EVE-OS Release Engineering

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Agenda

- CI/CD
- Github Actions / EVE-OS
- Roadmap in RE
  - Components
  - Container Registries
  - Dashboards
  - Information

CI/CD

GitHub Actions https://github.com/lf-edge/eve/actions

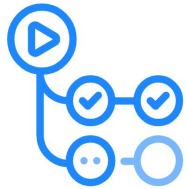
Every PR has a number of “checks” run against it (on both ARM and x86)

This is where Eden tests kick-in

Test infrastructure

- GitHub Actions VM
- Google Compute Platform (GCP) VMs

  with support for nested virtualization



GitHub Actions

Hardware configurations on Packet.net (nowadays Equinix Metal) Dell, HP, Supermicro, Huawei, Foxcon

Updated list: https://wiki.lfedge.org/display/EVE/EVE+in+the+Market

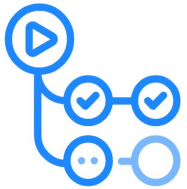
CI/CD

Workflow

A configurable automated process that you can set up in your repository

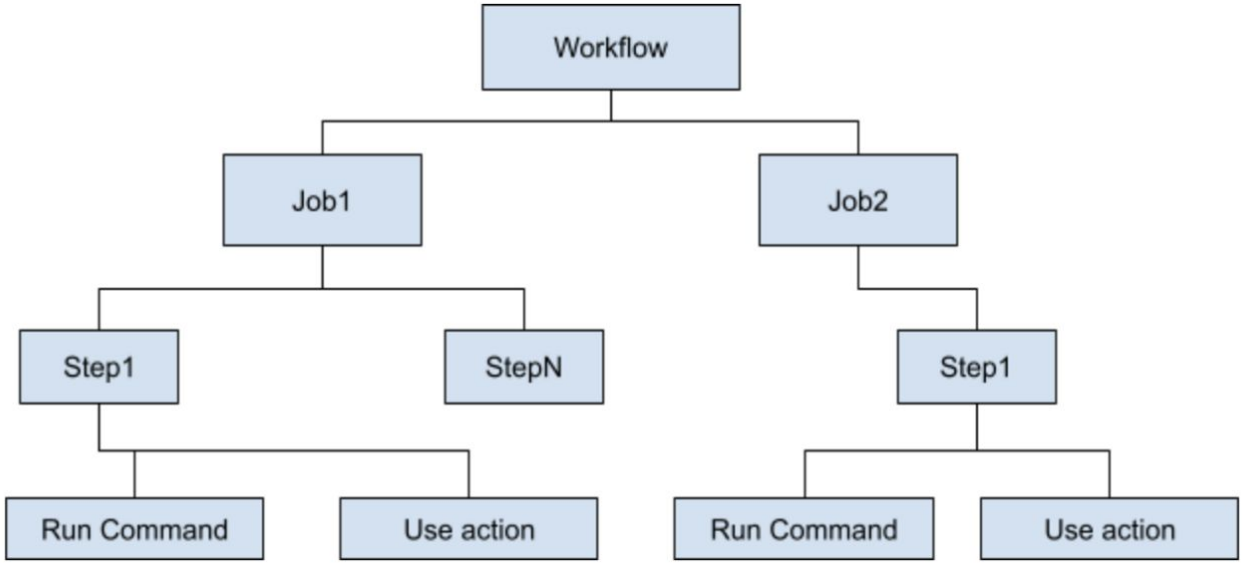
For example:

- Organizational: Welcoming new contributors
- Legal: Ensuring license uniformity
- Application: Testing across multiple operating systems



GitHub Actions

CI/CD



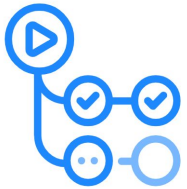
CI/CD

Event

Workflows are triggered on events

For example:

- Push, pull_request, public, etc.
- Schedule
- Repository_dispatch(outside systems)



GitHub Actions

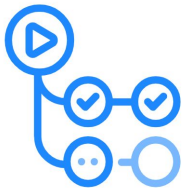
CI/CD

Action

Individual unit of work that you combine as steps to create a job in a workflow

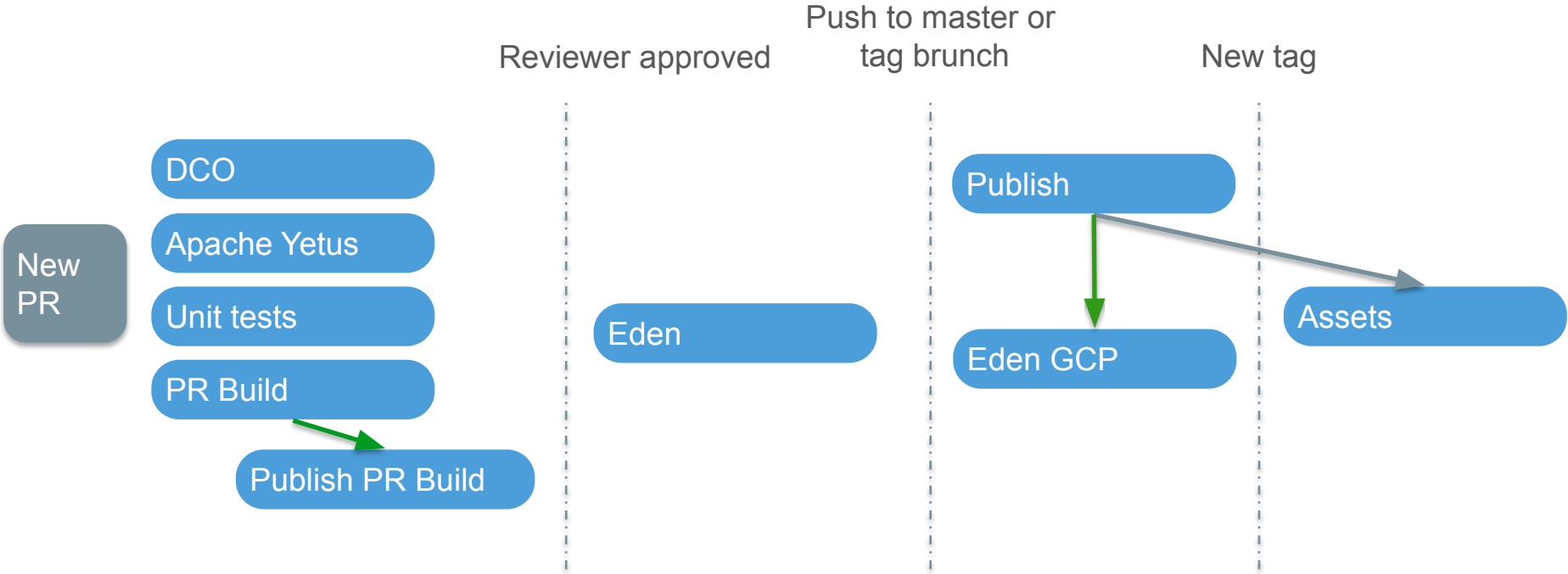
For example:

- actions/checkout
- actions/cache



GitHub Actions

CI/CD EVE



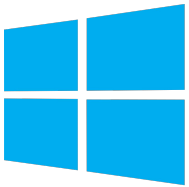
CI/CD Github Actions/ Github-Hosted runners

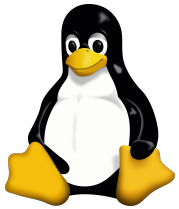
Hardware specification for Windows and Linux virtual machines:

2-core CPU

7 GB of RAM memory

14 GB of SSD disk space





Hardware specification for macOS virtual machines:

3-core CPU

14 GB of RAM memory 14 GB of SSD disk space

CI/CD Limitation

Job execution time - Each job in a workflow can run for up to 6 hours of execution time. If a job reaches this limit, the job is terminated and fails to complete.

Workflow run time - Each workflow run is limited to 72 hours. If a workflow run reaches this limit, the workflow run is cancelled.

API requests - You can execute up to 1000 API requests in an hour across all actions within a repository. If exceeded, additional API calls will fail, which might cause jobs to fail.

Concurrent jobs - The number of concurrent jobs you can run in your account depends on your GitHub plan, as indicated in the following table. If exceeded, any additional jobs are queued.

GitHub plan	Total concurrent jobs
Free	20
Pro	40
Team	60
Enterprise	180

CI/CD Self-Hosted runners

- Hardware Testing Lab Dmitry & Mikhail & Avi

CI/CD Release

Releases / 7.1.0

Release 7.1.0 Pre-release

github-actions released this 10 days ago · 17 commits to master since this release 7.1.0 f4f9138

Release 7.1.0

Assets 16

- amd64.initrd.bits
- amd64.initrd.img
- amd64.installer.img
- amd64.ipxe.efi.cfg
- amd64.ipxe.efi.ip.cfg
- amd64.kernel
- amd64.rootfs.img
- arm64.initrd.bits
- arm64.initrd.img
- arm64.installer.img

CI/CD Release

Release Cycle - 2 weeks

Semantic versioning uses a structure like **<MAJOR>.<MINOR>.<PATCH>**

For a new release (i.e., a published version), we increment…

MAJOR when making incompatible API changes,

MINOR when adding backwards-compatible functionality,

PATCH when making backwards-compatible bug fixes.

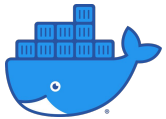
Roadmap Actions

- Security Actions
  - Dependabot
  - Docker Registry Harbour for all images from EVE and Zededa Repo
  - Commercial tools?
- Increase ARM self-hosted runners

Roadmap Container Registries

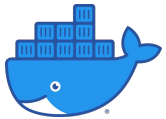
Now:

- Docker Hub



Soon:

- Docker Hub
- Github Container Registry
- Harbour
- Clients Private Repo

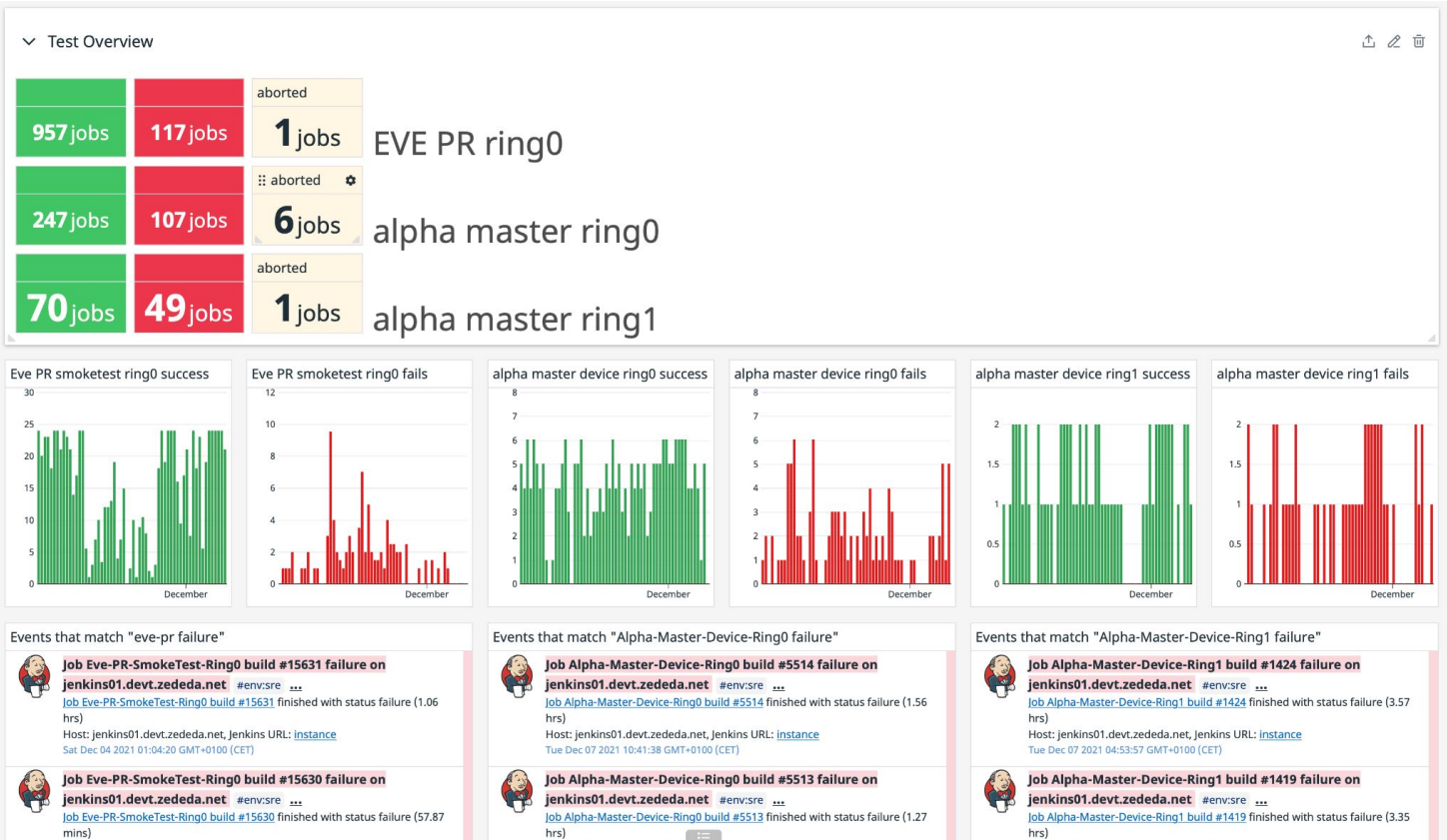


Roadmap Container Registries

	Amazon ECR	Docker Hub	GitHub Container Registry
Public Repository	✅ yes	✅ yes	✅ yes
Private Repository	✅ yes	✅ yes	✅ yes
Authentication	AWS IAM	Password or Access Token	Personal Access Token (PAT)
Image Scanning	✅ yes	✅ yes (paid plans only)	❌ no
Rate Limits	**Pull: 1,000 per second, Push: 10 per second**	**Pull: 100/200 (Free Plan), unlimited (Paid Plan)** **LF-edge: 5000 pulls/day** **Unused images deletes after 6 month**	**n/a**

Roadmap CI/CD Dashboard Now

https://p.datadoghq.com/sb/ec50dc3b2-88d4cdf59e500741975b87867b679d6f



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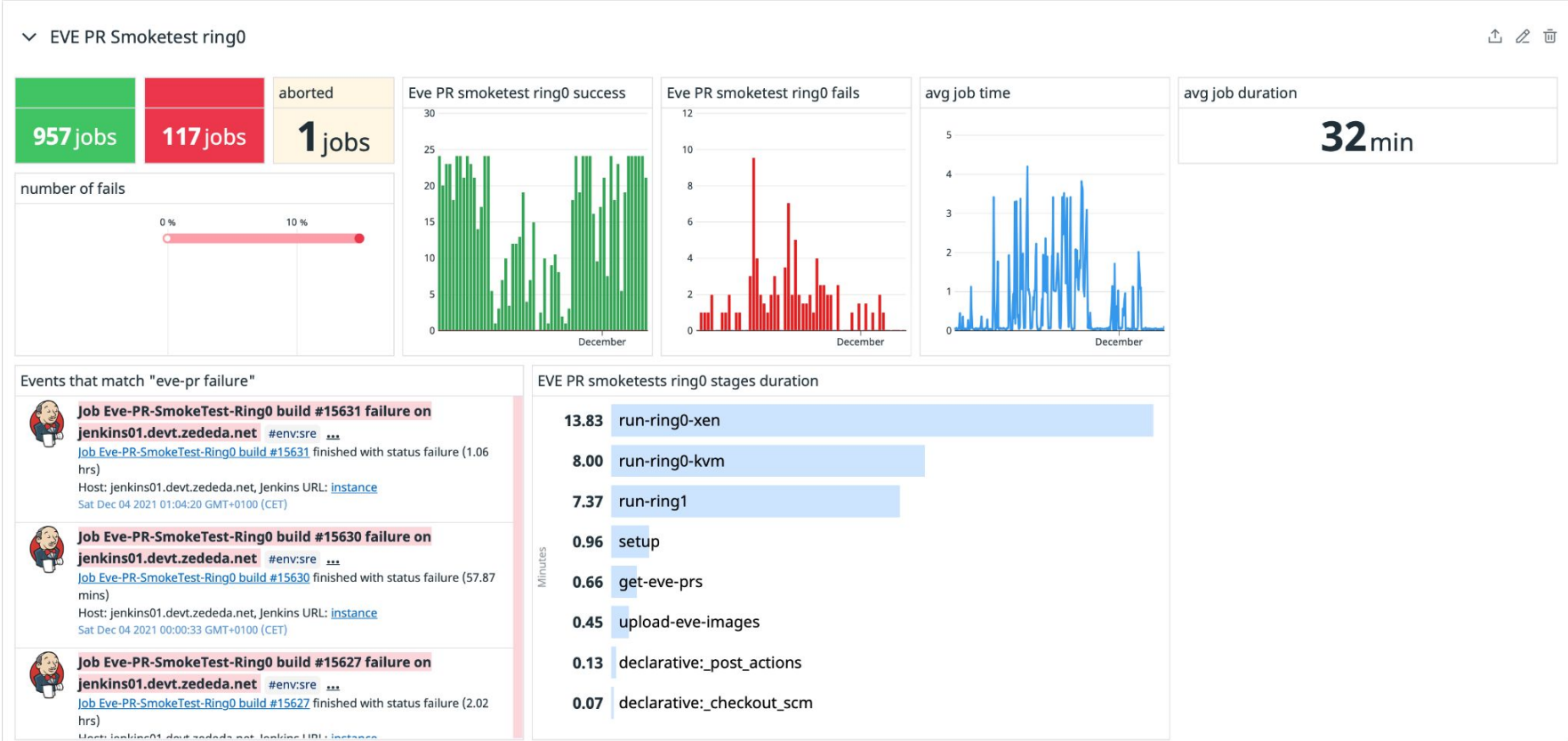
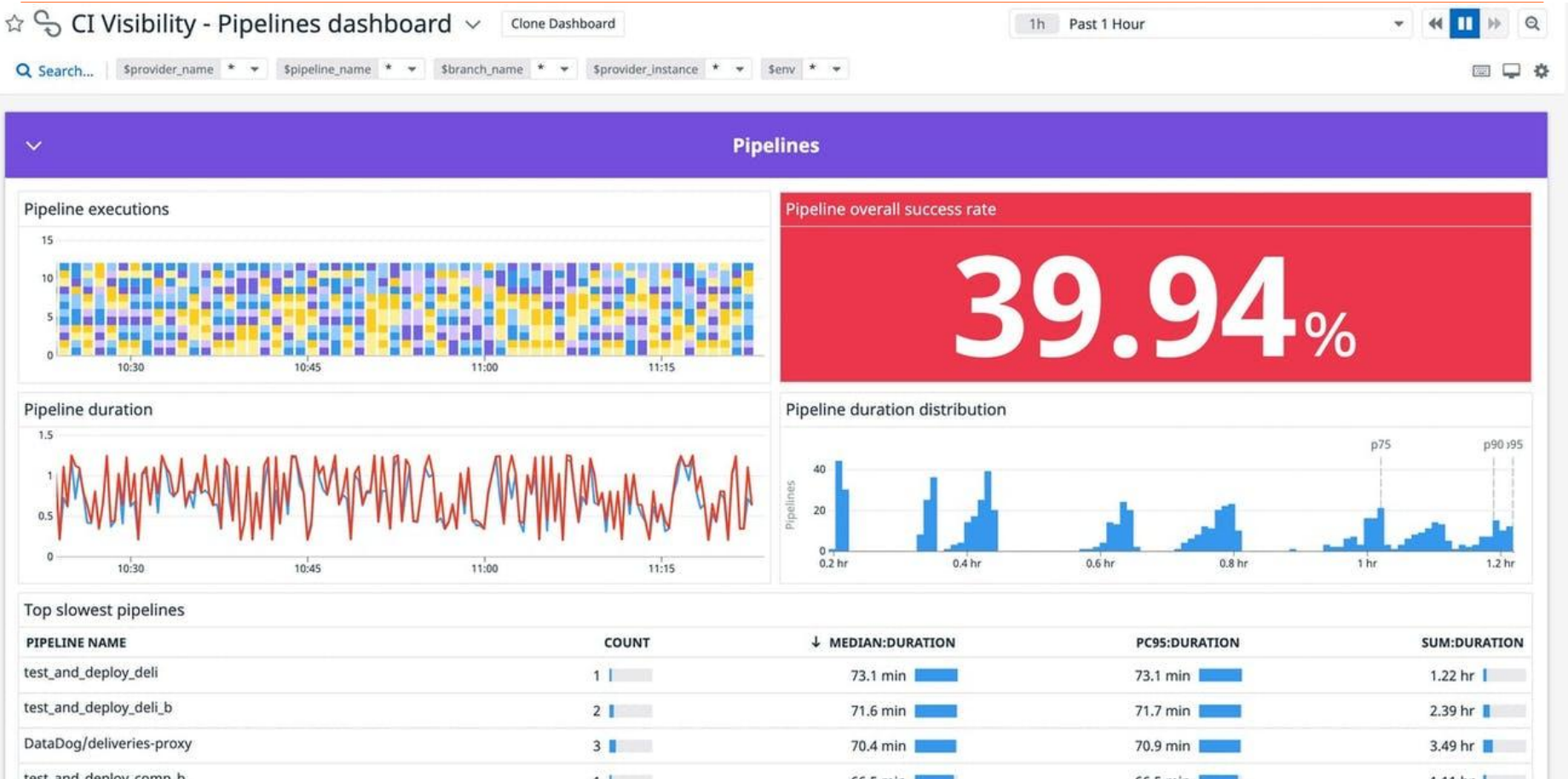


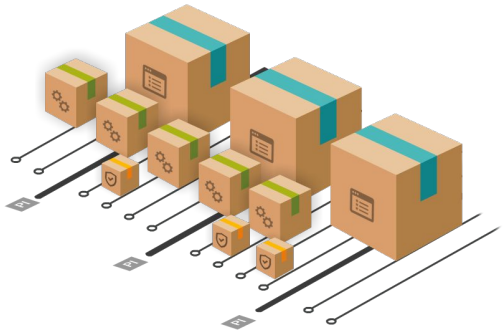
Roadmap CI/CD Dashboard After



Roadmap Components

Target upstream component:

- Alpine **~ 6 month (release cycle)**
- Linux Kernel, mainline **~ 2-3 months**
- Xen **8 months**
- QEMU **3-4 months**
- Golang **6 month**



Roadmap Information

Information support:

Now

- Zededa Slack ~73
- LF-edge Slack ~1445

Total: 1,518

Soon

- Zededa Slack ~73
- LF-edge Slack ~1445
- LF edge Twitter ~2340
- ZEDEDA Twitter ~1082
- LF edge Blog ~80.01K
- ZEDEDA Blog ~?
- Youtube Channel? 🤔 ~132
- Github Release notes ~325

Total: 85,497

github.com/lf-edge/eve

Thank you!

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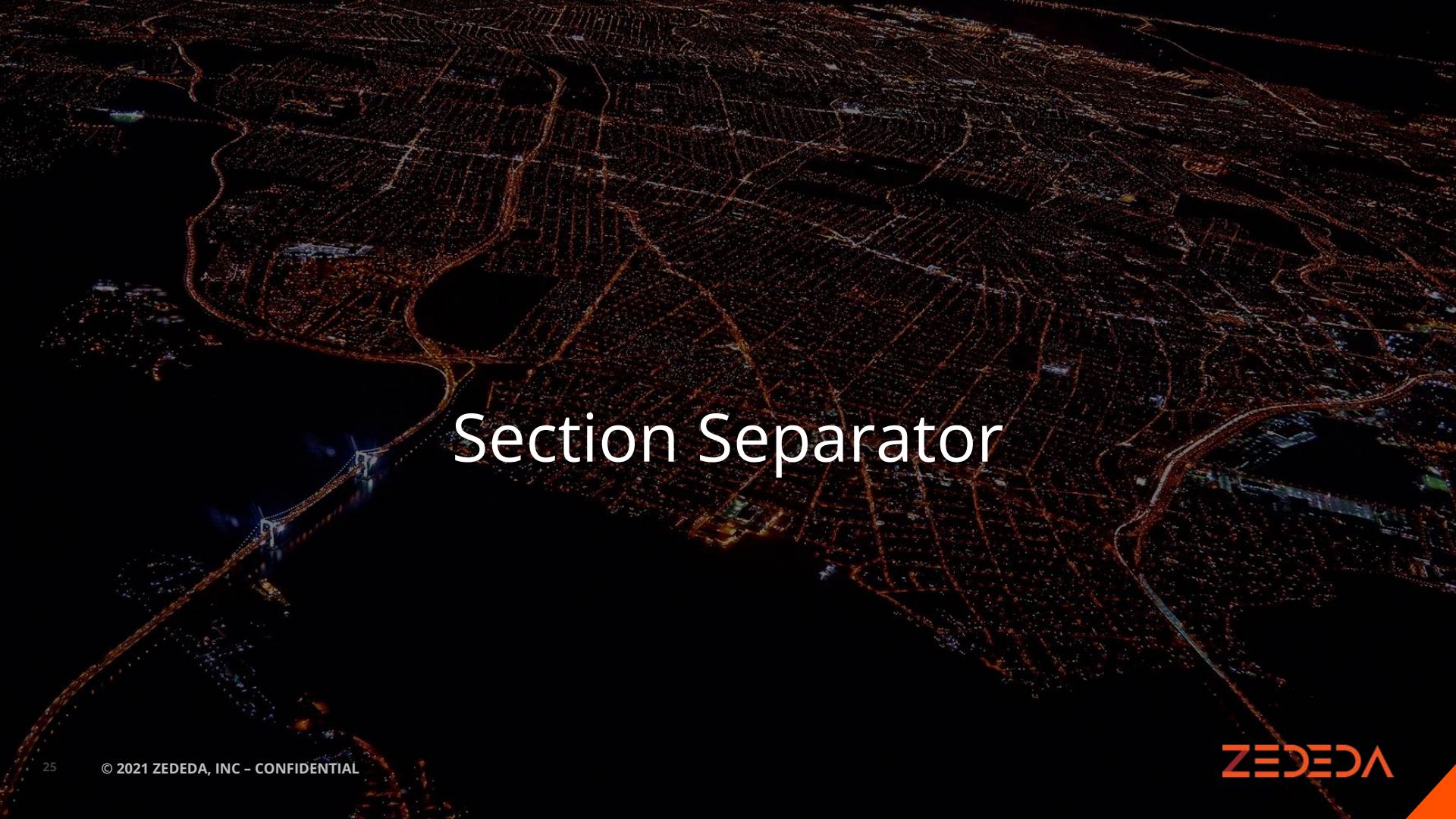
Twitter: @dautovri

General Slide

- Bullet 1
- Bullet 2
- Bullet 3

Example Table Slide

Criteria	1. OSS via Project EVE Community	2. General ZEDEDA Ecosystem Partner	3. ZEDEDA HW AVL	4. Preferred ZEDEDA Partner
Strategy	Build up a roster of HW OEMs using EVE-OS and engaged in the Project EVE community. Listing on EVE in Market on LF Site as “known to run” with no implied commercial support.	Establish partnership with HW OEM committed to providing engineering and support for specific customer opportunities	Establish a small baseline of HW that is pre-qualified and supported by ZEDEDA. Options added based on customer demand.	Establish strategic relationship with HW OEM taking on ongoing support fo EVE-OS. Preferred partners are recommended first to customers that need options.
Key Qualification Criteria	HW provider (or ZEDEDA) has loaded EVE to check for basic compatibility	Full HW support on at least one model	Full HW support for models on the AVL	Full vendor-provided support on chosen HW models, upstreaming to Linux community as needed
I/O and Driver Qualification	Verify basic I/O functions (e.g. Ethernet, USB)	All I/O and functions (e.g. cellular, watchdog timer) on supported models		
Test Hardware Provided to ZEDEDA	Not required	One sample by supported model, otherwise as needed for the customer engagement	Minimum 5 samples of supported hardware for ongoing verification	Minimum 5 samples of supported hardware for ongoing verification, in a “trust but verify” model
EVE-OS Regression Testing	Ad-hoc testing with EVE test suite	Based on contract established for the joint customer engagement	By release, performed by ZEDEDA	By release, performed by partner
Field Support	No commercial support	Based on contract established for the joint customer engagement	ZEDEDA takes 1st call, passes to vendor if HW issue	Partner takes 1st call on EVE-OS or HW issue



Cloud Agility at the Edge.

Visibility, Control and Security for the Enterprise and Industrial IoT Edge

Some Slide Deck

April 2021

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