javAPRS Filter Users Guide
by Roger Bille, SM5NRK

NOTE: This is the JavAPRS Filter Guide from F5VAG's website, with some minor additions, redone with HTML formatting to make it more readable and easily searched.

3.0 javAPRSFilter Users Guide.

Introduction:

The APRS-IS full feed today has a lot of traffic and requires a high bandwidth, in particular for the APRS-IS server sites, but also for some of you that connect that are only interested in the particular traffic. To accommodate this a number of servers have special regional feeds which filter the traffic. There are also some weather specific feeds available. But all these are setup according to what the server operator "thinks" will be good for the users. Now we can take this one step further.

Now will each of you be able to select what traffic you are interested in and the server will create a unique feed for you. There is great flexibility to construct your personal feed.

How does it work?
Pete Loveall AE5PL have written the APRS-IS server software javAPRSSrvr in java which is used by a number of servers. Pete has been kind to create some hooks into his server software so I have been able to write a filter add-on, javAPRSFilter (also in java). These 2 applications work together to provide this filtering. Status on the APRS-IS servers can be found here:
http://ahubswe.net/aprs_stat.asp

You define the filter by doing the following:

1. Connect and logon to a filter-enabled port 14580 on an APRS server.
2. Send an APRS message to the server requesting the filter(s) you want.

[Most modern APRS programs can be set do this automatically as part of the server log-on setup.]

Filter commands

There are 12 different kinds of filters that can be used in any combination. Each filter works independently and is additive to the feed. This means if the filter finds a match it will be passed to you. The filter commands in the APRS message to the server's call is started with the word 'filter' (without quotes) and each filter command is delimited by a single space. A message with just 'filter?' (without quotes) will return the current filter definition. **NEW: Filters can also be subtractive if preceded with a " - "** See "EXCLUDE Items" below.

You can filter by:

RANGE | CALL SIGN PREFIX | BUDLIST (List of specific callsigns)
PACKET TYPE | APRS SYMBOL | DIGIPEATER | Lat/Long Boxed AREA
APRS-IS Q-construct | OBJECT NAME | Range from MYSELF |
Range from a FRIEND | EXCLUDE Items

[These links jump to places farther down on this page.]

#1 Range filter

The range filter will pass all stations and objects within a distance from a set location. It will also pass messages to stations within the filter and positions of the message sender even if they are outside the range. Up to 9 range filters can be used at the same time to extend the areas when you have problem to find a good circle match.

Syntax: r/lat/lon/dist [r/lat1/lon2/dist2 [[r/lat2/lon2/dist2]]

Where: r = range command
lat = latitude in degrees. Negative for south
lon = longitude in degrees. Negative for west
dist = distance in kilometers from lat/lon.
I'm sorry we don't use miles here in Sweden ;-)

Samples:

`r/55/-4/600`   This will pass all traffic for UK
`r/37/-81/1500`   This will pass all east cost US traffic

From V3.0 lat and lon can be in decimals. E.g. 58.5

#2 Prefix filter

Note: This filter is kept for backwords compatibility. The Budlist filter now support this functionality. (from V 1.4)

The prefix filter will pass traffic based on if the sender's call starts with a specific pattern.

Syntax: p/p1/p2/p3…

Where: p = prefix command
p# = The prefix (starting) pattern

Samples:

p/K   This will pass all traffic from stations starting with K

p/SK/F   This will pass stations starting with either SK or F

p/SM5NRK   This will pass all traffic from SM5NRK and any SSID at the end

#3 Budlist filter

The budlist filter will pass traffic based on exact match of the sender's call or call starts with a specific pattern (from V 1.4). Also the SSID is part of the exact match.

Syntax: b/call1/p1*/call3/p2*…

Where: b = budlist command
call# = The prefix (starting) pattern
p# = The prefix (starting) pattern

Samples:

b/SM5NRK   This will pass all traffic from SM5NRK without any SSID

b/SM5NRK-5/SK5UM   This will pass all traffic from SM5NRK-5

b/K*   This will pass all traffic from stations starting with K

b/SM5NRK/F*   This will pass all traffic from SM5NRK and stations starting with F

#4 Type filter

The type filter will pass traffic depending on the packet type. More than one type can be defined in one single command.

Syntax: t/type

Where: t = type command
type = is one or more of the following letters
p = Position packets
o = Objects
i = Items

m = Message
n = NWS Weather and NWS Area Objects
w = Weather
t = Telemetry
q = Query
s = Status
u = User-defined

Samples:

t/p　　This will pass all traffic with a position

t/w　　This will pass all weather traffic. For positionless weather objects the corresponding position packet will also be sent when it is next heard

t/mos　　This will pass all messages, objects and status traffic

Remember that the APRS message must start with the word filter and then the commands.

The above filters can be combined as explain above. Each filter will however working independent of the others, for example:

filter r/63/16/1000 r/55/-4/600 p/F b/AE5PL t/s

The above filter will pass all traffic within Nordic (range#1) AND UK (range#2) AND stations starting with F (prefix) AND from AE5PL (budlist) AND all status traffic (type).

#5 Symbol filter

The symbol filter will pass traffic based on the symbol in the packet.

Syntax: s/pri/alt/over

Where: s = symbol command
pri = symbols in primary table
alt = symbols in alternate table
over = overlay character (case sensitive)

Samples:

s/->　　This will pass all House and Car symbols (primary table)

s//#　　This will pass all Digi with or without overlay

s//#/T　　This will pass all Digi with overlay of capital T

#6 Digipeater filter

The digipeater filter will pass all packets that have been digipeated by a particular station(s). Remember that a packet can many time go different routes

to get to APRS-IS and might be digipeated by other stations that is shown. These
packets are filtered out by various filters/application as duplicates. More that
one digipeater can be entered and each are OR together.

Syntax: d/digi1/digi2…

Where: s = digipeater command
digi# = digipeater call

Samples:

d/SM5NRK-2   Pass all packets digipeated by SM5NRK-2

d/SM5NRK-2/SK5UM   Pass all packets digipeated by SM5NRK-2 or SK5UM

#7 Area filter

The area filter works the same as range filter but the filter is defined as a
box of coordinates. The coordinates can also been seen as upper left coordinate
and lower right. South and west are negative. Up to 9 area filters can be
defined at the same time.

Syntax: a/latN/lonW/latS/lonE

Where: a = area command
latN = North latitude border (-90 to 90)
lonW = West longitude border (-180 to 180)
latS = South latitide border (-90 to 90)
lonE = East longitude border (-180 to 180)

Sample:

a/50/-130/20/-70   This will pass all traffic in US

From V3.0 onward, lat and lon can be in decimals. E.g. 58.5

#8 q Construct filter

The q Construct filter will base all filtering on the q Construct used on the
APRS-IS. For more information about q Contract look here:
http://www.aprs-is.net/q.htm

Syntax: q/con/ana

Where: q = q Construct command
con = list of q Construct to pass (case sensitive)
ana = analysis based on q Construct.
i = Pass positions from IGATES identified by qAr or qAR.

Sample:

q/C   Pass all traffic with qAC

q/rR   Pass all traffic with qAr ot qAR

q//i   Pass all position packets from IGATES indentified

in other packets by qAr or qAR

#9 Object filter (from V1.4)

Same as BudList but acts on the object names instead of sender's call.

Syntax: o/name1/n2*/name3/n3*...

See Budlist for more information

#10 My Range filter

The my range filter will pass all stations and objects within a distance from your own station. It will use the location sent for the same call as you used when you logged onto the server. This is useful if you have an mobile station with internet connection. It will then always pass the local stations no matter of where you are.

Note: This will not work until a valud position has been sent from the same call-ssid you used when you logon to the server.

Syntax: m/dist

Where: m = my range command
dist = distance in kilometers from lat/lon.

Samples:
m/500   This will pass all traffic within 500 km from my location.

#11 Friend Range filter

The friend filter works the same as My range filter, except you define which call-ssid should be used (see more above). Up to 9 friend filters can be defined. This is a moving filter so it is following the call-ssid last known position.

Note: This will not work until a valud position has been sent from the call-ssid defined.

Syntax: f/call/dist

Where: f = friend range command
call = call to be used as center of the range
dist = distance in kilometers from lat/lon.

Samples:
f/SM5NRK/500   This will pass all traffic within 500 km from SM5NRK's last position.

#12 Exclusion filter

All the above filters also support exclusion. Be prefixing the above filters with a dash the result will be the opposite. Any packet that match the exclusion filter will NOT pass. The exclusion filters will be processed first so if there is a match for an exclusion then the packet is not passed no matter any other filter definitions.

The exclusion filter is especially valuable to prevent APRS maps from being flooded with the thousands of non-RF non-ham CWO (Citizens Weather Observer) stations that share the APRS Internet system with licensed amateurs.

Samples:

`a/50/-130/20/-70 -b/CW*`   The area filter says to pass all traffic in US. The -b filter says to exclude any stations that starts with CW.

`a/50/-130/20/-70 -s/>j`   The area filter says to pass all traffic in US. The -s filter says to exclude any stations with Car or Jeep symbols.

Support

I do monitor the aprssig and UI-View mailing lists so please post any questions there.

73 de sm5nrk/Roger

Notes by F5VAG:

- Connect only to port 14580 of a server to use a custom filter
- Check the server's status page to see your connection status and filter (e.g.: http://france.aprs2.net:14501/)
- If you use a filter like "m/dist", based on your own location, you have to send a position beacon in order to receive data from the server
- If you download "filter.txt", you can replace the outdated version in your UI-View32/Docs directory.

[Download raw version of filter.text](#)

[How to put the filter text in UI-View](#)

[Hit Counter](#)