Sender Overview

Sender application can be used to send Vehicle Situation, Intersection, and Object Registration/Discovery data to the clearinghouse/warehouse. The application receives messages such as VehSitDataMessage or IntersectionSituationData or partial messages (IntersectionRecord) from various sources and delivers them to the clearinghouse/warehouse via appropriate dialogs.

Note that since the dialogs are created by the sender, it will pick a dialogID when creating a new dialog and will overwrite the dialogID in the incoming messages with that dialogID.

Incoming BER messages can be binary, HEX string, or Base64 strings. The message can be consumed from a UDP port, pipe, file, or files in a folder. Folder monitoring is not supported in this version.

Sender uses JSON-based configuration file to describe all aspects of execution as described below.

All sections (top level members) are optional and all fields have defaults.

Configuration files fields:

source specifies source and type for the incoming data

pipe source is standard input as HEX or BASE64 string. Default: *false*

file source is a file containing BER message(s)

folder source is a list of files in a folder

path path to a folder containing files

filter expression to filter the files. For example, *\*.ber* .

port source is a UDP port to listen on. If pipe, file, folder, or port is not provided the default is port with port value of *46750*.

type incoming message format. Valid values: BER, HEX, BASE64. Default: *BER*

delay sleep milliseconds before resending a record. Default: *500* (.5 second)

destination specifies target host, port, and reply port for sending data to

host target server name or IPv4/IPv6 address. Default: *localhost*

sendPort target port. Default: *46751*

recvPort reply to port for sending. Default: *46752*

fromPort local port to send from. Default: *46753*

dialog specifies target host, port, and reply port for trust establishment

group GroupID to use in the dialog. Default: *0* (i.e. unspecified)

type SemiDialogID type name of the dialog. Options include *advSitDataDep*, *vehSitData*, *intersectionSitDataDep, objReg, or objDisc* Default: *intersectionSitDataDep*

custom dialog specific auxiliary settings

record for *intersectionSitDataDep* dialog signals that incoming messages are individual IntersectionRecord(s) and not IntersectionSituationData. for *advSitDataDep* dialog signals that incoming messages are just the asdmDetails.advisoryMessage portion(s) of the full AdvisorySituationData message.

for objReg dialog signals to build a new ObjectDiscoveryDataRequest message from scratch using provided serviceId and region ignoring messages found at source location

for objDisc dialog this field is ignored Default: *false*

serviceId for objReg and objDisc dialogs only. Valid values are (1=sdc,2=sdw,3=scms,4=other) Default: 1

svcProvId for objReg only. A 4 byte ServiceProviderID. Object Registration records are uniquely identified in the database via the combination of serviceId and svcProvId. You can have multiple records for a given serviceId given they have different svcProvId values. svcProvId values (1-4) are reserved for use by the Data Warehouse. Values above 5 are available for general use. Default:5

ttl set this time in the IntersectionSituationData or AdvisorySituationData message. No default.

region set this geo region in the IntersectionSituationData, AdvisorySituationData, ObjectDiscoveryDataRequest, and ObjectRegistrationData messages. If record is true and region is not given, default is nw (43.0, -85.0), se (41.0, -82.0)

nw north-west corner

lat latitude

lon longitude

se south-east corner

lat latitude

lon longitude

records maximum records per dialog. Default: *5000*

timeout close dialog after timeout seconds of inactivity. Default: *20000 (20 seconds)*

request provides disposition for trust establishment and data receipt

ignore ignore trust establishment failure. Default: *false*

attempts maximum trust establishment retries. Default: *3*

timeout socket receive timeout in milliseconds. Default: *3000* (3 seconds)

resend provides disposition for resending failed dialogs

recvPort port number for receiving packets during resend. Default: *46754*

fromPort local port to send from. Default: *46755*

delay sleep milliseconds before resending a record. Default: *500* (.5 second)

attempts maximum dialog resend retries. Default: *3*

timeout number of milliseconds to wait for receipt. Default: *3000* (3 seconds)

other miscellaneous options

timestamp set timestamp field in a SpatRecord to current time. Default: *false*

verbose pretty print messages being encoded and decoded. Default: *false*

relaxed enable relaxed decoding and disable decoder constrains. Default: *false*

secure specifies certificate list for secure 1609.2 message exchanges

enable if true secure message exchanges are enabled. Default: *False*

psid Provider Service Identifier as decimal number. Default: 12257 *(0x2fe1)*

certs certificate list section. Multiple certificates can be listed there and CA root certificate must be listed first.

cert individual certificate entry (the fields do not have defaults).

name mandatory certificate friendly name. Supported names are CA, RA, and Self in that order.

path mandatory path to the certificate file

key optional key that the certificate is encrypted with

Run sender via run\_app.bat script. Or the command below:

java -cp "fedgov-cv-apps-1.0.0-SNAPSHOT-jar-with-dependencies.jar;." gov.usdot.cv.apps.sender.Sender -c isd\_sender\_config\_base64\_port.json

Sample configuration file:

{

"source":{

"port":46750,

"type":"HEX",

"delay":1000

},

"destination":{

"host":"10.152.191.50",

"sendPort":46751,

"recvPort":46752,

"fromPort":46753

},

"other":{

"verbose": false

},

"dialog":{

"type":"intersectionSitDataDep",

"custom":{

"record": true,

"ttl":1,

"serviceId":4,

"svcProvId":5,

"region":{

"nw":{

"lat":43.1,

"lon":-85.1

},

"se":{

"lat":41.1,

"lon":-82.1

}

}

}

},

"request":{

"timeout":4000,

"attempts":2,

"ignore": false

},

"resend":{

"timeout":4000,

"attempts":3,

"delay":200,

"recvPort":46754

},

"secure":{

"enable": true,

"psid": 12257,

"certs":[

{

"cert":{

"name": "CA",

"path":"/root/store/ca.cert"

}

},

{

"cert":{

"name": "RA",

"path":"/root/store/ra.cert"

}

},

{

"cert":{

"name": "Self",

"path":"/root/store/sdw.cert",

"key":"/root/store/sdw\_key.txt"

}

}

]

}

}