Health Check Services

PGP Benchmark and Fingerprint Opportunities for system performance improvements

The PGP Benchmark and Fingerprint provides a comprehensive diagnostic analysis of the Power Generation Portal (PGP) 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 detailed recommendations for improvement.

Observing typical systems
What we might see in long-term running systems:
- System overload is causing slow response rate
- Non-optimal system settings and conditions often do not cause incidents immediately, but might result in disturbances over time
- Gradual system performance degradation is not diagnosed or resolved until issues arise
- Issues arise sporadically which are difficult to diagnose
- Hardware devices diminish slowly towards unavailability
- System efficiency losses

Revealing unseen weak spots
As a first step of system analysis, portable easy-to-use data collection software, which has been developed on the basis of long-term service experience, is executed on the servers in the PGP system. It runs in the background 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 based platform “My Control System” and upload the result file manually, thus keeping the workflow strictly under the end user’s control.

The web-based analysis starts automatically after upload and checks the measured results against ABB specifications, requirements and recommendations. Deviations from the expected results are presented in the PGP Benchmark Report which is immediately available on My Control System. It presents a summary of the checks results in easy-to-read “traffic light” tables (green for good/yellow for ambiguous/red for incorrect). The findings are listed briefly and 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 the PGP Fingerprint, which is ordered from ABB Local Service. A specialized service engineer performs a computer aided analysis and evaluation of the collected data. The resulting Fingerprint Report starts with an executive summary, pointing out the most important and urgent corrective actions, 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 presents the Fingerprint Report to the customer in a meeting. This gives the opportunity to discuss possible return on automation investment (ROI) impacts, and agreement, if necessary, on an action plan to improve system reliability, availability and operational performance.
What is being checked
The PGP Benchmark and Fingerprint include comprehensive measurement of system parameters which are mandatory for reliable operation. This includes:

- **PGP internal core components health-state**
  Core components (processes, internal queues, etc.) performance parameters such as memory utilization, handles, and I/O operations are measured; health-state KPIs are calculated and monitored over time. Performance measurement is performed in an optimized way to avoid any impact on the process performance. Assessment is done against reference values and best practices.

- **Database configuration consistency checks**
  PGP configuration databases must have an exact replica on every server. Inconsistent or corrupted configuration may have catastrophic impacts on operation. Configuration parameters, sizing and license details are validated against ABB requirements and recommendations.

- **Hardware components configuration**
  Faulty or inadequate server and pc hardware endangers PGP installation reliability and decreases operational performance. Using dedicated tools, performance and component settings are collected and validated against ABB requirements.

- **Computer runtime parameters**
  High utilization of computer resources, such as processor, memory or hard disk load, is an indicator of insufficient system layout or undiscovered software and hardware problems. Values above known thresholds provide early indications of possible problem areas.

- **Network parameters and performance**
  All network adapter health-state and settings are verified against PGP installation requirements. Network statistics and performance measurements are taken to validate reliable redundant network communication.

Identifying improvement actions
The PGP Fingerprint Report goes far beyond problem detection and reporting. It provides for each finding an individual

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

Standardized rules for report generation guarantee an easy to read report. On one hand this is addressed to top 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 also provides a survey to the specialists, listing the identified problems and weak spots, and providing detailed technical advice. The measured data details are presented in an appendix.

Getting the benefits
- Detection of hidden degradation before problems occur, adopting a proactive maintenance strategy
- Extend the system life and take advantage of new technology
- Customer web portal for easy access to information and reports

The PGP Benchmark and Fingerprint establish a perfect initial step in achieving improved system performance levels. ABB continuously improves and expands Health Check Services, and as a result steadily improves the performance of its customer base.

For more details please contact your local ABB Service organization.

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