AllJoyn Gateway Framework Test Case Specifications

Version 14.12 April 13, 2015

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# Introduction

## Purpose

These test cases evaluate and verify the Configuration Manager component functionality related to the AllJoyn Gateway framework.

## Scope

These test cases are designed to determine if an implementation of a Configuration Manager application conforms to the Gateway interface specifications. Successful completion of all test cases in this document does not guarantee that the tested device will interoperate with other devices.

## References

* AllJoyn Gateway Framework Interface Definition
* AllJoyn Gateway Agent HLD
* Package Manager Addendum

## Acronyms and terms

| Term | Definition |
| --- | --- |
| AP | Access Point |
| AUT | Application Under Test |
| DUT | Device Under Test |
| HLD | High Level Design document |
|  |  |

# Gateway Configuration Manager

## Environment setup

### Requirements

The following are required in order to execute these test cases:

* An AllJoyn-enabled device (the device under test or DUT) that has an installed component that supports the Gateway framework in the role of a ConfigurationManager Application (the Application under test or AUT).
* An AllJoyn-enabled device that has the tester app installed which will act the role of the GatewayControllerApp.
* A Wi-Fi access point (referred to as the personal AP).

### Preconditions

Before running these test cases, it is assumed that:

* The DUT is connected to the personal AP.
* Any Connector Applications that were installed satisfy the requirements for connector applications found in the AllJoyn Gateway Agent HLD and the Package Manager addendum. Those include, but are not limited to, the following:
* If not preinstalled, the Connector Application should have a signature that was verified by the Package Manager.
* The Connector Application must include a Manifest file that passed the XSD validation included as part of the GatewayManagementApp.
* The Connector Application should be installed in the proper directory structure. This means the binary goes under /opt/alljoyn/apps/connectorId/bin and libraries under /opt/alljoyn/apps/connectorId/lib.
* The Connector Application should request the well-known name org.alljoyn.GWAgent.Connector.*connectorId*.
* The Connector Application is an application that connects to the cloud so that it can be used to access the proximal network remotely.
* The tester application is connected to the personal AP.

## ConfigurationManager test cases

### GWAgent-v1-01: Interfaces Match Definition

Objective

Verify the AUT introspection results contain the defined object path tree and each object defines the correct interfaces.

Procedure

1. The test device listens for an About announcement from the AUT.
2. After receiving an About announcement from the application, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device performs introspection of the “/” object path.
4. The test device performs introspection of the “/gw” object path.
5. The test device performs introspection of each of the child objects under “/gw”.
6. The tester app performs introspection of each of the child objects under “/gw/<connector-id>” for each connector application

Expected results

* The test device receives an About announcement from the AUT which advertises the “org.alljoyn.gwagent.ctrl.AppMgmt” interface.
* The test device joins a session with the AUT at the port specified in the received About announcement.
* The result of the introspecting the “/” object path of the AUT returns a child object with path “/gw” which implements the “org.alljoyn.gwagent.ctrl.AppMgmt” interface.
* The result of the introspecting the “/gw” object path of the AUT returns child objects with path “/gw/<connector-id>” implementing both the “org.alljoyn.gwagent.ctrl.App” and “org.alljoyn.gwagent.ctrl.AclMgmt” interfaces (where <connector-id> is a place holder for the unique connector application identifier)
* The result of the introspecting each of the “/gw/<connector-d>” object paths of the AUT returns child objects with path “/gw/<connector-id>/<acl-id>” implementing the “org.alljoyn.gwagent.ctrl.Acl” interface (where <acl-id> is a place holder for the unique acl identifier)