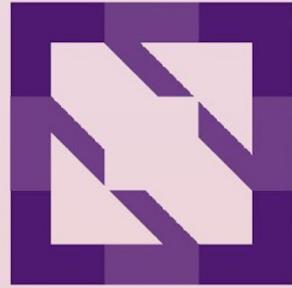


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Kube-Costbusters: Optimizing Kubernetes Clusters for Efficiency and Epic Savings

*Rachel Leekin, Containers Solutions Architect, AWS
Antoinette Mills, Senior Containers Specialist, AWS*

Meet the Kube-Costbuster Team



Rachel Leekin – Code Name “Razor”

10+ years of accelerating customers to adoption of Cloud and Kubernetes. Specializes in application migration strategies to Kubernetes and Kubernetes optimization.

Antoinette Mills – Code Name “Little GG”

19+ years of achievement shepherding transformations, maximizing global partnership performance, and igniting multimillion-dollar growth. Specializes in providing cloud performance optimization strategies to address and ensure that your compute environment runs smoothly.



Lil Kuddie!

Mascot of Kube-Costbuster team. Specializes in emphasizing key strategies that audience should lean into!

Standard Kubernetes Cost Components



Infrastructure

Kubernetes Cluster Management

Storage

Networking

Monitoring & Logging

Security

Licensing

Scaling

Compliance & Regulatory

Backup & Disaster Recovery

Vendor Lock-In

Training & Expertise

Cost Monitoring & Reporting Tools



OpenCost

Visualize and Report!

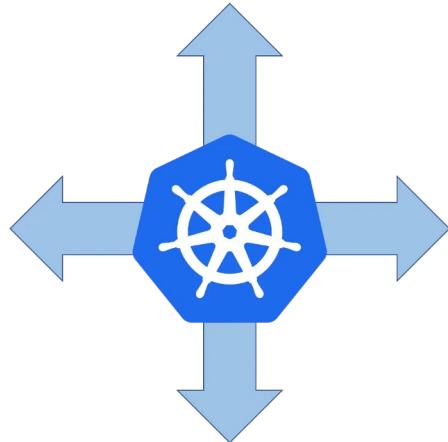


Prometheus

Monitor what matters and
collect what you need!



Cluster Rightsizing



Implement Cluster Autoscaler Priority Expander

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: cluster-autoscaler-
priority-expander
data:
  priorities: |-  
    10:  
      - .*t2\.large.*  
      - .*t3\.large.*  
    50:  
      - .*m4\.4xlarge.*
```



Implement Karpenter Consolidation

```
apiVersion: karpenter.sh/v1beta1
kind: NodePool
spec:
  template:
    spec:
      nodeClassRef:
        name: default
      requirements:
      - key: karpenter.k8s.aws/instance-category
        operator: In
        values: ["c", "m", "r"]
  disruption:
    expireAfter: 360h
    consolidationPolicy: WhenUnderutilized
```



Storage Optimization



Clean up your Image
Repos!



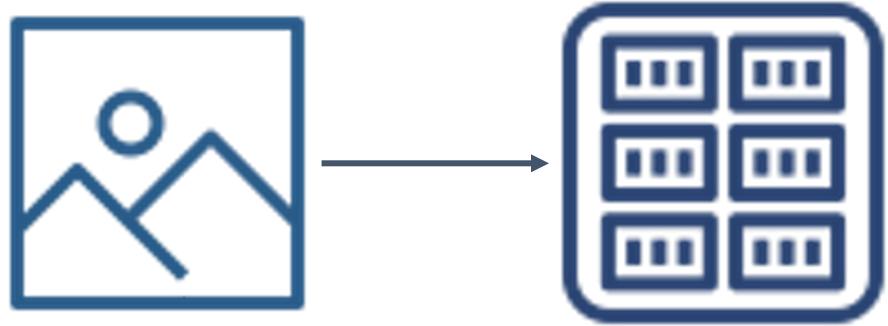
Clean up your Logs!



Clean up your PVs & PVCs!



Network Optimization



Reduce container image pulling

Configure Caching
proxy:
 **remoteurl: https://registry-
1.docker.io**
 username: [username]
 password: [password]



Keep the traffic in the same zone

Enable Topology Aware Routing
**service.kubernetes.io/topology-
mode = Auto**

Hidden Kubernetes Cost Components



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**Orphaned
Pod
Resources**

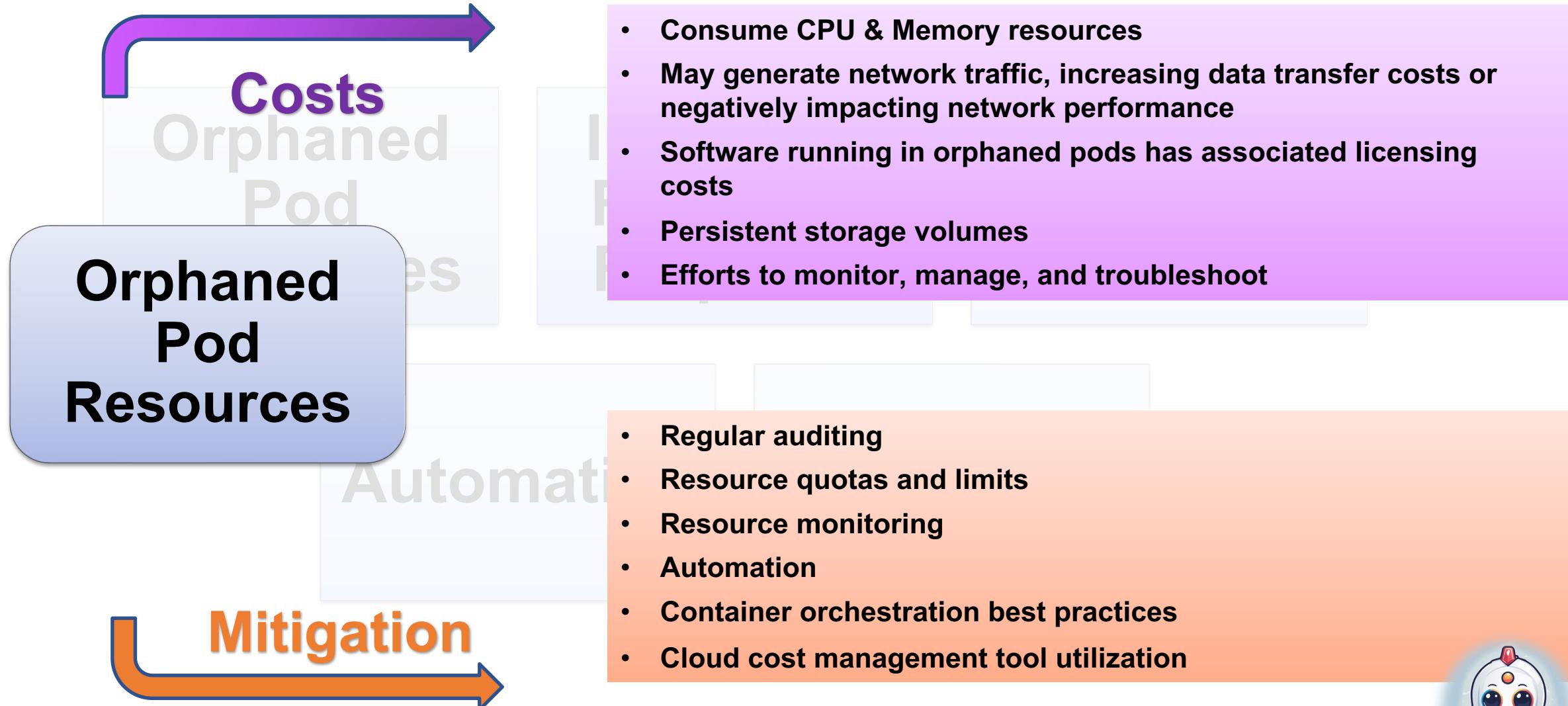
**Inefficient
Resource
Requests**

**Idle
Resources**

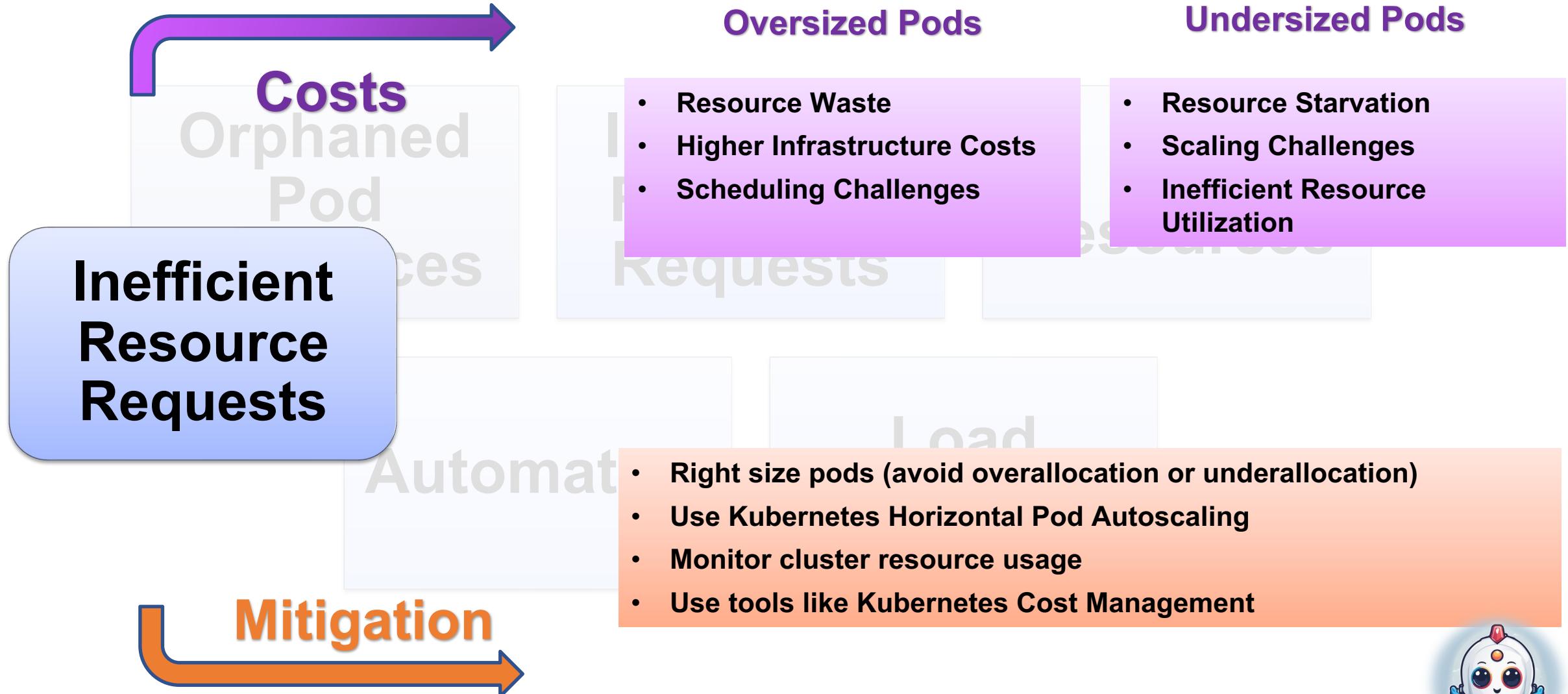
Automation

**Load
Balancers**

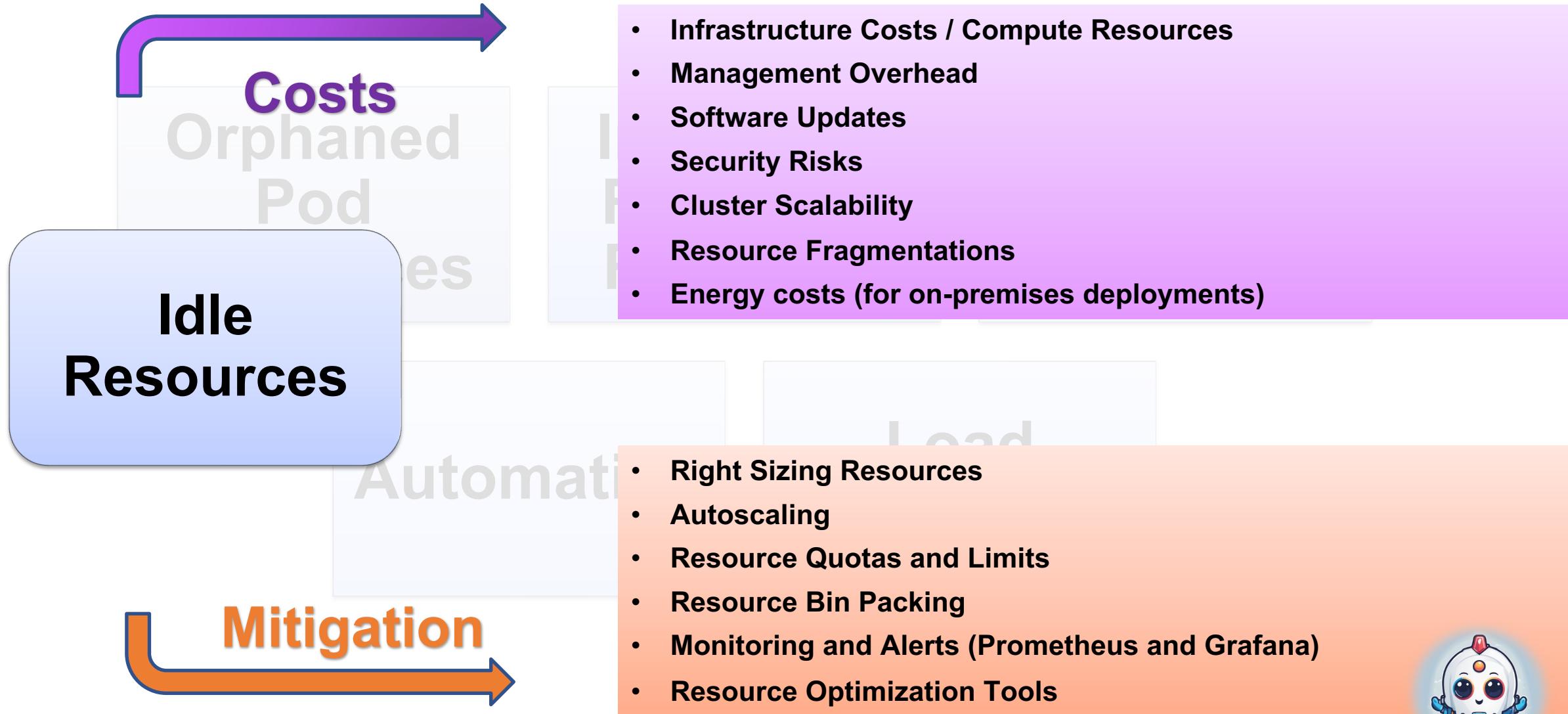
Hidden Kubernetes Cost Components



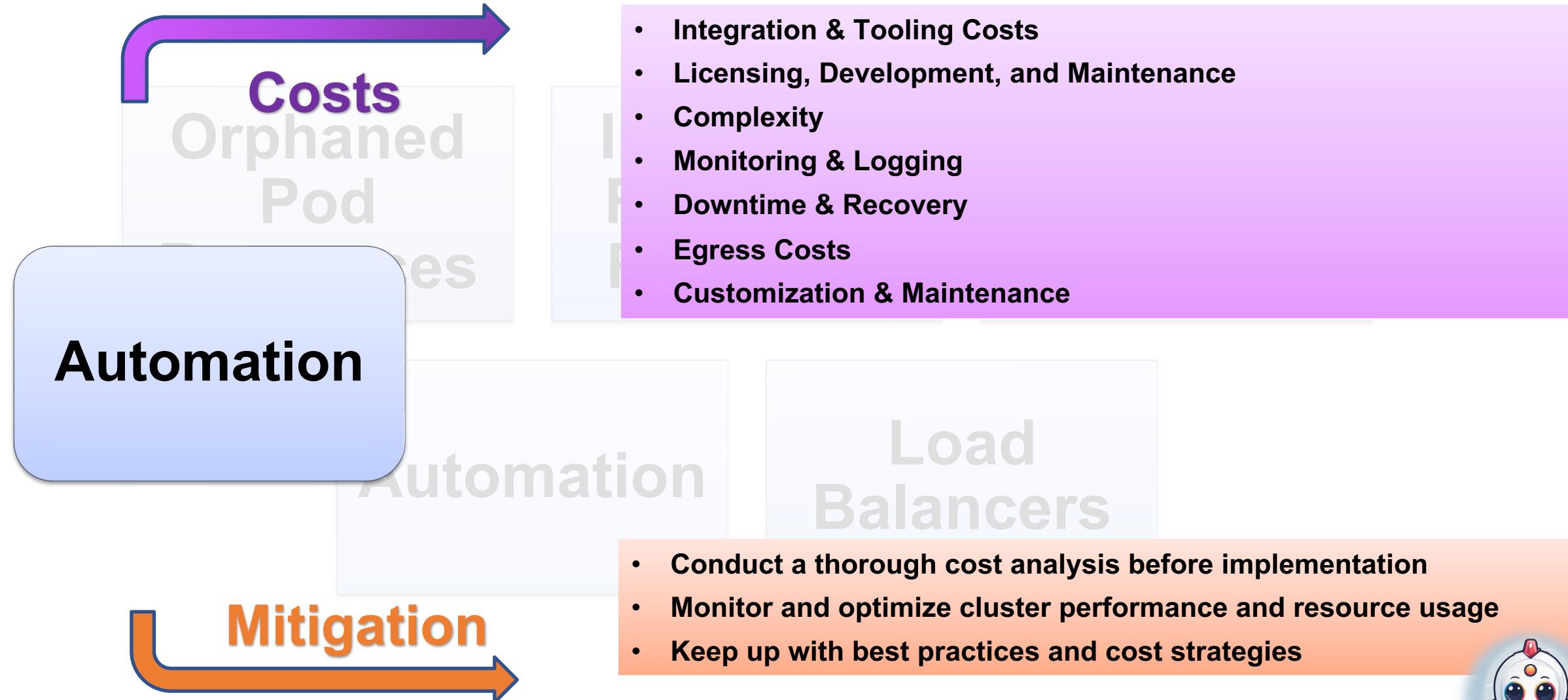
Hidden Kubernetes Cost Components



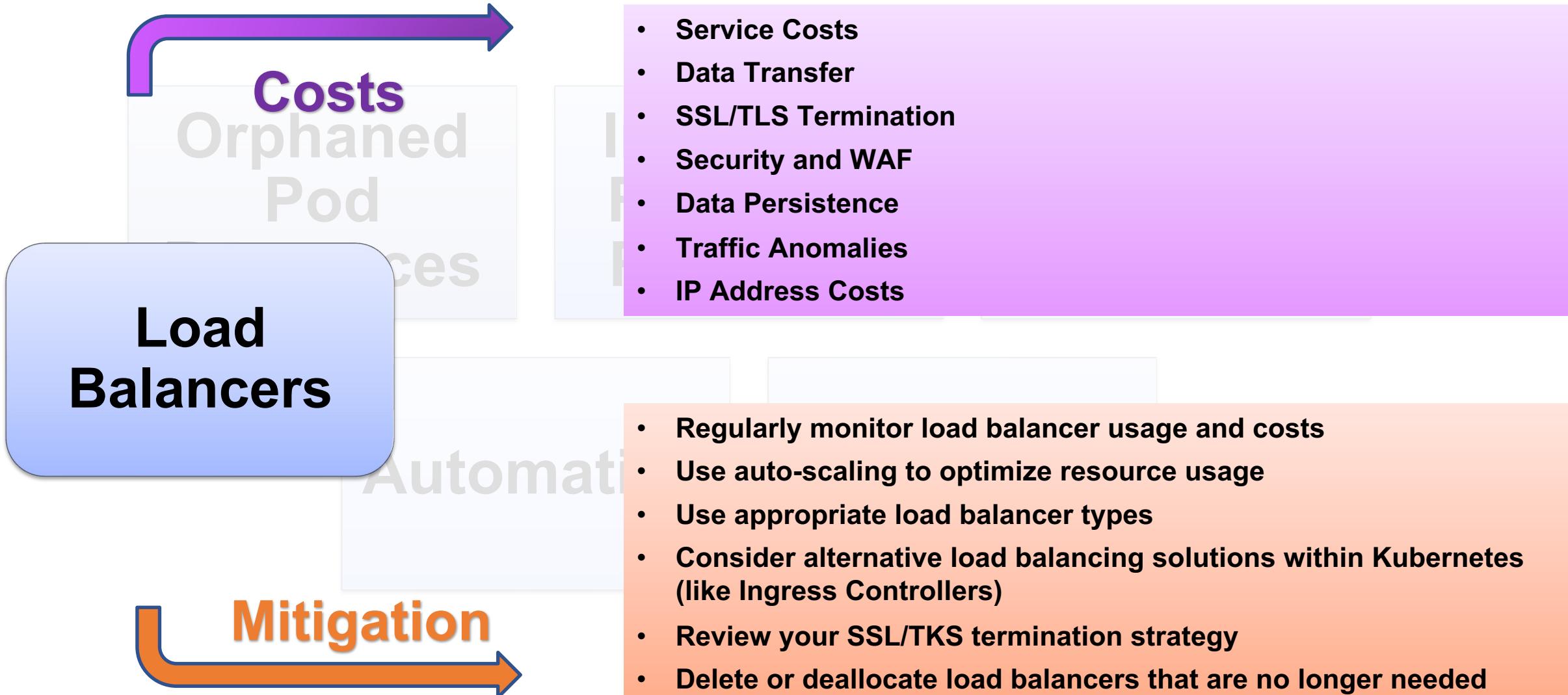
Hidden Kubernetes Cost Components



Hidden Kubernetes Cost Components



Hidden Kubernetes Cost Components



Trap your ghosts by:

- **Rightsizing** your resources
- **Implementing** efficient scaling strategies
- **Using** cost monitoring and optimization tools
- **Considering** long-term implications of architectural decisions



Questions?

Scan QR code to
contact **Rachel Leekin**



Scan QR code to
contact **Antoinette Mills**





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