Rockwell Automation

FT **Innovation**Suite
powered by **PTC**

THINGWORX
APPLICATIONS

Asset Monitoring and Utilization

▶ BEGIN

ThingWorx applications
Introduction

ThingWorx Applications accelerate time to value and time to scale by focusing on use cases that have substantive impact on the P&L while building a foundation for digital transformation.

High impact applications replace custom, bespoke approaches with repeatable, configured-not-coded, applications that leverage the domain expertise from hundreds of successful implementations.

These applications vastly reduce the effort associated with designing, coding, and testing new applications.

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AMU - Features And
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High impact applications

Built for multiple customers, industries, locales and sites

Built for performance at scale with dozens of assets at dozens of sites

Affordable, quick to deploy and easy to support

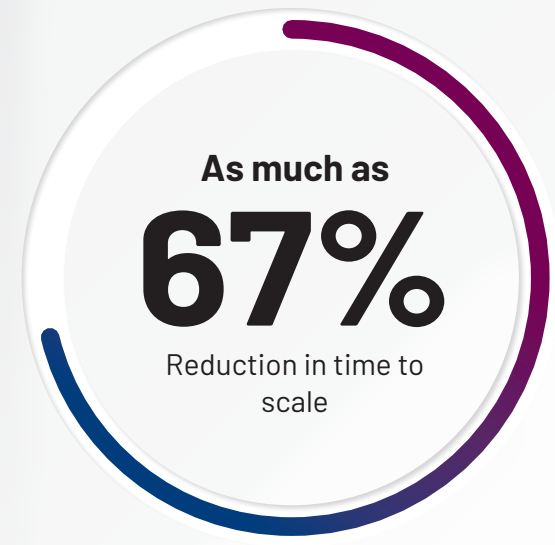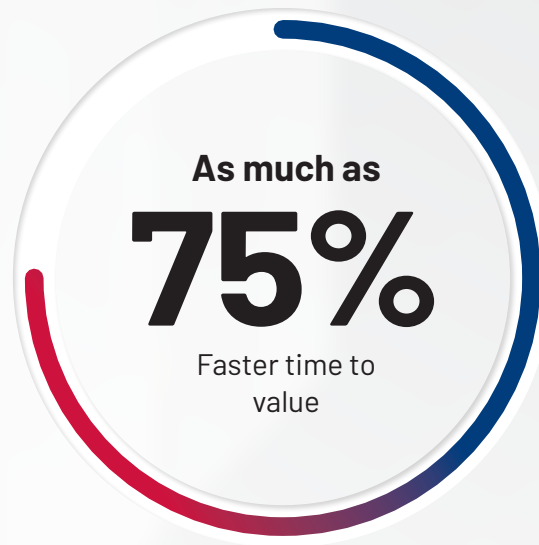Managed applications with version control and pre-requisites

Extensible (horizontally and vertically)

Upgradable applications aligned with ThingWorx capabilities, features and releases

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Vastly **reduced** efforts

Up to

90%

Reduction in application development time & cost

As much as

75%

Faster time to value

As much as

67%

Reduction in time to scale

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ThingWorx Applications Universal Features

The high impact applications align to the most common requirements. This enables companies to rapidly create a foundation for digital transformation.

Using our scalable, extensible platform, they can iteratively extend into additional digital transformation use cases.

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Out of the Box Features

Multi-Language Support

All features/displays configurable to security roles and settings

Process Troubleshooter

Waste, Downtime, and Production tracking models

Waste and Downtime reporting mashups

System Configuration Displays:

Plant Model | Reason Trees | Control Characteristics | Smart Tools | Products

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Key capabilities

Ready to configure applications

Rapid implementation

Wrap & Extend

Future-proofed roadmap for continuous innovation

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ThingWorx application – Asset Monitoring & Utilization (AMU)

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ThingWorx Applications Framework

Leading with solutions, Pivoting strategy with applications for proven no regret use cases, that still have the power and flexibility of the platform.

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INDUSTRIAL IOT SOLUTIONS PLATFORM

Asset monitoring & utilization

Predictive ..... Maintenance
.... Quality

Advisors • Connectors • Domain Model • Business Logic • UI Elements

BUILDING BLOCKS

Security

Connect   **Build**   **Analyze**   **Manage**   **Experience**
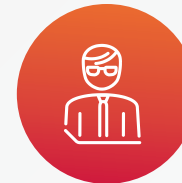
INFRASTRUCTURE & CLOUD

Strategic Partners • Global Systems Integrators • Management Consultants

EXISTING LANDSCAPE

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Asset monitoring & utilization

With integration to maintenance systems, maintenance and reliability engineers can rapidly connect to and catalog assets, establish critical parameters needed to track asset-related performance, identify anomalous data trends, troubleshoot for root cause analysis, and access performance information from any device.

Challenges Facing the Industry

- Difficulty for maintenance personnel in a factory to connect and monitor the health of assets

- Need visibility on utilization to improve uptime and availability

- Want to inform user in real time in case of abnormal conditions

Benefits from AMU

- Using a descriptive analytics approach where asset health is monitored in real-time based on threshold values and complex event processing to identify abnormal conditions and alert people in real time. Form the basis for Predictive Maintenance.

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Asset monitoring & utilization

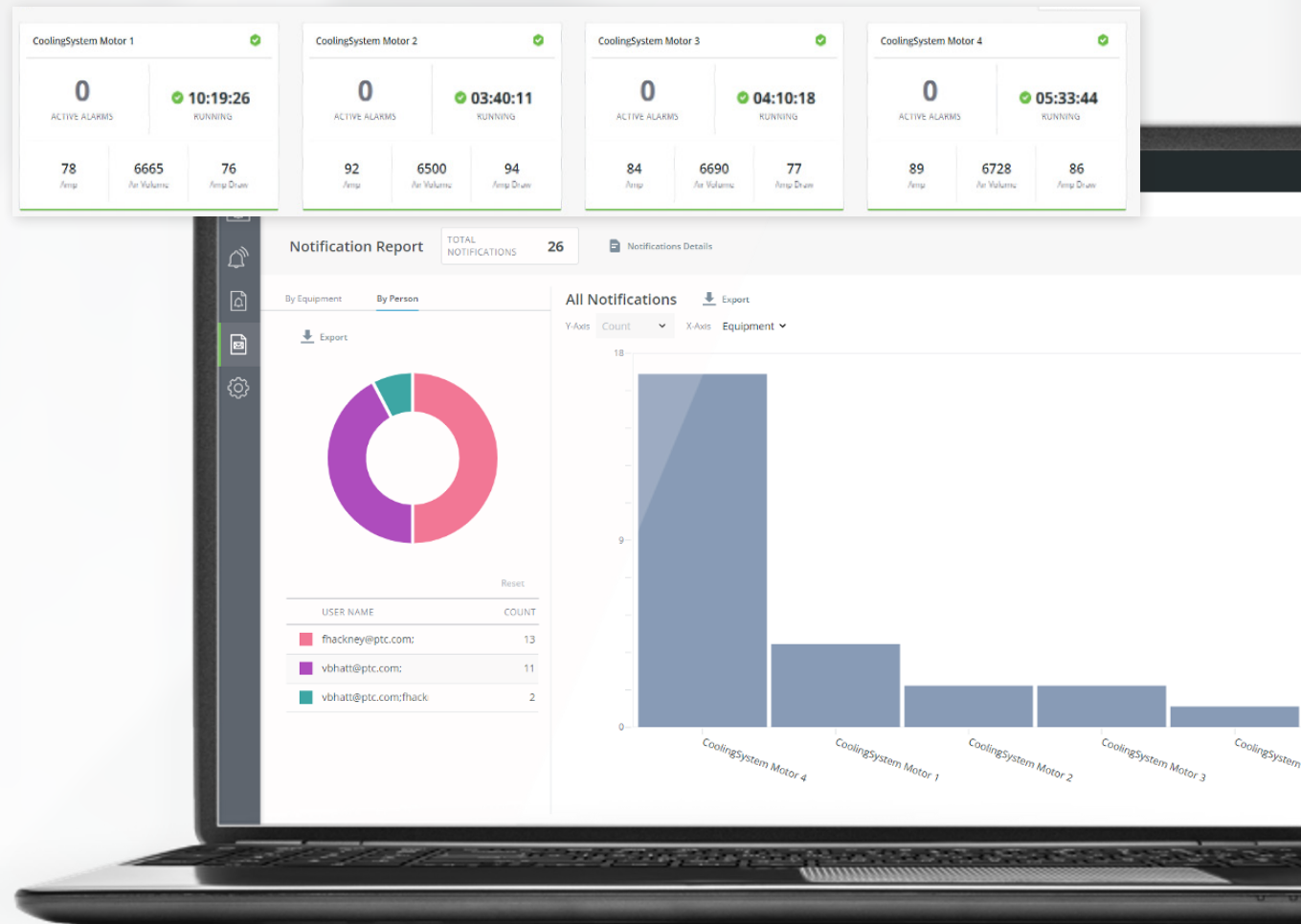**Gain real-time visibility into asset performance, status, and overall utilization:**

With a pre-built application that provides:

To enable operators to enable double digit impact:

Powered by:

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Asset monitoring & utilization

Gain real-time visibility into asset performance, status, and overall utilization:

With a pre-built application that provides:

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thingworx® kepware®

1 Configurable "Asset Cards"

2 Configurable alerts based on property rules and limits

3 Detailed views of trends for troubleshooting

4 Custom alerting & alarming for performance losses

5 Escalation process in case of unacknowledged alarms

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Asset monitoring & utilization

Gain real-time visibility into asset performance, status, and overall utilization:

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5 – 20% ▲
Increase in throughput

20 – 30% ▼
Reduction in unplanned downtime

2 – 13% ▼
Reduction in energy consumption

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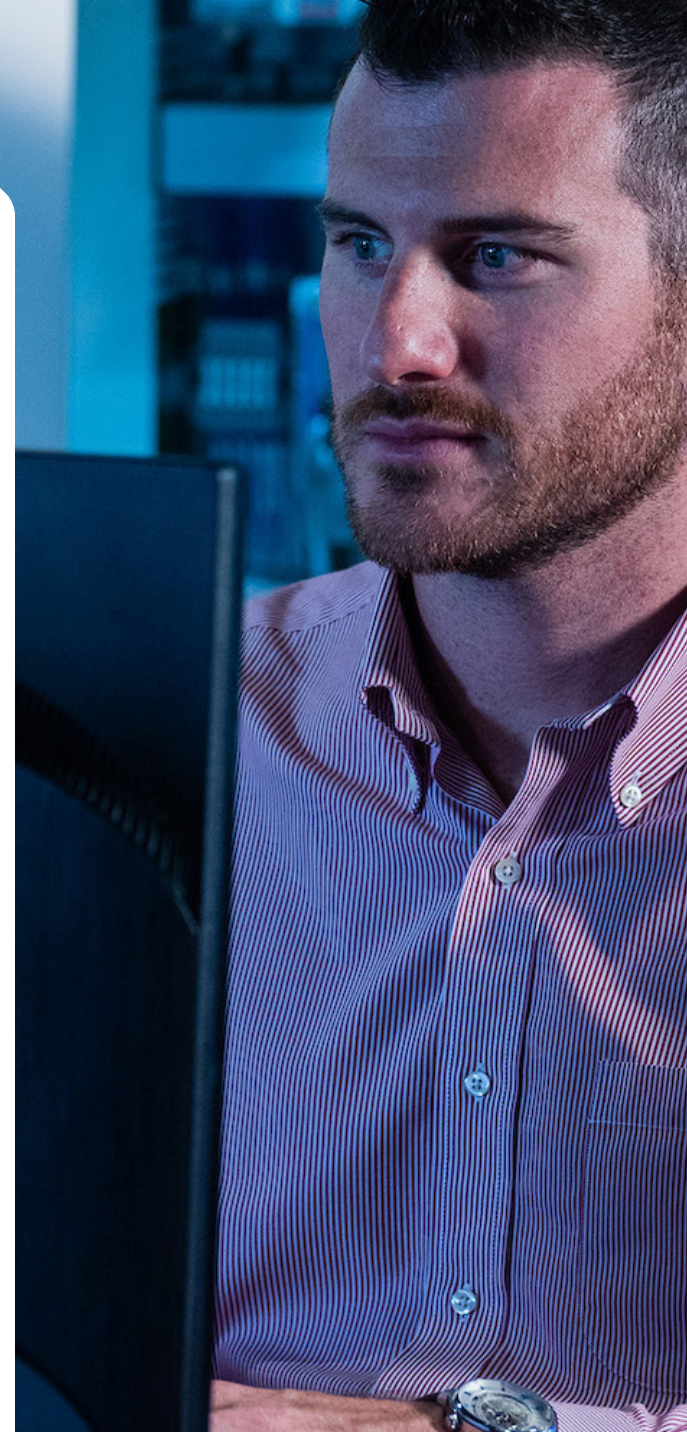
AMU – Features And Key Users

Out of the Box Features

- Monitoring of Asset Properties through Kepware connectivity

- Configurable "Asset Cards"

- Configurable alerts based on property rules and limits

- Escalation process in case of unacknowledged alarms

KEY USERS

Maintenance engineers can see current readings and values from Asset Cards

+

Business decision makers can identify which assets are failing more often and why

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AMU – Main Dashboard

Each Card Has:

- Number of active alarms

- Elapsed Up/Down time when applicable

Global to Display

- Configurable card size (small/medium/ large)

- Filter by equipment type, alarm severity, etc...
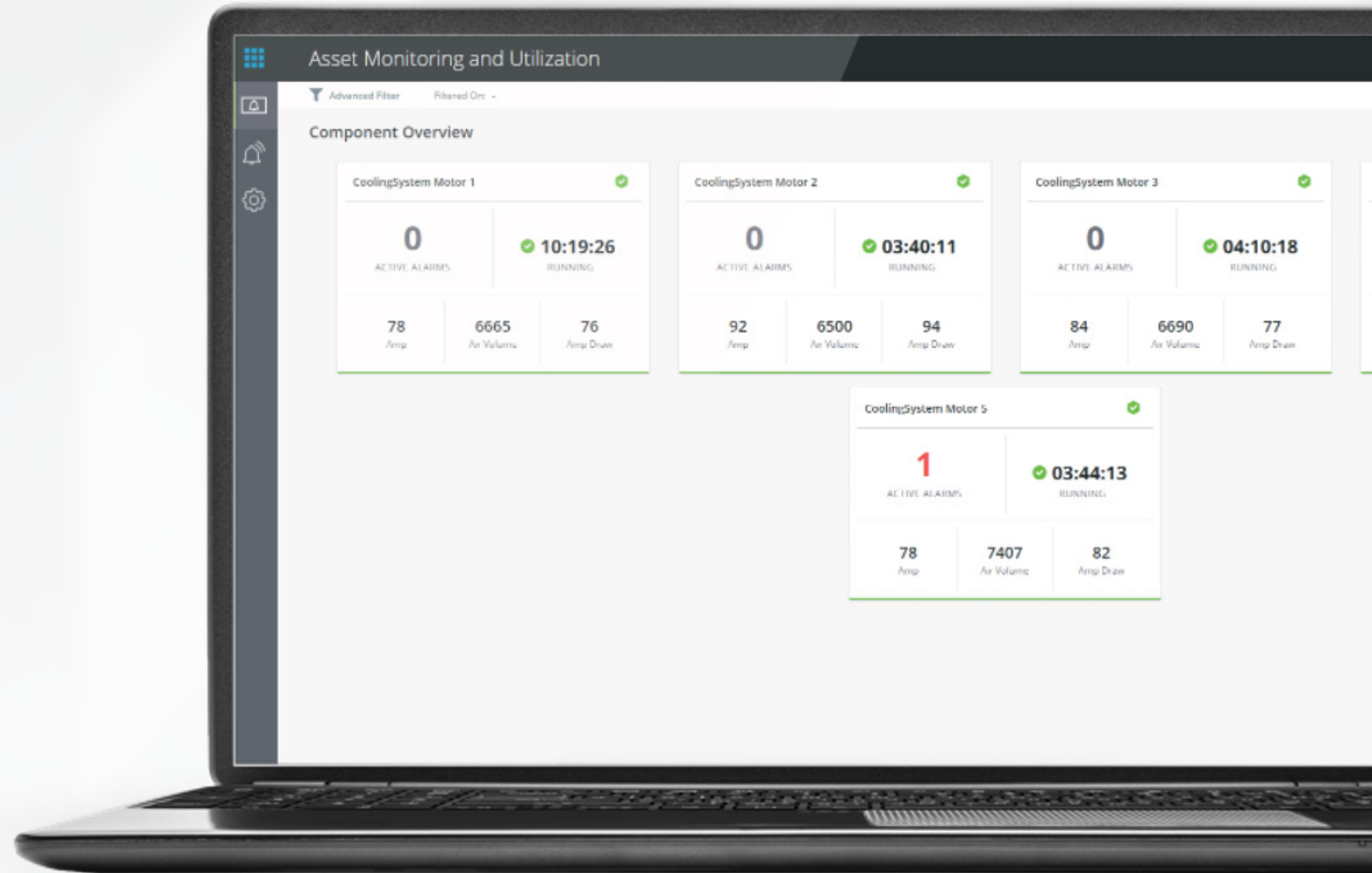
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AMU – Alarm Configuration

Alarm Configuration

- Can create an alarm on any connected property of an asset

- High/Medium/Low alarm priorities

Asset Monitoring and Utilization

Configuration: Add New Alarm

General Configuration — Condition — Action — Escalation

Name — Must be unique
MyAlarmName

Alarm Severity
Medium

Display Name
My New Alarm

Assigned Equipment
CasePacker01B

Description
Alarm for Case Packers

Cancel   Next

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AMU – Alarm Configuration

Alarm Conditions

- Attribute-based alarms

- Multiple conditional operators
  - (=, <>, <, >, <=, >=)
  - Out of range, Between, Not in Between)

- Compare with constant or limits
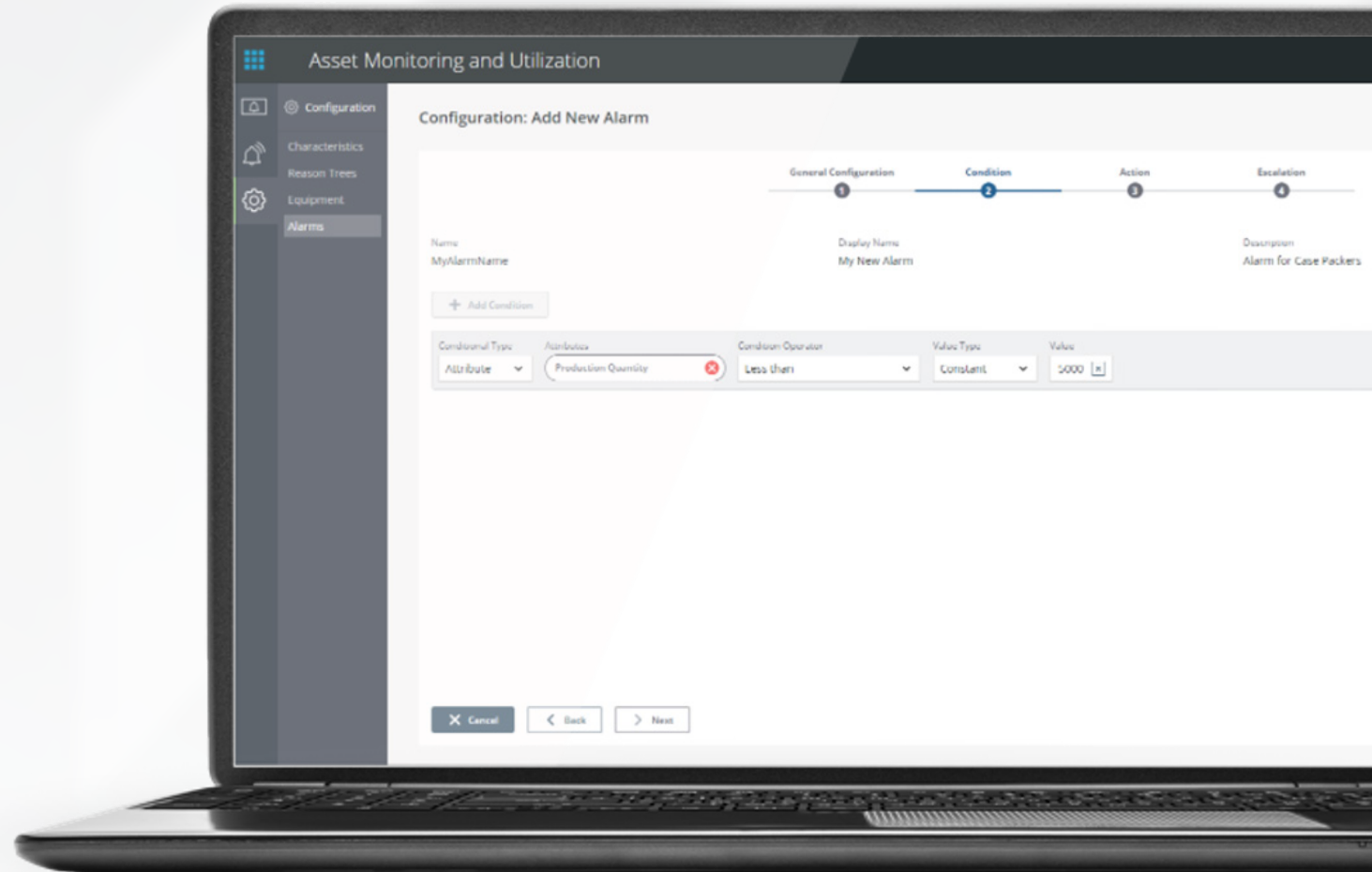
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AMU – Alarm Configuration

Alarm Actions

- Action: sending an email

- Title and body are configurable

- Adding multiple actions
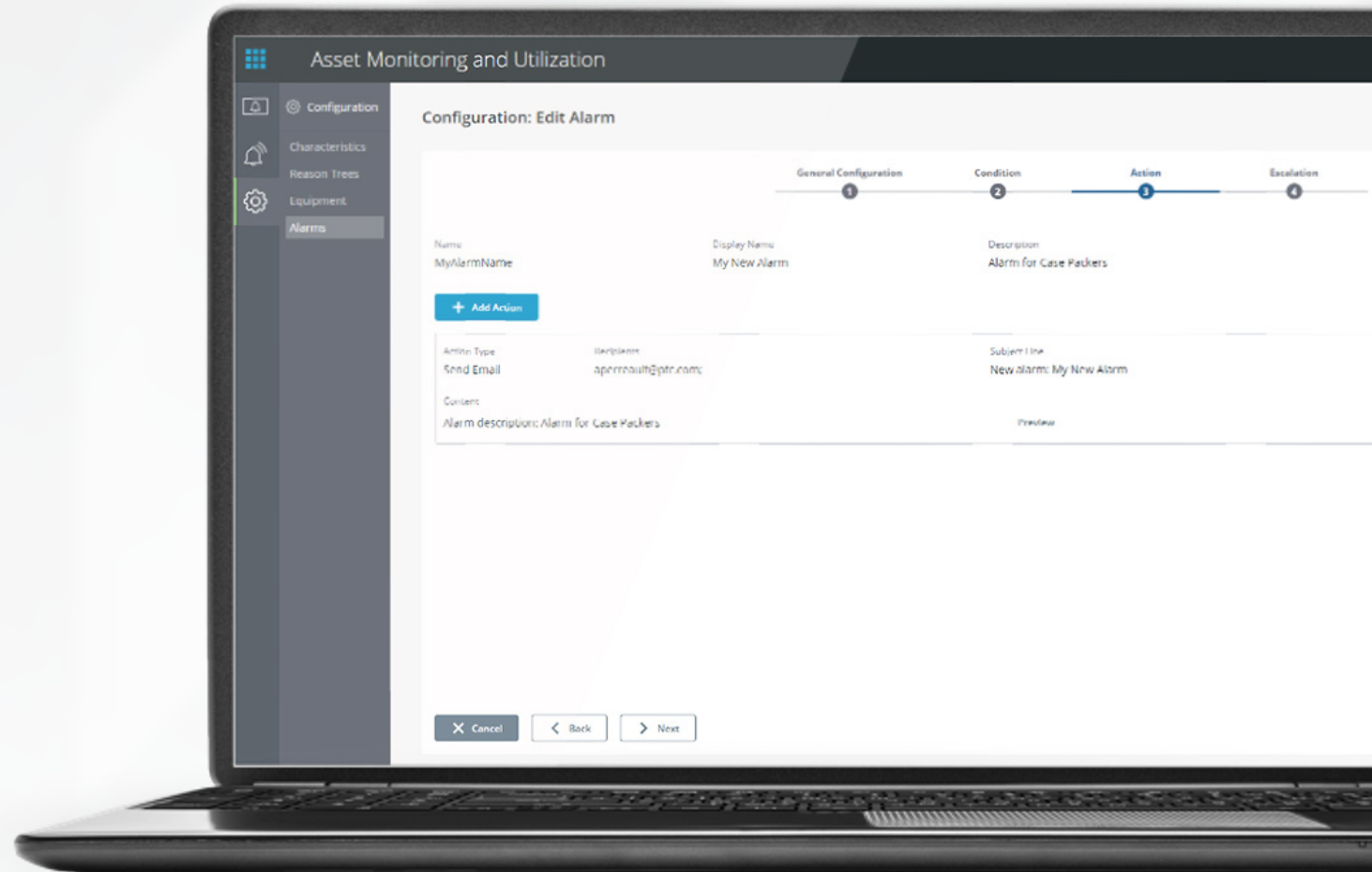
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AMU – Alarm Configuration

Alarm Escalation

- 3 levels of escalation possible

- Time-based escalation (unacknowledged)

- Alarm condition is still open after x minutes even if acknowledged
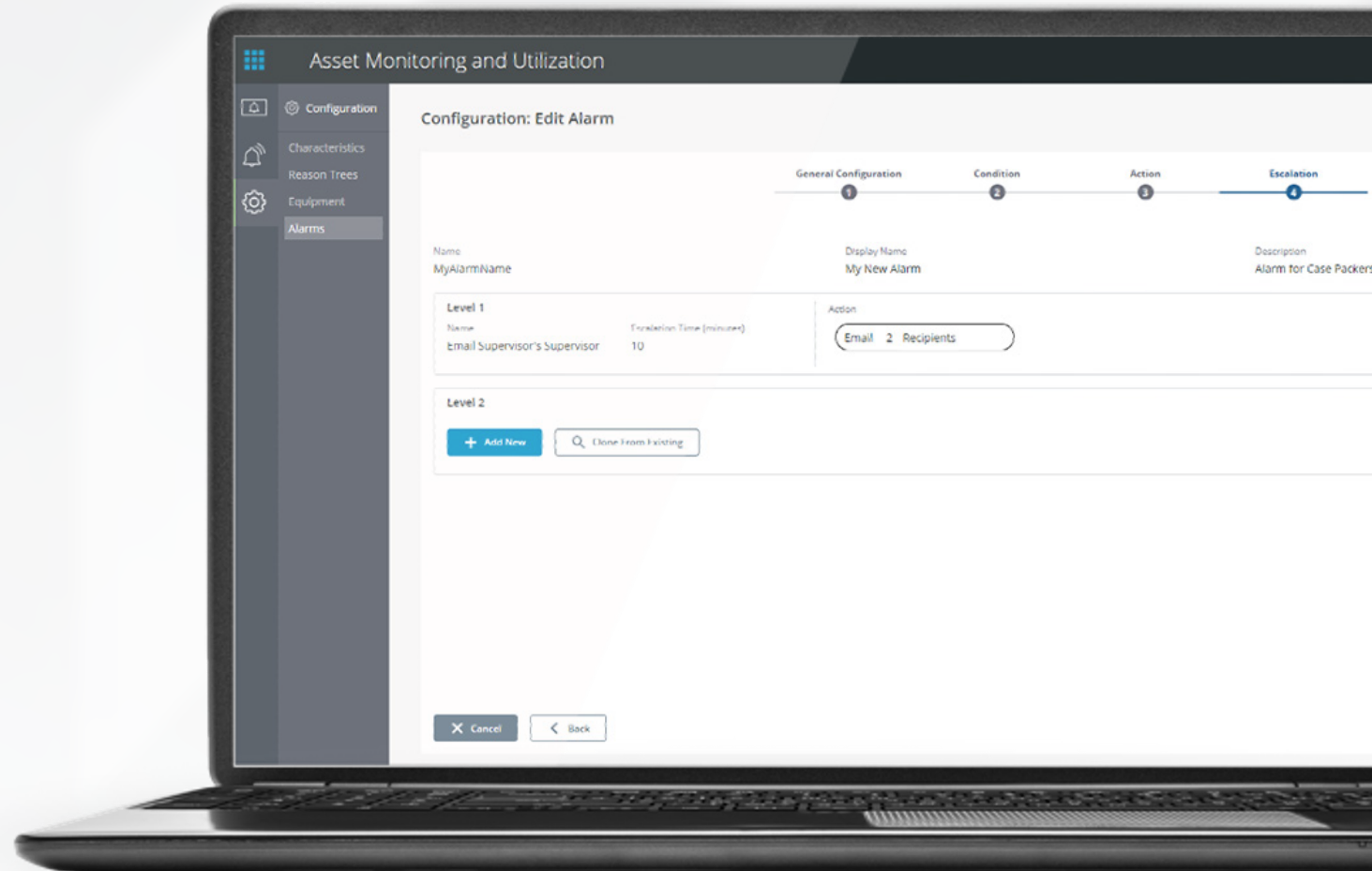
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AMU – Alarm Acknowledge

Alarm Acknowledge

- Designed to fit on a mobile

- Acknowledge link directly from the email

- Information about limits

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AMU – Reporting

Alarm Overview Report

- Advanced filtering options
  (Asset type, properties, etc..)

- Distribution of alarms by severity
  or status

- Drill-down from pie chart to bar graph

- Y axis options
  - Alarm Count
  - Avg. Ack. and Closed Time

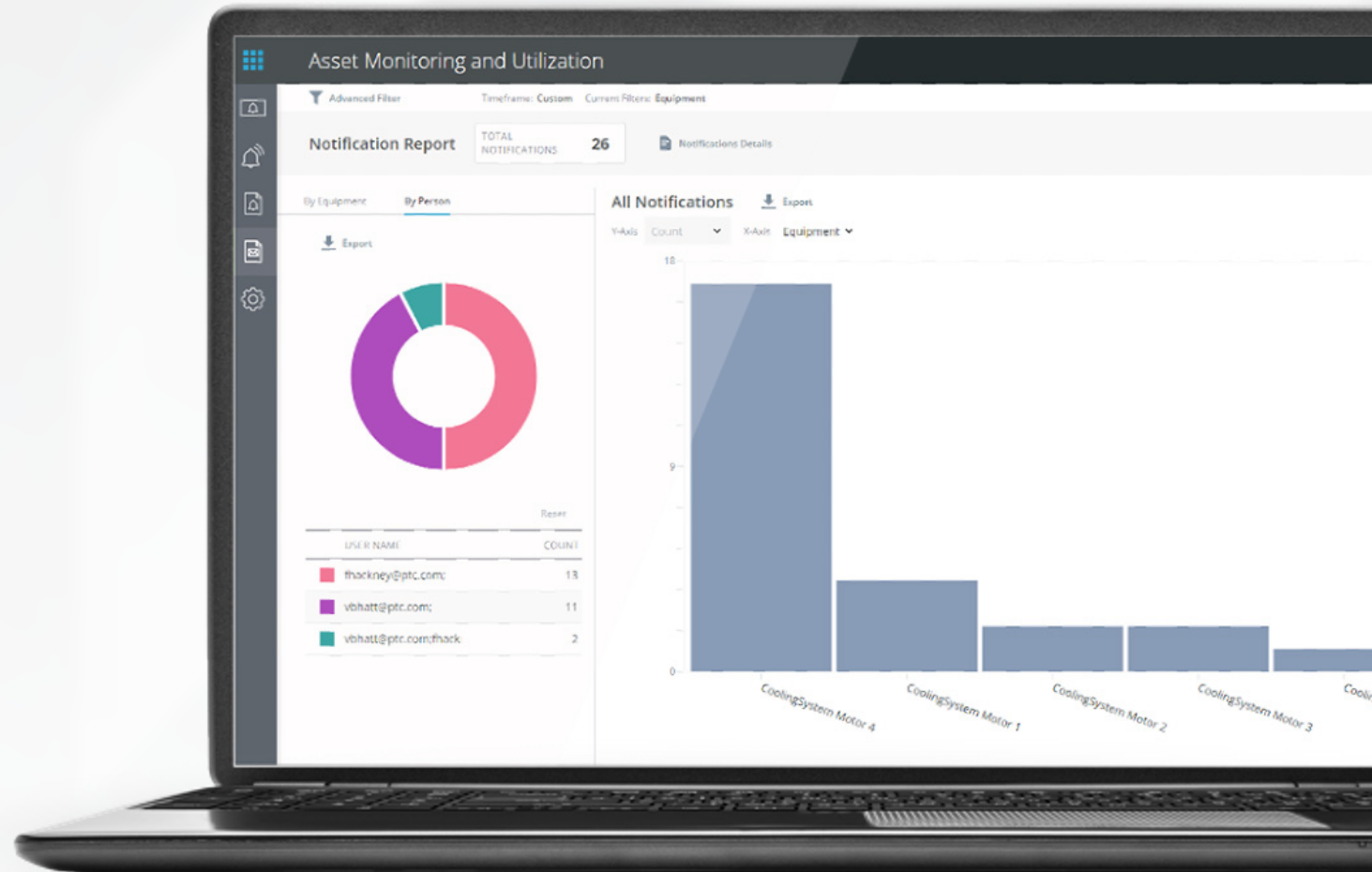- X axis options
  - Equipment
  - Time
  - Status

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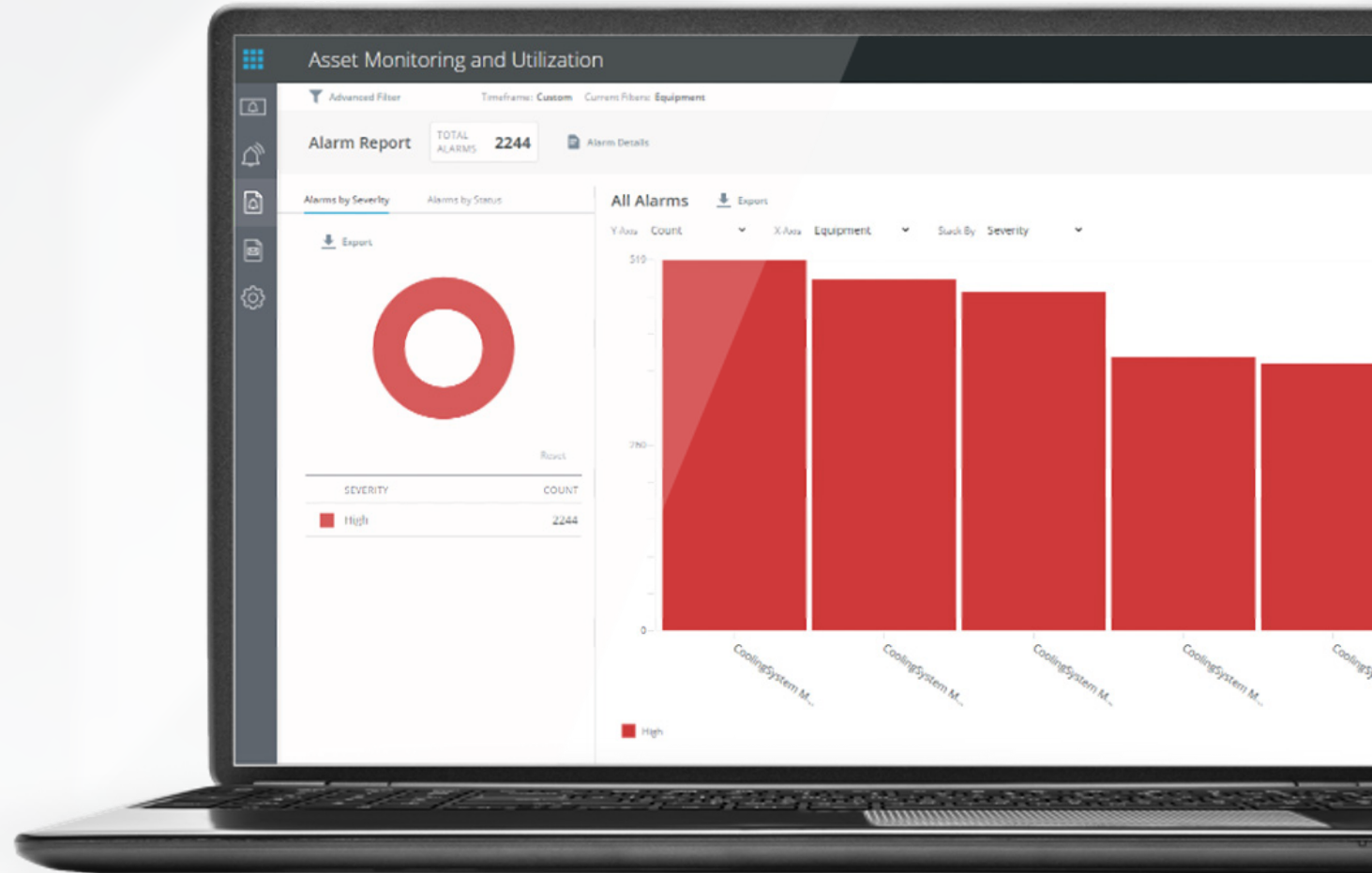
AMU – Reporting

Alarm Notifications Report

- Advanced filtering options
  (Asset type, properties, etc..)

- Distribution of alarms by equipment
  or person

- Drill-down from pie chart to bar graph

- Y axis options
  - Notifications Count

- X axis options
  - Equipment
  - Time
  - Person

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