

RADIUS Software Developer's Toolkit – v7.3

Extend the capabilities of Interlink Networks' RAD-Series RADIUS Server

Interlink Networks' **RADIUS Software Developer's Toolkit** provides a set of easy-to-implement and modular tools to help you extend the capabilities of your Interlink Networks RAD-Series RADIUS Server. With the RADIUS Software Developer's Toolkit, you can create plug-in modules that add functionality to:

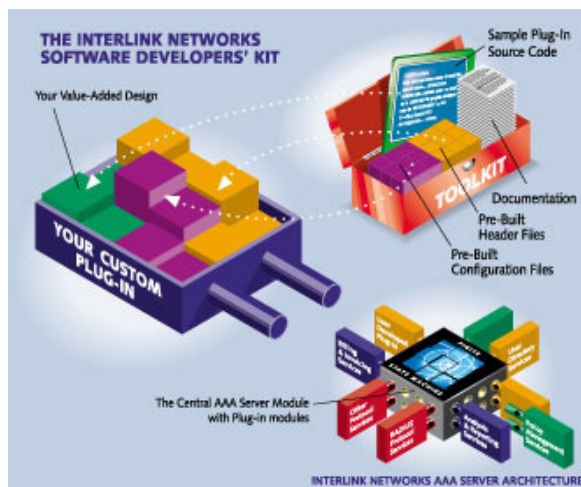
- Authenticate users stored in any data source, including off-the-shelf and proprietary databases
- Track and control usage by interfacing to unique billing systems
- Implement highly customized authorization schemes
- Add support for unique network access hardware

The RADIUS toolkit provides an interface to the server function libraries that perform specific server-related tasks and interact with predefined data structures. The toolkit allows you to extensively customize the RADIUS Server's operations. Developers can write and compile plug-in modules, which are loaded into memory at server start-up. These new modules can then be plugged in to any step of processing a RADIUS request — beginning, middle, end, or even replace an existing step during server operation. The new plug-ins can then be a substitute for, or a supplement to, existing features in the RADIUS Server.

Features

- **Extensible.** Add capabilities to the RAD-Series RADIUS Server that meet the unique needs of your existing and future network infrastructure.
- **Highly configurable.** Control the flow of the RAD-Series RADIUS Server's operation; what modules it calls and in what order. Replace or add to existing server modules with your own custom plug-in modules. A wide range of functions allows implementing unique authentication types, billing systems, session control features, and policy functions.
- **Easy to implement.** Plug-in modules make it simple to upgrade the RADIUS server with new feature enhancements. API functions follow the syntax and conventions of standard ANSI C so there is no need to learn a specialized programming or scripting language.
- **Powerful.** API functions and header files allow you to customize the security and control of your RAD-Series RADIUS Server implementation.
- **Modular.** Compile & manage small sections of code organized to perform specific tasks and functions.

Easily build custom plug-in modules for unique Authentication, Authorization & Accounting methods and to modify the internal processing engine



**Create Unique
AAA Methods for
your RADIUS
application**

***Critical Branding
Feature for OEMs
and SIs***

***Modular RADIUS
Server Architecture
Allows Total
Customization***

The RADIUS Software Developer’s Toolkit Includes:

- Documentation describing how to write a plug-in module and use it with the RADIUS server
- Documented header files, data structures, and API function calls
- Configuration files necessary for building and loading the user plug-in code
- Sample plug-in source code for reference or to use as a code base to build upon

Authentication API:

Used to internally develop extensions to the core RADIUS architecture, you can to build custom plug-in modules for unique authentication, authorization, or accounting methods, and modify the internal RADIUS processing engine. For example, you can:

- Configuration files necessary for building and loading the user plug-in code
- Authenticate users stored in any data source, including off-the-shelf and proprietary databases
- Track and control usage based on unique billing systems
- Implement highly customized authorization schemes
- Add support for unique network access hardware

User Interface (UI) API – “An Interlink Networks Exclusive Feature”

This feature allows OEMs and System Integrators to build custom UIs and other RADIUS server management applications tailored to the varied needs of your end-user customers. The API provides a consistent interface to the RADIUS server’s configuration and data files, regardless of how or where the information is stored. It allows easy migration and upgrades to new RADIUS server versions by acting as an abstraction layer between the external interfaces and the core RADIUS functionality. The UI also simplifies product localization or “internationalization”.

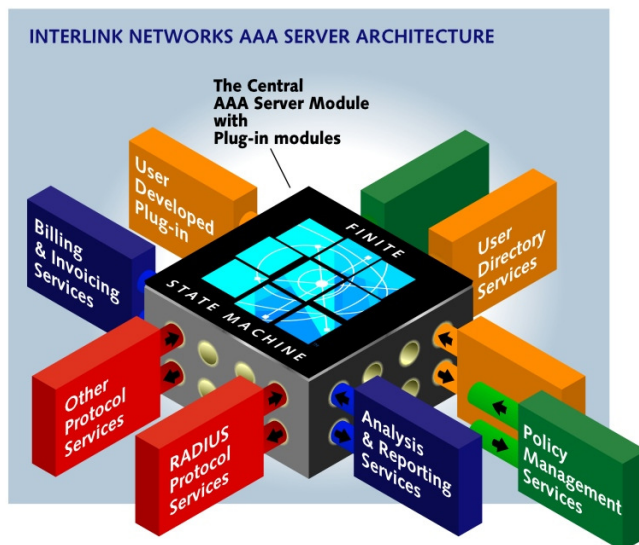
Specifications

System Requirements:

- Interlink Networks RAD-Series RADIUS Server Version 7.3 or higher
- GNU gcc C/C++ compiler
- GNU make utility
- GNU autoconf utility

Supported Operating Systems:

- Sun Solaris 8, 9, 10
- Red Hat Enterprise Linux 3, 4, 5



Functionality

The RAD-Series RADIUS Server uses several different internal and external data structures that custom plug-in modules can access through the RADIUS Software Developer's Toolkit. This provides a method to read and set values in these predefined structures. In addition to external data structures (information read from the server's configuration files), the toolkit provides easy access to the following internal data:

- All information about an in-process authentication
- The Attribute-Value (A-V) pairs in each request/reply that define the request/reply

The Software Developer's Toolkit functions can execute a wide range of tasks:

- Call other modules
- Read, search, parse, and modify AV pairs and A-V pair lists
- Read, search, and modify user information
- Maintain configuration strings
- Authentication functions, such as parsing realms, processing check and deny items, determining authentication type
- Password functions
- Obtain server and client information
- Debugging functions
- Read, write, and parse file tokens

Because the RAD-Series RADIUS Server is built around a finite state machine engine, configuring the RADIUS server to use a custom plug-in module is simple. The RADIUS server's process flows can be created or modified in a text file and defined to call the module when the appropriate server event occurs. At start-up the server loads the compiled files that contain the modules and the RADIUS server instructions into memory.

New in Version 7.3

Version 7.3 of the RADIUS Software Developer's Kit includes support for extending the new EAP-SIM feature of the RAD-Series RADIUS Server. The RADIUS SDK makes it possible to deploy EAP-SIM authentication without requiring an AuC/HLR on an SS7 network. A3/A8 Algorithms can be developed using the RADIUS SDK and plugged into the RADIUS server to create a local AuC. The SDK package includes the Milenage Reference A3/A8 algorithms and a template for writing custom A3/A8 algorithms.

Plug-in modules allow feature enhancements without editing, recompiling, and retesting all of the server code – providing for speedy development of additional functionality



Interlink Networks, LLC.
2500 Packard Rd., Suite 202
Ann Arbor, MI 48104

Sales: +1 (734) 821-1238
Fax: +1 (734) 821-1235
www.interlinknetworks.com

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