Nephio Security SIG

Proposal

General Philosophy

- Holistic: Secure all stages [dev, release, deploy, runtime]
- Focus on security intent than on tooling
- Zero Trust Enablement
- Policy based framework
- Frictionless Security
  - Fail the build not the release

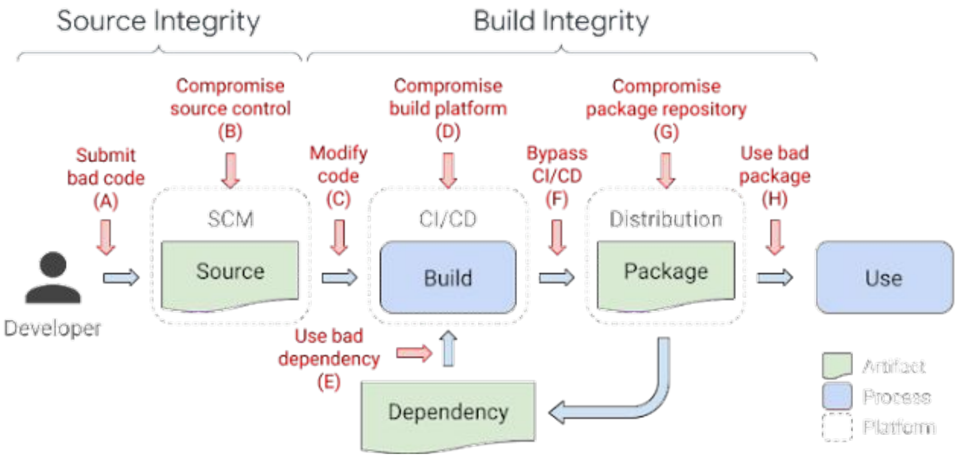
Opportunity: Differentiate Nephio as a “Secure Telco Automation Framework”

Dev stage: Project/Repo/Code security

- OSSF checklist/score
- Security automation for new repos
  - Using org-level common github actions
- Security Review Checklist
  - Approving CI execution for PRs from external contributors
- SAST/DAST tools integration
  - Check LF for access to licensed tools (FOSSA, Synk)
- Security Advisories/Policy in place
  - Provide external folks to report a security issue

Release stage: Supply Chain Security

- Adhere to SLSA framework
  - Processes need to be set with automation
- Image signing & verification
- Automate release workflows with signed images
- Vulnerability scans in release pipelines



Deploy Stage: Deployment Security

- Deployment best practices
  - Use of non-privileged workloads
  - Process for defining how to enable privileged workload if need be
  - Mandatory resource request specification
- Use of Admission Controllers and CD best practices
- Policy Framework

Runtime Security

- Implications of Identity in multi-cluster deployments
  - Why would it be important? Consider ZTNA for NFs
  - What solution to use? SPIFFE?
- Automating hardening controls
  - ENISA
  - MITRE FiGHT
- API Security
- Secrets Management
- Risk assessment tools
- Zero Trust Enablement
- Preparing blueprints and automating deployment
  - Policy Framework

5G specific security

- 3GPP TS 33.501
- ENISA
- MITRE FiGHT
- Securing RIC
- Network Slice Security

Multi-cluster security orchestration

- Use of security operator
- K8s native policy framework

Security Committee

- Manage Security policies and advisories
- Managing Incident Responses

TODOs

- Consider compliance, auditing requirements
- Zero Trust enablement
- Observability & Monitoring
- 5G specific threat vectors
- Identities & Entitlements management
- Performing Threat Modelling