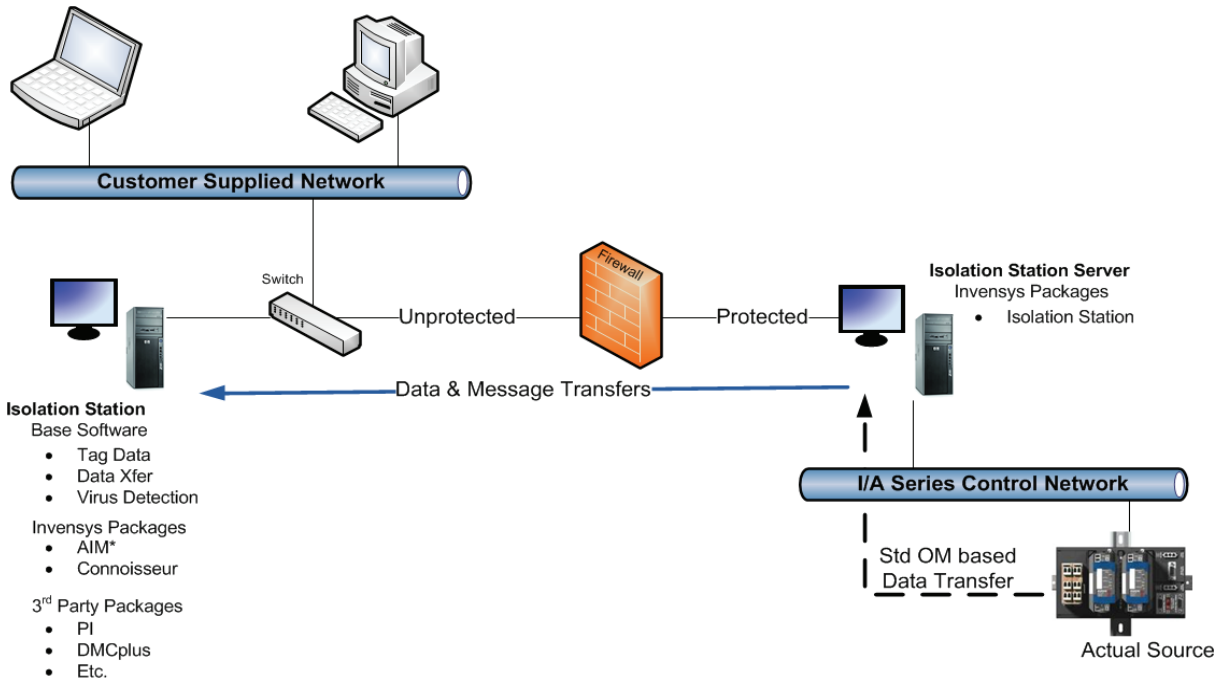
I/A Series® SOFTWARE
Product Specifications

invensys
Foxboro®

PSS 21S-7B4 B3

Isolation Station Software for Windows® Based Systems



The Isolation Station software, when combined with the correct network and I/A Series® equipment, strictly controls access to I/A Series Process Control equipment while enabling complete access to selected process data. Isolation with data transparency is the distinguishing feature of the product. While the Isolation Station solution is a key component in a plant-wide security program, customers should contact their Account Representatives about our service offerings to assist in the development of a comprehensive Security Policy for their process facilities.

OVERVIEW

When combined with the correct network and I/A Series hardware, the Isolation Station software provides controlled isolation between the I/A Series control network and the customer supplied network. The Isolation Station solution by itself is a component within a plant-wide security program.

The Isolation Station Server is an I/A Series workstation or server installed with the Isolation Station software and placed on the control network that feeds data into the Isolation Station.The Isolation Station is an I/A Series workstation or server that is placed outside the I/A Series control network on a customer supplied network. The Isolation Station then becomes the source of plant data to stations on the customers supplied network.

The above illustration shows the equipment and network arrangements necessary for the Isolation Station solution.

ISOLATION STATION SOLUTION

The Isolation Station solution consists of the following:

- Isolation Station *(Sold Separately)* - A specially equipped I/A Series workstation or server that is connected to the customer supplied network. This station is the platform that hosts all 3rd party applications and Invensys applications that interface to the customer supplied network PCs.
- Isolation Station Firewall *(Sold Separately)* - A dedicated firewall that is the sole link between the Isolation Station and the Isolation Station Server.
- Isolation Station Server *(Sold Separately)* - An I/A Series workstation or server residing on the control network that has been configured with the Isolation Station software. This station connects to the firewall using a second Network Interface Card (NIC).

The Isolation Station and Isolation Station Server use the functionality of the Isolation Station software to replicate data required by the customer supplied network PCs.

Key features of the Isolation Station solution are:

- Strictly controlled access to the I/A Series control network.
- Segregation of the I/A Series control network from third-party and nonessential applications.
- Strict control of reads and writes to I/A Series tags. The station can be configured to prevent all writes to the process or to allow writes on a point-by-point basis.
- No reconfiguration of existing applications or graphics other than physically moving them since the tag names do not change.
- Complete support for standard I/A Series services like: FoxView instances, Alarm Managers, FoxAPI, and the OM API calls.

PHYSICAL ISOLATION

The firewall component prevents communications to the I/A Series control network. The firewall is configured to close off all access initiated from the customer supplied networks. Data transfer is initiated from the Isolation Station Server. This arrangement maximizes security by eliminating all unsolicited traffic from the customer supplied network. The Isolation Station Server communicates to the Isolation Station using the FoxAPI interface software.

Optionally, a second firewall can be used to limit access to the Isolation Station. This second firewall segregates the Isolation Station itself from unapproved access. In general, it is configured to allow access from only selected stations and protocols.

OPERATING SYSTEM SECURITY

The Isolation Station can be:

- I/A Series server running a Windows Server® 2003 operating system. (Provides remote access to multiple display managers.)
- I/A Series workstation running a Windows XP® operating system. (Multiple display manager access is not supported.)

The Isolation Station software's initial configuration is backed by Invensys' commitment to implementing security fixes and virus updates. Field Service offers checkups and updates.

DATA SECURITY AND TRANSFER

The Isolation Station Software provides data transfer between the Isolation Station Server on the protected I/A Series control network and the replicated tags in the Isolation Station.

While the Isolation Station software implements bi-directional, change-driven data transfer and fully supports connected and one-shot data access on the Isolation Station to process data, in the typical application, you configure the Isolation Station Software such that all data transfers are initiated from the Isolation Station Server. This configuration allows the firewall used between the Isolation Station Server and the Isolation Station to reject all communications initiated from the unprotected system and, thereby, greatly enhance the protection provided by the firewall.

If some data must be written to the process, the Isolation Station software can be configured to read the data from the Isolation Station and store it locally in the Isolation Station Server. The local copy of the data can be used directly by any OM client and may also be connected to a Control Block Parameter if it is needed in the Control Processor.

The Isolation Station software allows you to select both the IP address of the Isolation Station and the IP communication port to be used for the data transfer. Since the IP Address and port are selectable, it is possible to change the port – with a brief data outage – if it is necessary.

MESSAGE SECURITY AND TRANSFER

The Isolation Station Software includes the optional ability to forward messages from the I/A Series system to the Isolation Station in support of Isolation Station hosted FoxView™ sessions and message historization.

As with data transfer, the Isolation Station Software uses the specified IP addresses and port numbers and moves the data over the secure network linking the Isolation Station Server to the Isolation Station.

Since the communication is initiated by the Isolation Station Server, message support is compatible with the most secure configuration of the firewall. That is, the only open ports are on the Isolation Station Server side of the firewall.

The Isolation Station software implements message forwarding by providing a logical name to which messages may be sent using the standard I/A Series system features, e.g., message groups in Control Processor compounds. The Isolation Station software receives messages sent to it and forwards the messages to the configured destinations in the IS. The set of logical names in the Isolation Station Server and the set of destinations in the Isolation Station are configurable settings of the Isolation Station Software.

The supported I/A Series message sources are:

- Any third-party or Invensys supplied program that uses connectionless IPC messages,
- The System Monitor,
- The Operator Action Journal, and
- The Control Processors.

Supported Control Processors messages include Process Alarms, Sequence Block messages, and Sequence of Event messages.

Supported alarm annunciation devices on the Isolation Station are:

- WPs
- Console Horns,
- Annunciator keyboards horns, and
- Annunciator lamps
- Printers
- Alarm historians

Alarm acknowledgement from the Isolation Station host FoxView instances requires write access to the I/A Series system which, while possible, is generally not configured.

FOXVIEW SECURITY

FoxView instances can be configured to provide additional levels of security. These include:

- The specification of machines that can receive a FoxView graphic.
- The control the initial environment of the FoxView instance.
- The control of access to pick-points on FoxView graphics.

SECURITY SUMMARY

The firewall component limits access to the I/A Series control network to exactly one location. The FoxAPI interface software eliminates write access to the I/A Series data by default, though writes can be permitted. If writes are permitted, the data transfer software can be configured to permit changes on a tag-by-tag basis.

Message transfer is one-way- from the I/A Series system to the Isolation Station.

The FoxView instances can be configured to limit access even further.

REDUNDANCY

The Isolation Station Server and the Isolation Station are not fault tolerant or redundant. Duplicate Isolation Stations Servers and Isolation Stations can be setup to provide redundancy.

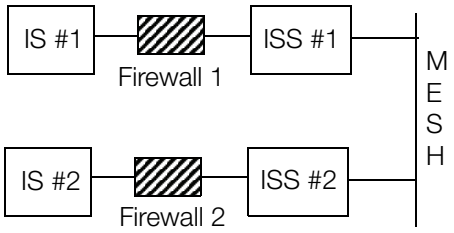


Figure 1. Redundancy Example 1

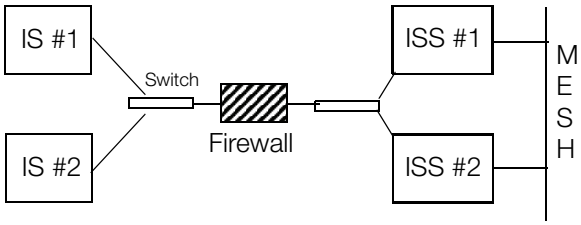


Figure 2. Redundancy Example 2

ORDERING INFORMATION

Isolation Station Software Part Numbers

Q0303AJ - Isolation Station Software

Q0303AK - Isolation Station Software Upgrade

REQUIREMENTS

The Isolation Station Software currently supports Windows® XP and Windows Server® 2003 operation systems.

Customer Supplied Network

- Any network for which a Network Interface Card (NIC) is available. Invensys offers additional Ethernet NICs.
- TCP/IP suite based.

I/A Series Platforms

Supported I/A Series Software Versions

Both the Isolation Station and Isolation Station Server support the following I/A Series versions.

- v8.1.1 - v8.4.x - Standard.
- v8.5 - v8.7 Standard.
- v8.5 - v8.7 Security Enhanced with default domain group policies.

NOTES

When using security enhanced I/A Series software please be aware that changing the Invensys provided default domain group policies or improperly using the McAfee® ePolicy Orchestrator firewall can adversely affect the proper operation of the Isolation Station configuration. Modifying Active Directory Group Policies is considered an advanced action and should only be undertaken by qualified personnel.

Isolation Station

- I/A Series server running a Windows Server 2003 OS (Provides remote access to multiple display managers.)
- I/A Series workstation running a Windows XP OS (Multiple display manager access not provided.)
- Extra NIC to link to Isolation Station Server
- FoxAPI Interface software

Isolation Station Server

- I/A Series workstation or server
- Extra NIC to link to Isolation Station
- FoxAPI Interface software
- Additional RAM may be required. This is a project specific need and must be evaluated on a case by case basis. System loading of the Isolation Station software is similar to that of a historian and maybe minimized by running the Isolation Station software on the historian host.

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