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Boot to Qt Software Stack

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Reference Target Devices and Development Hosts

Qt for Device Creation supports a variety of hardware target devices. Qt is already ported on a rich set of operating systems (with and without POSIX) and various hardware, as listed in [Target Devices for Qt for Device Creation](#). For more detailed information about the devices and target operating systems, see [Reference Target Devices and Operating Systems](#).

Depending on your hardware, you can utilize the ready-made system images, buy the images as a service, or do the images yourself. For more information, see [Accessing Qt for Device Creation Deliveries](#).

Reference Target Devices and Operating Systems

Reference Target Devices

The following reference target devices are used in Qt's release test automation:

Reference target device	Installation guide
NXP i.MX8QuadMax	Embedded Linux guide
Toradex Apalis i.MX6	Embedded Linux guide
Toradex Colibri i.MX6ULL	Embedded Linux guide

Target Devices with limited support for Qt for Device Creation

The following table lists target devices that have been known to work with Qt for Device Creation at some point. The devices are listed under vendors and grouped by model names.

A ready-made system image is available for some of the listed devices. The images can be accessed via Qt online installer, [Qt Account Downloads](#), or [Qt Professional Services](#). For more information, see [Accessing Qt for Device Creation Deliveries](#).

Vendor	Model	SoC	GPU
BeagleBone	BeagleBone Black	TI AM335x	PowerVR SGX530
Boundary Devices	Boundary Devices i.MX6 Boards	NXP i.MX6	Vivante GC2000
	Boundary Devices Nitrogen7	NXP i.MX7	N/A
	Boundary Devices Nitrogen8M	NXP i.MX8M Quad	Vivante GC7000Lite
	Boundary Devices Nitrogen8M Mini	NXP i.MX 8M Mini	Vivante GCNanoUltra
Garz & Fricke	Garz & Fricke	NXP i.MX6	Vivante GC2000
Hilscher	NETX 4000	Hilscher netX 4000	N/A
Intel	Intel NUC	Atom, Celeron, i3, i5, i7	Intel Graphics
Intrisyc	SA8155P Automotive Development Platform	Qualcomm Snapdragon 8155P	Qualcomm Adreno

Vendor	Model	SoC	GPU
	S820Am v2 Automotive Development Platform	Qualcomm Snapdragon 820	Qualcomm Adreno
Kontron	Kontron SMARC-sAMX6i	NXP i.MX6	Vivante GC2000
NVIDIA	NVIDIA DRIVE CX	NVIDIA Tegra X1	NVIDIA Maxwell
	NVIDIA Drive PX 2	NVIDIA Tegra X2	NVIDIA Pascal
	NVIDIA Drive PX Xavier	NVIDIA Drive Xavier	NVIDIA Volta
	NVIDIA Jetson TX1	NVIDIA Tegra X1	NVIDIA Maxwell
	NVIDIA Jetson TX2	NVIDIA Tegra X2	NVIDIA Pascal
NXP	NXP i.MX8M Mini	NXP i.MX8M Mini	Vivante GC Nano Ultra
	NXP i.MX8QuadMax	NXP i.MX8QuadMax	Vivante GC7000
	NXP SABRE Board for Smart Devices	NXP i.MX6	Vivante GC2000
	NXP Warp 7	NXP i.MX7	N/A
Qualcomm	Qualcomm Snapdragon 820D	Qualcomm Snapdragon 820	Qualcomm Adreno
	Qualcomm Snapdragon 8155P	Qualcomm Snapdragon 8155P	Qualcomm Adreno

Vendor	Model	SoC	GPU
Raspberry	Raspberry Pi 4 B	Broadcom BCM2711	VideoCore 6
	Raspberry Pi 3 B+	Broadcom BCM283B	VideoCore 4
	Raspberry Pi 3 B	Broadcom BCM283x	VideoCore 4
	Raspberry Pi 2 Model B	Broadcom BCM283x	VideoCore 4
	Raspberry Pi Model B	Broadcom BCM283x	VideoCore 4
Renesas	Renesas E2	Renesas R-Car E2	PowerVR SGX540
	Renesas E3	Renesas R-Car E3	PowerVR GE8300
	Renesas D3	Renesas R-Car D3	PowerVR Series8XE GE8300
	Renesas H3 Salvator-X	Renesas R-Car H3	PowerVR Series6XT GX6650
	Renesas M3 Salvator XS	Renesas R-Car M3	PowerVR Series6XT GX6250
ST	STM32MP157A	STM32MP1	Vivante GCNano
TechNexion	PICO-IMX8M-MINI	NXP i.MX8M Mini Solo, NXP i.MX8M	Vivante GC Nano Ultra

Vendor	Model	SoC	GPU
		Mini Dual, NXP i.MX8M Mini Quad	
	PICO-IMX8M	NXP i.MX8M QuadLite, NXP i.MX8M Quad	Vivante GC7000Lite
	PICO-IMX7	NXP i.MX7 Solo, NXP i.MX7 Dual	N/A
	PICO-IMX6	NXP i.MX6 Solo, NXP i.MX6 DualLite, NXP i.MX6 Quad	Vivante GC2000
Texas Instruments	Sitara AM335x Starter Kit	TI AM335x	PowerVR SGX530
Toradex	Apalis i.MX6	NXP i.MX6	Vivante GC2000
	Colibri i.MX6ULL	NXP i.MX6ULL	N/A
	Toradex Apalis i.MX8	NXP i.MX8	Vivante GC7000
	Toradex Colibri iMX8X	NXP i.MX8X	Vivante GC7000Lite
	Toradex Colibri iMX6	NXP i.MX6	Vivante GC2000
	Toradex Colibri VF50	NXP Vybrid	N/A
	Toradex Colibri VF61	NXP Vybrid	N/A

Additionally, there may also be other devices running on Qt that are not listed in the table above. Porting Qt to new platforms is often done by our partners and community members, and information about all ports has not necessarily reached this documentation.

Accessing Qt for Device Creation Deliveries

With a commercial Qt for Device Creation license customer has access to the Qt for Device Creation deliveries in at least one of the following ways:

- Qt online installer that can be downloaded via [Qt Account Downloads](#)
- [Qt Board Support Packages \(QBSP\)](#) are available via [Qt Account Downloads](#)
- Through [Qt Professional Services](#)

Additional QBSP packages may also be available through the corresponding vendor pages. For more information about QBSP, see [QBSP Overview](#).

Target Operating Systems

The target operating system in Qt for Device Creation is embedded Linux based on Yocto 3.1 (Dunfell).

In Qt 6.0, there is limited support for reference target devices and operating systems when compared to Qt 5.15. Wider support for other target operating systems, for example embedded variants of Android and Real Time Operating Systems (RTOS), will be added in upcoming Qt 6 releases.

If you need Qt on some other operating system that is not yet supported by Qt, it is very probable that you can use Qt if the operating system provides the following features:

- POSIX API
- C++-17 compliant compiler
- Graphics API (in case your target device requires a UI). For more information about Graphics API support in Qt, see [Graphics](#).

Development Hosts

The development hosts for Qt for Device Creation are:

- Ubuntu Linux 64-bit (20.04 LTS or later)
- Windows 10 64-bit

Supporting macOS in Qt for Device Creation

As development host, support for macOS 10.15 (or later) with a limited functionality has been provided for some customers by Qt Professional Services. For more information, [contact us](#).

Qt for Design Studio fully supports macOS, along with Windows and Linux.

Building Image for Target Device from Sources

Qt sources are available from the Qt online installer or directly from the Git version control. If you want to use embedded linux, you can use Boot to Qt software stack to build image for your target device, or you can use the new meta-qt6 layer that we have created and released for Qt 6. The meta-qt6 layer allows you to build Qt 6 using the Yocto build environment.

If you need help with building or using the image, you can contact [Qt Professional Services](#).

Qt Technical Support

The level of available technical support for target devices depends on your Qt license and your device. If you have a Qt for Device Creation license, Qt technical support can help with the questions related to the [reference devices](#) under the standard support services. If you need help with other than reference devices, you need to separately buy support for your device.

See [Qt Support](#) for information about the technical support.

See [License Agreements and Service Terms](#) for the latest version of the Qt license agreements and the support terms and conditions for the Qt account.

Qt Professional Services

[Qt Professional Services](#) provides support for porting Qt to different target devices. For example, your project may have minimal Qt and QPA (Qt Platform Adaptation layer) source

code delivery. On the other end of spectrum, your project can be mature turnkey solution that contains custom applications and maintenance.

Qt performance on target devices

Qt can be used in embedded devices in such a variety of ways that estimating the performance and hardware requirements of Qt can be difficult without thorough testing. The application use case, display resolution, and use of 3D graphics affect how much performance is required in the target device. On a lower level, a QML based Qt application and full operating system can be run in approximately 10 MB of RAM. On the high end, the default Boot to Qt software stack enables almost all Qt features and modules and therefore requires better performing hardware. A good starting point would be a target device with 256MB of RAM, 1GHz CPU, and a GPU with OpenGL ES 2.0 or Vulkan support.

Support Lifecycle Policy

Release dates and support end-of-life dates for each Qt version are listed in [Supported Platforms and Configurations](#).

[Qt Board Support Packages](#) [Installation Guide](#) [Boot to Qt Software Stack](#)

Available under certain Qt licenses.

[Find out more.](#)

A dark blue rectangular advertisement for Qt hiring. In the top left corner is the Qt logo. The main text reads "We're hiring!" in a large, white, sans-serif font. Below this, in a smaller white font, it says "Work with the best #QtPeople in the business" and "Positions in R&D, consultancy, sales & marketing". At the bottom left, the URL "www.qt.io/careers" is displayed. On the right side of the advertisement, there is a stylized world map composed of green dots and lines, with several white squares highlighting specific geographic locations.

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