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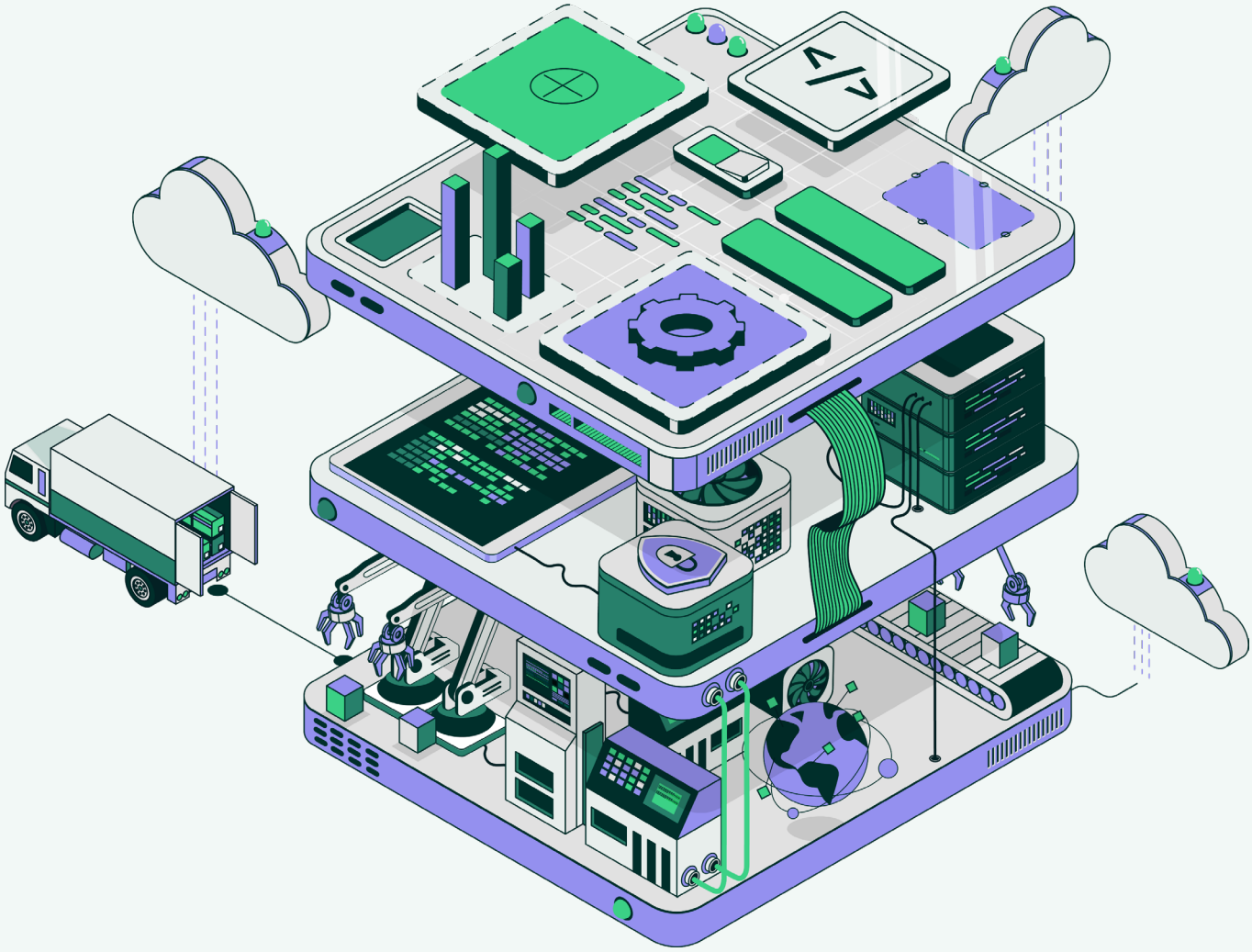
QuickStart Guide
Litmus Edge Developer Edition



Litmus 2025

What is The Developer Edition?

The Developer Edition is a 2-hour, renewable trial that gives you full access to Litmus Edge's core features in a self-contained environment. It's ideal for citizen developers, technical leads, or system builders who want to experiment with data integration, automation, and application development, without needing a full production setup. You can run it via:

- **Docker image:** Run on your laptop, server, or CI pipeline
- **ISO image:** For spinning up Litmus Edge in a virtual machine
- **Raspberry Pi image:** Optimized for RPi 4 and 5 (ARM architecture)
- **Portainer listing:** Launch instantly from the official public app library

You'll activate your installation and access downloads through the Litmus Central Portal; your hub for all the add-ons and integration tools. No matter which method you choose, you'll be up and running in minutes.

Where to begin? Log in (or register at) Litmus Central Portal. You need to have an active account to start your 2-hr resettable trial.

Tip: For the fastest setup, use Docker or Portainer, ideal for quick dev work and testing without the wait. **Watch this to learn how.**

Want to learn more about working with Litmus Edge?

Check our Litmus User and Developer Certificate trainings.

How to Install Litmus Edge

Depending on your choice of environment, we offer a variety of installation solutions. Here are the walkthrough guides, based on the type of deployment. Click on each to check its documentation page.

Deployment Methods	
ISO via Hyper-V	ISO via VirtualBox
ISO via ESXi	ISO on Industrial PC
OVA Installation	Docker Installation
Raspberry Pi Installation	Kubernetes Installation

Tip: For the fastest setup, use Docker via Portainer, ideal for quick dev work and testing without the wait. **Watch this to learn how.**

For detailed instructions on Hyper-V and VirtualBox installations, check our User Certificate training.

For more on Docker and Kubernetes installations, check our Developer Certificate training.

Try It: Digital Factory Demo




Just got your Developer Trial Edition? The best way to explore Litmus Edge is with the Digital Factory Demo, your instant testbed for industrial innovation.

This powerful, fully simulated smart factory experience helps you validate edge computing, real-time analytics, and integrations without needing physical PLCs or OT hardware. You can dive into live machine data streams, prebuilt analytics flows, and interactive dashboards.

Key features include:

- 12 simulated PLCs with digital twin models and real-time data
- 18 ready-to-use analytics pipelines
- Fully integrated Grafana dashboards for everything from OEE to energy costs

Where to begin? Check out our Digital Factory Demo on Central Portal and then follow the detailed steps in Litmus Documentation.

Tip: It's the perfect playground to test scripts, validate data flows, and build confidence with Litmus, before going live with real assets.

Want to learn more about setting up Digital Factory Demo?

Check our Quick Learn videos in Litmus Academy.

Data Collection, Processing, and Publishing

Litmus Edge guides your industrial data through three essential stages: data collection, processing, and publishing, giving you complete control from the edge to enterprise systems.

1. **Data Collection:** Connect to industrial assets via DeviceHub's graphic UI. If you want to build an automated workflow, use the Python SDK to programmatically configure devices and tags.
2. **Data Processing:** Once data is collected, apply built-in analytics pipelines to transform and contextualize it. Clean your data, perform calculations, or apply logic so that it becomes meaningful and ready for visualization or advanced applications.
3. **Data Publishing:** Deliver processed data to cloud platforms, enterprise software, or visualization tools. You can use one of our built-in connectors or create your own publishing flows using Docker containers inside Litmus Edge.

Where to begin? Check out our Litmus API Portal and then download Litmus SDK from Central Portal.

Tip: For advanced users, the Python SDK is the fastest way to script full data workflows, from collection to all the way to publishing.

Want to learn more about using API and SDK in Litmus Edge?

Check our Litmus Developer Certificate in Litmus Academy.

You're All Set – Keep Building with These Resources

Whether you're building your first PoC or scaling your next industrial solution, everything you need to keep moving forward is just a click away.

Good luck on your Litmus Edge journey!

Resource	Description	Link
Litmus Central Portal	Download images, activate your installation, and access add-ons	central.litmus.io
Litmus Documentation	All the technical documents for Litmus products and solutions	docs.litmus.io
Litmus API Portal	Full REST API for automating devices, tags, analytics, and more	api.litmus.io
Litmus Academy	Self-paced trainings and certificate programs for all user levels	academy.litmus.io
Litmus Support	Contact support or search the knowledge base for answers	support.litmus.io

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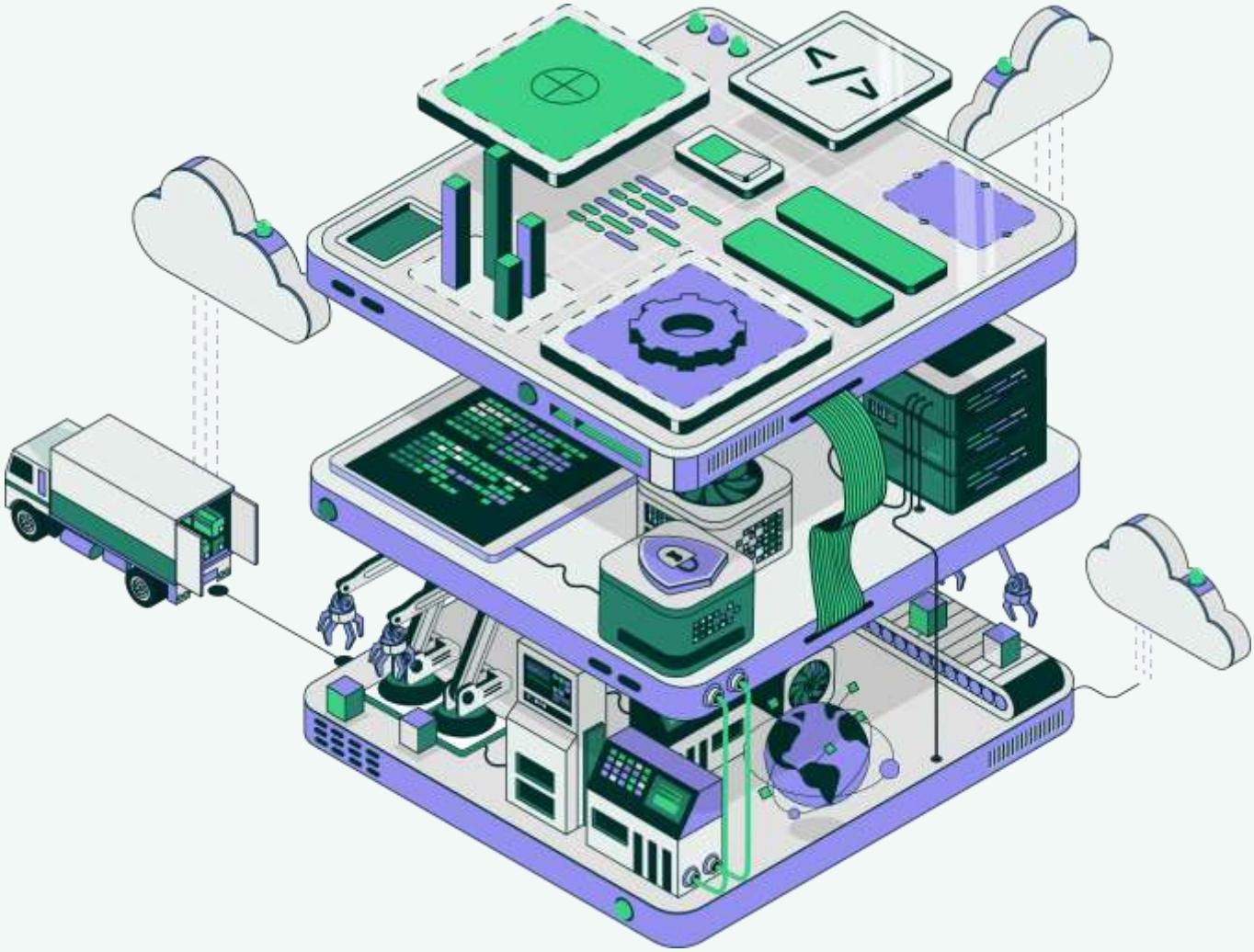
Build Your First Project with Litmus Edge



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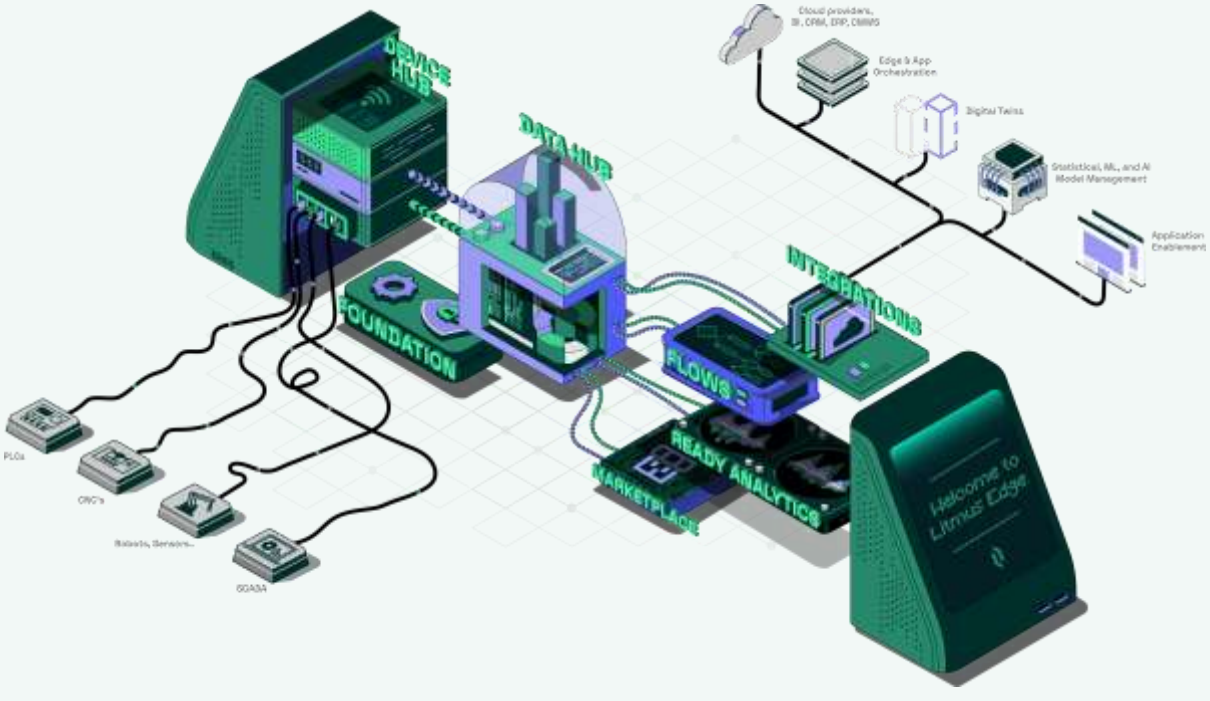
What Is Litmus Edge

Litmus Edge is an Edge Data platform designed for IIoT (Industrial Internet of Things) environments. It enables manufacturers to rapidly connect to industrial systems (sensors, PLCs, SCADA, historian) to **collect**, **process**, and **publish** real-time data.

With support for more than 250 industrial protocols (OPC UA, MQTT, BACnet, Modbus TCP, Siemens S7, etc.), Litmus Edge allows teams to unify data from disparate assets and systems. Once ingested, data is normalized and ready for analytics, machine learning models, and enterprise platforms.

The platform's modular architecture supports containerized applications, secure data flows, and built-in data buffering, allowing users to deploy IIoT solutions that are reliable, scalable, and aligned with OT (Operational Technologies) realities.

By enabling real-time visibility and decision-making directly on the factory floor, Litmus Edge empowers organizations to accelerate digital transformation while maintaining control over data, security, and infrastructure.

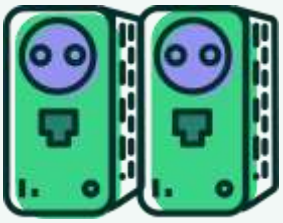


Key Business Questions

To maximize the value of your Litmus Edge deployment, structure your project around the core data lifecycle:

Collect → Process → Publish

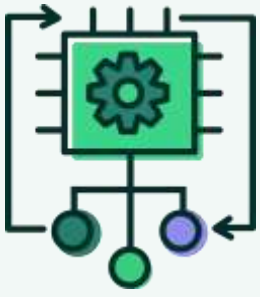
Data Collection



What data needs to be collected, and from where?
Identify your data sources: PLCs, sensors, SCADA, HMIs, meters, or other edge devices. What signals are critical to your use case?

Is the data accessible at the edge?
Ensure you have access to the systems generating data, including physical connectivity and protocol compatibility.

Data Processing



What transformations or analytics must be performed on the collected data?
Will you need to filter, aggregate, calculate KPIs (like OEE), or run anomaly detection?

Should processing occur in real time, on schedule, or both?
Some applications need continuous processing (e.g., alerting), while others benefit from periodic aggregation (e.g., shift reports).

Data Publishing

Where should the processed data be published?
Identify all target systems: cloud platforms (AWS, Azure), databases, SCADA systems, BI tools, dashboards, or messaging queues.

Who will consume the published data, and how?
Will it be used by operators in dashboards, analysts in Power BI, or apps running ML models? This determines the publishing format and cadence.

Know Your Data Sources




What are your data sources? Litmus Edge collects industrial data in 4 different ways.

PLCs: Integrate programmable logic controllers (PLCs) directly using industrial protocols to continuously collect real-time machine states, operational metrics, and critical production data.

> Pros: Easy to set up, as Litmus Edge comes pre-packaged with more than 280 PLC drivers.
> Cons: Requires PLC to be configured and connected in the OT network.

Flat Files: Utilize Excel or CSV flat file integrations to collect historical data, batch records, or exported system logs. This approach enables periodic data ingestion and historical data analysis.

> Pros: Simple and quick integration.
> Cons: Limited real-time capabilities and potential latency.

Manual Input: Capture data manually when automated data collection is impractical or unavailable. Manual inputs may include operator logs, inspection results, or maintenance notes essential for comprehensive analysis.

> Pros: Flexibility in capturing complex or context-specific information.
> Cons: Prone to human error and very time-consuming.

External Systems: Connect seamlessly to external systems such as MES, ERP, cloud services, or third-party databases using OPC UA servers, APIs, or MQTT. This allows Litmus Edge to enrich collected data with additional context, synchronize operations, and enhance overall operational visibility.

> Pros: Extensive integration options and enhanced data enrichment.
> Cons: Potential complexity in setup and maintenance.

Want to learn more about unlocking your data sources with Litmus Edge? Check our Litmus User Certificate training.

Have more questions? Check Litmus Documentation.

Process Your Data




Data processing transforms raw data into valuable insights. Litmus Edge offers three primary ways to process data effectively:

Flows: Utilize our customized Node-RED flows for visual, drag-and-drop data processing. Easily create data transformation, routing, and integration logic.

> Pros: User-friendly, rapid prototyping and deployment.
> Cons: Advanced use cases require higher coding knowledge.

Analytics: Leverage built-in analytics capabilities to execute calculations, anomaly detection, aggregation, and generate actionable KPIs like OEE or energy usage.

> Pros: Pre-configured analytics simplify your setup.
> Cons: Limited customization compared to fully custom-coded Flows.

Third-Party Applications (Docker): Host third-party applications inside Litmus Edge using Docker containers, providing specialized processing or custom-developed analytical solutions.

> Pros: Highly flexible, enables advanced processing scenarios.
> Cons: Requires additional resources and Docker expertise to manage effectively.

Want to learn more about data processing with Litmus Edge? Check our Litmus User Certificate training.

Have more questions? Check Litmus Documentation.

Publish Your Data

Data can be directly injected into visualization tools for dashboards or used as inputs for machine learning models. Litmus Edge supports data publication through two primary pathways:

Local, On-Premises Databases: Publish data directly to local databases such as InfluxDB or a self-hosted SQL database.

> Pros: Low latency, secure, full control over infrastructure.
> Cons: Requires local maintenance and may have limited scalability.

Cloud Storage Solutions: Publish data securely to cloud platforms like AWS, Azure, or Google Cloud.

> Pros: Scalable, easily integrated with advanced cloud services, and accessible from anywhere.
> Cons: Potential higher latency, increased costs associated with transferring and storing large volumes of data.

Want to learn more about data publishing with Litmus Edge? Check our Litmus User Certificate training.

Have more questions? Check Litmus Documentation.

Infrastructure Prerequisites

When deploying Litmus Edge for a project (pilot or production-level), it's essential to align the infrastructure setup with both your organizational architecture and operational goals. This ensures a stable, secure, and scalable deployment from day one.

Product Layer Location

Determine where Litmus Edge will reside within your industrial architecture, typically mapped against the Purdue Model.

Product Host Environment

Decide how Litmus Edge will be hosted. Supported environments include physical gateways, virtual machines, and container orchestration platforms like Kubernetes (K8s).

Product Configuration

Plan the system-level integrations. This includes time synchronization (NTP), directory services (LDAP), DNS routing, and secure certificate management.

Deployment Method

Select your preferred deployment strategy: full GitOps/CI-CD pipelines, partially automated scripts, or manual configuration.

Use Case Configuration

Outline infrastructure needs specific to the use case, such as cloud targets, storage volumes, data retention policies, or visualization endpoints.

Use Case Design Checklist

A successful Litmus Edge deployment should be rooted in a well-defined use case. Use this checklist to outline a frame and validate a use case that can deliver measurable impact on operations.

1. **Success Criteria**
   Define clear metrics for success (e.g., reduced downtime, reduced waste, optimized energy consumption, improved OEE).
2. **Target End Users**
   Identify who will benefit from the use case: operators, supervisors, site managers, regional executives, etc.
3. **Candidate Site List**
   Select initial deployment sites where the use case is relevant and where infrastructure supports Litmus Edge installation.
4. **Data Collection**
   List the machines, PLCs, or sensors providing the raw data. Ensure protocol compatibility and physical connectivity are addressed.
5. **Data Processing**
   Specify transformations, calculations, or logic to be applied to make the data actionable.
6. **Data Publishing**
   Define where the processed data should go: cloud platforms, MES/SCADA systems, on-prem databases, or custom dashboards.
7. **Architecture Requirements**
   Outline any supporting infrastructure needed for data routing and publishing (e.g., firewalls, proxies, cloud endpoints).
8. **Compute Demand**
   Estimate the processing resources required at the edge, including CPU, memory, and storage.
9. **Data Governance Strategy**
   Describe data structuring and management, including hierarchy (ISA-95), access control, retention, and security policies.

Sample Use Case Checklist:
Site-Level OEE Monitoring for Discrete Manufacturing

1. **Success Criteria**
   Achieve a minimum 10% improvement in OEE within 90 days by identifying key causes of downtime, cycle time variation, and quality loss across three production lines.
2. **Target End Users**
   Operations Managers: Real-time OEE dashboards for decision-making; Process Engineers: Root cause analysis using historical trends; Corporate Analysts: Consolidated OEE metrics for reporting
3. **Candidate Site List**
   Initial rollout starts at Site A (Automated Assembly Line, US), which has the necessary infrastructure to support the pilot project.
4. **Data Collection**
   PLC tags already available for: Machine cycle counts, Run/stop states, Reject counts and product good/bad
5. **Data Processing**
   Use Litmus Edge's built-in Analytics component to calculate Availability, Performance, and Quality in real time
6. **Data Publishing**
   Real-time metrics to a local Grafana dashboard. Next phase: aggregated data sent hourly to a central cloud data lake (AWS S3)
7. **Architecture Requirements**
   Litmus Edge instance directly connected to PLCs; Ethernet connection to plant network (VLAN-segmented); Secure MQTT or HTTPS uplink for cloud data publishing
8. **Compute Demand**
   Docker deployment in a Virtual Machine: 4 vCPUs, 16GB RAM, 50GB local storage for buffering and retention
9. **Data Governance Strategy**
   Tag naming structured using ISA-95 (Site > Line > Asset > Metric); Data access restricted by user role (viewer, editor, admin)

Give It A Try

To help you explore Litmus Edge hands-on, we offer a **Developer Edition** built for rapid experimentation and learning. It's ideal for citizen developers, solution architects, and technical decision-makers who want to test industrial data workflows without a full production setup.

Developer Edition Overview

- **2-Hour Resettable Trial License:** Test in a clean environment every session, with full-feature access and no long-term lock-in.
- **Multiple Deployment Options:** Choose from Docker, ISO image (for VMs), Raspberry Pi image (for RPi 4 & 5), or launch directly via the Portainer app catalog.
- **Centralized Activation:** Access all downloads and start your trial through the Litmus Central Portal; your go-to source for SDK, add-ons, and developer tools.
- **Full Capability Access:** Trial users can work with connectivity drivers, normalize data, build analytics pipelines, run digital twin models, and integrate with cloud platforms.

Click here to start your journey with Litmus Edge Developer Edition

Learn More as You Explore

- Litmus Academy: Structured training courses and certification programs to help you build practical skills quickly.
- Litmus Documentation: Detailed setup guides, integration walkthroughs, and configuration references to support every stage of your deployment.
- Litmus Support: Access to our technical support team and knowledge base for troubleshooting, FAQs, and personalized assistance during your trial or deployment.

Together, these resources help ensure your trial experience is not just exploratory, but impactful.