ROS Jazzy Jalisco

--- What's new for ROS 2 core ---

see more details to
https://docs.ros.org/en/jazzy/Releases/Release-Jazzy-Jalisco.html

Jazzy Documentation

Installation, Tutorials, How-to Guides and Packages are available.

Supported Platform

- Tier 1 platforms
  - **Ubuntu 24.04 Nobel** (amd64 / aarch64)
  - Windows 10 (VS 2019) (amd64)
- Tier 2 platforms
  - RHEL 9 (amd64)
- Tier 3 platforms
  - macOS (amd64)
  - Debian Bookworm (amd64)

New Features

Preview RMW Zenoh

A new ROS MiddleWare (RMW) that integrates Zenoh with ROS 2 and rmw_zenoh is now available. However, it is still a preview because there are some known bugs in it, and we aren’t quite ready to commit to it for the long term.

rmw_zenoh is one of `Non-DDS` RMW implementations.

Note that rmw_zenoh requires `Zenoh Router` daemon running.

To use, we need to compile rmw_zenoh from the source.

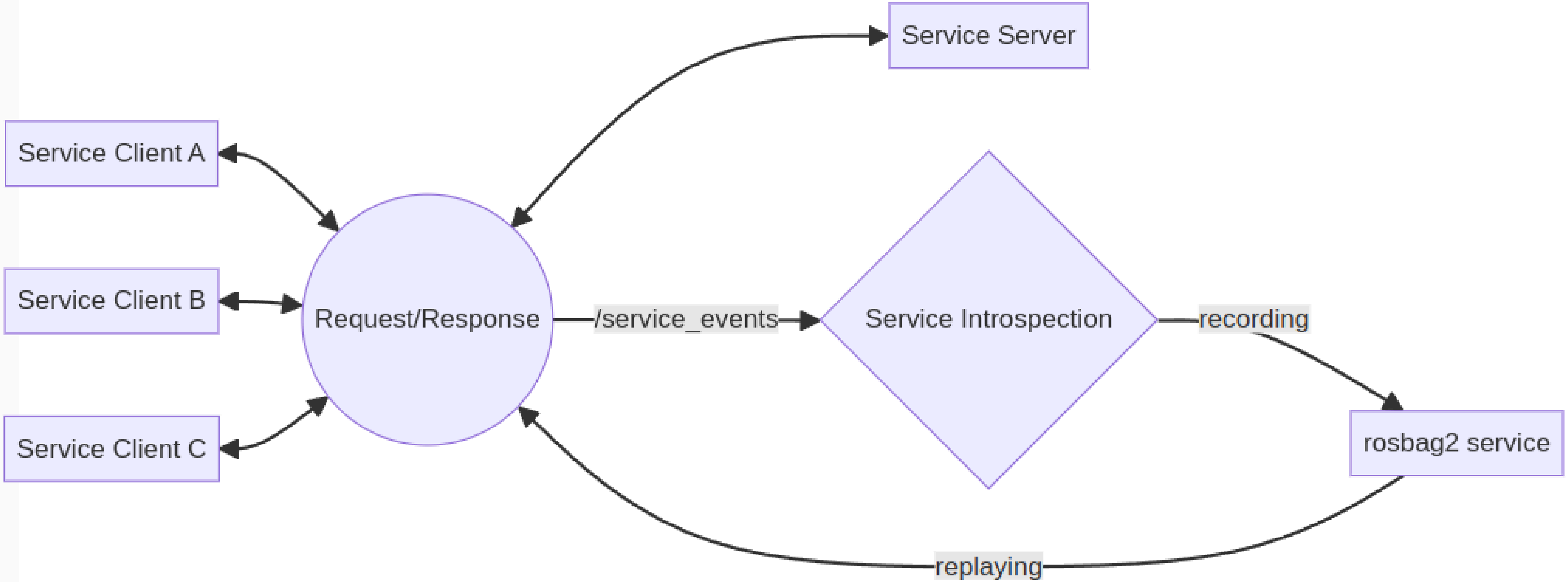
```
### Start the zenoh router
ros2 run rmw_zenoh_cpp rmw_zenoh

### Talker and  Listener
RMW_IMPLEMENTATION=rmw_zenoh_cpp ros2 run demo_nodes_cpp talker
RMW_IMPLEMENTATION=rmw_zenoh_cpp ros2 run demo_nodes_cpp listener
```

- By default, discovery traffic is only in local host system. If network communication is needed, we need to configure zenoh router and restart.
- uses CDR as the serialization format. (Compatible with DDS based RMWs)

rosbag2 record and replay service

This feature depends on Service introspection implemented in Iron. rosbag2 takes advantage of it to record all service requests and responses, and also replays service data from the bag file.

This feature allows you to debug/enhance/test/simulate the ROS 2 services more efficiently.


Service Server
Service Client A
Service Client B
Service Client C
Request/Response
/service_events
Service Introspection
recording
rosbag2 service
replaying

- Recording

```
# All services and all topics
ros2 bag record --all
# All topics
ros2 bag record --all-topics
# All services
ros2 bag record --all-services
```

- Playback

```
ros2 bag play --publish-service-requests bag_path
```

Please check out Managing Service Data Tutorial and Design Document for more information.

Core Feature Development

- message_filters
  - Now we can use `TypeAdapter` to the subscription, so that user defined message type can be declared and converted by user callback for the filtering process.
- rcl
  - `~/get_type_description` service is added to support upcoming feature Evolving Message Type.

- rclcpp
  - `get_service_typesupport_handle` API is added to resolve service type at runtime. this is required by rosbag2 service playback which requires dynamic service type resolving.
- ros2cli
  - Now you can specify the log file name prefix with `--ros-args --log-file-name filename`. This is useful when you run with `ros2 run` because prefix is `python` by default.
  - Escape sequence support for human readable log format supports with `RCUTILS_CONSOLE_OUTPUT_FORMAT`.

- rosbag2
  - `Player` and `Recorder` are now exposed as rclcpp components. this brings the capability that you can record and play via intra-process communication with high performance.
  - Compression threads priority control support.
  - Split bag files during conversion.
  - bag files self-contain metadata. this means each bag file is self-contained, ready to play on anywhere.

- ros2action
  - `type` sub-command is now supported to look up the action type.

    ```
    ros2 action type /fibonacci
    action_tutorials_interfaces/action/Fibonacci
    ```

Core Updates from Iron Irwini

- rcl
  - rcl_timer_call_with_info is added to allow user application know expected timer call time and when actual timer is called. e.g user application can know the jitter and delay for the timer.
  - rcl_wait improvement to avoid spurious wake-ups.
- rclcpp
  - Data Racy Condition Improvement.
  - Enhancement rclcpp::WaitSet.
  - rclcpp::get_typesupport_handle is deprecated.
  - Actual and expected call time when timer is called.
  - Entity Execution Order is NOT predictable (W.I.P).

- rclcpp_action
  - Safely release goal handle, to drop the handle in a locked context.
- rclpy
  - forbid parameter to be declared statically without initialization.
  - Several `TypeDescriptionsInterface` enhancement for Evolving Message Type.

- rosbag2
  - --exclude CLI option was renamed to the --exclude-regex (part of rosbag2 service development).
  - Add node name to the Read(Write)SplitEvent message to support multiple rosbag2 instance.
  - Signal Handling Enhancement.
  - Add topic_id returned by storage to the TopicMetadata, performance improvement with id but topic names via storage backend and tell multiple topics with id.
  - Improve performance in SqliteStorage::get_bagfile_size()

- ros2_tracing
  - publication and subscription end to end tracing is agnostic from middleware details, no source build is required anymore
  - Generic publisher and subscription tracing supported
  - New `ros2 trace start/pause/resume/stop` sub-commands are supported.

```
$ ros2 trace start session_name   # Configure tracing session and start tracing
$ ros2 trace pause session_name   # Pause tracing after starting
$ ros2 trace resume session_name  # Resume tracing after pausing
$ ros2 trace stop session_name    # Stop tracing after starting or resuming
```

see more details for https://github.com/ros2/ros2_tracing/pull/70 and readme

2025 ROS Turtle `K` Release: Kilted Kaiju

Kaiju is a Japanese term that is commonly associated with media involving giant monsters.

See you at ROSCon 2024

Odense, Denmark

October 21st - 23rd, 2024