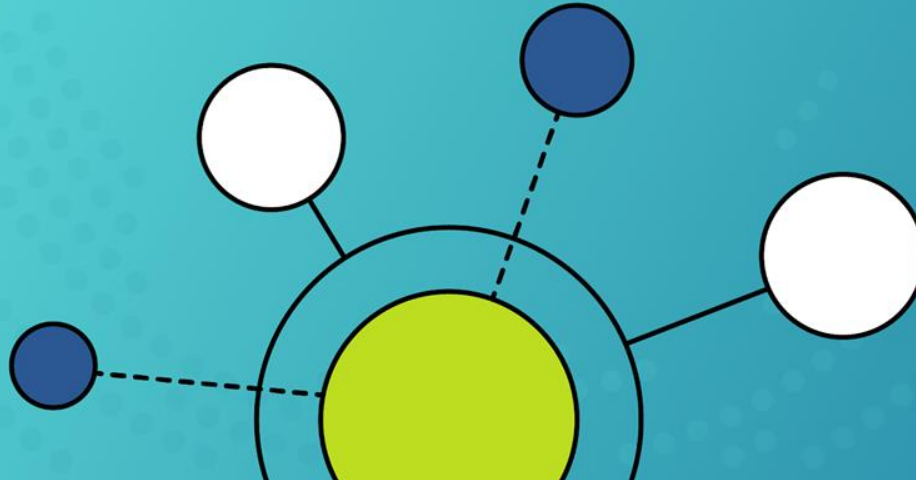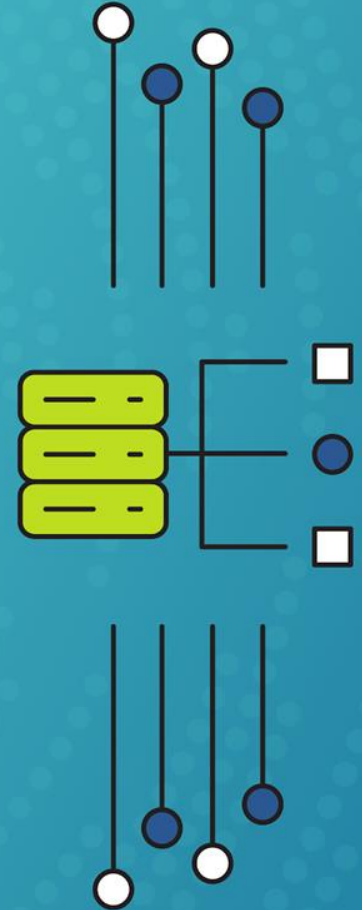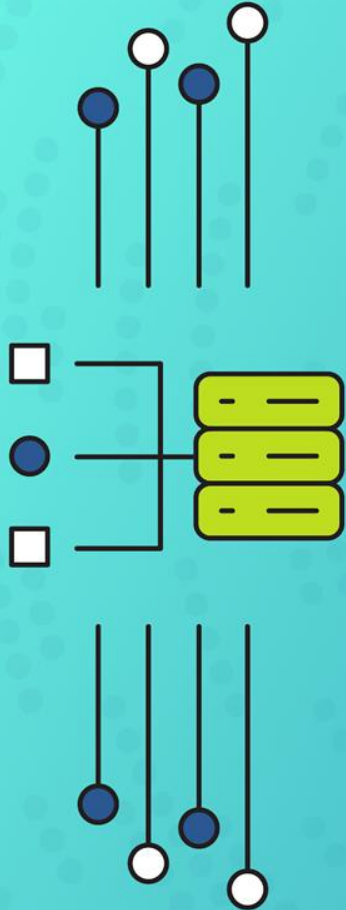# Turning Enterprise Data Into Decisions More Quickly

How to Leverage Ignition for DataOps

Today's Moderator

Don Pearson
Chief Strategy Officer
Inductive Automation

Agenda

- Introduction to Inductive Automation & Cirrus Link Solutions

- Introduction to Today's Speakers

- About DataOps

- Ignition for DataOps

- Chevron Use Case

- Demo

- Wrap-up Discussion and Audience Q&A

Ignition by Inductive Automation

One Universal Industrial Application Platform for HMI, SCADA, MES & IIoT:

- Unlimited licensing model

- Cross-platform compatibility

- Based on IT-standard technologies

- Scalable server-client architecture

- Web-managed

- Launch on desktop or mobile

- Modular configurability

- Rapid development and deployment

Ignition by Inductive Automation

About Cirrus Link Solutions

- Inductive Automation Strategic Third-Party Module Partner
- Develop and support IIoT, Cloud & EFM Modules for Ignition
- 30+ years of SCADA and Telemetry experience
- Innovative leadership in Industrial IoT & Digital Transformation
- Integral in the creation and continued growth of MQTT
- Developed Sparkplug specification and contributed it to Eclipse Foundation, now part of Eclipse Tahu project
- Trusted by AWS, Phillips 66, Tyson, Georgia Pacific & other leading companies

Today's Speakers

Arlen Nipper

President and CTO

*Cirrus Link Solutions*

Travis Cox

Co-Director of Sales Engineering

Inductive Automation

What's the Problem?

- Many companies are striving to accelerate their Digital Transformation

- Progress is stymied by a slew of data problems

What's the Problem?

- Many companies are striving to accelerate their Digital Transformation

- Progress is stymied by a slew of data problems:

  - Inefficiencies in accessing, preparing, and integrating data, and in making data available

  - Data inconsistencies

  - Lack of data context

  - Data is not in a usable form
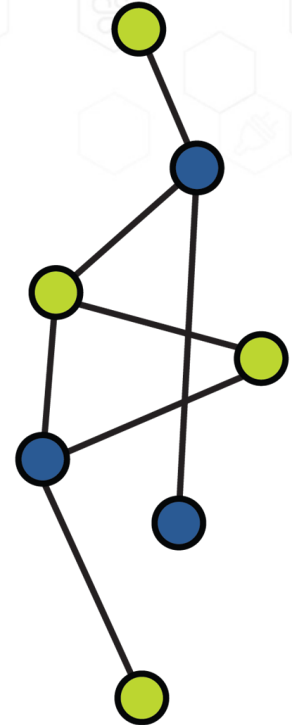
A Solution: DataOps

- DataOps is an automated, process-oriented methodology, used by analytic and data teams, to improve the quality and reduce the cycle time of data analytics.

- DataOps addresses the data architecture needs of industrial companies as they adopt Industry 4.0, Digital Transformation, and Smart Manufacturing.

- Improves communication between data stakeholders

- Aligns data management with data goals

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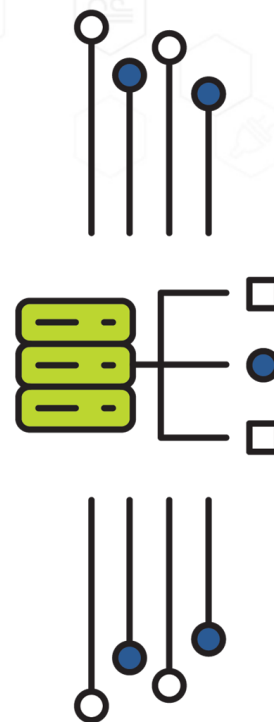
DataOps

- Also known as data harmonization or data cleansing, etc.

- DataOps has some similarities to DevOps: Both combine people, processes, and tools to deliver results more efficiently; both encourage the breaking down of silos.

- It is a methodology, rather than a product or solution, or a specific position or team in the organization.

DataOps

General guidelines for implementation:

- Democratize the data (i.e., make data available across the enterprise)

- Leverage platforms and open-source tools

- Build a model for your data

- Facilitate cooperation between departments
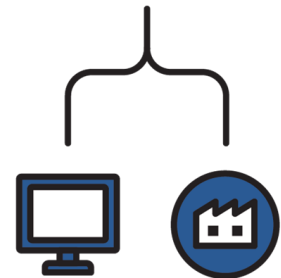
DataOps

- DataOps solutions perform data contextualization and standardization and provide secure data flow to the various consuming applications running at the edge, in on-premises data centers, or in the cloud.

- To implement a DataOps solution successfully, you need the right foundation.

- **Ignition meets all of the foundational requirements.**

Ignition for DataOps

- Ignition is modular and open (SDK)
  - Uses open standards and tools
  - Does not own the data

- Ignition is scalable
  - From simple and small to large and complex

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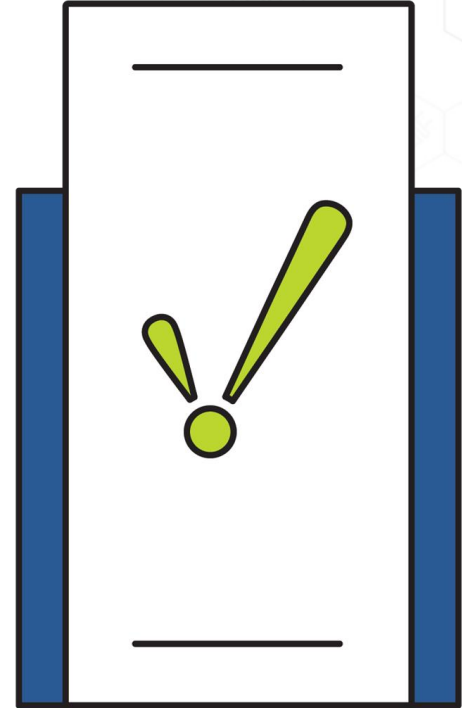
Ignition for DataOps

- Ignition is price-competitive
  - Sold by the server: one license gives you unlimited clients, tags, and connections
  - For a fraction of what some other solutions cost, you can get your whole company connected
  - No need to exclude data because of licensing restrictions

- Ignition is OS-agnostic: Windows, iOS, Linux, Android

Ignition for DataOps

- Ignition is easy to install, manage and configure

- Ignition provides data connectivity: protocols, legacy devices, databases, web sockets, web services, and much more

- Ignition is OT-driven and proven — and it bridges the gap between OT and IT
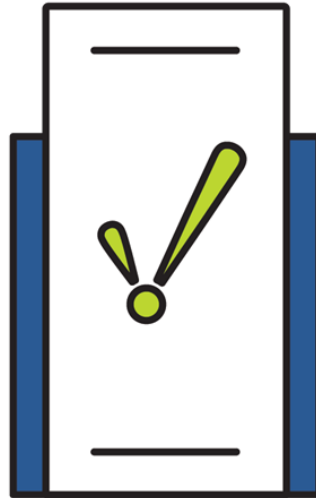
Ignition for DataOps

- Provides Data Transformation / DataOps
    - Connects to OT data
    - Single source of truth
    - Transforms proprietary protocols tags into proper tags naming
    - Creates tools for creating data models/UDTs
    - Provides metadata details such as scaling, eng units, etc.
    - Auto-discovery of information:
        - Simple; connect and learn instantly.
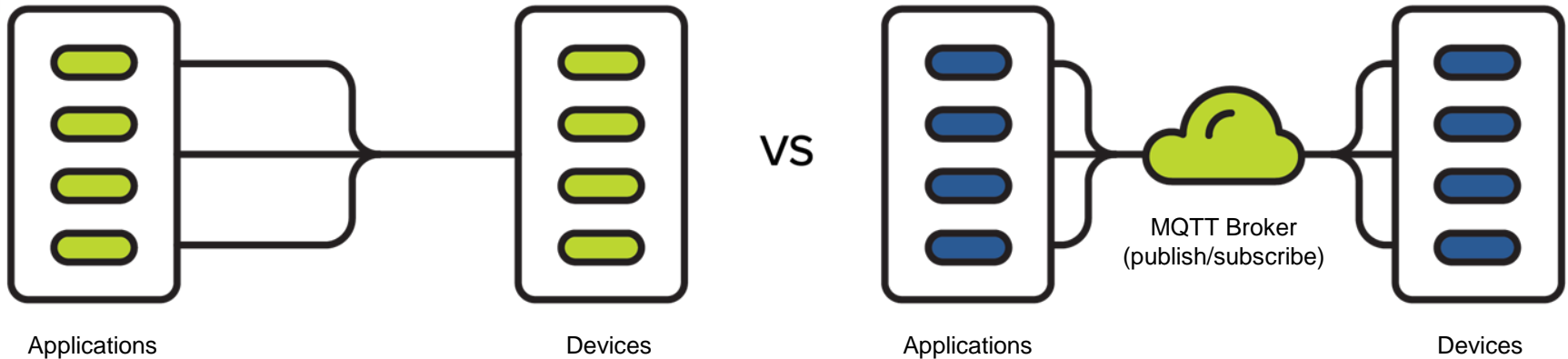   - No human editing required, or other error-prone or costly activities

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Ignition for DataOps

- Ignition allows you to use tools on platforms — not coding on operating systems

Ignition for DataOps

- Ignition is interoperable
  - Decouples applications from devices, enabling easy connectivity to multiple consumers

Applications — Devices

VS

Applications — MQTT Broker (publish/subscribe) — Devices

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Ignition for DataOps

- Ignition is MQTT Sparkplug-enabled
  - Sparkplug is an open-source software specification, created by Cirrus Link and now managed by the Eclipse Foundation
  - Sparkplug helps clients seamlessly integrate data between their sensors, devices or gateways and applications within an MQTT infrastructure.
  - Sparkplug is rapidly becoming the standard for the IIoT to achieve cross-industry interoperability and digital transformation.
  - Session awareness
  - Store & Forward built in

Sparkplug
MQTT Topic &
Payload Definition

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Ignition for DataOps

- Ignition is MQTT Sparkplug-enabled
    - Sparkplug B Specification Offers:
        - Defines an OT-Centric Topic Namespace
        - Defines an OT-Centric Data Model/Asset Structure
        - Defines an OT-Centric Extensible Process Variable Payload
        - Defines MQTT State Management
        - Establishes a Single Source of Truth for Models/Assets/Tags at the Origin!

Sparkplug
MQTT Topic &
Payload Definition

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Chevron: What Business Problem Are We Trying to Solve?

• Commissioning a facility ~ every week of the year

• Integration time in Process Control Network

• Integration time into enterprise business systems

• Property swaps/purchases, implementing the "Chevron" control system standards

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Chevron: What are the Challenges?

- "Man-power will only add 30% when facilities are doubling"

- There are 5+ items that need to be updated per facility:
    - PLC
    - Local Touchscreen
    - Control Room graphics
    - Pi Historian
    - Decision Support Center Graphics

- The integration of these points has to be done in series to test and rule out "human error"

Compared the time it takes to propagate a standard object addition through the system with:

a) Vendor PLC with same vendor touchscreen, with different vendor HMI with OSI Pi historian

b) Single vendor (PLC, Touchscreen, HMI, Historian)

c) Publisher/Subscriber solution

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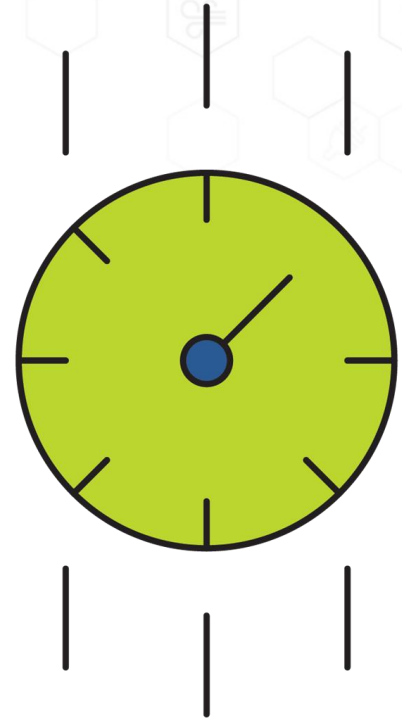
Chevron: Lean Sigma Time Recordings Architecture

Time measurements were taken to "add a tank object" to a supposed existing system and download to the controllers/computers. The times came out as follows:

a) Competitor PLC / HMI   22 minutes

a) Single vertical vendor   13 minutes

a) Publisher/subscriber system   4.5 minutes
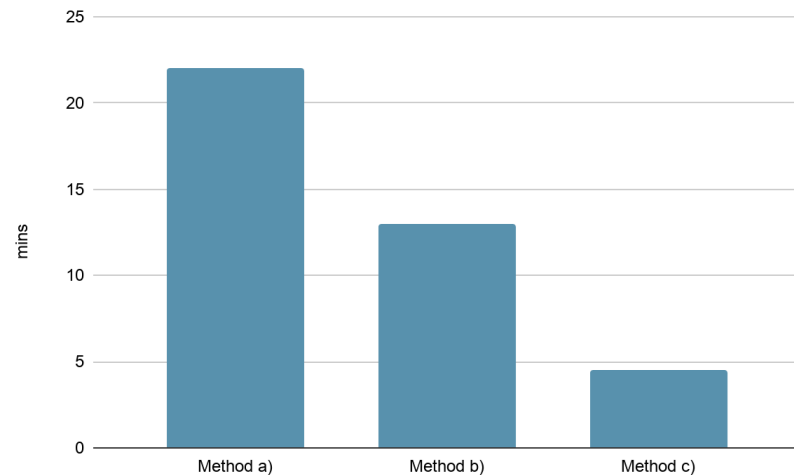
Architecture Example
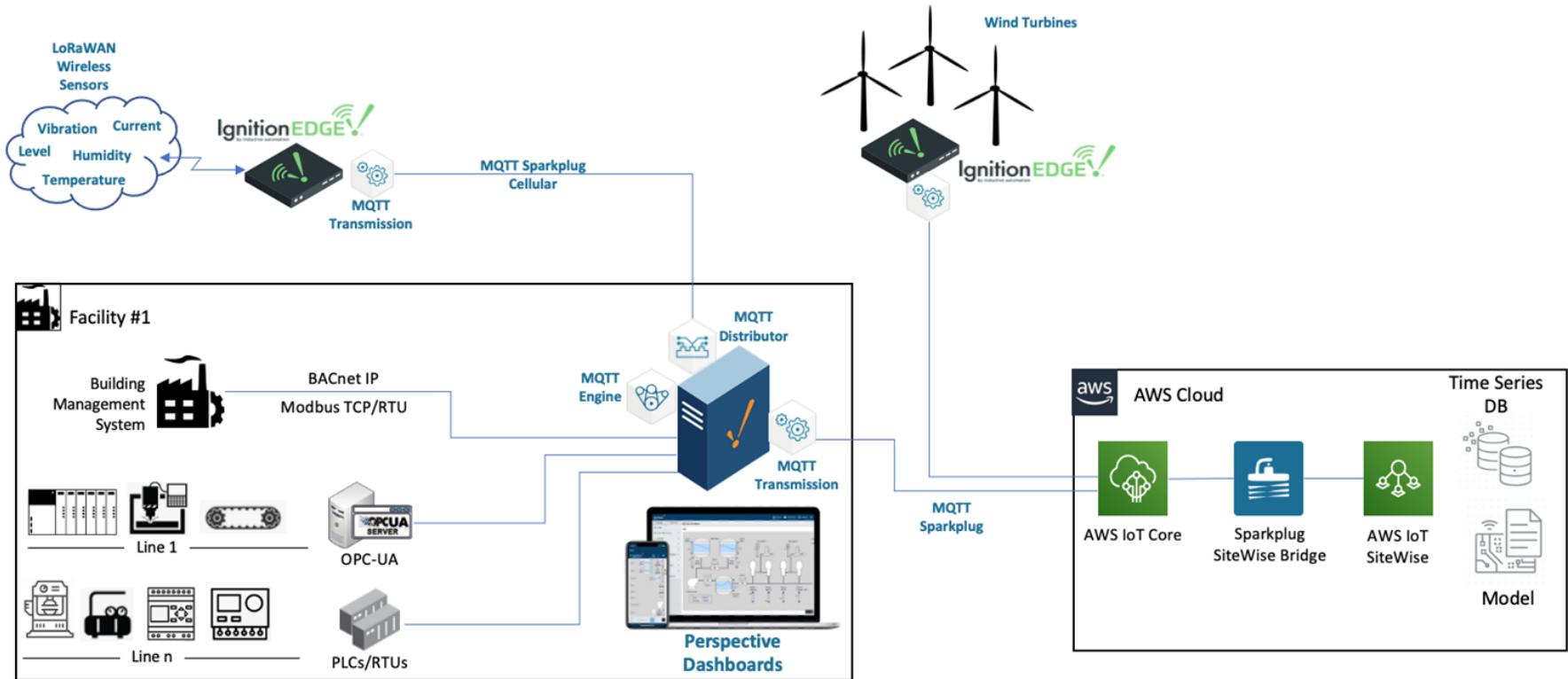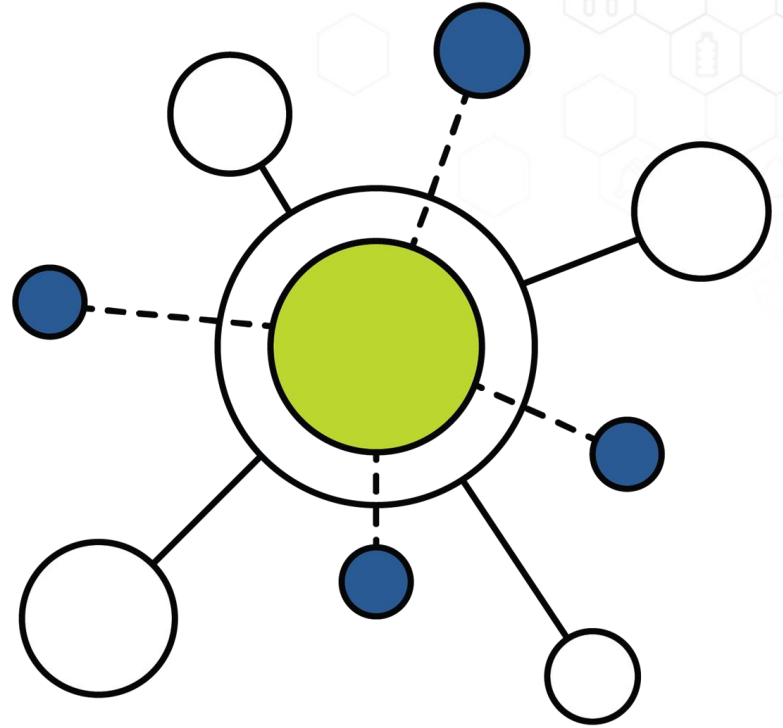
To summarize, what are your overall thoughts about the importance of DataOps and the effectiveness of Ignition and MQTT as a solution for this?

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THE DISCOVER GALLERY

Submit your best Ignition project at:

icc.inductiveautomation.com/discover-gallery-2021

The deadline is April 30, so submit your project soon!

Questions & Comments

Speaker

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