



# A Pirate's Guide To Troubleshooting Kubernetes-Based Applications Using



*A Captain Stacky and  
Friends Adventure*



## Set Sail to Troubleshoot Kubernetes Apps With Ease

### Swashbucklers worldwide are turning to Kubernetes

as their preferred open-source system for automated deployment, scaling and management of containerized applications.

Because it offers the flexibility to leverage on-premises, hybrid or public cloud infrastructure, Kubernetes empowers scallywag developers and engineers to effortlessly move workloads wherever they're needed.

But like the uncharted oceans, Kubernetes architecture is vast, so troubleshooting can feel like a quest for buried treasure without a map!

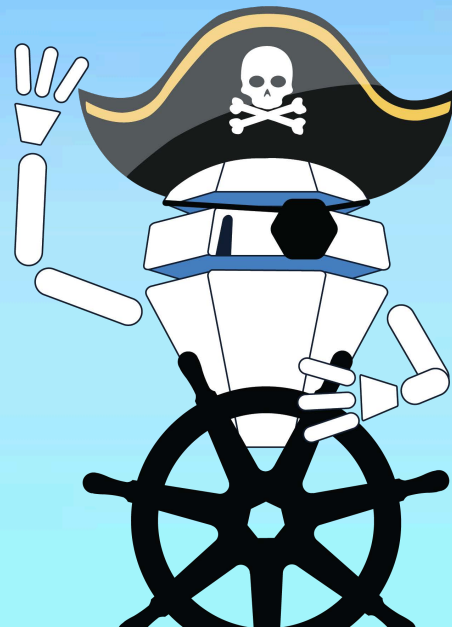
Let's set sail with Captain Stacky to discover the treasures of troubleshooting whether they be hidden within a pod, a container or a cluster of gold.



“

AHOY MATEYS.  
Come aboard.  
I'll show you how  
to tackle the  
Kubernetes beast!

”





## Don't Abandon Ship!

During his last quest, documented in the e-book, *The Illustrated Guide to Troubleshooting Kubernetes*, Captain Stacky examined the ways his mates utilized metrics to track changes in behavior, sifted through logs to find the root cause of mishaps and monitored events to unravel the mysteries hidden within their clusters.

"Blimey," he shouted while sailing the seven seas. "What we need is a single solution to tackle all of these wretched torments!"

That's when he met a ship of Dutch swashbucklers who created a tool that made navigating Kubernetes-based applications a breeze helping buccaneers swiftly resolve any potential obstacles they encountered.

So climb aboard me hearties and join Captain Stacky's latest Kubernetes troubleshooting adventure with StackState!

“

YO HO HO!  
A pirate's life  
for me!

”





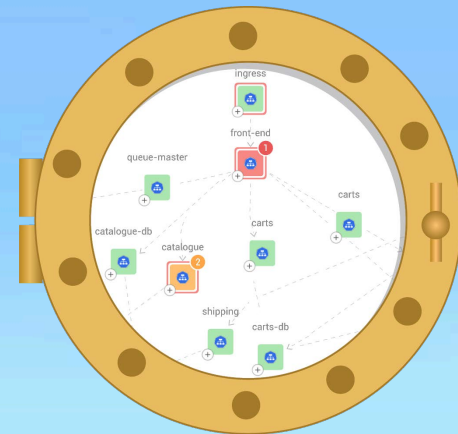
# Troubleshooting Solution #1

**Avast ye!** StackState is the most comprehensive troubleshooting solution that can **collect, aggregate and correlate Kubernetes observability data!**

- StackState collects metrics, logs, events and traces using open standards like eBPF and OpenTelemetry.
- Then automatically correlates this information for a clear view of everything in the context of its associated Kubernetes resources, even if life cycles have ended.

**YO HO HO!**

*Think of StackState as a compass that guides ye to a unified view and even allows ye to integrate data from yer other trusty tools, bringing everything together in a central location, including golden signals.*



“ With StackState, I can easily navigate dependencies across my Kubernetes cluster! ”





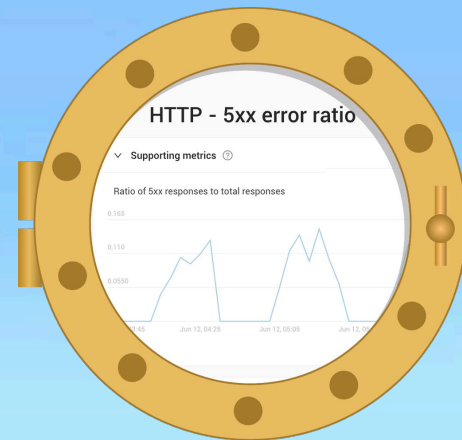
## Troubleshooting Solution #2

**Avast ye!** StackState is the most comprehensive troubleshooting solution that **automatically applies Kubernetes best practices using monitors.**

- Expert practices come in the form of pre-configured monitors that look for common issues and apply compliance, security and other policies too.
- These monitors work out-of-the-box and are written in an easy-to-read YAML format so SREs can further extend them.

YO HO HO!

*Ye can harness insights from over 22 dashboards without anyone on yer crew having to master complex query languages to understand yer Kubernetes environment.*



“With StackState, I can find, identify and resolve 5xx errors ratio issues within minutes!”





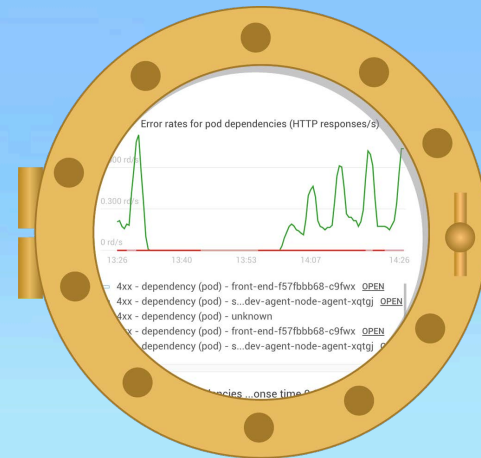
## Troubleshooting Solution #3

**Avast ye!** StackState is the most comprehensive troubleshooting solution that can **automate your runbooks**.

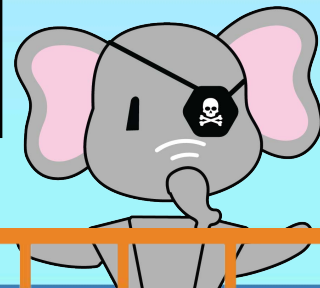
- Any landlubber can easily follow StackState's step-by-step guided remediation to promptly resolve irritating issues.
- Troubleshooting hints and visual assistance are provided using smart problem clustering to simplify and accelerate remediation.

YO HO HO!

*Access to multiple built-in remediation guides benefits every buccaneer in your crew who deploys Kubernetes regardless of skill level.  
(More on these mighty guides later.)*





“ With StackState, I can find the root cause of performance degradation! ”





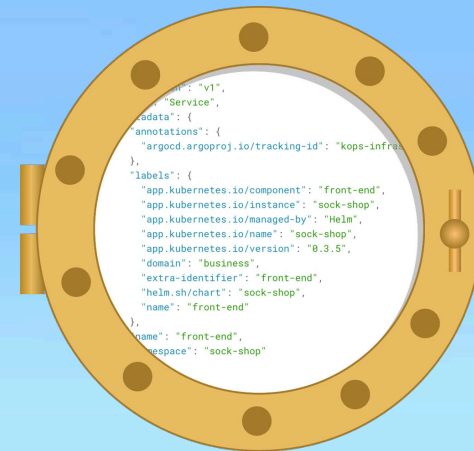
## Troubleshooting Solution #4

**Avast ye!** StackState is the only comprehensive troubleshooting solution that **can auto-discover your environment.**

-  Automatically uncover and visualize all service and resource dependencies to build a holistic understanding of all your clusters.
-  Real-time topology reveals dependencies and data traffic among all components – pods, containers and processes – enabling easy visibility of resource changes throughout your entire environment.

**YO HO HO!**

*Go back in time with a treasure map that highlights dependencies, allowing you to identify mistakes, chart a better course and prevent future disasters. (More on these salty maps later.)*



“ With StackState, I can find config issues that bog down application startup. ”





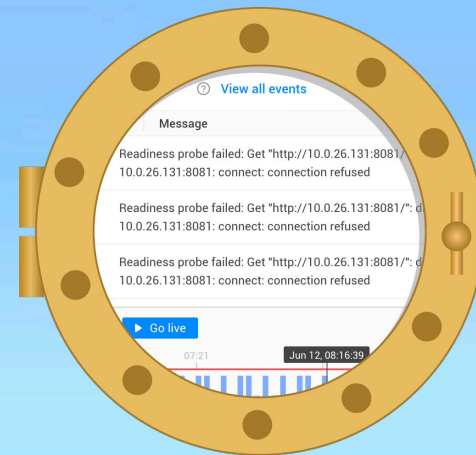
## Troubleshooting Solution #5

**Avast ye!** StackState is the only comprehensive troubleshooting solution that **combines your data in exhaustive dashboards.**

- StackState's dashboards aggregate and correlate all relevant metrics, logs, traces and events.
- You'll never need to context-switch between tools or write numerous and tedious queries to get the data you need.

YO HO HO!

*StackState is one-stop shop incorporating ALL of yer data in one safe place. Not only does it save time, it's a more secure way to access all observability data even when yer crew is exploring other islands for buried treasure.*

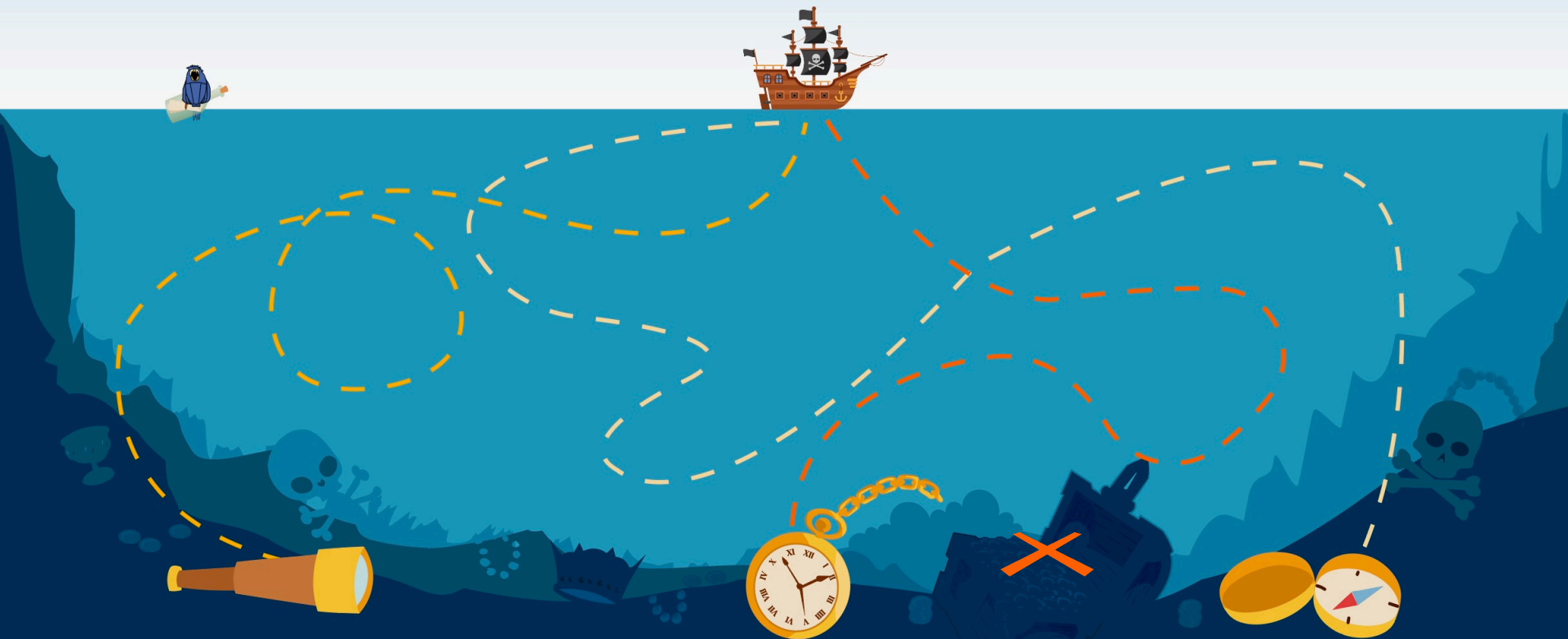


“ With StackState, I can find misconfigured apps caused by configuration drift. ”





Want to see what makes StackState a treasure trove?  
Let's go below the surface for a deeper dive!



**Dynamic Observability  
Dashboards**

**Dependency Maps with  
Real Time Topology**

**Kubernetes  
Remediation Guides**

# Deep Sea Dive: Dynamic Observability Dashboards



StackState's dynamic Kubernetes observability dashboards combine all crucial data into a single screen and organize it for easy consumption.

Key features:

- Critical metrics for each resource type: services, pods, nodes, deployments, daemon and stateful sets, PVCs and persistent volumes.
- Status, configuration and health information of each component or relevant event.
- Service Highlights containing golden signals (error rate, throughput and latency).
- Metadata such as labels, age, owner, namespace and cluster information.
- Pod Highlights referencing container logs.
- "Last Change" information that's only a click away.

## YO HO HO!

*Track any issue by examining interconnections among resources in yer pods or across yer cluster. All overview and highlight pages are pre-configured and available to analyze as soon as data flows into the system.*



# Deep Sea Dive: Dependency Maps with Real Time Topology



StateStack enhances Kubernetes service and infrastructure maps with real-time topology to show dependencies between pods, containers and processes.

Key features:

- Ability to track relationship types (network, infrastructure, services, deployments, etc.) for issue resolution without needing "PowerPoint architecture" know-how.
- Utilization of eBPF to collect dependency and metrics data irrespective of application programming languages used.
- Discover and visualize all dependencies within your Kubernetes environment with user friendly maps that offer simple navigation and a drill-down capability.
- Maps can be accessed and filtered at any time, helping you examine the composition of your system at a precise moment in time.

## YO HO HO!

*Enhanced with real-time topology these maps reveal the intricate dependencies between components. Ye can scroll through the timeline to see how services interacted at any point to track the evolution of issues over time.*





# Deep Sea Dive: Remediation Guides

StackState remediation guides are step-by-step playbooks that lead you to the cause of an issue for prompt remediation.

Key features:

- Over a dozen pre-packaged guides for rapid remediation of common issues.
- Step-by-step guidance for detecting the causes of issues.
- Easy-to-understand explanations of issues and their significance.
- Code snippets as remediation suggestions for use in config files for example.
- Deep links into other screens for smooth transitions between components.
- Ability to extend remediation guides in YAML.
- Ability to pin and unpin remediation guides.
- Linked to out-of-the-box monitors and triggered by specific monitors.

## YO HO HO!

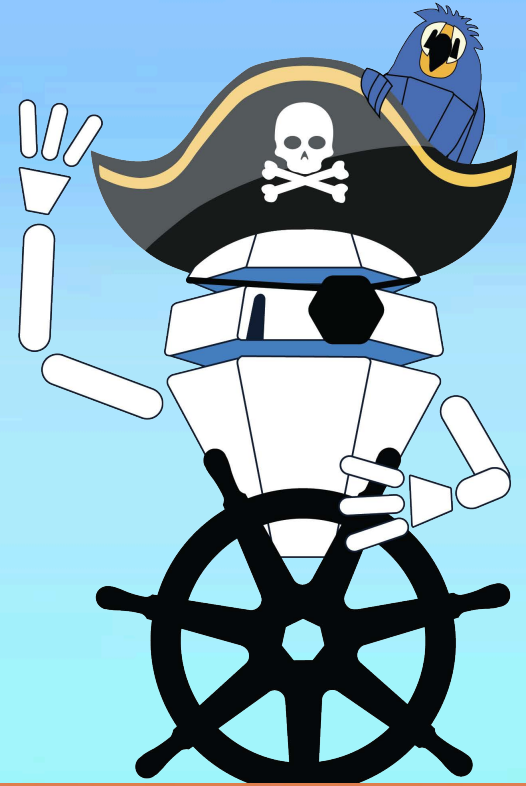
*Remediation guides directly cover the most critical issues and can be extended with code snippets and deep links to other components, enabling cross-component troubleshooting for all of yer mateys.*





# Top 7 Reasons To Set Sail With StackState

1. **Comprehensive Data Management:** We're a one-stop shop, collecting all of your data in one centralized location.
2. **Time Efficiency:** As a single tool for all of your observability needs we streamline operations and save valuable time.
3. **Secure Access:** Enterprises can confidently grant access to observability data through our secure platform.
4. **Pre-built Dashboards:** With over 20 pre-configured dashboards SREs and engineers don't need to be experts in complex query languages.
5. **Rapid Time-to-Value:** Experience unrivaled observability benefits in under 5 minutes.
6. **Extensible Framework:** Our solution is highly adaptable, allowing customization to align with specific enterprise needs.
7. **Level Playing Field:** Users at any knowledge level can address and remediate issues without having to master the platform.





## Are ye brave enough to take the StackState Kubernetes Challenge?

Captain Stacky challenges you to troubleshoot on your own. You'll either walk the plank or be rewarded with a bounty of guided remediation from StackState.

So, batten down the hatches and **visit the StackState playground** to take the helm!

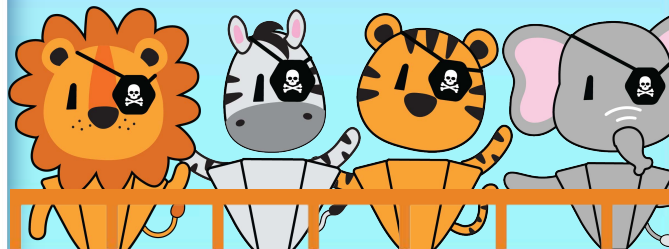
Come out the other side and you'll be able to:

- Navigate dependencies across your Kubernetes clusters
- Determine the root cause of performance degradation
- Check the real-time availability of endpoints
- Identify and resolve 5xx server errors in minutes
- Detect and address config issues that bog down app startup
- Identify misconfigured apps caused by configuration drift

To give StackState a go with yer own data, steal away with our **14-day free trial**. It sets up in minutes, so you'll be overtaking that scurvy dog of a Kubernetes issue in no time!



“  
We took the StackState challenge and we're hooked!  
”





Designed to help engineers of all skill levels who build and support Kubernetes-based applications, StackState provides the most effective solution available for Kubernetes troubleshooting. Our unique approach to SaaS observability helps teams quickly detect and remediate issues so they can ensure optimal system performance and reliability for customers. With StackState's comprehensive observability data, the most complete dependency map available, out-of-the-box applied knowledge and step-by-step troubleshooting guidance, any engineer can remediate issues accurately and with less toil.

Leading enterprises like KPN, Vodafone, Accenture and Danske Bank rely on StackState to ensure the performance and reliability of their business-critical services. We are proud to be recognized as a High Performer in the G2 spring 2023 report based on the strength of [our customer reviews](#).

For more information, visit us on [www.stackstate.com](http://www.stackstate.com) or follow us:   

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