

RTI Recording Service

Recording, Analysis and Replay of Real-Time Data



Time-critical and data-critical applications — such as combat systems, financial trading applications and transportation management systems — can rapidly generate large volumes of real-time data. RTI Recording Service reliably and non-intrusively records large amounts of real-time data from a heterogeneous networked system without having prior knowledge of the system. Data is stored in a portable format, immediately available for replay, querying, or conversion to commonly accepted formats for export to data analysis tools.

Applications:

- Data recording for analysis and debugging
- Data replay for simulation and testing
- Archiving for regulatory compliance

Features:

- Efficient, non-intrusive data capture
- Records data, metadata and system information
- Recording console for easy configuration and operation
- Portable data format with all information necessary for analysis and replay
- Run-time control via interactive shell and built-in topics
- Real-time, configurable data replay
- Scalable and suitable for fault-tolerant applications

RTI Recording Service, a component of RTI Connext Messaging, is the first off-the-shelf solution for non-intrusive recording, analysis and replay of real-time data, messages and events at high data-rates and high fidelity.

Efficient Non-Intrusive Data Capture

Useful in project development, testing and system integration as well as in deployed systems, RTI Recording Service provides an efficient data capture mechanism with minimal system impact. It can be used when recorded data is needed for analysis and for system debugging, when there is a need to record run-time activity for later review, or when there is a need to record data to simulate components of the system that are not readily available during system development.

Real-Time Data Replay

RTI Recording Service enables real-time, configurable replay of recorded data. The replay function provides fidelity to within 10 milliseconds of the recorded data rate. It also provides options for accelerated and decelerated replay, and replay using different Quality of Service (QoS) settings than used in the original recorded application. Replay is non-intrusive to the system, simply appearing as another publisher to DDS, transparent to subscribers.

Efficient Data Analysis Integration

RTI Recording Service stores data in a platform independent format that can be used on any of the supported operating systems. Data is immediately available, searchable and scriptable through SQL, and can be exported to enterprise databases or to standard data formats — such as XML, HTML and CSV — for use in readily available analysis software.

Seamless Integration with RTI Connex

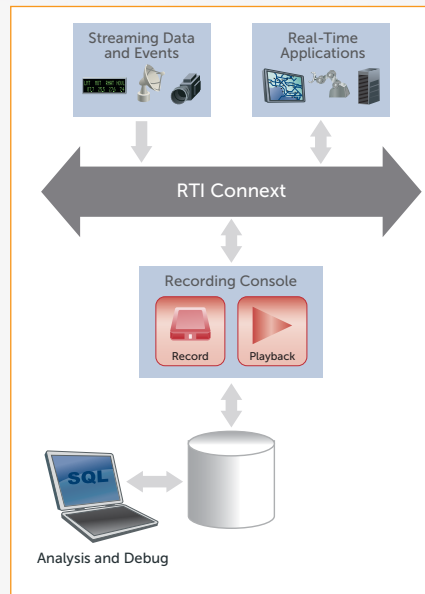
Out of the box, RTI Recording Service provides seamless integration with RTI Connex; it will automatically record and replay all the topics encountered in the system. RTI Recording Service is distributed as a stand-alone service and works seamlessly with the dynamic architecture of RTI Connex. It can record data from, or replay data to, any heterogeneous networked system that is using RTI Connex.

Complete Configurability

RTI Recording Service is completely configurable, providing the capability to selectively control what data to interact with and how to interact with it. Depending on settings in the configuration file, the service can interact with data from multiple domains and can be configured to record or replay all published topics, only a subset of topics, or only certain fields within selected topics.

QoS properties, such as reliability, control how data is sent and received by RTI Connex applications. By default RTI Recording Service automatically determines the settings needed to create a communication channel with a DDS publisher or subscriber, and it is also possible to explicitly control the QoS properties. In addition, serialized or de-serialized data samples can be used — trading off convenience for raw performance.

Users can control the number of files in which data is stored, the maximum size of the data files, and the partitions used. RTI Recording Service can handle any sample size — from 16 bytes up to 1 Gigabyte. To avoid the pitfalls associated with large data files, RTI Recording Service can use multiple files, with more than 2 Terabytes of data stored in a single file.



Graphical Recording Console

Recording Console provides a graphical front end for configuration, scheduling, and recording functions. In addition to standard recorder operations (start, stop, pause, etc.) the user can monitor and select topics to replay, control the playback speed, and perform many other advanced functions.

Scalable and Suitable for Fault-Tolerant Applications

Multiple instances of RTI Recording Service can be run concurrently to enable recording or replay of extraordinarily high data volumes and to support redundant recording or replay of critical data. Fine grain control is provided over which data is recorded or replayed by each instance.

Example Uses

Distributed Testing and Simulation

Recording and Replay of live and simulated distributed tests allow you to establish a fixed baseline and repeat tests with high fidelity, even when the system or testing lab is not available

Seamless integration with third-party technologies, such as Relational Data Management Systems (RDBMS) and Complex Event Processing (CEP), reduces the risk and cost of your QA effort

Financial Trading

Recording market data, analytic results and trade decisions so that algorithm and real-time performance can be analyzed and optimized

Replay for testing software and algorithm updates

Demonstrating best execution per regulatory requirements such as Reg NMS and MiFID

Intelligence, Surveillance and Reconnaissance

Recording data for post-mission analysis, particularly when network connectivity is not available during a mission, is unreliable, or does not have sufficient bandwidth to stream available data in real-time

About RTI

Real-Time Innovations (RTI) is the Industrial Internet of Things (IIoT) connectivity company. The RTI Connex® databus is a software framework that shares information in real time, making applications work together as one, integrated system. It connects across field, fog and cloud. Its reliability, security, performance and scalability are proven in the most demanding industrial systems. Deployed systems include medical devices and imaging; wind, hydro and solar power; autonomous planes, trains and cars; traffic control; Oil and Gas; robotics, ships and defense.

RTI is the largest vendor of products based on the Object Management Group (OMG) Data Distribution Service™ (DDS) standard. RTI is privately held and headquartered in Sunnyvale, California.



Your systems. Working as one.

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