ircDDB Install instructions

This document describes the installation of the ircDDB-add-on on Icom-Hard- and Software based D-Star-Gateways.

Please note, that this add-on is not necessary if you use the G4KLX ircDDBGateway in combination with the Icom Controller RP2C !
This add-on only works together with the DStar-Gateway Software provided by Icom !

Please check appendix 2 before you start the installation on a system which already has a former ircDDB-version installed without using Yum-packages!

Overview of the Installation process:

- The script will first add the ircDDB repository to the YUM-repository list.
- Next it will install and configure the ircDDB-mheard software.
  Settings will be copied from existing configuration files as far as possible.
- After successful installation the script will ask you to start it again with the irccDDB password as a parameter.
  This password is provided by the ircDDB registration server by email after performing the registration process and approval by the admin team.

ircDDB requires registration of gateways, without a login password it won't work!

- Optional configuration steps are necessary to use "QRGs&Maps".

Please join the ircDDB Yahoo-Group < http://groups.yahoo.com/group/ircddb > and check for more information and support.

Detailed description of the Installation:

Step 1:

Add the ircDDB repository to your YUM settings:

This command will do that for you:

```
curl http://group1-update.ircddb.net/ircDDB/centos55/ircddb.repo -o /etc/yum.repos.d/ircddb.repo
```

This only works on YUM-based systems.
Please check our download server for other packages if needed.

Step 2:

Install the configuration script:

```
yum clean expire-cache
yum -y install ircddbconfig
```

Step 3:

Run the configuration script:

```
/usr/sbin/ircddbconfig
```

The script will pick settings from existing configuration files.
Please check the output on the screen to see if any additional actions are required.

Step 4:

On request run the configuration script again with the required password for network access.

```
/usr/sbin/ircddbconfig ircddbpassword
```

The password is provided by the ircDDB admin team during the gateway registration process.
Please use this website for registration: http://regsrv.ircddb.net/index.htm

Step 5:

Finally have a look at the ircDDB gateway status < http://status.ircddb.net/cgi-bin/ircddb-gwst >, your gateway should be shown with a green "LED".
Press the PTT and check "ircDDB-live" < http://ircddb.net/live.htm > and the ircDDB-LastHeard table < http://status.ircddb.net/ >, it should show your routing information.

Welcome at the ircDDB network!

Step 6 (optional)

ircDDB offers to show your gateway on Google Maps and some additional information on the status webpages.
We called this option “QRGs&Maps”.

Before you configure “QRGs&Maps” read some important privacy notes:

- *All information is provided by your gateway and in your own responsibility.*
- *The functionality may easily be switched off by deleting the appropriate configuration options.*
- *"QRGs&Maps" settings are not necessary to run ircDDB for routing.*
- *Everything shown on the web once may be stored in databases by others.*

You need to add some information to the ircDDB main configuration file to get your gateway shown on the maps of the ircDDB statuspage.
You will find that configuration file in /etc/ircddbd, it is called ircDDB.properties.

If your system is running DStarMonitor you may use a script to convert some of the necessary settings from the APRS-Settings in the dstarmonitor.properties and use it for a template.
You may download the necessary script here:

http://download.ircddb.net/ircddb-icom/tools/ircddb-cpprop.pl

After download copy the file for example to /usr/sbin and make it executable using the command

```
chmod +x ircddb-cpprop.pl
```

Start the script, it will ask you for 2 lines of text, each of max. 21 characters.
This is the text shown on the web in the QTH-field of the status-table
http://status.ircddb.net/cgi-bin/ircddb-gwst
and on the webpage
http://status.ircddb.net/cgi-bin/ircddb-gwdetails

This text should characterize location or ownership of your gateway and help to identify it later in a list or on the display of a transceiver. Something like “ircDDB Gateway”, software versions, URLs and that kind of stuff won’t help anybody. This kind of information is shown automatically at other places on the status page.

Next the script will read your /opt/dstarmon/dstarmon.properties and parse it.
The relevant configuration lines should usually look like this in the source file:

```
# repeaterIDA=30.000;-15.0000;40;1.2 Voice 1293.00MHz -20Mhz
repeaterIDAD=50.396389;7.205278;20;1.2 Data 1242.225MHz 128K
repeaterIDB=50.396389;7.205278;40;440 Voice 439.5625MHz -7.60 MHz
# repeaterIDC=30.000;-15.0000;40;2m Voice 147.360MHz +.600 MHz
```

You may recognize a line for each active module of your system.
The lines are separated into 4 fields by a semicolon: latitude, longitude, range in miles and a free text field which usually keeps mode, frequency and shift.
The last field may create issues, free text can only be parsed correct if the format is like here in the sample.

The script will show the parsed values on the screen.

The output will then be added to /etc/ircddbd/ircDDB.properties

The script will create a backup of the original properties file at each start.
It will also clean the properties from former entries before it adds new values.
So you may start the script as often as you like but it is only necessary after you have changed anything on the DSM properties.

!!! After the script has ended you urgently need to have a look to the resulting config-file /etc/ircddbd/ircDDB.properties !!!

As mentioned above the result may only be used as a template, it must not be correct!
At the end of the configuration file you should now find a block like this:

```
rptr_freq_AD=1242.225
rptr_range_AD=20
rptr_freq_B=439.5625
rptr_duplex_shift_B=-7.60
rptr_range_B=40
rptr_pos_latitude=50.396389
rptr_pos_longitude=7.205278
rptr_pos_text1=Gaensehals (JO30oj)
rptr_pos_text2=Mayen-Koblenz
```

You may recognize the values extracted from dstarmon.properties shown above:
- frequency and range for an AD-module
- frequency, shift and range for module B **in miles** !!! (APRS standard)
- latitude and longitude in degrees, decimal notation
- and the 2 lines of text.

Modules may usually be A, B, C, D, AD (DD-Module on SHF).

Please correct frequency and shift if necessary, it MUST all be in MHz!!
A shift of -600MHz on 2m band is impossible! 600kHz must be shown as -0.6 !
Note that the shift may be + or - !
A lot of stations are using wrong locations since years in the APRS settings of DSM and never recognized it.
Note that this will be shown wrong in QRGs&Maps also after the transfer!

You may create the additional entries to ircDDB.properties manually instead of using the script.

After that some other entries have to be added manually.
The order of all entries does not care. I grouped entries by modules.
Comments may be added, comment lines have to start with a “#” at the first position.

The following sample shows some additional options added to the file shown above (marked in red):

```
# QRG of module AD in MHz
rptr_freq_AD=1242.225
# Range of module AD in miles
rptr_range_AD=20
# Antenna hight above ground in meters
rptr_agl_AD=25
# QRG of module B in MHz
rptr_freq_B=439.5625
# Duplex shift of module B in MHz
rptr_duplex_shift_B=-7.60
# Range of module B in miles
rptr_range_B=40
```

```
# Antenna hight above ground in meters
rptr_agl_B=30
rptr_pos_latitude=50.39683333
rptr_pos_longitude=7.20500000
rptr_pos_text1=Gaensehals  575m asl
rptr_pos_text2=Mayen-Koblenz
rptr_info_url=http://db0myk.prgm.org
```

rptr_agl_<module-id> is the antenna hight **ABOVE GROUND LEVEL!!**
Different modules may have a different antenna hight.
Note that this is not ASL /above sea level and not AAT / above average terrain like used for APRS, it is above ground!

In a later step we want to provide maps which show real coverage areas based on systems like Google Earth or similar. These areas are given by the calculated range based on radiated power and on the antenna hight above ground level.
The ground level of the location is given by the exact coordinate.

rptr_info_url is a URL shown on the status pages which shows more information of your repeater on a local website. Note: Links to commercial websites are not allowed in the ircDDB network!

rptr_pos_text1 and **rptr_pos_text2** are fields to provide information about the gateway location. Each is max. 20 characters, no special characters, no weblinks, no html-tags, plain ASCII text.
Both fields are shown on the ircDDB.net webpages, but only **rptr_pos_text1** is used for the memory channel lists. This data will appear on the display of the transceivers and should identify the gateway.

All these data are sent out to the ircDDB network at each start of "ircddbd", so you need to restart it using

```
/sbin/service ircddbd restart
```

or

```
/etc/init.d/ircddbd restart
```

Check the “qrgs&maps” on the ircDDB webpage for your gateway and correct wrong data.

We intend to use these data for the creation of memory lists for most common D-Star devices.
Wrong data won’t be helpful for anybody, it will make that system useless!

In case of questions please first check the ircDDB Yahoo group and use its’ search feature.
If you don’t find anything helping you please ask the community, this will help us to save our time for development of new features.

Hundreds of systems have been set up, some admins have installed a dozen of systems, there is a lot of experience in the group.

Please don’t send us personal emails before checking for available information!

Thank you!

Appendix 1:

Location of the ircDDB files

YUM ircDDB repository:

`/etc/yum.repos.d/ircddb.repo`

Binaries:

The daemons `ircddbd` and `ircddbmhd` are located in `/usr/sbin/`

The Java-apps - as variable part of the installation - are located in `/var/cache/ircddbd/`
The apps are updated automatically on a restart of `ircddbd`.

Start/Stop-Scripts:

The daemons are started by 2 separate scripts

```
/etc/init.d/ircddbd
/etc/init.d/ircddbmhd
```

Start the 2 components:

```
service ircddbd start
service ircddbmhd start
```

Stop the 2 components:

```
service ircddbd stop
service ircddbmhd stop
```

Check the status of the 2 components:

```
service ircddbd status
service ircddbmhd status
```

Logfiles:

The log files are located it at `/var/log/ircddbd`

All components of the package can be found here: http://github.com/dl1bff

Appendix 2:

Updating from older ircDDB versions

Major Changes:

With this software version we will have some major changes:

- ircDDB no longer uses DSM.
  Instead we have created an own software "ircDDB-mheard".
  This software provides a lot more information that we want to share on the ircDDB network.
  Note: DSM will still be needed for reporting to dstarusers.org and for DPRS/APRS.
  ircDDB-mheard is no replacement for DSM!
  ircDDB-mheard makes the ircDDB system independent from DSM and more flexible.
  ircDDB-mheard improves the communication to the ircDDB-network.
- The install mechanism of the ircDDB software changed.
  Most of the Icom gateways run CentOS5.
  On this systems we will use standard YUM packages provided from an own repository.
  This will make installation and update easier than before.
- We now use a new directory structure for the ircDDB software which is FHS compatible
  < http://www.pathname.com/fhs/pub/fhs-2.3.html >.

Before installation of the new ircDDB version:

The last DSM update 2.7b01 already cleaned up ircDDB specific changes to the DSM properties and startup files.
Make sure that you installed this update before you start to install the new ircDDB software!
(Please check Brian Roode's information in Yahoo-Group "DStarAdmin" / Message 620 from dec 27th 2010 for more details)

After installation of the new ircDDB version:

Clean up old home directory of user ircdbb:

With the new installation packages we moved the home directory of user "ircddb" to /home/ircddb.
SELinux complained about the former home directory which was the install/working directory.

If you are running SELinux you need to perform the following commands:

Delete the content of folder /opt/ircDDB/

```
rm -Rf /opt/ircDDB/*
```

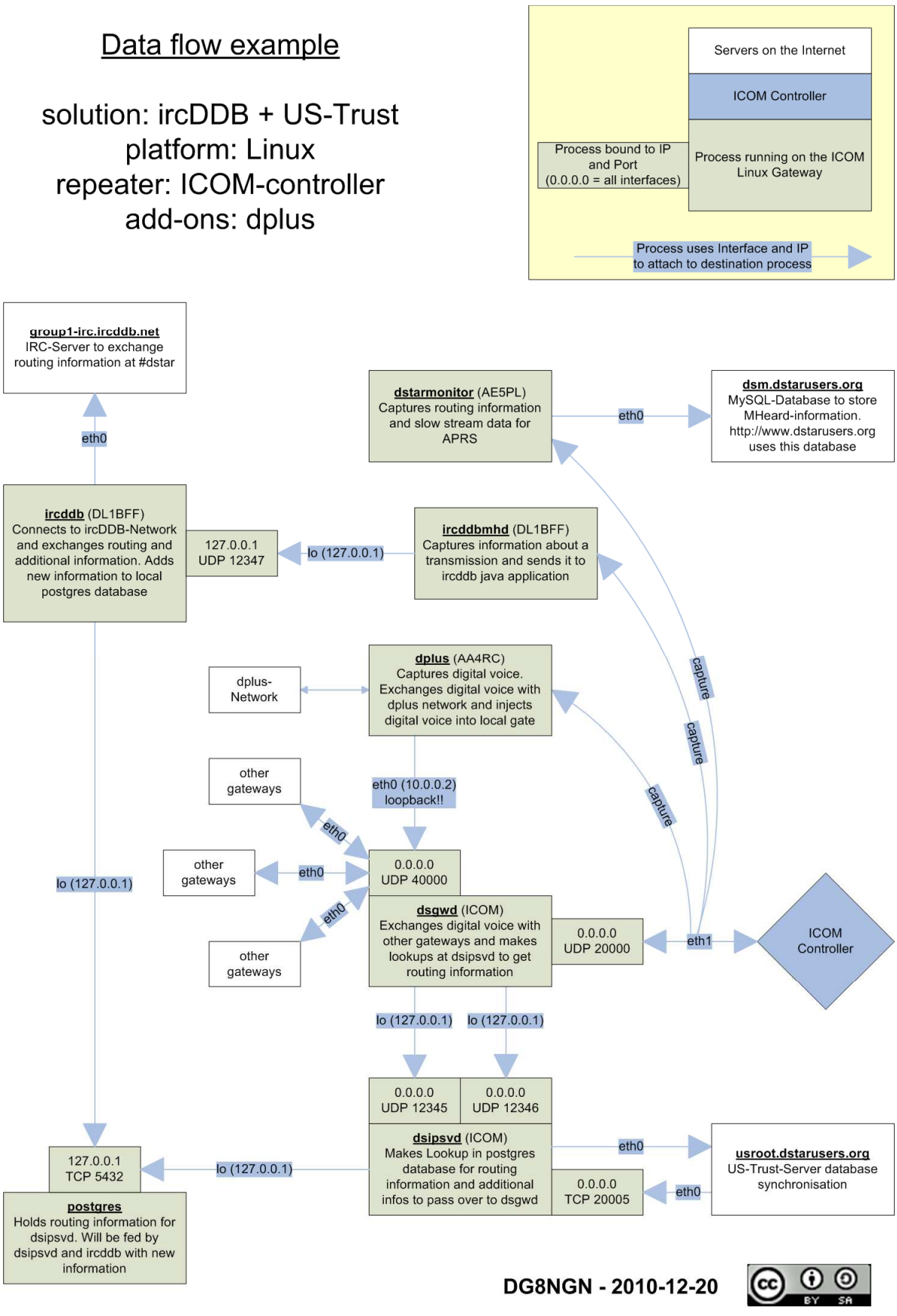
Move the user's home directory from /opt/ircDDB to /home/ircddb

```
/usr/sbin/usermod -d /home/ircddb -m ircddb
```

If you already tested ircDDB-mheard before you may also remove `/usr/local/sbin/ircDDB-mheard`

These components are no longer required.

Appendix 3:


Data flow example
solution: ircDDB + US-Trust
platform: Linux
repeater: ICOM-controller
add-ons: dplus
Servers on the Internet
ICOM Controller
Process bound to IP and Port (0.0.0.0 = all interfaces)
Process running on the ICOM Linux Gateway
Process uses Interface and IP to attach to destination process
group1-irc.ircddb.net
IRC-Server to exchange routing information at #dstar
eth0
dstarmonitor (AE5PL)
Captures routing information and slow stream data for APRS
eth0
dsm.dstarusers.org
MySQL-Database to store MHeard-information.
http://www.dstarusers.org uses this database
ircddb (DL1BFF)
Connects to ircDDB-Network and exchanges routing and additional information. Adds new information to local postgres database
127.0.0.1
UDP 12347
lo (127.0.0.1)
ircddbmhd (DL1BFF)
Captures information about a transmission and sends it to ircddb java application
capture
dplus-Network
dplus (AA4RC)
Captures digital voice.
Exchanges digital voice with dplus network and injects digital voice into local gate
capture
other gateways
eth0 (10.0.0.2)
loopback!!
capture
eth0
other gateways
eth0
0.0.0.0
UDP 40000
lo (127.0.0.1)
eth0
other gateways
dsgwd (ICOM)
Exchanges digital voice with other gateways and makes lookups at dsipsvd to get routing information
0.0.0.0
UDP 20000
eth1
ICOM Controller
lo (127.0.0.1)
lo (127.0.0.1)
0.0.0.0
UDP 12345
0.0.0.0
UDP 12346
127.0.0.1
TCP 5432
lo (127.0.0.1)
dsipsvd (ICOM)
Makes Lookup in postgres database for routing information and additional infos to pass over to dsgwd
eth0
usroot.dstarusers.org
US-Trust-Server database synchronisation
0.0.0.0
TCP 20005
eth0
postgres
Holds routing information for dsipsvd. Will be fed by dsipsvd and ircddb with new information
DG8NGN - 2010-12-20