

Deployment workflow with Temporal at TheFork

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About



About

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TheFork, is the leading online restaurant booking platform, that Champions restaurant culture around the world!

55.000
restaurants

In 12
countries

20 million+
monthly visits

20 million+
reviews

40 million
app downloads



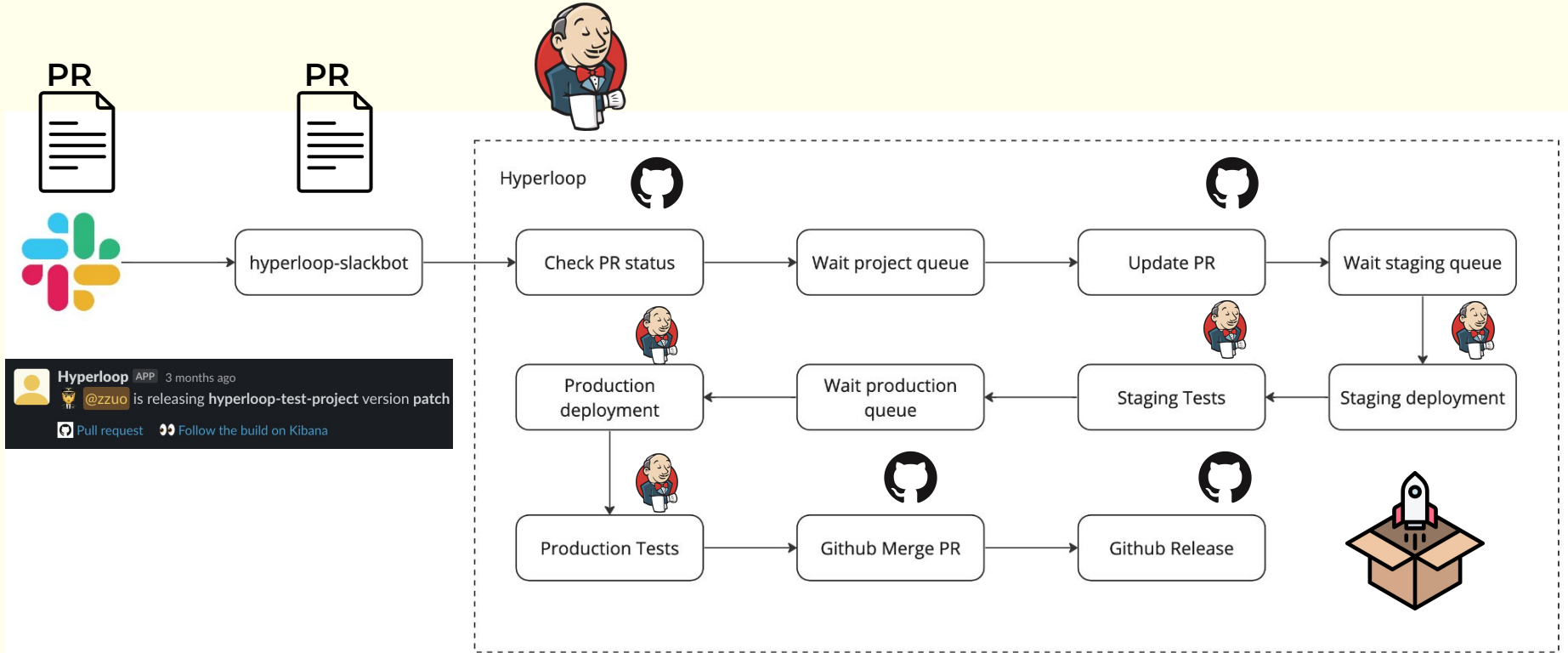
Context



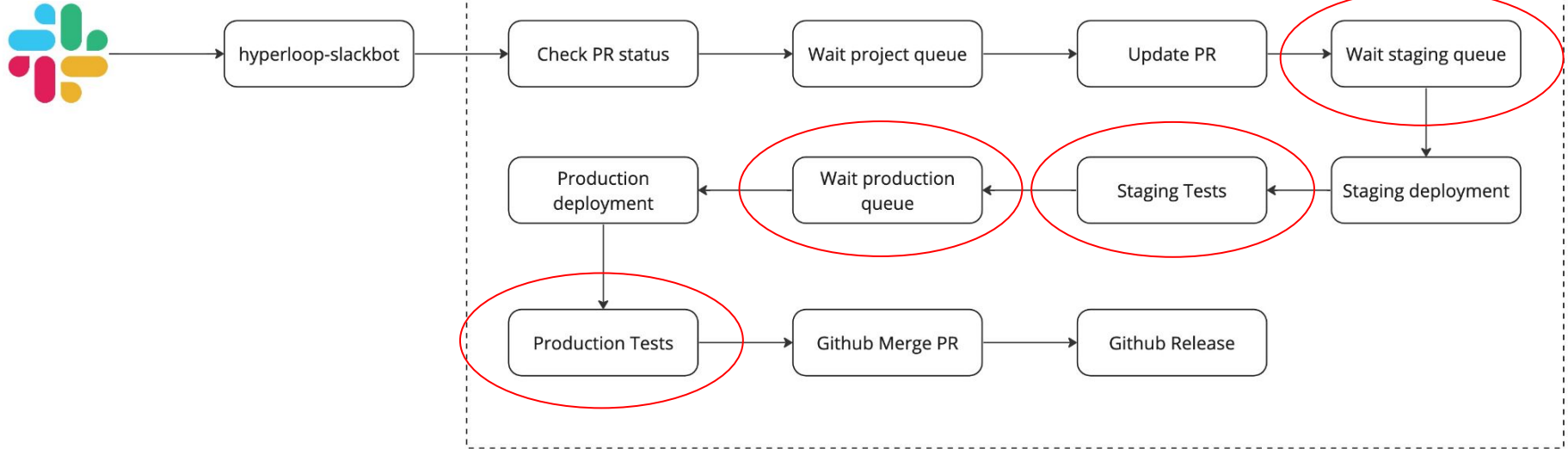
Context | **Hyperloop History**

- Deployment pipeline for our products backends
- Created 2 years ago by our Ops team (Game changer)
- Jenkins based for V1

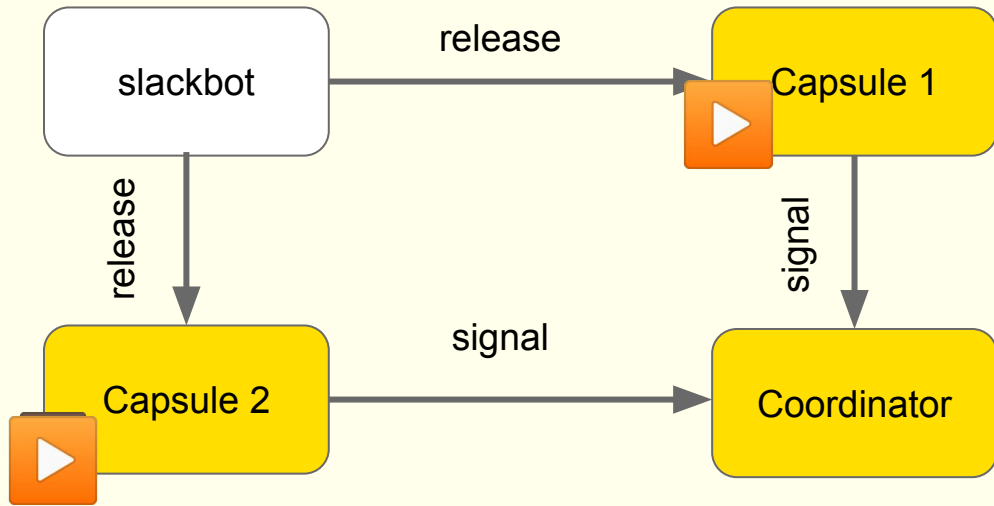
Context | Hyperloop Flow



Context | Hyperloop Flow



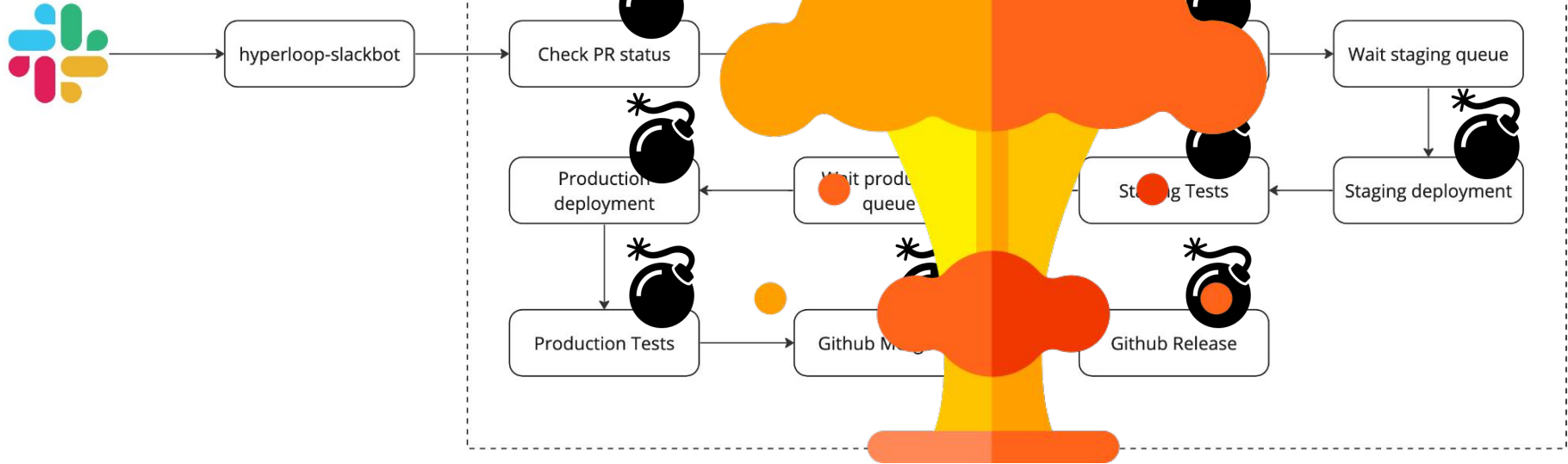
Context | Hyperloop Flow



Context | **Problems for V1**

- Reliability
- Missing skill (Groovy) in team
- Observability
- Maintainability
- Testability

Context | Reliability



Context | **Missing skill**



Context | Observability

```
[Pipeline] echo
12:40:16 DEBUG>>>{"ok":false,"error":"core-front: PR has missing requirements (validation?)"}<<<DEBUG
[Pipeline] readJSON
[Pipeline] writeJSON
[Pipeline] sh
12:40:16 + set -e
12:40:16 + curl https://slack.com/api/reactions.add -X POST -H Content-
```

Context | Maintainability

```
hyperloop / pipeline / capsule.Jenkinsfile
Code Blame 1886 lines (1606 loc) · 71.3 KB
steps {
  container('hyperloop') {
    vaultInjection(approleName, secrets) {
      script {
        def results
        def shouldTriggerApproval
        WORKSHEET.stage(WORKSHEET.stagingTests, { reRender ->

          def (jobsResults, hasFailures) = runJobsParV2(BUILD_CONFIG.getStagingTe
          results = jobsResults
          shouldTriggerApproval = hasFailures
          WORKSHEET.stagingTests.setResults(jobsResults)
          reRender()

          if (!hasFailures) {
            COMMANDS.sendDeployingToProdMail(jobsResults)
            return
          }
        })

        if (!shouldTriggerApproval)
          return

        stage("QA approval staging")
        WORKSHEET.stage(WORKSHEET.stagingTests, { reRender ->
          FEEDBACK.mark("x")
          FEEDBACK.info("x:

        container('hyperloop') {
          vaultInjection(approleName,
```



Journey to Temporal



Journey to Temporal | **Alternatives**

- Refactoring existing Jenkins code
- Rewrite whole workflow with state machine in TS
- AWS Step Functions
- Temporal 🏆

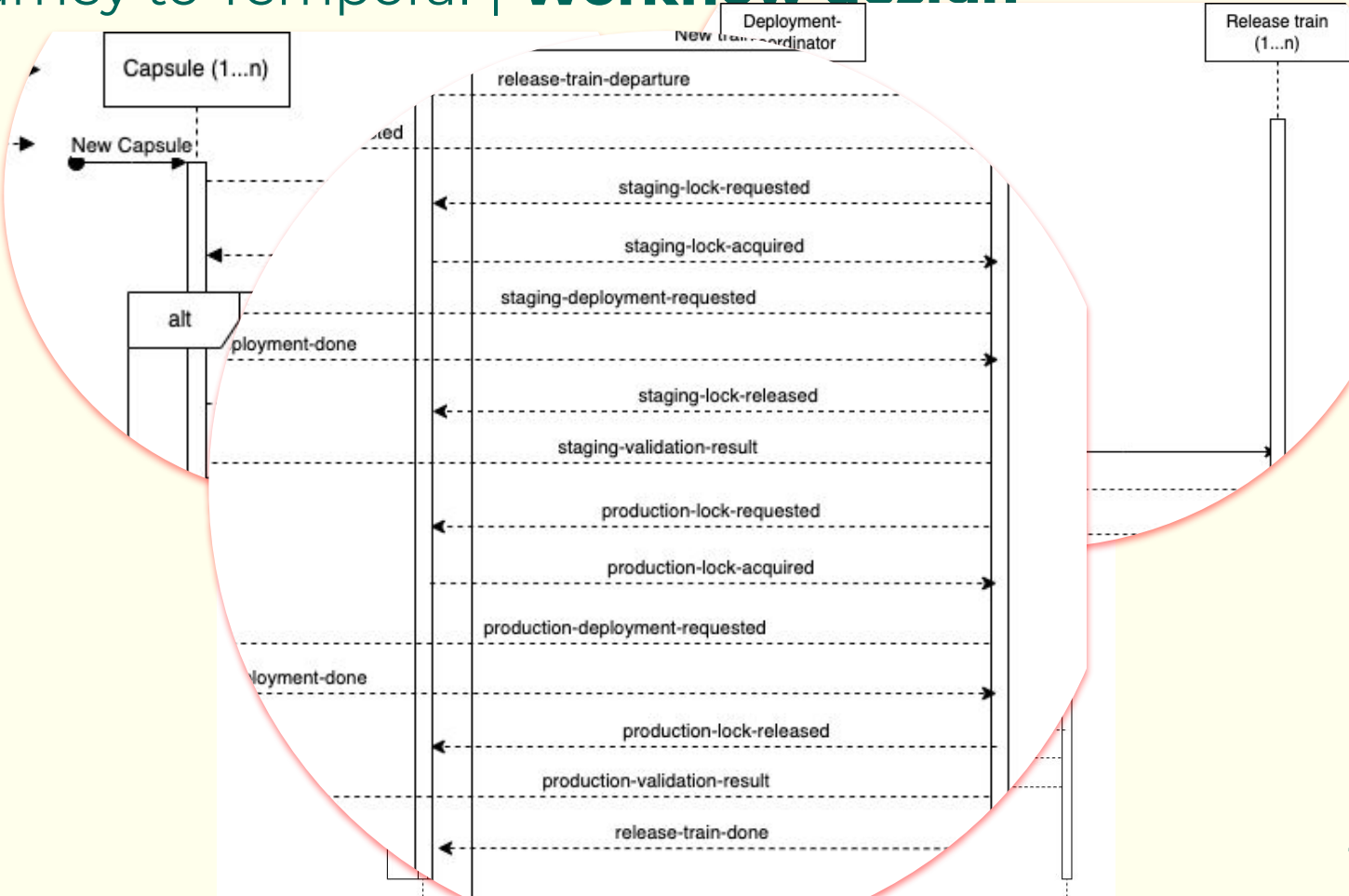
Journey to Temporal | **Infrastructure**

- Start with self-hosted Temporal server
- Move to Temporal cloud

Journey to Temporal | **Workflow design**

- 2 Entity workflows
 - ◆ Capsule
 - ◆ Release train
- 1 Long running workflow
 - ◆ Deployment coordinator

Journey to Temporal | Workflow design



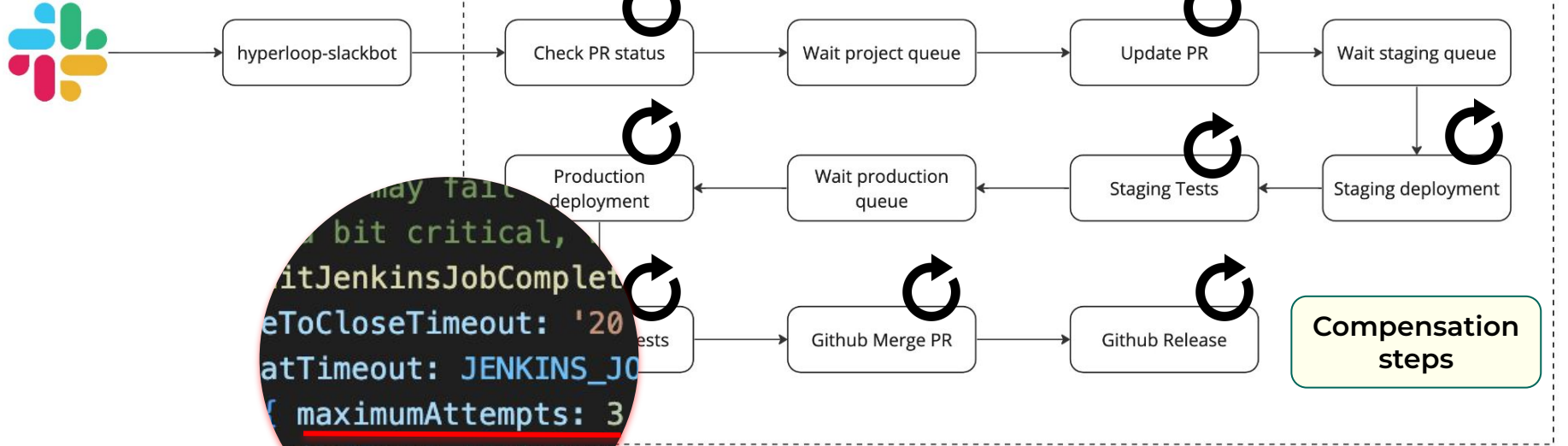
Assessment



Assessment | **Problems solved by Temporal?**

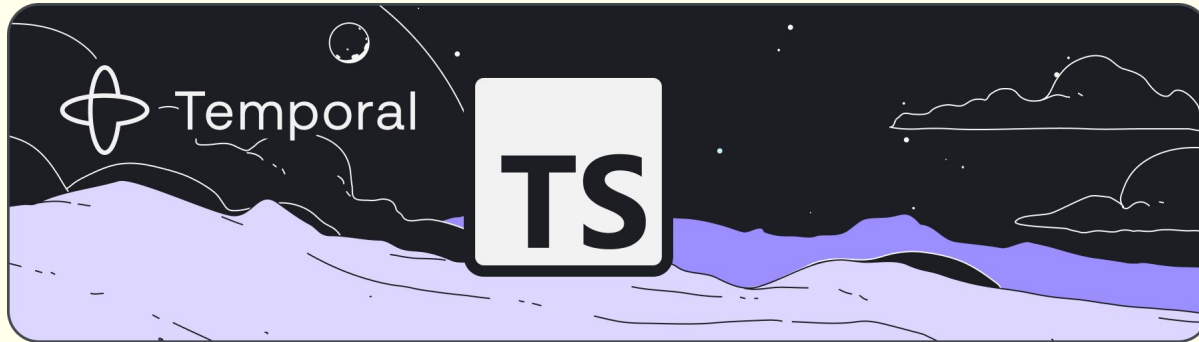
- Reliability
- Missing skill (Groovy) in team
- Observability
- Maintainability
- Testability

Assessment | Reliability

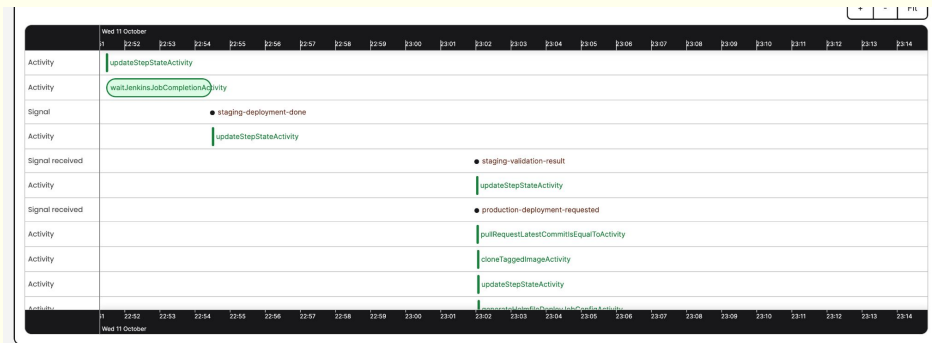
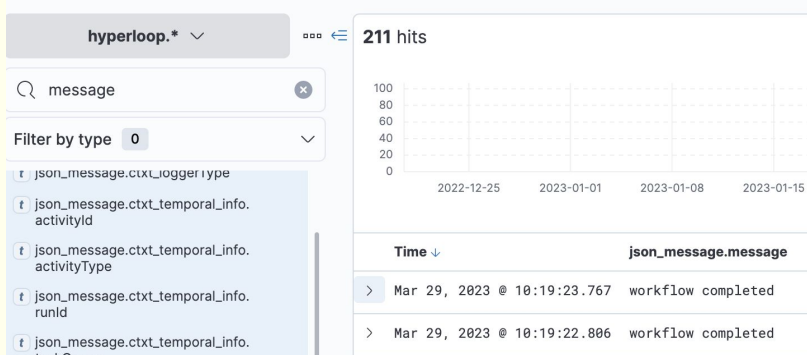


```
fail at some point (just because it's jenkins ...),  
it critical, we'll try 3 times before giving up  
aitJenkinsJobCompletionActivity } = proxyActivities<ReturnType<typeof createActivities>>({  
  scheduleToCloseTimeout: '20 minutes', // Limit overall timing (including potential retries)  
  heartbeatTimeout: JENKINS_JOB_STATUS_POLLING_INTERVAL * 2,  
  retry: { maximumAttempts: 3 },  
  cancellationType: ActivityCancellationType.WAIT_CANCELLATION_COMPLETED,  
});
```


Assessment | **Missing skill**



Assessment | Observability



Date & Time	Event Type	Result Payloads	Expand All
5 2023-10-11 UTC 20:51:21.76	parseTFPRUActivity	[[{"repo": "tfm-front", "prNumber": 7743}]]	⌵
11 2023-10-11 UTC 20:51:21.92	signalWorkflowWithStartActivity	[null]	⌵
17 2023-10-11 UTC 20:51:21.94	Signal received: deployment-check-in-result	[[{"validated": true}]]	⌵
21 2023-10-11 UTC 20:51:22.00	Signal: check-freeze	Workflow ID deployment-coordinator	⌵
26 2023-10-11 UTC 20:51:22.06	Signal received: check-freeze-result	[[{"result": "NO_FREEZE"}]]	⌵
30 2023-10-11 UTC 20:51:22.83	initStateActivity	[[{"id": "capsule-3b955e08-e624-4a88-bea5-f82b7b974030", "webhookUrl": "http://"}]]	⌵
36 2023-10-11 UTC 20:51:23.45	updateStepStateActivity	[[{"id": "capsule-3b955e08-e624-4a88-bea5-f82b7b974030", "webhookUrl": "http://"}]]	⌵
42 2023-10-11 UTC 20:51:24.28	validatePullRequestEventuallyDeployableActivity	[null]	⌵
48 2023-10-11 UTC 20:51:24.91	updateStepStateActivity	[[{"id": "capsule-3b955e08-e624-4a88-bea5-f82b7b974030", "webhookUrl": "http://"}]]	⌵
54 2023-10-11 UTC 20:51:24.95	Signal: project-lock-requested	Workflow ID deployment-coordinator	⌵
59 2023-10-11 UTC 20:51:25.02	Signal received: project-lock-acquired	Signal Name project-lock-acquired	⌵

Assessment | Maintainability

```
src
├── __tests__
├── activities
├── domain
├── infrastructure
├── lib
├── signals
├── sinks
├── utils
├── workflows
├── TS customMetricsServer.ts
├── TS debug-replayer.ts
├── TS interceptors.ts
├── TS logging.ts
├── TS worker.ts
└── .dockerignore
```

The screenshot displays a code editor with a TypeScript file named `validateOnStaging`. The code defines a workflow step with a `status` of `'RUNNING'` and a `data` object containing `workflowIdToNotify`. A `StepEvent` is created with the name `'WAITING_PRODUCTION_LOCK'` and `status` `'RUNNING'`. The `customMetricsManager.addCapsuleStepDuration` method is called with `'STAGING_TEST'`. A conditional block `if (isWaitingQValidation)` contains an `await condition` and an `await @updateStepStateActivity` call. The code is annotated with line numbers from 364 to 394.

The terminal window on the right shows the workflow execution log. The title is **Workflow execution completed**. The duration is 23 minutes, 4.762 seconds. The log lists several workflow tasks, all of which are **COMPLETED**. The tasks include `WorkflowTask (COMPLETED)` with sub-tasks like `WorkflowExecutionStarted`, `ActivityTaskScheduled`, `ActivityTaskStarted`, and `ActivityTaskCompleted`. Other tasks include `WorkflowTask (COMPLETED)` with sub-tasks like `SignalExternalWorkflowExecutionInitiated` and `WorkflowTask (COMPLETED)` with sub-tasks like `ExternalWorkflowExecutionSignaled`.

Journey to Temporal | Testability

```
describe('success workflows', () => {
  it.each([
  ])(
  );
  it('should start capsule deploy workflow after updating PR in case of behind PR', async () => {
  });
  it('should start capsule deploy workflow after waiting staging lock', async () => {
  });
  it('should start capsule deploy workflow after waiting project lock', async () => {
  });
  it('should be able to start second deployment (same repo) workflow if first deployment failed during preparing onboard', async () => {
  }, 10000); // Timeout set to 10s cause of 3 times retry of failed activity
  // TODO correct CI error this in the future-
});
describe('failed workflow', () => {
  it('should stop preparing onboard if PR does not pass pretrip check', async () => {
  });
});
```

localhost:8080/namespaces/default/workflows

Recent Workflows

2 workflows • [Download JSON](#)

<input type="checkbox"/>	Status	Workflow ID
<input type="checkbox"/>	Running	capsule-2c30617f-6318-48c1-b897-4ac2b7f68398
<input type="checkbox"/>	Running	deployment-coordinator

Assessment | **Drawbacks**

- Test coverage issue inside Temporal Typescript SDK
- Detection of non-determinism error before new version release

Assessment | **What's next?**

→ Assess Temporal on business flow (To be planned)



Thank you!