



Aradial Converged Billing

Features & capabilities

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Aradial Converged Billing

Features Overview

- Convergent Prepaid and postpaid subscribers.
- Convergent Services: ISP, Mobile, Wifi, VOIP, Mobile and other services.
- Advanced customer structure and administration
 - Account – shared balance for users
 - Users under account
 - Resource/ANI/CPE defined per users
- Product catalog
 - Price plans
 - Offers using price plans
 - Price plan
 - Network profile provisioning
 - One-time offers
 - Add on offers
- Web self service for users and accounts
 - Users and passwords management
 - Payments and invoices
 - Purchase new offers and upgrades
 - Access account details
 - Change tariff plans
 - View bills
 - View recharge history wherever applicable
 - Download Bills or recharge details
 - Pay bills or recharge prepaid accounts
- Public portal for self registration
- Trouble ticketing – administration and self care
- Blacklist and white list administration for network

- Account and user operation
 - View financial transactions, sessions and calls
 - Payment by credit card or PayPal
 - Adjustments to invoices
 - Manual payments – cash, checks
- Invoicing
 - Periodic automatic invoicing
 - Invoicing sent by email
 - XSL layout – branding
 - PDF printing
 - Undo billing
- Flexible charging & rating
 - Periodic RCs
 - Usage charges
 - Allowances
 - Time of day and day of week
 - Destination charging (mainly for VoIP)
 - One-time charges
- CDRs processing including error management or rating problems
- Automatic payment
 - Error management
- Account Receivables (A/R)
 - Manual, fast payment screen
 - Credit card
 - PayPal
- Accounting reports
 - Invoicing
 - Payment
 - Operator statement, per-account statement
 - Aging payment reports
- Advanced reseller management
- Micros Fidelio/Opera support – to charge the room in Hotels

AAA

- Please see all the feature of the RADIUS / AAA module.
- WIMAX AAA support (including 802.16e mobility)
- Concurrence enforcement per group or per user
- Advanced usage reporting
- Dynamic IP pool allocation with support for high availability – DHCP alternative
- Statistics graphs
- Security - SSL-secured HTML-based administration
- WiFi hotspot support

Subscriber management

- HTML UI for user database and user groups
- Customer self-care module
- Configurable and customized per location captive portal
- Policy & QoS control
- Bandwidth, time and traffic control per group or user
- Online sessions management to disconnect users in real time
- Fixed-IP support

Overview of Prepaid Features

- Centralized authentication and accounting for all the routers or gateways.
- Converged services: VOIP, Dial-up, Wifi and ISP Broadband/DSL support on the same platform.
- SSL secured HTML based administration.
- Extended HTML UI for user database and groups of users.
- High-performance and reliable server.
- Scalable to handle millions of users and concurrent sessions on a low-end hardware.
- Support for most of the Access points and VOIP gateways on the market.
- Balance, Duration and Traffic enforcement.

- Balance and Credit Limit per user/calling card.
- User concurrency enforcement and viewing concurrent calls from the administration tool.
- Support for multi-session calls using balance management (Quota management).
- HTTP API for external systems and customization.
- Optional: Integration with SNMP based NMS.

Data Rating Capabilities

- Time quota
- Volume quota
- Time and volume quota (whichever runs out first) + expiration check.
- Expiration date
- Unlimited card with a time expiration date (e.g. 24 hour card)
- Destination based rate
- Access code based rate
- Rate based on time of day
- Rate based on time of day and destination
- Destination based rate with x free minutes
- Usage charges
 - Allowances
 - Time of day and day of week
 - Destination charging (mainly for VoIP)
- Periodic RCs
- One-time charges

VOIP Rating Capabilities

- ANI based (caller ID)
- Rating according to call destination
- Different rounding intervals per tariff/destination
- Call setup cost
- Rating according to time of day, day of week
- Unlimited number of rate tables and Tariff definition.
- Import of rates from CSV files.

Calling Cards

- Authentication, authorization, accounting (AAA) and real time VOIP prepaid.
- Full prepaid system for VocalTec, Telrad, RAD, Teles, Mailvision, Cisco, Quintum, NexGe, Mera softswitch / gateways and many others.
- Calling Card based prepaid billing.
- Calling card generation importing and exporting.
- Replenishing API or voucher refilling
- Support multiple Tariffs and destination rating tables that can be assigning for a calling card.
- Session reports and summary reports per calling card, per system, per destinations and periods.

Postpaid Billing – Invoice & Receivables

- Recurring charges (RC)
- RC Proration
- One time charges
- Taxes
- Multiple billing cycles
- Automatic invoice generation
- Automatic sending of invoices by mail
- Advanced bill day workflow
 - Run / Rerun
 - Undo
 - QA
 - Confirm
 - Bill Production
- Open Item / Balance Forward
- Prepaid statements
- Credit limit
- Trouble Ticketing

Customer Management

- User information definition
- Account can contain unlimited number of users
- Advanced search for users
- View users sessions
- Self Care module to view the account by the user
- History of successful/unsuccessful calls
- Send email to users
- Adjust time and money, change password, etc
- Dealer/Business partner management. Dealers can manage their own
- Support for multiple Admin types.
- Admin activity tracking.

Resource Management and inventory

- Full life cycle for Inventory
- Create Inventory: Number, MAC Address, Modem Serials, IMSI
- Import from files
- Automatic assignment of resources to users and under users.

Credit Control and Disconnect enforcement

- Concurrency enforcement per group or per user
- Time of day concurrency enforcement per group or per user
- Active disconnection of user from Admin UI using packet-of-disconnect (POD).
- Expiration, Duration and Volume enforcement.
- Credit limits enforcement for all users. Prepaid users enforced at Zero balances.
- Disconnect using Packet-Of-Disconnect
- Optional: automatic disconnect of user when their balances are breached.
- Optional: Send notification to users: email, SMS
 - SMS gateway using email or SMPP

Advanced Reporting / Statistics

- Operator reports
 - Statements
 - Invoicing
 - Payments
 - Income reports
 - Automatic Payments
 - Status
 - Payment Aging reports
- Account reports
 - List
 - Statement
 - Balance
 - Transaction

Aradial Converged Billing Features & capabilities

- Payments
 - Sessions
- User reports
 - List
 - Balances
 - Transactions
 - Sessions
 - Payments
- Resources reports
- Vouchers reports and management
 - Vouchers list and exporting
 - Vouchers status report
 - Use vouchers and income
- Tickets reports
- Credit Card payment history report
- Automatic Credit Card payment history report
- Session and summary reports per calling card, system, destination and period
- **Open database to generate extended reports via reporting tools.**

Aradial RADIUS / AAA server capabilities

1. Centralized authentication and accounting for all the routers or gateways
2. High-performance and reliable server.
3. Runs on Windows.
4. Backend database: MS SQL server or Oracle.
5. Scalability and Real-time AAA functionalities.
6. Scalable to handle millions of users and concurrent sessions.
7. Performs 2000 AAA/sec on a small hardware with database or LDAP.
8. Real time active session management.
9. Grouping and Sub Grouping of user's profiles.
10. Bandwidth enforcement according to the user policy.
11. Concurrency enforcement per group or user.
12. Policy algorithms.
13. Detection of zombie sessions using Interim accounting and removing them from the concurrency check.
14. Time Bank enforcements.
15. Traffic Bank enforcements.
16. Expiration time enforcement.
17. Supports: EAP-PEAP and EAP-TTLS, EAP-TLS, EAP-MD5
18. Digest, MS-Chap and MS-ChapV2 support
19. Login from Portal: PAP or CHAP.
20. SSL secured HTML based administration
21. HTML user interface for users and user groups with security profiles.
22. Provisioning API for External systems to manage users and query.
23. Aradial API supports CoA (Change of Authorization) and POD (packet of disconnect).
24. Proxying to other RADIUS servers.
25. Process monitoring - including SNMP MIBs and traps.
26. Dynamic Persistent IP pool allocation with support for high availability – DHCP alternative.
27. Block or change QoS for Groups in Time-of-Day periods (e.g. peak, off-peak configurations).
28. Online session disconnection using POD (packet of disconnect).
29. Tunneling support configuring the NAS.
30. Statistics graphs
31. High speed IP Pools
32. IPv6:
 1. IPv6 attributes
 2. IPv6 sockets
 3. IPv6 IP Pools
33. Enhanced zombie session mechanism
34. Rule based authentication engine – advanced feature.

Wimax Module

1. WiMAX Forum standards compliant
2. AAA fully 16e NWG 1.4 Stage 3:
 - Authentication and authorization
 - EAP-TTLS and TLS for authentication.
 - Integration with leading ASN-gateways partners
 - IP Based and Flow Based accounting
 - Hotlining with CoA (Change of Authorization)
 - Disconnection using POD (packet of disconnect)
 - Descriptors and VLAN support
 - **Wimax Prepaid application**
3. Supports 16d using any BRAS or access controller.

VOIP

1. Support for most of VOIP gateways on the market – Cisco VSA.
2. Support for multi-session calls using balance management (Quota management).
3. HTTP API for external systems and customization.

Hotspots and ISP services

1. Support for most of the Access points and controllers gateways on the market.
2. Support for most of BRAS on the market.
Example: Cisco, Cisco ISG, Juniper ERX, Redback, Runcom SG-BA, Huawei ME-60 (and others), Mikrotik, MERAKI, BlueSocket, etc.
3. Support for most of Dial-up on the market.
4. HTTP API for external systems and customization
5. Customer management.
6. Supports WiFi Access controller / access gateways:
For example: Mikrotik, Zone Director, Nomadix, Aruba, Runcom SG-G1, HP Curve, Motorola WING5, DD-WRT based, Chillispot, BlueSocket, etc.
7. EAP-SIM and EAP-AKA for Wifi 3G offloading.

Mobile 3G Module

1. 3GPP standards compliant
2. Support for most of GGSN gateways on the market.
3. Support for most of PDSN gateways on the market.
4. Special APN module for GRPS sessions.
5. EAP-SIM and EAP-AKA for Wifi 3G offloading.
6. Production among other with: Cisco PDSN, Huawei PDSN, Tricomtek.

Diameter Server Module

1. 3GPP standards compliant for LTE charging
2. Diameter server with support for Ro/Rf – Dynamic Charging
3. Diameter server with support for Gx/Gy – Policy Control

Optional module: VOIP Wholesale

1. Support for most of VOIP gateways on the market.
2. Prepaid Peering – charging and limiting multi-session calls using balance management (Quota management).
3. HTTP API for external systems and customization.
4. High call capacity.
5. Unlimited rate tables.
6. Real time monitoring& alerts.
7. Each wholesale customer is defined by special technical prefix.
8. Group of prefixes to Trunk Groups.
9. Group of prefixes to Providers.
10. Group of prefixes to Sales Person.
11. Hourly operational report to detect traffic problems (e.g. low ASR).
12. Daily operational report to detect traffic problems (e.g. low ASR).
13. Termination/origination Failures cause report.
14. Usage reports that include the rounding, rounded minutes and cost per destination.
15. Accounting financial reports per wholesalers.
16. Provider's reports.
17. Provider's self care to view its usage and CDR.
18. Salesman reports.
19. Providers self care module to view its wholesaler's usage and income.
20. Searches and breakdowns by: Between days, per destination, per Tech Prefixes, Providers and Salesman.

Optional module: APC – Aradial Policy Control

- Policy Control quota management
- Advanced AAA – RADIUS and Diameter
- Support Policy 3GPP standard
- Advanced dynamic policies for active users
 - Disconnect
 - Redirect
 - Change of QoS parameters
- Send balance notifications via email and SMS
- Fast definition of Policy rules, actions and step
- Handles various users events and notifications
- Basic applications:
 - Fair Usage
 - Time of Day / Day of Week
 - Promotions
 - Booster
 - Bill Shock
- Use cases:
 - Smart Limits / Capping
 - Fair Use
 - Enhanced User Experience (sending notifications)
 - Advanced offering to users based on time, location, accumulated usage, app, attributes, profile
 - Bandwidth on Demand including booster
 - Services/QoS Differentiation
 - Bill Shock prevention
 - Time of Day/Day of Week
 - Promotions
 - Location-based Policies
 - Zone Charging
 - Any attribute or subscriber parameter based Policies
 - User-defined Service Schedules/Parental Controls