

PACEdge Software and Computing Devices

Enhanced and Secure IIoT Development

PACEdge is a singular, secure, and controlled environment for customers to begin their Digital Transformation. Edge processing maximizes the value of your data so you can generate real insights and improve your operation's reliability, safety, and energy optimization. PACEdge provides the foundation for these improvements by delivering all aspects of edge processing with simplified IIoT application development, deployment, and administration. All components necessary in the IIoT application life cycle are brought together in this single package to provide a unified and secure interface to decrease your development time and increase your deployable footprint.



Intuitive Application Development

With drag-and-drop programming, “wiring” software and hardware interfaces has never been easier. Connect your system from the shop floor to user dashboards and beyond all on one centralized application platform. No more command line configuration, PACEdge has web interfaces for device administration, application development and scalability. PACEdge includes application samples to get you running out of the box!.

Advanced Analytics

PACEdge runs on industrially rated hardware so that it can be placed next to or near the machine to optimize control processes by leveraging data and analytics from external sources such as enterprise, ecological and environmental databases via the Industrial Internet.

Effective Visualization

Using state of the art software PACEdge provides powerful interactive visualization and analysis tools connected out of the box with timeseries and relational databases for data logging.

Remote Monitoring & Diagnostics

The inherent architecture of n-tier web services enable easy remote monitoring and diagnostics information to be shared anywhere, anytime with the appropriate supporting network.

Secure Networking

The PACEdge architecture is built with security in mind. It allows for safe de-segregation of operational data and networks so they can interact with higher level IT and cloud solutions.

Easy Deployment

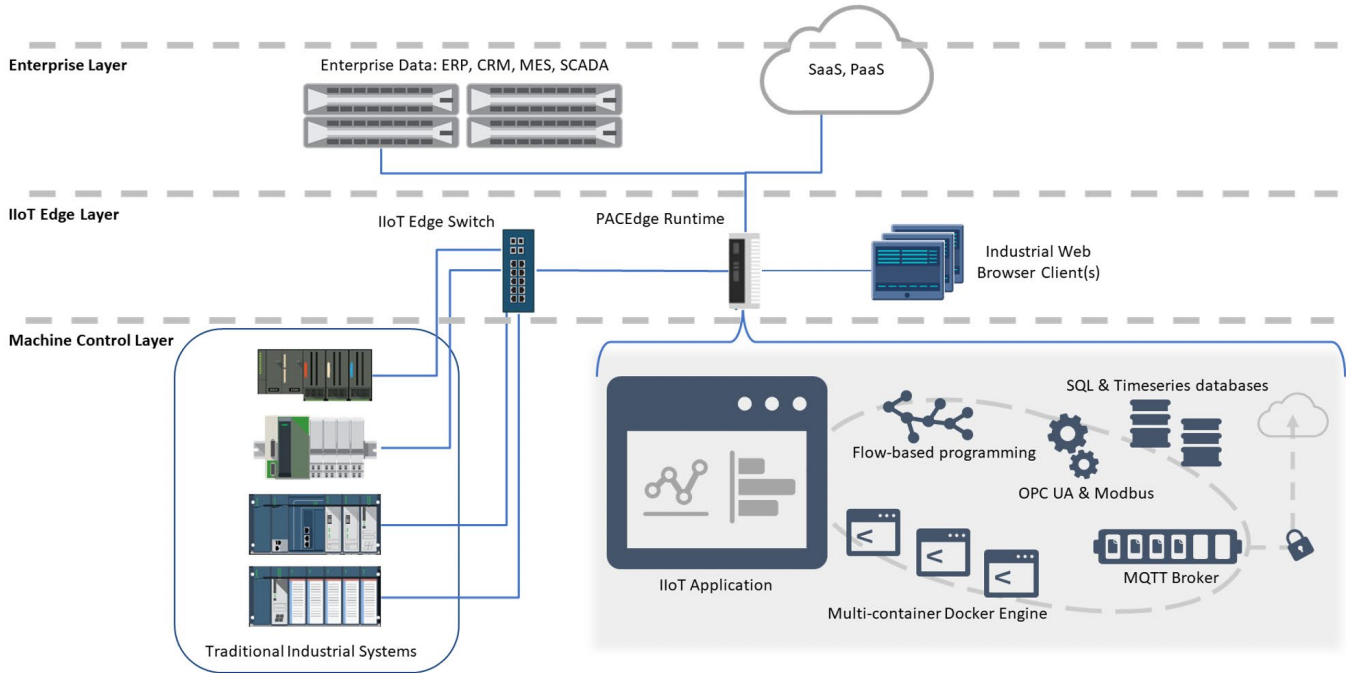
PACEdge components are deployed on a multi-container Docker engine, bringing operating system level virtualization into the industrial edge, for user friendly development and the scalability required for the Industrial Internet.

Using a secure USB drive, easily backup and replicate your PACEdge applications across thousands of devices.

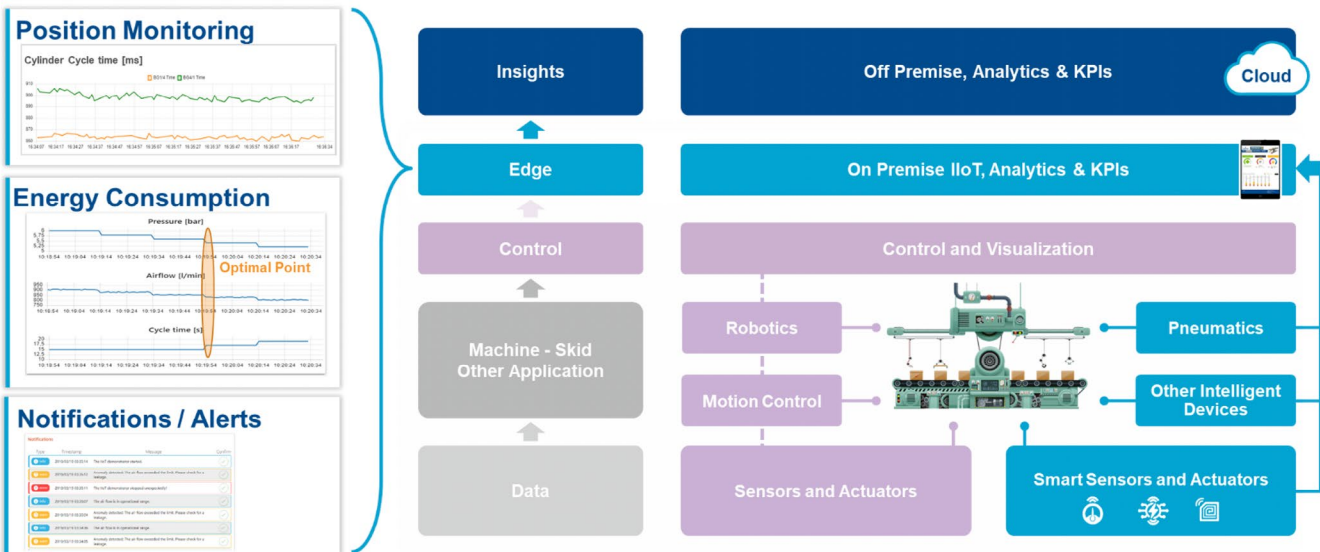
Cloud Connectivity

PACEdge is built for a dynamically evolving cloud agnostic development strategy. Easily connect multiple cloud vendors together at PACEdge. Pull data from a cloud vendor, combine with control system data and push to a different cloud vendor.

PACEdge Architecture



Immediate, Accurate Data at the Edge



PACEdge Integrated Devices



DIN Rail Mounted RXi2 - BP Industrial PC



DIN Rail Mounted RXi2 - LP Industrial PC

PACEdge Landing page



The screenshot shows the PACEdge landing page. At the top left is the Emerson logo, and in the center is the text "Emerson PACEdge". A blue horizontal bar spans the width of the page. Below this bar, the heading "PACEdge Applications" is centered. Underneath, there are five application icons in rounded squares: Node-RED (Data Processing), Grafana (Data Visualization), COCKPIT (Manage Linux), portainer.io (Manage Docker), and chronograf (Manage Influxdb). At the bottom, a dark blue footer bar contains the PACEdge logo on the left, "Version: RC2.0.1" in the center, and "Readme | EULA | OSS Info" on the right.

Key IIoT Development Tools Included with PACEdge

PACEdge is a world-class collection of tools to help you build your IIoT applications. Some of these most critical software components which have been combined into one easy to access toolbox include:

Tool and Purpose	Benefits
<p>App Development:</p> 	<ul style="list-style-type: none"> Substantial community support provides nodes to do almost anything including different communication and protocol nodes, data processing nodes, interfaces to databases and storage, even machine learning and visualization and dashboarding capabilities. Abstracts and provides ready to use function block so that developers can focus on applications and not on mechanics (such as instantiating OPC UA server or sending email or connecting to website). Allows developers to easily get data and send the data out and focus on data processing, analytics, and visualization. Suitable for both experts and novices. Node-RED flows can be completely created in a graphical flow, while experts can use Function nodes and Python nodes to write their own code in Python or JavaScript.
<p>Visualization:</p> 	<ul style="list-style-type: none"> Allows users to easily: <ul style="list-style-type: none"> Configure views and view types Perform data analytics (calculations, apply functions) Setup alerts to generate warnings and emails Interactively zoom in and out Search and explore data on the fly Provides numerous plug-ins and expansion options via open community.
<p>Time Series Database:</p> 	<ul style="list-style-type: none"> Open source time series database supported by Node-RED. Suits itself well for time series data storage and fits well into PACEdge containerized architecture.
<p>Open Source Relational Database:</p> 	<ul style="list-style-type: none"> Open source relational database that is natively supported by Node-RED. Suits itself well for relational data storage and fits well into PACEdge containerized architecture.
<p>Docker Container Manager:</p> 	<ul style="list-style-type: none"> Extensive functionality to manage Docker Containers (logs, terminal into container, statistics, control of container). Fits well into PACEdge architecture.

Features, Applications, and Components Included

Connectivity	OPC UA, MQTT, Mosquitto
Flow Programmer	Node-RED
Data Analysis & Dashboard	Grafana
Micro-services Framework	Docker & Traefik
Administration Interface	Cockpit
SQL Database	MariaDB
Time Series Database	InfluxDB
Programming Languages Supported	Options include: Python, Node.JS, Node-RED

Minimum System Specification

Operating System	Ubuntu Server 20.04 LTS
CPU	x86, ARM (AArch64)
RAM	4GB
Disc Storage	32GB
Ethernet Port	1

Ordering Information

Part Number	Description
R2L0N1A2AD	RXi2-LP, 1GHz/2C, 4GB RAM, 32GB SSD, 2xRJ45, Ubuntu Server LTS with PACEdge, DIN mount
R2L0N2A2CD	RXi2-LP, 1GHz/2C, 8GB RAM, 128GB SSD, 2xRJ45 Linux with PACEdge, DIN mount
R2B0N9E4N3A0A	RXi2-BP, 1.5GHz/2C, 4GB RAM, 64 GB SSD, 4xRJ45, Ubuntu Server 20.04 LTS with PACEdge, DIN mount
R2B0N1E1N3A0A	RXi2-BP, 2.0GHz/4C, 8GB RAM, 128 GB SSD, 4xRJ45, Ubuntu Server 20.04 LTS with PACEdge, DIN mount
PACEDGECORE ¹	PACEdge Core Software License

¹Required to obtain license for each piece of hardware purchased at time of order.

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