

Data Writer

DataWriter objects are responsible for sending type-specific data to one or more DataReaders.

A DataWriter is created with a Topic, which gives a name to the data stream and associates the DataWriter with a data type. A DataWriter sends data to one or more DataReaders if the DataWriter and DataReader(s):

- have Topics with the same name
- have data types that are assignable to each other (not necessarily identical)
- are within the same domain
- have compatible QoS
- can be discovered and communicate with each other over one or more transports

The behavior of a DataWriter is controlled by QoS. For example, a DataWriter can be made reliable by configuring its RELIABILITY QoS. A DataWriter provides asynchronous notifications in the form of Status Changes.

There are two types of objects that can be referred to as DataWriters: DDS DataWriter objects and type-specific DataWriter objects (usually called FooDataWriter to indicate a user data type “Foo”).

The DDS::DataWriter object is used for actions that are not specific to a single data type, such as configuring QoS or installing listeners. The type-specific FooDataWriter object is used for actions that involve the specific data type, such as writing data or unregistering/disposing of an instance.

For example, when writing data, you must use a type-specific DataWriter, rather than the generic DataWriter class:

Example of using a DDS DataWriter

```
// Create the DDS::DataWriter. This object can be used for configuring QoS,
// asserting liveliness, or other non-type specific actions.
DDS::DataWriter *ddsWriter
= publisher->create_datawriter
  ( medicalDataTopic,
    qos,
    listener,
    DDS_STATUS_MASK_ALL
  );
// Create the type-specific DataWriter. This object can be used for writing
data,
// disposing a data-instance, or other actions that are specific to a data
type
MedicalDeviceDataWriter *medicalDataWriter
= MedicalDeviceDataWriter::narrow(ddsWriter);
medicalDataWriter->write(deviceData, ...);
```

From:
<https://www.omgwiki.org/dds/> - **DDS Foundation Wiki**

Permanent link:
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Last update: **2019/05/12 21:15**

