

Tracking Repository Health at Scale



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**How healthy is
your estate?**



**Would you know if
it changed?**





Health Check Bot

Now

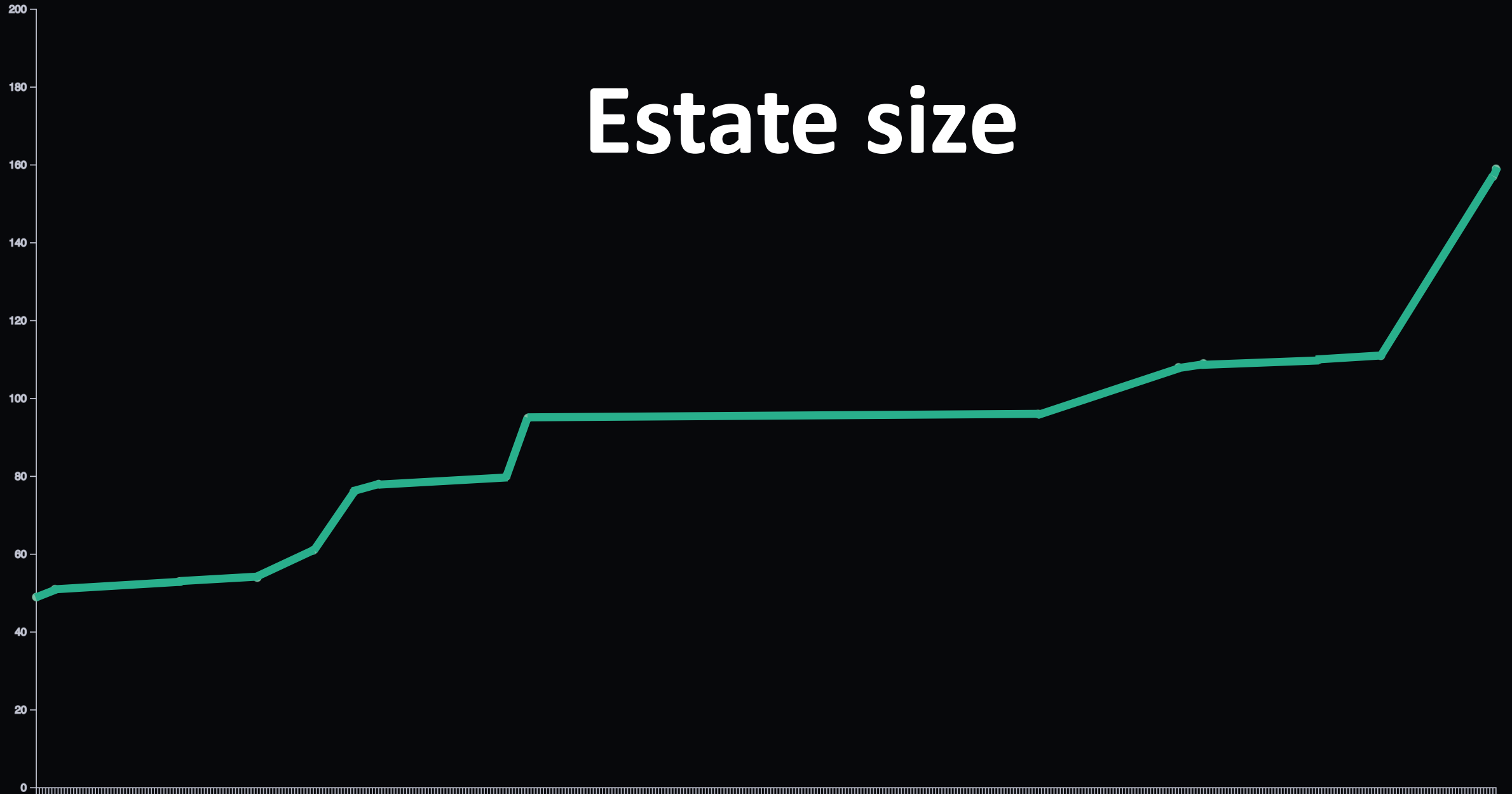
LDX3 Repository is now locked due to its poor health score – click to see resolutions.

Now

How big is your estate?



Estate size



Web @ Trainline

Booking Flow

Landing Pages

Customer

Trainline
Business

White label

Affiliate widgets

Web @ Trainline

Booking Flow

Landing Pages

Customer

Trainline Business

White label

Affiliate widgets

Web Platform

Before Platform

- Cluster model
- Engineers are specialists
- Loose conformance
- Multiple communities
- 3-10 repos per cluster
- Manual Health checks

After Platform

- Horizontal/Vertical model
- Engineers are generalists
- Tighter conformance
- One Web community
- ~160 repos
- Needs a different approach

What is health?





Health Principles

Secure

Securing Customers data



Health Principles

Productive

Easy to release, up to date and self service



Health Principles

Consistent

Consistent experience for customers and engineers



Health Principles

Conformant

Meets shared understanding of what good looks like

What is Repository health?



Healthy?

- Uptime / availability
- Latency / Response times
- Error Rates
- Throughput / RPS
- DORA Metrics
- Static Code Analysis
- Analytics
- Business Metrics
- Test coverage
- Core Web Vitals (LCP, FID, CLS)
- Build time / status



Code at rest



Checks

Node Versions

A landscape photograph of rolling hills under a cloudy sky at sunset or sunrise. The hills are covered in green grass, and the sky is filled with soft, golden light. The word "Checks" is written in a large, bold, black font in the upper left corner.

Checks

Versions

Checks

Permissions

The background image is a landscape of rolling hills. The hills in the foreground are dark and silhouetted, while the hills in the distance are lighter and hazy. The sky is filled with large, dramatic clouds, and the light from the sun, which is not visible, creates a warm, golden glow across the scene.

Checks

Security Audit

The background image is a landscape of rolling hills. The foreground shows a dark, grassy hillside sloping down towards the right. In the distance, several layers of hills are visible, each progressively lighter and more hazy than the last, creating a sense of depth. The sky is filled with large, soft clouds, and the light from the sun, which is not directly visible, creates a warm, golden glow across the scene, particularly on the right side and within the clouds.

Checks

Capabilities

Checks

Restricted Packages

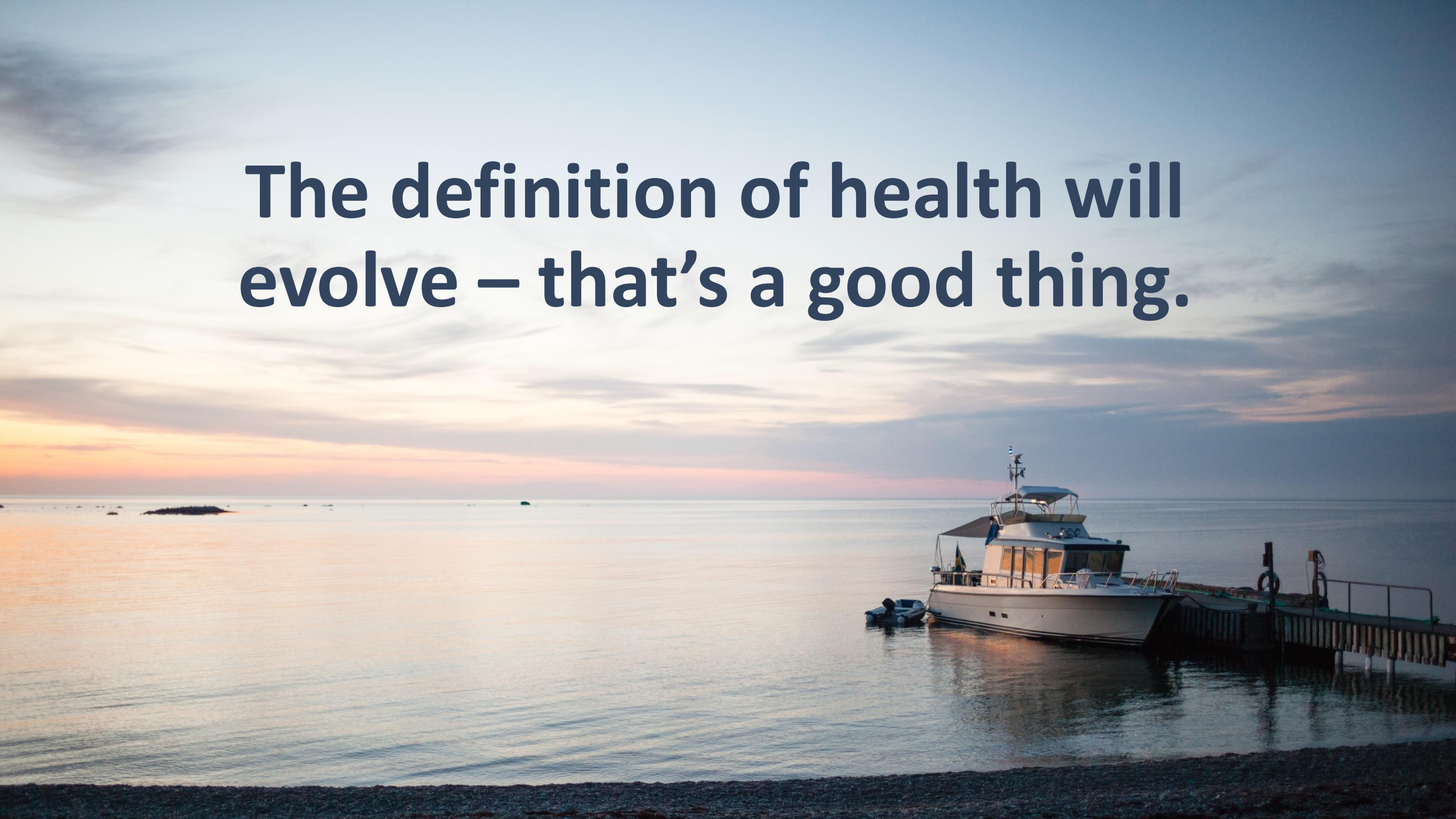
Checks

Dependabot Enabled

Checks

Migrated to Cloud

**The definition of health will
evolve – that's a good thing.**



A scenic photograph of three hikers standing on a rocky mountain peak, looking out over a vast mountain range under a clear blue sky with a bright sun. The hikers are silhouetted against the bright sky. The foreground shows the rugged, rocky terrain of the peak, while the background features layers of distant, hazy mountain ranges.

**Communicating
the state of our code**

Calculate the repository score

$$\text{Passes} + \text{warning} / \text{total checks} * 100$$

Thresholds will evolve with time – that's a good thing.

< 40%

Archived



> 60%

Locked



23%



Risky



54%



Healthy



92%



- JSON object listing all the repos
- Fetch meta data for each repo
- Run appropriate checks for each repo
- Calculate results and store in JSON.
- Generate static html file from the JSON.
- Push to GitHub pages.
- Report any changes to Slack / Plandek



How does it work?

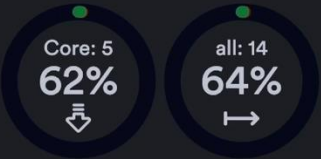
The dashboard



Not showing real data



Web Repository Health



carriage-return



19%

core



loca-motivation



47%

core



whistle-stop



69%

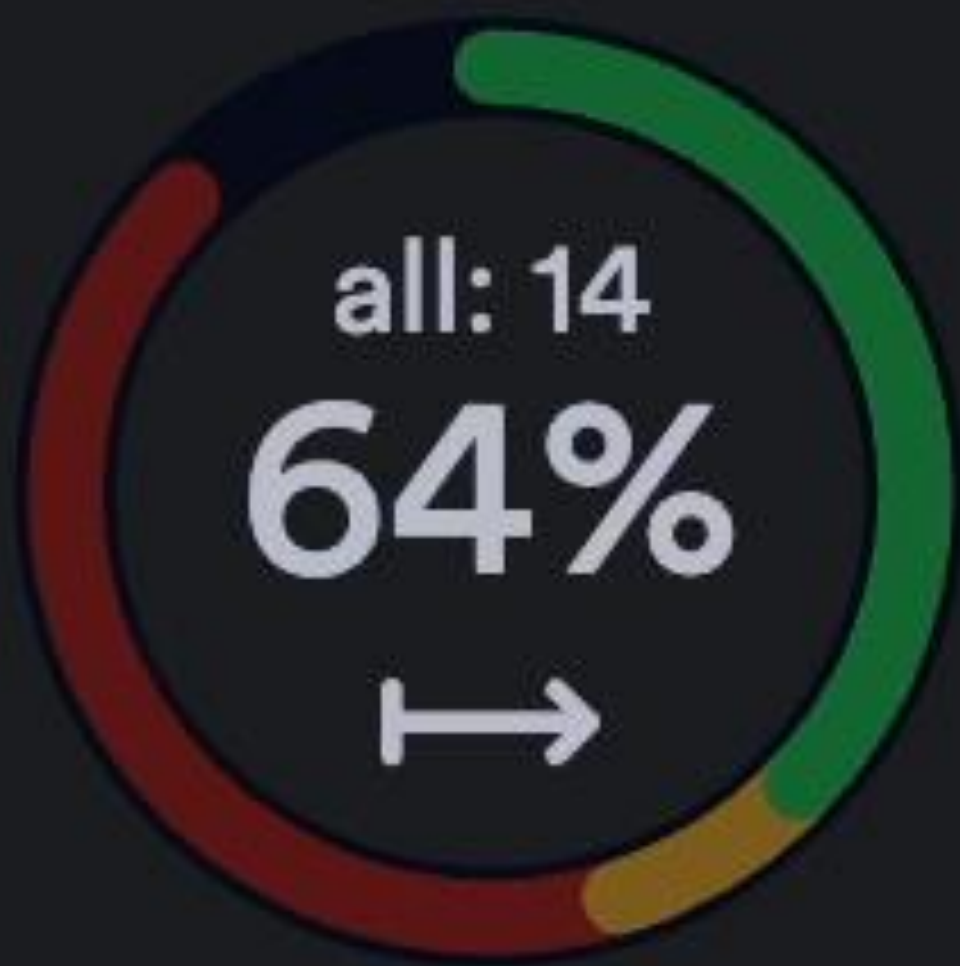
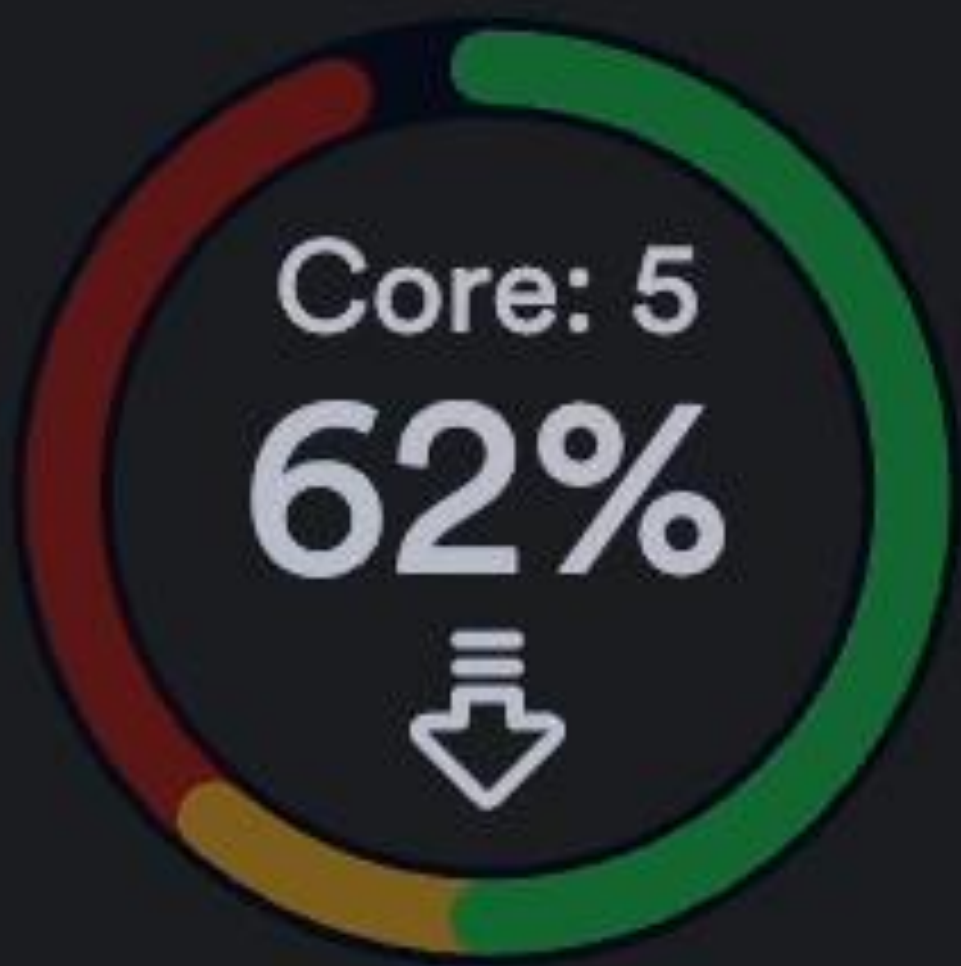


puff-power

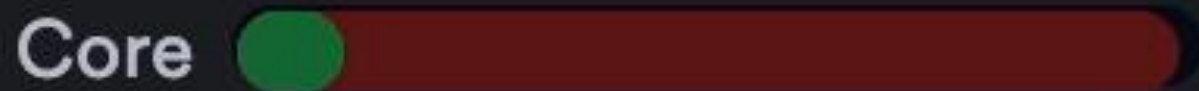


62%

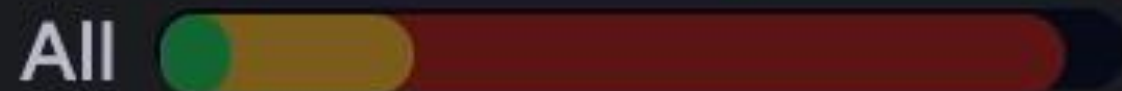
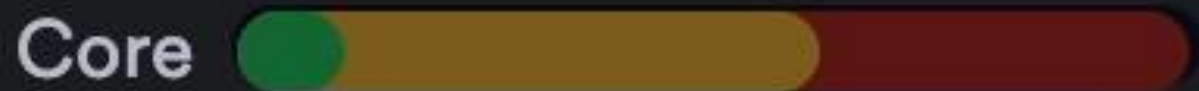




check 3



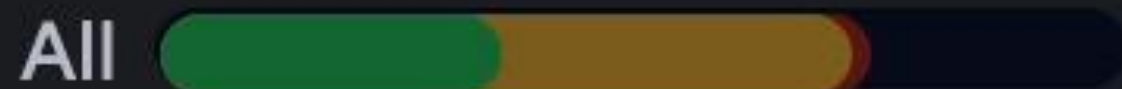
check 4



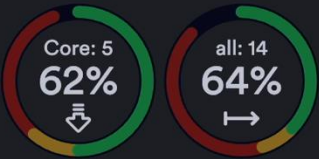
check 9



check 10



Web Repository Health



Fictional Repository

31%

↔

checks

history

notes

✓ ArtifactoryMigration

✓ Backstage

✓ Contributions

✗ Dependabot

◦ Vulnerability alerts are not enabled for this repository.

◦ .github/dependabot.yml must be supplied to authenticate with Artifactory Cloud, and configure automated security and version updates

◦ Automated security fixes have been disabled for this repo. Please re-enable them.

✗ GitHub Actions

◦ Remove or update the following TeamCity-related webhooks if GitHub Actions is intended to replace TeamCity:
https://vulcan.tools.trainline.com/app/hooks/github/dfd3ff8c-d0b9-4a5b-a65f-d53992c09563 Ensure that the corresponding workflows are set up in GitHub Actions and that the TeamCity webhooks are no longer needed.

◦ Enable GitHub Actions in the repository settings. Please reach out to the Atlas team on Slack (#help-atlas) to ask for GHA to be enabled for the repository.

✗ PackageManager

◦ Please migrate to pnpm - https://oneweb.trainline.tools/docs/docs/Development%20practices/Toolchain/using-pnpm#migrating-from-yarn-v1

✓ ProtectedBranches

? UbuntuVersion

◦ Status could not be determined - please check healthcheck repo

✗ PackageAudit

◦ high: debug should be >=2.6.9

◦ high: node-fetch should be >=2.6.7

◦ high: async should be >=2.6.4

◦ high: semver should be >=5.7.2

◦ high: body-parser should be >=1.20.3

◦ high: path-to-regexp should be >=0.1.12,>=0.1.10

◦ high: sshpk should be >=1.13.2

◦ high: ua-parser-js should be >=0.7.22,>=0.7.23,>=0.7.33

◦ high: moment should be >=2.19.3,>=2.29.4,>=2.29.2

◦ high: lodash should be >=4.17.19,>=4.17.21

◦ critical: underscore should be >=1.12.1

◦ critical: minimist should be >=0.2.4

✗ Capabilities

◦ Missing: design-system

◦ Missing: shared-components

◦ Missing: type-system

◦ Missing: browser testing

◦ Missing: accessibility testing

✓ Contributors

✗ ECS Check

◦ The registry file (.spacelift/registry.yaml or .spacelift/registry.yml) is missing.

◦ The deployment directory for dev is missing.

◦ The deployment directory for exttest is missing.

◦ The deployment directory for stg is missing.

◦ The deployment directory for prod is missing.

✗ NodeVersion

◦ node running 8.16.2 expected 20.10.0. Source: lockfile

◦ node running 8 expected 20.10.0. Source: .nvmrc

✗ Permissions

◦ Team: Vulcan, expected: push but found: admin

✗ RestrictedPackages

◦ ttl-page - restricted - unsupported by webplatform and readonly

◦ ttl-icons - restricted - use icons from depot-web

◦ trainline-deep-link - restricted - use https://github.com/trainline-private/dpi

◦ mocha - deprecated - unsupported by web platform. Move to jest

◦ moment - deprecated - Community decision to move to Day.js, see https://oneweb.trainline.tools/docs/docs/Development%20practices/working-with-dates/

✗ Versions

◦ Upgrade newrelic from 5.13.1 to 12.11.3 in undefined

◦ Upgrade react from 15.5.4 to 19.0.0 in undefined

◦ Upgrade react-dom from 15.5.4 to 19.0.0 in undefined

◦ Upgrade webpack from 2.7.0 to 5.97.1 in undefined

Locked

Due to the low health score this repo is locked. Its health score needs to be improved before any changes can be made.

X Capabilities

- Missing: design-system
- Missing: shared-components
- Missing: type-system
- Missing: browser testing
- Missing: accessibility testing

**Health checks run once per day on each
repo.**





How do we use it?

Tracking trends



How do we use it?

Communicating Risk



How do we use it?

Handovers



How do we use it?

Before/After Screenshots

Future Plans

A scenic view of a lake with a church and mountains in the background. The church has a tall, dark spire. The mountains are covered in green trees. The water is calm and reflects the sky and the church. A wooden post is visible in the foreground on the left.

Tech Radar

Future Plans

A scenic view of a lake with a church and mountains in the background. The church has a tall, dark spire. The mountains are covered in trees and some have patches of snow. The water is calm and reflects the sky and the buildings. In the foreground, there is a wooden post and a metal railing.

Ownership
Leaderboard

Future Plans

A scenic view of a lake with a church and mountains in the background. The church has a tall, dark spire. The mountains are covered in trees and some have patches of snow. The water is calm and reflects the sky and the buildings. In the foreground, there is a wooden post and a metal railing.

PR integrations

- Thanks
- Blocking

Conclusions



Thankyou

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