AllJoyn™ Onboarding Service Framework 14.06 Test Case Specifications

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Contents

1 Introduction

1.1 Purpose

This document provides test cases to evaluate and verify the functionality related to the Onboarding service framework exposed by a device through the Onboarding 1.0 interface.

The Onboarding interface allows an onboader to send the Wi-Fi credentials to the onboardee to allow it to join the personal access point.

NOTE

See Interface Data to review the parameters supported by the Onboarding service framework. Refer to the *AllJoyn™ Onboarding Service Framework Interface Specification* for more information (description, signature, etc.).

1.2 Scope

These test cases are designed to determine if a device conforms to Onboarding interface specifications. Successful completion of all tests in this document does not guarantee that the tested device will operate with other devices.

1.3 Release history

Release version	What changed in this document
14.02	Initial release.
14.06	■ Added release history section ■ Added a note to address mandatory data in the appropriate *Interface Specification* document. ■ Added chapter to include mandatory data to pass certification and compliance.

1.4 References

The following are reference documents:

- *AllJoyn™ Onboarding Service Framework 1.0 Interface Specification*

2 Environment Setup

2.1 Requirements

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

- An AllJoyn device (the device under test or DUT) which supports the AllJoyn Onboarding service framework 1.0
- A supported test device on which the test cases will run
- A Wi-Fi access point (referred to as the personal AP) set up with WPA or WPA2 security enabled (it cannot be open).

2.2 Preconditions

Before running these test cases, it is assumed that:

- The DUT has already been onboarded and is connected to the personal AP
- The test device is connected to the personal AP
- At least one process on the DUT is announcing its capabilities through its About announcement, including its support for the Onboarding interface
- The passcode for the DUT is set to the default passcode
- The SSID of the soft access point (Soft AP) advertised by the DUT follows the proper format such that it ends with the first seven digits of the deviceId

2.3 Test execution

NOTE

Some of the test cases involve interacting with the Config 1.0 interface (if supported by the DUT) and running through scenarios where the passcode is changed.

If the DUT does not conform to the interface specification, or if there is an issue that causes a test case step to fail, manual steps may be necessary to return the DUT to the proper state (e.g., passcode set to the default passcode) before testing can continue.

2.4 Parameters

Table 1. Parameters for the Onboarding service framework

Parameter	Description
DeviceId	Device ID of the DUT
AppId	Application ID of the Onboarding application on the DUT
Soft AP SSID	SSID of the Soft AP broadcast by the DUT

Parameter	Description
Soft AP authentication type	Authentication required to connect the Soft AP
Soft AP passphrase	Passphrase (if required) to authenticate to the Soft AP
Personal AP SSID	SSID of the personal AP network
Personal AP authentication type	Authentication required to connect to the personal AP
Personal AP passphrase	Passphrase (if required) to authenticate to the personal AP

3 Onboarding Test Cases

3.1 Onboarding-v1-01: Offboard the DUT

Objective

Verify that the test device can offboard the DUT.

This test case must be executed first before running other Onboarding test cases.

Procedure

1. The test device listens for an About announcement from the application on the DUT.
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 registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
4. The test device retrieves the Version property from the Onboarding bus object.
5. The test device calls the Offboard() method on the Onboarding bus object.
6. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT.
7. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
8. After connecting, the test device waits to receive an About announcement from the application.
9. 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.
10. The test device retrieves the State property from the Onboarding bus object.
11. The test device leaves the session.

Expected results

- With both devices connected to the personal AP:
  - The test device receives an About announcement from the application (matching the expected deviceId and appId).
  - The test device joins a session with the application at the port specified in the About announcement.
- The Version property is 1.
- After receiving a call to the Offboard() method, the DUT goes into the offboarded state and its Soft AP can be seen.

- The Soft AP SSID matches the format: AJ_<first 7 characters of manufacturer name>_<first 1 characters of device description>_<first 7 digits of deviceId>.
- The test device connects to the Soft AP and receives an About announcement from the application (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the received About announcement.
- The State property on the Onboarding bus object is 0 (Personal AP Not Configured).

3.2 Onboarding-v1-02: Onboard the DUT

Objective

Verify that the test device can onboard the DUT onto the personal AP.

This test case must be executed after running one or more of the Onboarding test cases so that the DUT can be onboarded back onto the personal AP network.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the ConfigureWiFi() method on the Onboarding bus object with the SSID, passphrase, and authType for the personal AP.
8. The test device retrieves the State property from the Onboarding bus object.
9. The test device calls the Connect() method on the Onboarding bus object.
10. If the DUT supports the channel switching feature, the test device waits to receive the ConnectionResult() signal from the Onboarding bus object.
11. The test device waits for the Soft AP to disconnect and then it connects to the personal AP.
12. The test device waits to receive an About announcement from the application.
13. After receiving an About announcement, the test device attempts to join a session with the application at the port specified in the About announcement.

14. The test device retrieves the State and LastError properties from the Onboarding bus object.
15. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- The test device calls the ConfigureWiFi() method on the DUT's Onboarding bus object to provide the personal AP details and the method returns a value of 1 (channel switching not supported) or 2 (channel switching supported).
- After calling the ConfigureWiFi() method, the State property on the Onboarding bus object has a value of 1 (Personal AP Configured/Not Validated).
- The test device calls the Connect() method on the DUT's Onboarding bus object to request that the DUT connect to the personal AP.
- If the DUT supports the channel switching feature, it sends a ConnectionResult() signal from its Onboarding bus object with a State of 3 (Personal AP Configured/Validated) and a LastError value of 0 (Validated).
- The test device receives an About announcement from the application on the DUT (matching the expected deviceId and appId) while both devices are connected to the personal AP.
- The test device joins a session with the application at the port specified in the About announcement while both devices are connected to the personal AP.
- The test device retrieves the State and LastError properties from the DUT's Onboarding bus object while both devices are connected to the personal AP:
  - The State property's value is 3 (Personal AP Configured/Validated).
  - The LastError property's value is 0 (Validated).

3.3 Onboarding-v1-03: Session joined on Soft AP

Objective

Verify that the test device can connect to the DUT’s Soft AP, join a session with it, and retrieve the State property on the Onboarding bus object.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.

2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device retrieves the State property from the Onboarding bus object.
8. The test device leaves the session.

Expected results

- The test device starts a session with the DUT and retrieves the State property from the Onboarding bus object.
- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connected to the Soft AP.
- The test device retrieves the State property from the Onboarding bus object when the test device is connected to the Soft AP:
  - The State property's value is 0 (Personal AP Not Configured).

3.4 Onboarding-v1-04: Invalid authType provided to ConfigureWiFi() returns OutOfRange error

Objective

Verify that when the test device calls the ConfigureWiFi() method on the Onboarding bus object with an invalid authType parameter that the method returns an OutOfRange error.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).

4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the ConfigureWiFi() method on the Onboarding bus object with the SSID and passphrase for the personal AP and an authType of 9999.
8. The test device retrieves the State property from the Onboarding bus object.
9. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connected to the Soft AP.
- The test device calls the ConfigureWiFi() method on the DUT's Onboarding bus object to provide the personal AP details with an invalid authType parameter, and the method returns an error code of "org.alljoyn.Error.OutOfRange".

3.5 Onboarding-v1-05: Nonexistent personal AP SSID provided to ConfigureWiFi()

Objective

Verify that when the test device calls the ConfigureWiFi() method on the Onboarding bus object with a nonexistent personal AP SSID and then calls the Connect() method, the DUT eventually returns to the offboarded state and the State and LastError Properties on the Onboarding bus object have the expected values.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.

5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the ConfigureWiFi() method on the Onboarding bus object with a personal AP SSID of "InvalidPersonalAP", the personal AP's passphrase, and the personal AP's authType.
8. The test device retrieves the State property from the Onboarding bus object.
9. The test device calls the Connect() method on the Onboarding bus object.
10. If the DUT supports the channel switching feature, the test device waits to receive the ConnectionResult() signal from the DUT’s Onboarding bus object.
11. If the DUT does not support the channel switching feature, the test device scans for Wi-Fi networks, waiting for the Soft AP of the DUT to become available again.
12. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
13. After connecting, the test device waits to receive an About announcement from the application on the DUT.
14. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
15. The test device retrieves the State and LastError properties from the Onboarding bus object.
16. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- The test device calls the ConfigureWiFi() method on the DUT's Onboarding bus object to provide the personal AP details and the method returns a value of 1 (channel switching not supported) or 2 (channel switching supported).
- After calling the ConfigureWiFi() method on the DUT's Onboarding bus object, the State property on the Onboarding bus object has a value of 1 (Personal AP Configured/Not Validated).
- The test device calls the Connect() method on the DUT's Onboarding bus object to request that the DUT connect to the personal AP.
- If the DUT supports the channel switching feature, it sends a ConnectionResult() signal from its Onboarding bus object with a State of 4 (Personal AP Configured/Error) and a LastError value of 1 (Unreachable).

- The test device sees the Soft AP of the DUT again after the DUT fails to connect to the personal AP and the DUT has given up trying.
- The test device subsequently retrieves the State and LastError properties from the DUT's Onboarding bus object when the test device is connected to the Soft AP.
  - The State property's value is 4 (Personal AP Configured/Error)
  - The LastError property's value is 1 (Unreachable)

3.6 Onboarding-v1-06: Invalid passphrase for personal AP provided to ConfigureWiFi()

Objective

Verify that when the test device calls the ConfigureWiFi() method on the Onboarding bus object with an invalid passphrase and then calls the Connect() method, the DUT eventually returns to the offboarded state and the State and LastError Properties on the Onboarding bus object have the expected values.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the ConfigureWiFi() method on the Onboarding bus object with the personal AP SSID, a modified passphrase with "0" prepended to the beginning, and the authType of the personal AP.
8. The test device retrieves the State property from the Onboarding bus object.
9. The test device calls the Connect() method on the Onboarding bus object.
10. If the DUT supports the channel switching feature, the test device waits to receive the ConnectionResult() signal from the DUT's Onboarding bus object.
11. If the DUT does not support the channel switching feature, the test device scans for Wi-Fi networks waiting for the Soft AP of the DUT to become available again.
12. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).

13. After connecting, the test device waits to receive an About announcement from the application on the DUT.
14. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
15. The test device retrieves the State and LastError properties from the Onboarding bus object.
16. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connected to the Soft AP.
- The test device calls the ConfigureWiFi() method on the DUT's Onboarding bus object to provide the personal AP details and the method returns a value of 1 (channel switching not supported) or 2 (channel switching supported).
- After calling the ConfigureWiFi() method on the DUT's Onboarding bus object, the State property on the Onboarding bus object will have a value of 1 (Personal AP Configured/Not Validated).
- The test device calls the Connect() method on the DUT's Onboarding bus object to request that the DUT connect to the personal AP.
- If the DUT supports the channel switching feature, it sends a ConnectionResult() signal from its Onboarding bus object with a State of 4 (Personal AP Configured/Error) and a LastError value of 3 (Unauthorized).
- If the DUT does not support the channel switching feature, then the test device eventually sees the Soft AP of the DUT again after the DUT fails to connect to the personal AP and the DUT has given up trying.
- The test device subsequently retrieves the State and LastError properties from the DUT's Onboarding bus object when the test device is connected to the Soft AP.
  - The State property's value is 4 (Personal AP Configured/Error)
  - The LastError property's value is 3 (Unauthorized)

3.7 Onboarding-v1-07: AuthType value of "any" provided to ConfigureWiFi()

Objective

Verify that when the test device attempts to onboard the DUT onto the personal AP using an authType of “any” that the DUT is successfully onboarded and the State and LastError Properties on the Onboarding bus object have the expected values.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the ConfigureWiFi() method on the Onboarding bus object with the SSID and passphrase for the personal AP, and an authType of -1 (Any).
8. The test device retrieves the State property from the Onboarding bus object.
9. The test device calls the Connect() method on the Onboarding bus object
10. If the DUT supports the channel switching feature, the test device waits to receive the ConnectionResult() signal from the DUT's Onboarding bus object.
11. The test device connects to the personal AP.
12. The test device waits to receive an About announcement from the application on the DUT.
13. After receiving an About announcement, the test device attempts to join a session with the application at the port specified in the About announcement.
14. The test device retrieves the State and LastError properties from the Onboarding bus object.
15. The test devices offboards the DUT and confirms that it can start a session with the application on the DUT over the Soft AP.
16. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- The test device calls the ConfigureWiFi() method on the DUT's Onboarding bus object to provide the personal AP details and the method returns a value of 1 (channel switching not supported) or 2 (channel switching supported).

- After calling the ConfigureWiFi() method on the DUT's Onboarding bus object, the State property on the Onboarding bus object has a value of 1 (Personal AP Configured/Not Validated).
- The test device calls the Connect() method on the DUT's Onboarding bus object to request that the DUT connect to the personal AP.
- If the DUT supports the channel switching feature, it sends a ConnectionResult() signal from its Onboarding bus object with a State of 3 (Personal AP Configured/Validated) and a LastError value of 0 (Validated).
- The test device receives an About announcement from the application on the DUT (matching the expected deviceId and appId) while both devices are connected to the personal AP.
- The test device joins a session with the application at the port specified in the About announcement while both devices are connected to the personal AP.
- The test device retrieves the State and LastError properties from the DUT's Onboarding bus object while both devices are connected to the personal AP.
  - The State property's value is 3 (Personal AP Configured/Validated)
  - The LastError property's value is 0 (Validated)
- The test device can offboard the DUT and it is able to start a session with the DUT after connecting to the Soft AP.

3.8 Onboarding-v1-08: GetScanInfo() returns results or FeatureNotAvailable error

Objective

Verify that calling the GetScanInfo() method on the DUT’s Onboarding bus object will either return a org.alljoyn.Error.FeatureNoteAvailable error or return values according to the specification.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.

6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the GetScanInfo() method on the Onboarding bus object.
8. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- The test device calls the GetScanInfo() method on the DUT's Onboarding bus object.
  - It receives either a valid scanList (SSID is non-empty and authType is in the valid range) or "org.alljoyn.Error.FeatureNotAvailable".
  - If a scanList is received, it must also contain the personal AP SSID.

3.9 Onboarding-v1-09: Call Onboarding method without proper authentication

Objective

Verify that the test device cannot call methods on the DUT’s Onboarding bus object when the wrong passcode is given.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“123456”) when authentication is requested.
7. The test device tries to retrieve the Version property from the Onboarding bus object.
8. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- The test device receives an error when attempting to retrieve the Version property and the completed method is called on the registered AuthListener indicating that the authentication failed.

3.10 Onboarding-v1-10: Call Onboarding method after changing the passcode

Objective

Verify that the test device can still call methods on the DUT's Onboarding bus object after changing the passcode (assuming the Config interface is supported).

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. If the DUT does not support the Config interface, the test case exits.
7. The test device registers an AuthListener that provides the default passcode ("000000") when authentication is requested.
8. The test device calls the SetPasscode() method on the Config bus object with the daemonRealm parameter set to a zero length string and the newPasscode parameter set to "111111".
9. The test device leaves the session with the DUT and clears its keystore.
10. The test device joins a session with the application at the port specified in the About announcement.
11. The test device registers an AuthListener that provides the default passcode ("111111") when authentication is requested.

12. After joining a session, the test device attempts to retrieve the Version property from the Onboarding bus object.
13. The test device calls the SetPasscode() method on the Config bus object with the daemonRealm parameter set to a zero length string and the newPasscode parameter set to the default passcode value (“000000”).
14. The test device leaves the session with the DUT and clears its keystore.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receive an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- If the DUT does not support the Config interface, a note is added to this effect.
- If the DUT supports the Config interface, the test device calls the SetPasscode() method on the DUT's Config bus object.
- After calling the SetPasscode() method on the DUT's Config bus object, the test device leaves the session, and then joins a new session with the DUT and retrieves the Version property from the Onboarding bus object (after providing the new passcode value).
- The test device calls the SetPasscode() method on the DUT's Config bus object to change the passcode back to the default passcode.

3.11 Onboarding-v1-11: Factory reset

Objective

Verify that when the test device calls the FactoryReset() method on the DUT’s Config bus object (assuming the Config interface is supported), all previously configured data on the DUT is cleared and it returns to the Soft AP mode.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.
3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.

6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the ConfigureWiFi() method on the Onboarding bus object with the SSID, passphrase, and authType for the personal AP.
8. The test device retrieves the State property from the Onboarding bus object and verifies that the value is 1 (Personal AP Configured/Not Validated).
9. The test device calls the Connect() method on the Onboarding bus object.
10. If the DUT supports the channel switching feature, the test device waits to receive the ConnectionResult() signal from the DUT's Onboarding bus object.
11. The test device connects to the personal AP.
12. The test device waits to receive an About announcement from the application on the DUT.
13. After receiving an About announcement, the test device attempts to join a session with the application at the port specified in the About announcement.
14. The test device retrieves the State property from the Onboarding bus object and verifies that the value is 3 (Personal AP Configured/Validated).
15. The test device retrieves the LastError property from the Onboarding bus object and verifies that the value is 0 (Validated).
16. If the DUT does not support the Config interface, the test case exits.
17. The test device calls the ResetConfigurations() method on the Config bus object with the languageTag parameter set to the default language and the fieldList parameter consisting of the DeviceName field.
18. The test device calls the GetConfigurations() method on the Config bus object with “” for the languageTag parameter.
19. The test device calls the GetAboutData() method on the About bus object with “” for the languageTag parameter.
20. The test device calls the UpdateConfigurations() method on the Config bus object with the languageTag parameter set to the default language and a configMap parameter containing the field DeviceName with a value of "newDeviceName".
21. The test device waits to receive an About announcement with the updated DeviceName from the application on the DUT.
22. The test device calls the GetConfigurations() method on the Config bus object with “” for the languageTag parameter.
23. The test device calls the GetAboutData() method on the About bus object with “” for the languageTag parameter.
24. The test device calls the FactoryReset() method on the Config bus object.

25. If the FactoryReset() method call returned the error org.alljoyn.error.FeatureNotAvailable, the test device performs the following actions:
    a. It adds a note that the FactoryReset() method is not supported.
    b. It calls ResetConfigurations() for DeviceName and DefaultLanguage on the Config bus object (to return them to their default values)
    c. It leaves the session and the test case exits.
26. If the FactoryReset() method call did not return an error, the test device scans for Wi-Fi networks looking for the Soft AP of the DUT.
27. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
28. After connecting, the test device waits to receive an About announcement from the application on the DUT.
29. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
30. The test device calls the GetConfigurations() method on the Config bus object with “” for the languageTag parameter.
31. The test device calls the GetAboutData() method on the About bus object with “” for the languageTag parameter.
32. The test device retrieves the State property from the Onboarding bus object.
33. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receive an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- The test device calls the ConfigureWiFi() method on the DUT's Onboarding bus object to provide the personal AP details and the method returns a value of 1 (channel switching not supported) or 2 (channel switching supported).
- After calling the ConfigureWiFi() method on the DUT's Onboarding bus object, the State property on the Onboarding bus object has a value of 1 (Personal AP Configured/Not Validated).
- The test device calls the Connect() method on the DUT's Onboarding bus object to request that the DUT connect to the personal AP.
- If the DUT supports the channel switching feature, it sends a ConnectionResult() signal from its Onboarding bus object with a State of 3 (Personal AP Configured/Validated) and a LastError value of 0 (Validated).

- The test device receives an About announcement from the application on the DUT (matching the expected deviceId and appId) while both devices are connected to the personal AP.
- The test device joins a session with the application at the port specified in the About announcement while both devices are connected to the personal AP.
- The test device retrieves the State and LastError properties from the DUT's Onboarding bus object while both devices are connected to the personal AP.
  - The State property's value is 3 (Personal AP Configured/Validated).
  - The LastError property's value is 0 (Validated).
- After calling the ResetConfigurations() method, calls to GetConfigurations() and GetAboutData() return the same default DeviceName value.
- After calling the UpdateConfigurations() method to update the DeviceName, a new About announcement is received. The About announcement contains an updated DeviceName in the metaData parameter. Subsequent calls to GetConfigurations() and GetAboutData() return the updated DeviceName value.
- The test device calls the FactoryReset() method on the Config bus object; it either returns successfully or returns an error, org.alljoyn.Error.FeatureNotAvailable.
  - If FactoryReset() returned an error, the test device calls ResetConfigurations() for DeviceName and DefaultLanguage on the Config bus object.
  - If FactoryReset() did not return an error, the test device loses its session with the DUT and sees the DUT's Soft AP.
- The test device connects to the Soft AP (retrying if necessary) and receives an About announcement from the application on the DUT (matching the expected deviceId and appId) with a DeviceName set to the default value.
- Subsequent calls to GetConfigurations() and GetAboutData() return the same default DeviceName value.
- The State property on the Onboarding bus object is 0 (Personal AP Not Configured).

3.12 Onboarding-v1-12: Factory reset resets passcode

Objective

Verify that when the test device calls the FactoryReset() method on the DUT’s Config bus object (assuming the Config interface is supported), the passcode of the DUT is reset to the default passcode.

Procedure

1. The test device scans for Wi-Fi networks looking for the Soft AP of the DUT and listens for About announcements on the personal AP network.
2. If the DUT is found on the personal AP network, it is offboarded and the test device continues looking for the Soft AP.

3. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
4. After connecting, the test device waits to receive an About announcement from the application on the DUT.
5. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
6. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
7. The test device calls the SetPasscode() method on the Config bus object with the daemonRealm parameter set to a zero length string and the newPasscode parameter set to "111111".
8. The test device leaves the session with the DUT and clears its keystore.
9. The test device joins a session with the application at the port specified in the About announcement.
10. The test device registers an AuthListener that provides the default passcode (“111111”) when authentication is requested.
11. The test device attempts to retrieve the Version property from the Onboarding bus object.
12. The test device calls the FactoryReset() method on the Config bus object.
13. If the FactoryReset() method call returns an error, the test device performs the following actions:
    a. It adds a note that the FactoryReset() method is not supported.
    b. It calls the SetPasscode() method on the Config bus object with the daemonRealm parameter set to a zero length string and the newPasscode parameter set to the default passcode value (“000000”).
    c. It leaves the session and the test case exits.
14. If the FactoryReset() method call did not return an error, the test device scans for Wi-Fi networks looking for the Soft AP of the DUT.
15. After seeing the Soft AP, the test device attempts to connect to the Soft AP (retrying if necessary).
16. After connecting, the test device waits to receive an About announcement from the application on the DUT.
17. After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
18. The test device registers an AuthListener that provides the default passcode (“000000”) when authentication is requested.
19. The test device attempts to retrieve the Version property from the Onboarding bus object.
20. The test device leaves the session.

Expected results

- The test device sees the Soft AP of the DUT when it is in the offboarded state.
- The test device connects to the Soft AP and receive an About announcement from the application on the DUT (matching the expected deviceId and appId).
- The test device joins a session with the application at the port specified in the About announcement when the test device is connect to the Soft AP.
- The test device calls the SetPasscode() method on the DUT's Config bus object.
- After calling the SetPasscode() method on the DUT's Config bus object:
  - The test device leaves the session and joins a new session with the DUT.
  - The test device retrieves the Version property from the Onboarding bus object after providing the new passcode value.
- The test device calls the FactoryReset() method on the Config bus object and it either returns successfully or returns an error, org.alljoyn.Error.FeatureNotAvailable.
  - If FactoryReset() returned an error, the test device calls the SetPasscode() method on the DUT's Config interface to change the passcode back to the default passcode (“000000”).
  - If FactoryReset() did not return an error, the test device loses its session with the DUT and sees the DUT's Soft AP.
- The test device connects to the Soft AP (retrying if necessary) and receives an About announcement from the application on the DUT (matching the expected deviceId and appId).
- After receiving an About announcement, the test device joins a session with the application at the port specified in the About announcement.
- The test device calls the SetPasscode() method on the Config bus object to change the passcode back to the default passcode (“000000”).

4 Interface Data

This chapter lists the interface data supported by the Onboarding interface.

4.1 Onboarding interface

4.1.1 ConfigWiFi method

See authTypes values for additional authTypes parameter information.

Parameter	Mandatory
SSID	yes
Passphrase	yes
authType	yes
status	yes

4.1.1.1 authTypes list of values

List of values	Additional value information
■ -3 - WPA2_AUTO ■ -2 - WPA_AUTO ■ -1 - Any ■ 0 - Open ■ 1 - WEP ■ 2 - WPA_TKIP ■ 3 - WPA_CCMP ■ 4 - WPA2_TKIP ■ 5 - WPA2_CCMP ■ 6 - WPS	■ When authType is equal to -1 (Any), the onboardee must attempt all possible authentication types it supports to connect to the AP. ■ When authType is equal to -3 or -2 (WPA2_AUTO or WPA_AUTO), the onboardee attempts to connect to the AP with TKIP cipher and then AES-CCMP cipher. ■ WPA_TKIP indicates WPA with TKIP cipher. ■ WPA2_CCMP indicates WPA2 with AES-CCMP cipher.

The possible values for the connection result status are:

- 1 – Current SoftAP mode will be disabled upon receipt of Connect. In this case, the Onboarder application must wait for the device to connect on the personal AP and query the State and LastError properties.
- 2 – Concurrent step used to validate the personal AP connection. In this case, the Onboarder application must wait for the ConnectionResult signal to arrive over the AllJoyn session established over the SoftAP link.

4.1.2 Connect method

While this method has no input or output parameters, it is considered mandatory.

4.1.3 Offboard method

While this method has no input or output parameters, it is considered mandatory.

4.1.4 GetScanInfo method

Parameter	Mandatory
age	yes
scanList	yes

4.1.5 ConnectionResult signal

Parameter	Mandatory
signalArg0	yes

signalArg0 list of values

Data type	Values
ns	■ 0 – Validated ■ 1 – Unreachable ■ 2 – Unsupported_protocol ■ 3 – Unauthorized ■ 4 – Error_message