



**ARADIAL RADIUS AAA SERVER**

## ARADIAL RADIUS AAA SERVER

Affordable, easy to deploy and operate.

High performance, availability and reliability (99.999%).

Horizontal and vertical scalability.

100% web-based solution with multiple administrator roles.

Rich set of AAA policy algorithm plug-ins.

Concurrency enforcement for users and groups.

Advanced usage metering and counters.

Policy control based on users' usage.

Dynamic IP-pool allocation.

Active disconnection of users and change of authorization.

Integration module for legacy billing systems.

Easy to provision from external systems.

### ARADIAL – A POWERHOUSE OF FUNCTIONALITY

Aradial is a high-performance full-featured RADIUS/AAA server that provides excellent functionality and technological superiority. It is unquestionably one of the market leaders in its class.

Including some of the most innovative features available on the market today, Aradial RADIUS caters to a wide range of telecom services, including ISP Internet, WiMAX, VoIP, wireless LAN, mobile 3G, Internet kiosks and cafés, and many more. Moreover, the solution's 100% web-based interface is customer centric, very easy to use, and ensures easy connectivity from anywhere in the world. Coupled with a state server that monitors the network in real time, Aradial uses policy algorithms to implement rule-based authentication and full manageability of network resources. It also features a wireless security suite with Extensible Authentication Protocol (EAP), 802.1X, EAP Cisco Wireless (LEAP), Protected EAP (PEAP), TTLS and TLS, as well as mobile EAP-SIM and EAP-AKA.

Aradial uses its own user database, an external ODBC-compliant database, Active Directory or LDAP to support millions of users.

A true powerhouse of features and performance, Aradial runs above 2000 authentication, authorizations and accounting requests per second on entry-level hardware, is very affordable and comes packed and ready for download and installation.

### RELIABILITY, FLEXIBILITY AND SCALABILITY

Aradial RADIUS is a true performer with tier-1 (99.999%) reliability and scalability that comfortably supports millions of subscribers. Serving small, medium and large service providers, the solution is highly flexible and requires low-cost hardware, supporting most requirements on commercial PCs.

### WEB-BASED MANAGEMENT

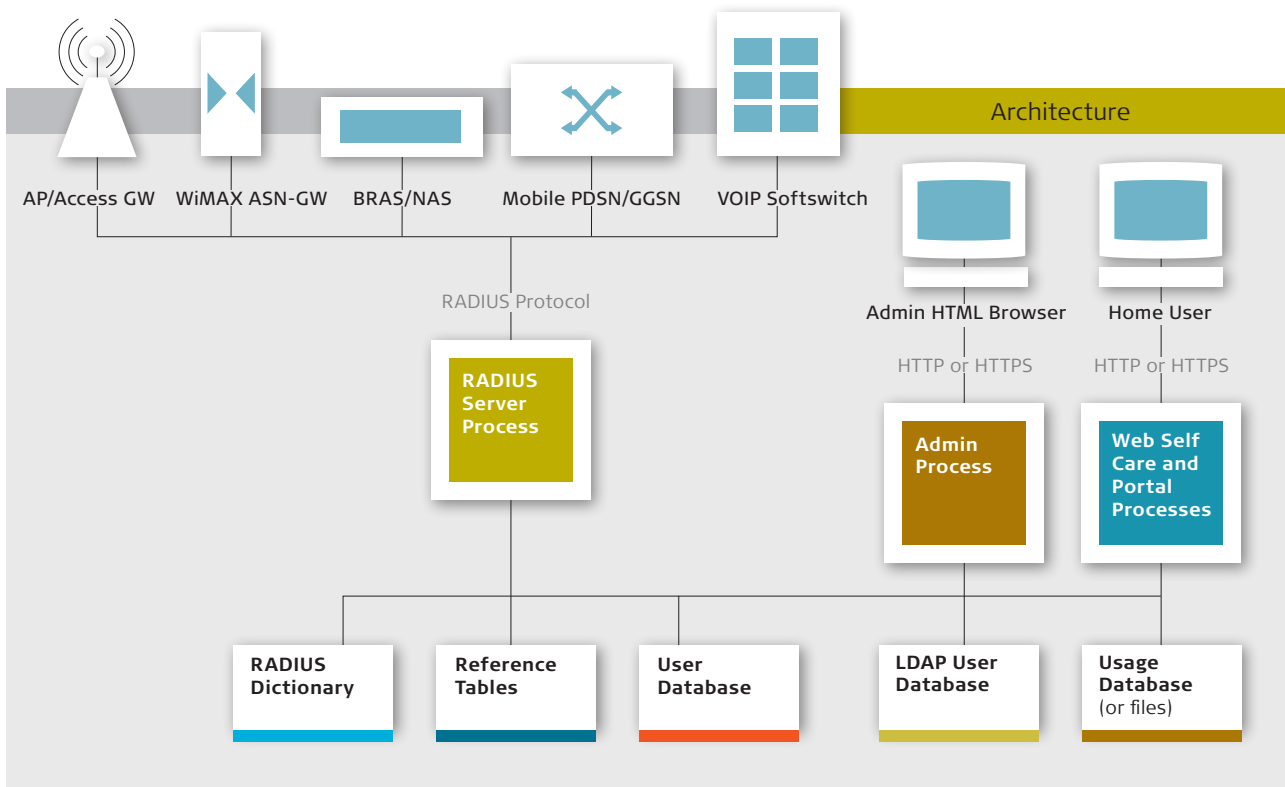
Aradial RADIUS turns the web browser into a remote easy-to-use management application. The server can be accessed from anywhere in the world over secure SSL, with no client-side installation whatsoever. All that is needed is a web browser to configure RADIUS settings, view current online sessions, and modify subscriber records.

### STANDARDS COMPLIANT

Aradial supports the latest RADIUS RFCs, including xDSL services, the latest 3GPP standards for both GSM and CDMA2000, vendor-specific attributes, and a host of other features like predefined attribute checklists. Aradial's experience in the RADIUS and billing markets ensures that service providers obtain a future-proof solution that will grow with them as their needs evolve.

### WiMAX STANDARD COMPLIANCE

Aradial for WiMAX AAA is leading in WiMAX technology. It is compliant with WiMAX forum NWG standard for 802.16e and 802.16d. Moreover, Aradial implemented the AAA standards for new WiMAX technologies including integration with ASN gateways as well as with regular BRAS and Wi-Fi access controllers. WiMAX, wireline broadband, Wi-Fi/hotspots, VoIP and mobile can all be served on the same Aradial AAA server in parallel.



## CATERING TO A WIDE ARRAY OF SERVICES

### Hotspots and WISP, FIXED WIRELESS, FTTH, ISP

- Support for most access points, access controllers, BRAS and dialup/RAS on the market today
- Customer management
- Prepaid cards management
- Walled garden portal
- User self-care module
- Additional module for topup vouchers and credit-card clearing
- Additional products for converged billing

### VoIP Retail and VoIP Wholesale

- Carrier grade
- Support for most VoIP gateways
- Support for multisession calls for the same account using balance management (quota management)
- Calling-cards management and applications
- Additional module for topup vouchers and credit-card clearing
- Advanced VoIP wholesale termination and origination billing and reporting

### WiMAX

- Fully compliant AAA for 802.16e NWG 1.4
- Integration with leading ASN gateways
- IP-based and flow-based accounting
- WiMAX prepaid application
- Hotlining using CoA
- Dynamic IP-pool allocation

### Mobile 3G

- Latest 3GPP standards
- GPRS (GSM) broadband data
- PDSN (CDMA2000) broadband data
- QoS and policy control
- Interfaces for integration with mobile operators' customer care and billing systems

## ADVANCED SECURED AUTHENTICATION METHODS

Aradial's AAA server is optimal for security and authentication requirements and secured networks, including:

- PAP and CHAP authentication
- MS-Chap and MS-ChapV2
- EAP-based authentication – EAP-MD5, EAP-TTLS, EAP-TLS, PEAP, LEAP
- Mobile EAP-SIM and AKA (needs integration with the local SS7 network)
- Digest
- MAC-address-based authentication
- Proxying to other RADIUS servers
- Tunneling

## SPECIFICATIONS

### Operating Systems

Windows 2019, 2022  
Linux CentOS, Redhat

### Development Languages

C++, HTML, SQL, TCL

### Performance

High-end support on small, entry-level hardware:

- On 6 core machines running Windows 2019 and MS SQL Server 2019 with RAID storage, Aradial executed above 12,000 AAA requests per second and more than 25,000 authentications per second with an average latency of 2 ms.
- 2000 AAA requests per second with RDBMS on a quad-core processor using Windows 2019 or Linux
- 2000 AAA requests per second with LDAP for authentication and RDBMS for accounting on a quad-core processor using Windows 2019 or Linux

### Databases

- MS SQL Server 2016 to 2019 and higher
- Oracle including RAC
- MySQL
- LDAP for authentication - flexible schema
- Active Directory for authentication
- Internal (MS Access MDB file) for entry-level systems

### HTTP Server

Thin client (web browser) served by either a proprietary Aradial web server or by IIS or Apache web servers

### Latency

5 ms to 30 ms on average (95% of the requests are handled in less than 50 ms)

### Scalability

- Horizontal and vertical scalability
- Measured in production: one million users and 500,000 concurrent sessions
- Lab tested with 10 million subscribers



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