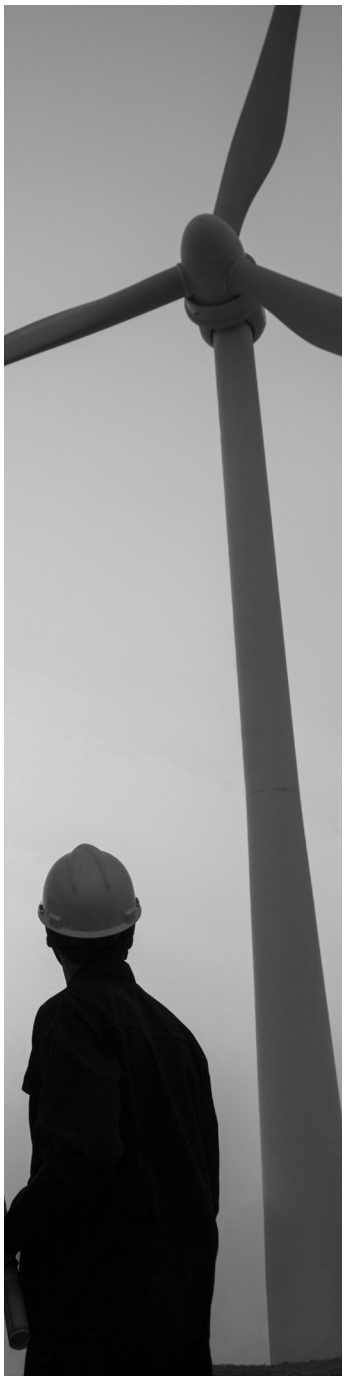
WNDRVR Studio

DEPLOY: DISTRIBUTED CLOUD

ORCHESTRATING USING AI/ML



THE CHALLENGE

A provider of renewable energy has a fleet of thousands of wind turbines placed throughout its region. It wants to better optimize production and lower maintenance costs, which run to about $48,000 per megawatt in the U.S.

Currently, the provider has to send a technician to each site on a schedule, whether maintenance is actually needed or not. Alternatively, when something fails, a technician goes to the site but might not know what the problem is until arriving. Both scenarios incur wasteful costs.

THE SOLUTION

Most modern turbines have sensors that monitor indicators of potential problems, such as temperature, humidity, vibration and alignment, cooling systems, and more. By connecting wind turbines via a distributed cloud using Wind River® Studio, the provider can better manage its fleet by getting a more holistic view of issues, such as wind patterns that affect whole regions. Sensors that collect data for a single unit now become part of a network of units managed by a central controller, making patterns easier to identify and monitor.

Studio enables the provider to introduce a digital feedback loop to collect and analyze data at both site and fleet levels. It also supports implementation of more sophisticated AI/ML tools to organize and analyze the vast amount of data already being gathered by existing sensors.

Understanding and responding to this data will help the provider introduce efficiencies and guide predictive maintenance to reduce failure and improve reliability of critical components. Data feedback can also be sent to the development team for software updates to resolve any issues.

THE RESULTS

Studio allows the provider to remotely orchestrate, automate, and deploy software updates to keep the fleet at optimal operation. This can eliminate costly truck rolls, avoid downtime, and reduce delays and costs. If technicians must make site visits, they can arrive with the right resources and a better understanding of the problem. The result: fewer mechanical failures and therefore fewer gaps in productivity.

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