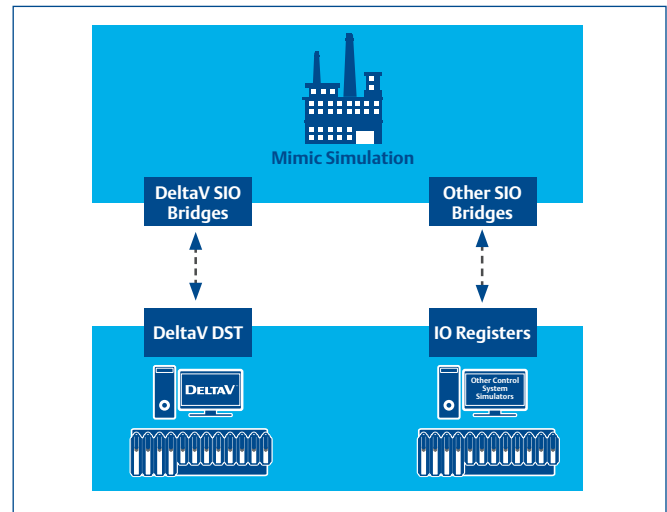


# Mimic™ Simulated IO Drivers

- Provides IO communication between Mimic simulation and control system simulators
- Allows process and equipment models to function completely independent of IO communication
- Allows simulation developed for one control system to be easily moved to another with no model changes



*Mimic Simulated IO Drivers support communication between Mimic Models and Control System Simulators.*

## Introduction

The Mimic Simulated IO Drivers provide users the ability to communicate with specific control system simulators without affecting the process and equipment models. The Simulated IO Drivers run as asynchronous services within the Mimic environment. Using Mimic Simulated IO (SIO) Tags, they provide direct IO simulation of the control system simulator or offline line control system. Mimic SIO Tags link the Simulated IO system to models in Mimic ranging from simple tie-back models to rigorous first principle process models. A Mimic system can use Simulated IO Drivers simultaneously to simulate IO signals to multiple controls systems simulators.

## Benefits

### **Provides IO communication between Mimic and control system simulators**

The Simulated IO (SIO) Drivers run as asynchronous services within the Mimic environment. They provide direct IO simulation of the control system simulator or offline line control system using Mimic Simulated IO Tags (SIO Tags).

### **Allows process and equipment models to function completely independent of IO communication**

Mimic SIO Tags are used to link the Simulated IO system to Mimic models that can be implemented from simple tie-back models to rigorous first principle process models. Separating the modeling and IO processing allows models to be enhanced and modified without affecting the control system configuration.

**Allows simulation developed for one control system to be easily moved to another with no model changes**

SIO Drivers are built to work with a specific control systems or protocols to stimulate IO using the native methods supported by that control system. By using the same SIO Tags in multiple SIO Tag definitions for different SIO Drivers, you can use the same model for multiple control system simulators with no model changes.

In addition, a Mimic system can use SIO Drivers simultaneously to simulate IO signals to multiple controls systems simulators. Since the SIO Driver is specified when the node is started, not while it is created, a simulation node can be started one time with one definition and the next time using a different definition. This separation between real IO and models allows the simulation to be brought online without any IO, if needed.

## Product Description

To establish communications between Mimic Simulation Software and a control system simulator, you will need the appropriate Simulated IO Driver for that system.

Mimic Simulated IO Driver	Supported Automation System Platform
DeltaV Railbus SIO Driver	Direct IO Simulation for DeltaV Controllers
DeltaV Simulate OPC SIO Driver	DeltaV Simulate Standalone and Multi-Node
Modbus TCP/IP SIO Driver	Schneider PLCs, Any Modbus TCP/IP Process Controller
Schneider Unity (OFS v3.2 or higher) SIO Driver	Schneider Unity PLCs and Soft PLCs
HIMA Soft PLC Visualization Gateway SIO Driver	Hima Soft PLC Visualization Gateway
Ethernet/IP SIO Driver (Rockwell PLCs only)	Rockwell PLCs
DeltaV SIS SimulatePro OPC SIO Driver	DeltaV SIS SimulatePro Standalone and Multi-Node
Open OPC Client SIO Driver	Any Control System Simulator with an OPC Server
DeltaV CIOC/VCIOC/Virtual Controller SIO Driver	DeltaV v11.3 or greater for physical CIOC or VCIOC, DeltaV v12.3 or greater Virtual Controllers
Mimic SPA SIO Driver	Siemens SIMATIC S7- PLCSIM v5.4, SIMIT for S7, PCS7
ABB 800xA Simulator SIO Driver	ABB 800xA Simulator and Soft Controller
Rockwell Studio 5000 Logix Emulate SIO Driver	Rockwell Studio 5000 Logix Emulate Virtual PLC Chassis and Emulate for OTS
Siemens/TI 5XX PLC SIO Driver	Siemens PLCs using TBP or NITP ASCII protocols via RS-32 serial ports

### DeltaV Railbus SIO Driver

The DeltaV Railbus SIO Driver supports communication between the Virtual IO Modules (VIM and VIM2) and DeltaV Controllers over the DeltaV IO bus. Using the VIM or VIM2, the driver simulates the IO cards that would normally be connected on the DeltaV IO Carriers. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a single channel of a DeltaV IO Card or Digital Bus IO signal. All DeltaV IO Cards are supported by this driver including digital bus IO. Simulated IO Tags and IO relationships are built for this driver using the DeltaV FHX Utility in Mimic.

### DeltaV Simulate OPC SIO Driver

The DeltaV Simulate OPC SIO Driver supports communication between DeltaV Simulate nodes and the Simulated IO Definition in Mimic using OPC. This Simulated IO Driver has been used with DeltaV Simulate Multi-Node and Standalone. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a fully qualified OPC path in DeltaV Simulate. Initialization of all values and DeltaV module simulate flags is handled by the driver. Simulated IO Tags and IO relationships are built for this driver using the DeltaV FHX Utility in Mimic.

## DeltaV SIS SimulatePro OPC SIO Driver

The DeltaV SIS SimulatePro OPC SIO Driver supports communication between DeltaV Simulate nodes that are simulating DeltaV Safety Logic Solvers (SLS1508) and the IO Definition in Mimic using OPC. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a single channel of a DeltaV SIS Logic Solver running as an alias in the DeltaV SimulatePro SIS Workstation. Simulated IO Tags and IO relationships are built for this driver using the DeltaV FHX Utility in Mimic. See DeltaV SIS with Electronic Marshalling Virtual Simulation for setup details. For Mimic simulation to DeltaV SIS with Electronic Marshalling, see DST Simulation under DeltaV CIOC/VCIOC/Virtual Controller SIO Driver.

## DeltaV CIOC/VCIOC/Virtual Machine Controller SIO Driver

The CIOC/VCIOC/Virtual Controller SIO Driver supports communication between the DeltaV Charms IO cards or Virtual Charms IO cards, DeltaV Virtual Machine Controller, and Simulated IO Definition through an OPC connection to the DeltaV Simulate PPN or ASN. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a single Charm channels, Virtual Machine Controller IO channel, or Virtual Machine Controller Device Signal Tag (DST) Parameter. Simulated IO Tags and IO/DST relationships are built for this driver using the DeltaV FHX Utility in Mimic.

*See DeltaV Virtual Machine Controller Simulation for additional details/limitations on DST Simulation.*

## Rockwell Studio 5000 Logix Emulate SIO Driver

The Rockwell Studio 5000 Logix Emulate SIO Driver supports communication between Mimic and Logix processors running in either the Logix Emulate virtual chassis in Studio 5000 or Emulate for OTS. This Simulated IO Driver has been used with Rockwell Studio 5000 Logix Emulate and Emulate for OTS. It uses OPC to send and receive IO, and the Rockwell TagServerAPI for snapshot and restore functionality. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a fully qualified OPC path in Logix Emulate. Simulated IO Tags and IO relationships are built for this driver using the Tag Browser Utility in Mimic.

## EtherNet/IP SIO Driver

The EtherNet/IP SIO Driver supports communication between Logix processors and the Simulated IO Definition in Mimic using the EtherNet/IP protocol. One Ethernet/IP SIO Definition can communicate with multiple devices. Each containing a non-overlapping, contiguous section of table values that will be read from or written to by the driver. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a CIP data value or array in the Logix Processor. Simulated IO Tags and IO relationships are built for this driver using the Tag Browser Utility in Mimic.

## Modbus TCP/IP SIO Driver

The Modbus TCP/IP SIO Driver supports communications between Mimic and Modbus compatible devices. The SIO Driver can use network connections to communicate with a TCP/IP devices or serial connections to communicate with Serial device. One Modbus TCP/IP SIO Definition can communicate with multiple devices. Each defined device in the IO Definition will contain a collection of segments, specifying non-overlapping, contiguous section of Modbus registers (Coil, Input Status, Input Register, Holding Register) that will be read from or written to by the driver. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a Modbus register.

## Open OPC Client SIO Driver

The Open OPC Client SIO Driver supports communication between Mimic and control system simulators that support OPC DA. This Simulated IO Driver has been used with Honeywell, Yokogawa, Foxboro, and other control system simulators. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a fully qualified OPC path in control system simulator. Simulated IO Tags and IO relationships are built for this driver using the Bulk Generation Utility in Mimic.

## ABB 800xA Simulator SIO Driver

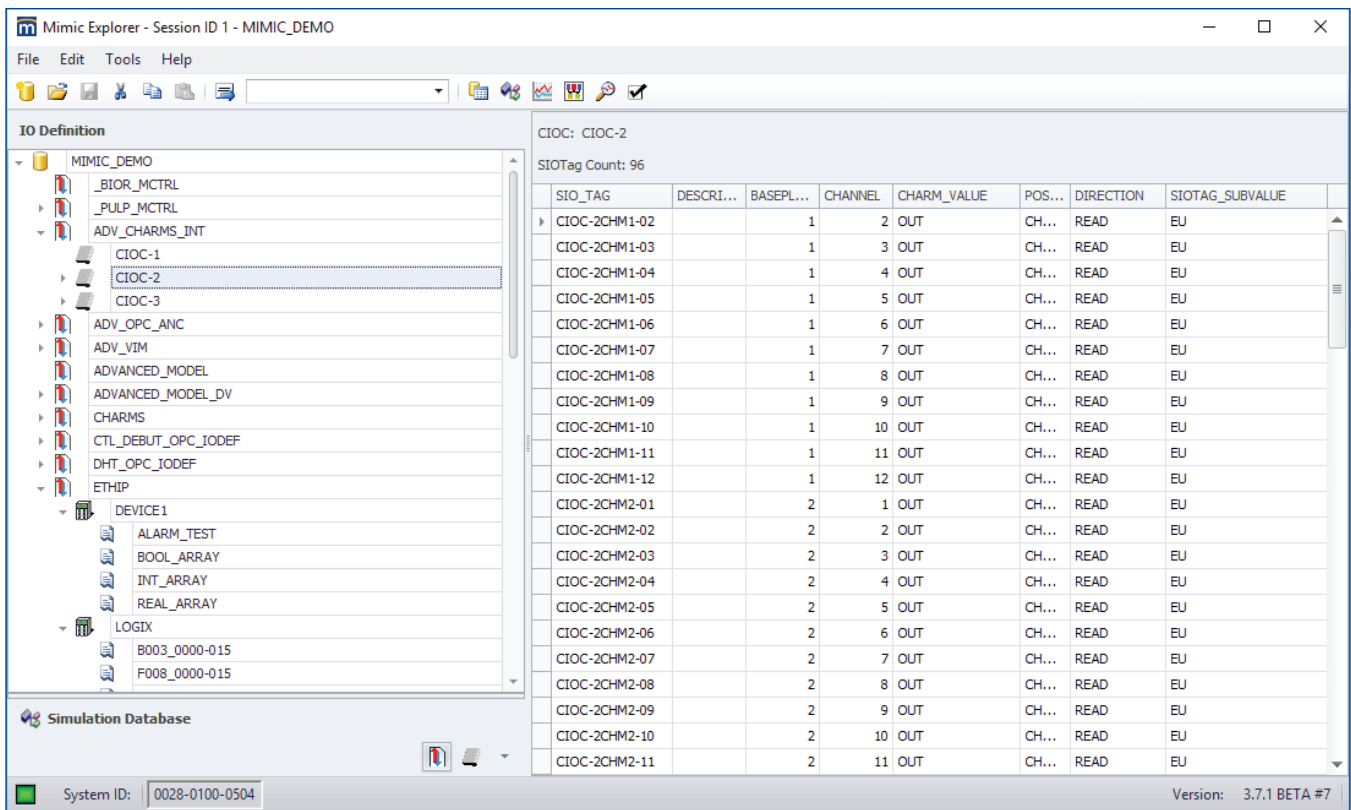
The ABB 800xA Simulator SIO Driver supports communication between Mimic and the ABB 800xA Simulator (FP3 and FP4) and soft controllers. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to the fully qualified path of the ABB 800xA Simulator IO Parameters. Simulated IO Tags and IO relationships are built for this driver using the Bulk Generation Utility in Mimic.

### Siemens/TI 5XX PLC SIO Driver

The Siemens/TI 5XX PLC SIO Driver supports communication between Mimic and TI 5XX PLCs, using either Transparent Byte Protocol (TBP) or Non-Intelligent Terminal Protocol (NITP) ASCII protocols via RS-232 serial ports. One TI 5XX SIO Definition can communicate with one device. Each defined device will contain a collection of segments (specifying a non-overlapping, contiguous section of TI5XX registers) that will be read from or written to by the driver. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to the TI5XX register in the segment. Simulated IO Tags and IO relationships are built for this driver using the Bulk Generation Utility in Mimic.

### Mimic SPA SIO Driver

The Mimic SPA SIO Driver supports communication between Mimic and Siemens SIMIT Virtual Controllers or SIMATIC S7-PLCSIM v5.4 software depending on the IO Definition Type that is selected. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to either a fully qualified OPC path in SIMIT or IO parameter in SIMATIC S7-PLCSIM. The SPA SIMIT IO Definition Type uses OPC to send and receive IO to SIMIT Virtual Controllers, and COM for snapshot and restore functionality. The SPA S7 IO Definition Type does not support snapshots of PLCSIM. Simulated IO Tags and IO relationships are built for this driver using the Bulk Generation Utility in Mimic.



Simulated IO Tag Definition in Mimic Explorer showing SIO Tags for DeltaV CHARM IO.

**HIMA Soft PLC Visualization Gateway SIO Driver**

The HIMA Soft PLC Visualization Gateway SIO Driver supports communication between Mimic and the HIMA Visualization Gateway Soft PLC. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to the fully qualified path of the HIMA Soft PLC IO Parameters. Simulated IO Tags and IO relationships are built for this driver using the HIMA Soft PLC Utility in Mimic.

**Schneider Unity (OFS v3.2 or higher) SIO Driver**

The Schneider Unity SIO Driver supports communication between Mimic and Schneider Unity class PLCs and PLC Simulator using OFS v3.2 or higher. The Unity PLC and PLC Simulator Located and Unlocated variables are both supported with this Simulated IO Driver. The Simulated IO Definition consists of a set of SIO Tags, where each tag points to a fully qualified OPC path in the Unity Class PLC or PLC Simulator using OFS. Simulated IO Tags and IO relationships are built for this driver using the Unity OFS Utility in Mimic.

**Ordering Information**

A Simulated IO Driver license should be included with the Mimic base license. Additional Simulated IO Drivers can be added to any Mimic license current on Mimic Software Support.

Description	Model Number
DeltaV Railbus SIO Driver	MM3-2101
DeltaV Simulate OPC SIO Driver	MM3-2102
Modbus TCP/IP SIO Driver	MM3-2103
Schneider Unity (OFS v3.2 or higher) SIO Driver	MM3-2104
HIMA Soft PLC Visualization Gateway SIO Driver	MM3-2105
Ethernet/IP SIO Driver (Rockwell PLCs only)	MM3-2106
DeltaV SIS SimulatePro OPC SIO Driver	MM3-2107
Open OPC Client SIO Driver	MM3-2108
DeltaV CIOC/VCIOC/Virtual Controller SIO Driver	MM3-2111
Mimic SPA SIO Driver	MM3-2112
ABB 800xA Simulator SIO Driver	MM3-2113
Rockwell Studio 5000 Logix Emulate SIO Driver	MM3-2114
Siemens/TI 5XX PLC SIO Driver	MM3-2115

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