



S4IS BACnet P1 Integration User Guide

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S4IS BACnet P1 Integration Basic Information

Introduction

The S4IS BACnet P1 Integration is delivered as a dedicated network appliance that bridges legacy Siemens P1 “Floor Level Network” (FLN) field devices with modern BACnet/IP systems. The S4 Integration Solutions application is preinstalled and factory-configured prior to shipment, with system commissioning and configuration performed through an intuitive, web-based user interface.

S4 Integration Solutions products deliver powerful protocol integration while maintaining a clean and efficient experience for system integrators and building operators. The S4IS application manages all communication with Siemens P1 field devices, automates the discovery of connected controllers, and publishes their points and properties as BACnet/IP objects. All configuration data, device information, and point values are persistently stored in an embedded SQL database, ensuring consistent operation across system restarts.

The platform is optimized for reliable protocol conversion and gateway operation in production environments. In addition to core gateway functionality, the system automates much of the integration workflow and provides comprehensive visibility into upstream and downstream P1 communications, P1 device performance, BACnet activity, and overall system health.



Each Siemens P1 device, along with its associated points and attributes, is presented as a fully emulated BACnet/IP device. Any BACnet-compliant client or supervisory system can interact with these devices as though they were native BACnet controllers, enabling seamless integration into modern building automation systems.

Gateway Overview

General information about the S4IS BACnet P1 Integration product is available in the associated product brochure.

Instructions for unpacking, mounting, and physically installing the S4IS BACnet P1 Integration appliance are provided in the S4IS Siemens P1 Integration Getting Started document.

Once all required power, field bus, and network connections have been completed, apply power to the system and open a supported web browser. Navigate to the IP address assigned to the appliance or access the system via its default hostname S4P1.local. On first access, you will be prompted to create a user account, which will serve as the *primary administrative account* for the system. You will need to contact S4IS for the “System” password to enable this transaction. Phone (801) 621 1970 or email sejones@s4integrationsolutions.com. You will now be able to create your username and password. Keep these credentials in a safe place.

S4 INTEGRATION SOLUTIONS

Welcome to Your S4 Integration Solutions Product
This is the S4 BACnet P1 Integration at 192.168.1.169

Use your credentials to log in
Email & Password

Don't have an account yet?
Use "Create an Account" button to get it

Don't remember your credentials?
Use "Forgot Password" link to reset it

To contact us, call (801) 621 1970 or email s4jones@s4integrationsolutions.com
System Licensing: 10 device(s) until 10/02/2125 [Change](#)
Version 1.0.41 [Update](#)
[Hardware ID](#) | [System Info](#) | [Diagnostic Reports](#) | [Backup & Restore](#) | [Reset Database](#)

Login

Email
Email

Password
Password

☒ Remember me [Forgot password?](#)

Sign In

or

Create an Account

This account will serve as the primary user and system administrator. Use these credentials for all subsequent logins at the administrator level. After signing in, the system will guide you through a series of Startup Wizard screens where you can define the desired operational properties.

As the primary administrator can invite additional users to the system.

Name	Email	Registered At	Last Login	Locked Until
Steve Jones	s4jones@s4integrationsolutions.com	03/24/2026 02:32 PM	05/19/2026 05:58 PM	Active

The login page also provides access to licensing and version information, system log creation and export tools, backup and restore functionality, and database reset options (with assistance from S4 Integration Solutions).



System Architecture

The system is hosted on an Ubuntu Linux operating system, providing a high degree of hardware portability, support for modern security best practices, and a stable, well-supported software environment for ongoing development and support.

A SQL database is central to the system architecture. It stores all system configuration parameters not managed directly by the operating system, the device template catalog, and all device- and point-level data. This includes point values, fault and reliability status, and all point attributes, including the BACnet priority array for controllable objects. This design optimizes system performance, ensures consistent operation, and guarantees that values and properties remain persistent across system reboots.

S4 Integration Solutions products utilize the SCADA Engine BACnet stack for BACnet communications, a robust BACnet implementation used by thousands of products and well-supported.

A continuous Scanner/Poller task runs in the background to periodically update all point values in the database at intervals defined during the Startup Wizard configuration. This ensures that point data is readily available to BACnet client applications and helps isolate the system from brief TCP/IP communication disruptions.

The Scanner maintains synchronization between the S4IS user interface, BACnet clients, and the upstream supervisory system (if used). As system size and point count increase, polling cycles may

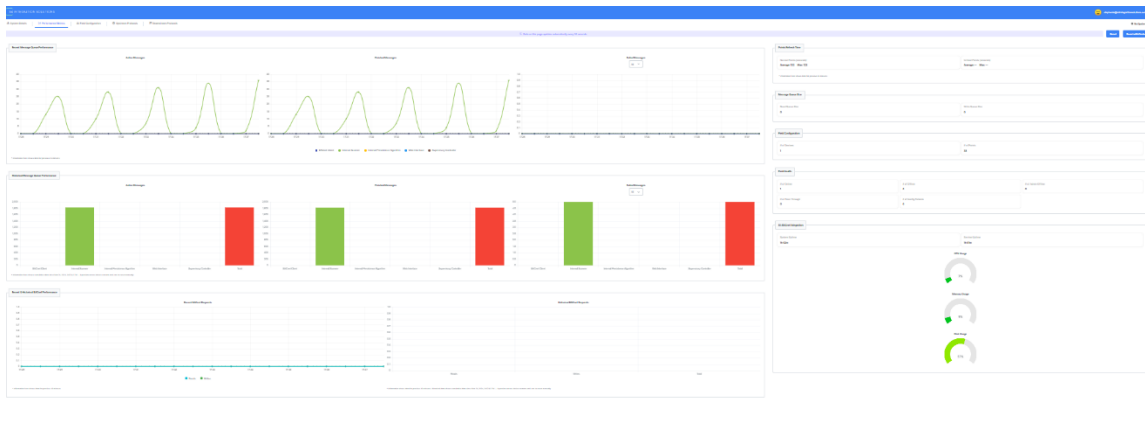


require additional time, which can result in minor latency between values displayed in the S4IS UI or BACnet clients and those present on the field network.

For control points that support the BACnet priority array, scanned values are written to the Relinquish Default property. For points that do not support the priority array mechanism, scanned values are written directly to the Present Value property. Additional details regarding BACnet priority array support are provided later in this document.

The Resolver task processes requests originating from the user interface or BACnet clients. If the requested data is available and has not expired, it is returned directly from the database. If the data has expired—based on a configurable timeout—the Resolver requests an updated value from the field device before responding.

All system transactions and error conditions are recorded in system log files, which are accessible through the user interface and available to authorized support personnel. System performance metrics and monitoring statistics are also built into the platform and can be viewed through the user interface.



Device-level performance statistics are published to BACnet alongside the point data from each Siemens P1 device. This enables trend logging, alarming, and visualization within BACnet operator workstations. The installer may select a few of these statistics or many, depending upon how much they want to know about the health of the field devices and the system in general.

Within the user interface, most properties and point details include an information icon (i). Hovering over this icon displays a tooltip that provides additional context and descriptive information for the associated item.

Startup Wizard

All sections of the Startup Wizard must be completed before the system can enter production operation. If the Startup Wizard is canceled at any point during the process, the system database will be reset and the configuration process must be restarted from the beginning.

Ethernet TCP/IP Properties

The first set of configuration options defines the TCP/IP settings for the system's Ethernet interface. These are standard network parameters. It is assumed that the installer is familiar with TCP/IP networking concepts; therefore, individual properties are not described in detail in this document.

By default, systems are shipped with automatically assigned IP addressing. If required, custom network configurations may be specified at the time of order or modified through the user interface during or after installation.

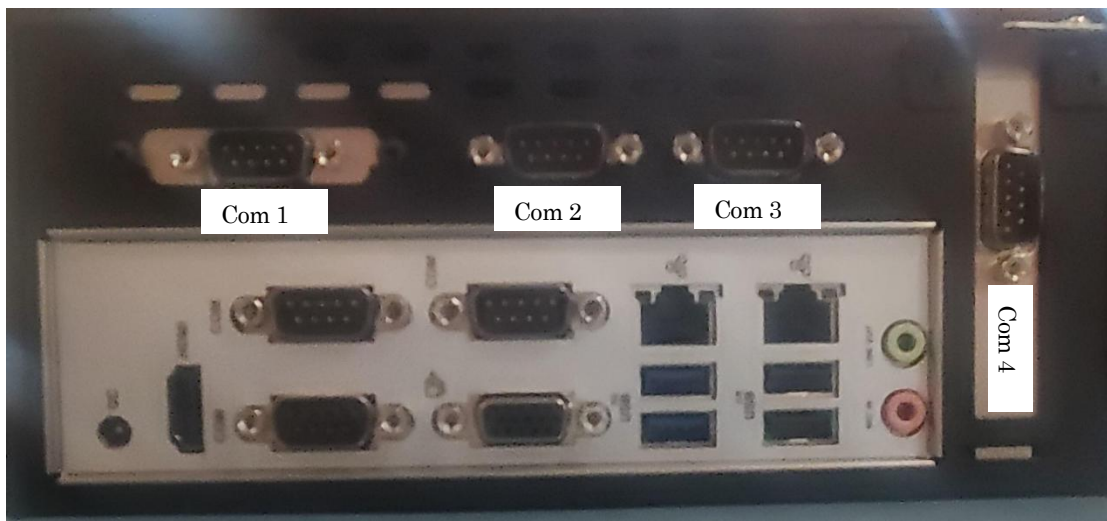
The screenshot displays a configuration interface with a horizontal progress bar at the top containing five steps: 1. TCP/IPv4 Network Settings (active), 2. Upstream Protocols, 3. Downstream Protocols, 4. Other, and 5. Discovery. Below the progress bar, the 'TCP/IP V4 Network Settings' section is shown with the following fields:

Field	Value
Hostname ⓘ	s4n2Dev
DHCP Enabled ⓘ	☒
IP Address ⓘ	192.168.1.125
Subnet Mask ⓘ	255.255.255.0
DNS Server ⓘ	192.168.1.1
Default Gateway ⓘ	192.168.1.1

When installing multiple S4IS BACnet P1 Integration systems, ensure that each system is assigned a unique hostname that clearly identifies the individual appliance.

Field Configuration

Next, assign each Siemens P1 (FLN) network to the appropriate physical COM port and designate it as a Downstream Serial Port.



Field Configuration

— N2 #1 —

Upstream Serial Port COM1 ▼

Downstream Serial Port COM2 ▼

— [+ Add New Interface](#) —

The default factory setting is to have COM1 be the “upstream” (the old Siemens master) serial port, and COM2 be the “downstream” (or field) port. This can be changed at your discretion.

Select Add New Interface if you are configuring more than one “downstream” interface. Each Network Interface can support one “downstream” and optionally one “upstream” port.

The screenshot displays a configuration window for the S4IS BACnet P1 Integration. It features a list of interfaces. The first interface is labeled 'Unnamed Interface #2'. Below this label, there are three rows of configuration options: 'Downstream Serial Port' set to 'COM2', 'Upstream Serial Port' set to 'COM3', and another 'Downstream Serial Port' set to 'COM4'. Each dropdown menu has a small downward arrow icon. At the bottom of the interface list, there is a button labeled '+ Add New Interface'.

Note that the system supports up to four downstream Siemens P1 (FLN) networks, or a maximum of two upstream networks and their corresponding downstream networks, for a total of up to four physical COM ports.

On the next screen, you will be prompted to configure the Upstream Network properties, including both Siemens P1 and BACnet settings.

Upstream Siemens P1 Properties

Status

This property defines the operational mode of the upstream interface and can be set to one of the following options:

- Normal – Standard operating mode. To the upstream device, the S4IS BACnet P1 Integration is invisible.
- No Upstream – Disables the upstream interface.

After the system has entered production operation, an additional option becomes available:

- **Pass-Through Mode** – When enabled, Siemens configuration and commissioning tools connected to this interface are granted exclusive access to the downstream Siemens P1 (FLN) bus. While in Pass-Through Mode, all transactions originating from BACnet clients, the S4IS user interface, or internally generated P1 traffic are suppressed to prevent bus contention.

Field BACnet Override Priorities

Defines the BACnet priority array level used to synchronize override transactions originating from the upstream Siemens P1 interface. That is, any command from the upstream device at one of their five legacy (often called “Apogee”) priority levels:

“@SMOKE” – “Smoke Override” overrides.	Typically used for fire and life safety overrides.
“@EMER” – “Emergency” sequences.	Emergency priority for critical safety sequences.
“@PDL” – “Power Demand Limiting” demand limiting.	Very rarely used, but some sites do demand limiting.
“@OPER” – “Operator” workstation or tablet.	Operator manual overrides from a workstation or tablet.
“@NONE” – “None” PPCL control program uses.	The “normal” priority the standard PPCL control program uses.

These priority levels are ONLY used by the upstream device (SCU, MBC, PXCC, FLN, etc.) internally. That is, competing control logic or operator commands are analyzed, and the highest command is sent out to the field. For example, if the operator turned ON a fan

manually (@OPER), but a fire started, the control logic would control the fan to OFF at priority @SMOKE (to keep the fire from spreading). No matter how many times the operator tries to control it (even @EMER), no field command would be issued until the higher-priority @SMOKE is RELEASED.

Hence, what comes down to the field device from the upstream device is only either the WRITE command or the RELEASE command.

The User Interface allows you to select which one BACnet priority is associated with these Apogee WRITE and RELEASE commands. All commands coming into one of these legacy priorities will be set to the BACnet priority that you use here.

the S4IS P1 Gateway will analyze the priority array and then send the highest level request out to the field, as per the normal operations of a BACnet system.

As an example, say you have the following setup:

Apogee field WRITE and RELEASE commands are at priority 13. (A fairly low level)

In this example, perhaps you have some programming in your BACnet system that does time-schedules at priority 14 (very common). In this case, any command from the upstream device will control the point (because 13 is higher priority than 14).

However, if you have some fancy energy optimization programming in your BACnet system that you want to work pretty much all the time, and you have it at priority 5 (used in a lot of BACnet systems as “critical equipment control”), then all commands from the Siemens upstream controller will be ignored and not sent to the field. (Actually, those commands are put in the priority array element #14, and if the fancy programming decides to RELEASE its control over that point, then the re-evaluation of the priority array could send out the Apogee control, if it is now the highest priority control).

P1 Protocol Serial Settings

Siemens P1 communication parameters are fixed and cannot be modified. These settings are displayed for documentation and reference purposes only.

The screenshot displays the S4IS configuration interface with the 'Upstream Protocols' tab selected. The 'P1 Protocol' section is active, showing 'Upstream Settings' and 'Serial Settings'. The 'Status' dropdown is set to 'No Upstream'. The 'Field BACnet Write Priority' dropdown is set to '14'. The 'Serial Settings' section shows 'Baudrate' and 'Parity' fields. The 'Baudrate' dropdown is open, showing a list of values: 9, 10, 11, 12, 13, and 14. The 'Parity' dropdown is set to '14'. The 'BACnet Protocol' section is also visible, showing 'Segmentation Settings' and 'Router Settings'. The 'Segmentation Settings' section includes 'APDU Max Length (bytes)' (1476), 'APDU Retries' (3), 'APDU Segment Timeout (milliseconds)' (2,000), and 'APDU Timeout (milliseconds)' (4,000). The 'Segmentation Supported' dropdown is set to 'Not Supported'. The 'Router Settings' section includes 'IP Port Number' (47,808), 'Router Network Number' (1), 'Virtual Network Number' (16,900), 'Router Device ID' (169,000), 'I-AM Message Pacing (milliseconds)' (1,000), 'RPM' (checked), and 'WPM' (unchecked). A 'Save' button is located at the bottom right of the BACnet Protocol section.

You will notice that the baud rate parameters are fixed at 4800 baud. It is believed that some field devices may be capable of higher speeds, but that is not implemented in the North American market. If you have a European site which does have a different baud rate, please contact us.

BACnet Protocol Properties

This document assumes that users of this product are familiar with BACnet concepts and terminology. As such, a general introduction or tutorial on BACnet is not provided here.

Setup your system now using Startup Wizard

1 TCP/IPv4 Network Settings 2 **Upstream Protocols** 3 Downstream Protocols 4 Discovery

BACnet Protocol

— ⓘ Segmentation Settings —

APDU Max Length (bytes)	1476	▼
APDU Retries ⓘ	3	⬆ ⬇ ⬆
APDU Segment Timeout (milliseconds) ⓘ	2,000	⬆ ⬇ ⬆
APDU Timeout (milliseconds) ⓘ	4,000	⬆ ⬇ ⬆
Segmentation Supported	Not Supported	▼

— 🖨 Router Settings —

IP Port Number ⓘ	47,808	⬆ ⬇ ⬆
Router Network Number ⓘ	1	⬆ ⬇ ⬆
Virtual Network Number ⓘ	1,000	⬆ ⬇ ⬆
Router Device ID ⓘ	1	⬆ ⬇ ⬆
I-AM Message Pacing (milliseconds) ⓘ	1,000	⬆ ⬇ ⬆
Field BACnet Priority ⓘ	16	▼

— 🔍 Other Settings —

S4 Router Installation Address	123 Anystreet, City, State, Zip
Additional Description	

Cancel Back Next

APDU settings should be configured to match the corresponding values used by your BACnet client. It is important that these four settings be correct, else Ethernet problems may happen rarely and sporadically. Thus, they will be difficult to detect and resolve.

Segmentation is not supported in the current version of the S4 Integration Solutions system and cannot be enabled or modified.

The screenshot displays the S4 Integration Solutions web interface for configuring Upstream Protocols. The browser address bar shows `http://s4p1vm.local/upstream-protocols`. The interface has a blue header with the S4 logo and a navigation bar with tabs: System Details, Performance Metrics, Field Configuration, Upstream Protocols (selected), and Downstream Protocols.

The main content area is split into two panels:

- P1 Protocol**
 - Upstream Settings**
 - Status: No Upstream
 - Field BACnet Write Priority: 14
 - Serial Settings**
 - Baudrate: 4800
 - Parity: None
 - Save button
- BACnet Protocol**
 - Segmentation Settings**
 - APDU Max Length (bytes): 1476
 - APDU Retries: 3
 - APDU Segment Timeout (milliseconds): 2,000
 - APDU Timeout (milliseconds): 4,000
 - Segmentation Supported: Not Supported
 - Router Settings**
 - IP Port Number: 47,808
 - Router Network Number: 1
 - Virtual Network Number: 16,900
 - Router Device ID: 169,000
 - I-AM Message Pacing (milliseconds): 1,000
 - RPM: ☒
 - WPM: ☐
 - Save button

Router Settings

The Router Settings section allows you to configure the BACnet router functionality of the system.

IP Port Number

Specifies the user-configurable TCP/UDP port on which BACnet communications are published.

Router Network Number

Assigns the BACnet network number for the S4 device. This is typically the BACnet backbone network used by the supervisory system.

Virtual Network Number

Defines the BACnet virtual network hosted by the S4 device. All discovered Siemens P1 (FLN) devices are published as BACnet/IP devices under this virtual network. ***This MUST be unique across your entire BACnet network.*** This is according to the BACnet specification (ASHRAE 135p-annex-ah), because all S4 Gateways act as a “router-to-network”, and you cannot have two routers with the same number.

Router Device ID

Assigns a ***unique*** BACnet device identifier to the S4 system, as required for all BACnet devices.

I-Am Message Pacing

The BACnet standard permits devices to transmit I-Am messages either asynchronously or in response to Who-Is requests. I-Am Message Pacing introduces a user-configurable delay between successive I-Am messages to prevent excessive broadcast traffic and reduce the risk of network congestion.

RPM (Read Property Multiple)

Enabled by default. This feature may be disabled by the installer if required by the BACnet client or network environment. For performance purposes, we recommend that this NOT be disabled.

WPM (Write Property Multiple)

Not supported in the current version of the S4 system. This setting is fixed and cannot be modified.

Downstream Protocol Properties

The next configuration page addresses Downstream Protocol settings. For this product, the downstream protocol is predefined as the Siemens P1 (FLN) field protocol.

Initial BACnet Device ID

This parameter is used by the Startup Wizard during device discovery to assign BACnet device identifiers to each published Siemens P1 device. The first device discovered is assigned the specified ID, and each subsequent device is assigned the next available sequential ID. The system validates each ID to ensure uniqueness and automatically selects the next available unassigned device ID if a conflict is detected.

The screenshot shows the 'Setup your system now using Startup Wizard' interface. A progress bar at the top indicates five steps: 1. TCP/IPv4 Network Settings, 2. Upstream Protocols, 3. Downstream Protocols (current step), 4. Other, and 5. Discovery. Below the progress bar, the 'Field Settings' section is visible. It contains four configuration items: 'Initial BACnet ID' with a value of 100,000, 'Baudrate' with a value of 9600, 'Parity' with a value of None, and 'Retries' with a value of 3. Each item has a dropdown arrow on the right. At the bottom left is a 'Cancel' button, and at the bottom right are 'Back' and 'Next' buttons.

Serial communication parameters (baudrate and parity) for the Siemens P1 (FLN) bus are fixed and cannot be modified. These settings are displayed for documentation and reference purposes only.

Retries

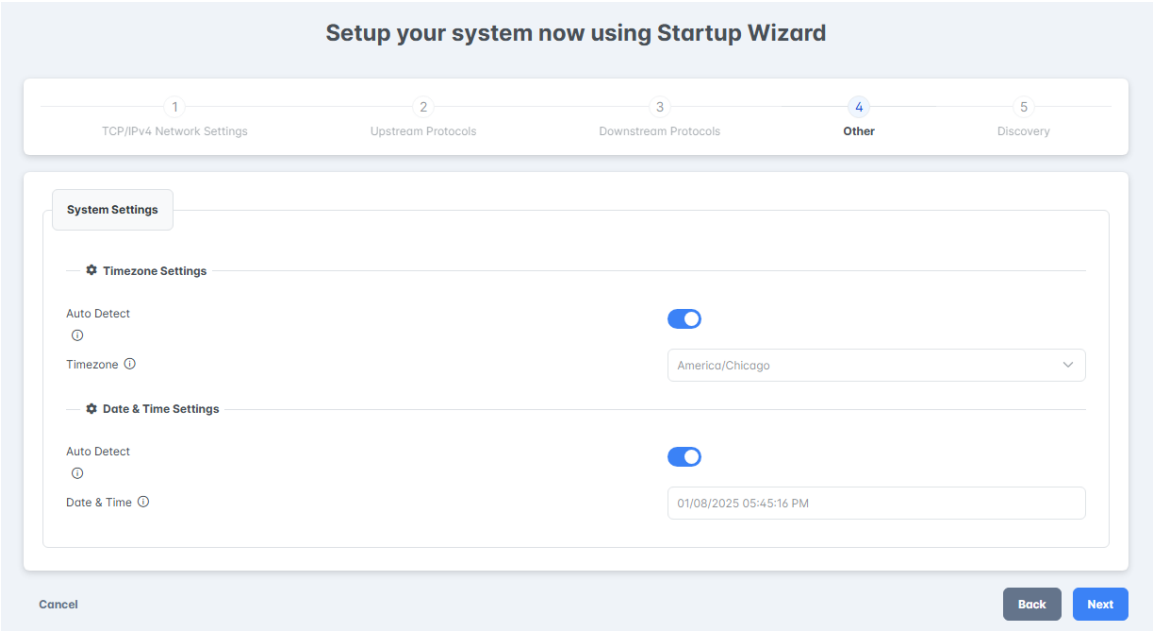
Specifies the number of attempts the system will make to communicate with a Siemens P1 device if errors occur during read, write, override, or release transactions.

Template Catalog

This opens up the Template Catalog page. This is used to import new templates (for new devices or to update existing template), or even reset the catalog to the factory defaults. Please refer to the S4IS “Guide to P1 Device Templates” document, for specifics. This is a controlled document and is available only with a documented need to know and an associated NDA.

Other Properties

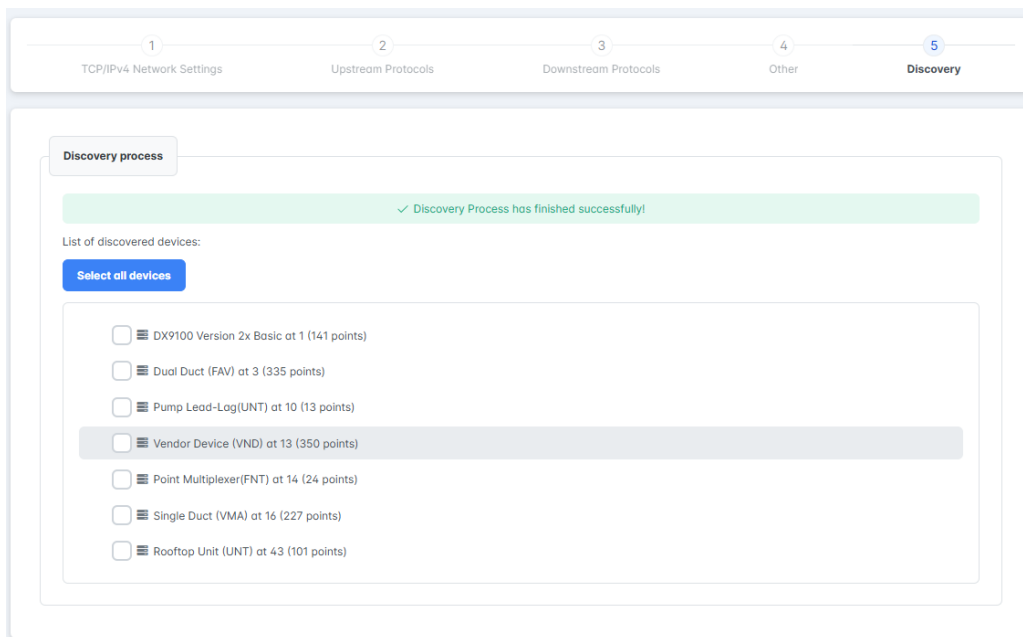
The final page of the Startup Wizard allows you to configure time zone, date, and time settings. By default, these values are set to **Auto Detect**, but they may be manually configured if the system is unable to access the appropriate Internet-based time services.



This completes the information-gathering phase of the Setup Wizard. The wizard then guides you through device auto-discovery, BACnet object generation, and creation of the S4 system database.

Auto Discovery and Database Generation

Select the devices you wish to integrate with BACnet, then click Finish to begin the discovery and database creation process.



Once system configuration is complete, publishing to BACnet is initiated. This event is announced on the BACnet network by transmitting a BACnet I-Am Router-to-Network message.

Note: While the System Setup Wizard is running, all BACnet requests are temporarily rejected.

Please be aware that the system performs extensive processing to prepare for BACnet publishing. In larger configurations, this process may take 10 minutes or longer to complete.

During this phase, the appropriate Device Template is automatically selected from the onboard template catalog and associated with each discovered device. Device templates define the BACnet point mappings and all related properties for each point.

Templates may be edited to remove (or comment out) unnecessary points, modify point properties, designate points as Critical, or apply other customizations necessary to meet the requirements of your project.

It is recommended that you review the point mappings for each device to verify accuracy. Manual adjustments may be required for certain device types that need to have unique templates: MX22, BIM, MPU and DPU devices. Also, we highly recommend that you check each TEC device template that you are using. Our default templates contain EVERY point possible, and there are a lot of unnecessary points:

- Setup parameters (motor direction and seconds-per-full travel, for example)
- Air-balance parameters (duct area, flow constants, etc., that should not be changed)
- PID constants (rarely, if ever, changed from Siemens defaults, and not from a host)
- Unnecessary points that only add confusion or data overload to operators

This is a good idea because the system should be trimmed down to obtain all possible speed from the S4IS BACnet P1-Gateway. Twice as many points as you need does not mean it is twice as slow, but there is a performance penalty for too many points. Some BACnet systems also charge for the number of points coming into them, and it might be expensive to leave everything in!

We also do not specify “critical” points in our default template, the installer may decide that some things are critical (say, airflow from an isolation room monitor, voltages and current from a power meter, etc.) You should check those points in the ***critical*** column of the template. “Critical” points are scanned and updated more frequently than all other points. Just ask yourself, “What do I need to know about, ***pronto?***”

BACnet Integration

The S4IS BACnet P1 Integration provides bi-directional access to field device data for any client that complies with the BACnet protocol as defined by ASHRAE SSPC 135.

All supported BACnet properties and services are documented in the S4IS BACnet P1 Integration Protocol Implementation Conformance Statement (PICS), which is available on the S4 Integration Solutions website.

Integration with BACnet

Commandable Points

All commandable BACnet objects support a 16-level BACnet priority array. The S4IS BACnet P1 Integration fully implements the priority array and includes application-specific extensions to ensure reliable and deterministic behavior across protocol boundaries. BACnet clients are unaware of the underlying Siemens P1 protocol, and Siemens P1 devices similarly have no awareness of BACnet protocol mechanics.

Synchronizing Values

The integration between Siemens P1 field devices and BACnet clients fully supports the BACnet priority array mechanism. All Siemens P1 points are read on a recurring schedule by the system's Scanner process, and the resulting values are written to the Relinquish Default level of the BACnet priority array. This approach ensures that the S4IS P1 Gateway system, the upstream supervisory controller, and the BACnet clients always remain synchronized.

Persistent Values

The S4 platform extends standard BACnet priority array behavior by supporting persistent commands, a feature critical for advanced applications such as Demand Response. When a commandable point is written at a given priority, the system continuously evaluates the priority array during each scan of the Siemens P1 bus. If a higher-priority value is present, that value is immediately reasserted to the field device, ensuring persistence and overriding any lower-priority commands. Once the higher-priority command is relinquished, normal point operation resumes.

Supervisory Controller Integration

The upstream Siemens P1 interface enables coexistence between legacy Siemens supervisory controllers and modern BACnet operator workstations, global controllers, and value-added applications. This

architecture allows gradual system migration while maintaining full operational continuity.

BACnet Priority Array Integration

The BACnet priority levels used for P1 write and override transactions are defined during the Setup Wizard and can be modified through the user interface as needed.

Critical Points

Points designated as Critical are scanned at a higher frequency than standard points. This behavior is controlled through the device template, which may be edited by the installer to meet project-specific requirements.

Actual scan rates are determined dynamically based on the total number of points, the volume of Siemens P1 transactions generated by the supervisory controller, and the level of BACnet traffic originating from all clients.

Pass-Through Mode

The upstream Siemens P1 interface functions as a virtualized P1 bus. In typical installations, a Siemens supervisory controller is connected to this interface. When the supervisory controller is disconnected, the interface may be used by Siemens configuration and commissioning tools such as WCIS, DataMate, BCS and similar utilities.

To prevent conflicting traffic on the Siemens P1 bus, upload and download operations using these tools require that the interface be placed into Pass-Through Mode via the user interface. While in this mode, all other system-generated and BACnet-originated transactions are suppressed.

Non-Commandable Points

BACnet input object types—including BI, AI, MSI, and character objects—do not support priority arrays. For these object types, values read from the Siemens P1 bus are written directly to the Present Value property. The BACnet Out-of-Service mechanism may be used in conjunction with BACnet write operations to temporarily override these values.

BACnet Best Practices

Best practices recommend configuring the APDU Segment Timeout and APDU Timeout values to match those used by the BACnet client system.

For Tridium-based systems (including Niagara and its derivatives), Read Property Multiple (RPM) *may* need to be disabled. Under high error conditions, Niagara’s Fox protocol retry and recovery mechanisms can otherwise cause all points (even fully operational points) to become stale. We suggest that you begin with RPM disabled, validate the system for proper operation, then try enabling RPM from the Niagara system. If data shows “stale” occasionally, disable RPM.

Security

Only network ports required for proper operation of the S4 application are enabled.

By default, common administrative services such as SSH (port 22), FTP (ports 20–21), and Telnet (port 23) are disabled. These services may be enabled temporarily for remote support purposes if required and when properly authorized.

The following ports are used by the system:

- UDP Port 47808 – Standard BACnet port. This port is configurable in accordance with the BACnet specification.
- TCP/IP Port 5095 – Used by the S4 application. (Not visible externally).
- TCP/IP Port 5800 – Used for backend-to-user-interface communication. (Not visible externally).
- TCP/IP Port 80 – Used for user access to the web-based user interface. (Port 8080 may be used instead).
- TCP/IP Port 33060 – Used for SQL database access (encrypted).
- TCP/IP Port 22 – Used for commissioning (for SSH remote viewing). Disabled after commissioning has been completed.

Licensing

The S4IS BACnet P1 Integration is a licensed product. Licensing is provided on a perpetual basis, with an optional annual support agreement. The appropriate license is installed on the system as part of the S4IS build and quality assurance process prior to shipment.

Many systems are sold as **Permanently Licensed**. These systems do not have a date-limitation which would trigger an expiration of the license, but they do have a device or point limit, which can be exceeded and trigger an expiration of the license.



If a system is found to be unlicensed, the following actions will occur:

Days 1–30

A notification message is displayed in the user interface stating:

“Your license has expired. Please contact S4 Integration Solutions immediately to prevent any interruption of services.”

Days 31–60

Access to the S4IS user interface is disabled. A pop-up message is displayed indicating that the license has expired and that S4 Integration Solutions must be contacted.

After 60 days

User interface access remains disabled, and the system appends “S4 License Expired” to the BACnet device name. For example, a device named Lobby will appear as Lobby S4 License Expired in BACnet systems.

If the number of licensed devices is exceeded, a warning message is displayed in the user interface indicating that the licensed device limit has been exceeded. In addition, the system appends “S4 License Exceeded” to the BACnet device name until the licensing issue is resolved.

Note that in all cases, the system continues to run! No data is lost, no slowdown occurs, nothing fails. It just tries to mention to you, nicely, that you need to re-up the license.

Current licensing status is displayed on the system login page. This page also provides access to the system hardware ID and tools for installing or updating a license.

S4 INTEGRATION SOLUTIONS

Welcome to Your S4 Integration Solutions Product
This is the S4 BACnet P1 Integration at 192.168.1.169

Use your credentials to log in
Email & Password

Don't have an account yet?
Use "Create an Account" button to get it

Don't remember your credentials?
Use "Forgot Password" link to reset it

To contact us, call (801) 621 1970 or email sejones@s4integrationsolutions.com
System Licensing: 10 device(s) until 10/02/2125 [Change](#)
Version 1.0.41 [Update](#)
[Hardware ID](#) | [System Info](#) | [Diagnostic Reports](#) | [Backup & Restore](#) | [Reset Database](#)

Login

Email

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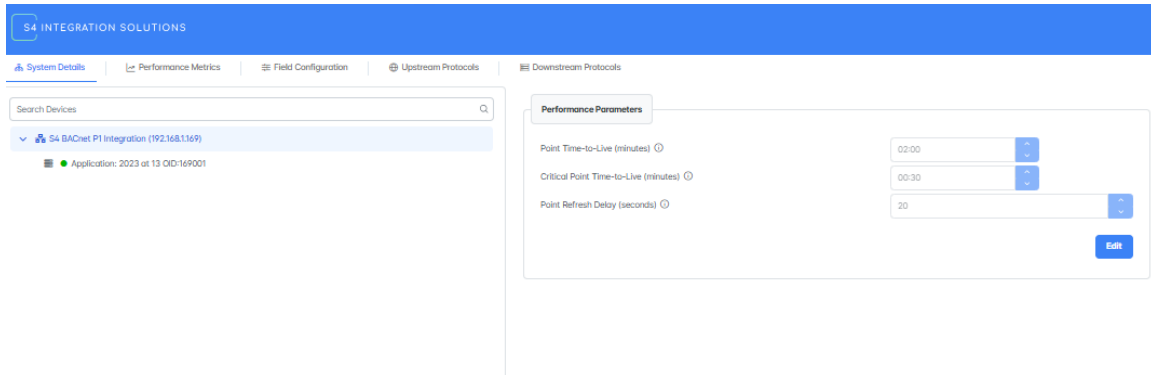
or

System Production Operation

This view displays the user interface when the system enters production operation. The top-level navigation items allow you to review and modify selections made during the Setup Wizard at any time.

This is a set of six “tabs” that allow you complete access to the system and its operation.

Performance metrics are available throughout the user interface, providing visibility into overall system health and the effectiveness of the integration.



The System Details Tab

The first item in the navigation pane always represents the S4 system itself. From this node, you can modify operational parameters and initiate administrative functions.

The screenshot displays four configuration tabs from the S4IS BACnet P1 Integration User Guide:

- Performance Parameters:** Includes fields for Point Time-to-Live (minutes) (02:00), Critical Point Time-to-Live (minutes) (00:30), and Point Refresh Delay (seconds) (20). An **Edit** button is at the bottom right.
- TCP/IP V4 Network Settings:** Includes fields for MAC Address (00:0C:29:3E:8C:8E), Hostname (S4P1VM), DHCP Enabled (checked), IP Address (192.168.1.169), Subnet Mask (255.255.255.0), DNS Server (192.168.1.1), and Default Gateway (192.168.1.1). An **Edit** button is at the bottom right.
- System Options:** Includes fields for Auto Detect (checked), Time Zone (America/Denver), and Date & Time (05/20/2026 05:37 PM). An **Edit** button is at the bottom right. Below the fields are buttons for **Update Firmware**, **Discovery**, **Diagnostic Reports**, **Backup & Restore**, **Reset Database**, and **Reboot**.
- Device Settings:** Includes fields for Name (S4 BACnet P1 Integration), S4 Router Installation Address (123 Street, City, State, Zip), and Additional Description (BACnet Server API). An **Edit** button is at the bottom right.

Reset Database Button

This button at the bottom of this tab initiates a function which resets the system to its pre-configuration state, allowing the setup process to be restarted from the beginning. Because this is a protected operation that may have significant side effects, it should be used with caution.

To invoke this function, you must contact S4 Integration Solutions to obtain the current authorization password and to review the expected system behavior following completion of the reset.

Reboot Button

Whenever the S4 system restarts, the following sequence is performed:

- The S4IS SQL database is validated.
- Communication with the Siemens P1 (FLN) field bus is reestablished.
- BACnet publishing is restored. Please note that the system performs significant processing during this phase; in large configurations, this process may take 10 minutes or longer to complete.

System Logs Button

All system transactions, property changes, and user administration actions are recorded in the system SQL database. This function allows you to export existing log files for review or transmission to S4 Integration Solutions for analysis, as well as to manually initiate the creation of new log files.

System Backup and Restore Button

System backup and restore operations can be initiated using this function. Application configuration data and the SQL database are included in the backup and restore process; the operating system is not included.

Update Firmware Button

If a system firmware update is required, S4 Integration Solutions will typically provide an update package via email. This function

guides you through selecting the update package and applying it to the system.

As a failsafe method, the update package may also be placed on a USB storage device and inserted into the system. The firmware update will be applied automatically when the system is rebooted.

P1 Device Nodes

Each discovered Siemens P1 device is displayed beneath the S4 Router node in the navigation pane at the top left of this screen.

The device name is accompanied by a status indicator, which may appear in one of the following colors:

- Green — The device is online and communicating normally.
- Gray — The device is in Administrative Offline or Pass-Through mode.
- Red — The device is offline or has a configuration error, most commonly due to a missing or incompatible device template. Additional details are available by hovering over the status indicator or by reviewing the Device Details tab.

Selecting a Siemens P1 device displays its associated point list and device properties, as in this example:

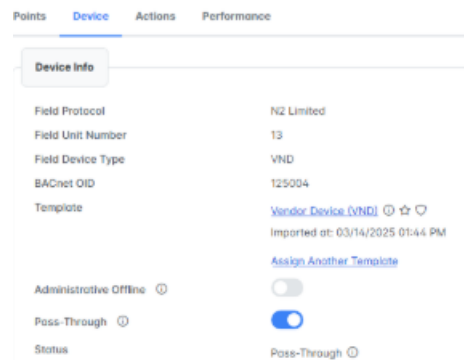
Name	Point Status	Present Value	Priority	BACnet OID	Data Source	Data Type	Writable	Critical
Exhaust Flow	Online	0 (cubic feet_per_minute)		AV/500170	n2://adf.17	Float32	NO	YES
Total Dk Flow	Online	0 (cubic feet_per_minute)	RD	AV/500190	n2://adf.19	Float32	YES	YES
Actual Zone Bias	Online	-0.2999999523162842 °F		AV/500200	n2://adf.20	Float32	NO	NO
Actual HtgSetpt	Online	-0.2999999523162842 °F		AV/506200	n2://adf.20	Float32	NO	NO
Actual ZoneSetpt	Online	0 °F		AV/500210	n2://adf.21	Float32	NO	NO

Device-specific actions, administrative functions, and performance statistics are accessible through the corresponding tabs in the user interface.

The Device tab displays detailed information about the selected device, including the assigned device template and current device status. Device status may be indicated as follows:

- **Online** — The device is communicating normally. If the device stops responding, the system performs up to three retry attempts before marking the device as offline. These retries involve different requests (such as reading alternate points), rather than resending the same request.
- **Offline** — The device is not responding. Requests originating from BACnet clients, the user interface, or the supervisory controller are not transmitted to the field device. The system polls the device at five-minute intervals to detect recovery.
- **Administrative Offline** — Functionally equivalent to the Offline state; however, the status is manually set by the user rather than automatically by the system.

- **Pass-Through** — Enabled by the user for administrative and commissioning purposes, allowing direct access to the field bus while suppressing BACnet or internal system generated transactions.



Point Details

Point lists and point-level details are defined by S4 device templates. For guidance on creating or modifying templates, refer to the S4IS P1 Template Design documentation. This document contains proprietary S4 Integration Solutions intellectual property and must be requested directly from S4 Integration Solutions.

Any BACnet property associated with a point may be modified by editing the corresponding device template.

The Present Value of any writable point can be changed by selecting the displayed value. A dialog box will appear to guide you through completing the transaction.

Set Present Value ×

Present Value

74
(from -3.4028234663852886e+38 to 3.4028234663852886e+38)

Priority

8 — Manual Operator

⚠ Writing to any priority will put the point into an auto periodic update mode.

Cancel Save

BACnet properties, including Point Status, are displayed alongside each point's value. If any faults or reliability errors are detected, the status field is highlighted in red. Hovering over the field provides additional detail about the condition.

Navigating Point Details

As a system integrator or end user, you will spend most of your time working within the Point Details view. The system provides additional navigation tools, including a free-text search function and the ability to sort data points by any column.

Once system installation and integration are complete, the S4IS user interface serves primarily as a reference tool for monitoring system performance and troubleshooting. Day-to-day interaction with system data is typically performed through BACnet client applications.

Upstream Protocols Tab

Selecting this tab displays the properties configured during the Setup Wizard and allows you to modify these settings in the

operational system. In some cases, applying changes will require a system reboot.

Downstream Protocols Tab

Selecting this tab displays the properties configured during the Setup Wizard and allows you to modify them while the system is operational. Some changes may require a system reboot to take effect.

Device Template Library

The Downstream Protocols tab includes a function that is not required for initial system setup but is essential for ongoing maintenance and support of device templates. The operation and role of device templates are described in earlier sections of this document.

The Export function allows you to select and export device templates. Exported templates are saved in .CSV format and may be edited using spreadsheet software such as Microsoft Excel or a text editor.

The Import function allows you to import new or modified templates. After a template is imported, the system identifies compatible devices and allows you to select which devices the template should be associated with.

S4 INTEGRATION SOLUTIONS

System Details | Performance Metrics | Field Configuration | Upstream Protocols | **Downstream Protocols**

P1 Protocol

Properties

Initial BACnet ID ⓘ 169,001

Baudrate 4800

Parity None

Retries ⓘ 3

Save

Templates

Template Catalog

To manage templates, click the **Manage Templates** button to open the template catalog. From there, you can view all templates, import new ones, export for editing, delete, or reset all changes

Manage Templates



Summary

This document provides an introduction to the S4IS BACnet P1 Integration and is intended to serve as both a training and reference guide. The system user interface is designed to be intuitive; therefore, after becoming familiar with the platform, you should rarely need to refer to this document.

Contact

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Happy Integrating!