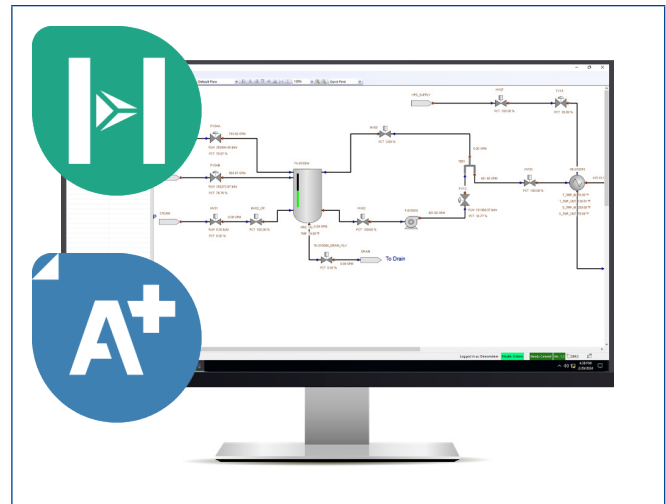


DeltaV™ Mimic and Aspen Simulation Links

- Movement of IO data between Aspen HYSYS, Aspen Plus, DeltaV Mimic and DeltaV Simulate or other control system simulators
- Support for multiple Aspen HYSYS cases in a single machine or across multiple machines
- Support for multiple Aspen Plus cases across multiple machines
- Ability to run the models and external systems at speeds other than real-time
- Ability to create, store, and restore snapshots



Introduction

The DeltaV™ Mimic Aspen HYSYS® Link and Aspen Plus® Link seamlessly integrate Aspen HYSYS Dynamics and Aspen Plus Dynamics models into Mimic. This integration supports control system development and testing, operator training, continuous improvement, and OpEx initiatives. Utilize Mimic Aspen Links for multi-purpose dynamic simulation projects, enabling the reuse of Aspen Dynamics simulations originally developed for process design. This proven approach supports operations, control testing, and operator training within the control system.

Built upon the proven communication bridge architecture in Mimic, the Mimic Aspen links provide:

- Movement of IO data between DeltaV Mimic and DeltaV Simulate or other control system simulators
- Support for multiple Aspen HYSYS cases in a single machine or across multiple machines
- Support for multiple Aspen Plus cases 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
- Ability to run the models and external systems at speeds other than real-time
- Ability to create, store, and restore snapshots

Benefits

- **Complete Integration for Aspen Dynamics into the Emerson Digital Twin** – The Mimic Aspen links uses a direct API interface, creating high-speed and secure communications between Mimic and Aspen Dynamics simulations, through the Aspen link end point server. The Mimic Aspen link provides synchronous IO updates and execution control of Aspen Dynamics models. Mimic bulk generation and discovery tools make integration fast and easy.

- **Built Upon the Proven Performance of DeltaV Mimic** – Mimic is a dynamic, real-time process simulation software 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. Built on advanced technology, Mimic features a multi-threaded 64-bit real-time simulation engine, multi-user support, and compatibility with VMware and Hyper-V.

Product Description

Endpoint Application

The Mimic Aspen link uses the Aspen Dynamics automation interface API. The Mimic Aspen link endpoint server is installed on the Aspen Dynamics machine. It provides multiple simultaneous connections from the Mimic Aspen bridge on the Mimic machine. When a connection is established, the bridge will send information about the case to launch and the subscription list of Aspen Dynamics items for the bridge.

The Mimic Aspen endpoint application supports a variety of functionality:

- Communication methods supported:
 - Aspen Dynamics IO to Control System Simulated IO Tags Direct
 - Aspen Dynamics IO to Mimic Base / IO / Equipment Models
 - Aspen Dynamics Case1 to CaseN Direct
 - Aspen Dynamics End Point to End Point Server
- Snapshot coordination and speed control
- Synchronous IO updates and execution control of Aspen Dynamics models
- Updates configured in the Mimic SIO definition

IO Definition

The Mimic Aspen HYSYS IO definition is optimized for Aspen HYSYS IO tables (the recommended communication method). The user defines the IO table in Aspen HYSYS Dynamics and the Mimic Aspen HYSYS endpoint server finds the Aspen 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 Aspen HYSYS IO use.

Configuration Values for the Aspen Dynamics SIO tag configuration include:

- SIO_TAG: The name of the Mimic SIO tag
- DIRECTION: From the perspective of Mimic, the direction of data movement
- ITEM_PATH: Identifies the Aspen variable to exchange data (e.g. Tank1.FlowOut1)
- SIO_SUBVALUE: The portion of the SIO tag to read/write (e.g. EU, XD, PCT, DISC)
- HYSYS_TABLE: Identifies the Aspen HYSYS or Aspen Plus table name
- HYSYS_TAG: Identifies the variable to exchange data
- 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; there are three options for the link type: No Link, HYSYS, or Mimic
- LINK_REFERENCE: The connection detail needed to map between systems if required

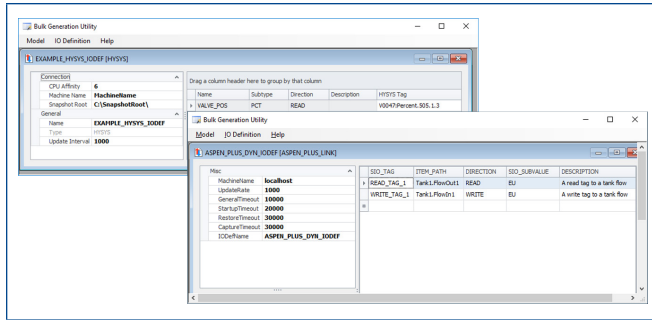
The Mimic Aspen Plus IO definition is optimized for Aspen Plus Dynamics variables. The user defines the IO table in Aspen Plus Dynamics models and the Mimic Aspen Plus endpoint server finds the models and IO tables of variables. To make IO variable selection easy, there is a browsable interface. The Mimic SIO tag configuration allows user selection of the IO to use.

Configuration Values for the Aspen Plus SIO tag configuration include:

- SIO_TAG: The name of the Mimic SIO tag
- DIRECTION: From the perspective of Mimic, the direction of data movement
- ITEM_PATH: Identifies the variable within the model's objects (e.g. Tank1.FlowOut1)
- SIO_SUBVALUE: The portion of the SIO tag to read/write (e.g. EU, XD, PCT, DISC)

Customize SIO Communications

To customize Mimic Aspen SIO communications, users can edit and update their Aspen SIO definition using the Mimic bulk generation utility. This supports editing in the utility, MS Excel, or CSV format.



Integration with Mimic Snapshots and Mimic Train

Mimic Foundation supports full integration of DeltaV, Aspen HYSYS, Aspen Plus and Mimic snapshot controls. Mimic Train allows for the creation of training scenarios and ad-hoc malfunctions supported with Mimic IO and equipment models. Training controls, as with the integrated solution, can be built in Mimic instructor station graphics or DeltaV Live.

Mimic Explorer controls the starting and stopping of Aspen SIO Communication, execution speed controls, and SIO model selections.

Integration with Mimic Diagnostics

The Mimic Aspen links are fully integrated into Mimic Diagnostics. SIO communication and Aspen 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.

Contact Us

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Product Support

Mimic Product Support is delivered through Guardian™. Guardian is Emerson's digital platform for addressing the end-to-end lifecycle needs of automation & control software and asset performance management solutions. The Guardian digital experience enables users to quickly connect to product support; securely manage subscriptions; get intuitive views into system health; and explore additional software and services that propel performance.

Ordering Information

DeltaV Mimic is licensed on a Flexible Subscription Unit (FSU) basis. An FSU is a currency that can be used to access any Mimic feature which is licensed on an FSU basis. Each feature requires its own number of FSUs. The FSU subscription is offered in one-year, three-year, and five-year terms. To purchase, extend, or expand a license, please contact your Emerson Sales Representative.

Optionally, the Mimic Aspen HYSYS Package can be bundled with Mimic to include the required licensing for Aspen HYSYS Dynamics.

Related Products

- DeltaV
- DeltaV Mimic Foundation
- DeltaV Mimic Field 3D
- DeltaV Mimic Process
- DeltaV Mimic Test Bench
- DeltaV Mimic Train
- DeltaV Mimic Aspen HYSYS Package

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