

APS TCPIP Service Provider

User Guide

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1 APSTCPIPService

This service provides, in ways of communication, plain simple TCP/IP communication. Users of this service will however have very little contact with the `java.net` classes.

The following are the points of this service:

- Simple TCP/IP usage.
- Makes use of an URI to provide what I call a "connection point". `tcp:`, `udp:`, and `multicast:` are supported protocols.

Do note that you do need to have a basic understanding of TCP/IP to use this service!

1.1 Security

Makes use of 2 separate services if available for security: *APSTCPSecurityService* and *APSUDPSecurityService*. Neither these nor APSTCPIPService makes any assumptions nor demands on the what and how of the security services implementations. The APSTCPSecurityService must provide secure versions of `Socket` and `ServerSocket`, while APSUDPSecurityService have 2 methods, one to encrypt the data and one to decrypt the data in a `DatagramPacket`.

APS currently does not provide any implementation of the `APS(TCP/UDP)SecurityService`.

1.2 Connection Point URIs

The service makes use of URIs to specify where to connect for sending or receiving.

The URI format is this:

protocol://host:port#fragment,fragment

Protocols:

tcp, udp, multicast

Fragments:

secure - If specified then one of the `APS(TCP/UDP)SecurityService` services will be used.

async (only valid on *tcp* protocol)

1.3 Examples

1.3.1 TCP

1.3.1.1 Write

```
APSTCPIPService tcpipSvc;
...
tcpipSvc.sendStreamedRequest(new URI("tcp://localhost:9999"), new StreamedRequest()
{
    void sendRequest(URI connectionPoint, OutputStream requestStream, InputStream
responseStream) throws IOException {
        // write to requestStream ...

        // read from response stream ...
    }
})
```

1.3.1.2 Read

```

APSTCPIPService tcpipSvc;
...
tcpipSvc.setStreamedRequestListener(new URI("tcp://localhost:9999"), this);
...
void requestReceived(URI receivePoint, InputStream requestStream, OutputStream
responseStream) {
    // Read request from reqStream ...

    // Write response to respStream ...
}

```

Note that there can only be one listener per URI.

1.3.2 UDP / Multicast

Since Multicast uses UDP packets there is no difference between host and port connected UDP or Multicast. The only difference is in the URI where "udp://" is specified for UDP packets and "multicast://" is specified for multicast packets.

1.3.2.1 Write

```

APSTCPIPService tcpipSvc;
...
bytes[] bytes = "Some data".getBytes();
tcpipSvc.sendDataPacket(new URI("udp://localhost:9999"), bytes);

```

or

```

tcpipSvc.sendDataPacket(new URI("multicast://all-systems.mcast.net:9999"), bytes);

```

1.3.2.2 READ

```

APSTCPIPService tcpipSvc;
...
tcpipSvc.addDataPacketListener(new URI("udp://localhost:9999"), this);
...
void dataBlockReceived(URI receivePoint, DatagramPacket packet) {
    byte[] bytes = packet.getData();
    ...
}

```