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Solution brief

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GAIN EARLY, CONDITION-BASED MAINTENANCE INSIGHTS

Reduce unplanned downtime, expenditures

INTRODUCTION

Manufacturers have long been accustomed to operating with either razor-thin margins or with pressure to increase or protect profits. This requires achieving optimal efficiency in manufacturing processes to meet financial targets. But traditional operational challenges—such as the need to approach ever closer to zero downtime, zero environmental impact, and zero safety incidents—are now being compounded by an increased demand for operational agility.

In addition, modern consumer demand for smart, networked products and their associated aftermarket support requires manufacturers to maintain regular connectivity to their customers and products. This is commonly done in the form of new smartphone applications that control, monitor, and maintain the product. This aftermarket connectivity and as-a-service model introduces new failure modes on both the product and its support equipment.

Manufacturers need the increased agility to address new, pandemic-intensified challenges, such as the need to pivot rapidly to new products, to mitigate the effects of supply chain disruptions, and to scale production up and down with little warning to meet fluctuating demand.

Meeting these challenges requires that you achieve higher levels of operational efficiency than ever. But the plant floor technologies on which you currently rely to ensure safety, reduce downtime, and improve reliability cannot deliver the rapid and significant improvements across each of those areas that the post-pandemic environment requires.

Such gains require a complete technology solution that incorporates hardware, processing power, and software designed specifically to deliver improved maintenance-based insight into the equipment driving your operations. The purposeful application of condition-monitoring technologies, statistical process control, and specific failure-mode-driven repair recommendations can help you deliver the vital improvement in uptime and reliability of your equipment.

HPE systems, Intel® processors, and Allied Reliability software combine in a full-stack solution to deliver condition monitoring with predictive maintenance technology via instrumented sensors that collect vital data and analyze it at the edge, without the delays and latencies inherent in cloud-based analytics. This solution provides you with a deep and accurate understanding of the present and future state of your manufacturing plant equipment and manufacturing execution systems.

Our solution enables you to improve the high availability of manufacturing plants, reducing the impact of manufacturing downtime in three major ways. You can avoid downtime with closed-loop high-quality design, planning, and procurements of product parts and manufacturing plant equipment. Notices and alerts allow you to convert downtime from an unplanned outage to a planned outage of reduced duration with less process disruption. And you can better tolerate downtime with informed use of redundant failover components and systems or automatic error correction.

This complete solution will enable you to predict equipment failure and take corrective or evasive action, optimize equipment use by ensuring that your equipment is correctly tuned and calibrated, and produce accurate capital expenditure budgets by planning for maintenance and replacement.

Our solution partner

Allied RELIABILITY

Our comprehensive solution includes tested and validated HPE hardware. You can choose an integrated solution system, HPE ProLiant for Microsoft Azure Stack; a server for the Internet of Things (IoT), HPE Edgeline and OT Link systems for edge and IoT; a tower server solution utilizing the HPE ProLiant ML Gen10 Server; or a rack server option, the HPE ProLiant DL Gen9 family; and enjoy peace of mind knowing that HPE systems feature 2nd and 3rd Gen Intel® Xeon® Scalable Processors, Intel® Optane™ Persistent Memory, and Intel® Optane™ Solid State Drives.

HPE GreenLake further allows you to bring cloud speed, agility, and an as-a-service model into your HPE and Allied Reliability solution.

Delivered via all HPE systems, Allied Reliability software leverages their proprietary failure mode library derived from analysis of more than three million product components and pieces of manufacturing equipment, derived from more than 1500 facilities, collected over two decades. The library identifies common components, parts, failure reasons, and inspection methods that detect the defects causing the failure.

The software uses a unique approach to condition monitoring that integrates a full range of data collection options from route-based to sensor-based collection and from inline to wireless periodic monitoring. These options afford you the flexibility to choose the right approach for each of your assets, resulting in a more holistic and cost-effective solution.

KEY FEATURES AND BENEFITS

HPE and Allied Reliability solutions offer a range of condition-monitoring technologies. These include infrared thermography, which can find both electrical and mechanical defects, and ultrasound detection, which can detect issues in rotating machinery, stationary and electrical apparatuses. Additional solutions include oil analysis, vibration analysis, and motor-circuit analysis. These techniques can be combined using critical rating. By using these technologies to identify or predict defects, your organization can make better decisions on what to fix and when, which will result in such benefits as:

- Reduction in time to identify defects
- Reduction in unexpected downtime
- Reduction in maintenance spend
- Additional significant reductions in:
  - Unexpected failures
  - Repair and overhaul time
  - Required spare parts inventory
- Increase in mean time between failures (MTBF)
- Increase in machinery availability

CONCLUSION

As manufacturers respond to challenges both old and new, they must find innovative solutions that can deliver unprecedented increases in safety, reductions in downtime, and improvements in reliability. The combination of HPE systems purpose-built for the edge, Intel processors and Allied Reliability software delivers condition-based monitoring and predictive maintenance capabilities that help you secure the overall health of your company's bottom line by ensuring more reliable operations and less unnecessary downtime.

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a50004196ENW, May 2021