

HOW TO BUILD A CARDSPIDER SERVER ON DREAMBOX

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GET YOUR SPIDER UP AND RUNNING FOR THE FIRST TIME

INTRODUCTION

General info:

First a little explanation about how cardspider works.

Cardspider allows you to share your local subscription card via network/internet. This allows others to view channels via your subscription, and in return you will be able to view the channels from the cards that other people on the spider network share. Due to the way the cardspider network is setup, you can not only watch the channels from the people you directly connect to (the so called: peers), but also from the ones they connect to and the ones they connect to etc, etc. So in theory: a connection to only one peer could be enough to watch all the channels that are possible to share via cardspider. In practice you will likely connect to some more peers for two reasons:

1. when this one peer is down you loose all shared channels.
2. to be able to view channels that are not on this peers network.

In this tutorial we use the three config files available at our download page (democonfig.rar) as example. These files can also, when modified according to your personal setup, be used as basis for your own cardspider server.

Basic needs for running cardspider via internet:

A Dreambox (or a linux pc, but that's beyond this readme)

An internet connection to the Dreambox (best: available 24 ours a day, 7 days a week), either direct or via a router.

A static internet IP number (e.g. One that doesn't change every day), or a dynamic IP that is registered at for instance www.dyndns.org or www.no-ip.com .

A valid subscription card. Most cards will do. Supported systems are: Seca, Viaccess, irde*o, Viasat-NDS, Conax, Cryptoworks and Nagravision1. Two important exceptions for now are: Premiere, and Sky UK.

The latest newcamd emu package (already there on most Dreambox images, or available for download on the usual places and in our download section).

An FTP proggy: for instance CuteFTP or the free Filezilla, and a good plain text editor: for instance UltraEdit32 or the free Crimson Editor (just google for these proggies on the internet and you will find them).

Someone who wants to peer with you.

Setting it all up

Network:

When your Dreambox is attached to the internet via a router you need to configure your router first. It must be configured to send all the network traffic (both TCP and UDP) for the network-port your cardspider will run on, direct to your Dreambox. This is called port forwarding. The port number is free to choose, and is configured later via the cardspider config file, but is standard set to 15000. How this port forwarding has to be done on your router depends on the brand and type of router you use, so you have to check your manual.

Needed software:

To run a cardspider server and to use it, you need 3 proggies on your Dreambox. You can find them in the newcamd package (available at our download section), or already installed on your Dreambox. They are:

cardserver.dream
cardspider.ppc
newcamd.ppc

All 3 should be available or send via an FTP prog. in the /var/bin directory on your Dreambox. Don't forget to change/check the user rights off the 3 to: 755. This can be done in most ftp proggies by rightclicking the files and select properties or file attributes.

Note: Some of the current Dreambox images use other names for these 3 files. The files are the same as in the original newcamd package, but they just have another name. So when necessary you can just rename them.

Samples:

Rudream (based):

cardserver.dream is renamed to cardserv

cardspider.ppc is renamed to cardspider

newcamd.ppc is renamed to newcamd

Hydra:

cardserver.dream is cardserver.dream

cardspider.ppc is cardspider.ppc

newcamd.ppc is newcamd.ppc

PLI and Peter Pan:

cardserver.dream is cardserver

cardspider.ppc is cardspider

newcamd.ppc is newcamd

The functions the 3 proggies take care off are:

Cardserver: Is started first* and takes care off sharing your card to the cardspider prog and to the newcamd prog. The sharing to cardspider is there so cardspider can share your card via the cardspider network. The sharing to newcamd is there so you can view the channels from your own card without having to go via the cardspider and to let your card get its updates when necessary.

Cardspider: Is started second* and connects to the cardserver. It takes care off sharing your card on the cardspider network, and makes the virtual cards (the ones that other share) available to the newcamd emu.

Newcamd: Is started third* and connects to both cardserver and cardspider so you can watch channels from your own card and from the virtual cards that are made available by cardspider. Furthermore it let you watch channels whose keys are available in the local keyfiles in the /var/scce directory on your Dreambox (keylist and rsakeylist).

* Reverse Login:

You will later find that by proper configuration files, you can start/restart the proggies in any order. Something called reverse login will take care off the proper connection between the 3 progs.

Configuration files:

All three the proggies use a configuration file to instruct them what to do. They are:

Cardserver: cardserv.cfg

Cardspider: cardspider.cfg

Newcamd: newcamd.conf

You can find samples off them in the newcamd emu package or on your Dreambox (they also contain a very good and extensive readme). They should be available/placed in the /var/tuxbox/config directory on your dreambox.

They are plane text files, and can be opened and edited with a good text editor (for instance ultra-edit32 or Crimson Editor).

As said before this tutorial uses the three config files available at our download section in democonfig.rar as basis for further configuration.

Cardserv.cfg

Open the demo cardserv.cfg file with a text editor and you try to understand what it says.

Some explanation:

DESKEY = 01 02 03 04 05 06 07 08 09 10 11 12 13 14

This is a special encryption key that cardspider and newcamd have use to login to the cardserver (remember: desskey is 14 times any combination of 0 to 9 and A to F). It's set very simple cause we do not allow external network connections to cardserver. The only ones that connect are the local cardspider and newcamd.

SERVER_NAME = cardserver

Speaks for itself; here you name your cardserver. This name is used by cardspider and newcamd for the identification of the cardserver. This is necessary for the reverse login process.

DEBUG_PORT = 14000

The debug port is used to get a list off users connected to the running cardserver.

Usage: telnet connect to your Dreambox and type: telnet localhost 14000 (note: cardserver must be running to use this function).

ENTITLEMENT_PORT = 14001

The entitlement port is used to get info about the cards shared by the running cardserver.

Note: this function only works for seca, conax and cryptoworks cards.

Usage: telnet connect to your Dreambox and type: telnet localhost 14001 (note: cardserver must be running to use this function).

USER = srvcuser srvcpass lan localhost 12000 au

Here we define a user that can login to the running cardserver.

In this case the user is the newcamd prog. We allow here the login for: user srvcuser with password srvcpass connected via lan, running on the localhost (e.g. this machine), and the port to use for reverse login is: 12000. By putting au at the end off this line we tell that this user takes care off the auto update off the card. When you don't put au in this rule it should work as well cause the first user always is au, but it doesn't hurt to leave it here, just to make sure.

USER = srvspuser srvspass lan localhost 15003

Same as point 5.

In this case the user is the cardspider prog. We allow here the login for: user srvspuser with password srvspass connected via lan, running on the localhost (e.g. this machine), and the port to use for reverse login is: 15003.

USER = srvcuser srvcpass lan localhost 12000

Same as point 5.

In this case the user is the newcamd prog. We allow here the login for: user srvcuser with password srvcpass connected via lan, running on the localhost (e.g. this machine), and the port to use for reverse login is: 15000.

#

top card slot

#

SERIAL_PORT = 0

TCP_PORT = 10000

EMM-G = yes

EMM-S = yes

EMM-U = yes

SPECIAL_FEATURES = no

Here we setup the top card slot from the Dreambox to be shared via cardserver.

By editing the cardserv.cfg it's also possible to share the bottom slot, and even a Phoenix connected to the serial port from the Dreambox. You can do that by removing the # in front off these lines at the bottom card slot part, and/or the serial port for Phoenix part.

Note: some cards need some special settings to be shared. You can find some samples in the cardserv.cfg in the original newcamd package.

Cardspider.cfg

Open the demo cardspider.cfg file with a text editor and you try to understand what it says.

Some explanation:

SERVER_NAME = yourspidername

Speaks for itself; here you name your cardspider. This name is used to identify your cardspider server to other cardspider user you connect to. You should alter yourspidername to anything you like, but keep in mind that this name should be unique in the cardspider network you will connect to.

DESKEY = AA BB CC DD EE 11 22 33 44 55 66 77 88 99

This is a special encryption key for logging in to cardspider by your local newcamd proggie (remember: deskey is 14 times any combination of 0 to 9 and A to F). It's set very simple cause in this case it's only used for internal network connections. Note that it's also possible to allow external (wan) newcamd users, but this is beyond this readme.

CWS_MULTIPLE = localhost 10000:10002 srvspuser srvspass 01 02 03 04 05 06 07 08 09 10 11 12 13 14 lan cardserver

Here we define the connection to the cardserver proggie. We tell here we want to login to the cardserver running on the localhost (e.g. this machine), at port 10000 to 10002, as user srvspuser, with password srvspass, with deskey: 01 02 03 etc, via lan and the cardserver is named: cardserver.

Please try to compare these settings with our cardserv.cfg, and you will be able to understand it even better.

Note: we connect here to port 10000 to 10002 from cardserver. In our example it would be enough to connect to only port 10000 (the top card slot), but it doesn't do no harm here to connect to the other two ports too, and it save you some hassle when you decide to use the bottom card slot or the Phoenix.

CWS_KEEPAKIVE = no

When set to yes this option will send so called keep alive messages to the cardserver and spiders you connect to. The purpose off this is to keep the connections up even if there are big timeouts in the connection. At the moment (newcamd 5.26) there still seems to be some problems with this function, so I suggest to set it to no for now.

USER = spncuser spncpass lan localhost 12000

Here we define a user that can login to the running cardspider and that can use the virtual cards (ones shared by others) that cardspider makes available.

In this case the user from the newcamd prog. We allow here the login for: user spncuser with password spncpass connected via lan, running on the localhost (e.g. this machine), and the port to use for reverse login is: 12000.

PEER_INCOMING_PORT = 15000

This option defines the incoming TCP/UDP port that other spiders (peers) that you connect to have to use to connect to your cardspider server. Note that it's default set to 15000, but you can choose any other port, as long as they don't conflict with other ports you might already been using (eg ftp server etc). This port, and ONLY this port have to be opened to the outside world (e.g. internet). So as said before: when your Dreambox is connected to the internet via a router, set up the router to forward all traffic for this port to go directly to the ip address from your Dreambox.

DEBUG_PORT = 15001

The debug port is used to get a status report off the running cardspider. It list running virtual cards, the port they are on, and the assigned providers (see point 12 below). Furthermore it list your peers and shows if they are connected, how many peers they got and the number of cardspider users they have running.

Usage: telnet connect to your Dreambox and type: telnet localhost 15001 (note: cardspider must be running to use this function).

CARD_SCAN_PORT = 15002

The card scan port is used to get a list off available cards in your cardspider network. It shows the card type and the providers.

Usage: telnet connect to your Dreambox and type: telnet localhost 15002 (note: cardspider must be running to use this function).

CWS_INCOMING_PORT = 15003

The CWS incoming port is the port that is used for reverse connections made to the cardserver when necessary (see cardserver.cfg point 5).

SID_SCAN_PORT = 15004

The SID scan port is used to get a list off card type and providers for the channels your cardspider server got requests for in the last 30 seconds.

Usage: telnet to your Dreambox and type: telnet localhost 15004 (note: cardspider must be running to use this function).

```
PEER = 192.168.1.1 15000 otherspider otherspiderpass 01 02 03 04 05 06 07 08 09 10 11 12
13 14
```

In this line you define the other spider users you connect to. The line in the attached sample files is fake, and you need to change it to the correct settings you get from the real peers you will connect to.

In this example we tell that we peer to someone's running cardspider on the ip 192.168.1.1 (this could also be a DNS address that run in a form like this: blabla.noip.com). His incoming port is: 15000. His peer is named: otherspider and the password we use is otherspiderpass. The deskey we use is 01 02 03 etc.

You can add as much lines like this as you like, and with any valid line you add another peer.

Some extra info with sample:

So you found someone who want to peer with you.

Let's say your internet ip is 39.34.23.220, and you defined in your cardspider.cfg that your cardspider server is named: nicespiddie and that you use 15000 as incoming port. This is what happens:

You ask his ip or DNS.

Answer: billy.somewhere.com

You ask him the port his cardspider server is running on (it's what he setup at HIS cardspider.cfg as PEER_INCOMING_PORT (see point 6)).

Answer: 19000

You ask him his server name.

Answer: superspider

Now one off you makes up a password and deskey. These are free to choose, and work only for the connection to this spider, as long as both sides use the same. Let's say he would make it.

Answer: blapass is password, and the deskey is: AA E0 09 12 F3 90 8C 55 21 D4 77 4B 02 C1 (remember: deskey is 14 times any combination of 0 to 9 and A to F).

Now the peer line we add to cardspider.cfg would be this:

```
PEER = billy.somewhere.com 17000 superspider blapass AA E0 09 12 F3 90 8C 55 21 D4 77
4B 02 C1
```

And the peer line he will have to add to his cardspider.cfg is this:

```
PEER = 39.34.23.220 15000 nicespiddie blapass AA E0 09 12 F3 90 8C 55 21 D4 77 4B 02
C1
```

Now both sides have to replace their modified cardspider.cfg in the var/tuxbox/config directory at the Dreambox, and restart the cardspider proggy (this can be done on most images by restarting the newcamd emu).

```
# VIRTUAL SHARED CARDS with Providers:
#
# Seca2
NETWORK_CARD = 0100:00001c:000025:000029:00002a:00002f:000030
TCP_PORT = 4000
#
```

etc, etc.

Here you define the virtual cards that cardspider shares to the newcamd emu.

It defines the tcp port that newcamd can connect to when it gets request for a certain card type and provider.

Note: The fact that the providers are defined in the cardspider.cfg doesn't mean that these providers are available in the cardspider network you connect to. It only makes sure that, when they are, they are shared to newcamd.

Sample:

Let's say cardspider is running and connected to a cardspider network, and that someone on the network is sharing RAI (0100:000030) on 13E.

When you zap on your Dreambox to one off the RAI channels, the newcamd emu gets a request for 0100:000030. As shown above this card is shared on tcp port 4000. So newcamd connects to the virtual card 1 on port 4000 from cardspider and asks for the info to open the channel. Cardspider now sends a request for it on the cardspider network and when it receives the proper info from the RAI card it sends it to newcamd and the channel will open.

Note: in the sample cardspider.cfg I already defined all the providers that are currently available at most cardspider networks and some extra info to speed up zapping for some providers. So there's no need to change this part of cardspider.cfg for now.

NEWCAMD.CONF

Open the demo newcamd.conf file with a text editor and you try to understand what it says.

At the top off the file you find point 1: PREFER_EMU. At the bottom you will find the part that defines the connection to the cardserver and cardspider proggies.

Some explanation:

PREFER_EMU = no

You have to decide for yourself if you put this option to yes or no. Yes means that newcamd will first check your local keyfiles for the correct keys for the channels. When newcamd doesn't find them there it will check for them on the connected network (eg local cards via cardserver and virtual cards via cardspider). A reason to put it to no is that when your own cards keys are available via keyfiles your card will not be used, and wont get it's updates.

```
CWS_MULTIPLE = localhost 10000:10002 srvncuser srvncpass 01 02 03 04 05 06 07 08 09
10 11 12 13 14 lan cardserver
```

In this line you define the connection from newcamd to the cardserver. This connection is here so newcamd can use your own shared card directly without going through the cardspider network, and to let your card get it's updates (when necessary).

We tell here that newcamd should login to cardserver prog on the localhost (e.g. this machine) at port 10000 to 10002 (see cardserver.cfg point 7) and that the username it have to use is srvncuser with the password: srvncpass (see cardserver.cfg point 5). The deskey it have to use is 01 02 03 etc (see cardserver.cfg point 1), and the connection is via lan to cardserver (the name of our running cardserver, see cardserver.cfg point 2).

Note: we connect here to port 10000 to 10002 from cardserver. In our example it would be enough to connect to only port 10000 (the top card slot), but it doesn't do no harm here to connect to the other two ports too, and it save you some hassle when you decide to use the bottom card slot or the Phoenix.

```
CWS_MULTIPLE = localhost 4000:4021 spdncuser spdncpass AA BB CC DD EE 11 22 33  
44 55 66 77 88 99 lan yourspidername
```

In this line you define the connection from newcamd to the cardspider (see also cardspider.cfg point 5). This connection is here so newcamd can use the virtual cards shared by the cardspider proggy.

We tell here that newcamd should login to the cardspider prog on the localhost (e.g. this machine) at port 4000 to 4021 (see cardspider.cfg point 12) and that the username it have to use is spdncuser with the password: spdncpass (see cardspider.cfg point 5). The deskey it have to use is AA BB CC etc (see also cardspider.cfg point 2), and the connection is via lan to yourspidername (the name of our running cardspider, see also cardspider.cfg point 1).

Note: you have to change yourspidername to the name you choose for your cardspider at cardspider.cfg point 1.

```
CWS_CONNECT_TIMEOUT = 20
```

Here we define the timeout for the cardserver to login to the newcamd proggy in 100ms. So here it's set to 2000ms.

```
CWS_INCOMING_PORT = 12000
```

The CWS incoming port is the port that is used for reverse connections made to the newcamd when necessary (see cardserver.cfg point 6 and cardspider.cfg point 5).

```
CWS_DEBUG_PORT = 12001
```

The CWS debug port is used to get a list of cards (real and virtual) that newcamd connects to. It shows the card types and the type of network they're on (e.g. lan or wan). Furthermore it shows how long the connections are up and the ip number and ports the cards are on. Usage: telnet to your Dreambox and type: telnet localhost 12001 (note: newcamd must be running to use this function).

```
CWS_KEEPLIVE = no
```

When set to yes this option will send so called keep alive messages to the cardserver and spiders you connect to. The purpose off this is to keep the connections up even if there are big timeouts in the connection. At the moment (newcamd 5.26) there still seems to be some problems with this function, so I suggest to set it to no for now.

Modify the 3 config files according to your needs and ftp them to the /var/tuxbox/config/ directory on your Dreambox.

GET YOUR SPIDER UP AND RUNNING FOR THE FIRST TIME

Due to the different ways the Dreambox images handle the startup of the cardserver, the cardspider and the newcamd emu there is no general way to get all the 3 proggies up and running. In the quickstart part off this website we give some good examples for the common used images. I suggest that before you use these "automated" ways of getting things started you first follow the next procedure to test if every one off the 3 programs will start without any errors and things, and then, when everything works oke you follow the examples in the quickstart.

Backup your current config files from the /var/tuxbox/config/ directory from your Dreambox (e.g. cardserver.cfg, cardspider.cfg and newcamd.conf). Make sure you forwarded the port chosen in cardspider.cfg (see cardspider.cfg point 6) on your router to your Dreambox.

Make sure your legal subscription card is in the top cardslot of your Dreambox with the chip contacts down (or any other slot you configured in your cardserver.cfg).
Select on your Dreambox for emu: "common interface", "no emu" or "dreamcrypt" (this depends on the image you use, but any off these 3 will do).

Now ftp to your Dreambox and check if all 3 off the proggies (cardserver, cardspider and newcamd) are in the /var/bin/ directory. When they are not there (or just to make sure they are the latest) copy them from the official newcamd package to the /var/bin/ directory. Note: make sure to check for the proper filenames and/or give them the proper name, and that the user rights are set to 755. See the note at: needed software above.

Now ftp connect to your Dreambox and copy your 3 own modified config files (cardserver.cfg, cardspider.cfg and newcamd.conf) to the /var/tuxbox/config/ directory.

Telnet to your Dreambox and type the name off the cardserver proggie for your image (eg: at rudream you type cardserv, and at hydra you type cardserver.dream. See the note at needed software above) and press enter.

Telnet to your Dreambox and type the name off the cardspider proggie for your image (eg: at rudream you type cardspider, and at hydra you type cardspider.ppc. See the note at needed software above) and press enter.

Telnet to your Dreambox and type the name off the newcamd proggie for your image (eg: at rudream you type newcamd, and at hydra you type newcamd.ppc) and press enter.

Now when everything started oke, and properly configured, you should be up and running.

To check if everything works you can zap to the channels you know that are available via cardspider and see if they clear. Other ways to test are listed below.

Test cardserver:

Telnet connect to your Dreambox and type: telnet localhost 14000

You should get a list off connected users (cardspider and newcamd) and check if both are online.

Test cardspider:

Telnet connect to your Dreambox and type: telnet localhost 15001

You should get a list off virtual cards, the users that are connected to them (newcamd) and the status off the peers you connect to.

Telnet to your Dreambox and type: telnet localhost 15002

You should get a list off providers that are in your cardspider network. You will always find your own card's provider, and the ones from others on the network.

Test newcamd:

Telnet connect to your Dreambox and type: telnet localhost 12001

You should get a list off virtual and real cards newcamd is connected to.

When you run into trouble you can always stop the 3 proggies (by typing: killall -9 proggiename in the telnet) and make the necessary changes and restart them again. For newcamd to start again you first have to go to the /tmp/ directory on your Dreambox via ftp and delete the file camd.socket, or type in a telnet session: rm /tmp/camd.socket.

When you don't succeed and want to get back to the original status: replace the 3 config files in /var/tuxbox/config/ by the ones you backed up earlier.

Now reboot your box, and check the quickstart part from our website to automate the start off the 3 proggies.

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