

Yocto Project Setup and Build Instructions

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1 Cloning the Repositories

```
git clone git://git.yoctoproject.org/poky
git clone git://code.qt.io/yocto/meta-qt6.git
git clone git://git.yoctoproject.org/meta-raspberrypi
git clone https://github.com/raspberrypi/linux.git
git clone https://github.com/rpm-software-management/rpm.git
git clone git://git.openembedded.org/meta-openembedded
git clone https://github.com/COVESA/capicxx-core-runtime
git clone https://github.com/COVESA/capicxx-someip-runtime
git clone https://code.qt.io/cgit/yocto/meta-boot2qt.git
```

2 Adding Layers to bblayers.conf

After cloning the necessary repositories, layers can be added using the `bitbake-layers` command:

```
bitbake-layers add-layer ../meta-qt6/
bitbake-layers add-layer ../meta-boot2qt/
bitbake-layers add-layer ../meta-raspberrypi/
```

2.1 bblayers.conf File

The `BBLAYERS` variable in the `bblayers.conf` file should be configured as follows:

```
BBLAYERS ?= " \
/home/samirameziany/yocto_project/yocto/poky/meta \
/home/samirameziany/yocto_project/yocto/poky/meta-poky \
/home/samirameziany/yocto_project/yocto/poky/meta-yocto-bsp \
/home/samirameziany/yocto_project/yocto/poky/meta-raspberrypi \
/home/samirameziany/yocto_project/yocto/poky/meta-capicxx-core \
```

```

/home/samirameziany/yocto_project/yocto/poky/meta-capicxx-someip \
/home/samirameziany/yocto_project/yocto/poky/meta-boot2qt \
/home/samirameziany/yocto_project/yocto/poky/meta-openembedded/meta-oe \
/home/samirameziany/yocto_project/yocto/poky/meta-openembedded/meta-python \
/home/samirameziany/yocto_project/yocto/poky/meta-openembedded/meta-multimedia \
/home/samirameziany/yocto_project/yocto/poky/meta-openembedded/meta-networking \
/home/samirameziany/yocto_project/yocto/poky/meta-openembedded/meta-fileystems \
/home/samirameziany/yocto_project/yocto/poky/meta-qt6 \
"

```

3 Creating Custom Layers

For `vsomeip` and `commonapi`, custom layers can be created as follows:

```

bitbake-layers create-layer ../meta-capicxx-someip/
bitbake-layers create-layer ../meta-capicxx-core/
bitbake-layers add-layer ../meta-capicxx-someip/
bitbake-layers add-layer ../meta-capicxx-core/

```

4 Configuring `local.conf`

In the `local.conf` file, configure the target machine and enable UART for Raspberry Pi 4-64:

```

MACHINE = "raspberrypi4-64"
ENABLE_UART = "1"

```

5 Building the Image

Initialize the build environment and start the build:

```

source oe-init-build-env
bitbake core-image-sato

```