

DATASHEET

RTI Recording Service

RECORDING, ANALYSIS AND REPLAY OF REAL-TIME DATA

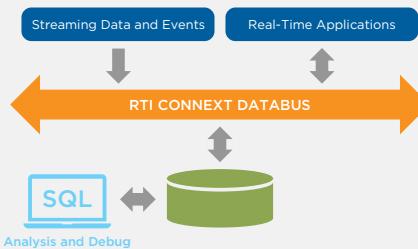
HIGHLIGHTS

- Data recording for analysis and debugging
- Data replay for simulation and testing
- Archiving for regulatory compliance
- Efficient, non-intrusive data capture
- Records data, metadata and system information
- Integrated with Administration Console for easy configuration and operation

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.

OVERVIEW

RTI Recording Service, a component of RTI Connext® DDS Professional, 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.



Record and replay data and events on the Connext database

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 provides options for accelerated and decelerated replay, and replay using different Quality of Service (QoS) settings than those used in the original recorded application. Replay also has the ability to jump forward or backward in time during the replay, and can recreate the “state of the world” given a starting timestamp by replaying the instance history prior to the timestamp. Replay is non-intrusive to the system, simply appearing as another publisher to DDS, and transparent to subscribers.

DEBUG MODE FOR DATA REPLAY

RTI Recording Service has a debug mode for Replay that allows developers to set breakpoints and lets them specify the behavior of the replay after the breakpoint is hit.

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 JSON in SQLite — for use in readily available analysis software.

SEAMLESS INTEGRATION WITH RTI CONNEXT

Out of the box, RTI Recording Service provides seamless integration with RTI Connext® DDS; 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 Connext. It can record data from, or replay data to, any heterogeneous networked system that is using Connext.

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 Connext 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.

ABOUT RTI

Real-Time Innovations (RTI) is the largest software framework company for autonomous systems. RTI Connext® is the world's leading architecture for developing intelligent distributed systems. Uniquely, Connext shares data directly, connecting AI algorithms to real-time networks of devices to build autonomous systems.

RTI is the best in the world at ensuring our customers' success in deploying production systems. With over 1,700 designs, RTI software runs over 250 autonomous vehicle programs, controls the largest power plants in North America, coordinates combat management on U.S. Navy ships, drives a new generation of medical robotics, enables flying cars, and provides 24/7 intelligence for hospital and emergency medicine. RTI runs a smarter world.

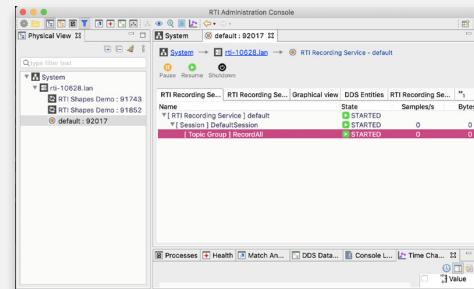
RTI is the leading vendor of products compliant with the Object Management Group® (OMG®) Data Distribution Service™ (DDS) standard. RTI is privately held and headquartered in Sunnyvale, California with regional offices in Colorado, Spain and Singapore.

Download a free 30-day trial of the latest, fully-functional Connext software today: <https://www.rti.com/downloads>.

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GRAPHICAL CONTROLS FOR RECORDING AND REPLAYING

RTI Administration Console provides a graphical front end for recording and replay functions. In addition to standard recorder operations (start, stop, pause, etc.), the user can monitor and visualize data during recording and replay.



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-grained 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 quality assurance effort.

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.