RADIUS Test Client

For Windows, Linux, Solaris & FreeBSD
Version 4.0

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Table Of Contents

Introduction

The RADIUS test client is an easy to use tool to simulate, debug and monitor most RADIUS and Network Access Servers (NAS).

IEA Software is the world's leading provider of billing, customer care, and authentication solutions for ISPs, VISPs, wireless and VOIP. Please visit our web site (http://www.iea-software.com) or contact our sales staff to learn more.

System Requirements

Browser

❖ Any web browser supporting CSS2 (Netscape 6+ or Internet Explorer 6+)

Linux

❖ RADIUS server for client authentication and accounting.
❖ PERL (required for installation)
❖ Any distribution of Linux supporting glibc 2.1 (Red Hat 7.1 or later requires the 6.2 compatibility packages compat-glibc or compat-libstdc)

Solaris

❖ RADIUS server for client authentication and accounting.
❖ PERL (required for installation)
❖ Solaris 2.6 or higher
❖ Sparc based CPU

Windows

❖ Any edition of Windows NT4, 2000, XP or 2003

Installation

Linux

Download the Radlogin 4 archive (radlogin4_linux.tar.gz) into a temporary folder.
To un-archive the file type:
tar –zxf radlogin4_linux.tar.gz

Next, run the installer:
./install.pl

Press 'C' then 'Enter' to continue.

To start the server: reboot or run /usr/local/radius/radlogin.
To access the web interface browse to http://localhost:8020

Solaris

Download the Radlogin 4 archive (radlogin4_solaris.tar.gz) into a temporary folder.
To un-archive the file type:
gzip –d radlogin4_solaris.tar.gz
tar –xf radlogin4_solaris.tar

Next, run the installer:
./install.pl

Press 'C' then 'Enter' to continue.

To start the server, run /usr/local/radius/radlogin.
To access the web interface browse to http://localhost:8020

Windows

Download the Radlogin 4 archive (radlogin4.exe) into a temporary folder.
Run radlogin4.exe
Follow the prompts.
The web interface can be accessed by selecting 'Programs' / 'RadiusNT' / 'Radius test client' from the windows START menu.

Configuring

Settings

Settings	
HTTP bind IP Address	
HTTP port	8020
Server threads	10
Default server	localhost
Default profile	Basic auth
Default Acct Start profile	[None]
Default Acct Stop profile	[None]
Monitor refresh interval (secs)	3
Date format	MMDDCCYY
Date separator	/
SMTP server	mail.iea-software.com
Notify email FROM: address	notme@myisp.com
Notify email Subject	[RADLOGIN] $name is $status

Option	Description
HTTP bind IP Address	Local IP Address the web server will listen for incoming http requests. By default the server listens on all available interfaces. Note you can restrict access to only local clients by setting the bind address to the local loop back interface (127.0.0.1)
HTTP port	TCP port to listen for incoming http requests.
Server threads	Number of concurrent requests the server can process at any one time. There is no limit however its unlikely you will ever need more than 10.

Default server	Selects the RADIUS server that should be used when radlogin is used from the command line interface.
Default profile	Selects the default authentication profile attributes to use when radlogin is used from the command line interface. If None is selected a default set of attributes is used.
Default Acct Start profile	Selects the default accounting profile to use when radlogin start requests are sent from the command line interface. If None is selected a default set of attributes is used.
Default Acct Stop profile	Selects the default accounting profile to use when radlogin stop requests are sent from the command line interface. If None is selected a default set of attributes is used.
Monitor refresh interval	Controls how often to refresh the server-monitoring scoreboard display. In seconds.
Date format	Internal date format used when displaying date/time strings.
Date separator	Internal date format separator used when displaying date/time strings.
SMTP server	SMTP mail server used to send status notifications. (See Server monitoring)
Notify email FROM: address	Email address status notifications will be sent from (See Server monitoring)
Notify email Subject	The subject line of a notification. The following variables can be used on the subject line. $name – monitor name $server – server name $status – Current server status (UP or DOWN) $profile – Attribute profile name The default notify subject is: [RADLOGIN] $name is $status (See Server monitoring)

RADIUS servers

Edit server

Server address	localhost
Shared secret	secret
Auth port	1645
Acct port	1646
Timeout (secs)	3
Retries	2

Option	Description
Server address	IP Address or hostname of the RADIUS server.

Shared secret	RADIUS shared secret, the server must have the same secret configured for requests coming from the radlogin test client.
Auth port	Port used to send authentication requests. The official RADIUS authentication port is 1812. Unofficially 1645 is still quite popular.
Acct port	Port used to send accounting requests. The official RADIUS accounting port is 1813. Unofficially 1646 is still quite popular.
Timeout (secs)	Number of seconds to wait for a response from the RADIUS server.
Retries	Number of times to resend a request if there is no response within the Timeout period above.

Request profiles

Request profiles optionally define the list of attributes sent to the RADIUS servers as well as various authentication and accounting options. At least one request profile is required in order to use 'Server monitoring' or 'Radlogin' features.

Edit profile

Profile name	Test auth 1
Role	Authentication ▼
Auth Method	PAP ▼

Option	Description
Profile name	Name to identify your request profile by.
Role	Sets whether RADIUS requests sent using this profile should be an authentication, accounting, disconnect or CoA request.
Auth Method	If an authentication request will be sent, should PAP or CHAP be used to send for password authentication? PAP (Password Authentication Protocol) works with any backend database. CHAP (Challenge Handshake Authentication Protocol) requires the RADIUS server have access to the users unencrypted text password.

After creating a new request profile you can begin adding attributes to your profile.
Click the attributes link to begin adding them.

Request profiles

Profile name	Role	Auth method
✗ Basic auth | Attributes	Authentication	PAP
✗ AirMarshal auth | Attributes	Authentication	PAP
✗ Test auth 1 | Attributes	Authentication	PAP

RADIUS attributes

	ID	Vendor	Attribute	Data
[New attribute]				
✗	1	Standard	Framed-Address	$randip
✗	2	Standard	Acct-Session-Id	$sessionid
✗	3	Standard	Framed-MTU	$MTU
✗	4	Standard	NAS-Port	$counter10
✗	5	Standard	Event-Time	$timestamp
✗	6	Standard	Caller-Id	5095551212
✗	7	Standard	NAS-Identifier	127.0.0.1
✗	8	Ascend	Ascend-IPSEC-Profile	blah blah blah

In the example above you will notice variables in the Data column. Radlogin provides several built-in variables to provide unique data helping to simulating multiple requests. Variables and what they do can be found in the table below. If you specify a variable not in this table, you will be prompted to provide a value for that variable while using the Radius login feature.

Variable	Description
$counter	Starting at one increments by one for each request
$counter2	Counter2 resets to 1 after reaching 2.
$counter3	Counter3 resets to 1 after reaching 3.
$counter10	Counter10 resets to 1 after reaching 10.
$counter100	Counter100 resets to 1 after reaching 100.
$counter1000	Counter1000 resets to 1 after reaching 1000.
$counteraz	Counteraz displays a single letter starting at 'a' and resetting after 'z'
$randaz	Randaz displays a single random character
$randaiz5	Randaz5 displays 5 random characters
$randaz10	Randaz10 displays 10 random characters
$randip	RandIP displays a random IP Address
$timestamp	Timestamp is the current time as the number of seconds past January 1, 1970 00:00 UTC
$sessionid	A unique 16-character string. Makes a good Session-ID.

Change password

Change password

Password	*******
Confirm password	*******

The admin password used to login to the radlogin web interface can be changed by entering a new password here. If you have other IEA software products such as Emerald or RadiusNT/X installed on the same computer changing the admin password for radlogin will also cause the admin password all other web based admin interfaces to change as well.

Command-line interface

```
RadLogin v4.0.17 RADIUS test client for RadiusNT
Copyright 1994-2006 IEA Software, Inc.

Usage: radlogin [username] [password] [# of checks]
Usage: radlogin coa|pod -server servername -profile profilename -login username [...-profileattrs profilevalues]
Usage: radlogin [username] START|STOP [# of checks]
Usage: radlogin [username] FILE debugfile.txt [# of checks]
Usage: radlogin USERLIST listofusers.txt
Prefixing these options /w DELIMITED  outputs in tab-delimited form.
```

Running radlogin -? Displays available command line options.

Example	Description
./radlogin neila test123	Sends a single PAP authentication request for the user neila with a password of test123.
./radlogin neila START	Sends a single Accounting START request for the user neila.
./radlogin neila STOP	Sends a single Accounting STOP request for the user neila.
./radlogin neila test123 1000	Sends 1000 PAP authentication requests for the user neila with a password of test123.
./radlogin neila test123 CHAP	Sends a single CHAP authentication request for the user neila.
./radlogin neila FILE raddebug58.txt	Sends an authentication request using the file raddebug58.txt. FILE must contain a hex dump of RADIUS AVPs (Attribute-Value-Pairs) (See Packet decoding)
./radlogin DELIMITED neila test123 1000	Sends 1000 PAP authentication requests for the user neila with a password of test123 using tab delimited output mode. This makes it easy to import the results of the test into a spreadsheet or database.
./radlogin coa|pod|auth|acct –server servername –profile profilename –login loginname –password password –variable1 value1 –example2 exvalue2 –variable3 value3	Sends a RADIUS request using named parameters. The first parameter is informational only and should be one of coa, pod, auth or acct depending on the type of request expected. The "-server" parameter is the name of a server defined in the RADIUS Servers section of the test client web interface. The "-profile" parameter is the name of the profile defined in the Request profiles section of the test client web interface. "-login" represents the User-Name attribute to send in the request and "-password" represents the password to send. All other named parameters can be used to match parameter variable names in the chosen profile. (See Request profiles)

Server monitoring

	Name	Server	Profile	Status	Resp Last	Resp Avg	Uptime	Msg	Age
X	Peters notebook (Auth)	localhost	Basic auth	OK	0 ms	0 ms	100.000%		6
X	AirMarshal (Auth)	scout	AirMarshal auth	OK	0 ms	0 ms	100.000%		6
X	Tesla AP	10.0.3.195		N/A	0 ms	0 ms	100%		12

Server monitoring periodically polls RADIUS servers, testing their ability to respond to authentication or accounting queries. The 'scoreboard' shows a list of servers being monitored, their current status, statistics such as response times in Milliseconds and average uptime. The Age field displays the number of seconds since the server was last polled. In addition to the web interface, radlogin can also send email notifications if the server stops responding.

Edit scoreboard

Monitor name	Local auth server
RADIUS Server	localhost
Auth Username	validlogin
Auth Password	validpassword
Down notify E-Mail	notme@myisp.com
Profile	Basic auth
Normal check interval (secs)	15
Down check interval (secs)	15
Response handling	NAK is Unreachable
RADIUS timeout Down (secs)	60
RADIUS timeout Notify (secs)	120

Option	Description
Monitor name	Name of the system being monitored
RADIUS Server	RADIUS server to send requests
Auth Username	Username for authentication requests
Auth Password	Password for authentication requests
Down notify E-Mail	If specified an email will be sent to this address whenever the server cannot be contacted.
Profile	Request profile controlling the type of RADIUS request to send
Normal check interval	Number of seconds between sending consecutive server requests. This setting is in effect when the server status is OK.
Down check interval	Number of seconds between sending consecutive server requests. This setting is in effect when the server status is DOWN.
Response handling	Controls whether a NAK in response to a RADIUS request should be considered an error or since the RADIUS server responded to

	the request its status should be considered OK.
RADIUS timeout Down	Number of seconds from last successful contact to consider the server DOWN.
RADIUS timeout Notify	Number of seconds from last successful contact to send an Email notification stating the server is down. Note the server must be in a down state before an Email notification can be sent out.

Radius login

Radlogin

RADIUS Server	localhost ▾
Profile	Test auth 1 ▾
Iterations	Single request ▾
Login	test
Password	test123
MTU	1500

Request

Attribute		Data
Standard	Framed-Address	220.239.250.151
Standard	Acct-Session-Id	"1048131058U7suk"
Standard	Framed-MTU	1500
Standard	NAS-Port	8
Standard	Event-Time	03/19/2003 19:30:58
Standard	Caller-Id	"5095551212"
Standard	NAS-Identifier	127.0.0.1
Ascend	Ascend-IPSEC-Profile	"blah blah blah"

Response

Status: Good
Resp Time: 10 ms

Attribute		Data
Standard	User-Service	Framed-User
Standard	Class	"IEAS2□1"

Option	Description
RADIUS Server	Selecting 'All' will use the first available RADIUS server to perform the query. (See RADIUS servers)
Profile	(See Request profiles)
Iterations	Indicates the number of requests to simulate. If you choose more than a single request a summary of activity is displayed every 2.5 seconds. If you wish to do load testing we recommend you open several browser windows and run tests simultaneously in each window since radlogin currently cannot track more than one outstanding request per window.
Login	User-Name to send for authentication or accounting requests.
Password	Password to send for authentication requests.
MTU	MTU is a dynamic field added by the existence of $MTU in the 'test auth 1' profile. (See Request profiles).

Packet decoding

RADIUS packet decoder

```
21 0f 39 35 31 30 37 35 37 38 37 41 6a 52 71
06 06 00 00 00 02
07 06 00 00 00 01
08 06 ff ff ff fe
1a 1a 00 00 00 09 01 1d 76 70 64 6e 3a 69 70 2d 61 64 64 72 65 73 73 65 73 3d
```
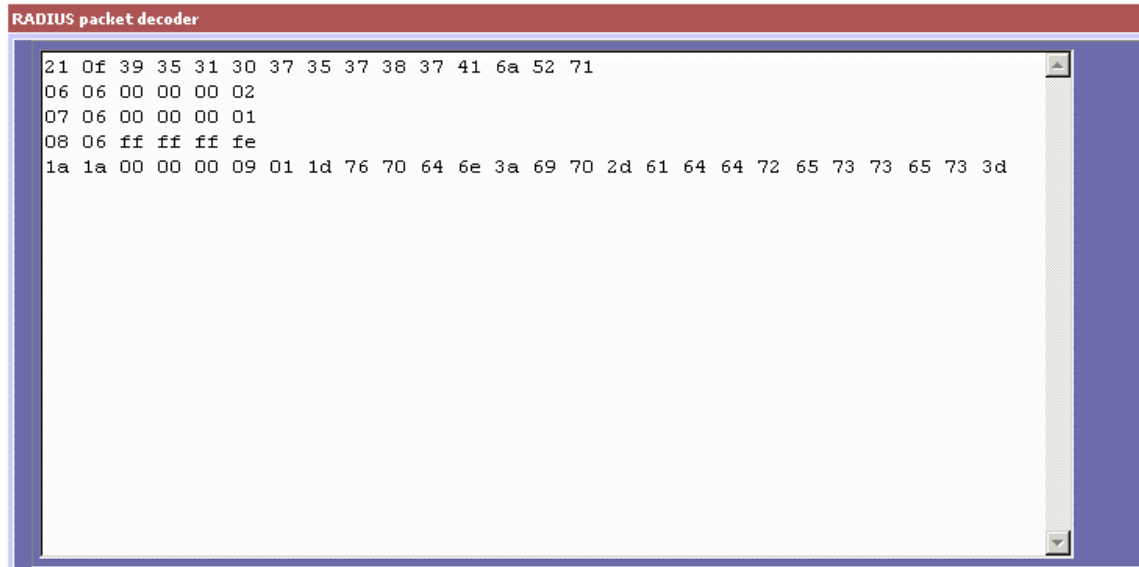
VSA Attribute length is larger than the remaining part of the packet.

Attribute		Data
Standard	Proxy-State	"951075787AjRq"
Standard	User-Service	Framed-User
Standard	Framed-Protocol	PPP
Standard	Framed-Address	255.255.255.254

Add results to profile dumping ground1

Many NAS, RADIUS servers and network monitoring applications such as MS Network Monitor or Ethereal allow you to dump RADIUS AVPs (Attribute-Value-Pairs) in a raw hexadecimal format. The packet decoder allows you to take this information, check for errors and display in a human readable format. Using the decoder AVPs can be bulk imported into existing Request profiles to quickly allow you to simulate or replay requests from a wide range of NASes.

Note: RadiusNT/X packet debug is enabled by including the '–X' flag from the command line. For example 'radius –x15 –X' starts radius in debug 15 mode with packet debugging enabled.