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Kubernetes 1.33

IN-PLACE POD RESIZE

THE DEMO DAY NIGHTMARE

📊 Quarterly treasury solution demo approaching

🔥 CPU throttling during preparation

⏰ Business analysts and PMs under pressure

💥 Resource adjustment = Pod restart = Downtime

📉 Demo preparation disrupted, time wasted

This is what our SRE team used to face until K8s 1.33

OLD WAY VS NEW WAY

Old

❌ Pod restart required

❌ Connection drops

❌ Service interruption

❌ State loss risk

New

✅ Live resource updates

✅ Zero downtime

✅ Connections preserved

✅ State maintained

THE MAGIC CONFIGURATION

To enable in-place pod resize

```
# Critical: resizePolicy configuration for in-place resize

resizePolicy:
- resourceName: cpu
  restartPolicy: NotRequired  # Live CPU adjustments
- resourceName: memory
  restartPolicy: NotRequired # Live memory adjustments
```

TRIPLE SCALING STRATEGY

HPA (Horizontal)

📊 More pods for load

Scale: 2 → 10 pods

VPA (Vertical) New!

📏 More resources per pod

Scale: 1 CPU → 4 CPU live

CA (Cluster)

🌐 More nodes for cluster capacity

Scale: 3 → 20 nodes

DEMO USE CASE IMPACT

🏛️ Demo Preparation: scale up for complex workflows

📊 CPU boost for complex real time computations

💰 Cost Optimization: Scale down between demo sessions

🔄 Stakeholder presentations: Uninterrupted demo flow

PRODUCTION READY GOVERNANCE

Layer 1: ResourceQuotas ➜ Namespace budget control

Layer 2: LimitRanges ➜ Individual container limits

Layer 3: **Kyverno** Policies ➜ Automated governance
➜ Policy-as-Code enforcement

⚠️ **NEVER enable without proper governance!**

KYVERNO

Your governance autopilot

- ✅ **Auto-creates quotas** for new namespaces

- ✅ **Validates resize operations** in real-time

- ✅ **Prevents resource abuse** automatically

- ✅ **Scales governance** to 100+ namespaces

- ✅ **Policy-as-Code** prevents human errors

COMPLETE TECHNICAL DEMO ON GITHUB

🤖 **Automated scripts** (deploy/test/monitor)

🛡️ Multi-layer governance setup (Kyverno policies)

📊 **Real-time** validation monitoring dashboard

🚀 Autoscaling integration

Demo flow: Deploy ➡ Scale UP ➡ Scale DOWN ➡ Validate ➡ Governance

Link: https://bit.ly/4mF1P2Q