

Recommended Hardware for PIV / Smart Card Authentication with Stages

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Audience: Internal (CSM, PS, Engineering, Sales Engineering)

Applies to: Stages environments using PIV / Smart Card authentication

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Source: Internal architecture guidance from the Bold Solutions Architecture team

Purpose

This article documents Bold Group's recommended hardware approach when supporting PIV / Smart Card authentication in environments integrating with Stages.

This guidance is intended to:

- Standardize internal recommendations
- Avoid unsupported hardware configurations
- Reduce risk in regulated and federal environments
- Ensure alignment with Bold's architectural best practices

Official Bold Recommendation

Bold Group does NOT recommend using PCIe serial cards installed directly in the server for PIV / Smart Card-related serial-to-IP communication.

Instead, Bold recommends using an external serial-to-IP device, specifically a DIGI PortServer-type device, connected outside the server.

Recommended Hardware Architecture

Preferred Approach: External Serial-to-IP Device

Bold recommends deploying a DIGI PortServer (or equivalent external serial device) to handle serial communications required by supporting applications.

How this works:

- Serial output (DB9) from the receiver or relevant hardware
- Converted to Ethernet (RJ45)
- Connected to an external DIGI PortServer
- The application (e.g., VaporPaper) accesses the PortServer as a standard COM port

This approach mirrors traditional in-server serial behavior without introducing server-level hardware dependencies.

Not Recommended: Server-Installed PCIe Serial Cards

Bold does **not** recommend:

- PCIe serial cards installed directly into application or database servers
- Server-level serial hardware for PIV / Smart Card-related integrations

Reasons:

- Increased hardware dependency on server configuration
- Reduced portability and scalability
- Higher risk during server upgrades or replacements
- Less alignment with modern, secure infrastructure standards

Supported Application Behavior

Applications interacting with serial communications (such as VaporPaper) will:

- Detect the DIGI PortServer connection
- Read it as a standard COM port
- Function identically to an in-server serial card from a software perspective

No special application-level changes are required when using the recommended external device.

Key Benefits of the Recommended Approach

- Server-agnostic configuration
- Easier hardware replacement and upgrades
- Cleaner separation of application and hardware layers
- Better alignment with security-conscious and regulated environments
- Reduced operational risk during OS or server refresh cycles

What We Do (and Do Not) Support

Bold Supports:

- External serial-to-IP devices (e.g., DIGI PortServer class devices)
- COM port access via external serial servers
- Standard application integration using OS-recognized COM ports

Bold Does Not Support:

- Troubleshooting or validating server-installed PCIe serial cards
- Custom or non-standard serial drivers embedded in server hardware
- Architectures that tightly couple serial hardware to application servers

Guidance for Internal Teams

When discussing PIV / Smart Card–related infrastructure with customers or partners:

- Always recommend an external serial-to-IP device
- Avoid endorsing specific PCIe card models
- Reinforce that Bold’s recommendation is external hardware, not server-installed cards
- Position this as a best-practice architecture, not a customer-specific workaround

Escalation & Exceptions

Any deviation from this recommendation must be:

- Reviewed with Solutions Architecture
 - Documented explicitly
 - Approved before implementation
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