

Meta-ros Overview

Supported Releases

- For support policies, refer to [OpenEmbedded Release Series Support](#)
- For recipe generation and branching, refer to [Superflore-OE-Recipe-Generation-Scheme](#).
- Yocto Releases: <https://wiki.yoctoproject.org/wiki/Releases>
- ROS Distributions: <http://wiki.ros.org/Distributions>
- ROS2 Distributions: <https://docs.ros.org/en/rolling/Releases.html>
- meta-ros Support Levels
<https://github.com/ros/meta-ros/wiki/Policies#supportlevel-values-in-mcf-files>
- meta-ros Machine Support
<https://github.com/ros/meta-ros/wiki/Policies#machine-support>

OpenEmbedded Release and ROS Distro

Last Updated 2023-10-16

OE Release	OE EOL (Rolling)	ROS1 Distros		ROS2 Distros			
		Melodic	Noetic	Foxy	Galactic	Humble (LTS)	Iron
		June 2023	May 2025	May 2023	Dec 2022	May 2027	Nov 2024
Scarthgap (Dev)	April 2028	May 2023	May 2025	May 2023	Dec 2022	May 2027	Nov 2024
Nanbield	April 2024	May 2023	May 2025	May 2023	Dec 2022	April 2024	April 2024
Mickledore	Nov 2023	May 2023	Oct 2023	May 2023	Dec 2022	Nov 2023	Nov 2023
Langdale	May 2023	May 2023	May 2023	May 2023	Dec 2022	May 2023	May 2023
Kirkstone (LTS)	April 2026	May 2023	April 2024	May 2023	Dec 2022	April 2026	Nov 2024
Honister	May 2022	May 2022	May 2022	May 2022	May 2022	May 2022	May 2022
Hardknott	April 2022	April 2022	April 2022	April 2022	April 2022	April 2022	April 2022
Gatesgarth	May 2021	May 2021	May 2021	May 2021	May 2021	May 2021	May 2021
Dunfell (LTS)	April 2024	May 2023	April 2024	May 2023	Dec 2022	April 2024	April 2024

Note: Colours indicate the proposed support levels for open discussion in the ROS OpenEmbedded Working Group.

Releases and distros not shown in the table above can be presumed unsupported.

Support Levels

Value	Definition
full	the configuration is fully supported
best-effort	the configuration has an EOL-ed ROS distro or OpenEmbedded release series, which means only a “best effort” will be made to have all its packages build
unsupported	the configuration is never built and only updated to fix breaking changes introduced upstream, eg [master] of a component’s repository being renamed to [main] or git:// needing to be replaced by https://
contrib	the configuration has been contributed and is not built
dne	this configuration does not exist

From: <https://github.com/ros/meta-ros/wiki/Policies>

(Colors from [Accessible Color Palette Generator | WCAG Compliant \(venngage.com\)](https://venngage.com/Accessible-Color-Palette-Generator-WCAG-Compliant/))

Branches

The master branch is intended to follow the Yocto Project release series currently under development. It is currently on Kirkstone and needs to be moved forward to the Scarthgap which is the Yocto release under development. The ROS distros each have their own sub-directory containing a layer inside the branch.

The -next branches contain “commits that are pending being merged into their corresponding unaffixed branches”

The build branch contains the mcf tool which can be used for creating an environment using the .mcf configuration files.

Tags

Information on past meta-ros milestone releases can be found on the meta-ros GitHub wiki: <https://github.com/ros/meta-ros/wiki/Superflore-OE-Recipe-Generation-Scheme#milestones>

The last official milestone was [Milestone 17](#) on 2022-06-05.

Milestones provide updates for all supported combinations of OpenEmbedded releases and ROS Distributions.

Suggested steps

See the [policy section on SupportLevel](#) values for clarification on the levels listed below:

Stage 1: Update MCF Configuration Files

- ☒ Checkout the build branch (or robwoolley/build-next)
- ☒ Set the following mcf files to “unsupported” and move to files-unsupported:
 - ☒ webos-*.mcf
- ☒ Modify the following combinations from ‘full’ to ‘best-effort’:
 - ☒ ros1-melodic-*.mcf
 - ☒ *-hardknott.mcf
 - ☒ *-honister.mcf
 - ☒ ros2-foxy-*.mcf
 - ☒ ros2-galactic-*.mcf
- ☒ Set ros2-humble-{honister,hardknott} to contrib and move to files-contrib
- ☒ Set ros2-rolling-{honister,hardknott} to unsupported and move to files-unsupported
- ☒ Add the following combinations as “full”:
 - ☒ ros2-humble-{kirkstone,dunfell}
- ☒ Push changes to build-next / build

Stage 2: Update README.md

- ☒ Checkout tag master/milestones/17
- ☒ Add a chart to the documentation explaining the Yocto Releases and ROS Distro
- ☒ Explain the update policy / mechanism for updates on repository
- ☒ Push to master-next / master

Stage 3: Update Kirkstone

- ☒ Using master (kirkstone): add humble, iron to scripts/ros-generate-*
- ☒ Add support for ROSDEP_SOURCE_PATH to scripts/ros-generate-*
- ☒ Add rename-bbappend.sh script
- ☒ Create meta-ros2-humble

- ☒ Use superflore to generate new recipes for humble:
 - ~~sh scripts/ros-generate-cache.sh \${ROS_DISTRO} \${ROSDISTRO_DATE} \${ROSDISTRO_REPO_PATH} \${ROSDISTRO_COMMIT}~~
 - ~~sh scripts/ros-generate-recipes.sh \${ROS_DISTRO}~~
- ☒ Create a branch for kirkstone-next
- ☒ Fix all build failures for ros-image-core
- ☒ Repeat previous steps for iron
- ☒ Repeat previous steps for noetic
- ☒ Update ros1-noetic-kirkstone.mcf in build-next
- ☒ Repeat previous steps for rolling
- ☒ Create a branch for all supported Yocto releases with *next
- ☒ Repeat superflore steps

Stage 4: Add New Combinations

- ☒ Add the following combinations as “full”:
 - ☒ ros2-humble-{scarthgap,nanbield}
- ☒ Push changes to build and master
- ☒ Set the master branch to scarthgap (note: since Yocto only sets the name upon release so ROS_OE_RELEASE_SERIES stays as “nanbield” until then)
- ☐ Add the following combination as “full”
 - ☐ ros1-{noetic}-scarthgap.mcf
 - ☒ ros2-{humble,iron,rolling}-scarthgap.mcf

Stage 5: Update Old Combinations

- ☐ Push to hardknott-next
- ☐ Push to dunfell-next

Stage 6: Update Dunfell Humble

- ☐ Push [robwoolley/dunfell-next](https://github.com/robwoolley/dunfell-next) to meta-ros/dunfell-next
- ☐ Update Dunfell Humble to PR5
<https://github.com/ros2/ros2/releases/tag/release-humble-20230925>

Stage X:

- ☐ Fix build failures for ros-image-world
- ☐ Create Dunfell Iron PR2 <https://github.com/ros2/ros2/releases/tag/release-iron-20230912>

Build Test

Get a semi-official container image for building Yocto based on Ubuntu 20.04 LTS (Focal):

git clone <https://github.com/crops/yocto-dockerfiles.git>

cd yocto-dockerfiles/dockerfiles/ubuntu/ubuntu-20.04/ubuntu-20.04-base

Use ./buildall.sh to build all the containers or execute this manually to just build ubuntu-20.04
TMPDIR="\$(mktemp -d)" REPO=rcwoolley/yoctobuilder DISTRO_TO_BUILD=ubuntu-20.04
./build_container.sh .

Sample usage

docker run -it --rm rcwoolley/yoctobuilder:ubuntu-20.04-base

Milestone release steps

- ☐ Update README.md and milestone.conf for each branch
- ☐ TBD

CI Infrastructure

- ROS Official Docker Images https://hub.docker.com/_/ros
- ROS Wiki CI <http://wiki.ros.org/CIs>
- Where?
 - Local (native and container-based)
 - Cloud-builds (e.g. AWS)
- Yocto Autobuilder [Buildbot \(yoctoproject.org\)](http://buildbot.yoctoproject.org)
- Yocto Error Reports <https://errors.yoctoproject.org/Errors/Latest/Autobuilder/>
 - i.