

Thread Test Plan - User Experience Border Router

Developer Preview 1

Contents

- Introduction3
- Test Setup3
- Test Plan3
- FAQs6
- Revision History7

Introduction

This document details a test plan specifically designed to assess the out-of-box user experience during the setup of your certified Thread border router. The objective is to verify the successful implementation of the developer's Thread border router, with a focus on the ease and intuitiveness of the onboarding user setup flow.

Test Setup

Devices Needed:

- One iPhone running the latest version of iOS + [Dev only entitlement for ThreadNetwork](#)
- One of any of these products (Thread Resident) below:
 - HomePod mini
 - Apple TV 4K (Wi-Fi + Ethernet)
 - 2nd Generation HomePod
- One of any of these products (Non-Thread Resident) below:
 - Apple TV 4K (Wi-Fi)
 - 1st Generation HomePod
- A Wi-Fi Router/Mesh with all the above devices connected
- Any Matter Thread accessories

Verification Steps:

This is a pre-requisite to verify that a Thread Network (NW) is running on Thread Border Router (BR). This can be done using the Discovery App ([Discovery - DNS-SD Browser](#)) on iOS or macOS on the same WiFi network as Thread Border Router.

1. Launch Discovery App and Navigate to local > '_meshcop._udp'
2. Select the Bonjour advertisement for the Thread Border Router
3. 'nn' field should give the Thread NW Name the device is running.

Test Plan

Setup Apple Border Router followed by 3rd Party Border Router

1. Add Apple Border Router (BR) (Thread resident) to Apple Home on SSID A.
2. Pair Matter Thread accessory in Home App
3. Use Verification Steps above to note down Thread NW name. This is referred as Apple BR Preferred Thread NW in further steps.

Testcase ID	Test Title	Test Steps	Expected Results
TCUX001	Deny access to Home data when Adding 3P BR	<ol style="list-style-type: none"> 1. Add 3P BR to 3P App on the same network (Wi-Fi/Ethernet). 2. For Wi-Fi AP + BR device, use the same SSID A for the new Wi-Fi network and remove the old router. 3. Deny access to Home data when popup comes up during setup flow. 	<ol style="list-style-type: none"> 1. Verify 3P BR creates a new Thread network and Preferred Thread NW credentials do not change.
TCUX002	Adding 3P BR with Apple BR Preferred Thread NW	<ol style="list-style-type: none"> 1. Add 3P BR to 3P App on the same network (Wi-Fi/Ethernet). 2. For Wi-Fi AP + BR device, use the same SSID A for the new Wi-Fi network and remove the old router. 	<ol style="list-style-type: none"> 1. Verify that the new 3P BR joins the existing preferred network and does not create a separate network using the verification steps above. 2. Verify Matter Thread accessories continue to work with the 3P BR on the network.
TCUX003	Pair and control Thread accessory with Apple BR Preferred NW	<ol style="list-style-type: none"> 1. Follow steps in Test #2. 2. Pair and control Matter Thread accessory in Home App 	<ol style="list-style-type: none"> 1. Verify that pairing and controls work and all BRs continue to be on the Apple BR Preferred Thread NW.
TCUX004	Reboot Apple BR with 3P BR online	<ol style="list-style-type: none"> 1. Follow steps in Test #3. 2. Reboot Apple BR 3. Control Thread accessories in Home App 	<ol style="list-style-type: none"> 1. Verify Matter Thread accessories are reachable on the Thread NW with 3P BR still online in reasonable amount of time (~1 - 2 minutes).
TCUX005	Disconnect Apple BR with 3P BR online	<ol style="list-style-type: none"> 1. Follow steps in Test #4 2. Disconnect Apple BR 3. Control Thread accessories in Home App 	<ol style="list-style-type: none"> 1. Verify Matter Thread accessories are reachable on the Thread NW with 3P BR still online in reasonable amount of time (~1 - 2 minutes).
TCUX006	Pair and control Thread accessory with only 3P BR online	<ol style="list-style-type: none"> 1. Follow steps in Test #5 2. Pair and control Thread accessory in Home App 	<ol style="list-style-type: none"> 1. Verify that pairing and controls work with the 3P BR on the Apple BR Preferred Thread NW.
TCUX007	Reconnect Apple BR with 3P BR online	<ol style="list-style-type: none"> 1. Follow steps in Test #6 2. Reconnect Apple BR 3. Control Thread accessories in Home App 	<ol style="list-style-type: none"> 1. Verify Apple BR rejoins the Apple BR Preferred Thread NW and Matter Thread accessories continue to operate on the Thread NW.
TCUX008	<p>Modify Wi-Fi SSID of 3P BR (WiFi AP + Thread BR) with existing Thread NW</p> <p>[Only Applicable to WiFi AP + Thread BR device]</p>	<ol style="list-style-type: none"> 1. Setup Wi-Fi AP + BR device using SSID B 2. Modify Wi-Fi SSID of 3P BR to existing SSID A 	<ol style="list-style-type: none"> 1. Verify that the 3P AP with BR support joins the existing preferred Thread NW on SSID A and does not create a separate network using the verification steps above. 2. Verify that Matter Thread accessories continue to work with the 3PBR on the network.

Setup 3rd Party Border Router followed by Apple Border Router

1. Remove all BRs from Home App and 3P App and clear any stored Preferred Thread NW credentials by deleting the Home in Home App.
2. Create new Home and add a Non-Thread Resident.

Testcase ID	Test Title	Test Steps	Expected Results
TCUX009	Adding 3P BR without existing Thread NW	<ol style="list-style-type: none"> 1. Add 3P BR to 3P App 2. For Wi-Fi AP + BR device, use the same SSID A for the new Wi-Fi network and remove the old router 3. Pair and control Matter Thread accessory in Home App with Non-Thread Resident 4. Add Apple BR to Home on the same network (Wi-Fi/Ethernet) 	<ol style="list-style-type: none"> 1. Verify 3PBR creates a New Thread NW and stores credentials as Preferred Thread NW. This is referred as 3P BR Preferred Thread NW in further steps. 2. Verify Matter Thread accessories work with the new 3PBR on the network. 3. Verify Apple BR added later joins the 3P BR Preferred Thread NW using Verification steps above.
TCUX010	Pair and control Thread accessory with 3P BR Preferred NW	<ol style="list-style-type: none"> 1. Follow steps in Test #9 2. Pair and control Matter Thread accessory in Home App 	<ol style="list-style-type: none"> 1. Verify that pairing and controls work and all BRs continue to be on the 3P BR Preferred Thread NW.
TCUX011	Reboot 3P BR with Apple BR online	<ol style="list-style-type: none"> 1. Follow steps in Test #10 2. Reboot Apple BR 3. Control Thread accessories in Home App 	<ol style="list-style-type: none"> 1. Verify Matter Thread accessories are reachable on the Thread NW with Apple BR still online in reasonable amount of time (~ 1 - 2 minutes).
TCUX012	Disconnect 3P BR with Apple BR online [Not Applicable to WiFi AP + Thread BR device]	<ol style="list-style-type: none"> 1. Follow steps in Test #11 2. Disconnect 3P BR 3. Control Thread accessories in Home App 	<ol style="list-style-type: none"> 1. Verify Matter Thread accessories are reachable on the Thread NW with Apple BR still online in reasonable amount of time (~ 1 - 2 minutes).
TCUX013	Pair and control Thread accessory with only Apple BR online [Not Applicable to WiFi AP + Thread BR device]	<ol style="list-style-type: none"> 1. Follow steps in Test #12 2. Pair and control Matter Thread accessory in Home App 	<ol style="list-style-type: none"> 1. Verify that pairing and controls work with the Apple BR on the 3P BR Preferred Thread NW.
TCUX014	Reconnect 3P BR with Apple BR online [Not Applicable to WiFi AP + Thread BR device]	<ol style="list-style-type: none"> 1. Follow steps in Test #13 2. Reconnect 3P BR 3. Control Thread accessories in Home App 	<ol style="list-style-type: none"> 1. Verify 3P BR rejoins the 3P BR Preferred Thread NW and Matter Thread accessories continue to operate on the Thread NW.

FAQs

A. How to verify a thread Network is running on Thread Border Router?

This can be done using the Discovery App ([Discovery - DNS-SD Browser](#)) on iOS or macOS on the same WiFi network as Thread Border Router.

1. Launch Discovery App and Navigate to local > '_meshcop._udp'
2. Select the Bonjour advertisement for the Thread Border Router

B. How to clear Thread credentials and stored Preferred Network on iOS?

Go to Home App -> Settings (3 dots on right top corner) -> Home Settings -> Remove Home

Revision History

Revision History

Version	Date	Notes
1.0	2025-05-09	Developer Preview 1.0



Apple Inc.
Copyright © 2025 Apple Inc.
All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, mechanical, electronic, photocopying, recording, or otherwise, without prior written permission of Apple Inc.

No licenses, express or implied, are granted with respect to any of the technology described in this document. Apple retains all intellectual property rights associated with the technology described in this document. This document is intended to be used in the development of solutions for Apple-branded products.

Apple Inc.
One Apple Park Way
Cupertino, CA 95014
408-996-1010

Apple, the Apple Logo, and HomeKit are trademarks of Apple Inc., registered in the U.S. and other countries. iOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license.

APPLE MAKES NO WARRANTY OR REPRESENTATION, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS DOCUMENT, ITS QUALITY, ACCURACY, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. AS A RESULT, THIS DOCUMENT IS PROVIDED "AS IS," AND YOU, THE READER, ARE ASSUMING THE ENTIRE RISK AS TO ITS QUALITY AND ACCURACY.

IN NO EVENT WILL APPLE BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT, ERROR OR INACCURACY IN THIS DOCUMENT, even if advised of the possibility of such damages.

Some jurisdictions do not allow the exclusion of implied warranties or liability, so the above exclusion may not apply to you.