

System 800xA Health Check

Increase availability and ensure optimal system performance of your 800xA control system

System 800xA Health Check provides a comprehensive evaluation of critical areas that affect system performance, including hardware, software and firmware, system and Ethernet communications, and current maintenance practices.

Benefits

- Increases control system performance, availability and reliability
- Minimizes risk of system upsets
- Lowers maintenance cost
- Improves system maintainability
- Reduces risk of component failures

Features

- System performance evaluation
- Visualization and analysis of Key Performance Indicators
- Detailed improvement plan
- Access to ABB System 800xA experts

System 800xA Health Check provides certified 800xA engineers to evaluate and test several key system areas. The analysis identifies underperforming areas and provides corrective and preventive recommendations to enhance and improve system performance and efficiency.

Revealing typical obstructions

- System overload is causing slow response rate.
- System performance degradation is not diagnosed or resolved until issues arise.
- Issues arise sporadically which are difficult to diagnose.
- Hardware devices glide slowly towards unavailability.
- Redundancy problems create single points of failures.
- System loses efficiency.
- Operational features become unavailable due to improper software installation changes.
- Security vulnerabilities occur due to obsolete Microsoft Update status

The concept in brief

System 800xA Health Check is a detailed and comprehensive inspection and status evaluation of an 800xA system. It is a key service for maintaining high system availability and avoiding disruptions and interruptions in production.



The System 800xA Health Check procedures have been developed on the base of long-term service experience. All tests are done during plant operation and are executed on a low priority level in order not to strain the system in operation.

Following a systematic guideline, an ABB service engineer steps through more than hundred control points in System 800xA. Computer aided data collection and analysis is supplemented by individual inspections and audits.

Findings are compiled and after a complete analysis a report is composed. The resulting System 800xA Health Check Report outlines actions that will help prevent potential problems and improve availability, reliability and system performance.

Evaluation Areas

The following 800xA system areas are inspected and validated against ABB requirements, documents and best practices.

– Software installation

A prerequisite for a reliable system is that the software has been installed correctly. All software needed for System 800xA—from the operating system to individual, specific packages within System 800xA—are analyzed to ensure the proper software, updates and versions are installed. Dependencies and correlation between versions and functions are also analyzed. All software installations must follow ABB's release documents. Installation of mandatory software and matching versions on all computers are validated.



– Computer hardware

It is important that all computers used in the system are certified for ABB System 800xA. Checks are done to identify typical hardware defects, and it is verified that all computers are properly configured and able to communicate with each other.

– Domains

System 800xA depends on proper functioning of the domain controllers, so that operators and other users have suitable access privileges in the system. System 800xA Health Check diagnoses functionality and makes sure that the configuration steps are carried out correctly.

– 800xA nodes

An automation system can consist of a large number of nodes. System performance depends on each node working flawlessly. This is validated by measuring utilization and status parameters, operating system settings, performing log file analysis and more.

– Control system applications

The application programs must be configured correctly. Common configuration errors and inconsistencies are exposed, which may result in reduced availability and a “slow” system.

– Other system tests

General system properties, such as server load balancing, time synchronization, alarm handling and antivirus software installation are validated.

– Backup strategy

Status, policies and procedures for system data and computer nodes backup are reviewed. Missing backups can lead to engineering work loss and, in the worst case, production loss by extending system downtime.

– Installation and environment

Hardware installation is inspected for being compliant to mounting instructions and industrial standards. Also environmental risk factors, such as vibration, humidity, temperature, dust and electromagnetic radiation are rated.

– AC 800M controller

AC 800M controller is densely integrated in System 800xA. Communication to and from the AC 800M, CPU load, log lists, task execution and more is checked. Included is also the health and load of the OPC server connection.

– 800xA for Advant Master

Check of controller CPU and bus communication load, memory utilization, error logs and messages, time synchronization and firmware version validity.

– PLC Connect

Verifications comprise the real-time database health, load figures, error logs and messages and performance measurements

– Information Manager

Status of the Oracle® database containing historical data from the process, including disk space memory usage of the database is reviewed.

– VMware Virtual Environment

If virtualization technologies are used, hardware and software version compatibility, planning and utilization of resources, virtual networking, time synchronization, and high availability options are checked.

– 800xA for Melody

Verification of connectivity server replication status and the database maintenance. For Melody Controllers, CPU resources, error messages (including I/O status and events), time synchronization, firmware correctness and the battery status is checked. Composer engineering is checked for resources, log files, time synchronization and regular backups. Special bus communication checks complete the verification.

Findings and recommendations

Once the evaluation has been completed, a detailed report, including findings, improvement recommendations, and areas found to need further analysis is provided.

Our standardized rules for report generation guarantee an easy-to-read report. On one hand this report is addressed to top level management. It presents the key findings in an executive summary, with a result overview in traffic-light style. It provides general impact and ROI discussions and recommends actions, if required.

On the other hand the report addresses the technical specialists. It explains all findings, and provides the severity, possible impacts, detailed recommendations and document references for each of them.

Corrective services

ABB offers assistance with the implementation of improvement recommendations. ABB Local Service will present the System 800xA Health Check Report to the customer in a meeting. This gives the opportunity to discuss possible Return on the automation Investment (ROI) impacts, and agree, if necessary, in an action plan to improve system reliability, availability and operational performance to its best. An ABB field service professional, experienced in 800xA system operation, is available to lead improvement activities utilizing site or ABB personnel.

A maintenance service tailored to your needs

System 800xA Health Check can be adapted to your individual needs and depending on your preferences. ABB local service will advise you for the best possible fitting.

ABB recommends to perform a System 800xA Health Check annually as part of a regular preventive maintenance program and long-term improvement plan. These checks support customers in achieving and securing improved system performance levels.

For more details please contact your local ABB Service organization.

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