Container Security Best Practices

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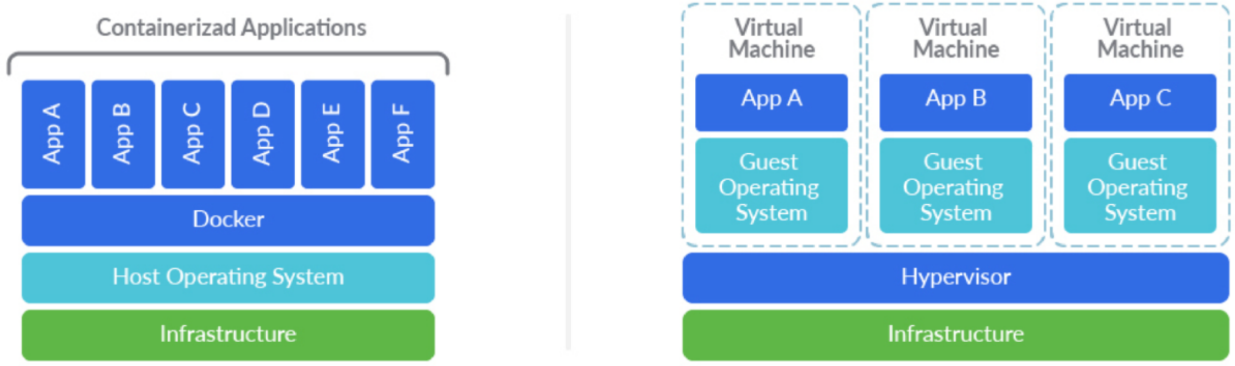
Agenda

- Container Basics
- Securing Container Host
- Securing Container Images
- Monitoring Containers
- Tools
- Demo

Basics

- What are containers?
- Difference between VM and Container
- Building blocks of container
- Security challenges



Container Host Security

- Keep everything up to date - Host OS + Docker Enginee
- Do not expose Docker Daemon Socket
- Run Docker in Rootless Mode
- Avoid privileged containers
- Limit container resources
- Limit container capabilities
- Mount Containers’ Root Filesystems as Read-Only

Container Image Security

- Scan container images for vulnerabilitites.
- Use minimal base image.
- Don't leak sensitive info to container images.
- Use multi stage builds
- Use fixed tags for immutability
- Create a USER for the container image

Monitoring Containers

- Highly dynamic and ephemeral
- Pose visibility challenges with traditional monitoring solutions
- Use centralized location for storing metrics and logs
- Monitoring Tools
    - Prometheus & Grafana
    - Sematext
    - Solarwinds
    - Dynatrace
    - Datadog

Tools

- Docker Bench for Security
- Trivy
- Semgrep

Demo

References

- https://cheatsheetseries.owasp.org/cheatsheets/Docker_Security_Cheat_Sheet.html
- https://blog.aquasec.com/docker-security-best-practices
- https://sysdig.com/blog/dockerfile-best-practices/

Q & A

Thank you!