F.6 Presentation

Return to DDS Quality of Service

The PRESENTATION QoS policy controls the extent to which changes to data-instances can be made dependent on each other and also the kind of dependencies that can be propagated and maintained by the Service.

The setting of coherent_access controls whether the Service will preserve the groupings of changes made by the publishing application by means of the operations begin_coherent_change and end_coherent_change.

The setting of ordered_access controls whether the Service will preserve the order of changes.

The granularity is controlled by the setting of the access_scope.

If coherent_access is set, then the access_scope controls the maximum extent of coherent changes. The behavior is as follows:

- If `access_scope` is set to INSTANCE, the use of `begin_coherent_change` and `end_coherent_change` has no effect on how the subscriber can access the data because with the scope limited to each instance, changes to separate instances are considered independent and thus cannot be grouped by a coherent change.
- If `access_scope` is set to TOPIC, then coherent changes (indicated by their enclosure within calls to `begin_coherent_change` and `end_coherent_change`) will be made available as such to each remote `DataReader` independently. That is, changes made to instances within each individual `DataWriter` will be available as coherent with respect to other changes to instances in that same `DataWriter`, but will not be grouped with changes made to instances belonging to a different `DataWriter`.
- If `access_scope` is set to GROUP, then coherent changes made to instances through a `DataWriter` attached to a common `Publisher` are made available as a unit to remote subscribers.

If `ordered_access` is set, then the access_scope controls the maximum extent for which order will be preserved by the Service.

- If `access_scope` is set to INSTANCE (the lowest level), then changes to each instance are considered unordered relative to changes to any other instance. That means that changes (creations, deletions, modifications) made to two instances are not necessarily seen in the order they occur. This is the case even if it is the same application thread making the changes using the same `DataWriter`.
- If `access_scope` is set to TOPIC, changes (creations, deletions, modifications) made by a single `DataWriter` are made available to subscribers in the same order they occur. Changes made to instances through different `DataWriter` entities are not necessarily seen in the order they occur. This is the case, even if the changes are made by a single application thread using `DataWriter` objects attached to the same `Publisher`.
- Finally, if `access_scope` is set to GROUP, changes made to instances via `DataWriter` entities

attached to the same `Publisher` object are made available to subscribers on the same order they occur.

Note:

This QoS policy controls the scope at which related changes are made available to the subscriber. This means the subscriber can access the changes in a coherent manner and in the proper order; however, it does not necessarily imply that the Subscriber will indeed access the changes in the correct order. For that to occur, the application at the subscriber end must use the proper logic in reading the `DataReader` objects, as Data Distribution Service (DDS) 1.4 Spec, Access to the data.

The value offered is considered compatible with the value requested if and only if the following conditions are met :

1. The inequality “offered access_scope >= requested access_scope” evaluates to ‘TRUE.’ For the purposes of this inequality, the values of PRESENTATION access_scope are considered ordered such that INSTANCE < TOPIC < GROUP.
2. Requested coherent_access is FALSE, or else both offered and requested coherent_access are TRUE.
3. Requested ordered_access is FALSE, or else both offered and requested ordered _access are TRUE.

Source: DDS 1.4 Spec

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