

Trane Upholds Green Building Practices, Drives Customer Performance With Real-Time Asset Visibility



Executive summary

Trane, the world's leading air conditioning provider, offers a broad range of innovative energy efficient heating, ventilation and air conditioning (HVAC) systems to create comfortable, eco-friendly homes and commercial buildings. Trane's larger commercial customers require a remote chiller plant to provide cooling on a bigger scale. Trane closely monitors the operational efficiency of these plants to help customers save money while meeting Singapore's green building regulations that promote environmental sustainability. Since deploying Splunk Enterprise and Splunk Industrial Asset Intelligence (IAI), Trane has seen benefits including:

- Enhanced performance with complete real-time visibility and predictive insights across disparate industrial assets
- Heightened efficiency due to simplified, automated operations
- Improved availability with predictive maintenance

Why Splunk

A chiller manufacturer and HVAC supplier with more than 100 years of history, Trane beats its competition by providing customers with a performance guarantee, ensuring each plant will deliver on an agreed-to-efficiency percentage. Executing on this promise is challenging, and close monitoring of the plant's operations and systems is critical. In Singapore, this is even harder to deliver given the country's additional green carbon emissions regulations.

To uphold its customer promise, Trane collects operational data from the remote customer sites, aggregates information and carries out comparative and predictive analyses that provide an integrated view into the health of critical chiller plant machine assets. In the past, this was labor intensive, as Trane's control department had to go to multiple web pages and manually enter data to generate the necessary plant KPIs. Also, Trane wanted to visualize site operations instead of a schematics drawing process that involved tedious coding, scripting and HTML programming.

The company decided to bring in Splunk Enterprise and Splunk IAI, a premium solution built on Splunk Enterprise that simplifies data ingestion and helps Trane deliver on performance guarantees and real-time predictive analytics capabilities.

Industry

- Energy & Utilities

Splunk Use Cases

- Industrial Data and IoT

Challenges

- Needed to monitor all remote assets closely to ensure operational efficiency
- Ineffective workflow due to human-driven logging and programming procedures
- Wanted forecast-based disaster risk management to minimize unplanned downtime

Business Impact

- Reduced reporting time from two to three hours to real time
- Enhanced operations with total visibility and real-time predictive insights across disparate assets, meeting performance index and environmental regulations
- Boosted business efficiency due to simplified, automated operations with rich visualizations in an intuitive user interface
- Improved availability and reliability
- Minimized risks and downtime

Data Sources

- Chiller operating performance data
- Daily operational logs

Splunk Products

- Splunk Enterprise
- Splunk Industrial Asset Intelligence

“The Splunk solution gives us the real-time visibility and predictive insights we need to maintain an efficient, productive and reliable operation and enhance the experience of our customers,” says Nicholas Goi, engineering development manager, control department, Trane Singapore.

All-in-one visibility and real-time insights improve asset performance

Splunk IAI seamlessly captures, integrates and correlates operational data from the remote chiller plants’ control systems and applications, carrying out real-time analyses and generating critical insights into the plants’ efficiency. Dashboards with rich visualizations enable Trane’s control department to analyze the most complex data and ensure the plants are running properly. The team can also keep a close eye on the performance trends of the chiller plants on a single large screen – and drill down into areas of interest with only a few clicks.

In addition to monitoring the efficiency of individual chiller plants, Trane also conducts comparative benchmarking between different plants as well as historical trending to keep track of performance degradation from a fleet perspective. Trane can identify its best-performing plants, discover what best practices generate excellent performance, then share and implement those practices with other plants worldwide.

Automated operation removes administrative hassles, boosts efficiency

According to Goi, Splunk IAI offers a painless experience in managing the daily operation of every remote chiller plant. Gone are the days when administrators had to write multiple lines of complicated code to access every point of operation. Now, with a few simple clicks, engineers can generate a schematic diagram. Goi explains that Splunk IAI has revolutionized the overall plant monitoring for

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Control Department**
Trane Singapore

Trane, simplifying manual, time-consuming and repetitive tasks into automatic processes – easier to manage, more straightforward and less error-prone. Its analytics capability also significantly reduces the efforts in troubleshooting equipment issues.

The improvement in operational efficiency is also reflected in the fact that it previously took about two to three hours to compile a customized report, which can be done almost instantly now with the correct range and site setting.

Predictive analytics minimizes risks and prevents problems

Splunk IAI’s data-driven predictive analytics capability enables the Trane team to see trends and patterns in the machine data, which helps them identify root cause issues with critical equipment. Trane also can identify potential risks while diagnosing operational anomalies, anticipate maintenance needs, respond to issues faster without affecting production and ensure the longevity of its valuable assets.

In the future, Trane plans to leverage the Splunk platform’s machine learning capabilities further to identify current patterns and prevent undesired outcomes. With an intelligent alerting system in place, the service staff can be more proactive as they look to deliver on the customer promise of performance guarantees.

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