RADIATOR

THE MOST FLEXIBLE AAA SOLUTION IN THE WORLD
Radiator AAA software -- since 1997

Customers in **OVER 180** countries

**DOZENS** of **TOP 100** enterprises and universities

**OVER 50%** of **LARGEST 25** mobile operators

**OEM** component in **HUNDREDS** of **MOBILE NETWORKS**

Regional **PARTNERS** in **OVER 50 COUNTRIES**

**THOUSANDS** of **ACTIVE CUSTOMERS** ranging from **SINGLE HOTELS** to **GLOBAL OPERATORS**
Radiator -- telecom references

Large telcos, ISPs, and CSPs

Proximus (Belgium), Telekom Austria Group, AAPT (Australia), NBN Co (Australia), Telstra (Australia), Optus (Australia), Bouygues Telecom (France), Free France, Colt Telecom (Germany), British Telecom (UK), O2 (UK), T-systems (Germany), Singtel (Singapore), Globe Telecom (the Philippines), Orange Telecom (Romania), Telecom Portugal, Vodafone Portugal, PCCW Hong Kong, Vodacom (Congo), Orange Telecom (Jordan), Telecom Italia (Italy), GTS Novera (Czech Republic), Digicel (Trinidad), Volga Telecom (Russia), Telecom Argentina, Callforeign (Singapore), and others
Government agencies and public organisations
US Military, US Department of Energy, SNCF (France), NBNCO (Australia), Austrade (Australia), Dept of Defence (Australia), CEZ Power Company (Czech Republic), Services Industriels de Geneve (Switzerland), Geological Survey of Austria, Port of Tallinn (Estonia), Dryden Municipal Telephone System USA, and others

Private corporations
e.g. Citigroup US, ASCOM (France), Jean Coutu Group (Canada), Deutsche Bank, Qantas (Australia), Virgin Blue (Australia), Mazda, Fujitsu, Garanti Bankasi (Turkey), DAB Bank (Germany), Foxtel (Australia), and others

National research and education networks, academic and research institutions
e.g. Janet UK, SUNET (Sweden), FCCN Portugal, Surfnet (The Netherlands), University of Helsinki, University of Amsterdam, CESNET (Czech Republic), AARNet (Australia), Harvard University IT, MIT, and others
Radiator key customer segments: Telcos, Operators, ISPs

- Flexibility for your network infrastructure
  - Multi-vendor support
  - Performance and scalability for different network architectures - a solution that grows with you

- Extensible for your needs
  - SIM Pack (SIM authentication, Wi-Fi Offloading)
  - Telco Pack (Policy and control functions, Diameter functions)
  - GBA/BSF Pack (VoLTE Authentication)
Use case for ISP: NBN Co

- Australian National Broadband Network company
  - Radiator has been there from the start
  - Authentication for ISPs and support for the whole network

- NBN Co provides infrastructure for ISPs
  - Which, in turn, can benefit from Radiator AAA platform on their geographical and redundancy needs
Radiator key customer segments: Enterprises

- Over 1000 enterprise customers trust Radiator for their AAA needs
  - Key component for your enterprise VPN and Wi-Fi authentication
  - Use cases range from Hotel Management System integration to IoT authentication

- Interoperability and scalability to your needs
  - Scalable licensing starting from single server license to enterprise licensing with 24/7 support
Radiator key customer segments: Universities and other educational institutions

- Radiator provides a trusted solution for your AAA needs
  - Used in hundreds of educational and research institutions around the world
  - Consulting and support experience with requirements of educational institutions
- Strong background in Wi-Fi roaming solutions (eduroam™ and others)
Key Differentiators for Radiator in the market

- Vendor neutral, no vendor lock-in
- Interoperability
- Flexibility
- True scalability - with VNF as well
- Lightweight, high performance
- Evolves/scales as you grow
Interoperability with different vendors

- Wide range of installations interoperating with different vendor BNG/BRAS devices
  - Both in enterprise and carrier solutions
  - Including Huawei, Cisco, Nokia among others
  - Ready-made interfaces and configurations in order to interoperate with different vendors

- Also interoperability with different BSS/OSS
Radiator SIM Pack

- Provides SIM authentication, authorisation, and accounting support for Radiator
  - EAP-SIM, EAP-AKA, EAP-AKA’ support
  - 3GPP interface support (Diameter-Wx and Diameter-SWx) for interoperation with mobile infrastructures. Acts as a 3GPP AAA Server
- Can be combined with Radiator Telco Pack for additional 3GPP policy and charging support (Diameter-Gx, Diameter-Gy, and Diameter-Gz)
- Comes with an unlimited Radiator AAA server licence
- Support options range from expert email support to 24/7 expert support
- Available for evaluation with test SIMs included
Wi-Fi Offloading for Tier 1 Mobile operator
Customer: Operator with large mobile and Wi-Fi coverage

- Customer operator operates 50,000 public hotspots in the nation
- Best Wi-Fi coverage in nation
- Radiator SIM Pack enabled operator to offload traffic to Wi-Fi
  - From 1 million usages per month to 70 million usages per month
  - iPhone Carrier Bundle with Wi-Fi Auto Connect
  - Based on actual connections with Wi-Fi traffic offload
What our customers say

"A Tier 1 Mobile Operator in Taiwan uses Radiator for all of their mobile authentication (EAP-SIM, UAM and SMS-OTP) for over 50,000 hotspots in Taiwan. A single server Radiator performs at almost 1200 transactions per second (TPS) during busy hours and has never failed in providing stable and rock solid performance."

- Peter Cheng, President, Acom Networks
Architecture for non-trusted access (VoWiFi, Wifi offloading)
RADIATOR TELCO PACK
UNIFIES POLICY AND CHARGING IN YOUR NETWORK
Radiator Telco Pack

- Provides policy and charging support for Radiator
- Translates policy, charging, and subscription information from Diameter to RADIUS and vice versa
- Uses Diameter interfaces (Diameter-Gx, Diameter-Gy, Diameter-Gz, and Diameter-Rx) to connect directly to 3GPP infrastructures
- Supports the creation, customisation, and deployment of new Diameter applications within your existing Radiator-based infrastructures
- Comes with unlimited Radiator AAA server license
- Also available as an OEM licensed version
- Support options range from expert email support to 24/7 expert support
Interfaces with Radiator SIM Pack and Radiator Telco Pack
Use cases for Radiator SIM Pack and Radiator Telco Pack 1/2

- VoWiFi and VoLTE authentication
  - Using Radiator SIM Pack and SIM Authentication / 3GPP AAA Server (EAP-AKA, EAP-AKA’, EAP-SIM)
  - Savings in network and also easy user experience for end user
- WiFi Offloading
  - Offloading traffic to Wi-Fi network
  - Savings in LTE Core traffic
  - Using Radiator SIM Pack
Use cases for Radiator SIM Pack and Radiator Telco pack 2/2

- Data plan management (also for VoWiFi and VoLTE)
  - For data and call time management
  - Different data plans - and both for LTE and Wi-Fi network
  - Enabling for example free data in Wi-Fi network
  - Using SIM Pack and Telco Pack
- Bill shock prevention
  - Providing warning system when roaming outside EU
  - Using Telco Pack
- IoT Authentication
  - Cost-effective data management
Radiator GBA/BSF Pack

Seamless VoLTE authentication support for Radiator
- GBA/BSF support for VoLTE Supplementary Services
- Authentication proxy (NAF/AP) supporting Ut (XCAP) interface
- HTTP Ua and Ub interfaces
- Diameter Zh and Zn interfaces

- **A word from our customer:** "The authentication proxy is used to authenticate and proxy the Ut interface which is used for supplementary services configuration with VoLTE devices” -Proximus, Belgium
GBA/BSF Authentication Architecture
Use cases for Radiator GBA/BSF Pack

- VoLTE Supplementary Services
  - Subscriber administration
  - Call forwarding, knocking - over LTE
- Rich Communications Suite (RCS) services
  - Provided by Google, for example
  - Application Server features
  - Authentication over XCAP interface
NFV - a natural environment for Radiator

- “Swiss army knife of AAA servers” - now as a NFV solution
  - More flexibility and scalability - combined with trusted solution working in 1000s of networks
Main benefits of Radiator VNF (=Virtualized Network Function)

- **Interoperability**
  - Interfaces open for integration. Radiator uses open industry standards where applicable

- **Scalability**
  - Comes with load balancers that ensure that you have right amount of AAA capacity

- **Communication**
  - All VNF components communicate using a redundant message queue which connects them together - this essential for automation

- **Configuration management**
  - Components and virtual hosts are automatically configured through centralised configuration management system
Radiator VNF architecture