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7 Cardsharing

7.1 Basics

How does it work ? I suggest you begin with [the Hydra Installation part](#) first, as it gives some basics on the two mains EMUs.

Basically, instead of sending commands and getting back answers from the official card locally in the local card reader, datas are sent through the network to the other dreambox which has the card.

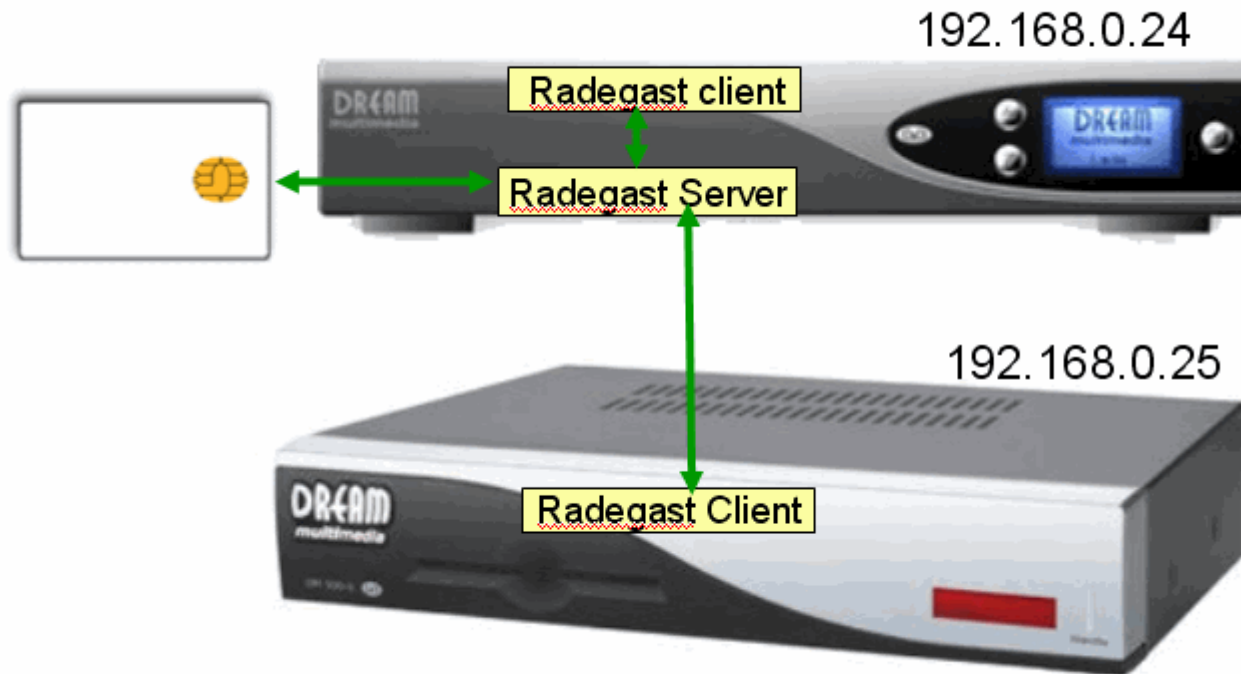
So, we have a server, with the card on one dreambox, which is waiting for client(s) to connect. Then you have one client running on both dreambox, sending commands and awaiting answers to the server, which forward to the card.

You imagine easily this is a bit more complex, but this is the global idea.

Of course, if you want to try that, you need 2 dreambox on a single network, Ethernet crossed cable in direct connection, or through a hub. Let's start with a easy-to-setup share, that you can easily set up with 2 dreambox.

For this example I choosed the standard dreambox7000, plus the wonderful Dreambox500, which costs about a third of the DM7000+HD but offers the same features on channel view and decoding

7.2 Radeqast on Hydra



I start with this method, as it's the easiest to set up, everything is done with the remote control. I clearly suppose you have Hydra installed and running on both dreambox.

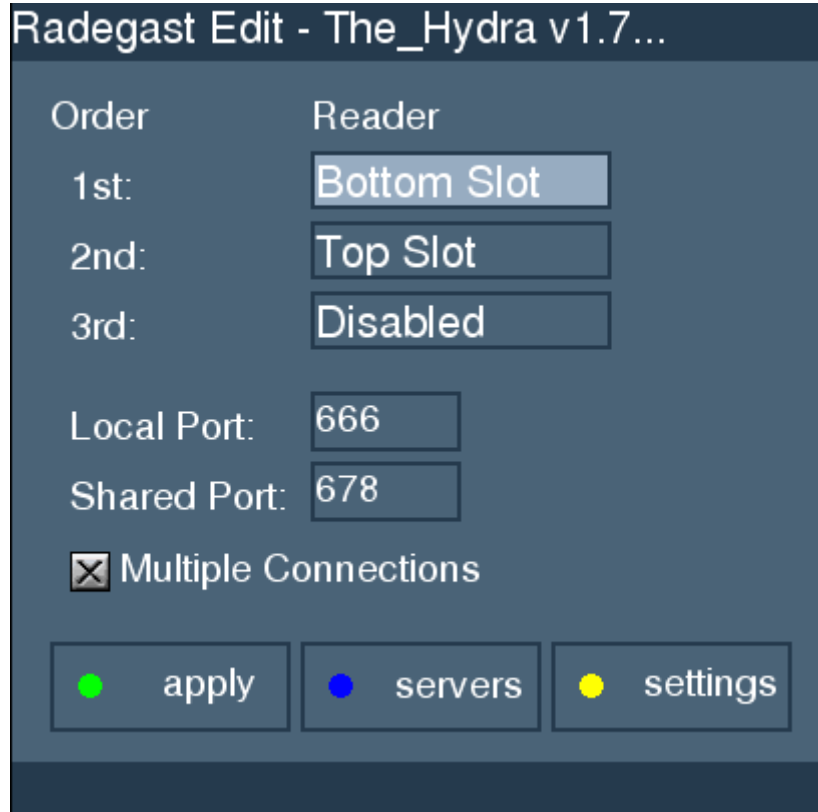
We set up on IP 192.168.0.24 the server with the official card on the DM7000, and the 192.168.0.25 for the client in your bedroom, on the DM500.

Telnet to one dreambox and ping the other, this must work with small latency. 0.6 ms is a standard latency on a LAN.

Hydra Angharad & Zeus and Radegast 3 b14 are used for this tutorial.

Let's configure the DM7000 server :

Blue Button, choose radegast, then press OK.



Order	Reader
1st:	Bottom Slot
2nd:	Top Slot
3rd:	Disabled

Local Port: 666

Shared Port: 678

Multiple Connections

● apply ● servers ● settings

You first need to enable the card reader where you put your official card. Let's allow both top and bottom slots. let ports on default values.

Also tick "multiple connections" as two clients will connect on it.

Put ECM and EMM to "both", keep default settings for Timeouts.

Advanced Settings

ECM:	<input type="text" value="both"/>	ATR Timeou:	<input type="text" value="2000"/>
EMM:	<input type="text" value="both"/>	Net Timeout:	<input type="text" value="10000"/>

Phoenix Settings

Speed:	<input type="text" value="9600"/>	Parity:	<input type="text" value="even"/>
--------	-----------------------------------	---------	-----------------------------------

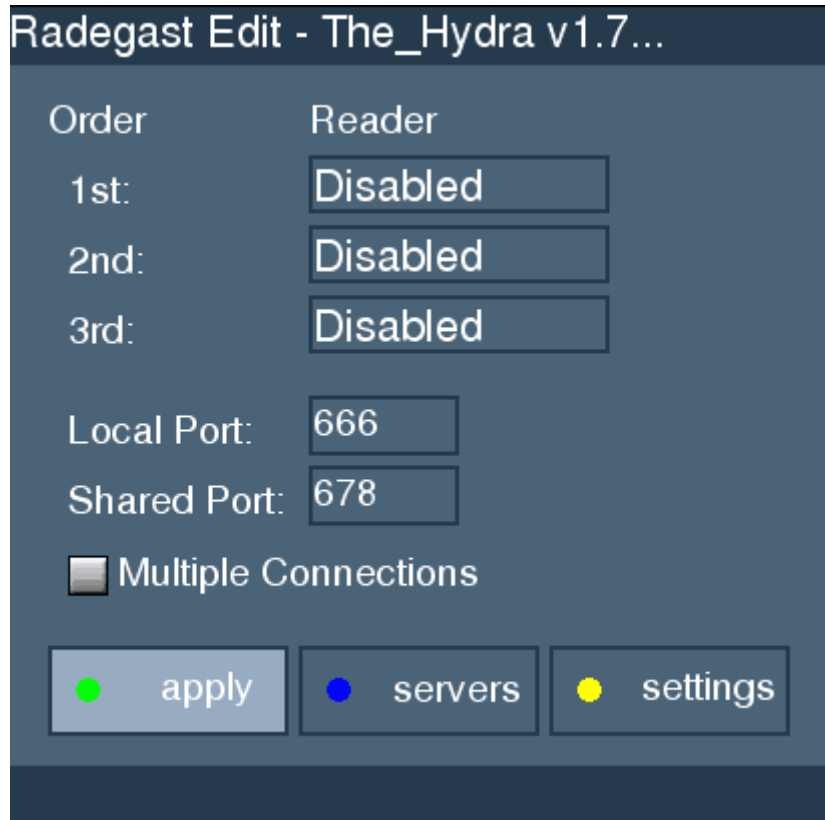
Server Authentication Enabled

At this stage do not tick "Server Authentication Enabled". This allow login/password and crypting securities, but keep it simple at the beginning.

Just press the green button to validate this last page, then to validate the general settings page, then to confirm you understand that's the Emu needs to be start again, then again the green button to start (or re-start) Radegast. Press the Lame button (or exit depending your remote control) and that is , you are ready on the server side.

Now, change to the other dreambox, the DM500,, to configure the client. Blue button, choose Radegast and press Ok to enter settings pages.

On this dreambox, no card inserted, so just let Disabled on the three card readers, and no reason to tick "Multiple Connection" here.



Press the yellow button to access the next page.

Put ECM and EMM to "both", keep default settings for Timeouts.

At this stage do not tick "Server Authentication Enabled" as we did not choose to use that on the server. Again, keep it simple at the beginning.

Press the green button to exit to the previous page.

Advanced Settings

ECM:	<input type="text" value="both"/>	ATR Timeou:	<input type="text" value="2000"/>
EMM:	<input type="text" value="both"/>	Net Timeout:	<input type="text" value="10000"/>

Phoenix Settings

Speed:	<input type="text" value="9600"/>	Parity:	<input type="text" value="even"/>
--------	-----------------------------------	---------	-----------------------------------

Server Authentication Enabled

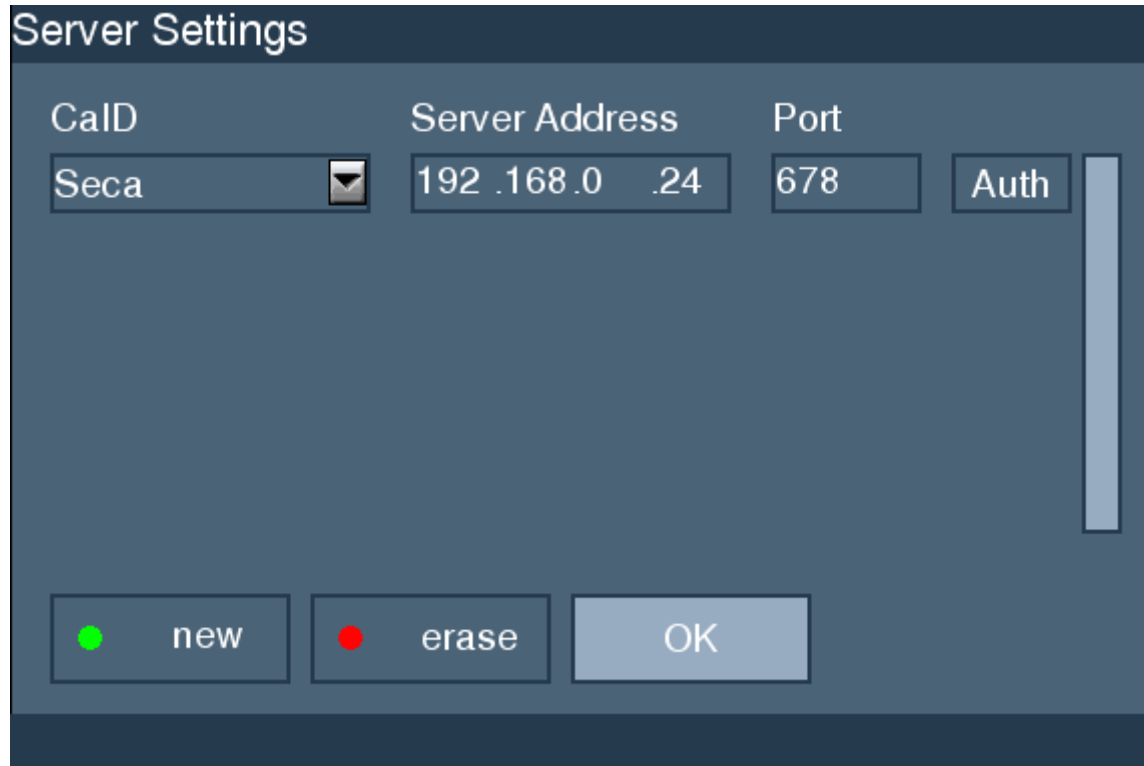
Press the blue button to access the next page.

Here we are going to tell to the radegast client where it can find the server, and for which type of card etc..

So, choose the type of card you have in the server, SECA here, then the IP address of your server, 192.168.0.24 here and the port to be used, 678 here.

Do not use the "Auth" button, this is for login/password and key for crypting, and we don't use it here.

As usual now, press the green button until you start radegast.



You can select a crypted channel and you should have the clear picture on your TV. That's is, you've done your first CS.

To finish this chapter on radegast, if you prefer to secure a bit your data transmission, with all your personal datas on decrypting your provider, you should better tick "Server Authentication Enabled" on both side, server and client.

On the client you have a simple way to configure it by clicking on "Auth" button.

So, put Login, password and a 16 digit key for crypting.

You of course need to put the same on the client side.

Authentication Settings

User name: klona

Password: secret

Deskey: 0102030405060708

OK

press ok to edit user name

On the server you first need to tick "Server Authentication Enabled" using the Hydra Menu.
But you also need to configure login/password access to the server, and this is not included in Hydra Menu.
So you need to edit config files.

FTP to /var/etc/ and get radegast.users

Edit it with a Unix compatible editor like UltraEdit, and simply put login:password:DESKey
in our case, simply klona:secret:0102030405060708

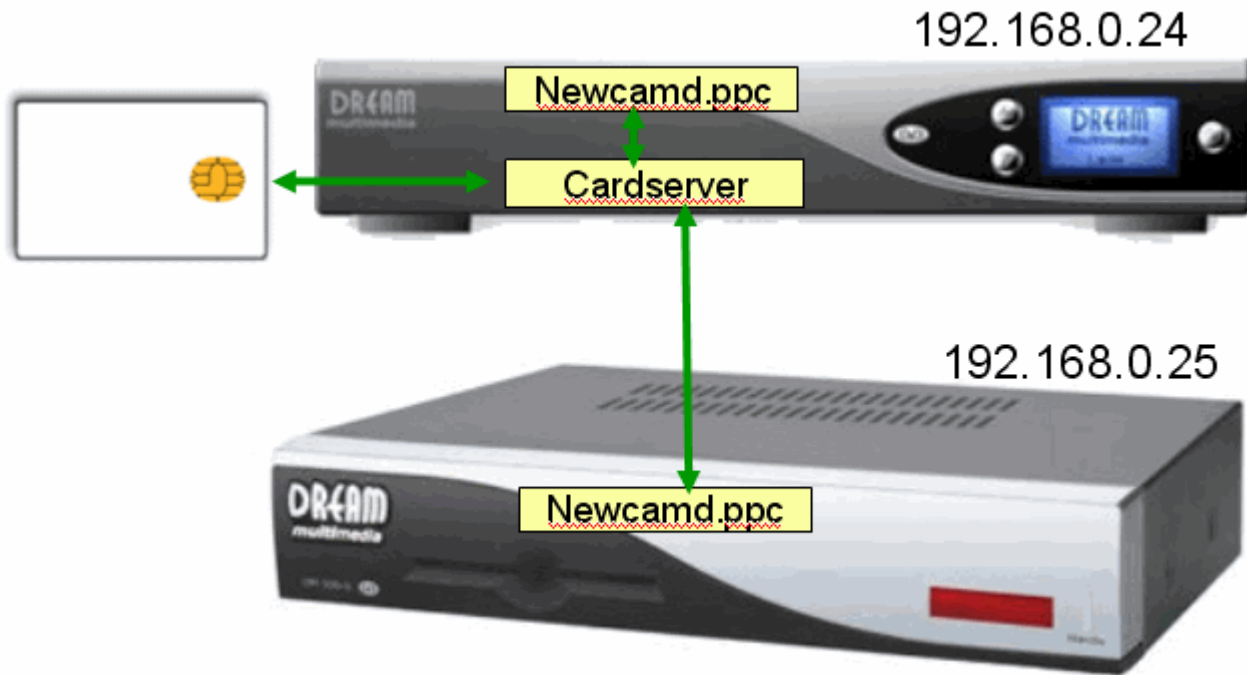
That's it, your server is configured.

The only default is that you absolutely need radegast on both side, and that radegast is slower than newcamd when it comes to zap time.

One small trick also is to change your EMU for MGcamd, which will use all Radegast config but is faster on zapping and also stable.

So let's move on a newcamd config, more complex, but faster and where you can use both radegast and newcamd server with a newcamd client.

7.3 Newcamd



Newcamd is another solution. Newcamd 5.25 is used for this tutorial. Be cautious, as the CS protocol changed with this version and you CANNOT share between newcamd 5.25 and older versions.

First have a look at [the Hydra installation](#) part to get some basics on newcamd.

So, we need to configure first cardserver.dream (/var/tuxbox/config/cardserver.cfg is the associated config file) and the client newcamd.ppc (/var/tuxbox/config/newcamd.cfg is the associated config file).

Filename used here are those used on Hydra images and it can change from one image to another. Mainly other than Hydra images, like Rudream, simply use newcamd and cardserver as filename. Have a look to /var/bin to find the correct filename for your image.

First job is to configure the server part.

So first edit the file cardserver.cfg from the DM7000

First step is to allow Auto Update for the card, and enable card readers to work, so at the end of the file you must have :

```
SERIAL_PORT = 0
TCP_PORT = 10001
```

```
EMM-G = yes
EMM-S = yes
EMM-U = yes
SPECIAL_FEATURES = yes
SERIAL_PORT = 1
TCP_PORT = 10000
EMM-G = yes
EMM-S = yes
EMM-U = yes
SPECIAL_FEATURES = yes
```

Then you need to set up network and security settings :

```
DESKEY = 12 34 56 78 90 12 34 56 78 90 12 34 56 78
SERVER_NAME = My_Server
DEBUG_PORT = 14000
ENTITLEMENT_PORT = 14001
ADMIN_PORT = 14002
ADMIN_PASSWORD = secret 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Just put the DES key you want and a unique server_name on the network. Be careful, there cannot be two server with the same name in the network.

Last point is to add clients authorized to connect and which password logging they need.

You need to build a line for each user like this : USER = login password wan IP_client admin_port au. In our case, we have the server dreambox that will connect to itself and the second dreambox with klona as login and secret as password, the client IP is 192.168.0.25 :

```
USER = local local lan localhost 12000 au
USER = klona secret wan 192.168.0.25 12000 au
```

In fact, if you get together all these lines, you have a simple working cardserver.cfg file :

```
DESKEY = 12 34 56 78 90 12 34 56 78 90 12 34 56 78
SERVER_NAME = My_Server
DEBUG_PORT = 14000
ENTITLEMENT_PORT = 14001
ADMIN_PORT = 14002
ADMIN_PASSWORD = secret 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
USER = local local lan localhost 12000 au
USER = klona secret wan 192.168.0.25 12000 au
SERIAL_PORT = 0
TCP_PORT = 10001
```

```
EMM-G = yes
EMM-S = yes
EMM-U = yes
SPECIAL_FEATURES = yes
SERIAL_PORT = 1
TCP_PORT = 10000
EMM-G = yes
EMM-S = yes
EMM-U = yes
SPECIAL_FEATURES = yes
```

Now let's configure the client newcamd.ppc (with his associated settings file newcamd.cfg) , on the dreambox server, so still the DM7000. There are quite some line in this file, but you only need in fact to add the details to connect to the server.

Line that define everything are built that way : CWS = server_IP server_port login password DESkey wan cardserver_name. In this case, the server connect to itself on port 10000 and 10001 (the 2 card readers we authorized) and login/password is local/local and the cardserver name is My_Server, so :

```
CWS = localhost 10000 local local 12 34 56 78 90 12 34 56 78 90 12 34 56 78 wan My_Server
CWS = localhost 10001 local local 12 34 56 78 90 12 34 56 78 90 12 34 56 78 wan My_Server
```

localhost returns the local internal IP that is 127.0.0.1, that also can be used directly in the config file. In our case, we can also change the IP to 192.168.0.24 as this is another valid IP address of the dreambox. It's better anyway to use 127.0.0.1.

Just check now you have CWS_INCOMING_PORT = 12000 in the end of the file.

I did not yet explain about this port that is in the cardserver config and in the newcamd config. Sharing is done on ports 10000 and 10001, so what is the port 12000 used for ? In easy terms, it's the way to send data back to the server. It's useful when the server was down and get online again, after a reboot for example; Through this port, the server tell to clients that it's back online. This way, the client does not have to reboot or restart the EMU newcamd to get again access to the server.

Let's now move on the client dreambox, the DM500, and configure newcamd. Edit the other newcamd.cfg (I suggest you make separated directories on your PC with clear names like server_192_168_0_24 and client_192_168_0_25 or you will probably mix files and nothing will work !)

This time, we need to connect on 192.168.0.25 , ports 10000 and 10001, login/password is klona/secret, DESkey is the same, and server name also.

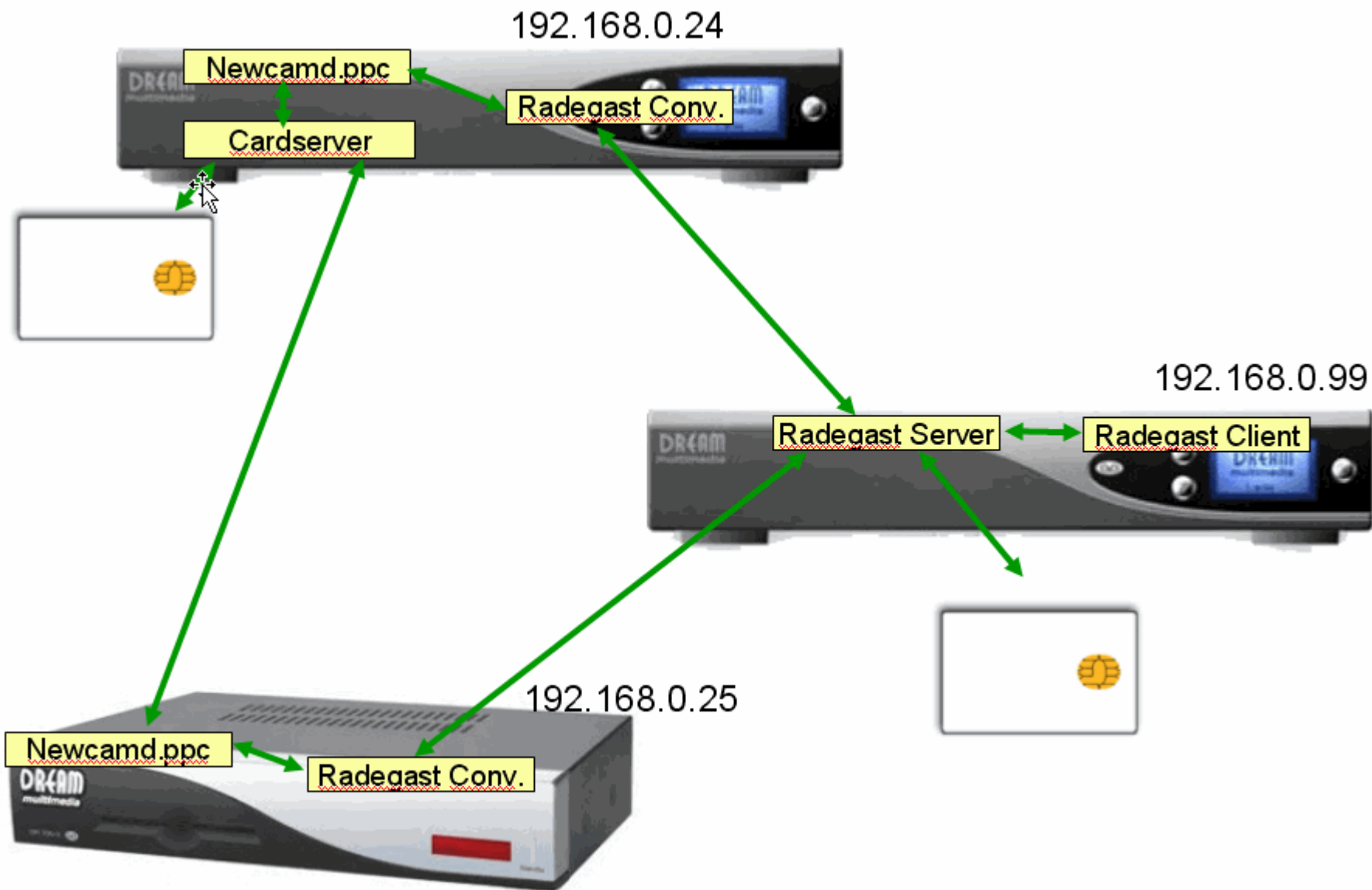
```
CWS = 192.168.0.24 10000 klona secret 12 34 56 78 90 12 34 56 78 90 12 34 56 78 wan My_Server
CWS = 192.168.0.24 10001 klona secret 12 34 56 78 90 12 34 56 78 90 12 34 56 78 wan My_Server
```

Still check CWS_INCOMING_PORT = 12000 in the end of the file.

That is, both clients and server are configured. This should work once you put your official card inside the server dreambox.

Anyway, there is still again an improvement we can do. What about a third dreambox , but this time with a radegast server.

7.4 : Radegast server and Newcamd client



Our third dreambox has the IP address 192.168.0.99 and is a DM7000

So, just configure normally your radeqast server on this new dreambox7000 as explained in the previous part . Just untick "Server Authentication Enabled" as radeqast is only able to handle one client in crypted DES mode.

Let's move now on the two clients configuration, the first DM7000 and the DM500. Newcamd and radegast are not directly compatible in sharing. We are going to use a radegast code to convert data to newcamd format. For this purpose, copy from the original newcamd package the file radegast.ppc from the radegast folder to /var/bin and change attributes to 755. If you don't know what means "chmod 755" check [here](#).

Then copy from the same folder of the newcamd package the file radegast.cfg to /var/tuxbox/config and NOT to /var/etc which is the standard directory for radegast EMU config files. In this case, this is not the radegast EMU but the radegast converter for newcamd that we use. Quite confusing isn't ?

Let's configure the radegast converter for the first client, the dreambox DM500 192.168.0.25 that has no card at all, already client of the cardserver.dream on the 192.168.0.24 dreambox. FTP /var/tuxbox/config/radegast.cfg and edit the file.

Here is what you need in this file :

```
SERVER_NAME = rdgd_server
DESKEY = 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DEBUG_PORT = 15000
RADEGAST_SERVER_CONNECT_TIMEOUT = 40
CLIENT_CONNECT_TIMEOUT = 30
USER = internal share localhost 12000
CARD = 0100:00246A
TCP_PORT = 16001
RADEGAST_SERVER = 01:0:192.168.0.99:678:0
DEBUG = yes
```

We use a zero DESkey as it is purely local, USER allowed is in fact the local newcamd client only, with internal as login and share as password, on port 16001, and connect to the radegast server on 192.168.0.99, port 678, that share a card type 0100 (seca) for the provider 00246A

We now need to add a server to connect to newcamd , so edit newcamd.cfg from dreambox 192.168.0.25

Simply add :

```
CWS = 127.0.0.1 16001 internal share 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 lan rdgd_server
```

Last thing to do is to start the radegast converter. Either manually by telnet and /var/bin/radegast.ppc &, or by adding this line into /var/etc/init.

Do not forget the "&" and use a Unix editor like UltraEdit or your dreambox won't boot anymore...

In fact you just need to do the configuration on the other dreambox which is already a newcamd server, the 192.168.0.24.

So to summarize.

On the DM500 192.168.0.25, no card inserted, newcamd connects to the newcamd server of the 192.168.0.24 dreambox and to local radegast converter which connects to the radegast server of the 192.168.0.99

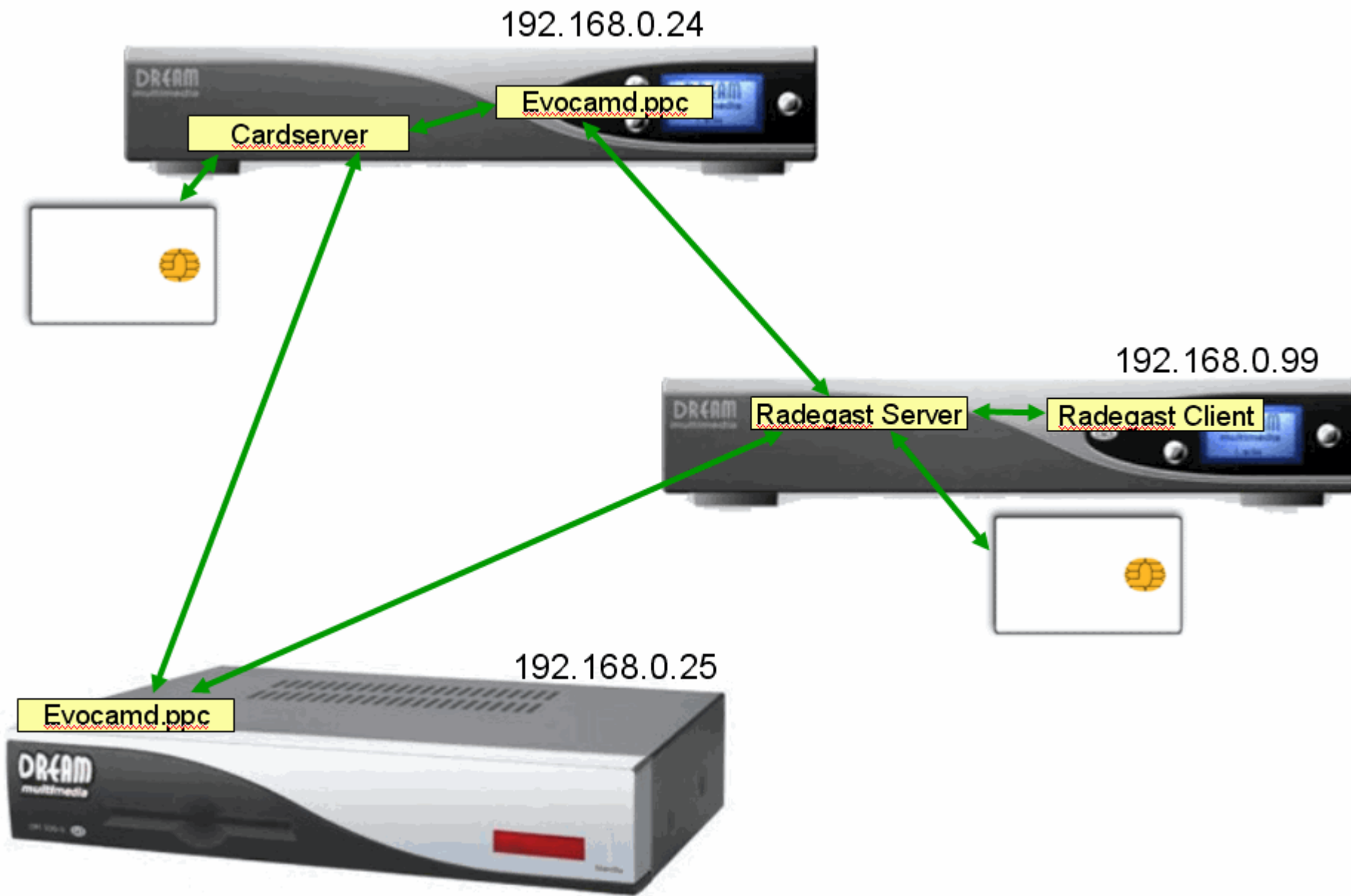
On the DM7000 192.168.0.24, 1 card inserted, newcamd connects to the local newcamd server and to local radegast converter which connects to the radegast server of the 192.168.0.99

On the DM7000 192.168.0.99, 1 card inserted, the radegast client connects to the local radegast server and that's all.

This seems quite nice, but some radegast sharing cannot be converted to newcamd, mainly because newcamd do not support every provider.

So there is still one other solution, explained in the next part.

7.5 : Newcamd and Evocamd



On this tutorial we use EvoCamd 4.1 which is compatible with newcamd 5.25 CS protocol. If using older versions of newcamd, you need to use evocamd 4.0.

The idea is to use evocamd as client, as it's able to connect directly to a radegast and a newcamd server, while serving with cardserver.dream from newcamd package.

You can use the cardserver.dream configuration from the [7.3 part](#) as there is no difference on the server.

You then need to configure evocamd as client on the 2 other dreambox. Evocamd client , whatever dreambox is concerned, will connect to the radegast server from the 192.168.0.99 dreambox, and from 192.168.0.24 for the newcamd sharing.

Newcamd sharing are defined in /var/key/newcamd-client.txt

```
[192.168.0.24] #Newcamd server
port = 10000
key = 12 34 56 78 90 12 34 56 78 90 12 34 56 78
username = klona
password = secret
```

Radegast sharing are defined in the standard radegast config file, /var/etc/radegast.cfg (NOT the /var/tuxbox/config/radegast.cfg this time !!)

```
net routes = 1
net route 1 = 05::192.168.0.99:678:0:::
```

05 is the CAID for Viaccess. If you have some trouble with this config line, simply use the radegast config display of radegast as explained in the [part 7.2, client configuration](#) . It will create the line for you. You can edit the file after and check what is inside, modify or complete it but it gives a nice hand to start with.

That's it. Simply use these config files in the dreambox 192.168.0.24 & 25.

Telnet to dreambox DM7000 192.168.0.24 :	Telnet to dreambox DM500 192.168.0.25 :	Telnet to dreambox DM7000 192.168.0.99 :
- kill old processes that can run	- kill old processes that can run	- kill old processes that can run
Killall newcamd.ppc killall radegast.ppc killall cardserver.dream	Killall newcamd.ppc killall radegast.ppc killall cardserver.dream	Killall newcamd.ppc killall radegast.ppc killall cardserver.dream
- Start the newcamd server	- Start evocamd client	- Start radegast server
/var/bin/cardserver.dream &	/var/bin/evocamd.ppc &	/var/bin/netpilot 678 666 &

- Start evocamd client

```
/var/bin/evocamd.ppc &
```

- Start radegast client

```
/var/bin/rdgd &
```

Or easier, use the EMU interface of Hydra to restart Radegast client & server.

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