optional modules:

- Revenue Collector and Formatter; and
- Pre-paid Integrator.

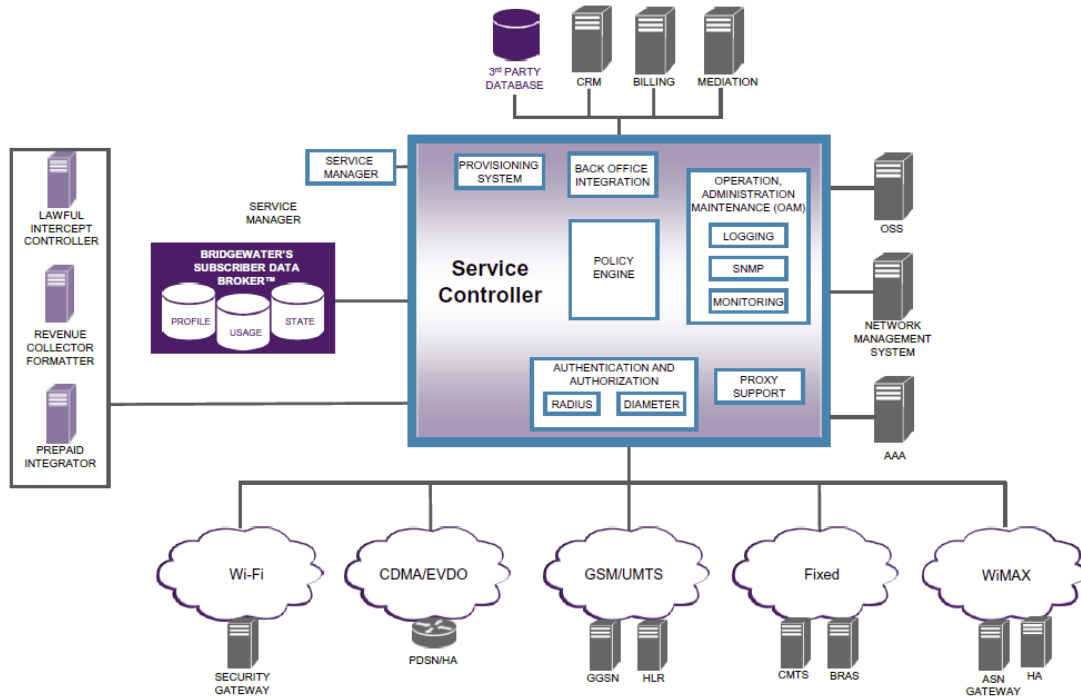
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Features and Benefits

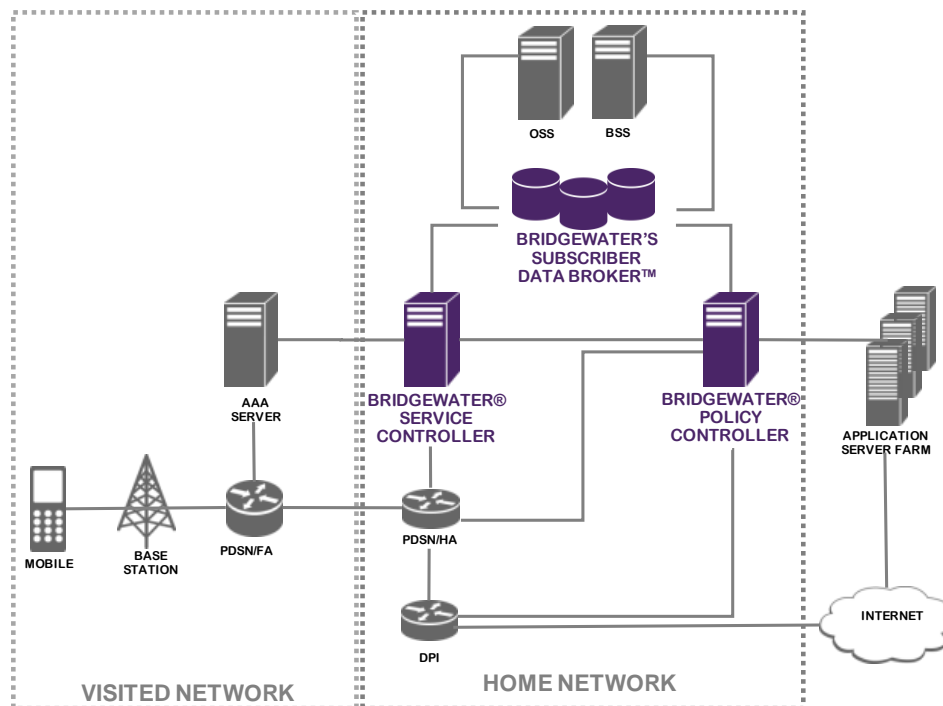
- **Policy Engine:** Flexible network, service, subscriber, device policies defined at many levels of granularity including domains, user or device groups, individuals, wholesale, enterprises, and consumers.
- **Push-and-Pull Policy Decision Point (PDP):** Allows subscriber and device entitlements to be managed and enforced through profile-associated attributes and credentials including security, QoS, location and subscriber, and device entitlements.
- **Real-time Session Management:** Provides mobility, roaming, security, and usage tracking.
- **Multiple Extensible Authentication Protocols (EAP):** Broad and flexible security policy support ensuring secure network attachment.
- **Multiprotocol Support:** Dual RADIUS and Diameter for simultaneous 3G and 4G support.
- **Interworking:** Provides non-3GPP interworking for data offload applications, and HLR interworking.
- **Regulatory Compliance:** Complies with complex regulatory standards for 4G and provides support across multiple access networks for activities such as lawful intercept.
- **Data Roaming:** Enables roaming subscriber's data session to be anchored in home network to preserve subscriber experience and minimize roaming charges.
- **Intelligent RADIUS Proxy:** Minimizes the operational impact of non-performing proxy targets.
- **Centralized Subscriber Management:** Bridgewater's Subscriber Data Broker™ provides the foundation for differentiated services, hierarchical subscriber and device administration, and granular, profile-based control of subscriber and device entitlements.
- **Deployment Architecture Options:** High availability, database replication, system redundancy, and application decoupling.
- **Hierarchical Device Modeling:** Allows flexible grouping of similar devices, and provides extensive scalability and the ability to support complex hierarchical groups of similar devices based on entitlements and requirements.

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Architecture



Deployment Example



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Standards Support

Authentication and Authorization Accounting Administration

RADIUS - RFC 2866 (RADIUS)
 RFC 2868 (RADIUS Attributes for Tunnel Protocol Support)
 RFC 3576 (RADIUS Dynamic Authorization Extensions)
 Draft RFC for PPTP/L2TP Tunneling via RADIUS
 Multiple configurable virtual server architecture (VSA) definitions for simultaneous support in a multi-vendor architecture

Diameter - RFC 3588 (Diameter Base Protocol)
 RFC 4005 (NASreq)
 RFC 4072 (Diameter EAP Application)
 RFC 4006 (Diameter Credit Control Application (DCCA))

Accounting

RFC 2866 (RADIUS Accounting)
 RFC 2867 (RADIUS Accounting Modifications for Tunnel Protocol Support)
 RFC 2868 (RADIUS Attributes for Tunnel Protocol Support)
 RFC 2869 (RADIUS Extensions)

Administration

CLI. GUI for Windows 2000, XP, or better
 Web-based corporate manager and user self administration
 (IE 5.0 or Netscape Navigator 6.0 or higher)
 APIs for OSS/BSS integration

3GPP/ETSI

TS 29.061 (PLMN-PDN Interworking)
 TS 23.234 R7 (WLAN Interworking)
 TS 32.299 (Diameter charging applications)

3GPP2

X.S0011-D v1.0 (CDMA2000 Wireless IP)
 X.S0028-100-0 (WLAN Interworking)

IETF

RFC 821 (SMTP)
 RFC 822 (ARPA text)
 RFC 959 (FTP)
 RFC 1939 (POP v3)
 RFC 2068 (HTTP v1.1)
 RFC 2251 (LDAP v3)
 RFC 2548 (MS RADIUS Attributes)
 RFC 2617 (HTTP Basic and Digest Access Authentication)

TIA/EIA

IS-835A (CDMA2000 Wireless IP Network Standard)
 IS-835B (Wireless IP-Mobile IP)
 IS-835C (3G Data prepaid support)
 IS-835D (QoS and MobileIPv6)

EAP

EAP-MD5 (RFC 3748-Simple CHAP)
 LEAP (Proprietary Cisco wireless support)
 PEAP (PEAPv0/EAP-MSCHAPv2)
 EAP-TLS (RFC 2716-Transport Layer Security)
 EAP-TTLS (EAP-Tunneled Transport Layer Security)
 EAP-SIM (RFC 4186-EAP Method for GSM for Mobile Communications Subscriber Identity Modules)
 EAP-AKA (RFC 4187-3G Authentication and Key Agreement)

SNMP

RADIUS Authentication Client MIB (RFC 2618)
 RADIUS Authentication Server MIB (RFC 2619)
 RADIUS Accounting Client MIB (RFC 2620)
 RADIUS Accounting Server MIB (RFC 2621)

WiMAX

WiMAX Forum NWG release 1.3

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Technical Specifications

Requirement	Minimum Configuration	Recommended Configuration
CPU	1 x 1.2 GHz Oracle's Sun UltraSPARC T2 Processor	1 x 1.2 GHz Oracle's Sun UltraSPARC T2 – 8 Core
Memory	8 GB RAM	32 GB RAM
Internal Mass Storage	2 x 300 GB Hard Drives (minimum sizes from Oracle's Sun server)	1200 GB (4 x 300 GB 10,000 rpm SAS Disks)
System Type	Oracle's Sun Server Model	Oracle's Sun T2 based hardware including Enterprise and Oracle's Sun Netra T5x20 servers
Operating System Support		Solaris
Network	1 x 10 Mbps Ethernet	4 x 10/100/1000 Mbps Ethernet
Multimedia	1 x CD-ROM	1 x DVD-RW
Power / Cooling		Dual 100-240 V AC or -48 to -60 V DC
I/O		3 PCI-X, 1 PCI-E
Physical Specifications		2 Rack Units (2RU)

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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