

# Advant MOD 300 Benchmark and Fingerprint Opportunities for improving system performance

With the Advant MOD 300 Benchmark and Fingerprint performance parameters are collected from installed Controllers, D2F Communication Interfaces, Consoles, Connectivity Servers, and D2D Communication Gateways. Measurements are compared against ABB system requirements and best practices. Two reports are generated: the Benchmark Report, providing a quick overview, and the Fingerprint Report with detailed recommendations for improvement.

## Observing typical systems

What we might see in long-term running systems:

- System overload is causing slow response rate
- Gradual 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 efficiency losses
- Unavailability of operational features due to improper software installation
- Security vulnerabilities due to obsolete Microsoft Update status

## Revealing unseen weak spots

Advant MOD 300 Fingerprint has been developed on the basis of long-term system expertise and service experience. It comes with easy-to-use Data Collection Software. As a first step, the data collection is done manually from the AdvBuild node on the Advant MOD 300 system. It runs on a low priority level, in order not to impact the system in operation. The result is a packed data file.

The second step is to log in to the "My Control System" portal and then upload the resultant file, keeping the workflow strictly under end user's control.

Legend:

Checks Passed
Checks passed with Warning(s)
Checks with Failure(s)
Not Applicable

No.	CheckItem	1600 AC4	1501 D2FB+	1501 AC4_1 Process Station	1502 AC4_2 Process Station	1503 AC4_3 Process Station	151E D2FB+	151F D2FB+	1600 OSH53 Advant Station	1700 AC4_1 Process Station	1701 AC5_1 Process Station	1702 AC5_2 Process Station
Device Status												
1	System State	R	G	G	G	G	G	G	R	R	G	G
System Performance Check												
2	CPU Load	N/A	G	G	G	G	G	G	N/A	N/A	G	G
3	CPU Load	N/A	G	G	G	G	G	G	N/A	N/A	G	G
4	Memory Pool Usage	N/A	Y	G	R	G	G	G	N/A	N/A	G	G
Message Statistics												
5	MOD 300 Message Statistics	N/A	N/A	N/A	N/A	R	R	R	N/A	N/A	N/A	N/A
DCN Statistics												
6	Current Utilization of Control Network Check	N/A	N/A	N/A	N/A	G	G	G	N/A	N/A	N/A	N/A
7	Maximum Utilization of Control Network Check	N/A	N/A	N/A	N/A	R	R	R	N/A	N/A	N/A	N/A

Excerpt from a Sample Benchmark Report

The web-based analysis starts automatically after upload and checks the measured results against ABB specifications, requirements and recommendations. The Advant MOD 300 Benchmark Report (in PDF format) is immediately created. It presents the check results in easy-to-read tables with "traffic light" indicators: green = good (as expected), yellow = warning (ambiguous or passed with deviations), red = failed (incorrect). The findings are listed briefly. This gives a quick overview of the actual system status.

## Performing a deep system analysis

The third step provides much more than a "Go / No-go" analysis. It is the creation of an Advant MOD 300 Fingerprint. A specialized service engineer performs a computer aided analysis and evaluation of the collected data. The resulting Advant MOD 300 Fingerprint Report starts with an executive summary listing the most important and urgent corrective actions. Next it provides all the findings in summary and in detail. For each finding there is a technical description with impact and severity discussion, and proposals for actions to be carried out.

ABB Local Service will present the Fingerprint 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, on an action plan to improve system reliability, availability and operational performance.



## What we are checking

The Advant MOD 300 Benchmark and Fingerprint includes a comprehensive measurement of system parameters which are mandatory for reliable operation. For each node, the following KPI parameters are measured:

### – Device status

This shows the current status of all the nodes configured in the AdvaBuild database, their “Types”, “DeviceID”, and “State”, with fault indication of those which are in “State=Off DCN” or “Down”.

### – System Performance

For CPU load, CCF load and memory pool usage, the current, peak and average values are taken. They are validated against experienced thresholds. Values within the acceptable limits are mandatory for reliable controller performance.

### – Message Statistics

This covers the communication services message statistics for a given node in a MOD 300 system. It is validated against thresholds which guarantee optimal system performance.

### – DCN Statistics

The current and maximum DCN (Distributed Communication Network) utilization is verified against MOD 300 system requirements. Values within acceptable limits are mandatory for a reliable network communication.

### – DBMS List

DBMS List Usage is a cross-reference matrix that shows the MOD 300 “List” relationship between each configured node on the control network.

## Identifying improvement actions

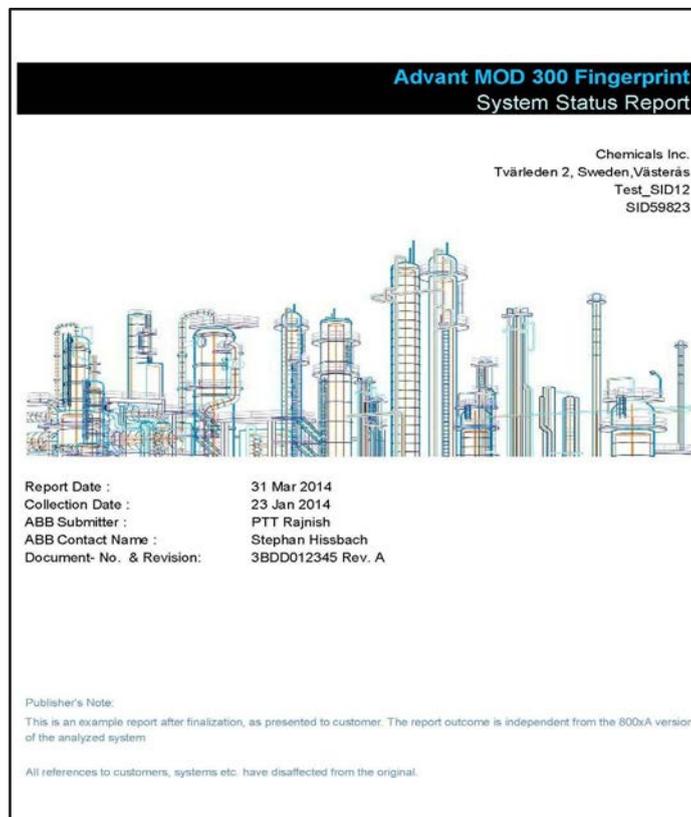
The Advant MOD 300 Fingerprint goes far beyond problem detection and briefing the results. For each finding it provides an individual

- technical explanation,
- severity evaluation,
- operational impact assessment,
- recommendation for actions, and
- documentation references.

Our standardized rules for report generation guarantee an easy-to-read report. It presents the key findings in an executive summary, together with impact and ROI discussions; and recommendations for an action plan, if necessary. Additionally, it gives a survey to the specialists, listing the identified problems or weak spots, and provides detailed technical advice. The measured data details are presented in an appendix.

## Getting the benefits

- Sophisticated report simplifies the management decision process by focusing on high impact opportunities for improvement



Sample Fingerprint Report

- Improvement plan provides a clear path to quickly closing performance gaps
- The report provides a solid foundation for continuous improvement based on data analysis methodology.

The Advant MOD 300 Benchmark and Fingerprint establish a first step into achieving improved system reliability and performance.

For more details please contact your local ABB Service organization.

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