

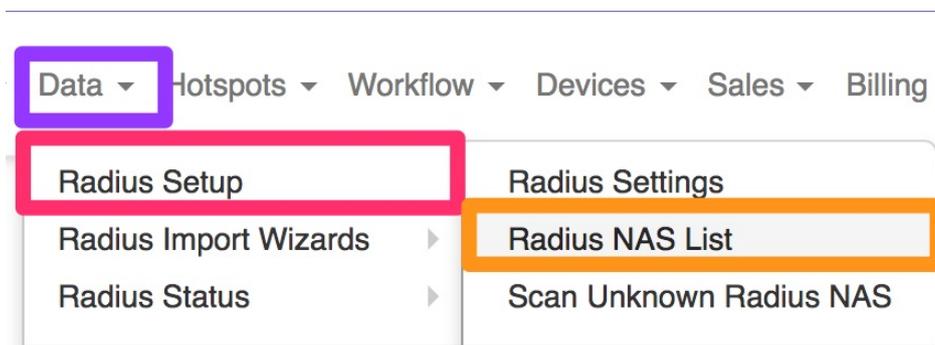
1. Introduction

Radius proxy is used when a radius request is not handled by the radius server that first receives the request. The radius requests are either passed on to an external third-party radius server for authentication, or a third-party radius request is received for authentication on a local radius server.

Telkom OpenServe uses proxy to authenticate against a HeroTill instance. The request at the client's house is sent to the Telkom NAS by his router. The Telkom NAS then forwards this request to the HeroTill instance linked to the customer's realm. The HeroTill instance processes the request (authentication or accounting) and then passes the result back to the Telkom NAS, which then relays it back to the originating client router.

2. NAS Setup

First, you will need to complete the NAS setup that is used for POD and Proxy requests. To do this, go to **"Data"** → **"Radius Setup"** and then click on the **"Radius NAS List"** option.



You will now see the following screen:

Radius NAS List

✕ Disconnect Pre Today
✕ Disconnect Last Month
✕ Disconnect All Sessions
🔄 Restart Radius Service
+ Add NAS
🔄 Refresh

10 records per page

Search:

Copy Columns Clipboard
Export Columns CSV
Export Columns Excel
Show / Hide Columns

NAS IP Address	NAS Name	Type	Secret	Description	Network Device Name	Device Model	Device API	Users	
10.3.0.7	Pieter Van As ET	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
10.255.0.56	10.255.0.56	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
10.255.0.66	10.255.0.66	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
192.168.42.11	192.168.42.11	Mikrotik	1qazxsw23edcvfr4		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
192.168.42.12	192.168.42.12	Mikrotik	1qazxsw23edcvfr4		CC-DT-EdenMeander-Office	CCR1009-7G-1C-1S+	OK		<a>+ <a>✕ <a>🗑️
10.6.0.20	2.4 Ghz Omni at eTime Office	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
10.98.23.1	21st Street	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
10.6.0.23	5 Ghz Omni at eTime Office	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
10.60.6.36	72 on York	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️
10.6.20.100	7th Ave	Mikrotik	cLi6orR6Ev		Missing	Missing	Missing		<a>+ <a>✕ <a>🗑️

Showing 1 to 10 of 471 entries

Previous
1
2
3
4
5
...
48
Next

2.1. Adding the NAS

You will now need to add the IP's that are used for the POD and Proxy requests with Telkom's secret: (telkom_radius_secret). To add these IP's, click on the **"Add NAS"** button.

On the following screen, you will need to add the IP Address, NAS name, secret, NAS Type and a description. Below is a list of **example** IP's:

- 196.43.1.86
- 196.43.1.87
- 196.43.1.88
- 196.43.1.89
- 196.43.3.86
- 196.43.3.87

Edit NAS 196.43.1.89 ✕

IP Address	<input type="text" value="196.43.1.89"/>
NAS Name	<input type="text" value="Telkom"/>
Secret	<input type="text" value="telkom_radius_secret"/>
NAS Type	<input type="text" value="Cisco"/>
Description	<input type="text" value="Description"/>

Close

Save changes

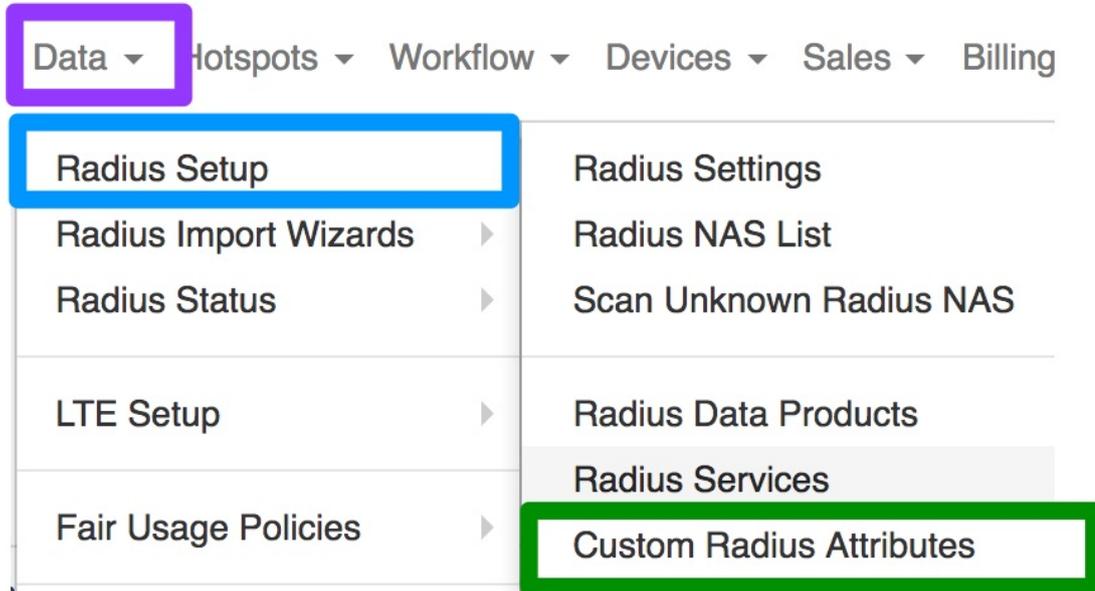
After adding the information, click on the **“Save Changes”** button.

3. Custom Attributes

Previously, you to first add your radius service before you were able to create your data product. After fair usage policy was introduced to HeroTill, you now only have to create the product. Once the product has been created, the radius service will be created in the background. This means that all custom radius attributes will now be added on the product and not the radius service.

3.1. Adding the custom attribute in HeroTill

To add the custom attribute, go to **“Data”** → **“Radius Setup”** and then click on the **“Custom Radius Attribute”** option.



On the following screen, click on the **“Add Attribute”** button.

Custom Radius Attributes

+ Add Attribute ↻ Refresh

10 records per page

Search:

Copy Columns Clipboard Export Columns CSV Export Columns Excel Show / Hide Columns

Attribute Name	Operand	Description	Compatible Devices	
Cisco-AVPair	:=		Mikrotik, Cisco, Other	✍ ✖
Framed-Route	+=		Mikrotik, Cisco, Other	✍ ✖
Mikrotik-Group	:=		Mikrotik	✍ ✖

Showing 1 to 3 of 3 entries

Previous 1 Next

On the following screen, you will need to complete the details as follow:

- **Attribute Name:** Cisco-AVPair
- **Operand:** +=
- **Compatible NAS type:** Cisco.
- **Attribute Description:** Add if necessary.

Edit Radius Attribute


Attribute Name Cisco-AVPair

Operand +=

Compatible NAS Type × Cisco

Attribute Description Attribute Description

Close

Save changes

After adding all the details, click on the **“Save Changes”** button.

3.2. Adding custom attributes to a data product

To add a custom attribute to a specific data product, you will need to go to **“Data”** and then click on the **“Data Products”** option.



After finding the specific product you would like to add the custom radius attributes to, click on the “**Edit**” button on the right-hand side of the product.

Data Products

All Product Groups | All Speed Boost Policies | All Speed Limit Policies | Select one or more Labels | Enabled | Normal | + Add Product | Refresh

Show 10 Rows

Search | Search | Copy Columns Clipboard | Export Columns CSV | Export Columns Excel | Show / Hide Columns

Type	Code	Product Title	Monthly Cap	Product Speed	Action once Capped	Monthly Cost	Topup Cost	Visible to Admins	Visible to Public	Num Users	Product Group	Labels
Radius	100M100M	100Mbit Symmetrical	300.0 GB	100 Mb/s Down, 100 Mb/s Up	Hard Cap	R 5,999.00	R 30.00	Yes	Yes	10		
Radius	10GB	10GB	10.0 GB	8 Mb/s Down, 8 Mb/s Up	Hard Cap	R 100.00	R 30.00	Yes	Yes	1		
Radius	10M10M	10Mbit Uncapped	150.0 GB	10 Mb/s Down, 10 Mb/s Up	Hard Cap	R 1,999.00	R 30.00	Yes	Yes	2		
Radius	1T20M10M	1T 20Mbit / 10Mbit	1.0 TB	20 Kb/s Down, 10 Kb/s Up	Hard Cap	R 2,100.00	R 30.00	Yes	Yes	7		
Radius	200GB6M6M	200GB 6Mbit/s	200.0 GB	6 Mb/s Down, 6 Mb/s Up	Hard Cap	R 1,600.00	R 30.00	Yes	Yes	5		
Radius	50GB2M2M	50GB 2Mbit/s	50.0 GB	2 Mb/s Down, 2 Mb/s Up	Hard Cap	R 299.00	R 29.00	Yes	Yes	5		

On the pop-up screen, navigate to the “**Radius Attribute**” tab and then click on the “**Add Custom Attribute**” button.

Edit Data Product #5 ✕

Primary Details |
 Data Limits |
 Radius Attributes |
 Billing |
 Note |
 Audit

Add Custom Attribute

On the pop-up screen, you will need to add the following:

Add Custom Radius Attribute



Attribute Name	Cisco-AVPair
Operand	:=
Attribute Value	

Cancel

Add

Red: Choose the "Cisco-AVPair" attribute here.

Add the following three **Cisco-AVPair** attribute values with the quotation marks:

- Value (Your Loopback Interface): "**ip:ip-unnumbered=LoopbackXXXX**"
- **LoopbackXXXX** is the Loopback interface associated with the address pool.
- Value (Your Address Pool): "**ip:addr-pool=YYYY**"
- **YYYY** is the address pool name from which an IP address should be allocated to the user.
- Value (Your primary and secondary DNS servers): "**ip:dns-servers=a.a.a.a b.b.b.b**"
- Replace **a.a.a.a** with the IP address of your Primary DNS server and **b.b.b.b** with your secondary DNS server.

***Please note that the attributes should not be entered into HeroTill with the quotation marks (“”) at the beginning and end of the text. Please refer to the screenshot below.**

Edit Data Product #1115 ✕

Primary Details Data Limits **Radius Attributes** Billing Note

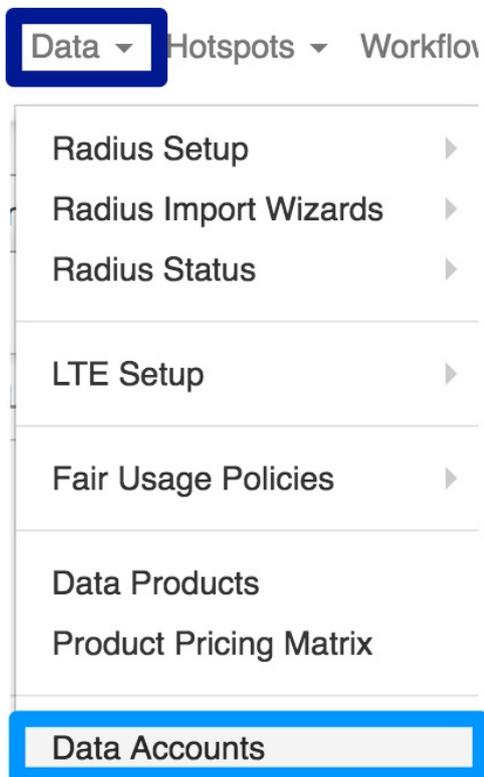
[Add Custom Attribute](#)

Attribute	Operand	Value	
Cisco-AVPair	+=	ip:addr-pool= [redacted]	✎ ✖
Cisco-AVPair	+=	ip:dns-servers=' [redacted]	✎ ✖
Cisco-AVPair	+=	ip:ip-unnumbered= [redacted]	✎ ✖

Remember to click on the “**Save Changes**” button after adding the custom attributes. After you have done this, the radius service can be assigned to a data account and then to a radius user where the Custom Radius Attributes will be applied for IPC Authentication. Below is a screenshot for the custom attributes added to the radius service.

3.3. Adding custom attributes to a specific data account

To view or add custom attributes to a specific data account, go to “**Data**” and then click on the “**Data Accounts**” option.



On the following screen, look for the relevant data account to which the attribute should be added and then click on the **Edit** button found on the right-hand side of the data account.

Connection Type	Username	Data Product	Customer	Counting Type	Monthly Cost	Topup Cost	Account Type	Labels	Radius Status	
OpenServe Fibre	[Redacted]	SuperSonic Uncapped 50 Mb/s Down, 100 Mb/s Up	Jessica	IP Accounting	R 20.00 (R 17.39)	R 10.00 (R 8.70)	Normal Account			   
OpenServe Fibre	[Redacted]	1GB Capped 1 GB Monthly, 3 Mb/s Down, 6 Mb/s Up	Imel	Radius	R 100.00 (R 86.96)	R 10.00 (R 8.70)	Normal Account			   
Wireless	macmini@radperl	1GB Capped 1 GB Monthly, 3 Mb/s Down, 6 Mb/s Up	Mac Mini	Radius	R 100.00 (R 86.96)	R 10.00 (R 8.70)	Normal Account		Speed Reduced	   

On the pop-up screen, ensure that you are on the **Radius Attributes** tab. Here you will be able to view **all custom attributes** or **add** more attributes. Please remember that radius user attributes are automatically assigned after the data account is assigned to the user.

Edit Data Account #2887 - [REDACTED] ×[Data Account](#) [Address](#) [Pricing Details](#) [Data Limits](#) **[Radius Attributes](#)** [Test](#)[Add Custom Attribute](#)

Attribute	Operand	Value
<i>Capped-Rate-Limit</i>	:=	[REDACTED]
<i>Cisco-AVPair</i>	+=	[REDACTED]
<i>Cisco-AVPair</i>	+=	[REDACTED]
<i>Cisco-AVPair</i>	+=	[REDACTED]
<i>Cleartext-Password</i>	:=	*****
<i>Group-Simultaneous-Use</i>	:=	<input type="checkbox"/>
<i>Mikrotik-Rate-Limit</i>	:=	[REDACTED]
<i>Range-Limit-Type</i>	:=	Monthly
<i>Soft-Cap</i>	:=	1
<i>Total-Cap-Size</i>	:=	0

[Close](#)[Save Changes](#)

4. Troubleshooting

Various screens are available to monitor the system behaviour regarding radius accounts. To monitor your accounts, go to “**Data**” → “**Radius Sessions**” and then click on the **relevant option**.

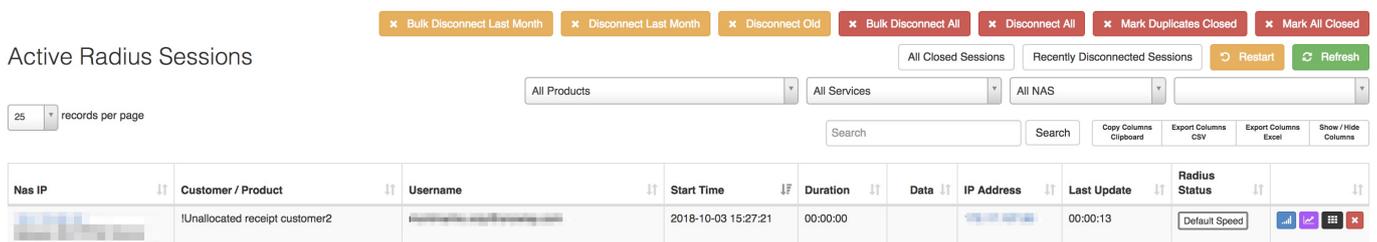
Data ▾ Hotspots ▾ Workflow ▾ Devices ▾ Sales ▾ Billing ▾ F

- Radius Setup ▸
- Radius Import Wizards ▸
- Radius Status ▸
- LTE Setup ▸
- Fair Usage Policies ▸
- Data Products
 - Product Pricing Matrix
- Data Accounts
 - Customer
 - Counting Type
- Radius Topup Groups
- Radius Topup Types
- LTE Topup Bundles
- Data Product Changes
- Radius Sessions ▸
 - Active Radius Sessions
 - Recently Disconnected Sessions
 - All Closed Sessions
 - Active Session Health
 - Un-Disconnected Sessions
 - Disconnection Requests
- Usage Debug

100 Mb/s, 50MB Capped
100 MB Monthly, 10 Mb/s Down, 5 Mb/s Up

4.1. Active Sessions

All currently active radius sessions are shown on this screen. This includes wireless & fibre accounts, including OpenServe connections.



The screenshot shows the 'Active Radius Sessions' interface. At the top, there are several action buttons: 'Bulk Disconnect Last Month', 'Disconnect Last Month', 'Disconnect Old', 'Bulk Disconnect All', 'Disconnect All', 'Mark Duplicates Closed', and 'Mark All Closed'. Below these are filters for 'All Closed Sessions', 'Recently Disconnected Sessions', 'Restart', and 'Refresh'. There are also dropdown menus for 'All Products', 'All Services', and 'All NAS'. A search bar is present. Below the filters, there is a table with the following columns: 'Nas IP', 'Customer / Product', 'Username', 'Start Time', 'Duration', 'Data', 'IP Address', 'Last Update', and 'Radius Status'. The table contains one row with the following data: 'Nas IP' (blurred), 'Customer / Product' (Unallocated receipt customer2), 'Username' (blurred), 'Start Time' (2018-10-03 15:27:21), 'Duration' (00:00:00), 'Data' (blurred), 'IP Address' (blurred), 'Last Update' (00:00:13), and 'Radius Status' (Default Speed). There are also icons for 'Copy Columns Clipboard', 'Export Columns CSV', 'Export Columns Excel', and 'Show / Hide Columns'.

Sessions can be disconnected from this screen, either individually, or for an entire NAS at a time.

4.2. All Closed Sessions

This screen shows all radius sessions no longer active. This includes wireless and fibre connections.

All Closed Radius Sessions

All Radius Accounts All NAS Refresh

Recently Disconnected Sessions Active Sessions

5 records per page

Search: Copy Columns Clipboard Export Columns CSV Export Columns Excel Show / Hide Columns

Session	Nas IP	Username	Start Time	Stop Time	Duration	Upload	Download	Station	IP Address
813000e7	10.15.0.220	tiny_router@radperf	2018-06-19 18:09:28	2018-06-20 00:00:11	05:50:44	1.0 MB	27.8 KB	pppoe server radperf	10.5.57.5
813000e6	10.15.0.220	tiny_router@radperf	2018-06-19 15:19:25	2018-06-19 18:09:28	02:50:01	495.7 KB	13.4 KB	pppoe server radperf	10.5.57.5
813000c5	10.15.0.220	tiny_router@radperf	2018-06-19 14:47:38	2018-06-19 15:13:38	00:26:04	75.8 KB	2.1 KB	pppoe server radperf	10.5.57.5
813000c4	10.15.0.220	tiny_router@radperf	2018-06-19 14:46:44	2018-06-19 14:47:33	00:00:50	2.6 KB	184.0 B	pppoe server radperf	10.5.57.5
813000c3	10.15.0.220	tiny_router@radperf	2018-06-19 12:46:42	2018-06-19 14:46:43	02:00:02	350.5 KB	9.6 KB	pppoe server radperf	10.5.57.5

Showing 1 to 5 of 3,183,427 entries

Previous 1 2 3 4 5 ... 636886 Next

4.3. Recently Disconnected Sessions

The recently disconnected screen is used to monitor unusual disconnections. Setting the limit down to a few minutes or an hour will show all the radius accounts disconnected in that period, together with the disconnect cause.

Typically, it would highlight a faulty highsite that keeps dropping wireless connections.

Recently Disconnected Sessions 1 Month

10 records per page

Search:

Username	NAS Request	NAS Error	Lost Carrier	Lost Service	User Request	Admin Reset	Admin Reboot	Port Error	Dup Session	Stale Session	Total	
zondagh.jimmy	2		8063		1					2	8068	
cc_nel006			5165								5165	
vandermerwe.reel			4961								4961	
burrough.place			3871							1	3872	
cc_vgb007@cc	3		2248		1					3	2255	
diamond.duo			2104								2104	
oche.geoffrey			1914								1914	
swdrugbyeagles	1		1549								1550	
burger.jan	4		3		1055					4	1066	
cc_fiv001	2		656								658	

Showing 1 to 10 of 2,693 entries

4.4. Session Disconnect Requests

The session disconnect request screen displays a log of all radius disconnect requests performed by either freeradius or HeroTill, together with a reason for the disconnect request.

Radius Disconnect Requests

 All NAS All Request Refresh

10 records per page

 Search:
Copy Columns Clipboard Export Columns CSV Export Columns Excel Show / Hide Columns

Request Date	Source	NAS IP	Reason	Username	Product	Usage	Account Code	Customer Title	
2018-06-20 10:11:13	DataTill - radclient	10.98.135.1	User selected session disconnect	[redacted]	Home Uncapped 6Mbs UC	52.4 GB	SEV001	[redacted]	✓ ⋮
2018-06-20 10:08:33	DataTill - radclient	10.98.192.1	Disconnect session on data topup submission	[redacted]	20GB Capped 3Mbs	20.1 GB of 22 GB	KOM001	[redacted]	✓ ⋮
2018-06-20 09:18:39	DataTill - radclient	10.98.33.1	Block user	[redacted]	Home Uncapped 2Mbs	69.1 GB	ASH003	[redacted]	✓ ⋮
2018-06-20 09:15:06	DataTill - Mikrotik API	10.97.24.1	Block user	[redacted]	Home Uncapped 2Mbs	133.5 GB	ALD001	[redacted]	✓ ⋮
2018-06-20 09:15:05	DataTill - radclient	10.97.24.1	Block user	[redacted]	Home Uncapped 2Mbs	133.5 GB	ALD001	[redacted]	✗ ⋮
2018-06-20 08:29:19	DataTill - radclient	10.98.50.1	Disconnect session on data topup submission	[redacted]	20 GB + 5 GB Free Monthly	25.1 GB of 30 GB	KUL001	[redacted]	✓ ⋮
2018-06-20 08:22:19	DataTill - Mikrotik API	10.98.72.1	Radius session exceeded timeout value	[redacted]	10 GB + 5 GB Free Monthly	7.2 GB of 15 GB	PET005	[redacted]	✗ ⋮
2018-06-20 08:22:18	DataTill - radclient	10.98.72.1	Radius session exceeded timeout value	[redacted]	10 GB + 5 GB Free Monthly	7.2 GB of 15 GB	PET005	[redacted]	✗ ⋮
2018-06-20 08:22:16	DataTill - Mikrotik API	10.97.18.1	Radius session exceeded timeout value	[redacted]	Home Uncapped 5Mbs	27.1 GB	KEN005	[redacted]	✗ ⋮
2018-06-20 08:22:15	DataTill - radclient	10.97.18.1	Radius session exceeded timeout value	[redacted]	Home Uncapped 5Mbs	27.1 GB	KEN005	[redacted]	✗ ⋮

Showing 1 to 10 of 209 entries

Previous 1 2 3 4 5 ... 21 Next

It also indicates whether the request was successful or not and allows you to re-try the disconnect. Failed disconnects could indicate a NAT issue, where the disconnect request appears to originate from an IP address other than the defined radius IP address on the ANS router.

View disconnect Details #33307 ✕

Date	2018-06-20 09:15:05
Source	DataTill
Method	radclient
NAS	10.97.24.1
Username	cc_rui001
Reason	Block user
Command	echo 'Acct-Session-Id=8148dae4,User-Name=cc_rui001, Framed-IP-Address: ↻
Result	<pre>Sending Disconnect-Request of id 231 to 10.97.24.1 port 1700 radclient: no response from server for ID 231 socket 3 Acct-Session-Id = "8148dae4" User-Name = "cc_rui001" Framed-IP-Address = 10.98.70.226 NAS-IP-Address = 10.97.24.1</pre>

✕ Unable to disconnect session

Close

4.4.1. Troubleshooting failed disconnections

If HeroTill fails to disconnect Openserve IPC connections then it is most likely related to NAT or firewall issues. HeroTill sends the radius disconnect request to one of the Telkom radius proxy servers in the 196.43.0.0/16 network range.

The Telkom proxy will only accept requests directed to UDP port 1700 and originating from the IP address associated with your ICP. If the disconnect packets are NAT'ed to another public IP then these requests will be ignored by the Telkom radius proxy.

To test whether your HeroTill instance can successfully communicate with the Telkom proxy run the following command on the command line of your HeroTill server:

Command:

```
echo 'User-Name=dummy@testrealm.co.za,Acct-Session-Id=0CA77E20022BAD5S0BAD50,Framed-IP-Address=10.11.12.13,NAS-IP-Address=10.10.10.10'|usr/local/bin/radclient -c '1' -n '1' -r '1' -t '1' -x
```

196.43.1.86:1700 disconnect telkom_radius_secret

4.4.1.1. A successful response would look like this:

Sending Disconnect-Request of id 89 to 196.43.1.86 port 1700

User-Name = "dummy@testrealm.co.za"

Acct-Session-Id = "0CA77E20022BAD5S0BAD50"

Framed-IP-Address = 10.11.12.13

NAS-IP-Address = 10.10.10.10

rad_recv: Disconnect-NAK packet from host 196.43.1.86 port 1700, id=89, length=26

Error-Cause = Session-Context-Not-Found

The "rad_recv" line indicates a valid response received back from the Telkom radius proxy. The error in the result indicates that the session we wanted disconnected does not exist on their end.

4.4.1.2. An unsuccessful response will look like this:

Sending Disconnect-Request of id 136 to 196.43.1.86 port 1700

User-Name = "dummy@testrealm.co.za"

Acct-Session-Id = "0CA77E20022BAD5S0BAD50"

Framed-IP-Address = 10.11.12.13

NAS-IP-Address = 10.10.10.10

radclient: no response from server for ID 136 socket 3

Note the 'no response' section. This indicates that either the packet did not arrive at the Telkom radius proxy or the Telkom radius proxy ignored the request as it originated from a non authorised source IP.

4.5. Un-Disconnected Sessions

The un-disconnected screen shows all active radius sessions that could not be disconnected automatically. This typically includes all sessions started in the previous month.

On the right-hand side, a list of all NAS devices that are unable to disconnect accounts will appear. The most likely cause for NAS devices to appear here is if there is an issue with either the incoming radius port (1700) or disconnect packets originating from the wrong (NAT'ed) IP address.

Un-Disconnected Radius Sessions

All NAS

✕ Disconnect Last Month

✕ Disconnect Old

🔄 Refresh

10 records per page

Search: Copy Columns
ClipboardExport Columns
CSVExport Columns
ExcelShow / Hide
Columns

Recently Un-Disconnected NAS Totals

Nas IP	Customer / Package	Username	Start Time	Duration	IP Address	Last Update	Status	
	Cloud Connect	mtjacques	2018-05-23 09:14:12	00:00:00		674:09:27	Started Prev Month	 ✕

NAS IP	Day	Week	Month	Total
No data available in table				

Showing 0 to 0 of 0 entries

Showing 1 to 1 of 1 entries

Previous 1 Next