

Advanced Operator Displays Services

- Establish easy and proactive complete patch management strategy
- Ensure the availability and business continuity of your DeltaV™ process control system
- Reduce manual system administrative activity and delays associated with software updates

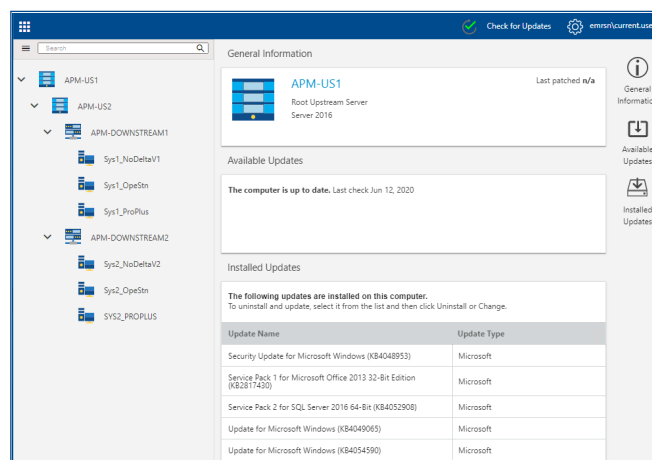


Figure 1: Advanced Patch Management's user interface

Introduction

Every month there are new Microsoft® Windows® OS security updates, McAfee® Endpoint Security for DeltaV Systems antivirus updates, Symantec™ Endpoint Protection antivirus updates and DeltaV DCS hotfixes (Guardian subscription required) that need to be acted upon. Emerson's Advanced Patch Management service provides a complete solution for Windows and DeltaV patches that addresses the five deployment steps — identification of Emerson-approved updates, acquisition of update executables, distribution to appropriate workstations and servers, installation for Windows updates and compliance auditing.

It is very common for the most critical security, antivirus and application hotfix updates to go uninstalled for extended periods of time, or not be installed at all. Often the reasons are due to limited skilled resources and demands on those resources to address an immediate need with a measurable business benefit. Deploying the Advanced Patch Management solution frees up those resources and allows you to keep your system patched and secure against attacks targeting unpatched systems.

Benefits

Establish easy and proactive patch management strategy: Advanced Patch Management service automates routine aspects of software update deployment for timely dependable implementation, while freeing staff to devote more time to your own business. For large systems, the savings can add up to hundreds of hours per year. Advanced Patch Management service identifies the appropriate Microsoft Windows security patches, tests them on supported DeltaV DCS/SIS systems and advises you on which DeltaV hardware needs updating with which particular software patches on an individual system-by-system basis.

Ensure the availability and business continuity of your DeltaV system: Emerson provides approved Microsoft Windows security updates as well as antivirus signature file updates on a regular basis. Experience has shown many of the disruptive events reported to the Emerson Global Service Center could have been avoided, had the relevant security update or hotfix been applied in a timely fashion.

Reduce manual system administrative activity and delays associated with software updates: Maintaining security, patch management and hotfixes are essential to your system's security and availability.

This automated service ensures that critical updates are deployed consistently.

By delegating patching to Emerson's Advanced Patch Management service, site resources can focus on delivering quality product and bottom-line results; spending less time evaluating and deploying patches, and more time focusing on process management and operations.

Minimize time spent on product installation and day to day patching activities: Advanced Patch Management comes with an easy to use user interface that lets you quickly determine patch status of your managed control system workstations and servers.

Included tools, like the Environment Checker, allow you to speed up initial installation and makes troubleshooting the environment more efficient by verifying required firewall ports are open and proper node communication.

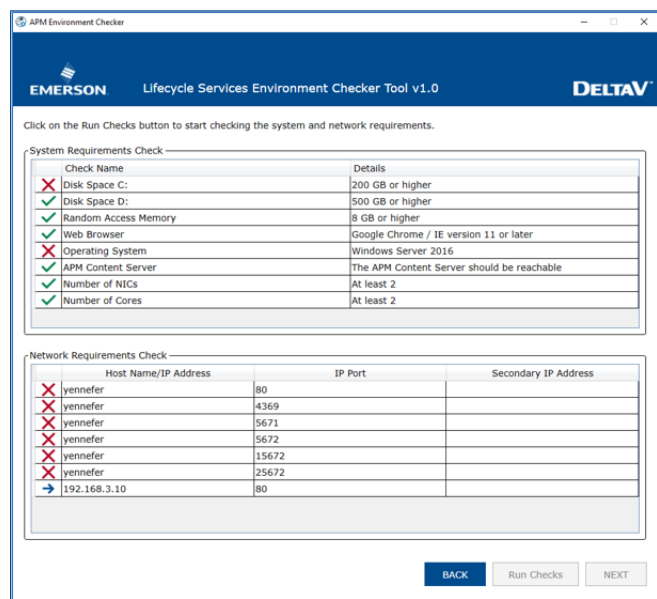


Figure 2: Included too, Environment Checker, allows you to quickly determine communication status

Distribute, install, and reboot patches and updates either locally or remotely from our intuitive user interface. Easily choose which updates to send to which machines and export your updated status report to assist in compliance auditing.

Advanced Patch Management Service Architecture

Advanced Patch Management can be combined with Emerson's expert consultation and optional on-site commissioning to implement automated deployment capability for Microsoft® Windows® security updates, McAfee or Symantec™ antivirus updates and for Guardian subscribers, DeltaV DCS hotfixes.

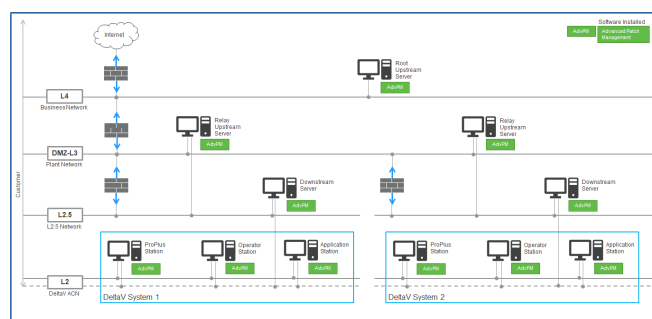


Figure 3. Advanced Patch Management Reference Architecture

Advanced Patch Management Service Architecture

Identification of Emerson-approved updates:

When Check for Updates is initiated, Advanced Patch Management will determine which assets at site require an update with what Emerson has tested and released. This now includes non-DeltaV workstations and servers at the same operating system version as DeltaV machines.

Acquisition of update executables: Updates will be securely downloaded and verified so you can be sure that the patches Emerson has tested and released are the one you will be installing.

Distribution to appropriate workstations and servers:

Updates will then be sent to the proper workstations and servers when the proper time is determined and Install Updates is initiated either remotely or locally from the user interface of the Advanced Patch Management console.

Installation for Windows updates: Installation requests can be locally approved or declined directly at the client machine. Discreet notifications can be enabled within the DeltaV Desktop to present to the user that updates are now available for installation.

Compliance auditing: Export the latest reports showing the current update status to make compliance auditing much more efficient once all the updates and patching is complete.

The Software Service Enablers

- **Advanced Patch Management Upstream Server:**
with an intuitive Emerson software application evaluating status of endpoints and the ability to check for updates from Emerson's Content Server, the upstream server solicits system hot fixes (Guardian subscription required) and Microsoft security updates via the Internet. It is typically located on an internet facing machine.
- **Advanced Patch Management Downstream Server:**
Intermediate interface that transfers new DeltaV hotfixes for active Guardian subscriptions and the latest approval information for Microsoft security updates from the internet facing Upstream Server to the endpoints to be patched.
- **If you have McAfee Endpoint Security for DeltaV Systems:**
 - McAfee ePolicy Orchestrator® Console (McAfee ePO™) — A software application that solicits antivirus updates from either Emerson or via the Internet, typically located on a server on the L3 network and can be combined with the Upstream Server as long as hardware requirements are met (see McAfee installation documentation for further ePO server details).
 - McAfee Agent Handler - An application platform that deploys the antivirus updates obtained by the ePO console to the agents located on the DeltaV ACN nodes and can be combined with the Downstream Server as long as hardware requirements are met (see McAfee installation documentation for further ePO server details).
- **If you have Symantec Endpoint Protection Solutions:**
Symantec signature files will be tested by Emerson monthly and released as a word file for you to obtain on your own.

Service Prerequisites

Advanced Patch Management Service prerequisites:

- Windows 10 and Server 2016 operating Systems.
- Internet facing root Upstream Server at site able to connect to Emerson's Patch Management Content Server.
- Downstream Server with constant connection to all workstations and servers to be patched.
- Annual purchase of the Advanced Patch Management Subscription Service for each system ID.
- For McAfee Endpoint Security for DeltaV Systems:
 - Licenses to use McAfee ePO, Agent Handler and agent clients (all supplied by Emerson).
- For Symantec Endpoint Protection:
 - License to use Symantec on clients (your responsibility to procure).
 - Support service contract from Symantec is recommended (your responsibility to procure).

Advanced Patch Management Services

Emerson offers services to help you integrate Advanced Patch Management Service into your network infrastructure through evaluation, design and implementation services. These services include:

- **Advanced Patch Management Evaluation:**
Emerson will work with you to evaluate your request for services. The evaluation will: Define the scope of work to be performed.
 - Analyze the system architecture desired and any high-level technical considerations requested.
 - Define any requirements of an overall system architecture plan and configuration desired.
 - Provide an Evaluation Report outlining your request, considerations, and Emerson's recommendations.

■ Advanced Patch Management Detailed Design:

Based on the findings from the Patch Management Evaluation, this optional service will develop a proposed architecture, detailed configuration, and policies to test and verify proper functioning of the proposed patch management system. The detailed design phase may include:

- System staging based on the your desired system architecture and configuration. This pre-work will determine the best configuration and installation processes to be used on site. Equipment to be used in the plant can be provided by you for system staging.
- Detailed consultation regarding the newest features and enhancements contained in the new versions of the patch management service.
- An outline of the testing procedure to be performed.
- Complete test reports outlining notable system behavior and installation and configuration issues found.
- A detailed roadmap indicating any site installation and configuration prerequisites required.
- Testing of any desired system modification identified during the Evaluation phase.

■ Advanced Patch Management Implementation:

Based on the findings of the evaluation and detailed design, Emerson will work with you to install, configure and implement the patch management service. Upon completion, an implementation report will be provided to you.

Please contact your Emerson Service Representative for a quote if these services are required at your site.

Advanced Patch Management Annual Subscription Service

Advanced Patch Management service requires an annual subscription. This subscription service enables the System ID's patch management server to connect with Emerson's Content Server to download the applicable updates.

Advanced Patch Management Project Support

Advanced Patch Management service is a solution composed of a combination of standard Emerson products and an engineered environment that delivers patches through your network to individual machines. Standard Guardian Support provides initial support for any issues or questions regarding the Advanced Patch Management solution through Emerson's Global Support Center (GSC) if you already have a Guardian subscription. If you do not have a Guardian subscription relatively simple and straightforward questions and issues that are non-site/system specific can be answered. Issues and questions that are more complex and are more site/system specific will most likely require an additional service contract either through your local Emerson Service Representative and/or Emerson's Performance Services group.

Cybersecurity Management Solutions

Advanced Patch Management service is an integral part of Emerson's Cybersecurity Management Solutions portfolio. A comprehensive cybersecurity solution consists of many different components; each one specific to reducing risks associated with various process control system entities. Emerson's Cybersecurity Management is an integrated approach to finding the best cyber solutions to fit your current process control system and existing plant security policies and procedures.

Cybersecurity Management solutions cover:

- Advanced/Manual Patch Management services
- Disaster recovery
- Backup and recovery
- System Health Monitoring
- Application Control
- Network Security Monitoring
- Security Information & Event Management (SIEM)
- Smart firewalls, Smart Switches and Controller Firewalls
- On-site spare parts management
- Security consultation services
- Incident Response Services
- Development Services for IR Plan and Site Policies & Procedures Review

Reduction of risks associated with the use of these solution components reduces the time spent on controllable issues and allows focus on other important day-to-day issues.

Ordering Information

The patch management service requires a current Advanced Patch Management subscription to be maintained for each System ID at a given plant site. Please visit the Advanced Patch Management Quotation Portal for part number selection and current pricing information <https://serviceprice.emerson.com>

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