Ovation™ Database Server

Features

- Houses the Ovation™ database, which populates a distributed database contained on all Ovation network-attached drops.
- Utilizes a relational database management system for data integration and organization.
- Stores system configuration, control algorithm information, and process point information.
- Uses system editing functions to track changes such as those provided by the Ovation Developer Studio and Ovation Control Builder engineering tools.

Introduction

The Ovation™ Database Server is a secure, reliable, and scalable server platform that supports complex Ovation control system database processes. The Ovation database server uses a relational database management system to integrate and organize massive amounts of raw data. This data is saved in tables where it can be extracted for use in Ovation control system applications.

The Ovation system database, stored within the Database Server, contains system configuration data (defined by the Developer Studio engineering tools), configuration data for Ovation applications, user interface information, and process points. The Ovation database is used to populate the distributed databases that reside on all Ovation drops connected to the Ovation network.

Ovation Database Types

The Ovation database within the Ovation Database Server creates and populates various distributed databases. Distributed databases contain a subset of information that is locally stored on each network-attached drop to allow for independent operation. The distributed databases are continually updated when point information changes.

Modifications to the Ovation Database is performed using system editing functions such as those provided by the Ovation Developer Studio and the Ovation Control Builder. As changes are made and/or loaded to Ovation drops, the Ovation Database Server performs a distribution of applicable data for each change in sequence.

The server also periodically broadcasts (through multicast) the plant mode point information, primary/partner drop information, drop mismatch information, and the current sequence number. Drops use the current sequence number to determine if an update request is needed.

Database Creation

The creation of the Ovation database is a product of a combined effort between customer design engineers and Emerson project engineers.

Typically, the following process is used to create the Ovation database:

- The customer determines the names and types of I/O points that are needed for the system. This information is based on the quantity and types of devices that need to be monitored in the control system.
- The customer and/or Emerson enters the defined points into a database tool (such as an Emerson internal tool, Microsoft® Access, or Excel) along with the fields required for each point. Point information is then imported into the Ovation database.
- Emerson determines what Ovation I/O modules are needed to handle the proposed points.
- Emerson determines how I/O modules should be mounted in the system cabinets so that the total of all the points can be partitioned accordingly.
- Point-by-point changes can be made using the Ovation point building tool. Mass changes can be performed by taking data out of the Ovation database and inserting it into the database tool for editing. After the edits are complete, the file is imported into the Ovation database again.

Relationship with the Engineering Functions

Having all the pertinent system information in one database provides the flexibility and processing speed needed to ensure that Ovation performs its functions quickly and efficiently. The Ovation database has a relationship with other Ovation functions as described in the following sections.

Ovation Developer Studio

The Developer Studio serves as a "window" into the Ovation Database Server. As a fully integrated advanced software program, the Developer Studio creates and maintains Ovation drop types, control strategies, process graphics, point records, and system-wide configurations including security features.

Ovation engineering tools within the Developer Studio program are used define initial control system attributes and edit those attributes as system requirements change.

Ovation Control Builder

Algorithm and Control Builder default points are created, deleted, and modified with the Ovation Control Builder. When Ovation logic is changed through the Control Builder, those modifications are communicated to the Ovation Database Server for subsequent database updates. The Control Builder's load function (initiated by the Ovation Developer Studio's load operation) delivers the updated data to applicable Ovation Controller drops.