Three Best Practices That Will Improve Your Container Development Experience

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arm
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We use different base images for similar purposes.

We don’t exploit commonalities across projects.

There is little re-use.
Base Image Versions

- **Node**: 5 versions
- **OpenJDK**: 9 versions
- **Python**: 13 versions
Best Practice 1

Exploit commonalities across projects; use common base images.
Common Base Images

Tree stored in ONAP’s common repository (e.g. DockerHub)

- onap/base
- onap/base-python
- onap/base-java
- onap/multivim
- onap/oof
- onap/dcae
Base Image Life Cycle

**Proposed**
PTLs submit proposals for addition of common base images.

**Under Review**
PTLs and SecCom review proposal.

**Adopted**
PTLs and SecCom decide, by simple majority, to accept the proposed change.

**Maintained**
PTLs or SecCom submit proposals for emergency updates.

**Retired**
PTLs or SecCom submit a request to remove a base image, or image version.

- Image is added to “ONAP Normative Base Images.”
- PTLs and SecCom decide, by simple majority, to retire the image.
Benefits of Best Practice 1

Re-use stable base images across projects.

Have a common starting point for new services.

One less thing projects have to maintain and worry about.
Challenge

Base images are not vetted by SecCom.

We don’t apply security best practices and guidelines in a scalable manner.

We typically react to security issues.
Best Practice 2

Rely on the SecCom to vet ONAP common base images.
Benefits of Best Practice 2

SecCom will be able to proactively assess the images.

Security best practices and guidelines can be consistently applied across all base images.

Scale the adoption of SecCom recommendations.
Challenge

Upstream project updates have caused us pain.

Unexpected changes could “break the build.”

We can’t prevent these events.
Best Practice 3

Mitigate the impact of changes on the OS distribution; setup a stable OS mirror.
Stable ONAP-Managed OS Mirror

OS mirror remains stable during development cycles.

Upstream OS distribution

OS Mirror

Libraries/Dependencies

Project A

Project B

Project C

Access to OS mirror that won’t break the build
Benefits of Best Practice 3

Ensure OS stability during development cycles.

Don’t break the build.

Increase re-usability.
Cost of adoption

Incrementally Low

Incrementally Low

Very Low
Summary of Benefits

- Higher Re-Usability
- Increased Security
- Greater Stability
Summary of Benefits

Time Savings
Thank you
### Call to Action

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<thead>
<tr>
<th></th>
<th>PTLs and Teams</th>
<th>El Alto</th>
<th>Frankfurt….</th>
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<tbody>
<tr>
<td>1</td>
<td>Avoid surprises, rely on the OS mirror</td>
<td>Identify your needs/make your case</td>
<td>Start using ‘common base images’</td>
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<tr>
<td>2</td>
<td>TSC</td>
<td>Approve the ‘common base images’ governance model and strategy now.</td>
<td>Leadership. Encourage teams to increase re-usability.</td>
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<td>3</td>
<td>LFN</td>
<td>Deploy the OS mirror</td>
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## Process and Stakeholders

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<tr>
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<th>PTLs</th>
<th>SecCom</th>
<th>TSC</th>
<th>CIA</th>
<th>LF</th>
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<tr>
<td><strong>In between releases And before M1</strong></td>
<td>- Submit Add, Update, Remove requests (via JIRA issues).</td>
<td>- Reviews and votes on proposed changes.</td>
<td>- Reviews and provides input on state of common images to seek alignment with ONAP-wide initiatives/goals.</td>
<td>- Facilitates image update requests.</td>
<td>- Helps coordinates with LFN infrastructure team via helpdesk tickets.</td>
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<td>- Review and vote on proposed changes, including new versions (major.minor.patch).</td>
<td>- Proposes changes and adoption of security best practices concerning container images and versions.</td>
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<td>- Updates and locks mirror/repo.</td>
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<td><strong>M1</strong></td>
<td>- Finalize common image updates via consensus.</td>
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<td><strong>M2-Release</strong></td>
<td>- Adopt common base images</td>
<td>- Monitors ONAP common images.</td>
<td>- Develops common base images</td>
<td>- Applies emergency mirror/repo updates.</td>
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<td>- Requests updates to deal with critical security issues.</td>
<td>- Proposes applicable best practices.</td>
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