

# MCUSDKARTOSRN

## MCUXpresso SDK Azure RTOS Release Notes

Rev. 1.0 — 3 June 2022

Release notes

## 1 MCUXpresso SDK Azure RTOS introduction

Azure RTOS is an embedded development suite including a small but powerful operating system that provides reliable, ultra-fast performance for resource-constrained devices. It is easy-to-use and market-proven, deployed on more than 6.2 billion devices worldwide. Azure RTOS supports the most popular 32-bit microcontrollers and embedded development tools. Azure RTOS components include Azure RTOS ThreadX, Azure RTOS FileX, Azure RTOS GUIX, Azure RTOS NetX Duo, and Azure RTOS USBX. This release includes the above components and corresponding examples. For more information and getting started instructions, see *Getting Started with MCUXpresso SDK for Azure RTOS* (document MCUXSDKAZURERTOSGSUG).

## 2 Supported development systems

This release supports the boards and examples listed in the following table.

Table 1. Supported boards and examples

Components	Example Name	Boards	Description
ThreadX	i2c_example	evkmimxrt1020, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s06, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	The example shows an application using Azure RTOS ThreadX with the I2C driver.
	spi_b2b_example_master	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064	The example shows how to use the LPSPI driver in the master mode with Azure RTOS.
	spi_b2b_example_slave	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064	The example shows how to use the LPSPI driver in the slave mode with Azure RTOS.
	spi_example	evkbimxrt1050, lpcxpresso55s06, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	The example shows how to use the SPI driver with Azure RTOS.



Table 1. Supported boards and examples...continued

Components	Example Name	Boards	Description
	threadx_demo	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s06, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	An example of creating multiple threads.
	uart_example	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s06, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	The example demonstrates how to use the UART driver in Azure RTOS.
FileX	filex_ram_disk	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s06, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	This is a small demo of the high-performance FileX FAT file system.
	filex_sdcard	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s28, lpcxpresso55s69	The example shows how to use the SD card middleware with Azure RTOS.
LevelX	filex_levelx_spiflash	lpcxpresso55s06, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	The example shows how to use FileX and LevelX based on SPI NOR flash.
GUIX	guix_washing_machine	evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064	A GUI example of a washing machine. Support PXP acceleration.
	guix_washing_machine_hd	evkmimxrt1160, evkmimxrt1170	A high-definition GUI example of a washing machine. Support PXP acceleration.
NetX Duo	azure_iot_embedded_sdk	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s28, lpcxpresso55s69	An example communicating with Azure IoT Hub using Azure IoT SDK.

Table 1. Supported boards and examples...continued

Components	Example Name	Boards	Description
	azure_iot_embedded_sdk_pnp	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170	An example communicating with Azure IoT Hub using Azure IoT SDK and enabling Azure IoT Plug and Play feature.
	azure_iot_embedded_sdk_adu	evkmimxrt1060, evkbmimxrt1060	This example showcases the <b>preview version</b> of the Azure device update (ADU) feature. It connects to Azure IoT Hub and starts interacting with the service, Device Update for IoT Hubs. When the example is running, it will report the device status, and fetch the device update information. In this example, the device credential is stored in flash securely.
	azure_iot_mqtt	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170	An example communicating with Azure IoT Hub using MQTT
	ethernet_over_usb	lpcxpresso55s28, lpcxpresso55s69	An example doing the iperf network test over a HP USB Ethernet adapter.
	netx_duo_iperf	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170	An example doing the iperf network test.
	netx_duo_ping	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170	A network ping example.
	pnp_temperature_controller	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170	An example communicating with Azure IoT Hub using Azure IoT SDK and enabling Azure IoT Plug and Play feature, constantly reporting the device temperature value.
USBX	usbx_device_audio_loopback	lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	This example works as a USB audio device. When connecting it to a PC, it will appear as a USB speaker and a USB microphone device.
	usbx_device_audio_microphone	evkmimxrt1060	This example works as a USB Audio Microphone device. It will appear as a USB Audio Microphone when connected to PC.
	usbx_device_audio_speaker	evkmimxrt1060	This example works as a USB Audio Speaker device. It will appear as a USB Speaker device when connected to PC.
	usbx_device_cdc_acm	lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	An example works as a USB CDC ACM device.

Table 1. Supported boards and examples...continued

Components	Example Name	Boards	Description
	usbx_device_composite_cdc_acm_cdc_acm	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	This example works as two USB CDC ACM devices.
	usbx_device_hid_keyboard	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	An example works as a USB HID keyboard device.
	usbx_device_hid_mouse	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s16, lpcxpresso55s28, lpcxpresso55s69	This example works as a USB HID mouse device.
	usbx_device_mass_storage	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s28, lpcxpresso55s69	USB mass storage device example.
	usbx_host_cdc_acm	lpcxpresso55s28, lpcxpresso55s69	This example works as a USB host. It can communicate with a USB CDC ACM device
	usbx_host_hid_keyboard	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s28, lpcxpresso55s69	An example works as a USB HID keyboard host. When connecting a USB HID keyboard and pressing keys, the serial port will output which key has been pressed.

Table 1. Supported boards and examples...continued

Components	Example Name	Boards	Description
	usbx_host_hid_mouse	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s28, lpcxpresso55s69	This example works as a USB HID mouse host. When connecting a USB HID mouse and clicking the mouse buttons, the serial console will output which button has been clicked.
	usbx_host_mass_storage	evkmimxrt1010, evkmimxrt1015, evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170, lpcxpresso55s28, lpcxpresso55s69	USB mass storage host example.
<b>combined examples</b>	combine_usbx_netxduo_filex	evkmimxrt1020, evkmimxrt1024, evkbimxrt1050, evkmimxrt1060, evkbmimxrt1060, evkmimxrt1064, evkmimxrt1160, evkmimxrt1170	An example combined a ping example and a USB mass storage device example. It uses these components: ThreadX, FileX, USBX, NetX Duo.

## 3 Known issues

### 3.1 NetX Duo iperf example

The NetX Duo iperf example works for Linux but not for Windows 10.

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