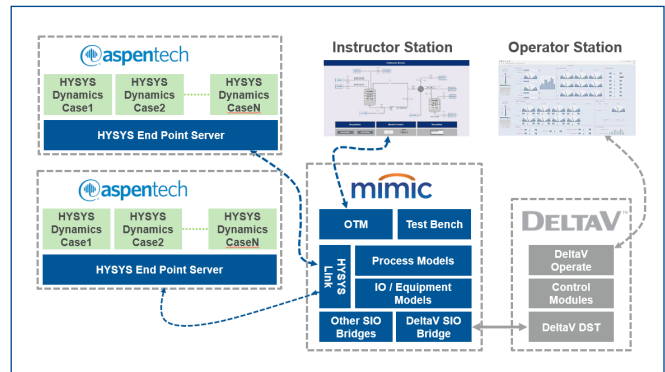# Mimic™ HYSYS Link

- Movement of IO data between Mimic and DeltaV Simulate or other control systems simulators

- Support for multiple HYSYS cases in a single machine or across multiple machines

- Running the models and external systems at speeds other than real-time

- Ability to create, store, and restore snapshots

Introduction

The Mimic HYSYS Link allows direct integration of HYSYS Dynamics models into Mimic Simulation Software and the Emerson Digital Twin, allowing those models to be used for control system development and testing, operator training, and continual improvements and OPEx initiatives. The Mimic HYSYS Link supports Multi-Purpose Dynamic Simulation projects, with a proven method to support the use of Aspen HYSYS for process design and HYSYS Dynamics for operations and control testing with the control system.

Built upon the proven communication bridge architecture in Mimic, the HYSYS Link provides:

- Movement of IO data between Mimic and DeltaV Simulate or other control systems simulators.

- Support for multiple HYSYS cases in a single machine or across multiple machines.

- Synchronization of variables between cases in the same machine or across several machines.

- Synchronization of execution for multiple cases in the same machine.

- Pause and resume the models and external systems.

- Running the models and external systems at speeds other than real-time.
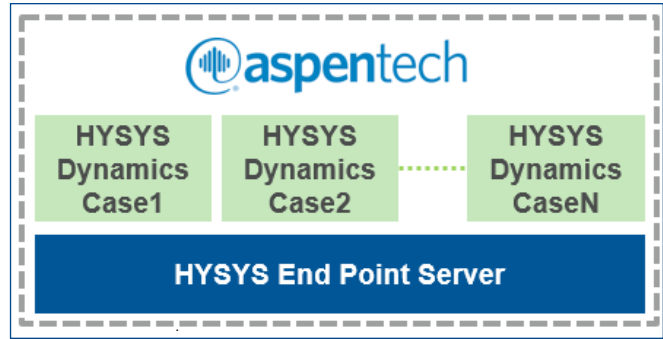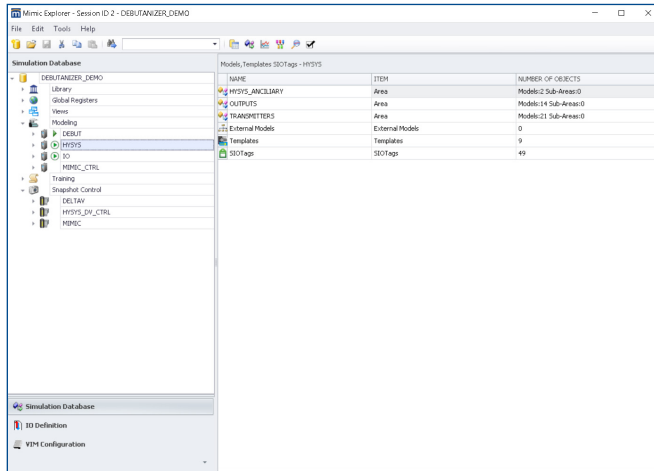
- Ability to create, store, and restore snapshots.

Benefits

Complete integration for HYSYS Dynamics into the Emerson Digital Twin

Mimic HYSYS Link uses a direct API interface, based upon the HYSYS Automation Interface, creating high speed and secure communications between Mimic and HYSYS, through the HYSYS End Point Server. Mimic HYSYS Link provides synchronous IO updates and execution control of HYSYS Dynamics models. Mimic bulk generation and discovery tools make integration fast and easy.

EMERSON.

Built Upon the Proven Performance of Mimic

Mimic Simulation Software is a dynamic real-time, process simulation solution that provides selective (low, medium and high) modeling of process plants with an extensive modeling library. Mimic automatically integrates with DeltaV Simulate and other control system simulators. Mimic is built on the latest technology with a multi-threaded 64-bit real-time simulation engine, multi-user support, and is VMWare and Hyper-V ready.

Product Description
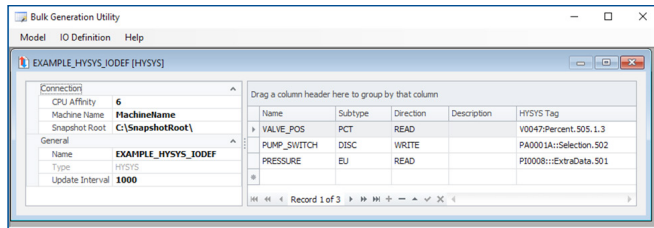
Mimic HYSYS Endpoint Application

Mimic HYSYS Link uses the HYSYS automation interface API. The Mimic HYSYS End Point Server in installed on the HYSYS machine and provides multiple, simultaneous connections from the Mimic HYSYS Bridge. When a connection is established, the bridge will send information about the case to launch, as well as the subscription list of HYSYS items for the bridge.

The Mimic HYSYS Endpoint application supports a variety of functionality.

- Communication methods supported:

    HYSYS IO to Control System Simulated IO Tags Direct

    HYSYS IO to Mimic Base / IO / Equipment Models

    HYSYS Case1 to CaseN Direct

    HYSYS End Point to End Point Server

- Snapshot coordination and speed control

- Synchronous IO updates and execution control of HYSYS Dynamics Models

- Updates configured in the Mimic SIO Definition

Mimic HYSYS IO Definition

The Mimic HYSYS IO Definition is optimized for HYSYS IO tables (AspenTech recommended communication method). The user defines the IO table in HYSYS Dynamics and the Mimic HYSYS Endpoint Server finds the HYSYS Cases and IO tables. To make IO table selection easy, there is a browsable interface. The Mimic SIO Tag configuration allows user selection of the HYSYS IO use. Mimic Server and the Mimic HYSYS End Point Server is a high-speed TCP/IP Socket.

Configuration Values for the HYSYS SIO Tag Configuration include:

- SIO_TAG: The name of the Mimic SIO tag.

- DIRECTION: From the perspective of Mimic, the direction of data movement.

- LINK_TYPE: A connection detail that allows the mapping of data from one node in Mimic to another or for the Endpoint to pass data from one case variable to another.

- LINK_REF: The connection detail needed to map between systems if required.

- HYSYS_TABLE: Identifies the HYSYS table name.

- HYSYS_TAG: Identifies the variable to exchange data.

- SIO_SUBVALUE: The portion of the SIO tag to read/write.

Customizing Mimic HYSYS SIO Communications

To customize Mimic HYSYS SIO Communications, users can edit and update their HYSYS SIO Definition using the Mimic Bulk Generation utility. This supports editing in the utility, MS Excel, CSV or XML format.

Integration with Mimic Operator Training Manager and Mimic Explorer

The Mimic Operator Training Manager supports full integration of DeltaV, HYSYS and Mimic snapshot controls. This allows for simple creation of training scenario malfunctions and ad-hoc malfunctions supported with Mimic IO and equipment models. Training controls, for the integrated solution, can be built in Mimic Instructor Station graphics of DeltaV Live.

Mimic Explorer controls starting and stopping HYSYS SIO Communication, execution speed controls, and SIO model selections.

Integration with Mimic Diagnostics

Mimic HYSYS Link is fully integrated into the Mimic Diagnostics. SIO communication and HYSYS Case Execution data and status are displayed. System failures are automatically logged into session log files, with error time and source logs for all failures. Windows service and connection failures are written to the Windows event log for troubleshooting.

Ordering Information

Mimic Licensing Considerations:

- Each IO Value communicated to the HYSYS End Point Server from Mimic will consume an SIO Tag and should be included in the Simulated IO Tag Count of the system.

- HYSYS Case to Case communications do NOT consume SIO Tags.

- Mimic Operator Training Manager is required for Snapshot control and Training Scenarios.

- Mimic HYSYS Link is an additional license.

Description	Part Number
Mimic HYSYS Link	MM3-3104

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North America, Latin America:
📞 +1 800 833 8314 or
📞 +1 512 832 3774

Asia Pacific:
📞 +65 6777 8211

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