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CloudNativeCon

North America 2025

Your Kubernetes Playbook at Your Fingertips

Advanced Troubleshooting With MCP, RAG, and k8sgpt

@yashsharma_f



@davidvonthenen



#KubeCon #CloudNativeCon



Yash Sharma

- Developer Advocate @DigitalOcean
- Maintainer CNCF project Meshery
- Open Source Contributor
- Loves Machines
- The Firefox logo isn't a fox

[in](#) [GitHub](#) [YouTube](#)  [X](#) [@yashsharma_f](#)



David vonThenen

- Are you Human or an AI?
- I want 5 Kubernetes
- Virtual Machines are Real
- Cloudy, cloudy, cloudy...
- There is storage for that!

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What Is k8sgpt?



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What are the use cases?

Your Customized AI Runbook

Your Organization's Best Practices via RAG and k8sgpt



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What Is An Operational Runbook?

- **Standardized, Step-By-Step Guide For:**
 - Performing IT Tasks
 - Troubleshooting Issues
 - Responding To Emergencies
- **Typical Runbook Characteristics:**
 - Designed to Support All Skill Levels
 - Reduce Complexity To Accomplishing A Task
 - Enable Consistency From Naming to Policy
- **Example Runbooks Uses:**
 - Routine Maintenance: Patching Servers, Renew Certs
 - Emergency Response: Failing Over, Disaster Recovery



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From Runbook to Reasoning: Build AI Agents

- **Why Build An AI Runbook Agent?**
 - Runbook Becomes A "Living" Document
 - Bridges Human Procedures To Machine Reasoning
 - Codifies Consistency, Expertise, Automation
 - Generate YAML or kubectl Commands
 - Agent "Thinks Like Your Organization"
- **Using k8sgpt and MCP, Perform Actions Where You Can:**
 - Retrieve Status On Aspects Of Your Cluster
 - Perform "Set" Operations Based On Runbook
 - Orchestrate Multi-Step Remediations With Your Agent



Demo: AI Agent Runbook

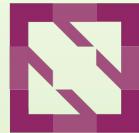


What About The Other Considerations?





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Thank You!



@yashsharma_f



@davidvonthenen



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