Zigbee EmberZNet SDK 7.1.0.0 GA
Gecko SDK Suite 4.1
June 8, 2022

Silicon Labs is the vendor of choice for OEMs developing Zigbee networking into their products. The Silicon Labs Zigbee platform is the most integrated, complete, and feature-rich Zigbee solution available.

Silicon Labs EmberZNet SDK contains Silicon Labs' implementation of the Zigbee stack specification.

These release notes cover SDK version(s):

7.1.0.0 released June 8, 2022

KEY FEATURES

- 2.4GHz Zigbee Smart Energy support for xG24
- 802.15.4 Signal Identifier and MAC CCA Mode 2 and 3 support for xG24
- Zigbee Green Power Gateway Backup
- Updated GCC and IAR Compiler Version
- Alpha Concurrent Multiprotocol Zigbee in NCP mode and Open-Thread in RCP mode
- -Alpha Dynamic Multiprotocol Blue-tooth and multi-PAN 802.15.4 in RCP mode

Compatibility and Use Notices

For information about security updates and notices, see the Security chapter of the Gecko Platform Release notes installed with this SDK or on the TECH DOCS tab on https://www.silabs.com/developers/zigbee-emberznet. Silicon Labs also strongly recommends that you subscribe to Security Advisories for up-to-date information. For instructions, or if you are new to the Zigbee EmberZNet SDK, see Using This Release.

Compatible Compilers:

IAR Embedded Workbench for ARM (IAR-EWARM) version 9.20.4.

- Using wine to build with the IarBuild.exe command line utility or IAR Embedded Workbench GUI on macOS or Linux could result in incorrect files being used due to collisions in wine's hashing algorithm for generating short file names.
- Customers on macOS or Linux are advised not to build with IAR outside of Simplicity Studio. Customers who do should carefully verify that the correct files are being used.

GCC (The GNU Compiler Collection) version 10.3-2021.10, provided with Simplicity Studio.

Contents

1   New Items

1.1   New Applications

New in release 7.1.0.0

The **Z3GatewayCpc** application has been added a host-side application that can send and receive EZSP frames using CPC. This application is meant to work with an NCP application that also uses the CPC feature. This application requires the CPC daemon to be running on the host. CPC setup is described in https://github.com/SiliconLabs/cpc-daemon/blob/main/readme.md.

Two **Zigbee - NCP + OpenThread – RCP** applications have been added, one for UART and one for SPI. These applications demonstrate the Zigbee NCP and OpenThread RCP running concurrently using an RTOS. For more information on these applications, see *AN1333: Running Zigbee, OpenThread, and Bluetooth Concurrently on a Linux Host with a Multiprotocol RCP.*

1.2   New Components

New in release 7.1.0.0

Token Interface

A token interface component added to allow access to the nvm3 tokens from host. Refer to the New API section for more information.

Zigbee EZSP CPC

The Zigbee EZSP CPC component has been added. This component satisfies the requirements of the EZSP Common component and is only applicable when creating a host application. The EZSP CPC component provides a means to send EZSP traffic over a Co-processor Communication (CPC) link. This component is mutually exclusive with the EZSP UART and EZSP SPI components, which handle sending EZSP traffic over a UART or SPI link, respectively. Refer to *AN1333: Running Zigbee, OpenThread, and Bluetooth Concurrently on a Linux Host with a Multiprotocol RCP* for details of how to configure a system that uses the CPC feature.

Any Zigbee host application that uses the Co-processor Communication (CPC) feature to communicate to and from the NCP must not use the NCP bootloading feature as it is present in the Zigbee components. The CPC daemon is responsible for bootloading a new image to the NCP. For more information, see https://github.com/SiliconLabs/cpc-daemon/blob/main/readme.md. .

1.3   New APIs

New in release 7.1.0.0

Trust Center Backup Component

The new token interface component provides the following four new APIs:

- uint8_t emberGetTokenCount(void);
- EmberStatus emberGetTokenInfo(uint8_t index, EmberTokenInfo *tokenInfo);
- EmberStatus emberGetTokenData(uint32_t token, uint32_t index, EmberTokenData *tokenData);
- EmberStatus emberSetTokenData(uint32_t token, uint32_t index, EmberTokenData *tokenData);

A new function (void emberGetRestoredEui64(EmberEUI64 eui64)) is added to override the EUI64 with the new eui64 token (see below) during power up of the NCP node as part of restore operation.

The Trust Center Back up component is updated with a new function emberAfTrustCenterBackupWriteNcpTokenToZigbeedTokens. This reads an NCP token back-up file that was saved during trust center back up operation and updates the Zigbeed tokens.

Miscellaneous

emberSetRadioIeee802154CcaMode() - A new API has been added to configure the 802.15.4 CCA mode in the radio. See documentation regarding emberSetRadioIeee802154CcaMode.

Added a new configuration option to be used in the sl_set_passive_ack_config() API. The new enum for sl_passive_ack_config_enum_t is SL_PASSIVE_ACK_THRESHOLD_WITH_REBROADCAST_ALL_NODES. This configuration is for both originating and relaying (non-originating) nodes. All configured nodes check for passive ACKs from minAcksNeeded neighbors. They will not rebroadcast received message if all passive ACKs have been received.

1.4 New CLI Commands

New in release 7.1.0.0

A new CLI command has been added to configure 802.15.4 CCA mode in the radio. See documentation regarding config-cca-mode.

A new CLI command has been added corresponding to the new emberAfTrustCenterBackupWriteNcpTokenToZigbeedTokens() API (see above).

1.5 New Tokens

New in release 7.1.0.0

Trust Center Backup

A new eui64 token is added to the stack token group to save the EUI64 of the operational network that is being backed up.

1.6 New Platform Support

Added support for BRD4186, BRD4187, BRD4188, BRD2601 SOC and BRD4319, BRD4316, BRD4317 module radio boards.

1.7 New Documentation

All components have documentation available. If you have an issue seeing the documentation when you select the component in Project Configurator, you can find it here: http://docs.silabs.com/zigbee/7.1

New in release 7.1.0.0

AN1321: Configuring Peripherals for 32 Bit devices with Zigbee 7.0 and Higher

AN1385: Supplemental Performance Results for Multi-PAN RCP for OpenThread and Zigbee

AN1387: Backing Up and Restoring a Z3 Green Power Combo Gateway

2 Improvements

2.1 Changed APIs

Changed in release 7.1.0.0

Return type of emberStartScan and ezspStartScan functions has been changed from EmberStatus to sl_status_t.

2.2 Other Improvements

Changed in release 7.1.0.0

GreenPower Combo Host Applications

The GP Sink Table initialization sequence is changed in host applications that use the Green Power Server cluster and is now called after the NCP is configured.

EZSP CPC

The Zigbee EZSP protocol is now integrated with the Co-processor Communication (CPC) feature. EZSP frames between the host and NCP can now be transported using CPC as the medium. To this effect, the host-side **EZSP CPC** component has been added. For more information please refer to the New Components section.

Trust Center Backup Component

Extended the Trust Center Back up component with additional functions to support backing-up and restoring tokens using the new token interface APIs. Refer to the New API section for more information.

OTA Update

OTA file search directory is now configurable at runtime using '-d' option in the host application.

Power Source in Device Announce Message

The EmberZNet stack now allows the MAC Capability field of Device Announce messages to dynamically update power source-related subfields in device announce. Whereas previously Capability field values were derived with respect to the Zigbee Device type (Coordinator, Router, End Device, Sleepy End Device), now the bit indicating whether the device is connected to a main power supply will be updated in response to changes of the ZDO Power Descriptor. When the Power Descriptor is changed (via the emberSetPowerDescriptor API in stack-info.h) the device will check to see if the state of the "On Main Power" subfield of the descriptor has changed with respect to the corresponding field in the Capability field. In the case where the update to the Power Descriptor changes the state of the On Main Power indication, the updated Device Capabilities will be cached in RAM and returned on subsequent field accesses.

These values are not persisted across reboot, and it is the responsibility of the application to ensure that the Power Descriptor is kept up to date to reflect the current device state.

The long-term guidance for users developing applications with non-standard power configurations (i.e. non-sleepy devices with battery power) is to make use of the ZCL Power Cluster and its associated attributes and commands rather than the stack-level messages and ZDO interfaces. Use of the Cluster interfaces to set and a query Power configuration of devices will likely result in a more consistent experience, and a more straightforward path through device testing and certification.

Multi Network and Multi PAN Components

The Multi Network Stub and Multi PAN Stub components have been removed. These components are no longer needed by a project. Simplicity Studio will prompt the user to upgrade older project files, which will have the reference to these components removed.

Users not utilizing the Multi Network or Multi PAN components will see a drop in flash consumption by the resulting image compared to previous software releases.

Miscellaneous

Incoming packet handler data now includes the NWK header as well.

Type of boolean now changed to bool in the EmberZNet SDK.

3 Fixed Issues

Fixed in release 7.1.0.0

ID #	Description
398694 519731 823888	ZCL reporting plugin is modified so that a rarely-occurring exception condition (failure to read a reportable attribute's value; possibly because the attribute's endpoint is disabled) does not result in excess execution cycles, repetitive printing of a debug message, and (for an RTOS configuration) blocking of a lower priority task.
462074	Fixed an issue where the throughput plugin occasionally returned an invalid standard deviation by checking for underflow before the subtraction operation.
679417	Fixed an issue where a failed scan would not allow network-steering (with optimized scans) state machine to advance states.
739044	The Green Power Proxy now forwards the GPDF during commissioning with security failure bit set for a recommissioning GPD with different key type.
756571	Fixed the issue that caused emberPacketHandoffIncoming to receive bad index for EMBER_ZIGBEE_PACKET_TYPE_NWK_DATA/EMBER_ZIGBEE_PACKET_TYPE_NWK_COMMAND packets.
758183	Fixed an issue where OTA updates have been slow for NCP UART HW applications.
759023	The GPD sample has been fixed where it would not work on EFR32MG22 due to a buffer alignment issue.
760176	An issue was resolved where the Z3Gateway host application experienced high CPU load.
760785	The ZCL Default Response Policy setting has been changed from "always" to "conditional" for the following Zigbee sample applications, consistent with their configurations prior to SDK 4.0.0 / EmberZNet 7.0.0: Z3ColorControlLight, Z3DoorLockWithWwah, Z3LightWithWwah, Z3SleepyDoorLockWithWwah.
773136	A buffer assertion issue for incoming malformed packet has been fixed.
773651	Fixed issue that caused the raw_packet_send to send incorrect packet.
819344	Fixed an issue where a SPI host application appears hung. If the user hits ENTER or inputs characters on the command line, the application proceeds to run. Such a hang prevents the device from going EMBER_NETWORK_UP on its own, with no user stimulus.
823604	Fixed an issue where component config did not display or allow configuring support for 'read-modify-write'.
824310	An issue was fixed where an AF-based host application that uses the Green Power Server cluster was reset twice due improper NCP and GP Sink Table initialization sequence.
824289	The Green Power server and client now set the disable default response flag in ZCL frame header while sending out Green Power commands or responses.
824895	Fixed an issue in GPD decommissioning, where the GpPairingConfiguration command will now be issued for sink type group cast.
825777	Fixed an issue on the coordinator/router parent, where the parent did not correctly populate the child table with the details of the new joiner if a secure network layer command frame was not received from the joining end device.
825960	Fixed an issue where malformed Zigbee packet with invalid destination address causes an assert.
829115 843369 843370	Compiler warnings have been fixed in various sample applications.
829602	Fixed an issue where 'plugin mfglib stream start' CLI command does not select the desired antenna TX mode.
831183	Fixed an issue that caused the coordinator to crash upon receiving a trust-center rejoin request after the network is closed for joining.
831270	Fixed an issue where the "Radio output power" CMSIS option in the configuration of the network-steering component had an incorrect data type.
833726	Fixed an issue where the high-byte of the manufacturer ID was mistakenly parsed as the command ID of the cluster, if manufacturer code was present in the message.
835380	Fixed missing Fragmentation component macros to propagate through configuration header.
841300	Restored ability to bypass emAfNetworkInit during initialization when EMBER_AF_TC_SWAP_OUT_TEST is defined.
842020	Fixed issue where calling `emberStackPowerDown` without the Debug Basic component causes linker errors.
842155	Fixed the `network find unused` CLI command for a host application that scans and forms the network.

4 Known Issues in the Current Release

Issues in bold were added since the previous release. If you have missed a release, recent release notes are available on https://www.si-labs.com/developers/zigbee-emberznet in the Tech Docs tab.

ID #	Description	Workaround
N/A	The following apps/components are not supported in this release • Smart Energy multi-MAC switch coordinator • Smart Energy multi-MAC selection • NCP Sleepy • EM4 support	Features will be enabled in subsequent releases.
135649	Multi-networking can cause APS frame counter confusion between networks.	Use emberAfSecurityInitCallback to add EMBER_NO_FRAME_COUNTER_RESET to EmberInitialSecurityBitmask.
193492	emberAfFillCommandGlobalServerToClientConfigureReporting macro is broken. The filling of buffer creates incorrect command packet.	Use the "zcl global send-me-a-report" CLI command instead of the API.
266341	Z3 Light sample app has two endpoints that support similar cluster commands, so duplicate responses may be generated for certain commands.	No known workaround
271644	A device that performs a classic join to a legacy ZLL gateway may eventually leave the network on its own initiative.	No known workaround
278063	Smart Energy Tunneling plugins have conflicting treatment/usage of address table index.	No known workaround
281832	Green Power Common plugin incorrectly formats groupList and groupListCount parameters of GP Pairing Configuration frame.	No known workaround
289569	Network-creator component power level picklist doesn't offer full range of supported values for EFR32	**Edit the range <-8..20> specified in the CMSIS comment for EMBER_AF_PLUGIN_NETWORK_CREATOR_RADIO_POWER in the <sdk>/protocol/zigbee/app/framework/plugin/network-creator/config/network-creator-config.h file. For example, change to <-26..20>.**
295498	UART reception sometimes drops bytes under heavy load in Zigbee+BLE dynamic multiprotocol use case.	Use hardware flow control or lower the baud rate.
312291	EMHAL: The halCommonGetIntxxMillisecondTick functions on Linux hosts currently use the gettimeofday function, which is not guaranteed to be monotonic. If the system time changes, it can cause issues with stack timing.	Modify these functions to use clock_gettime with the CLOCK_MONOTONIC source instead.
331438	Service discovery may time out too quickly in busy networks.	Define EMBER_AF_DISCOVERY_TIMEOUT_QS to customize the timeout period.
338151	**Initializing NCP with a low packet buffer count value may cause corrupt packets.**	**Use the 0xFF reserved value for packet buffer count to avoid the too-low default value**
356937	Read/write attribute CLI commands do not support manufacturer-specific ZCL attributes. Some implementations may allow local CLI debug access to display or modify these attributes.	Access the attributes from a remote device in the network via ZCL global Read/WriteAttributes commands.
363162	There is a bug in emberAfAddAddressTableEntry which could allow for duplicate entries in the address table	Under Investigation
387750	Issue with Route Table Request formats on end device.	Under Investigation
400418	A touchlink initiator cannot link to a non-factory-new end-device target.	No known workaround.

ID #	Description	Workaround
424355	A non-factory-new sleepy end device touchlink target-capable initiator is not able to receive a device information response in certain circumstances.	Under Investigation
437704	The OccupiedCoolingSetpoint attribute should be optional by default in Appbuilder.	Modify the "optional" flag from false to true in the OCCUPIED_COOLING_SETPOINT attribute in app/zcl/ha.xml
442664	In a dense network with many devices joining simultaneously, a packet buffer assert is sometimes seen when collecting beacons during network steering.	No known workaround
456350	"emberAfPluginIasZoneClientReadAttributesResponseCallback" in "ias-zone-client.c" incorrectly sets the type of "zoneStatus" and "zoneType" attributes to uint8_t. The correct type should be uint16_t.	Modify the type of these two attributes to "uint16_t" in "emberAfPluginIasZoneClientReadAttributesResponseCallback".
465180	The Coexistence Radio Blocker Optimization item "Enable Runtime Control" may block proper Zigbee operation.	Optional 'Wi-Fi Select' Control of Blocker Optimization should be left "Disabled".
468581	ZCL attribute tokens creator codes are likely to change if you add or remove one or more attributes. For instance, if you add an attribute whose cluster ID or attribute ID is not the largest numerically, then this attribute gets inserted into a list of creator codes and makes all creator codes after it to be different (shifted).	Use the script at https://github.com/SiliconLabs/IoT_Utility_Scripts/tree/master/token_preserver to fix this issue.
480550	The OTA cluster has its own built-in fragmentation method, hence it should not use APS fragmentation. Although, in case APS encryption is enabled it grows the payload of the ImageBlockResponses to a size where the APS fragmentation is activated. This could lead to the OTA process failing.	No known workaround
481128	Detailed Reset Cause and crash details should be available by default via the Virtual UART (Serial 0) on NCP platforms when Diagnostics plugin and Virtual UART peripheral are enabled.	Since Serial 0 is already initialized in the NCP, customers can enable the emberAfNcpInitCallback in the Zigbee NCP Framework and call the appropriate diagnostic functions (halGetExtendedResetInfo, halGetExtendedResetString, halPrintCrashSummary, halPrintCrashDetails, and halPrintCrashData) in this callback to print this data to Serial 0 for viewing in the Network Analyzer capture log. For an example of how to use these functions, refer to the code included in af-main-soc.c's emberAfMainInit() when EXTENDED_RESET_INFO is defined.
481618	The "Network Open Time" option of the Network Creator Security plugin may not work as expected when you open network if the time does not match the transient key timeout.	Set the Network Open time to the same value as the Transient Key Timeout.
486369	If a DynamicMultiProtocolLightSoc forming a new network has child nodes remaining from a network it has left, emberAfGetChildTableSize returns a non-zero value in startIdentifyOnAllChildNodes, causing Tx 66 error messages when addressing the "ghost" children.	Mass-erase the part if possible before creating a new network or programmatically check the child table after leaving the network and delete all children using emberRemoveChild prior to forming a new network.
494636	The length of EZSP command responses are not checked before processing. An unexpectedly long response may cause a stack overflow.	No known workaround
495563	Joining SPI NCP Sleepy End Device Sample App doesn't short poll, therefore the joining attempt fails at the state of Update TC Link Key.	The device that wishes to join should be in Short Poll mode before attempting to join. This mode can be forced by the End Device Support plugin.
497832	In Network Analyzer the Zigbee Application Support Command Breakdown for the Verify Key Request Frame mistakenly references the part of the payload that indicates the frame Source Address as the Destination Address.	No known workaround

ID #	Description	Workaround
498094	In function checkForReportingConfig() in metering-server.c, the second input parameter of the invoked function emberAfContainsServer() incorrectly references the attribute ID instead of the cluster ID.	Change the 2nd input parameter from the attribute ID (ZCL_CURRENT_SUMMATION_DELIVERED_ATTRIBUTE_ID) to the cluster ID (ZCL_SIMPLE_METERING_CLUSTER_ID).
519905 521782	Spi-NCP may very rarely fail to start up bootloader communication using the 'bootload' CLI command of the ota-client plugin.	Restart the bootload process
521706	A duplicated attribute ID is assigned in the altConsumptionMonthAttrIds[] array of the gas-proxy-funxtion plugins in gpf-structured-data.c.	Change the second ZCL_PREVIOUS_MONTH6_ALTERNATIVE_CONSUMPTION_DELIVERED_ATTRIBUTE_ID to ZCL_PREVIOUS_MONTH7_ALTERNATIVE_CONSUMPTION_DELIVERED_ATTRIBUTE_ID.
620596	NCP SPI Example for BRD4181A (EFR32xGMG21) nWake default pin defined cannot be used as a wake-up pin.	Change the default pin for nWake from PD03 to a EM2/3 wake-up-enabled pin in the NCP-SPI Plugin.
631713	A Zigbee End Device will report address conflicts repeatedly if the plugin "Zigbee PRO Stack Library" is used instead of "Zigbee PRO Leaf Library".	Use the "Zigbee PRO Leaf Library" instead of the "Zigbee PRO Stack Library" plugin.
648906 659010	emberChildId API was accidentally removed in EmberZNet 6.8.0.2.	Call sl_mac_child_short_id instead.
661214	Upgrading NCP from the host side will fail if the communication port between host and NCP is not USART0.	Use USART0 as the communication port.
670702	**Inefficiencies within the Reporting plugin can lead to significant latency based on data write frequency and table size, which may interfere with customer application code, including event timing.**	**If doing frequent writes, consider checking reporting conditions and sending reports manually rather than using the plugin.**
708258	**Uninitialized value in groups-server.c via addEntryToGroupTable() can create a spurious binding and cause groupcast reporting messages to be sent.**	**Add "binding.clusterId = EMBER_AF_INVALID_CLUSTER_ID;" after "binding.type = EMBER_MULTICAST_BINDING;"**
709981	**FreeRTOS kernel does not work with DynamicMultiprotocol (ZB+BLE) apps out of the box. The issue is with calling the "osEventFlagsSet" more than once.**	**Remove the assert "assert((flags & osFlagsError) == 0);" that is present after "osEventFlagsSet" call in rtos-main.c.**
748977	4158a SPI-EZSP bootloader is not able to launch rcp-spi-802154.slcp. This only occurs when using the spi-ezsp bootloader.	No known workaround.
757775	All EFR32 parts have a unique RSSI offset. In addition, board design, antennas and enclosure can impact RSSI.	When creating a new project, install the RAIL Utility, RSSI component. This feature includes the default RSSI Offset Silabs has measured for each part. This offset can be modified if necessary after RF testing of your complete product.
758965	**ZCL cluster components and ZCL command discovery table are not synchronized. Therefore, when enabling or disabling a ZCL cluster component, implemented commands will not be enabled/disabled in the corresponding ZCL Advanced Configurator command tab.**	**Manually enable/disable discovery for the desired ZCL commands in the ZCL Advanced Configurator.**
759512	Building Zigbee Host Applications with Cygwin under Windows systems is not currently supported.	Use Linux based systems for building Host applications.
760811	In the CPCd configuration, if STDOUT_TRACE and TRACE_TO_FILE are both disabled, a timing issue with CPC causes the Zigbee endpoint to close on some setups.	For a short-term workaround, enable traces using either STDOUT_TRACE or TRACE_TO_FILE.

ID #	Description	Workaround
765735	**The OTA update fails on Sleepy End Device with enabled Page Request.**	**Use Block Request instead of Page Request.**
821967	**End device is stuck in Network State 1 (EMBER_JOINING_NETWORK) when multiple networks are open and during the joining process one network is closed.**	**No known workaround**
823617	**The watchdog cannot be enabled on MG24 device for Zigbee applications in this release.**	**No known workaround**
829647	**emberAfSendUnicastWithCallback() never fires the callback for fragmented messages:** **When sending a message large enough to require fragmentation with emberAfSendUnicastWithCallback(), the callback is never called.**	**No known workaround**
843811	**When sending a message large enough to require fragmentation with emberAfSendUnicastWithCallback(), the callback is never called.**	**Under Investigation**

5 Deprecated Items

None

6 Removed Items

<u>Removed in release 7.1.0.0</u>

The Multi Network Stub and Multi PAN Stub components have been removed. For further information please refer to the Improvements section.

The APIs halStackGetIdxTokenPtrOrData(), halInternalGetIdxTokenPtrOrData(), and sl_token_get_pointer_or_data() are not used and not supported. If there is a situation using them, the more common APIs halCommonGetIndexedToken() or sl_token_get_data() should be used instead.

7   Multiprotocol Gateway and RCP

7.1   New Items

Added in release 7.1.0.0

A new concurrent multiprotocol configuration is available: Zigbee NCP and OpenThread RCP running concurrently on the EFR32, using the Co-Processor Communication (CPC) architecture. It is released as alpha quality. See *AN1333: Running Zigbee, OpenThread, and Bluetooth Concurrently on a Linux Host with a Multiprotocol RCP* for details.

7.2   Improvements

Changed in release 7.1.0.0

CPC security is now enabled by default in the cpcd.conf file and in the SLCP project files. This means data sent over the serial line between the host and the EFR32 is encrypted. A security commissioning step is required to bind the host to the EFR32. See https://github.com/SiliconLabs/cpc-daemon/blob/main/readme.md for details.

For convenience, the run.sh script in *app/host/multiprotocol/zigbeed/multiprotocol-container/* includes a `-K` argument for commissioning cpcd security when using the multiprotocol docker container.

The multiprotocol container has been upgraded to use ubuntu 22.04 and BlueZ 5.64.

The `zigbee_trust_center_backup` component now supports migrating from a Zigbee Host + NCP setup to a Zigbee Host + Zigbeed + RCP setup. See *AN1333: Running Zigbee, OpenThread, and Bluetooth Concurrently on a Linux Host with a Multiprotocol RCP* for details.

Zigbeed built from GSDK sources no longer requires the /accept_silabs_msla_file at runtime. Only the Zigbeed binary from the multiprotocol docker container requires it.

7.3   Fixed Issues

Fixed in release 7.1.0.0

ID #	Description
760596	Reduced the CPU consumption of Zigbeed when it is idle.
811566	Fixed an issue where Zigbee sleepy end devices failed to join to an RCP parent.
817698	Fixed a Zigbeed crash due to a null buffer in the lower mac layer.
822233	Fixed an issue that caused dropped CPC packets over VCOM, especially at higher baud rates.
829614	The multi-PAN/multiprotocol 802.15.4 RCP now sets the radio tx power to the maximum of the power levels requested by all 15.4 host applications. This avoids the problem of one application reducing the power and inadvertently causing network connectivity problems for the other application.
830596	Fixed an issue where joining a sleepy end device to the multiprotocol RCP caused Z3Gateway to crash in some circumstances.
831689	Fixed an issue in Zigbeed that resulted in a fixed pan id and other parameters being chosen when forming a network.

7.4   Known Issues in the Current Release

ID #	Description	Workaround
811732	Custom token support is not available when using Zigbeed.	Support is planned in a future release.
828785	There is a known issue with the cpc-hci-bridge that causes the second HCI packet to be dropped if BlueZ sends two HCI packets to the RCP in rapid succession.	A fix is targeted for the next patch release.

ID #	Description	Workaround
829675	**Bi-directional Green Power Devices can't pair with Z3GatewayGPCombo + Zigbeed + RCP.**	**A fix is being worked on for the next patch release.**
834191	**There is a known issue with the cpc-hci-bridge consuming excessive CPU time.**	**A fix is targeted for the next patch release.**
849438	**There is a known issue that the Zigbee NCP / OpenThread RCP is not functioning properly over a SPI connection.**	**Use a UART link until this issue is resolved in the next patch release.**

7.5   Deprecated Items

None

7.6   Removed Items

Removed in release 7.1.0.0

Pre-built ARM binaries for multiprotocol host applications are no longer distributed within the GSDK (cpcd, otbr-agent, zigbeed, Z3Gateway, etc). These should be built from sources on the target platform using the instructions in *AN1333: Running Zigbee, OpenThread, and Bluetooth Concurrently on a Linux Host with a Multiprotocol RCP.*

A copy of sl_cpc.h that was being included in the OpenThread sources as a convenience has been removed. This header file is placed in the standard system location when cpcd is installed.

8 Using This Release

This release contains the following:

- Zigbee stack
- Zigbee Application Framework
- Zigbee Sample Applications

For more information about Zigbee and the EmberZNet SDK see UG103.02: Zigbee Fundamentals.

If you are a first-time user, see *QSG180: Z Zigbee EmberZNet Quick-Start Guide for SDK 7.0 and Higher*, for instructions on configuring your development environment, building and flashing a sample application, and documentation references pointing to next steps.

8.1 Installation and Use

The Zigbee EmberZNet SDK is provided as part of the Gecko SDK (GSDK), the suite of Silicon Labs SDKs. To quickly get started with the GSDK, install Simplicity Studio 5, which will set up your development environment and walk you through GSDK installation. Simplicity Studio 5 includes everything needed for IoT product development with Silicon Labs devices, including a resource and project launcher, software configuration tools, full IDE with GNU toolchain, and analysis tools. Installation instructions are provided in the online Simplicity Studio 5 User's Guide.

Alternatively, Gecko SDK may be installed manually by downloading or cloning the latest from GitHub. See https://github.com/SiliconLabs/gecko_sdk for more information.

Simplicity Studio installs the GSDK by default in:

- (Windows): C:\Users\<NAME>\SimplicityStudio\SDKs\gecko_sdk
- (MacOS): /Users/<NAME>/SimplicityStudio/SDKs/gecko_sdk

Documentation specific to the SDK version is installed with the SDK. Additional information can often be found in the knowledge base articles (KBAs). API references and other information about this and earlier releases is available on https://docs.silabs.com/.

8.2 Security Information

Secure Vault Integration

This version of the stack does not integrate Secure Vault Key Management.

Security Advisories

To subscribe to Security Advisories, log in to the Silicon Labs customer portal, then select **Account Home**. Click **HOME** to go to the portal home page and then click the **Manage Notifications** tile. Make sure that 'Software/Security Advisory Notices & Product Change Notices (PCNs)' is checked, and that you are subscribed at minimum for your platform and protocol. Click **Save** to save any changes.

8.3   Support

Development Kit customers are eligible for training and technical support. Use the Silicon Laboratories Zigbee web page to obtain information about all Silicon Labs Zigbee products and services, and to sign up for product support.

You can contact Silicon Laboratories support at http://www.silabs.com/support.

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