Fairwinds

Kubernetes Security and Compliance Done Right

Do's and Don'ts of Kubernetes Security

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Your Speaker

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Andy got his start in tech doing IT work while waiting tables in college. Later he took his first SRE role at ReadyTalk back before the video conferencing revolution gave us Zoom and other contenders.

Today Andy leads Research and Development at Fairwinds exploring new nooks and crannies of the Kubernetes ecosystem and pressing the limits of what's possible with automation in a fast-moving technology like Kubernetes.

Kubernetes Done Right

Fairwinds provides software and services to help companies ship cloud native applications faster, more cost effectively and with less risk.

- **Software** - policy-driven configuration validation of containers and Kubernetes from CI/CD through production.
- **Open source** - open source projects to address problems that exist with Kubernetes.
- **Services** - expertly managed cloud-native infrastructure leveraging containers and Kubernetes.

Don't: Expect security by default using native controls

Do: Use Pod Security Context Options

```yaml
spec:
  securityContext:
    runAsUser: 1000
  containers:
  - name: sec-ctx-demo-2
    image: gcr.io/google-samples/node-hello:1.0
    securityContext:
      runAsUser: 2000
      allowPrivilegeEscalation: false
      readOnlyRootFilesystem: false
        capabilities:
          drop: ["all"]
          add: ["NET_BIND_SERVICE"]
```

Don't: Grant access to the host node

Do: Set up Network Policy

Don't: Run containers with known vulnerabilities

Do: Separate <u>Node vs. Pod</u> Cloud Access

Do: Create a strategy for
role based access control (RBAC)

Do: Use an admission controller to enforce security policies

Security is Now Everyone's Job

69%

Reported a Kubernetes misconfiguration incident

Roughly 7 out of 10 companies reported a misconfiguration incident in their Kubernetes environment over the last 12 months -- making it the top Kubernetes security issue.

"Kubernetes by the numbers: 12 stats to see", July 2020, EnterprisersProject.com
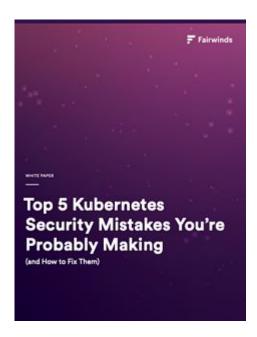https://enterprisersproject.com/article/2020/6/kubernetes-statistics-2020

Fairwinds Insights

Kubernetes security, policy and governance software, from CI/CD through production

- Shift left security
- Automate Kube and container security
- Enforce policy
- Govern compliance
- Optimize compute resources

5 Kubernetes Security Mistakes You Are Probably Making

Get started on improving your Kubernetes security.

Here are a few of the common mistakes:

- Granting access to the host node
- Assuming operations is aligned with security
- Running containers with known vulnerabilities