NSR Digipeater User's Guide
javAPRSSrvr 4.3

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Section 1 - Introduction

NSRDigi provides a generic AX.25 digipeater based on the No Source Route AX.25 digipeater algorithm (www.ax25.net).

NSRDigi extends net.ae5pl.aprssrvr.ClientRcv. It requires javAPRSSrvr to provide the serial interface. While active as an APRS client to javAPRSSrvr, it neither sends nor receives packets to/from javAPRSSrvr. It solely makes use of the serial interface capability of javAPRSSrvr to act as completely independent digipeater that is fully AX.25 compliant.

Section 2 - Program Requirements and Description

NSRDigi is designed to run on any OS and Java VM supported by javAPRSSrvr.

NSRDigi is comprised of a number of classes which Java looks at as objects. The main class is net.ae5pl.nsrdigi.NSRDigi. This class is called at startup, sets parameters, and begins execution.

NSRDigi monitors the RF receive to determine if any packets meet the criteria for being digipeated. It does dupe checking. It adheres to the NSR digipeater algorithm found at www.ax25.net Although it is an extension of net.ae5pl.aprssrvr.ClientRcv, it is not APRS-specific and provides NSR digipeating to all protocols using the AX.25 transport.

Section 3 - Configuration Properties

The configuration properties reside in properties files for each client adjunct, server adjunct, and port. The main properties file is called javaprssrvr.properties by default. You can use any text file for the main properties file if you pass the name into javAPRSSrvr as a command line parameter.

The property names are not case sensitive but the values can be. Defaults are shown below.

NOTE: UNLESS YOU REQUIRE A SETTING OTHER THAN THE DEFAULT, DO NOT INCLUDE ANY PARAMETERS WITH DEFAULT SETTINGS.

List parameters (L) may be defined on the property line or may be defined in a text file with the suffix .lst. If defined on the line, each entry is separated by a semicolon. If defined in a file, each entry is put on a separate line in the .lst file and the file name is the property value. Do not put blank lines in the file. For instance, this could be a definition for ListProperty (example only):

ListProperty=first.aprs.net:1313;second.aprs.net:1313

Or you could have the following 2 lines in a file named hubs.lst:

first.aprs.net:1313
second.aprs.net:1313

with ListProperty=hubs.lst

Properties preceded by a (M) are unchangeable and should not be included in your properties files. They are included in the descriptions below to indicate what common properties are available vs. those that have been forcibly overridden.

javAPRSSrvr Properties

Clients=

(L)This must include the NSRDigi properties file.

NSRDigi Properties

Class=

This must be set to net.ae5pl.nsrdigi.NSRDigi.

ClassPath=

(L)This must include NSRDigi.jar.

StationCall=

This is the callsign-SSID for the digipeater.
It must conform to AX.25 standards and it must be different from javAPRSSrvr's ServerCall (the server's callsign-SSID) and any other station's callsign-SSID visible to APRS-IS. It may share the same callsign-SSID as an APRSIGate instance running in the same instance of javAPRSSrvr and sharing the same serial interface. This allows APRS identification of the digipeater.

IntfName=

This is the name of the serial interface. This must match the respective Serial Interface IntfName property.

TNCPort=0

This is the TNC port (leave at zero for single port TNCs) to use.

ParseErrorLevel=WARNING

Sets logging level for packet parsing errors. Set to FINE to suppress parsing errors from being logged.

Digipeater Properties

MaxHops=8

This specifies the maximum digi hops allowed in the path to be eligible for digipeating.
NSRDigi does compensate for UIFlood digis, including digis with NOID turned off. If this is -1, then no hop check is done.

DupeTime=10

Number of seconds that the digi considers recent.
This is used for dupe checking.

Exclude=

(L)This is the list of all callsign-SSID's to be excluded from digipeating.

Backups=

(L)This defines digipeaters which will be monitored for activity by NSRDigi.
If any station in this list is not heard for RecentTime minutes, NSRDigi will begin to digipeat.

RecentTime=30

This is the time in minutes that NSRDigi will wait before assuming a station on the Backups list has gone away.

Source Routing Properties

Aliases=

(L)This is the list of all standard aliases to be responded to.
DISCVR is always recognized as an alias to support layer 2 discovery and does not need to be included in your alias list.

AllowLastDigi=

(L)This defines digipeaters which will be digipeated by NSRDigi.
This is to enable other digipeaters to be considered part of the LAN. The idea is to support one or two other digipeaters as part of the LAN while filtering out remote LANs networks.

nsExcludeDigis=

(L)This defines digipeaters which will cause NSRDigi to ignore a packet if the packet has already been digipeated by a listed digipeater.
This allows the sysop to define where the LAN stops and allows for overlapping LANs.

useExcludeDigis=true

This indicates whether the nsExcludeDigis list will be used.
If set to false, only digis in the AllowLastDigi list will be allowed in the path.

nsDefaultPath=DISCVR

This defines extra vias to be appended after this station's callsign. This is a comma separated list as would be expected in a TNC2 path.
Do NOT include an * with any call.

Section 4 - Recommended Configurations

A sample digipeater for WIDEn-n operation (also provides support for older RELAY and WIDE):

Aliases=WIDE1-1;WIDE2-2;WIDE2-1;RELAY;WIDE
nsDefaultPath=WIDE2-1
MaxHops=2

Use AllowLastDigi and nsExcludeDigis to define any surrounding digipeaters that either make up the local area network or that should be excluded from the local area.

A sample fill digipeater:

Aliases=WIDE1-1;RELAY
nsDefaultPath=WIDE2-1
MaxHops=2

Section 5 - Installation Instructions

You must include NSRDigi.jar in the ClassPath property in your NSRDigi properties file.

Set Clients= to point to your NSRDigi properties file.

Section 7 – XML Status Page