

USP - Testing with CDRouter

CDRouter is a test automation platform from QA Cafe that contains many test cases for the USP protocol, including the DTP-469 USP Conformance tests.

To test UspPa with CDRouter, you need to configure both the agent and CDRouter.

Configuring UspPa Agent

Use the one of the factory reset settings below in your `usp_factory_reset.conf` file. They configure your agent to use an unencrypted STOMP, MQTT or WebSocket connection to CDRouter.

NOTE: Replace "192.168.1.128" with the IP address or hostname of your CDRouter unit.

STOMP

```
# IMPORTANT: Modify Device.STOMP.Connection.1.Host with the IP address of your CDRouter
Device.STOMP.Connection.1.Host "192.168.100.128"
Device.LocalAgent.Controller.1.EndpointID "proto::controller-id"
Device.STOMP.Connection.1.Username "qacafe"
Device.STOMP.Connection.1.Password "qacafe123"
Device.LocalAgent.Controller.1.MTP.1.STOMP.Destination "/controller-path"
Device.LocalAgent.MTP.1.STOMP.Destination "/agent-path"
Device.STOMP.Connection.1.X_ARRIS-COM_EnableEncryption "false"
Device.LocalAgent.EndpointID "proto::agent-id"

Device.LocalAgent.MTP.1.Alias "cpe-1"
Device.LocalAgent.MTP.1.Enable "true"
Device.LocalAgent.MTP.1.Protocol "STOMP"
Device.LocalAgent.MTP.1.STOMP.Reference "Device.STOMP.Connection.1"
Device.LocalAgent.Controller.1.Alias "cpe-1"
Device.LocalAgent.Controller.1.Enable "true"
Device.LocalAgent.Controller.1.AssignedRole "Device.LocalAgent.ControllerTrust.Role.1"
Device.LocalAgent.Controller.1.PeriodicNotifInterval "600"
Device.LocalAgent.Controller.1.PeriodicNotifTime "0001-01-01T00:00:00Z"
Device.LocalAgent.Controller.1.USPNotifRetryMinimumWaitInterval "5"
Device.LocalAgent.Controller.1.USPNotifRetryIntervalMultiplier "2000"
Device.LocalAgent.Controller.1.ControllerCode ""
Device.LocalAgent.Controller.1.MTP.1.Alias "cpe-1"
Device.LocalAgent.Controller.1.MTP.1.Enable "true"
Device.LocalAgent.Controller.1.MTP.1.Protocol "STOMP"
Device.LocalAgent.Controller.1.MTP.1.STOMP.Reference "Device.STOMP.Connection.1"
Device.STOMP.Connection.1.Alias "cpe-1"
Device.STOMP.Connection.1.Enable "true"
Device.STOMP.Connection.1.Port "61613"
Device.STOMP.Connection.1.VirtualHost "/"
Device.STOMP.Connection.1.EnableHeartbeats "true"
Device.STOMP.Connection.1.OutgoingHeartbeat "30000"
Device.STOMP.Connection.1.IncomingHeartbeat "300000"
Device.STOMP.Connection.1.ServerRetryInitialInterval "60"
Device.STOMP.Connection.1.ServerRetryIntervalMultiplier "2000"
Device.STOMP.Connection.1.ServerRetryMaxInterval "30720"
Internal.Reboot.Cause "LocalFactoryReset"
```

MQTT

```
# IMPORTANT: Modify Device.MQTT.Client.1.BrokerAddress with the IP address of your CDRouter
Device.LocalAgent.Controller.1.EndpointID "proto::controller-id"
Device.MQTT.Client.1.BrokerAddress "192.168.100.128"
Device.LocalAgent.MTP.1.MQTT.ResponseTopicConfigured "/agent-path"
Device.MQTT.Client.1.Username "qacafe"
Device.MQTT.Client.1.Password "qacafe123"
Device.LocalAgent.EndpointID "proto::agent-id"

Device.LocalAgent.MTP.1.Alias "cpe-1"
Device.LocalAgent.MTP.1.Protocol "MQTT"
Device.LocalAgent.MTP.1.Enable "true"
Device.LocalAgent.MTP.1.MQTT.Reference "Device.MQTT.Client.1"
Device.LocalAgent.Controller.1.Alias "cpe-1"
Device.LocalAgent.Controller.1.Enable "true"
Device.LocalAgent.Controller.1.AssignedRole "Device.LocalAgent.ControllerTrust.Role.1"
Device.LocalAgent.Controller.1.PeriodicNotifInterval "600"
Device.LocalAgent.Controller.1.PeriodicNotifTime "0001-01-01T00:00:00Z"
Device.LocalAgent.Controller.1.USPNotifRetryMinimumWaitInterval "5"
Device.LocalAgent.Controller.1.USPNotifRetryIntervalMultiplier "2000"
Device.LocalAgent.Controller.1.ControllerCode ""
Device.LocalAgent.Controller.1.MTP.1.Alias "cpe-1"
Device.LocalAgent.Controller.1.MTP.1.Enable "true"
Device.LocalAgent.Controller.1.MTP.1.Protocol "MQTT"
Device.LocalAgent.Controller.1.MTP.1.MQTT.Reference "Device.MQTT.Client.1"
Device.LocalAgent.Controller.1.MTP.1.MQTT.Topic "/controller-path"
Device.MQTT.Client.1.ProtocolVersion "5.0"
Device.MQTT.Client.1.BrokerPort "1883"
Device.MQTT.Client.1.TransportProtocol "TCP/IP"
Device.MQTT.Client.1.Alias "cpe-1"
Device.MQTT.Client.1.Enable true
Device.MQTT.Client.1.ClientID ""
Device.MQTT.Client.1.KeepAliveTime "60"
Internal.Reboot.Cause "LocalFactoryReset"
```

WebSockets

```
# IMPORTANT: Modify Device.LocalAgent.Controller.1.MTP.1.WebSocket.Host with the IP address of your CDRouter
Device.LocalAgent.Controller.1.EndpointID "proto::controller-id"
Device.LocalAgent.EndpointID "proto::agent-id"

Device.LocalAgent.Controller.1.MTP.1.Protocol "WebSocket"
Device.LocalAgent.Controller.1.MTP.1.WebSocket.Host "192.168.100.128"
Device.LocalAgent.Controller.1.MTP.1.WebSocket.Port "80"
Device.LocalAgent.Controller.1.MTP.1.WebSocket.Path "/controller-path"
Device.LocalAgent.Controller.1.MTP.1.WebSocket.EnableEncryption "false"
Device.LocalAgent.Controller.1.MTP.1.WebSocket.KeepAliveInterval "2000"
Device.LocalAgent.Controller.1.MTP.1.WebSocket.SessionRetryMinimumWaitInterval "5"
Device.LocalAgent.Controller.1.MTP.1.WebSocket.SessionRetryIntervalMultiplier "2000"
Device.LocalAgent.Controller.1.MTP.1.Enable "true"
Device.LocalAgent.MTP.1.Enable "true"
Device.LocalAgent.MTP.1.Protocol "WebSocket"
Device.LocalAgent.MTP.1.WebSocket.Port "80"
Device.LocalAgent.MTP.1.WebSocket.Path "/agent-path"
Device.LocalAgent.MTP.1.WebSocket.EnableEncryption "false"
Device.LocalAgent.MTP.1.WebSocket.KeepAliveInterval "2000"
Device.LocalAgent.Controller.1.Alias "cpe-1"
Device.LocalAgent.Controller.1.Enable "true"
Device.LocalAgent.Controller.1.AssignedRole "Device.LocalAgent.ControllerTrust.Role.1"
Device.LocalAgent.Controller.1.PeriodicNotifInterval "600"
Device.LocalAgent.Controller.1.PeriodicNotifTime "0001-01-01T00:00:00Z"
Device.LocalAgent.Controller.1.USPNotifRetryMinimumWaitInterval "5"
Device.LocalAgent.Controller.1.USPNotifRetryIntervalMultiplier "2000"
Device.LocalAgent.Controller.1.ControllerCode ""
Internal.Reboot.Cause "LocalFactoryReset"
```

Configuring CDRouter

The following instructions are for configuring CDRouter for testing with a RPi running RDK-B. Some tweaking may be necessary with other devices.

First add a new configuration using the CDRouter Web GUI.

Then you need to modify the following testvars:

```
testvar wanIsIp 192.168.100.1
testvar wanIsMask 255.255.255.240
```

If you don't connect CDRouter's designated LAN port to RPi using an ethernet to USB dongle, then you must connect a network switch to CDRouter's designated LAN port instead and set the *lanMode* testvar to 'static':

```
testvar lanMode static
```

Replace the "USP Add-On" section in the configuration with the text below.

If you are testing using a different MTP than STOMP, modify the testvar *uspControllerMTP* appropriately.

```
SECTION "CDRouter USP Add-On" {

    testvar supportsUSP yes

    SECTION "Basic Controller Configuration" {

        # testvar uspControllerID proto::controller-id
        # testvar uspControllerInterface wan

        # testvar uspControllerIpMode ipv4-only
        testvar uspControllerIpv4 192.168.100.128
        # testvar uspControllerIpv6 6000::2
        # testvar uspControllerPort auto
        # testvar uspControllerPath /controller-path

        testvar uspControllerUseNonPayloadProtection no
        testvar uspControllerUseSessionContext no
        testvar uspControllerMTP stomp
        testvar uspControllerMTPEncryption no
        # testvar uspControllerUSPEncryption no
        # testvar uspControllerDomain controller.cdroutertest.com

        # testvar uspSegmentationEnable no
        # testvar uspSegmentationSize auto

        testvar uspControllerMTPCertPath /usr/cdrouter/tests/cdroutertest.pem
# testvar uspControllerMTPCaCertPath /usr/cdrouter/tests/eco_agent_root.crt

        # testvar uspControllerUSPCaCertPath /usr/cdrouter/tests/wildcard.cdroutertest.com-ca.pem
        # testvar uspControllerUSPCertPath /usr/cdrouter/tests/wildcard.cdroutertest.com.pem

        # testvar uspControllerSenderCertPath /usr/cdrouter/tests/wildcard.cdroutertest.com.pem
        testvar uspControllerVerifyRecordIntegrity no

        # testvar uspControllerHost any
        # testvar uspControllerUsername qacafe
        # testvar uspControllerPassword qacafe123

    }

    SECTION "Basic Agent Configuration" {

        # testvar uspAgentID proto::agent-id
```

```

# testvar uspAgentIpv4            auto
# testvar uspAgentIpv6            auto
# testvar uspAgentPort            auto
# testvar uspAgentPath            /agent-path

# testvar uspMessageTimeout        30
}

SECTION "USP Scenarios" {

# testvar uspScenarioPath          /home/dev/myUSPScenario.usp
# testvar uspScenarioSingleMode    no
# testvar uspScenarioBootstrap     /home/dev/myBootstrapScenario.usp

}

SECTION "Data Model" {

# testvar uspSkipParameters        empty
# testvar uspModifyParameters      empty
# testvar uspSupportedDataModel    all

SECTION "Custom USP Data Model" {

    IGNORE testvar_group usp_profile_1 {

        # testvar uspProfileName      myVendorParameters
        # testvar uspProfilePath      /home/dev/myVendorParameters.xml

    }

}

}

SECTION "USP Agent Data Model Configuration" {

testvar uspParameterPath1          Device.DeviceInfo.ManufacturerOUI
testvar uspParameterPath2          Device.IP.Interface.1.Name
testvar uspMissingParameterPath    Device.DeviceInfo.DeviceCategory
testvar uspExternallyChangeableParam Device.LocalAgent.Controller.1.MTP.1.CoAP.Host

# testvar uspNotificationParamManualChange yes
# testvar uspNotificationParamNewValue    myCustomParameterValue

testvar uspObject1                  Device.Bridging.Bridge.
testvar uspObject2                  Device.RouterAdvertisement.InterfaceSetting.

testvar uspValidSearchPath          {Device.IP.Interface.[Name=="brlan0"].}
testvar uspValidSearchPathResultParam Alias
testvar uspValidSearchPathResultValue "Primary LAN"

testvar uspFirmwareImage            /home/qacafe/imageC.txt
testvar uspOriginalFirmwareImage    /home/qacafe/imageA.txt
testvar uspInactiveFirmwareSlot     Device.DeviceInfo.FirmwareImage.2

}

}

```

Finally you will need to create a test package containing the tests to run. For example the tests from the USP -> usp.tcl group.