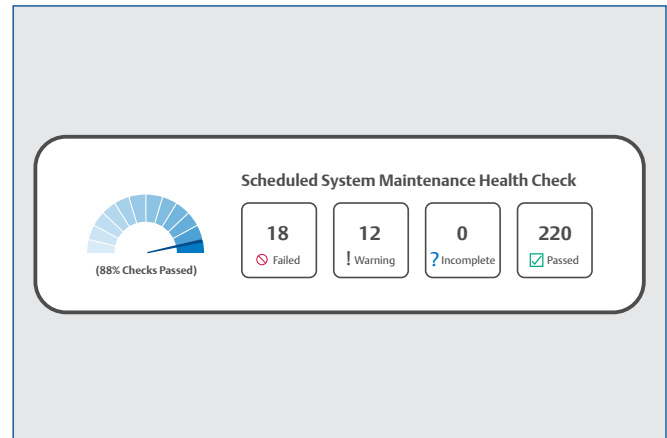


Digital Twin Preventive Maintenance

- Implement a standardized maintenance approach
- Improve infrastructure availability
- Maintain simulator performance
- Leverage service specialists with system-specific expertise



Achieve and sustain peak performance and reliability of the Digital Twin infrastructure.

Introduction

Regularly scheduled maintenance is critical to ensuring the longevity and peak performance of your simulation infrastructure. The service produces an action-plan report to protect the automation environment and maintain a path forward.

Digital Twin Preventive Maintenance allows you to meet your plant's specific and comprehensive needs and address your operational and business challenges by:

- Keeping your Digital Twin infrastructure operating effectively, consistently and economically.
- Improving and preserving your asset reliability and investment over time.
- Optimizing performance and achieving business goals.

Emerson service specialists perform a prescribed set of maintenance tasks and site services using a standard and proven procedure.

Proactively maintain and continually advance and enhance your Emerson Digital Twin installation.

With this program, you can keep your simulator hardware and software maintenance requirements at peak performance while maintaining a flexible path forward to new technology and features.

Benefits

Implement a standardized maintenance approach

Emerson's Digital Twin Preventive Maintenance Service provides a standardized and proactive maintenance methodology to help you dependably operate your simulation system day after day. Preventive Maintenance changes the maintenance from a fail-and-fix approach to a predict-and-prevent approach. The objective is to proactively identify shortcomings that can impact system continuity and availability.

Improve infrastructure availability

Maximize Digital Twin system availability for operations, engineering and training teams through proven software and hardware support maintenance methods. The service minimizes the risk of unexpected simulator malfunction or failures.

Maintain simulator performance

Apply component updates and identify potential issues to keep the Digital Twin operating reliably and current with the latest software and hardware technology. Proactively assess simulator performance to maintain alignment with production system operation.

Leverage services specialists with system-specific expertise

Priority access to site services specialists with deep knowledge and expertise of past proven solutions can be a major time saver and help reduce the risk of an inefficient or unreliable solution.

Service Description

Emerson initiates the scheduling of planned maintenance visits with your plant's designated contact person. Emerson services specialists work in advance to access the necessary system documentation and data to be used in completing the work.

To ensure that the Digital Twin system is fully functional, a completed performance analysis of the DeltaV Simulate offline control system software, Mimic Simulation software and a review of the supporting hardware infrastructure is completed in order to generate an assessment report. The report includes the results and recommendations on potential enhancements.

The Digital Twin Preventive Maintenance activities are divided into ten categories:

- 1. System Documentation**
Verify that all necessary and recommended Digital Twin system documentation has been created and is up to date.
- 2. Hardware – Virtualization**
Check health and performance parameters of the virtual host server(s) as well as the status of their hardware chassis to ensure normal operation. Visual inspection of Server cabinets is performed to verify the integrity of the installed Digital Twin supporting virtual host server(s).
- 3. Hardware – Workstations**
Check health and performance parameters of the workstations, status of their network communications and physical condition within the Digital Twin infrastructure.
- 4. Hardware – Network**
Check health and performance parameters of the Digital Twin network equipment to ensure its integrity.
- 5. Software – Virtualization**
Check health and performance parameters of the virtual host server(s) as well as the status of their virtualization hypervisor to ensure normal operation. Verification of key performance parameters and system utilization are part of the standard tasks for this system dimension.
- 6. Software – Workstations**
Check health and performance parameters of the workstations, status of their simulation communications and virtual performance conditions within the Digital Twin software infrastructure.
- 7. Software – Network**
The integrity parameters of virtual networks (VLANs) are reviewed and compared against the Emerson recommended values.
- 8. Software – Mimic**
Check health and performance parameters of the Mimic Simulation Software. The integrity parameters of the Mimic Simulation Database are reviewed and compared against the Emerson recommended values. Communications with DeltaV Simulate are initiated to assess performance.
- 9. Software – DeltaV**
Check health and performance parameters of the DeltaV Simulate Software. The integrity parameters of the DeltaV Simulate Database are reviewed and compared against the Emerson recommended values.
- 10. Backup and Recovery**
Check health and integrity parameters to make sure Backup and Recovery setup is working as configured.

During each service visit, specialists will log all findings and observations and generate a standardized report. The report summarizes the findings and actions taken during the execution of the Preventive Maintenance routines. The report includes any other action plan recommendations identified during the visit to improve lifecycle, support and maintenance of the Digital Twin.

Service Availability

Digital Twin Preventive Maintenance is a Lifecycle Services offering for DeltaV DCS. The Lifecycle Services portfolio consists of service modules, each designed to address specific support requirements. These modules can be combined to customize a support program for your plant that is tailored to fit just right, meeting your support needs while providing value and peace of mind.

Ordering Information

Description	Model Number
Digital Twin Preventive Maintenance	SER-4104

Note: Must have an active Guardian Support for Mimic contract to utilize this service.

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