



# *Oh, bring back my logging*

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Log Anomaly Detection with Opni

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# *Hi there!*

- Outage-disliking sys admin at heart
- Senior Technical Evangelist @ SUSE
- SIG Docs co-chair @ Kubernetes

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# *Agenda*

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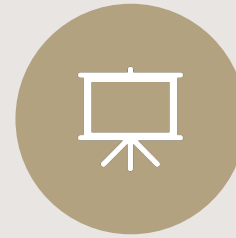
SETTING THE  
CONTEXT



WHAT IS OPNI?



INSTALLING OPNI  
ON RANCHER  
DESKTOP



DEMO



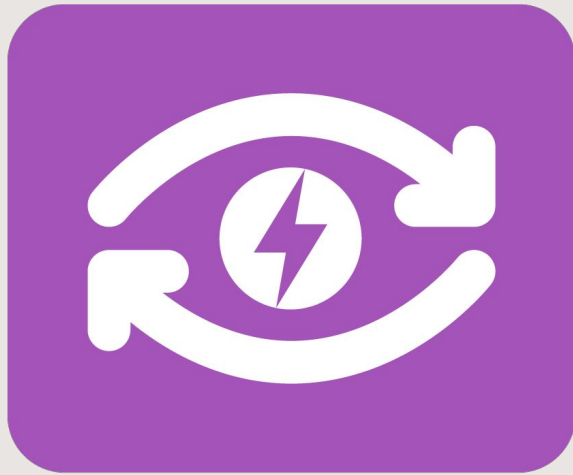
ROADMAP



The background is a dark gray field filled with various geometric shapes and patterns. These include circles, squares, rectangles, and 3D cubes, some of which are filled with a grid of small dots or diagonal hatching. There are also wavy lines, a large green circle in the upper right, and a large green square in the lower left. The overall style is modern and abstract.

*Outages suck. Reading logs shouldn't!*

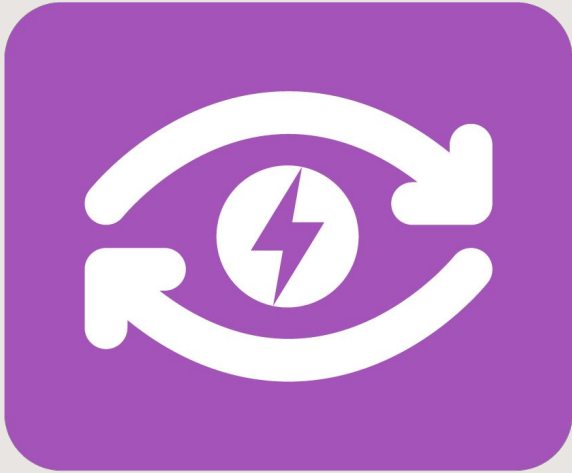
# *What is Opni?*



# OPNI

- Cloud native tool for multi-cluster, multi-tenant observability
- Capabilities:
  - Create and manage backends, agents, and data associated with logging, monitoring, and tracing
  - Comes built-in with AIOps

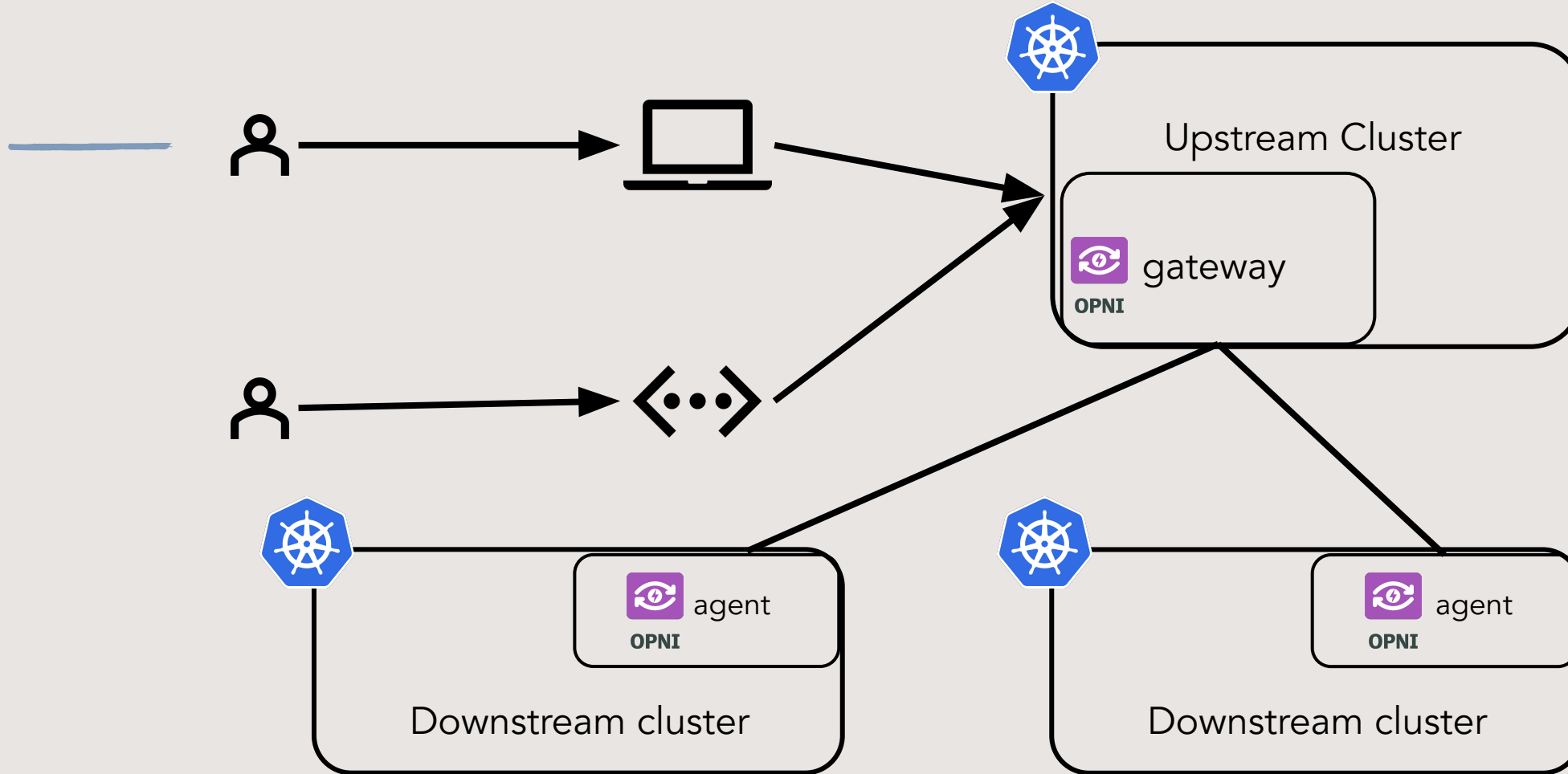
*How is it different?*



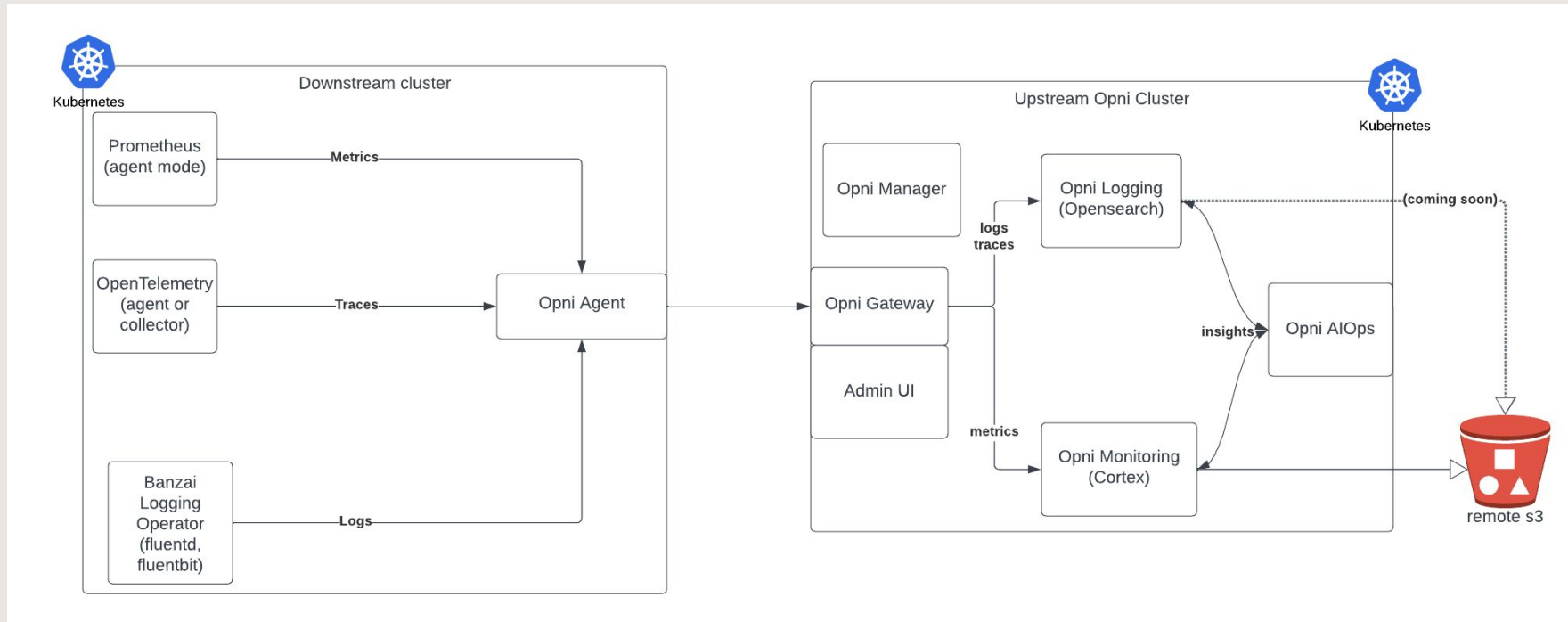
**OPNI**

- Open source
- No knowledge of AI/ML required by operator
- Does not require high volume of logs to get started
- Comes with pre-trained models specific to the Kubernetes control plane, Rancher, and Longhorn.

## *A 10,000 ft view of the architecture*



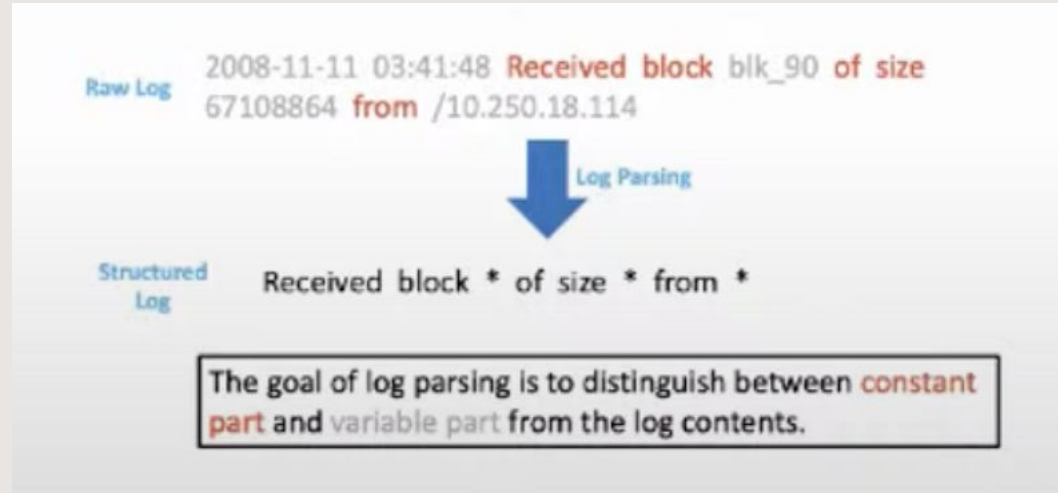
# Zooming in





# *What about AIOps?*

- Machine learning method: Drain
  - Learns log templates from incoming log messages
  - Lightweight, fast model
  - Detects changes in environment & retrains Deep learning models

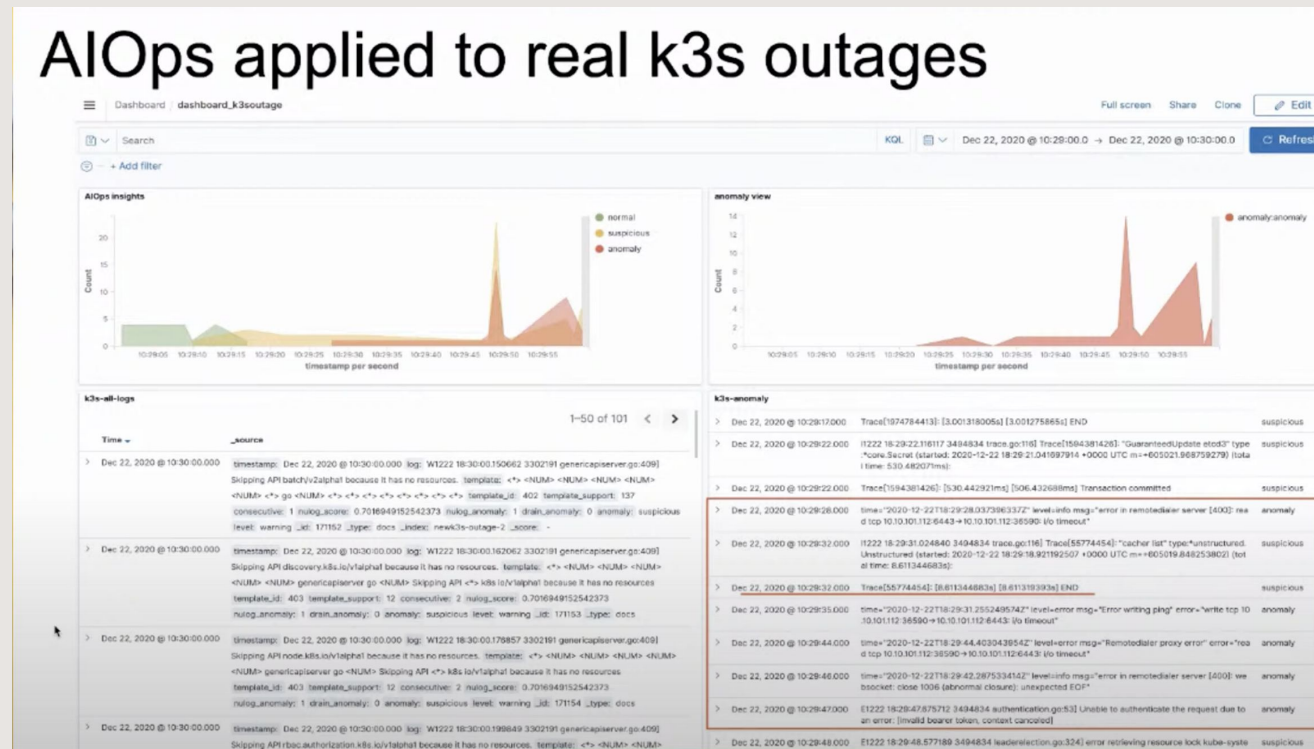


# *What about AIOps?*

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- Deep learning method: NuLog
  - Learns semantic contextual information from logs
  - Advanced GPU-based model with state of the art accuracy
  - Capable of handling large amounts of data
  - Robust predictions

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# *Installing Opni on Rancher Desktop*

## *Step #1: Install cert-manager*

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```
kubectl apply -f https://github.com/cert-manager/cert-manager/releases/download/v1.10.0/cert-manager.yaml
```



## *Step #2: Customize your installation*

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- Add hostname
- Select Authentication provider
- For sample values.yaml refer to docs or this demo!

## *Step #3: Add the Opni Helm repository*

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```
helm repo add opni https://raw.githubusercontent.com/rancher/opni/charts-repo
```

```
helm repo update
```

## *Step #4: Install the CRDs chart*

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```
helm -n opni install --create-namespace opni-crd opni/opni-crd
```

## *Step #5: Install Opni*

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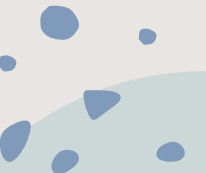
```
helm -n opni install opni opni/opni -f values.yaml
```



*Demo*



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# *Project Roadmap*

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- Managed OpenTelemetry collector for logs, metrics, traces via Opni agent by H1 2023
- Opensearch as a vectorstore for AI/ML applications
- Chatbot powered by Large Language Models (LLM)

Source: <https://github.com/orgs/rancher/projects/36>

## ***Resources***

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DRAIN: <https://ieeexplore.ieee.org/document/8029742>

NuLog: <https://arxiv.org/abs/2003.07905>

Opni GitHub: <https://github.com/rancher/opni>

Opni docs: <https://opni.io>

Rancher Slack: <https://slack.rancher.io>



*Thank you!*

