

Cisco Prime Access Registrar

Product Overview

Cisco Prime™ Access Registrar provides solutions for authentication, authorization, and accounting (AAA). The Cisco Prime Access Registrar solution for AAA is a high performance, carrier class RADIUS/Diameter solution that provides scalable, flexible, intelligent authentication, authorization, and accounting services.

Service providers face tremendous challenges in deploying and managing mission-critical access services, such as AAA. These include:

- Efficiently serving an increasingly diverse mix of access technologies (and corresponding authentication protocols), users, and roaming partners
- Rapidly delivering new subscriber services for competitive advantage (for example, a new prepaid service)
- Efficiently managing resources like IP addresses or session limits
- Keeping up with scalability, performance, and stability demands

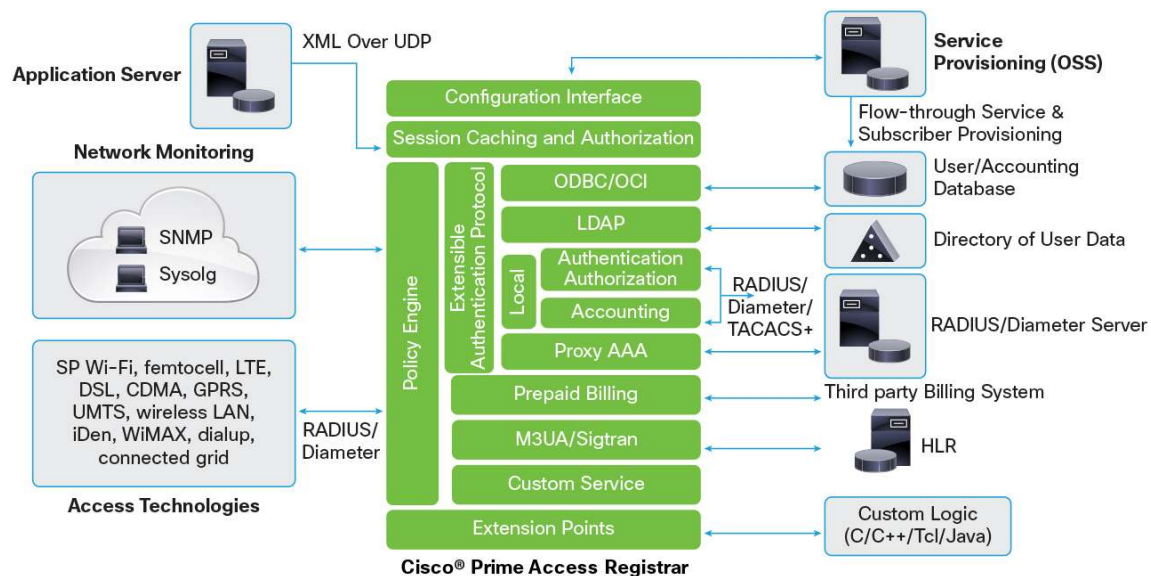
Adding to this complexity is the fact that many service providers have multivendor, heterogeneous AAA environments and increasingly complex business requirements. Service providers also are under pressure to reduce operating expenses (OpEx) and have to keep up with the needs to centralize data stores and adapt billing systems. Operators need a comprehensive access management solution to address these issues.

In addition, given today's explosive mobile data growth, network operators are often finding that third-generation (3G) networks are not equipped to handle the load on the network, and one key problem relates to signaling. Today's smartphones include applications that can request data from the network every few minutes, and this number of radio authentication requests can easily overwhelm the radio access and core network elements involved with authentication, encryption, and billing systems. As a result, mobile operators face the prospect of needing to continually increase the capacity of network equipment.

Mobile network offloading over Wi-Fi access networks can offer a cost-effective alternative, and operators need an AAA solution that can support this capability.

Cisco Prime Access Registrar consists of a RADIUS/Diameter AAA server designed from the ground up for scalability and extensibility for deployment in complex service provider environments including integration with external data stores and systems and multivendor network access servers. Session and resource management tools track user sessions and allocate dynamic resources to support new subscriber service introductions. The solution supports service provider deployment of access services by centralizing AAA information and simplifying provisioning and management. See Figure 1.

Figure 1. Cisco Prime Access Registrar Provides Scalable, Flexible, Intelligent AAA Services



Features and Benefits

Cisco Prime Access Registrar:

- Supports a broad range of wireline and wireless **access technologies** like Service Provider Wi-Fi (SP Wi-Fi), femtocell, LTE, DSL, Code Division Multiple Access (CDMA), General Packet Radio Service (GPRS), Universal Mobile Telecommunications Service (UMTS), wireless LAN (WLAN), iDen, WiMAX, dialup, Connected Grid, and others. By helping to enable standardization on a common 3GPP-compliant AAA server platform, the solution delivers operational and capital expense savings while providing flexibility to the service provider regarding choice in AAA.
- Provides support for a wide variety of **authentication protocols**, such as Password Authentication Protocol (PAP), Challenge Handshake Authentication Protocol (CHAP), and Extensible Authentication Protocols (EAP), including EAP-SIM, EAP-AKA, and EAP-AKA-PRIME (EAP-AKA') over M3UA/SIGTRAN and SWx, EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-GTC, PEAPv0, PEAPv1, LEAP, EAP-FAST, with the ability to extend to others such as POP3 through custom services for meeting unique requirements.
- Provides extensive **subscriber data store** support including an internal database and integration with existing external databases including Oracle, MySQL, Microsoft Active Directory (AD), and Open Lightweight Directory Access Protocol (OpenLDAP) through the use of connectivity mechanisms such as Open Database Connectivity (ODBC), Lightweight Directory Access Protocol (LDAP), Oracle Call Interface (OCI), and Java Database Connectivity (JDBC). This integration support is schema independent, simplifying deployment and day-to-day operations, providing OpEx savings by using existing infrastructure, and helping to support networks with tens of millions of subscribers.
- Provides **scalability** to support large service deployments. An external session manager allows tens of millions of simultaneous active sessions. Additionally, the multithreaded architecture provides performance that scales with additional CPUs.

- Efficiently **manages resource use** with real-time session management to track user sessions and dynamically allocate resources like IP addresses (to support centralized IP address assignment) or user/group session limits (to support enforcement across access devices, access technologies, and multiple servers). The session manager also facilitates new revenue streams by helping to enable service enhancements such as reduced sign-on, personalization, and enhanced video delivery through consolidation of subscriber and network state data into one common session data store.
- Gives service providers an off-the-shelf, standards-based RADIUS/Diameter server that offers the **flexibility and extensibility** previously available only by maintaining internally built versions of public-domain RADIUS/Diameter software. With extension point scripting (EPS), the solution can be customized to meet unique business, regulatory, and technical requirements. EPS allows users to interact with request processing and communicate with Cisco Prime Access Registrar at numerous API points to develop and deploy custom logic for user authentication, authorization, or accounting.
- Provides broad **integration support**: Reduces operational costs and speeds service rollout by supporting integration with provisioning, billing, and other service-management components. A billing interface allows billing vendors to integrate their systems into Cisco Prime Access Registrar for prepaid functionality, such that service providers may offer prepaid data or usage-based premium services while reusing their existing billing system and protecting their investments.

Additional features and benefits of the AAA server include:

- Industry-leading RADIUS performance/transaction rate to handle the busiest networks
- Replication of the internal database, allowing multiple servers to be similarly configured for centralized management and ease of use
- Support for virtualization technologies: Oracle VM Server for SPARC (previously called Logical Domains, LDoms) and VMware ESXi.5.0, improving scale and availability and helping to enable server footprint reduction and efficient use of resources
- IPv4 and IPv6 support
- Option for end-to-end Cisco solution including software, Cisco Unified Computing System™ (Cisco UCS™) hardware, and professional services
- Resilience and reliability through server, remote system, and process system redundancy; automatic server restart; and Veritas and Sun clustering for high availability
- Support for SP Wi-Fi/hotspot markets and wireless data offload, including authentication for data access against the newer generation subscriber database Home Subscriber Service (HSS) and the ability to interface directly with the Home Location Register through M3UA/SIGTRAN
- High performance AAA support for authenticating smart meters on a Connected Grid network
- Translation of incoming RADIUS requests and responses to Diameter and vice versa, which allows integration of RADIUS-only clients with a Diameter based network

About Cisco Prime

The Cisco Prime portfolio of IT and service provider management offerings empowers organizations to more effectively manage their networks and the services they deliver. Built on a service-centered foundation, Cisco Prime supports integrated lifecycle management through an intuitive workflow-oriented user experience, providing A-to-Z management for evolved programmable networks, mobility, video, cloud, and managed services.

Cisco Services

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you to protect your network investment, optimize network operations, and prepare the network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, see [Cisco Technical Support Services](#) or [Cisco Advanced Services](#).

For More Information

For more information about Cisco Prime Access Registrar, visit <http://www.cisco.com/go/accessregistrar/>, contact your local account representative, or send an email to ar-tme@cisco.com for presales/business queries or cs-ar@cisco.com for technical queries.



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