ABB Ability™
Asset Health for control systems
Prescribing reliability
Digital diagnostics can determine control system health to help power plants fix issues that impede availability, speed and reliability.

ABB Ability™ Asset Health for control systems diagnoses real-time health of ABB control systems, and prescribes fixes to keep the system -- and production -- running strong.

ABB Ability™ is our digital platform, from device to edge to cloud, with systems, solutions and services that enable producers to know more, do more, do better, together.
Protect generation from performance degradation

Cumulative effects of revisions, additions and adjustments to control system hardware and software may slowly degrade system performance – and thus production performance -- through non-optimal settings and conditions. This could impede generation reliability, and place assets at risk through insufficient upkeep. Risk is amplified by the fact that many workers knowledgeable about these issues are retiring, and qualified new workers can be hard to find.

### Meeting Needs

<table>
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<tr>
<th>Power plant need</th>
<th>Threat</th>
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<tr>
<td>Production reliability</td>
<td>Non-optimal control system settings and conditions that degrade performance, causing unpredictable behavior and unplanned downtime</td>
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<td>Long asset life</td>
<td>Insufficient ability to record and track all control system assets’ lifecycle, leaving system vulnerable to unsupported or obsolete software and hardware</td>
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<td>Stable workforce</td>
<td>Retiring workforce; younger generations less interested in production environments.</td>
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ABB Ability™ Asset Health for control systems uncovers the hard-to-find issues that limit system performance, advising you on specific time- and money-saving improvements while helping to extend the life of your assets.
## Maintain your control system health

### ABB Ability™ Asset Health for control systems

ABB Ability™ Asset Health for control systems is a software-assisted service for systematic diagnosis and analysis of your ABB control system settings and conditions.

Using non-invasive, state-of-the-art software tools, ABB Ability™ Asset Health for control systems automatically collects and compares system performance, configuration and lifecycle parameters to ABB requirements for optimum operations. It then delivers actionable analytics and detailed recommendations for maintaining optimum control system performance to users.

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### Here’s what you get

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tr>
<td><strong>Scan</strong></td>
<td><strong>System Status</strong>: A data collection software tool generates an encrypted system data file that is analyzed and presented through ABB’s My Control System web-based customer support platform with an overview of system performance, software and lifecycle status.</td>
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<tr>
<td><strong>Benchmark</strong></td>
<td><strong>Benchmark Report</strong>: A comprehensive control system check with results presented in a “traffic light” format (green, yellow, or red). Key Performance Indicator (KPI) violations are accompanied by short text explanations.</td>
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<td><strong>Fingerprint</strong></td>
<td><strong>Fingerprint Report</strong>: KPI violations are listed with detailed descriptions, explanations, findings, impacts, specific corrective actions, recommendations, and document references. The Fingerprint also generates a database of the control system software and hardware, which it then compares to lifecycle information, delivering the lifecycle status of every installed software and hardware component.</td>
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The Asset Health workflow
Here’s how you get it:

**Issue**
Potential degradation of control system performance, risking production performance

**Data Collection**
System owner downloads system Scan software from ABB’s My Control System web-based support platform, runs software, and uploads Scan into My Control System

**Benchmark**
My Control System automatically executes performance and lifecycle KPI analysis and generates a Benchmark report for the system owner to review and determine if actions are required to mitigate potential issues

**Fingerprint**
For deeper support, the Benchmark analysis is reviewed by ABB control system experts, and a more detailed report with specific recommendations is delivered to the system owner via My Control Systems

**Lifecycle Database**
The Fingerprint report includes a Life-cycle Database of installed control system hardware and software for asset management and evolution planning

**Solution**
Qualified ABB or plant engineers act on Benchmark data or Fingerprint recommendations to address identified issues to ensure system and production reliability

Average time laps: Less than 5 hours
Case studies for ABB Ability™ Asset Health

Operations not under control

The Incident: After logging into the system, plant operators could not acknowledge alarms or operate parts of the plant. This placed assets and operations at risk.

Root Cause Analysis: The processing time of the two domain controllers in the ABB control system had slowly drifted apart. After two years, the time deviation reached the system limit of five minutes, and using the correct Microsoft Windows login no longer worked.

Prevention: Frequent domain controller diagnostic checks, using ABB Ability™ Asset Health for control systems, would have mitigated this situation.

Inaccessible assets imperil operations

The Incident: Certain plant assets were used infrequently, but after a period of disuse, they had become inaccessible, placing assets and operations at risk.

Root Cause Analysis: The control system database was inconsistent and partially corrupted. The failure was traced to a defective hard drive, damaged either by age or a temporary power interruption.

Prevention: ABB Ability™ Asset Health’s regular checks for hard drive and database consistency would have identified this issue before assets were needed.

Security unstable with slow system

The Incident: During critical processes, control system response time was unacceptably slow, and it couldn’t provide timely information as needed for secure plant operation.

Root Cause Analysis: Performance was very poor in a segment of the system’s network. Previously, a switch was found to be defective, but the replacement switch was improperly configured, causing the network’s slow performance.

Prevention: ABB Ability™ Asset Health’s frequent measurement of the network’s throughput would have identified the underperforming segment of the network.
ABB Ability™ Asset Health for control systems improves availability, speed, quality and reliability.

Reduce maintenance costs by $20,000 to $40,000 annually

Reduce overall maintenance expense
ABB Ability™ Asset Health for control systems reduces overall maintenance costs while maintaining performance levels.

Cost reductions and improved efficiencies:
- Cut corrective maintenance cost
- Optimize maintenance resource utilization
- Reduce unplanned downtime
- Prioritize maintenance work
- Prevent budget overruns

30% to 50% improved availability

Identifies deviations that impact plant performance
Advanced services such as ABB Ability™ Asset Health for control systems identify deviations from defined benchmarks that impact plant performance.

Performance optimization and improved availability:
- Improve availability of system functions
- Optimize performance (e.g. response time)
- Eliminate strange system behavior

$500,000 in avoided risks*

Minimizes interruptions and operational risk
Advanced services such as ABB Ability™ Asset Health for control systems ensures continuous production with minimum interruption and less operational risk.

Risk reduction and increased reliability:
- Eliminate 2 out of 3 potential incidents
- Identify KPIs drifting towards critical limits
- Confirm that system events and alarms are properly detected and interpreted
- Check functionality of implemented features such as redundancy, network protection etc.
- Continually run predictive maintenance processes to keep system robust and production on track

* Savings based on typical customer with an annual revenue of $100 million USD.
Get started

1. Register your company in ABB’s My Control System web-based customer service platform (if not already registered) and take the steps necessary to run the free System Scan.

2. Sign up for a Core level ABB Power Generation Care agreement to access the System Benchmark service in My Control System

3. Upgrade to a Select Level ABB Power Generation Care Agreement to access the additional recommendations available in the Fingerprint


5. Act on the Benchmark data analytics and Fingerprint recommendations to ensure that your control system and plant production are always at peak reliability.

Prescribe reliability

To get started or learn more, please contact your local ABB sales representative or visit:

abb.com
new.abb.com/power-generation/service/advanced-services/system-performance