

Freelance Benchmark and Fingerprint Opportunities for improving system performance

Freelance Benchmark and Fingerprint provide a comprehensive diagnostic analysis of the Freelance process control system. Performance, configuration and life cycle parameters are read from the installed system and compared to requirements and best practices. Non-optimal system states and settings are automatically identified. As result, the Benchmark report provides a quick overview of the system status, and the Fingerprint report presents the evaluated findings and gives 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
- Missing operational features due to lacks in software installation
- The life cycle of modules finalizes, resulting in support limitations
- Security vulnerabilities due to obsolete Microsoft Update status

Revealing unseen weak spots

As a first step of system analysis, a portable easy-to-use data collection software, which has been developed on the base of long-term service experience, is executed on any computer in the Freelance System. It runs on a low priority level, in order not to strain the system in operation, and produces a packed result file.

The second step is to log in to the ABB web portal My Control System and upload the result file, by that keeping the workflow strictly under the user's control.

No.	Checkitem	B219-ANL-E5	B219-ANL-LTRD	B219-ANL-LV51	B219-ANL-LV51D	B219-ANL-LV51I	B219-ANL-LV52	B219-ANL-LV53	B219-ANL-LV54	B219-V001
24	Hotix Check	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25	Project File Size	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26	License Check	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
27	Node Functions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IT Security										
28	Anti-Virus Software	Y	Y	Y	Y	Y	Y	Y	Y	Y
29	Firewall Software	Y	Y	Y	Y	Y	Y	Y	Y	Y
30	Microsoft Updates	G	G	G	Y	Y	G	G	G	Y
Computer Software Consistency										
31	ABB Software Consistency	G	G	G	G	G	G	G	G	G
32	Microsoft Software Consistency	G	G	G	G	G	G	G	G	G
33	3rd Party Software Consistency	Y	G	G	G	Y	G	G	G	N/A
Computer Software Performance										
34	Windows Event Log	Y	G	R	G	G	R	R	Y	G
35	Process Memory	G	G	G	G	G	G	G	G	G
36	Autostart Services	G	Y	G	G	G	Y	G	G	Y
37	Handle Count	G	G	G	G	G	G	G	G	G
38	Graphics Device Driver	G	G	G	G	G	G	G	G	G
Computer Software Settings										
39	Time Synchronization	G	R	R	R	G	R	R	R	R
40	Regional Options	G	G	G	G	G	G	G	G	G
41	Screen Saver Settings	Y	G	G	G	G	G	G	G	Y
42	Virtual Memory Settings	G	G	G	G	G	G	G	G	G
43	Automatic Update Settings	G	G	G	G	N/A	G	G	G	N/A
44	Taskbar Settings	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45	Display Settings	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
46	User Account Control Settings	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
47	Power Settings	G	G	G	G	G	G	G	G	G
Life Cycle Status										
48	Computer hardware / Freelance Life Cycle	G	G	G	G	G	G	G	G	N/A
49	Microsoft Windows Life Cycle	R	R	R	R	G	R	R	R	R

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 Freelance 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 of analysis provides much more than a "Go / No-go" analysis. It is the creation of a Freelance Fingerprint, to be ordered from ABB Local Service. A specialized service engineer performs a computer aided analysis and evaluation of the collected data. The resulting Freelance Fingerprint Report starts with an executive summary, pointing out the most important and urgent corrective actions (as far as necessary). 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, in an action plan to improve system reliability, availability and operational performance to its best.

What we are checking

The Freelance Benchmark and Fingerprint include a comprehensive measurement of system parameters which are mandatory for reliable operation. This covers:

– Software Installation

The Freelance software versions are tested and released under circumstances which are published in ABB release documents. The fulfillment of the installation requirements is validated.

– Controller Configuration and Performance

Problems on the controllers directly affect the production processes. Validating their operation is of uttermost importance. For all controllers the configuration of memory, network buffers, time synchronization and redundancy is collected. The same is done for performance data, such as memory utilization, CPU load and temperature, time deviation, and more. All data is validated against required and recommended values.

– Computer Hardware Configuration and Performance

High utilization of computer resources, such as processor, memory or hard disks, is an indicator for insufficient system layout or undiscovered hardware problems. All data is validated against required and recommended values.

– Computer Software Configuration and Performance

Freelance computers are based on Microsoft Windows®, which offers a large number of customization settings and tuning parameters. They are measured together with load and status indicators from processes and services. The values are validated against ABB and Microsoft recommendations.

– Computer Network Configuration and Performance

Dependable network connections are a prerequisite for trustworthy plant control. Network configuration parameters and load data, which could hazard network performance, are reported.

– Essential Security Settings

It is highly recommended to take actions for protecting the Freelance systems against the intrusion of malware attacks. The status of basic defensive measures, such as anti-virus software, firewall and Windows® updates, is checked. Identified gaps are reported.

Identifying improvement actions

The Freelance 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.

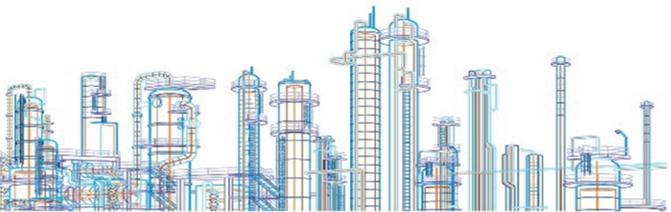
Our standardized rules for report generation guarantee an easy-to-read report. On one hand this is addressed to top

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

Freelance Fingerprint

System Status Report

CHEM AG
Industriestraße 11, 68309 Mannheim
Deutschland
Druck-Reaktor 1
SID12345



Report Date	7 Nov 2013
Collection Date	28 Oct 2013
ABB Submitter	Stephan Hissbach
ABB Contact Name	Hans-Otto Köhler
Document- No. & Revision	9CNE000035_A1

Power and productivity
for a better world™ 

Sample Fingerprint Report

level management. It presents the key findings in an executive summary, together with impact and ROI discussions; and recommendations for an action plan, if necessary. On the other hand it gives a survey to the specialists, listing the identified problems or weak spots, and providing detailed technical advice. The measured data details are presented in an appendix.

Getting the benefits

- Sophisticated report simplifies management decision process by focusing on high impact opportunities for improvement
- Improvement plan provides clear path to quickly closing performance gaps
- Provides a solid foundation for continuous improvement based on data analysis methodology.

The Freelance Benchmark and Fingerprint establish a first step into achieving improved system reliability and performance levels. ABB continuously improves and extends Benchmark and Fingerprint, and by this steadily increases the trust into process control capabilities.

For more details please contact your local ABB Service organization.