20 YEARS ANNIVERSARY

DevSecOps & Deployment Options



Quoc An Ha
DevOps Engineer

be informed

What is DevSecOps?

- **Dev**elopment
- **Sec**urity
- **Op**eration**s**



be informed

© Be Informed 2026 | All rights reserved worldwide

Agenda

1 Development Pipeline

2 Deployment Options

3 Your environment, your tools, our help

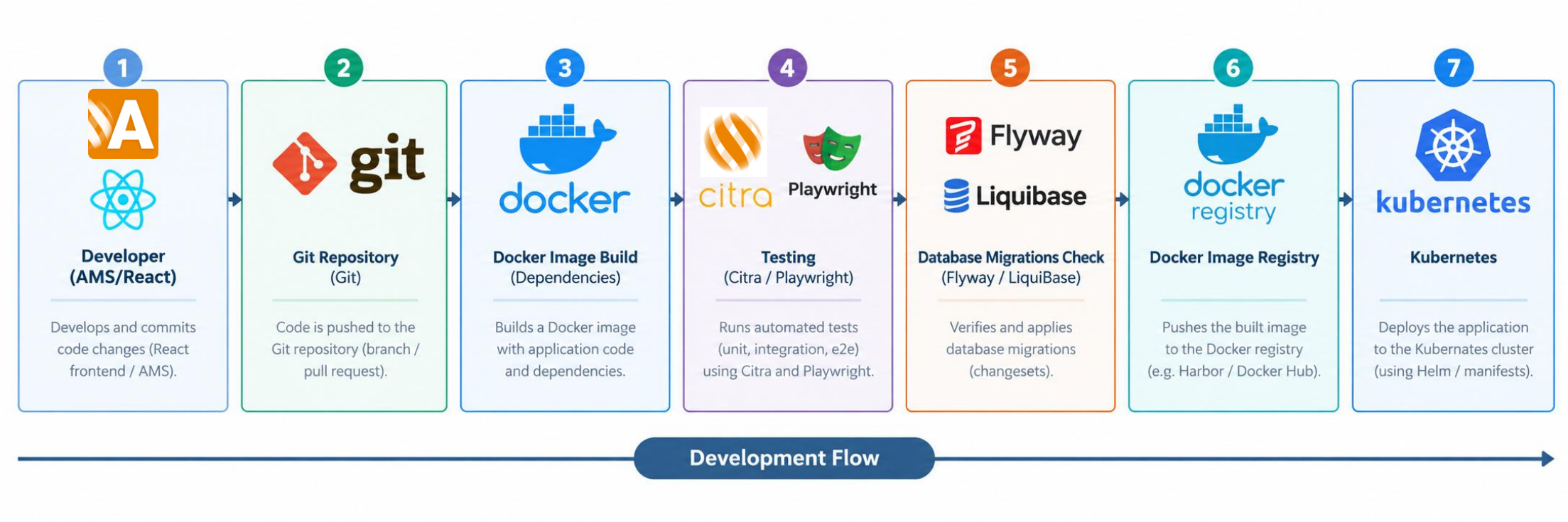
4 Summary

5 Questions

© Be Informed 2026 | All rights reserved worldwide

Development Pipeline

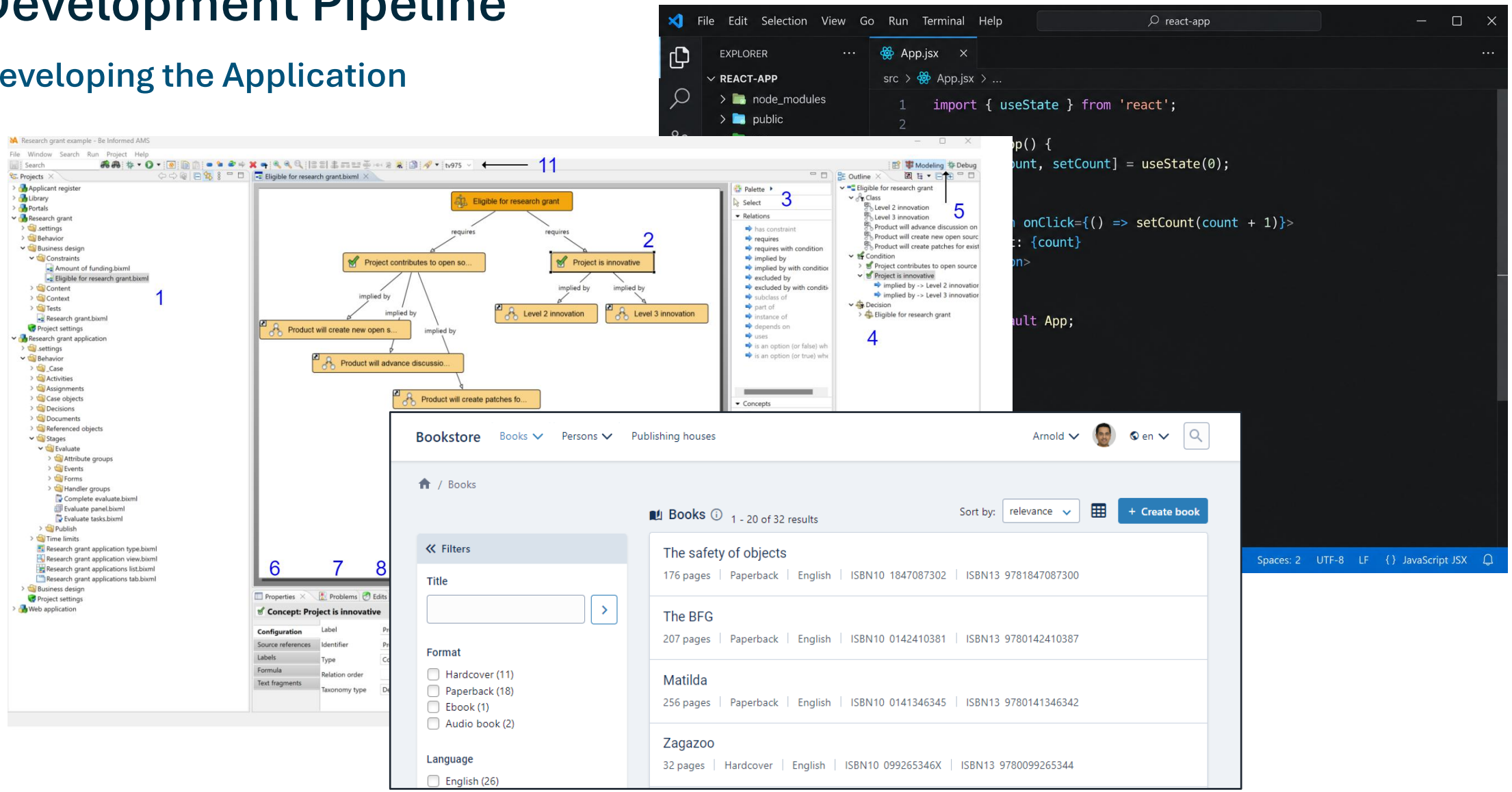
How does a change reach a running application safely?



© Be Informed 2024 | All rights reserved worldwide

Development Pipeline

Developing the Application



© Be Informed 2024 | All rights reserved worldwide

Development Pipeline

Collaboration: the switch from SVN to Git

Subversion

- Centralised
- Pessimistic locking
- Straightforward workflow
- Branches were difficult

Git

- Decentralised
- No locking
- Merging strategy
- Branches easy

“I was comfortable with SVN and wasn’t sure Git would be worth the switch. Now that we can work on separate branches and merge our changes, I wouldn’t want to go back.”



“With SVN, we locked a model before editing it because merging BIXML was so difficult. Git lets us work in parallel, and the merge tools make that practical.”

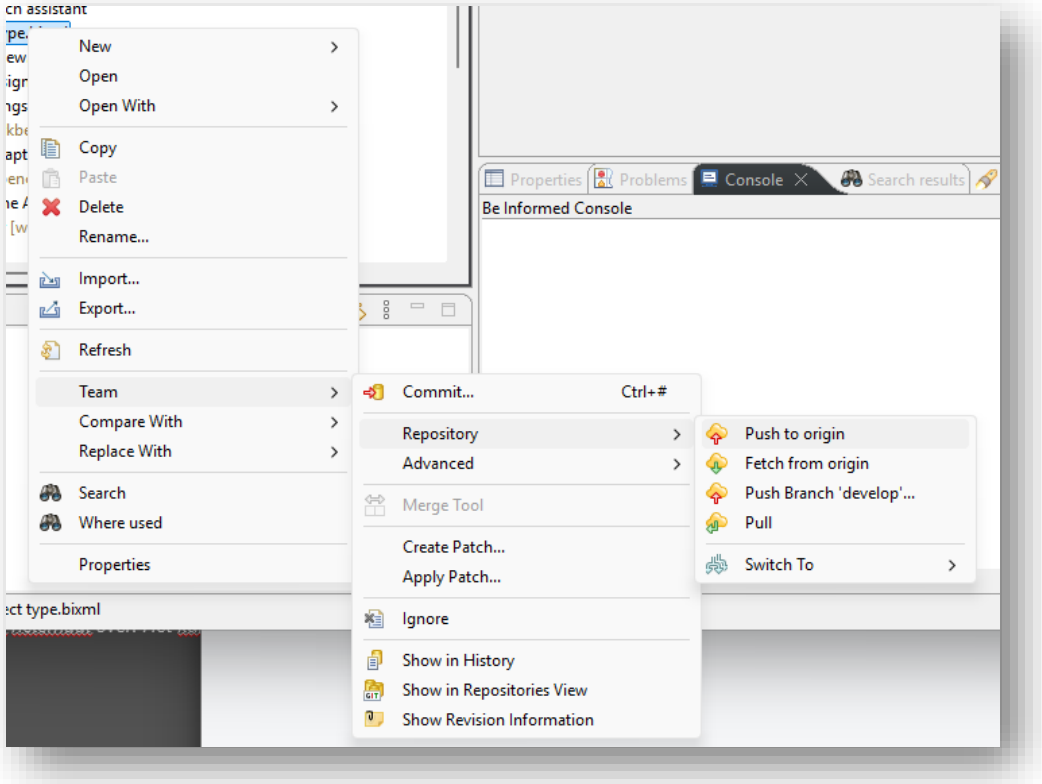
“Git takes some getting used to, but it gives us much more freedom. We can make a change, test it and bring it together with other work far more quickly.”

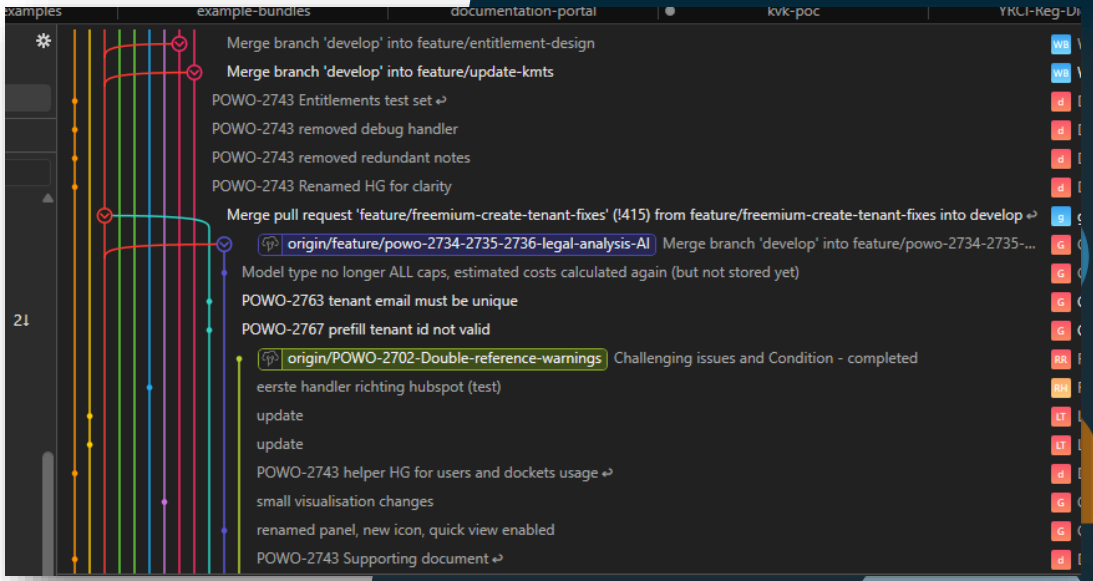
be informed

© Be Informed 2026 | All rights reserved worldwide

Development Pipeline

Collaboration: using Git






```
C:\Users\r.heller>git
usage: git [-v | --version] [-h | --help] [-C <path>] [-c <name>=<value>]
           [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
           [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--no-lazy-fetch]
           [--no-optional-locks] [--no-advice] [--bare] [--git-dir=<path>]
           [--work-tree=<path>] [--namespace=<name>] [--config-env=<name>=<envvar>]
           <command> [<args>]

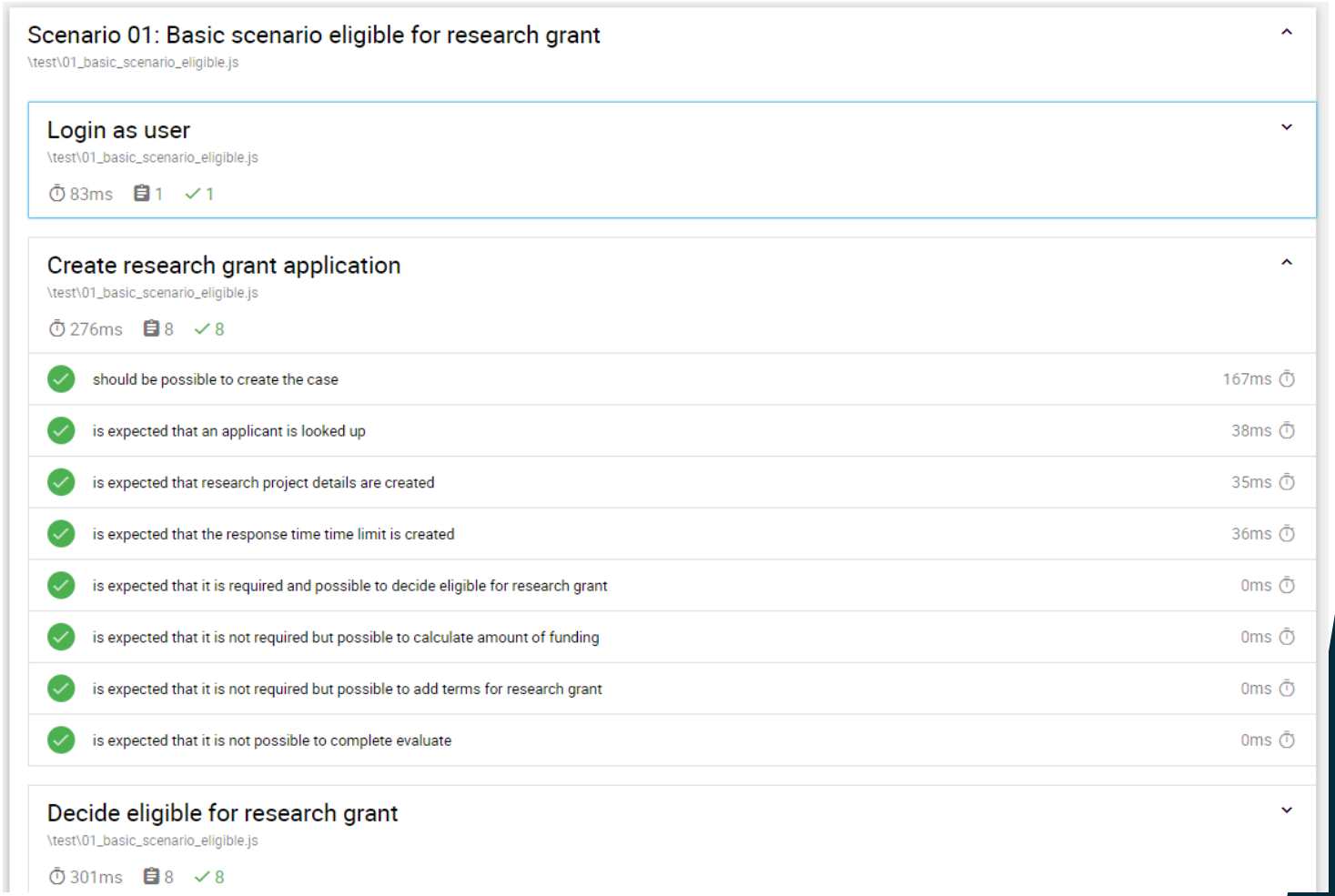
These are common Git commands used in various situations:
```

be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Testing your changes: Citra



be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Testing your changes: Playwright

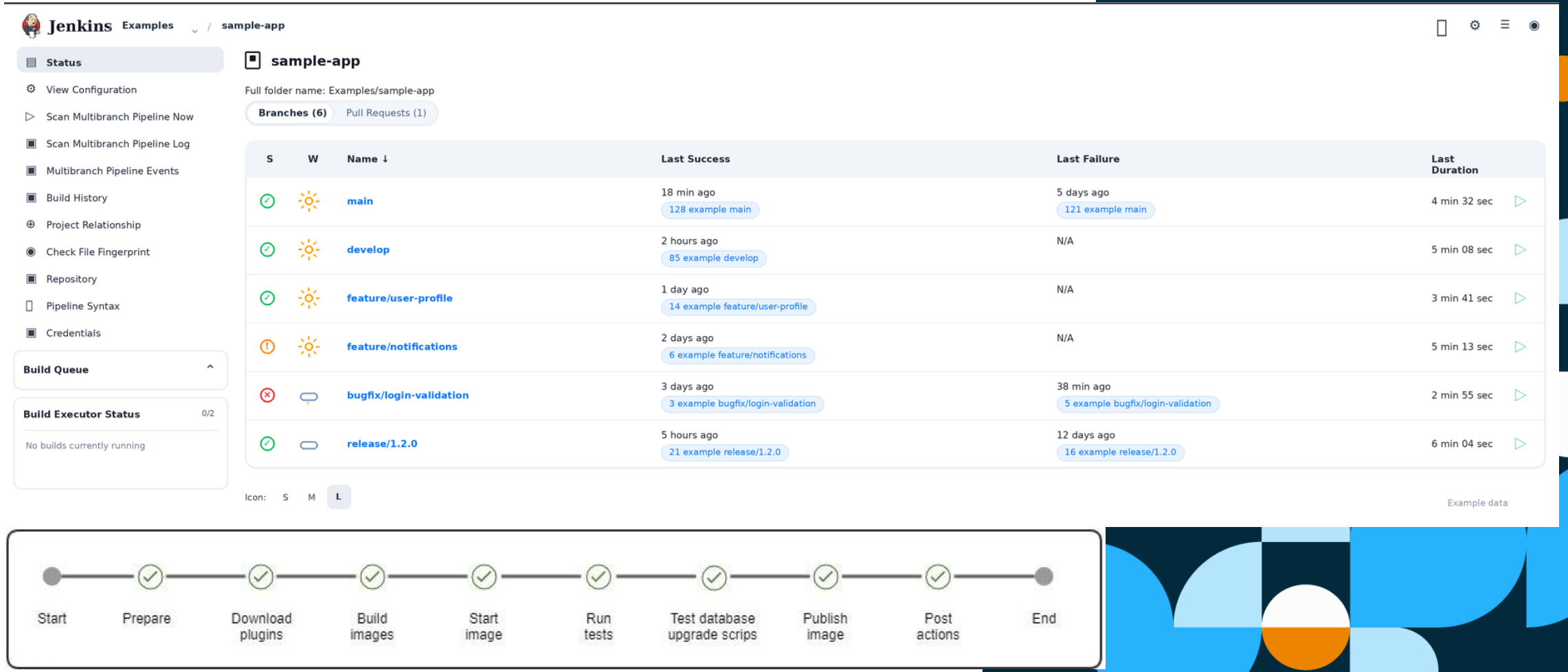


be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Testing your changes: in the cloud



be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Database Migration Check

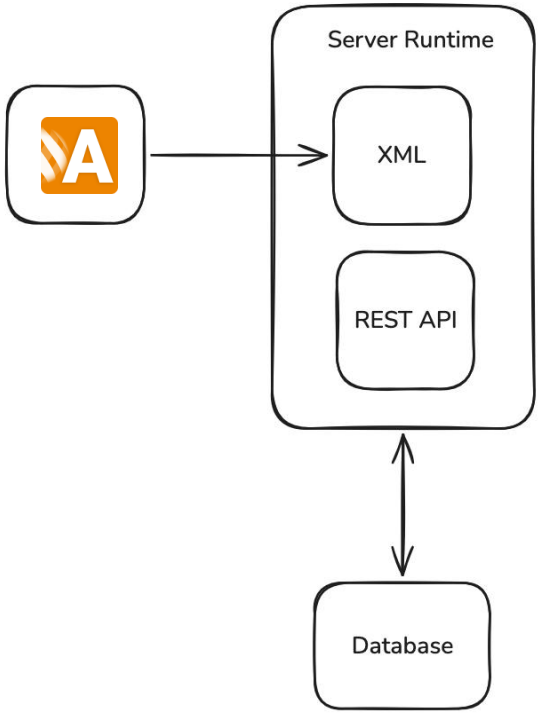


be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

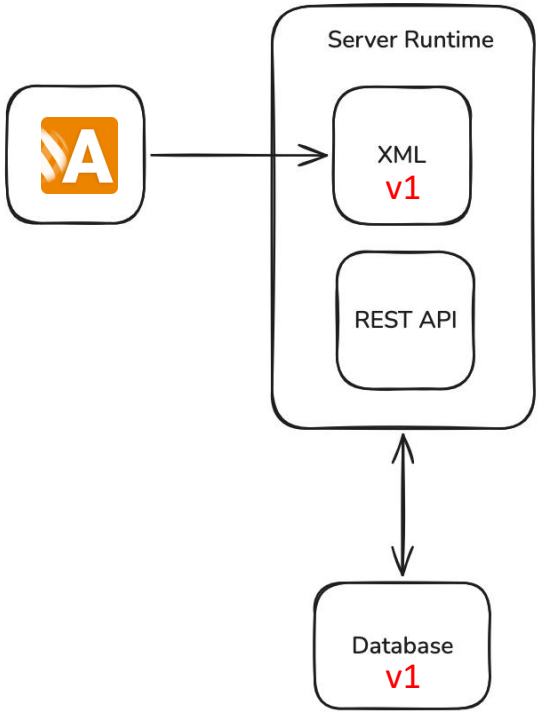
Database Migration Check



© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

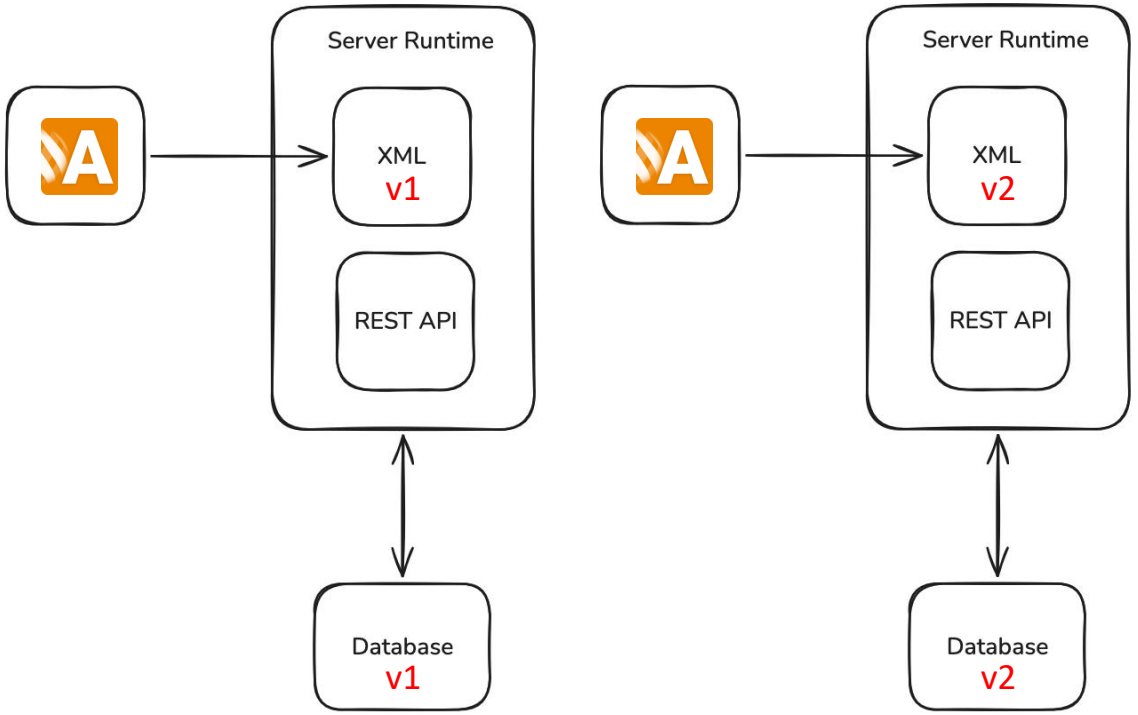
Database Migration Check



© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Database Migration Check

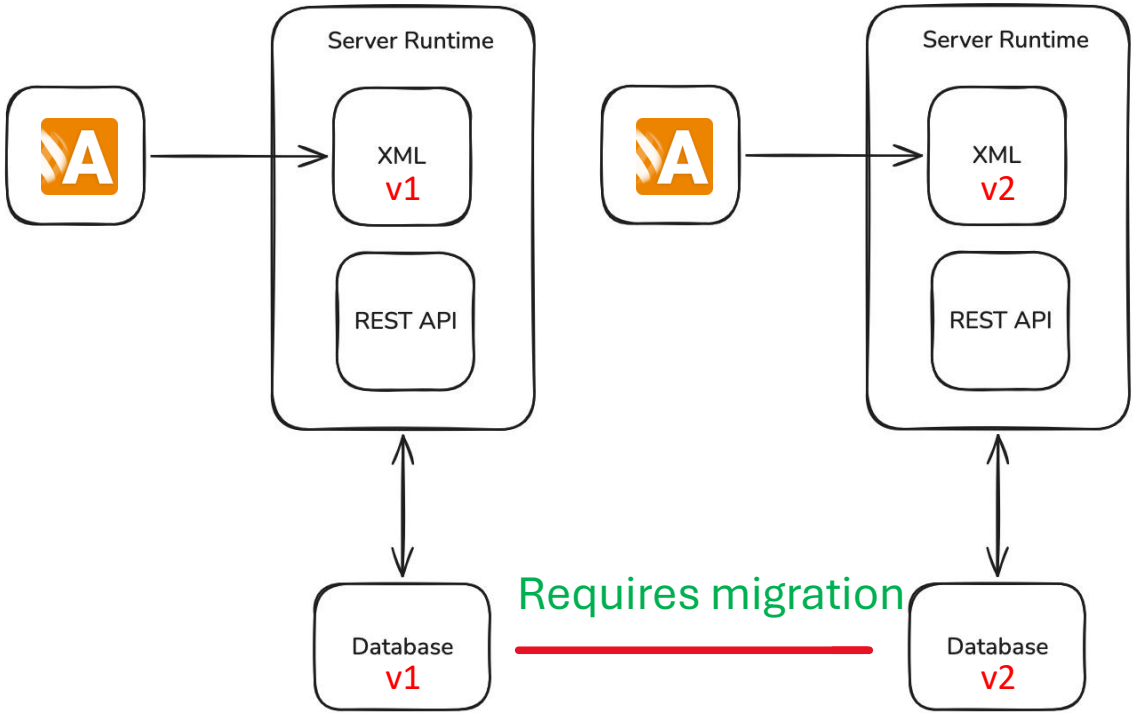


be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

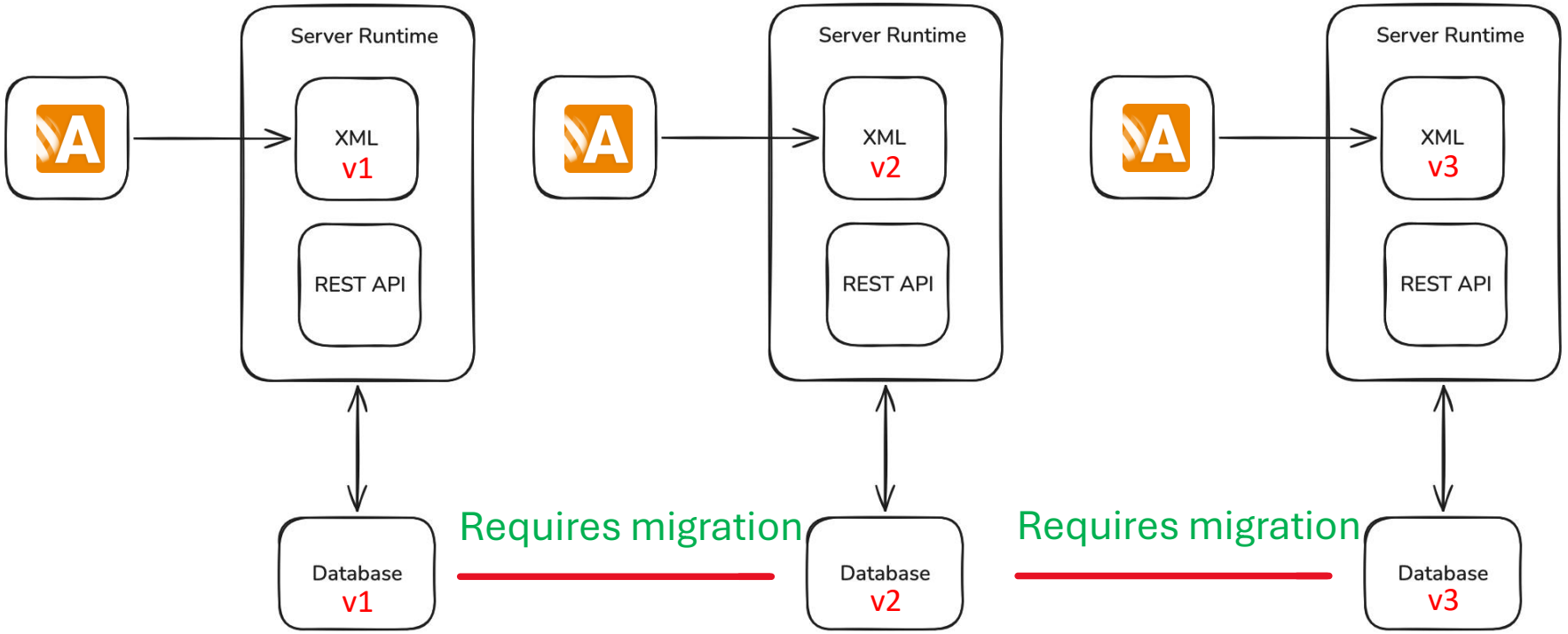
Database Migration Check



© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Database Migration Check

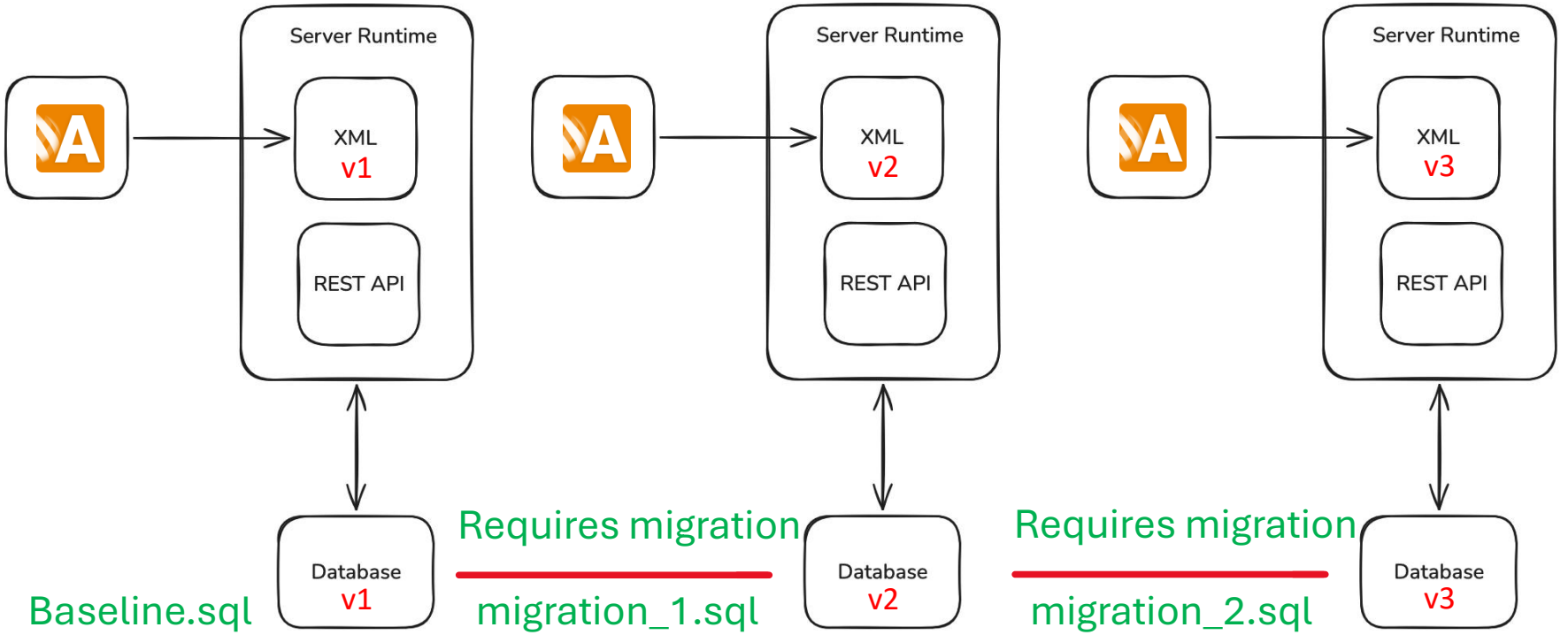


be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Database Migration Check

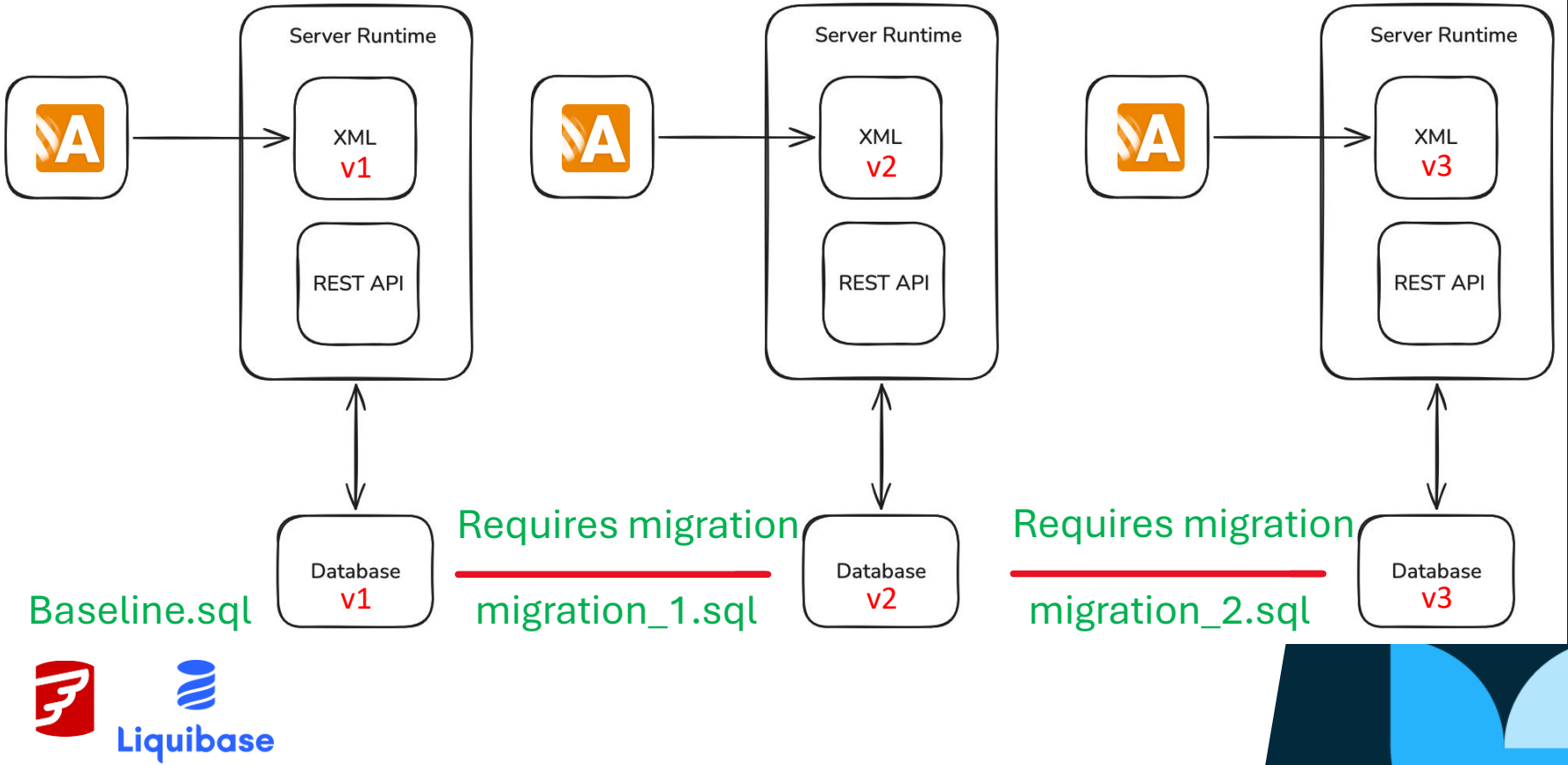


be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

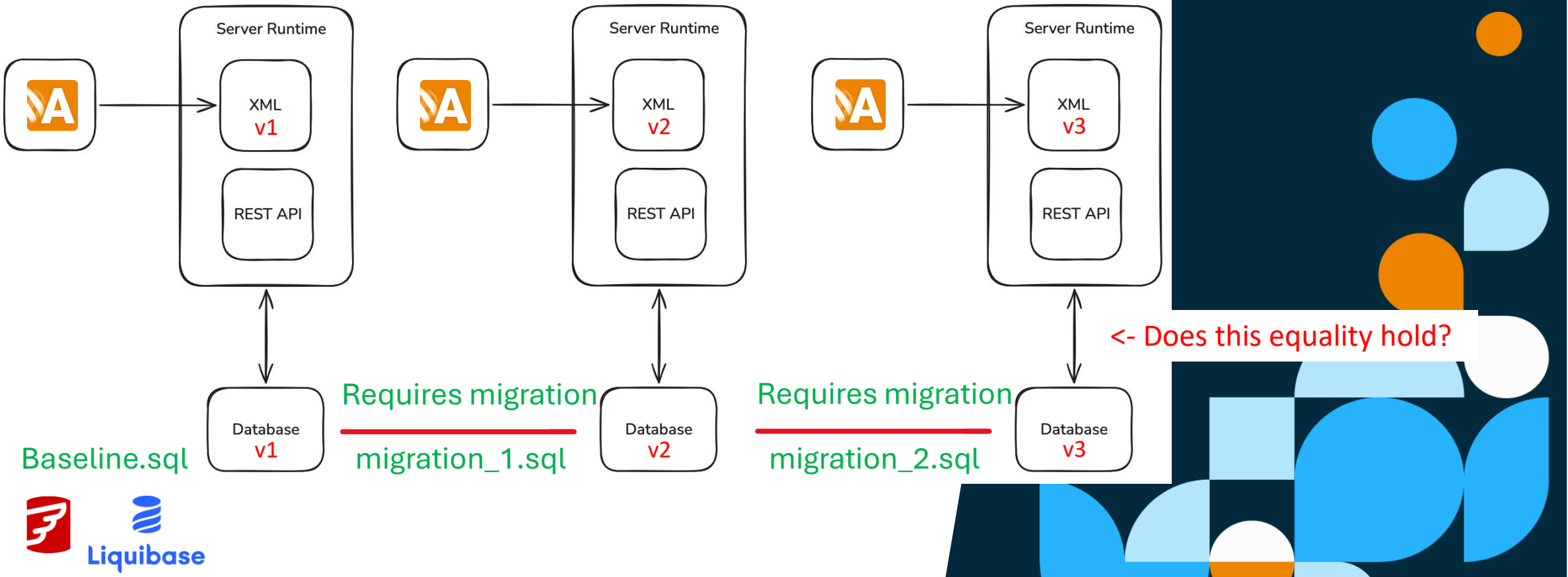
Database Migration Check



© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Database Migration Check



be informed

© Be Informed 2026 | All rights reserved worldwide

Building and testing a change

Database Migration Check

Database compare results

Database 1: jdbc:sqlserver://db:1433;DatabaseName=beinformed
Database 2: jdbc:sqlserver://db-migrations:1433;DatabaseName=beinformed

Not within database 1

Table 'BUNDLE_PROPERTIES' does not contain column 'VENDOR'
Table 'BUSINESSCAPABILITY_PROPERTIES'
Table 'DATAELEMENT'
Table 'DATAOBJECT_PROPERTIES'
Table 'DUTY_PROPERTIES' does not contain column 'DUTYCOMPONENTS'
Table 'FIBFMODEL_PROPERTIES'
Table 'FLINTMODEL_PROPERTIES'
Table 'SERVICEACTIVITY_PROPERTIES'
Table 'SERVICEAREA_PROPERTIES'
Table 'SERVICEFUNCTION_PROPERTIES'
View 'V_SOURCE_REFERENCES' does not contain column 'CONTEXTAFTER'
View 'V_SOURCE_REFERENCES' does not contain column 'CONTEXTBEFORE'
View 'V_SOURCE_REFERENCES' does not contain column 'SOURCECASEID'

Not within database 2

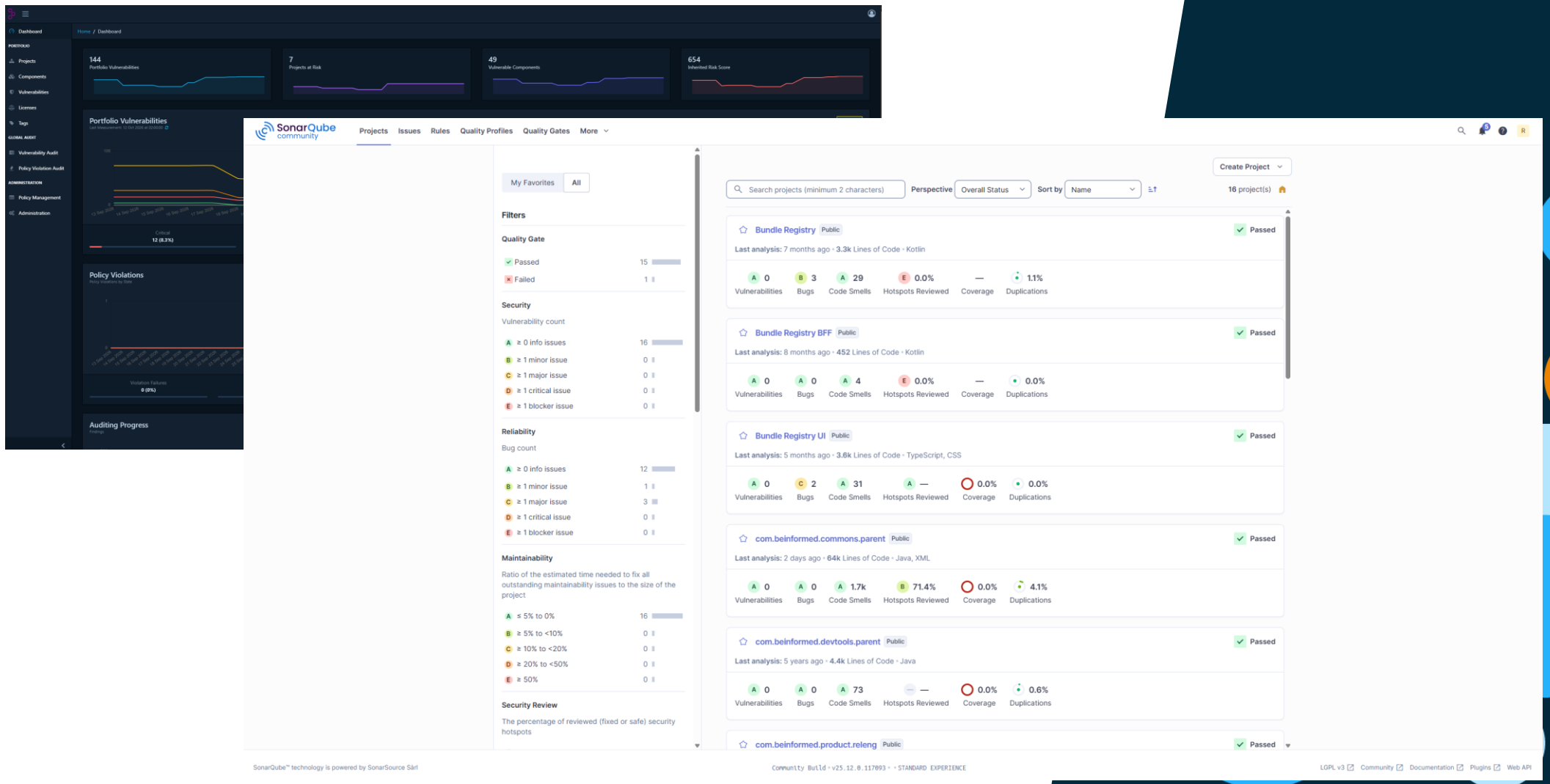
Table 'ANNOTATION' does not contain column 'CASEID'
Table 'TENANT_PROPERTIES'
View 'TENANTUSERS'
View 'V_DOCKET_ANNOTATIONS'
View 'V_SOURCE_REFERENCES' does not contain column 'DOCKETCASEID'
View 'V_SOURCE_REFERENCES' does not contain column 'SOURCERECORDID'
View 'V_TENANTS'

Differences in table elements

Table	Type	Element	Element
DOCKETPROPERTIES	column	Column [name=DSL, type=NVARCHAR, size=5, nullable=1]	Column [name=DSL, type=NVARCHAR, size=25, nullable=1]
AGENT_PROPERTIES	column	Column [name=TENANTID, type=BIGINT, size=19, nullable=0]	Column [name=TENANTID, type=BIGINT, size=19, nullable=1]
AGENT_PROPERTIES	column	Column [name=DOCKETID, type=BIGINT, size=19, nullable=0]	Column [name=DOCKETID, type=BIGINT, size=19, nullable=1]
DOCKETPROPERTIES	column	Column [name=DOCKETTYPE, type=NVARCHAR, size=17, nullable=1]	Column [name=DOCKETTYPE, type=NVARCHAR, size=31, nullable=1]
PROJECT_PROPERTIES	column	Column [name=DSL, type=NVARCHAR, size=5, nullable=1]	Column [name=DSL, type=NVARCHAR, size=25, nullable=1]
V_SOURCE_REFERENCES	column	Column [name=PROJECTCASEID, type=NUMERIC, size=19, nullable=0]	Column [name=PROJECTCASEID, type=NUMERIC, size=19, nullable=1]
FACT_PROPERTIES	column	Column [name=TENANTID, type=BIGINT, size=19, nullable=0]	Column [name=TENANTID, type=BIGINT, size=19, nullable=1]
V_SOURCE_REFERENCES	column	Column [name=SOURCETYPE, type=NVARCHAR, size=1024, nullable=0]	Column [name=SOURCETYPE, type=NVARCHAR, size=1024, nullable=1]
DUTY_PROPERTIES	column	Column [name=TENANTID, type=BIGINT, size=19, nullable=0]	Column [name=TENANTID, type=BIGINT, size=19, nullable=1]
ACTION_PROPERTIES	column	Column [name=DOCKETID, type=BIGINT, size=19, nullable=0]	Column [name=DOCKETID, type=BIGINT, size=19, nullable=1]
ACTION_PROPERTIES	column	Column [name=TENANTID, type=BIGINT, size=19, nullable=0]	Column [name=TENANTID, type=BIGINT, size=19, nullable=1]
FACT_PROPERTIES	column	Column [name=DOCKETID, type=BIGINT, size=19, nullable=0]	Column [name=DOCKETID, type=BIGINT, size=19, nullable=1]
ACT_PROPERTIES	column	Column [name=DOCKETID, type=BIGINT, size=19, nullable=0]	Column [name=DOCKETID, type=BIGINT, size=19, nullable=1]
ACT_PROPERTIES	column	Column [name=TENANTID, type=BIGINT, size=19, nullable=0]	Column [name=TENANTID, type=BIGINT, size=19, nullable=1]

© Be Informed 2026 | All rights reserved worldwide

Security



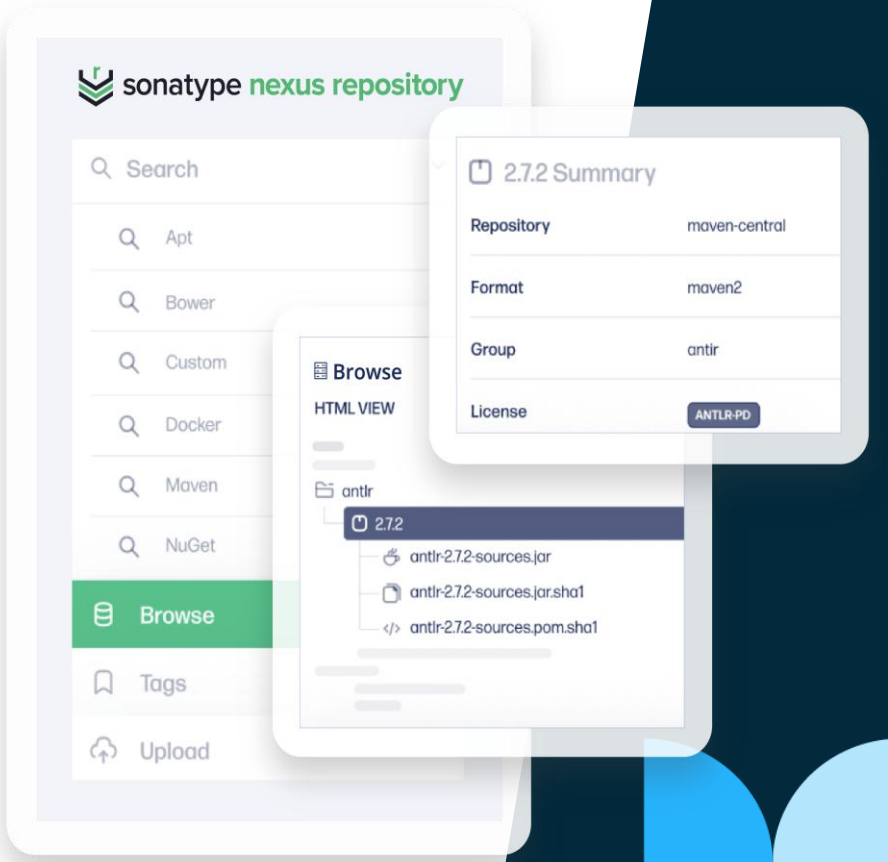
be informed

© Be Informed 2026 | All rights reserved worldwide

Publishing the image

Final deployment tasks





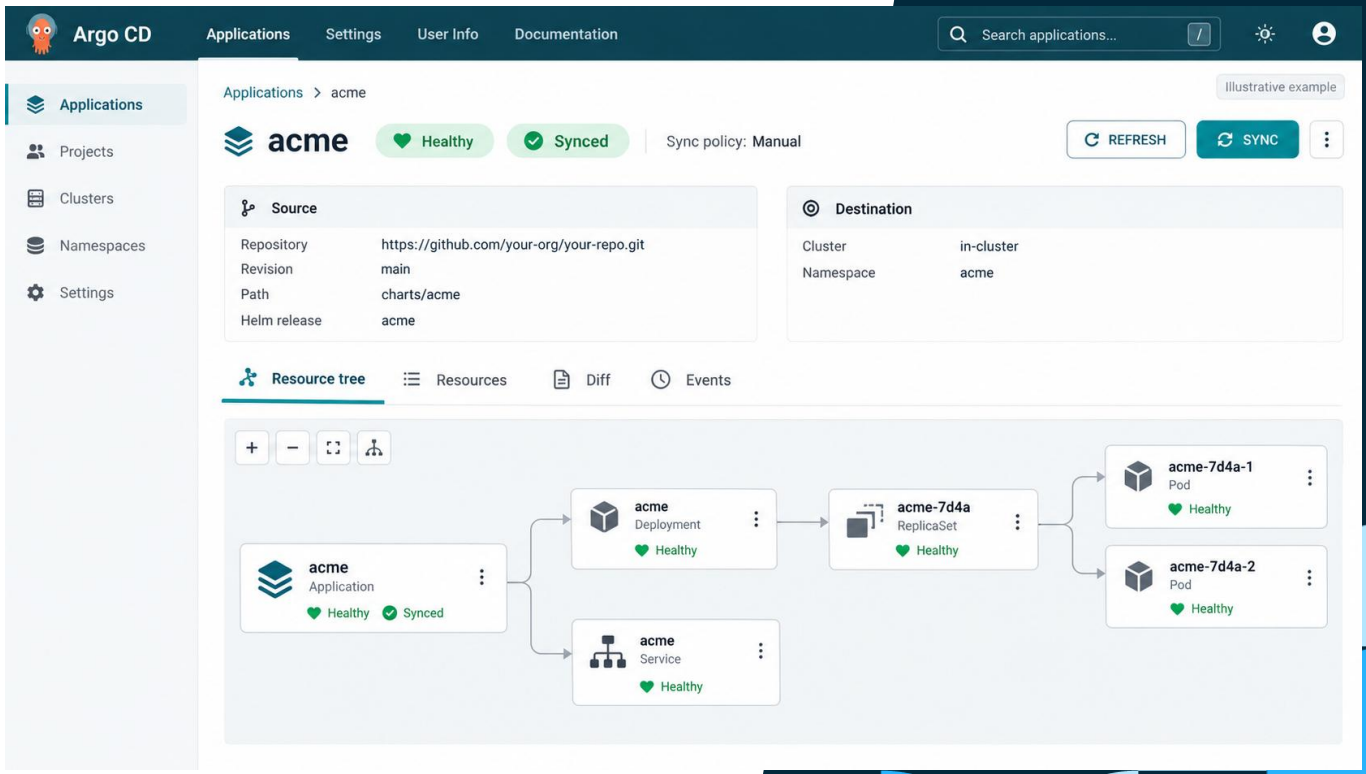
be informed

© Be Informed 2026 | All rights reserved worldwide

Deployment

Using Kubernetes and ArgoCD

```yaml
apiVersion: argoproj.io/v1alpha1
kind: ApplicationSet
metadata:
  name: acme
  namespace: default
spec:
  syncPolicy:
    preserveResourcesOnDeletion: true
  generators:
    - git:
        repoURL: http://github.com/acme/acme.git
        revision: main
        files:
          - path: clusters/alpha/acme/deployment.yaml
  template:
    metadata:
      name: acme
    spec:
      project: acme
      sources:
        - repoURL: github.com/registry
          chart: acme
          targetRevision: "1.0.0"
          helm:
            releaseName: acme
            valueFiles:
              - $values/clusters/alpha/acme/values.yaml
        - repoURL: http://github.com/acme/acme.git
          targetRevision: main
          ref: values
      destination:
        server: https://127.0.0.1:16443
        namespace: acme
      syncPolicy:
        automated: { prune: true, selfHeal: true }
        syncOptions:
          - CreateNamespace=true
          - ServerSideApply=true
      ignoreDifferences:
        - group: apps
          kind: StatefulSet
          managedFieldsManagers:
            - kube-controller-manager
            - kube-apiserver
          jsonPointers:
            - /spec/ordinals
            - /status
```

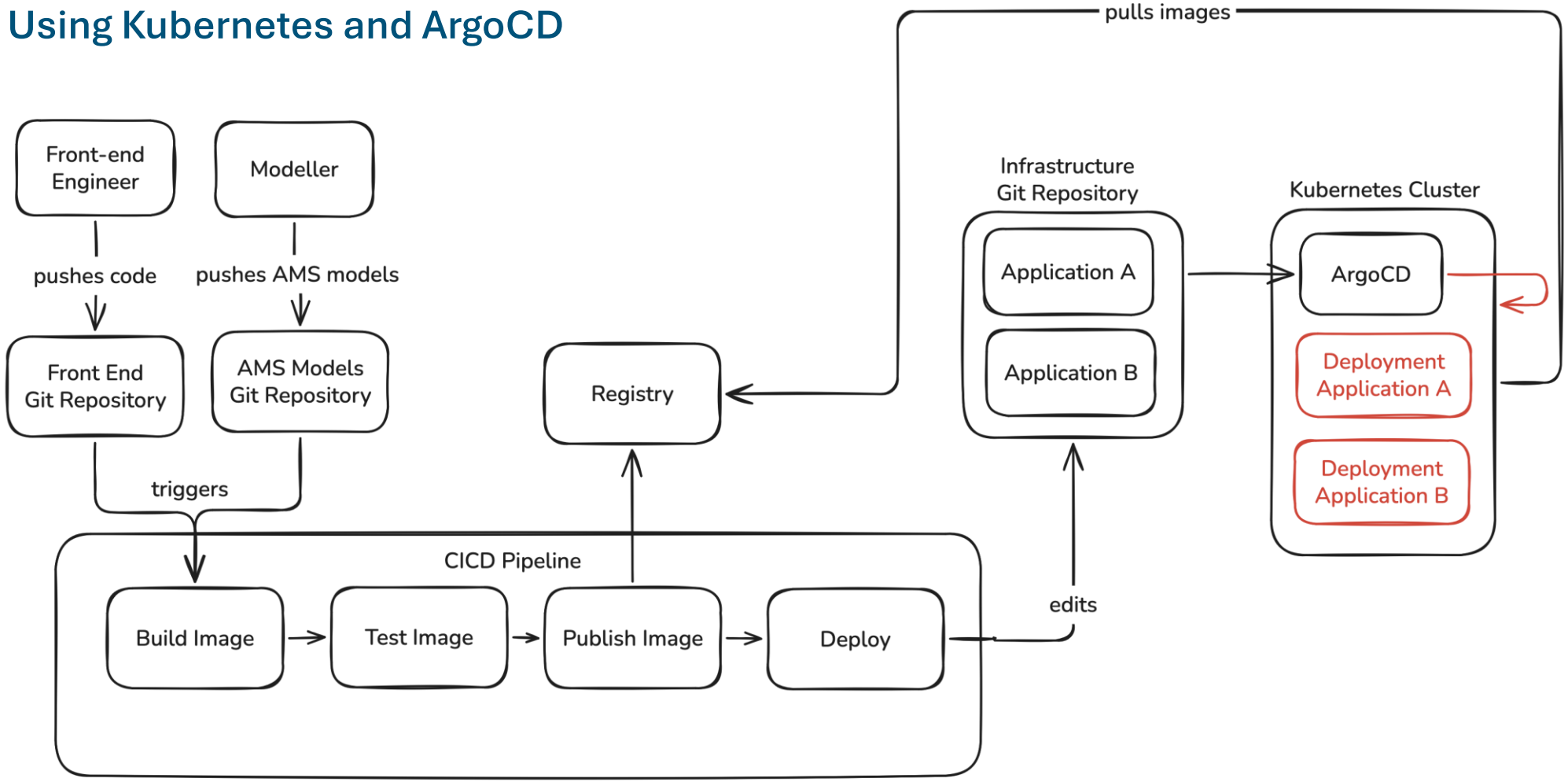


be informed

© Be Informed 2026 | All rights reserved worldwide

Deploying

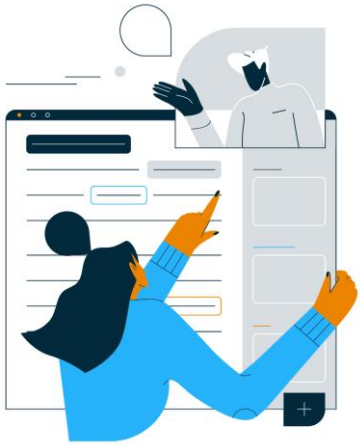
Using Kubernetes and ArgoCD



be informed

© Be Informed 2026 | All rights reserved worldwide

DTAP



Development

Developers build and integrate changes in an isolated environment, using version control and automated checks before code moves forward.



Test

The integrated build is validated for functionality, quality, security, and regressions in a stable, production-like test environment.



Acceptance

Business users and stakeholders confirm the release meets requirements through user acceptance testing and final approval.



Production

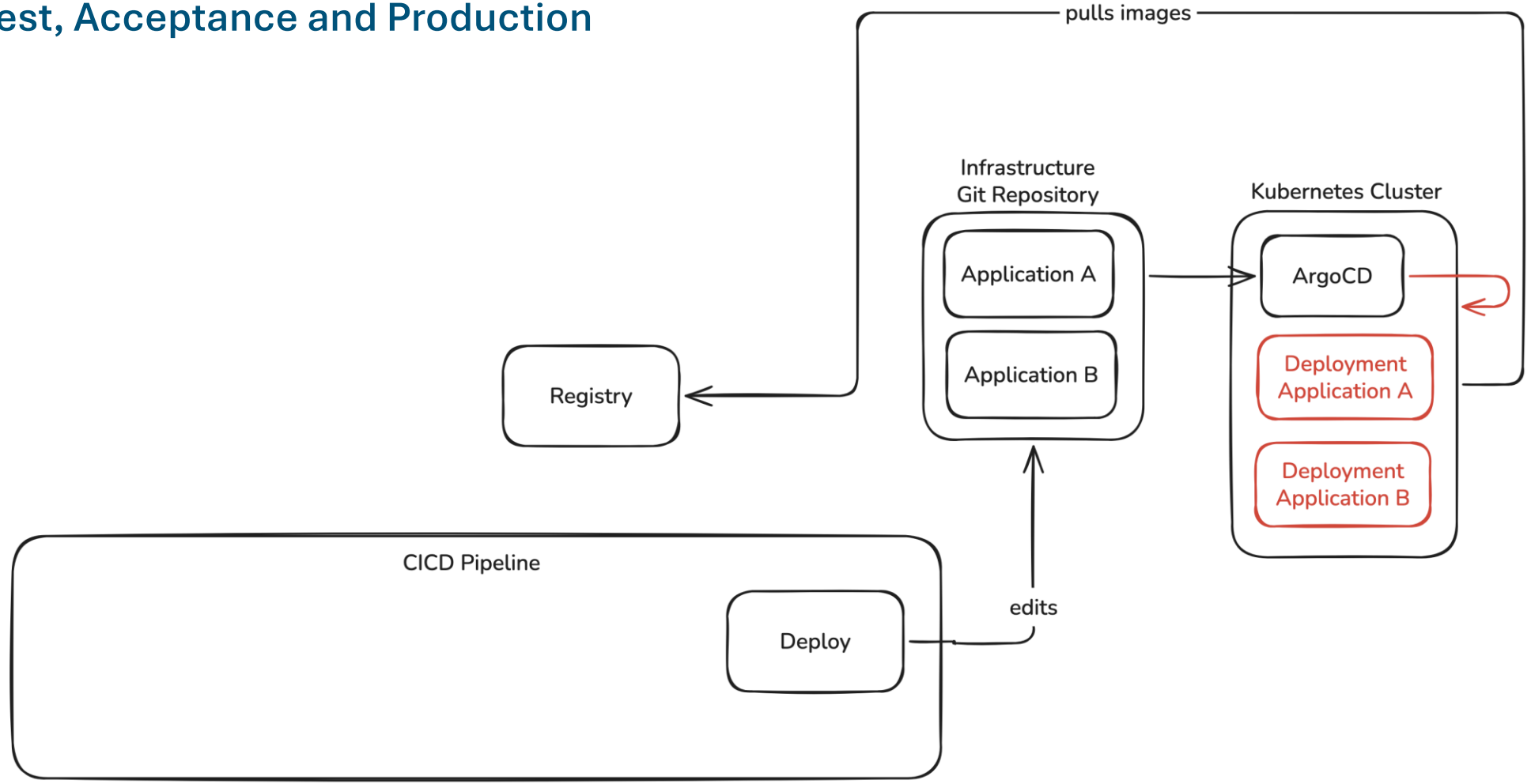
The approved release is deployed to live users with controlled rollout, monitoring, and rollback procedures to maintain reliability.

be informed

© Be Informed 2024 | All rights reserved worldwide

Deploying

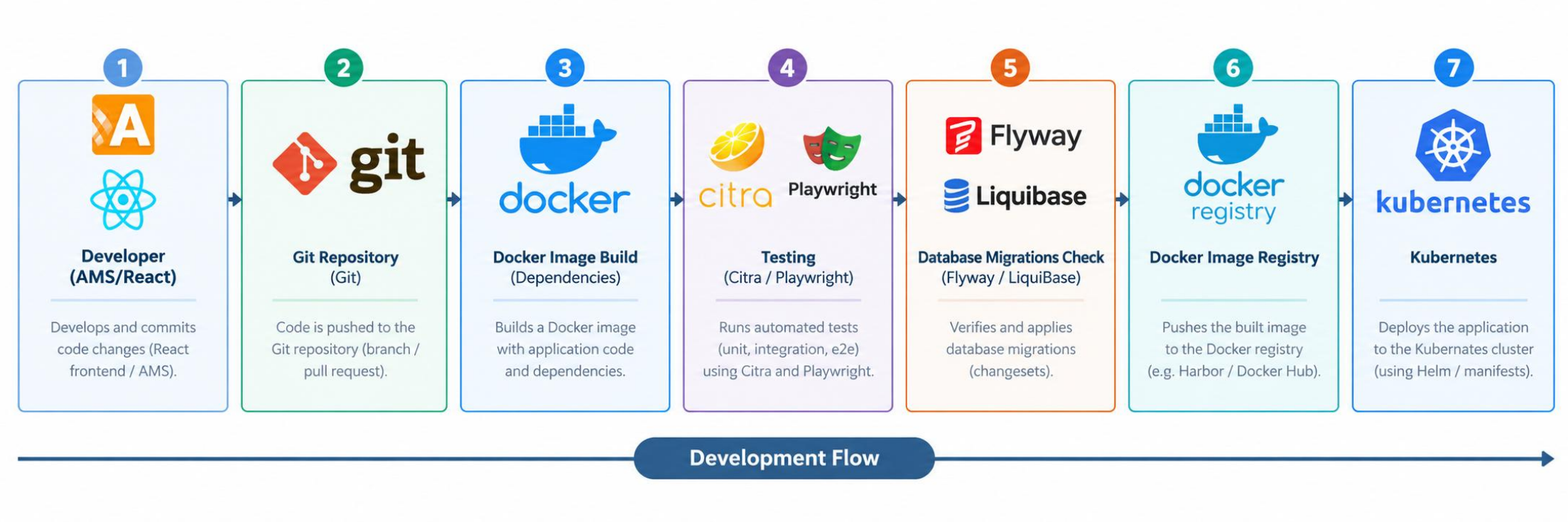
Test, Acceptance and Production



be informed

© Be Informed 2026 | All rights reserved worldwide

Summary: AMS change to application

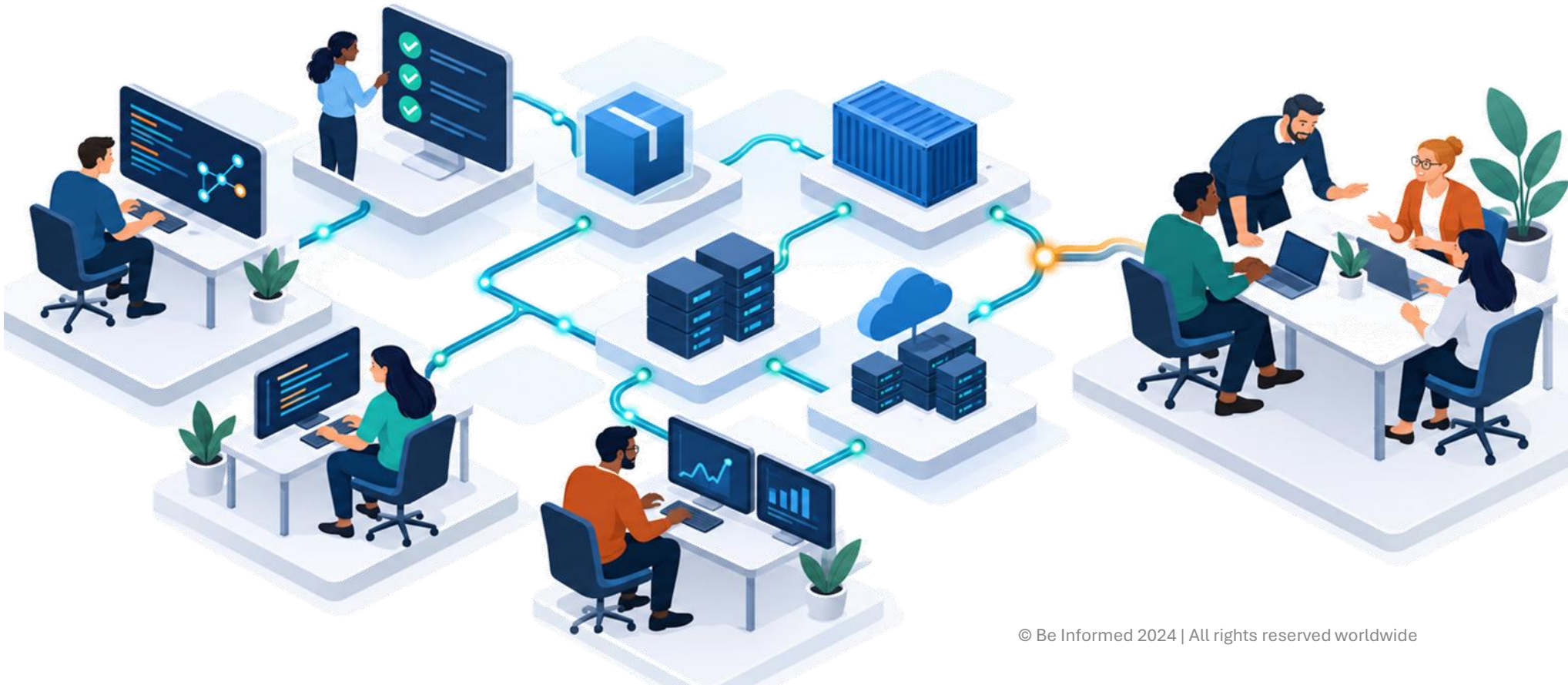


© Be Informed 2024 | All rights reserved worldwide

Your environment, your tools, our help

We start with the tools and processes you already use.

Cloud, Be Informed cloud & on premise



be informed

© Be Informed 2024 | All rights reserved worldwide

Thank you!
Any questions?

info@beinformed.com
+31 (0)55 368 1420
www.beinformed.com

be informed