

AWS re:Invent

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DOP215-S

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What developers want from internal developer portals

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What Devs Want from IDPs

How to engage every developer in your Internal Developer Portal program

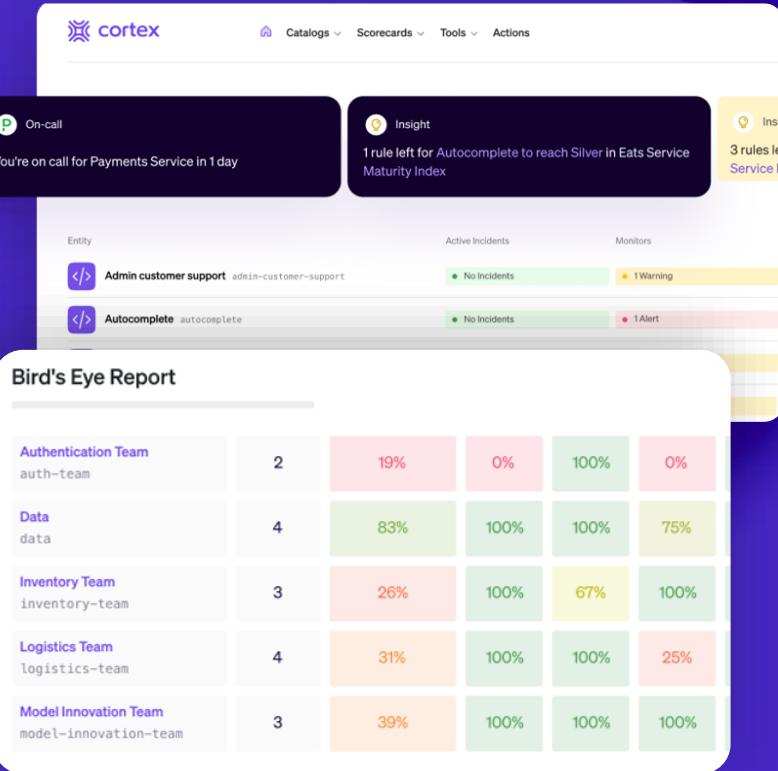
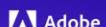


At a Glance

Cortex is an Internal Developer Portal designed to help developers take ownership over the state and quality of their software, in the most efficient way possible. Unblock engineers. Unlock productivity.

Backed by the best
SEQUOIA
IP

Building for the best



Today's Agenda

❖ Changes in the tech landscape

❖ How Internal Developer Portals help

❖ What devs need to improve their work



Ganesh Datta

Co-Founder, CTO

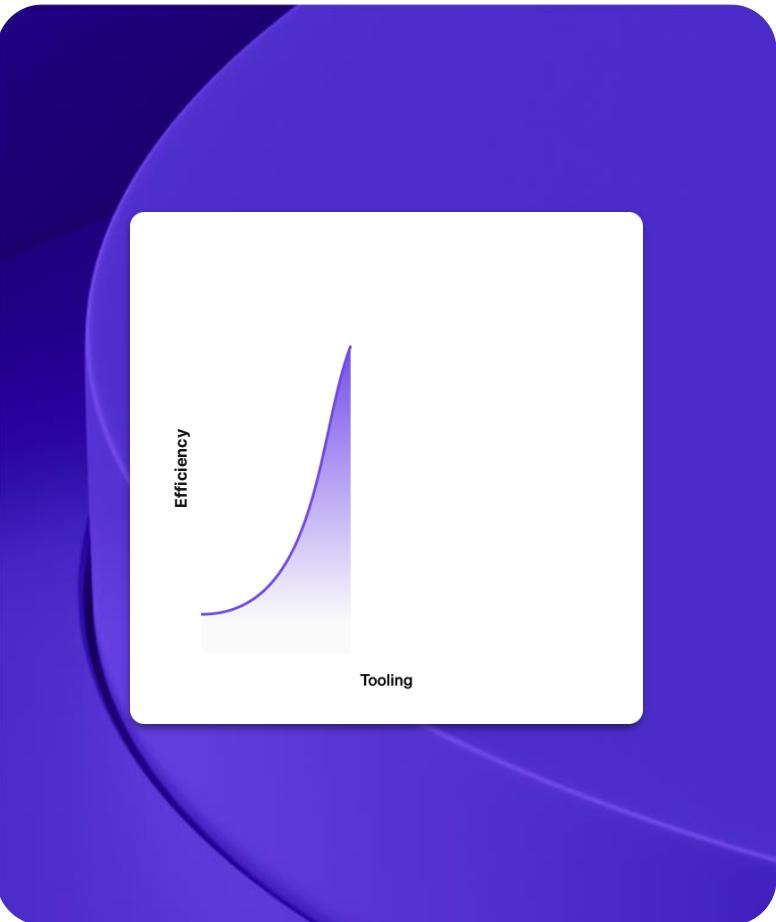


The last 5+ years of tech modernization made us more efficient

☰ Microservices & Kubernetes enable parallel work

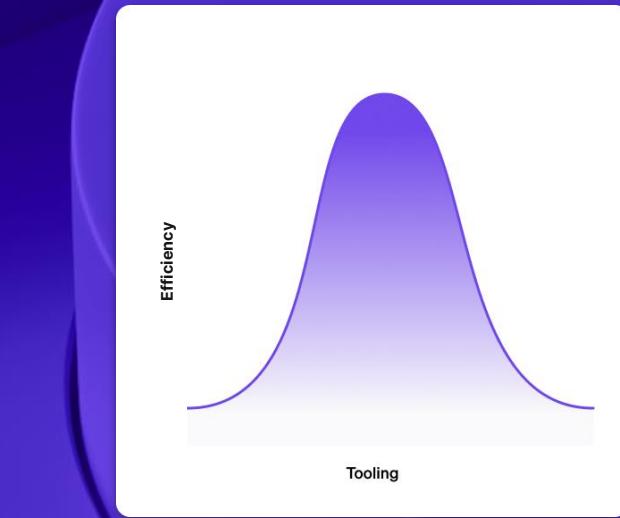
💰 Cloud hosting made storage and compute cheaper

☑ Devs have more tools than ever to help them ship faster



The last 5+ years of tech modernization made us more efficient—*to a point.*

- Microservices & Kubernetes enable parallel work
 - Software volume makes it impossible to track ownership
- Cloud hosting made storage and compute cheaper
 - We're now paying for forgotten software
- Devs have more tools than ever to help them ship faster
 - Devs are also bottlenecked by process and noise



Today's tools help with velocity and quality but rarely at the same time.

APM and DevOps platforms

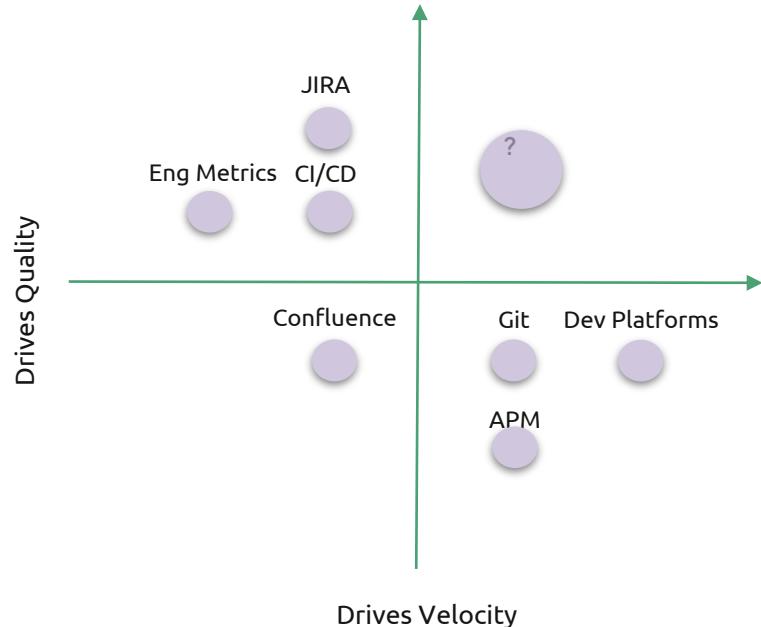
- Focus on performance but no context related to components, dependencies, or owners

Engineering Intelligence/Metrics

- Evaluates productivity of individuals but does nothing to drive progress as a team

Git, Jira, Confluence

- Creates pathways to speedy deployment but doesn't track standards alignment



We still need something to enforce standards using data from across the stack.

APM and DevOps platforms

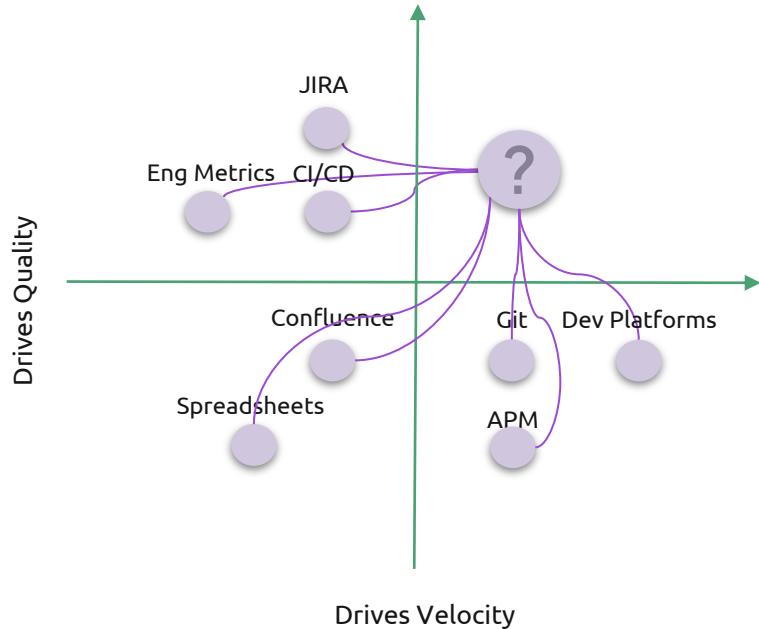
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How IDPs Help

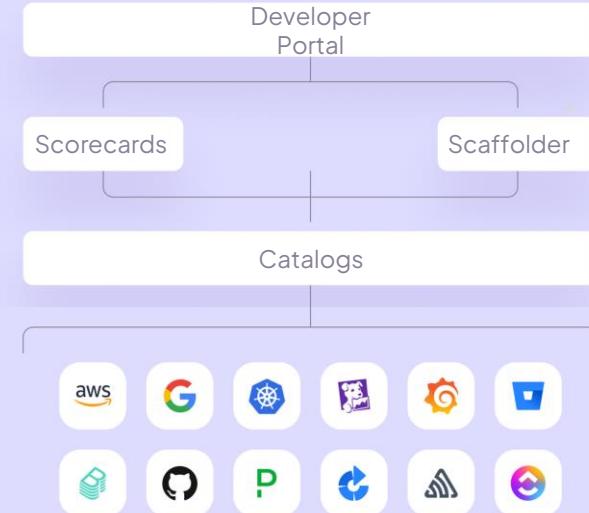
IDPs ensure standards are met across the SDLC

At minimum, internal developer portals must provide:

01 System of Record: Unify data under common language

02 Assessment: Evaluate against core standards

03 Self-Service: Deploy services in line with standards



What Devs Want from IDPs

Our Research

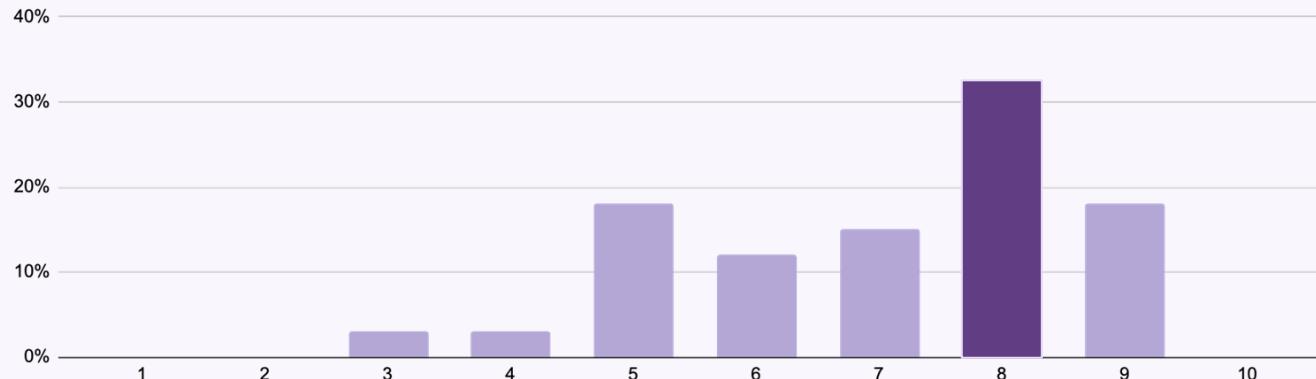
We surveyed 50 vetted software developers and engineers that have used or are evaluating IDPs about what they want from this technology. We also asked about top pains and focus areas.

3 key takeaways:

1. Basic inability to find information is still a top pain
2. Prioritization is a major problem
3. Templates are the #1 requested feature

1. Finding information is *still* a top pain

Q: How difficult is it to find information about services and resources?

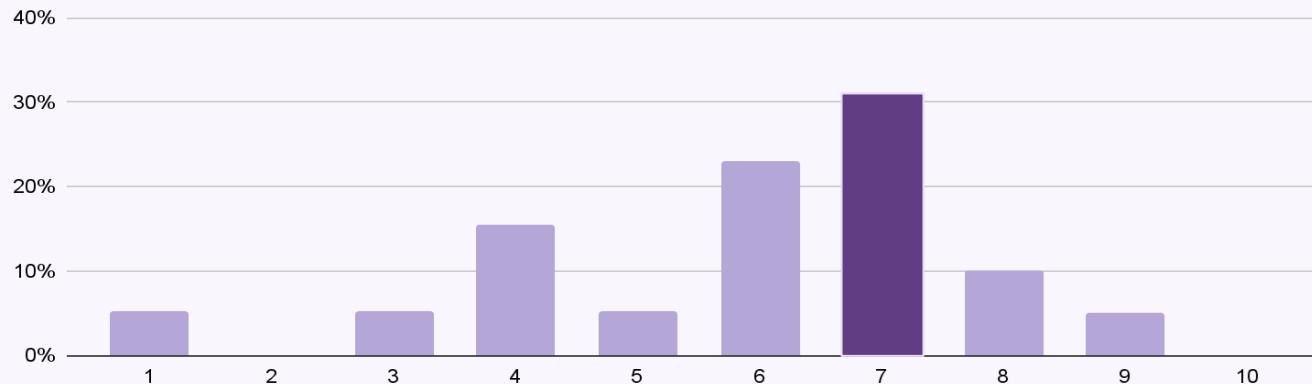


“I can’t keep track of infra for different environments. Knowing what microservices are available to me in my role would have prevented me from developing things that were already available.”

- Cale, Principal Software Engineer

2a. The need for prioritization is peaking

Q: How difficult is task prioritization for you?

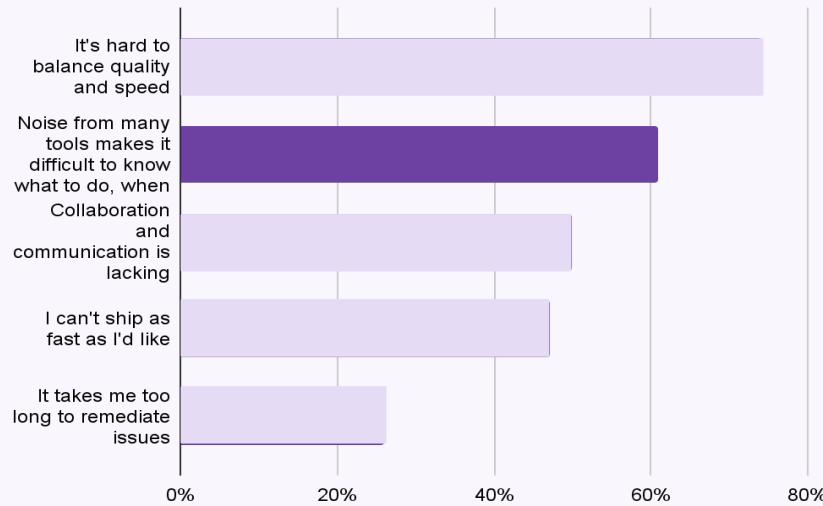


“Prioritization remains subjective, if there was a way to automate severity assignment, that'd be helpful.”

- Ashleigh, QA Engineer

2b. Noise from other tools is a top distraction

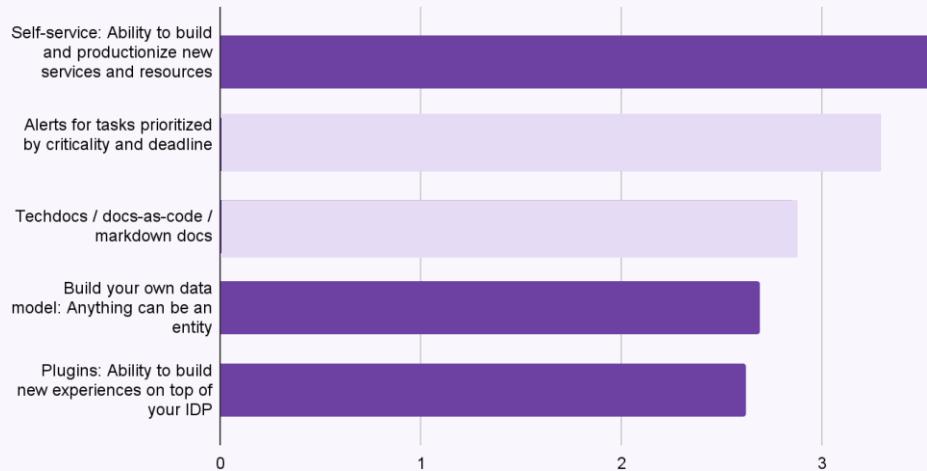
Q: What challenges do you face in your current role?



61% say noise from tools makes it difficult to know what to do, when

3. Devs want templates above all else

Q: Rank order the following sample of features of IDPs by how much you personally value them:



“An IDP should provide comprehensive and up-to-date docs, code samples and templates as starting points for common tasks.”

– Jabaz, Senior Software Developer

Improving DevEx with Cortex

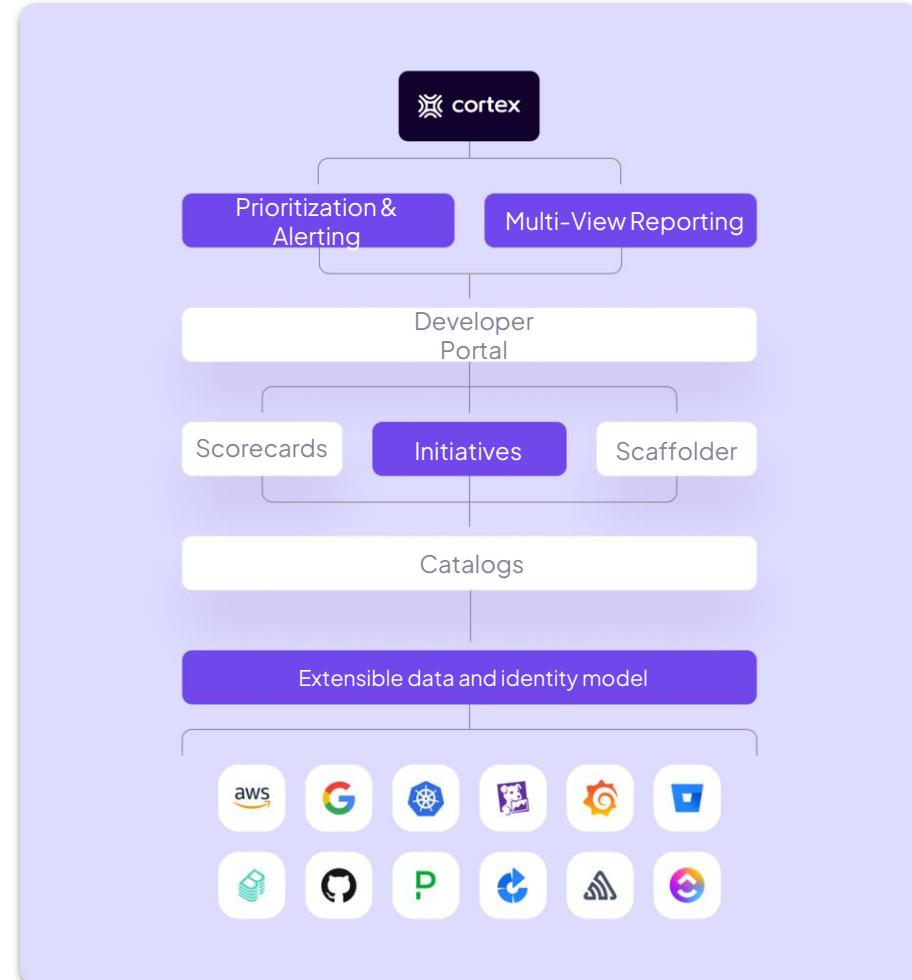


Cortex drives active progress against initiatives

01 **System of Record:** Unify data under common language
With the most flexible and extensible model

02 **Assessment:** Evaluate against core standards
With the ability to run targeted or continuous checks

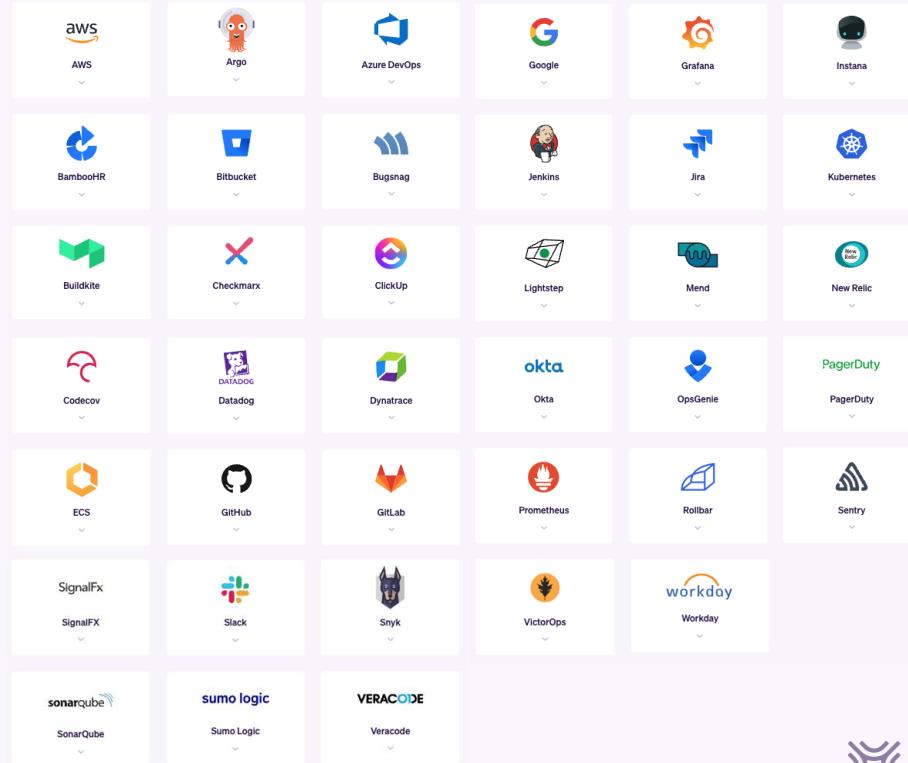
03 **Self-Service:** Deploy services in line with standards
With personalization for greater adoption



1. Build System of Record

50+ Deep Integrations

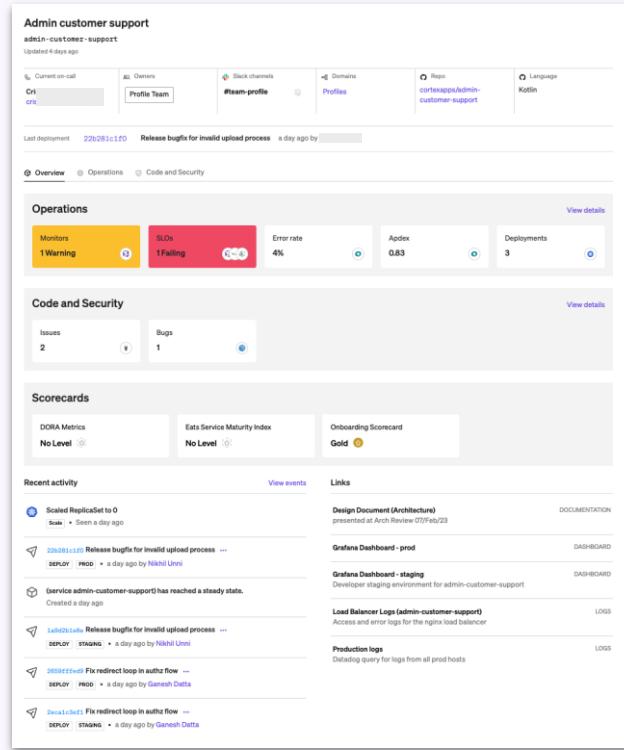
Pull defined entities & relationships from across your stack. Use logical defaults—extend where needed.



1. Build System of Record

Auto-Sync Catalogs

Show devs what's available, who owns it and what's changed with up-to-date ownership, docs, and dependencies.

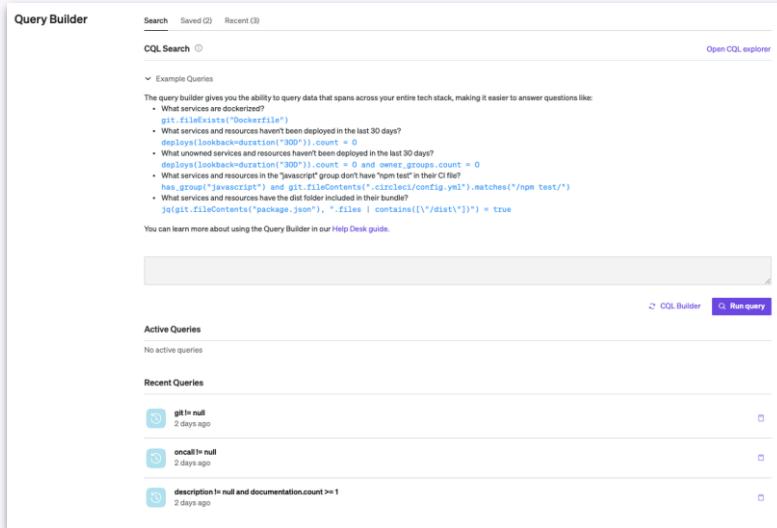


The screenshot shows a detailed catalog dashboard for the service 'admin-customer-support'. At the top, it displays the service name, a current on-call status for 'ctrl', and various metadata like Slack channels, domains, profiles, repository, and language. Below this, the dashboard is divided into several sections: 'Operations' (Monitors: 1 Warning, SLOs: 1 Failing, Error rate: 4%, Apdex: 0.83, Deployments: 3), 'Code and Security' (Issues: 2, Bugs: 1), 'Scorecards' (DORA Metrics: No Level, Eats Service Maturity Index: No Level, Onboarding Scorecard: Gold), and a 'Recent activity' feed. The activity feed lists several recent events, including deployment logs and operational alerts, such as 'Release bugfix for invalid upload process' and 'Fix redirect loop in authz flow'.

1. Build System of Record

Cortex Query Builder

Ask nuanced questions about ownership, version, metrics, state, and more.

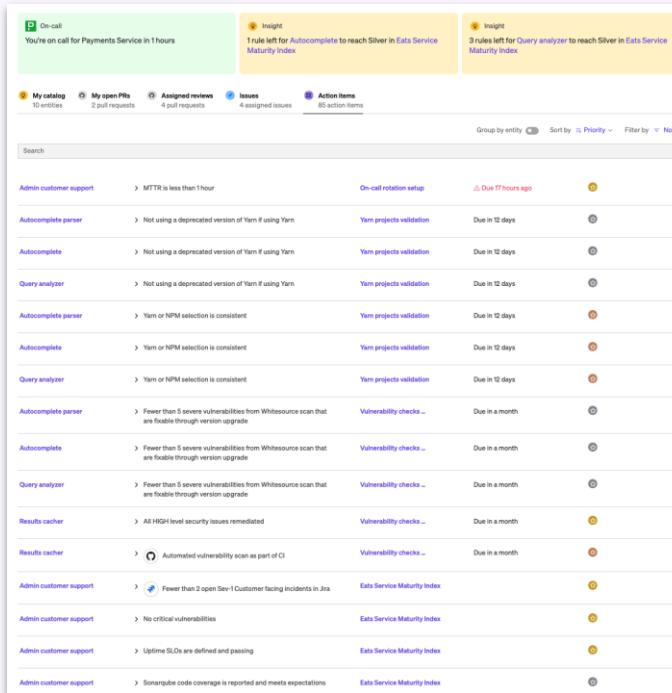


The screenshot shows the Cortex Query Builder interface. At the top, there is a search bar with 'Saved (2)' and 'Recent (3)' buttons. Below the search bar is a 'CQL Search' input field and a 'Run query' button. A 'Example Queries' section provides examples of CQL queries for Dockerfiles, deployment duration, and npm test. The main area is divided into 'Active Queries' and 'Recent Queries'. The 'Active Queries' section shows 'No active queries'. The 'Recent Queries' section lists three queries: 'git != null' (2 days ago), 'oncall != null' (2 days ago), and 'description != null and documentation.count >= 1' (2 days ago). Each query entry includes a refresh icon and a delete icon.

2. Prioritize Action

Developer Homepage

View info from across your stack like on-call info and PR status, as well as priority actions. Get alerts for time-sensitive tasks.



The screenshot shows the Cortex Developer Homepage with the following sections:

- On-call:** You're on call for Payments Service in 1 hours.
- Insight:** 1 rule left for Autocomplete to reach Silver in Eats Service Maturity Index.
- Insight:** 3 rules left for Query analyzer to reach Silver in Eats Service Maturity Index.

Below these are tabs for **My catalog**, **My open PRs**, **Assigned reviews**, **Issues**, and **Action items**. The **Action items** tab is selected, showing 85 items. The table below lists these items with columns for category, detail, status, due date, and priority.

Category	Detail	Status	Due	Priority
Admin customer support	MTTR is less than 1 hour	On-call rotation setup	Due 17 hours ago	!
Autocomplete parser	Not using a deprecated version of Yarn if using Yarn	Yarn projects validation	Due in 12 days	!
Autocomplete	Not using a deprecated version of Yarn if using Yarn	Yarn projects validation	Due in 12 days	!
Query analyzer	Not using a deprecated version of Yarn if using Yarn	Yarn projects validation	Due in 12 days	!
Autocomplete parser	Yarn or NPM selection is consistent	Yarn projects validation	Due in 12 days	!
Autocomplete	Yarn or NPM selection is consistent	Yarn projects validation	Due in 12 days	!
Query analyzer	Yarn or NPM selection is consistent	Yarn projects validation	Due in 12 days	!
Autocomplete parser	Fewer than 5 severe vulnerabilities from Whitespace scan that are fixable through version upgrade	Vulnerability check...	Due in a month	!
Autocomplete	Fewer than 5 severe vulnerabilities from Whitespace scan that are fixable through version upgrade	Vulnerability check...	Due in a month	!
Query analyzer	Fewer than 5 severe vulnerabilities from Whitespace scan that are fixable through version upgrade	Vulnerability check...	Due in a month	!
Results cache	All HIGH level security issues remediated	Vulnerability check...	Due in a month	!
Results cache	Automated vulnerability scan as part of CI	Vulnerability check...	Due in a month	!
Admin customer support	Fewer than 2 open Sev-1 Customer facing incidents in Jira	Eats Service Maturity Index	!	!
Admin customer support	No critical vulnerabilities	Eats Service Maturity Index	!	!
Admin customer support	Uptime SLAs are defined and passing	Eats Service Maturity Index	!	!
Admin customer support	Sonarqube code coverage is reported and meets expectations	Eats Service Maturity Index	!	!

2. Prioritize Action

Any-Rubric Scorecards

Spell out what's needed to migrate, deploy, hit compliance, meet best practice, and more.

Choose any rubric, add any exemptions.

Eats Service Maturity Index
Audit service maturity for all tier-1 services

exts-q2-migration
Applies to tier-1 services

Median level	% at highest level	% without level	Services
Bronze	4%	22%	27

Updated a minute ago Next evaluation in queue Evaluate now Level 4 ▾ None

Rules

Score	Rules	Reports	Rule Exemptions
Gold	<ul style="list-style-type: none">> No critical vulnerabilities> Uptime-SLOs are defined and passing> MTTR is less than 1 hour> Uses latest version of our auth library> Fewer than 2 open Sev-1 Customer facing incidents in Jira		
Silver	<ul style="list-style-type: none">> Has on-call rotation with at least 2 escalation levels> Sonarque code coverage is reported and meets expectations> Automated unit testing as part of build pipeline		
Bronze	<ul style="list-style-type: none">> Has at least 2 owners> Has README		

data-calculator-batch-job
Updated a few seconds ago Next evaluation in queue Evaluate now Level 4 ▾ None

data-calculator-batch-job

Rules

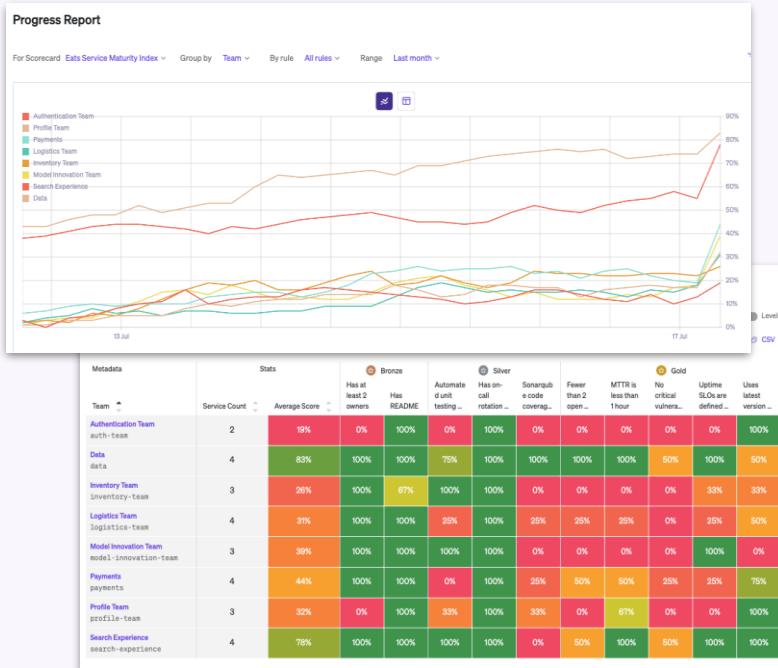
Score	Rules	Reports	Rule Exemptions
Gold (1 service)	<p>Fewer than 2 open Sev-1 Customer ... jira.issues(*status = "Open") - MTTR is less than 1 hour oncall.analysis_meanTimeToResolve... No critical vulnerabilities jenkins("vulnerability-scan...")</p>		
Silver (2 services)	<p>Inventory scraper Image recognition pipeline</p>		

Inventory-scraper 1 to 100%
Image-recognition-pipeline 1 to 100%

2. Prioritize Action

OOTB Reporting

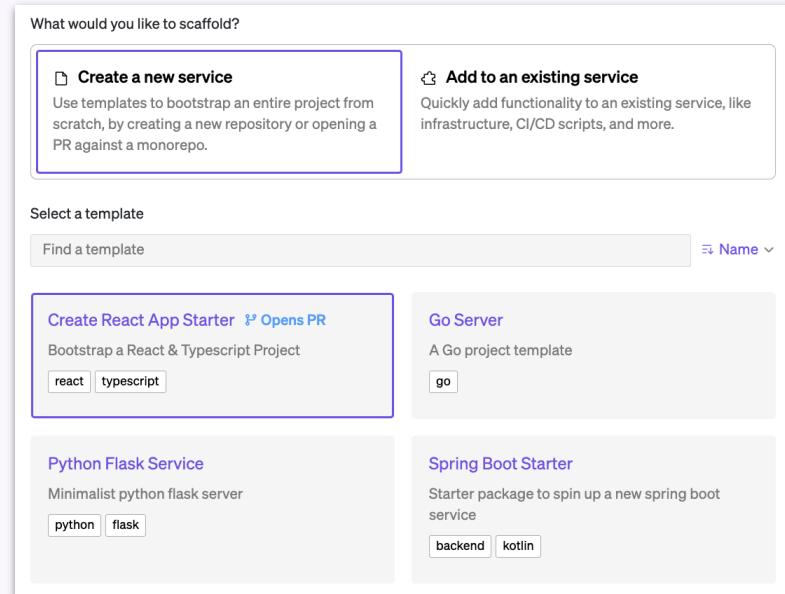
Benchmark by team, product, or component to understand who's excelling and who needs more support or resources.



3. Enable Smarter Self-Service

Scaffolder

Create templates for building new components that reduce code and improve consistency



The screenshot shows the Scaffolder interface. At the top, a question "What would you like to scaffold?" is displayed. Below it are two main options: "Create a new service" and "Add to an existing service". The "Create a new service" option is highlighted with a purple border. A sub-description states: "Use templates to bootstrap an entire project from scratch, by creating a new repository or opening a PR against a monorepo." To the right, the "Add to an existing service" option is described as "Quickly add functionality to an existing service, like infrastructure, CI/CD scripts, and more." Below this, a "Select a template" section is shown with a search bar "Find a template" and a "Name" dropdown. Four template cards are listed: "Create React App Starter" (Bootstrap a React & Typescript Project, react, typescript), "Go Server" (A Go project template, go), "Python Flask Service" (Minimalist python flask server, python, flask), and "Spring Boot Starter" (Starter package to spin up a new spring boot service, backend, kotlin).

3. Enable Smarter Self-Service

Actions

Configure no-code events that send custom payloads from Cortex to any API (internal, external, or webhook).

Deploy Run Action

This action deploys to the specified environment
Applies to all services

Configuration History

POST <https://github.com/cortexapps>

Inputs

Environment* Options: ["Prod", "Staging", "Dev"] Default value: "Dev" Allow multiple: `true` env

Ref Default value: `main` ref

Send release notification* When true, this will send the latest release notes to the specified email. Default value: `true` send_release_notes

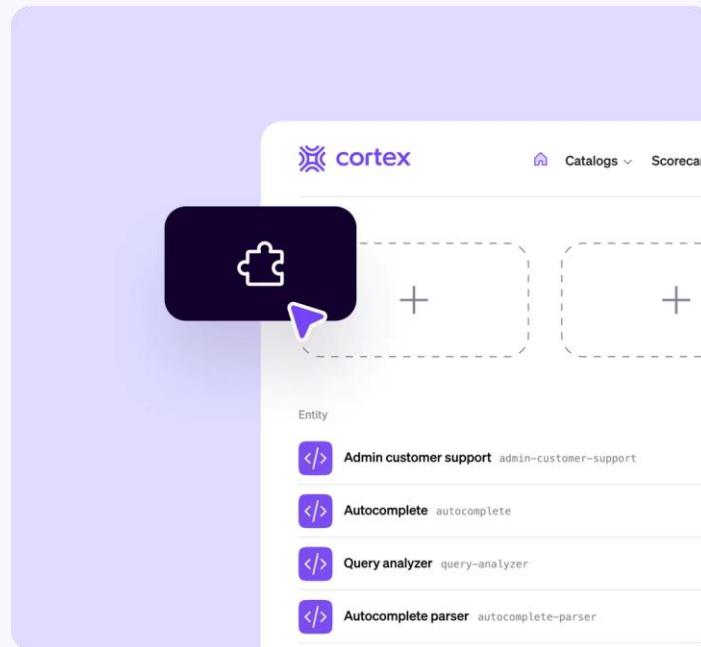
Slack channel Placeholder: `#team` Validation regex: `^([a-zA-Z0-9][a-zA-Z0-9._-]{1,80}$)` channel

Additional release notes additional_release_notes

3. Enable Smarter Self-Service

Plug-Ins

Enable developers to build custom experiences on top of their current platform.



Cortex IDP Maturity Curve

Personalized Developer Homepage

Catalogs

Scorecards

Initiatives

Scaffolder

Plugins

01

Aggregate

Centralize service and resource ownership info.

02

Assess

Define minimum requirements and assess where services fall.

03

Prescribe

Drive actions against standards and best practices. Manage OKRs end to end.

04

Enable

Incentivize developers to take action; provide tooling and templates to do so quickly.

05

Optimize

Deliver experiences tuned to each developer with automation and activations that reduce overhead.

Unified Data Model



Next Steps

Thank you!

Thank you!



Please complete the session
survey in the mobile app