

# RADIATOR

THE MOST FLEXIBLE AAA SOLUTION IN THE WORLD



# Radiator Software in brief

Radiator Software is a Finnish-Australian company group, which provides RADIUS/Diameter Authentication, Authorisation and Accounting (AAA) software products and services.

Radiator is used for mobile telecom, communication/IoT service provider and enterprise networks directly or through our resellers and integrators around the world.

Radiator software products are available as traditional software licences as well as cloud services and NFV capable versions.



# 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 AAA Server Software

- Radiator is a highly configurable and extensible RADIUS, TACACS+, and Diameter server that allows you to easily customise and control how to authenticate users and record accounting information. You can easily integrate Radiator with current and legacy systems and software.
- Radiator is the AAA server for serious ISPs and carriers who want power and flexibility to meet the needs of their changing technical environment and growing user base.

# Radiator AAA Server Software

Designed for flexibility, Radiator is highly configurable and flexible with many features:

- Supports over 60 different authentication methods
- Interoperates with a huge range of devices, databases, billing packages, tokens
- Includes RadSec – secure, reliable RADIUS proxying
- Includes Diameter through Radiator Carrier Pack – required by mobile operators
- Includes TACACS+ for infrastructure management
- Full source supplied

# Radiator benefits

- Acts as a Diameter to RADIUS gateway for NAS authentication and accounting
- Smooth migration path from small to very large ISPs with no upgrade fees
- Supports small and large virtual ISP and carrier systems
- Works reliably in a huge range of environments
- Easy modification to suit your special requirements
- Compliance with relevant standards
- Easy assimilation of new user populations from other ISPs during mergers and acquisitions – authenticate different realms in different ways
- Easy migration from small to extremely large user populations: change your database type as your requirements change
- Support for 802.1X wireless authentication
- Certified compatibility with MICROS-Fidelio Opera Property Management System

# Radiator features for Telcos, Operators, and 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
  - Carrier Pack (Diameter and SIGTRAN functions)
  - SIM Pack (SIM/AKA authentication, Wifi Offloading)
  - Telco Pack (Policy and control functions, online/offline charging)
  - GBA/BSF Pack (VoLTE supplementary services authentication)



# Radiator features for enterprises and public organisations

- 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)



# Advantages of Radiator

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

# Interoperability with different vendors

- Thousands of customers
  - Ready-made interfaces and configurations in order to interoperate with different vendors
- Interoperable with different vendors
  - E.g. Huawei, Cisco, Nokia, Ericsson, Juniper, Brocade, Aruba, HP, Dell, Alcatel-Lucent, MikroTik, Ruckus, Telrad, Ciena, Extreme, Meraki, Netgear, ZyXEL, ZTE, Arista

# Active development work

- Two Radiator releases per year
  - Also smaller updates, patches etc.
- Full product history:
  - <https://radiatorsoftware.com/products/radiator/history/>

# Supported Platforms

- Unix and Linux
- Red Hat Enterprise Linux 6, 7, 8
- Ubuntu 16.04 LTS, 18.04 LTS
- Debian 9, 10
- Centos 7, 8
- SUSE
- Any Linux using tar.gz for manual installation
- Solaris 8, 9, 10, 11. 32-Bit or 64-Bit. SPARC or Intel
- Windows 7/8/8.1/10 and Server 2008/2012/2016/2019
- Mac OS X
- VMs

# Licensing options

Licence for Radiator AAA Server Software is perpetual, and the software is provided in electronic form for download. Access to new releases and patches is provided for a year with every licence purchase; access can be extended on a yearly basis.

Licence is based on number of server installations; we offer packages from 1 to unlimited server count.

# Support options

- Email support is provided for a year with every new licence purchase.
- Email support contracts can be renewed on a yearly basis.

Additional telephone support services available:

- 8x5 telephone support
  - Service Hours = 7:00 - 16:00 (UTC) Monday to Friday
- 24x7 telephone support

Support team is located in Finland. Support requests are always handled directly by our experts (level 3 support).



# RADIATOR SIM PACK

YOUR KEY TO SEAMLESS AUTHENTICATION

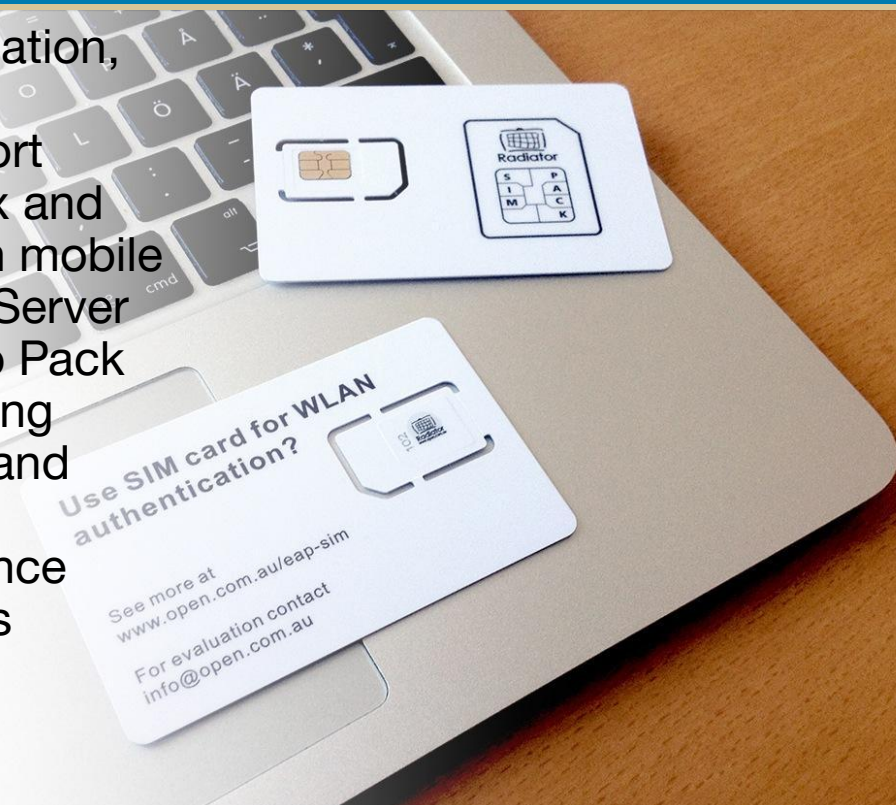


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# Radiator SIM Pack and 3GPP AAA Server

- 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 Radiator AAA server licence
- Available for evaluation with test SIMs included

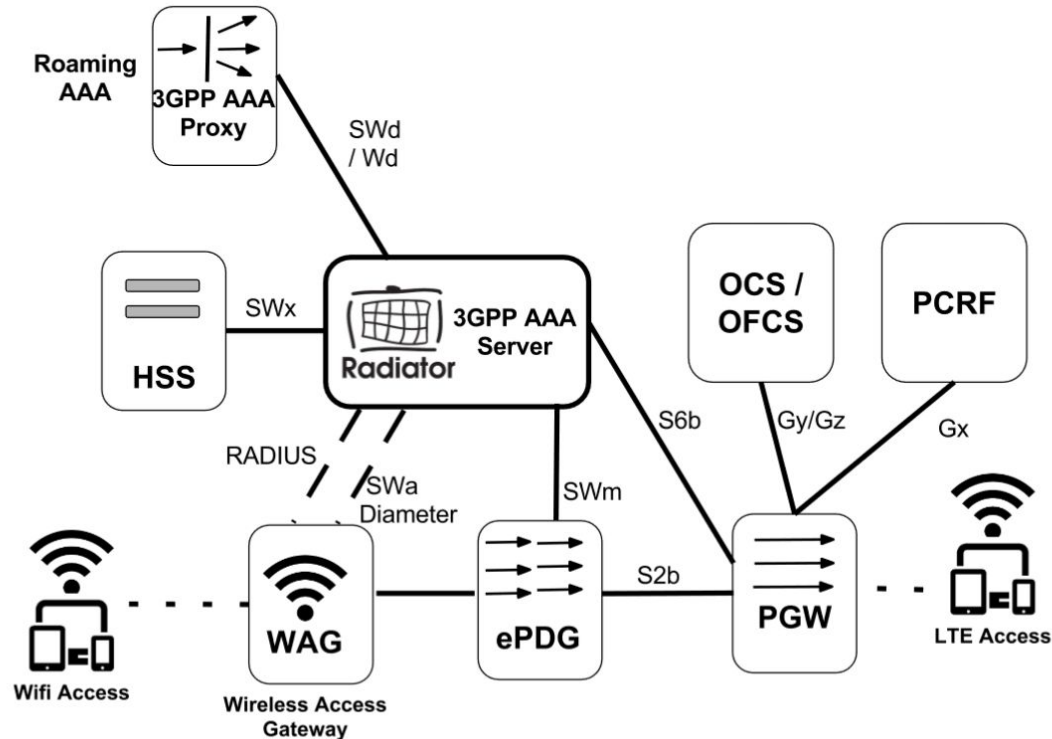


# What our customers say

*"A Tier 1 Mobile Operator in Taiwan uses Radiator for all of their mobile authentication (EAPSIM, 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



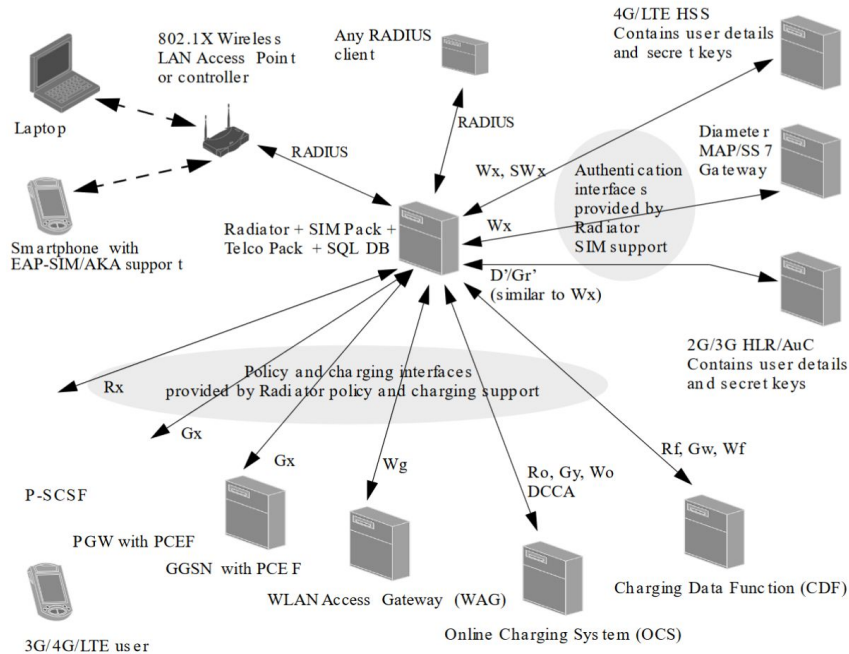
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# Radiator Telco Pack



- 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 Radiator AAA server licence
- Also available as an OEM licensed version

# Interfaces with Radiator SIM Pack and Radiator Telco Pack



# Use cases for Carrier Packs 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 Wifi network
  - Savings in LTE Core traffic
  - Using Radiator SIM Pack



# Use cases for Carrier Packs

- Data plan management (also for VoWiFi and VoLTE)
  - For data and call time management
  - Different data plans - and both for LTE and Wifi network
  - Enabling for example free data in WiFi 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

**GENERAL BOOTSTRAPPING ARCHITECTURE  
AUTHENTICATION FOR RADIATOR**



# Radiator GBA/BSF Pack

Seamless VoLTE authentication support for Radiator

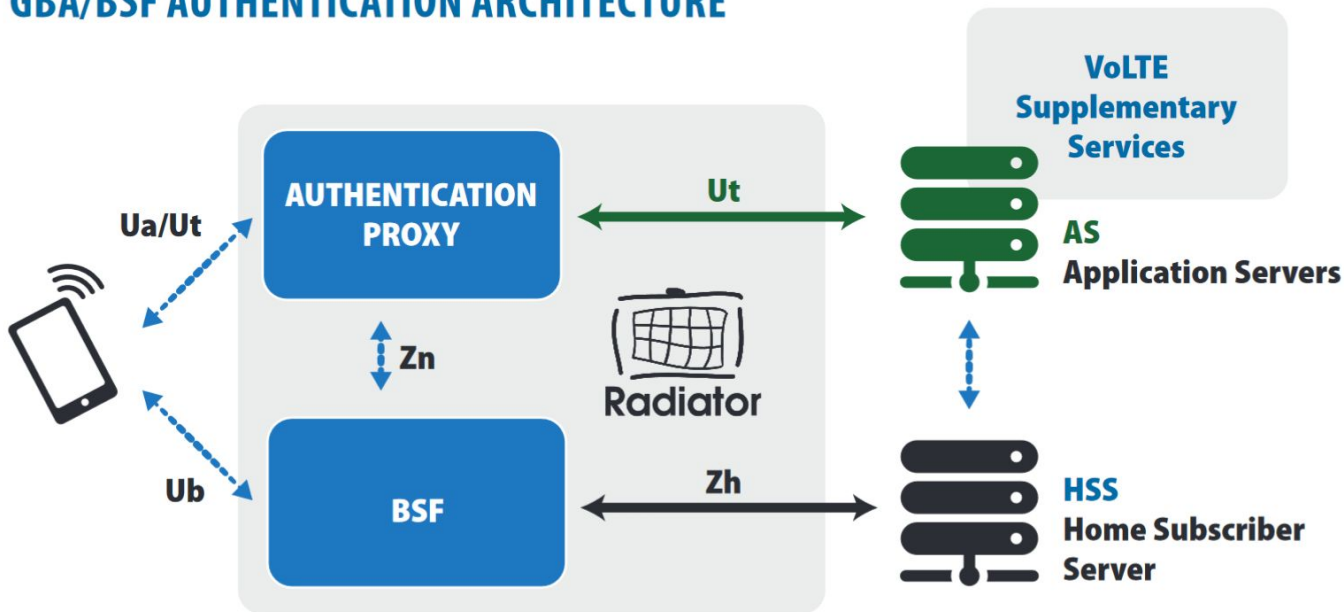
- GBA/BSF support for VoLTE Supplementary Services
- Authentication proxy (NAF/AP) supporting Ut (XCAP) interface
- HTTP Ua and Ub interfaces
- Diameter Zh and Zn interfaces

Public reference: Proximus Belgium (Tier 1)



# GBA/BSF Architecture

## GBA/BSF AUTHENTICATION ARCHITECTURE



# Use cases for Radiator GBA/BSF Pack

- Authenticating LTE subscribers for VoLTE supplementary services such as multimedia telephony service (MMTel) and multimedia telephony application server (MTAS)
- Radiator GBA/BSF Pack contains BSF server (Ub interface) and authenticating proxy (NAF/AP, Ut/Ua interface)

# Licensing options for Carrier products

Licences for Carrier products are available as flat-rate, concurrent session based, and transactions per second based.

- Licensing model is agreed with customer based on their use case

Licences include access to download new releases and patches and unlimited email support, both valid for one year.

Reporting and monitoring for licence compliance agreed prior to licence grant.

# Services available - on site or remotely

Consulting services such as

- Installation
- Migration
- Optimization

Custom development

- Feature requests

Training

- Adapted to meet customer specific needs