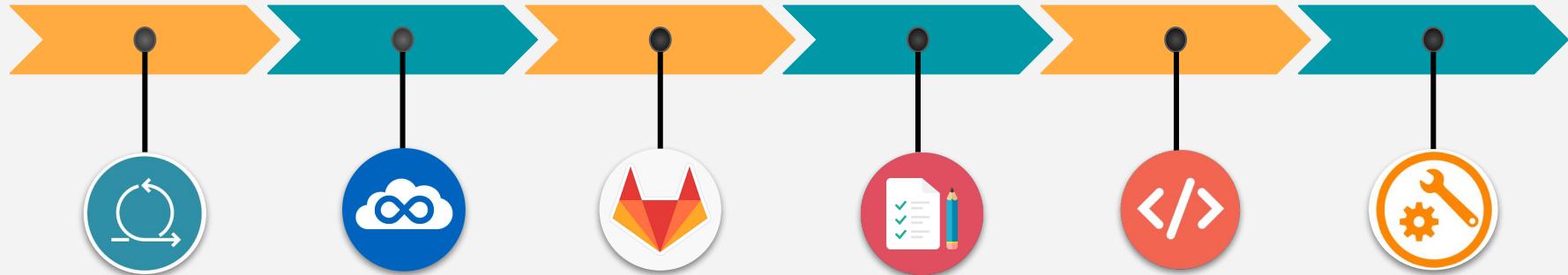


SDLC AND DEVOPS WITH GITLAB



Session RoadMap



Overview

Agile.
Scrum.
Kanban.

Modern DevOps

Devops.
Benefits.
Obstacles.

Manage Plan

The ToolChain
Complexity.
How Gitlab Fits?
To Manage.
To Plan.

Design Document

To Design.
To Document.
Wiki.
Versioning.

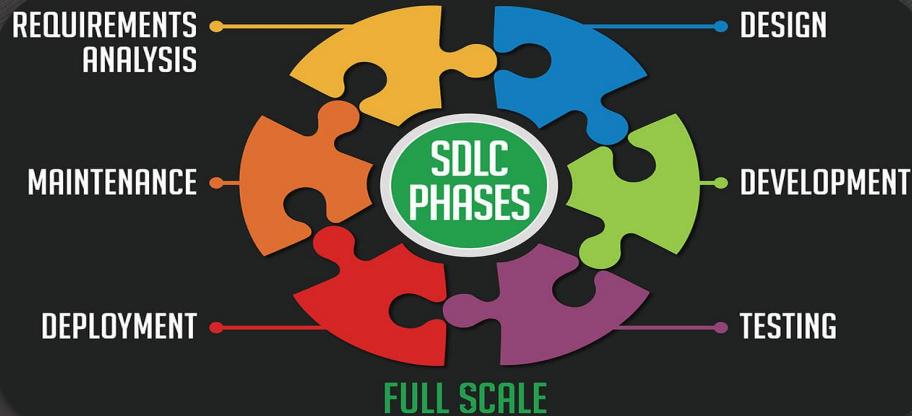
Create Code

Commits.
Branches.
MR.
Compare.
Beyond
Community
Edition.

Just A Beginning

Continuous...
The Final Tool
Chain.
Q/A.

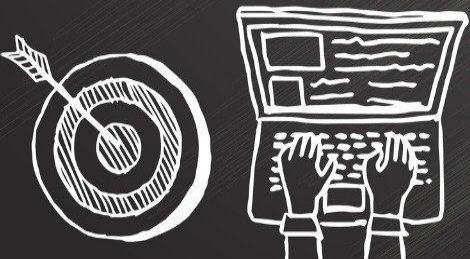
Requirement Analysis



Evolution



Testing



Design

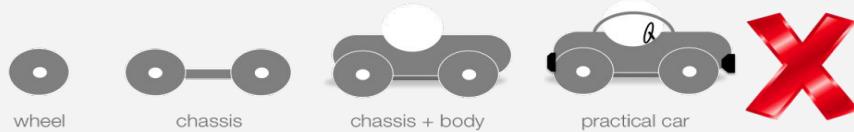


Implementation



The Agile Hype

Traditional waterfall



Agile prototyping



Value

Delivering Early and Often

Flow

End-To-End Workflow optimization

Quality

Fueled By Fast Feedback

AGILE MANIFESTO

We are uncovering better ways of developing software by doing it and helping others do it.

Through this work we have come to value:



While there is value in the items on the right, we value the items on the left more.

Reproduced from Agile Manifesto (2001) <http://agilemanifesto.org>

OUR AGILE SCRUM PROCESS



14
Rinse, repeat and voila! We continue the sprint cycles until all user stories have been delivered to your satisfaction.

TESTING



10

4
Organisation is key. Your project is organised into a series of sprints. User stories for each sprint are managed within the sprint backlog.

6
It's all in the detail. We break down each user story into smaller, more manageable blocks of work.

7
Ready to build. Software is designed, built, documented and tested within each sprint cycle. Daily standup meetings allows us to communicate progress.

9
Software in 2 weeks! Completed software from each sprint is shipped and ready for you to try.

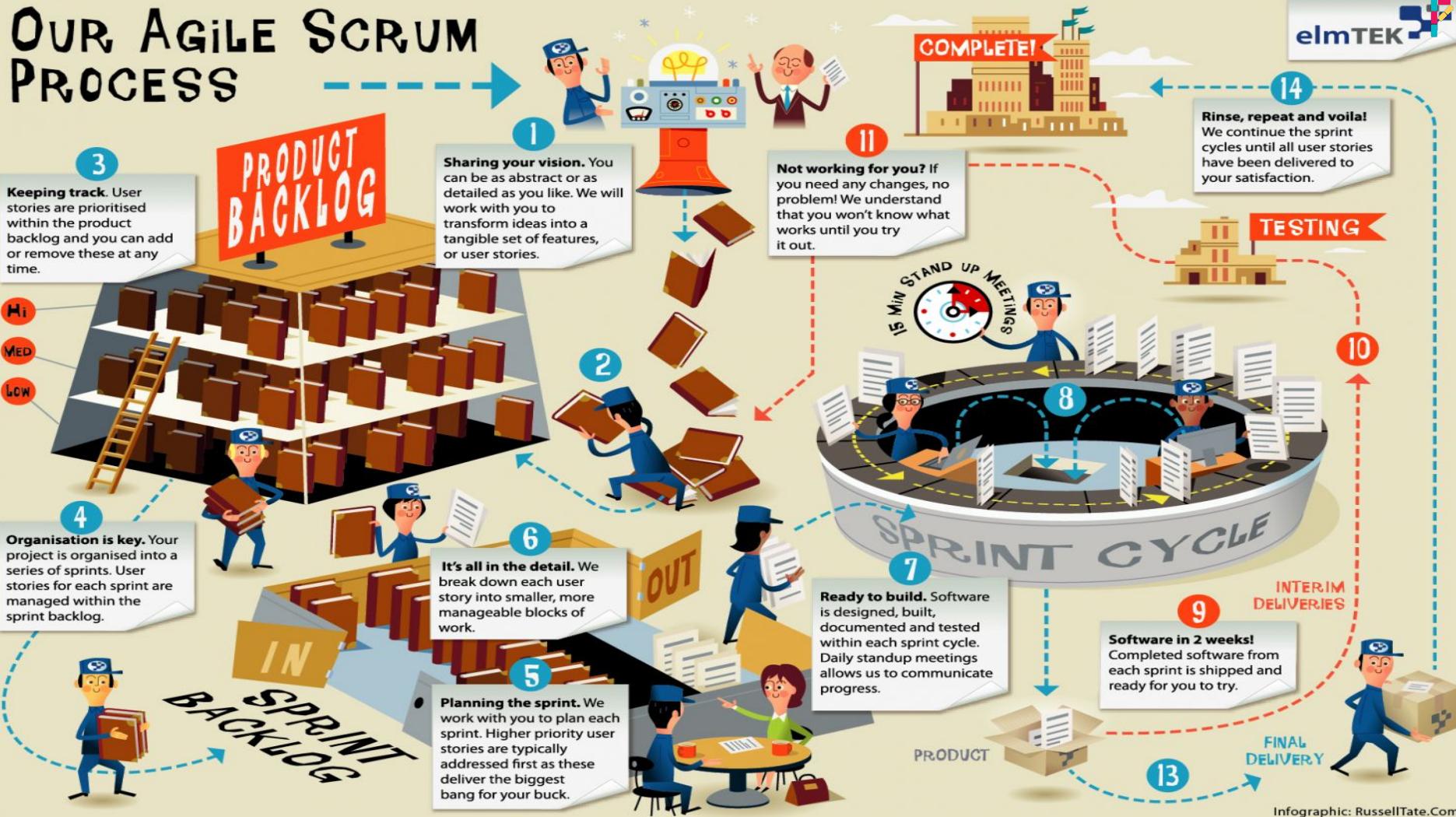
FINAL DELIVERY

SPRINT BACKLOG

5
Planning the sprint. We work with you to plan each sprint. Higher priority user stories are typically addressed first as these deliver the biggest bang for your buck.

PRODUCT

OUR AGILE SCRUM PROCESS



The Kanban Method

- Work and Workflow visualization tool.
- Enables you to optimize the flow of your work



Improved Flexibility



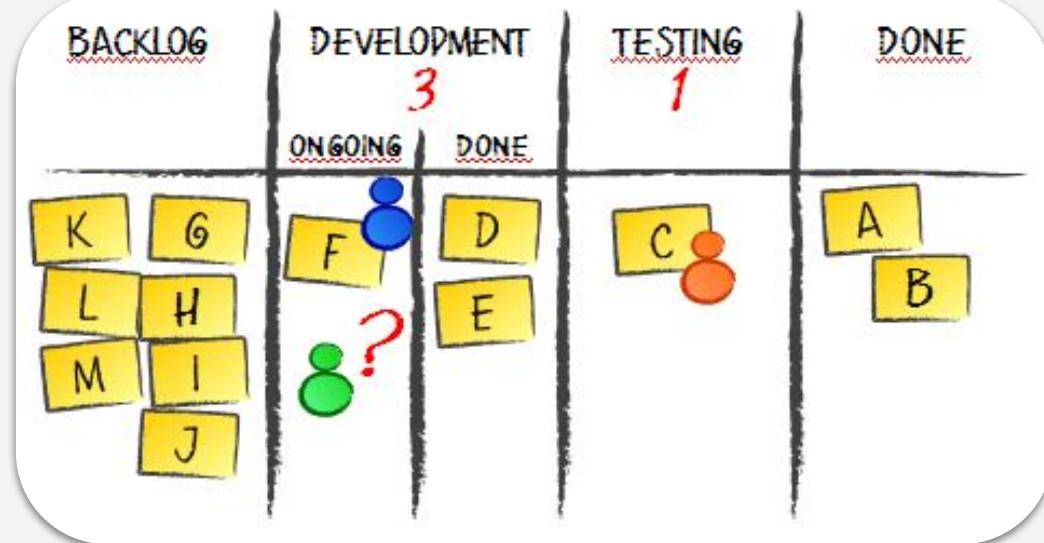
Increased Productivity



Focused on Continuous Delivery



Improved Collaboration



Visualize Work

Focus on Flow

Limit work in Progress

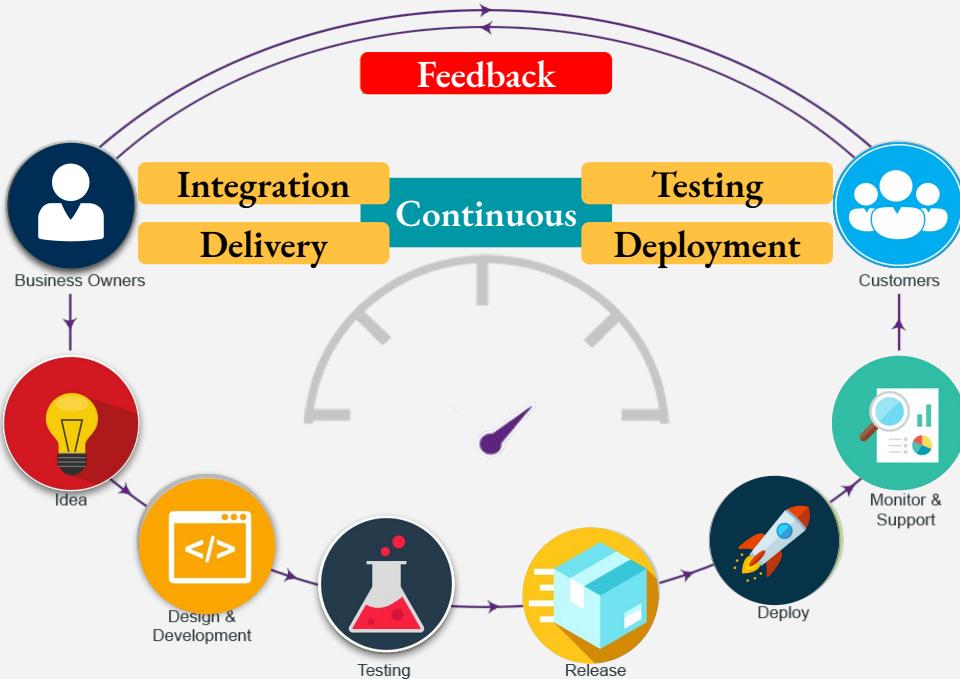
Continuous Improvement

DevOps



DevOps is a combination of **cultural philosophies, practices, & tools** that increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes.

- Evolution and Adaptation
- Tailored to Team and Projects
- Puts the User First - Not just the End-User
- Increased Collaboration and Not just Automation



Benefits

Shorter Dev Cycle

Faster Delivery

Reliability

Higher Quality

Fewer Failures

Reduce TTR

Stability

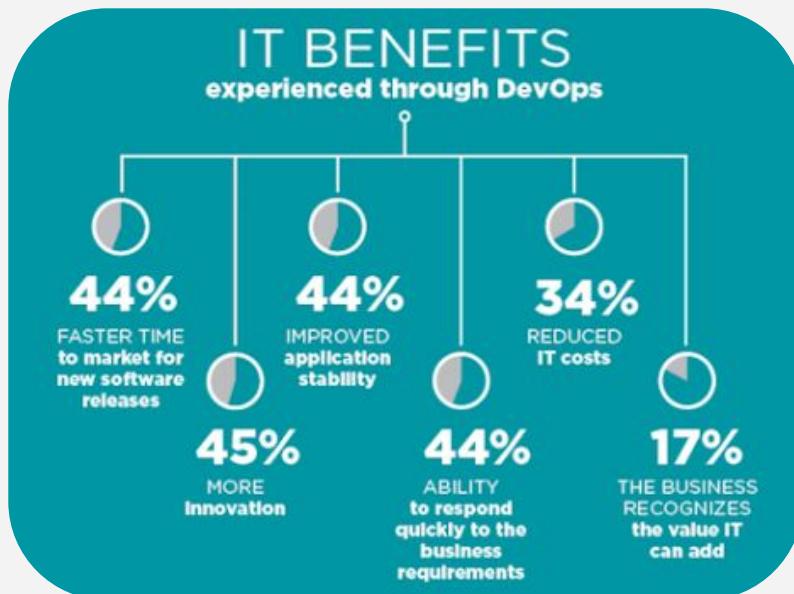
Faster Updates

Efficiency

Lower Risk

Better UX

Resource Savings



Shortcomings?

→ What You Do?

→ How You Do?

The DevOps Obstacles



1 CULTURE

Focus on building a collaborative culture with shared goals.
Elect champions.



2 TEST AUTOMATION

Don't neglect test automation while focusing on CI/CD deployments.
Continuous Testing is hugely important.
Security should not be an afterthought.



3 LEGACY

Include modeling for legacy infrastructure and applications.
Brownfield deployments are always tougher



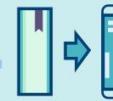
6 MANAGING ENVIRONMENTS

Standardize and automate complex DevOps environments with cloud sandboxes



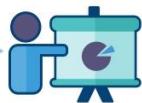
5 NO DEVOPS PLAN

Have a clear plan with milestones, owners and well-defined deliverables



4 APP COMPLEXITY

Factor in application architecture changes based on on-prem, cloud and containers early on.



7 SKILLSET

Train your teams, Standardize processes and establish common operational procedures.



8 BUDGET

Don't assume open source means free. Factor in integration and operational complexity.



9 TOOLS

Avoid fragmented toolset adoption. Tool chain sprawl can impose operational overhead.

Don't Forget
Me !!!



DevSecOps

BizDevOps



10 EXECUTIVE SUPPORT

Take time to educate executive chain to get resource and budget alignment

The image shows a central cartoon character with a large head, small body, and a question mark on its forehead, standing in front of a massive grid of logos representing various cloud native technologies. The grid is organized into sections with titles such as "Database", "Streaming & Messaging", "Application Definition & Image Build", "Continuous Integration & Delivery", "Platform", "Observability and Analysis", "Orchestration & Management", "Runtime", "Provisioning", "Cloud", "Public", "Kubernetes Certified Service Provider", "Special", "Kubernetes Training Partner", and "Serverless". Each section contains a grid of logos for different projects like Kubernetes, Docker, Istio, Prometheus, Grafana, and many others. A large yellow speech bubble at the bottom left contains the text "Ok.. Not This !!!".

Database

Streaming & Messaging

Application Definition & Image Build

Continuous Integration & Delivery

Platform

Observability and Analysis

Scheduling & Orchestration

Coordination & Service Discovery

Remote Procedure Call

Service Proxy

API Gateway

Service Mesh

Cloud-Native Storage

Container Runtime

Native Network

Automation & Configuration

Container Registry

Security & Compliance

Key Management

Chaos Engineering

Monitoring

Logging

Tracing

Kubernetes Certified Service Provider

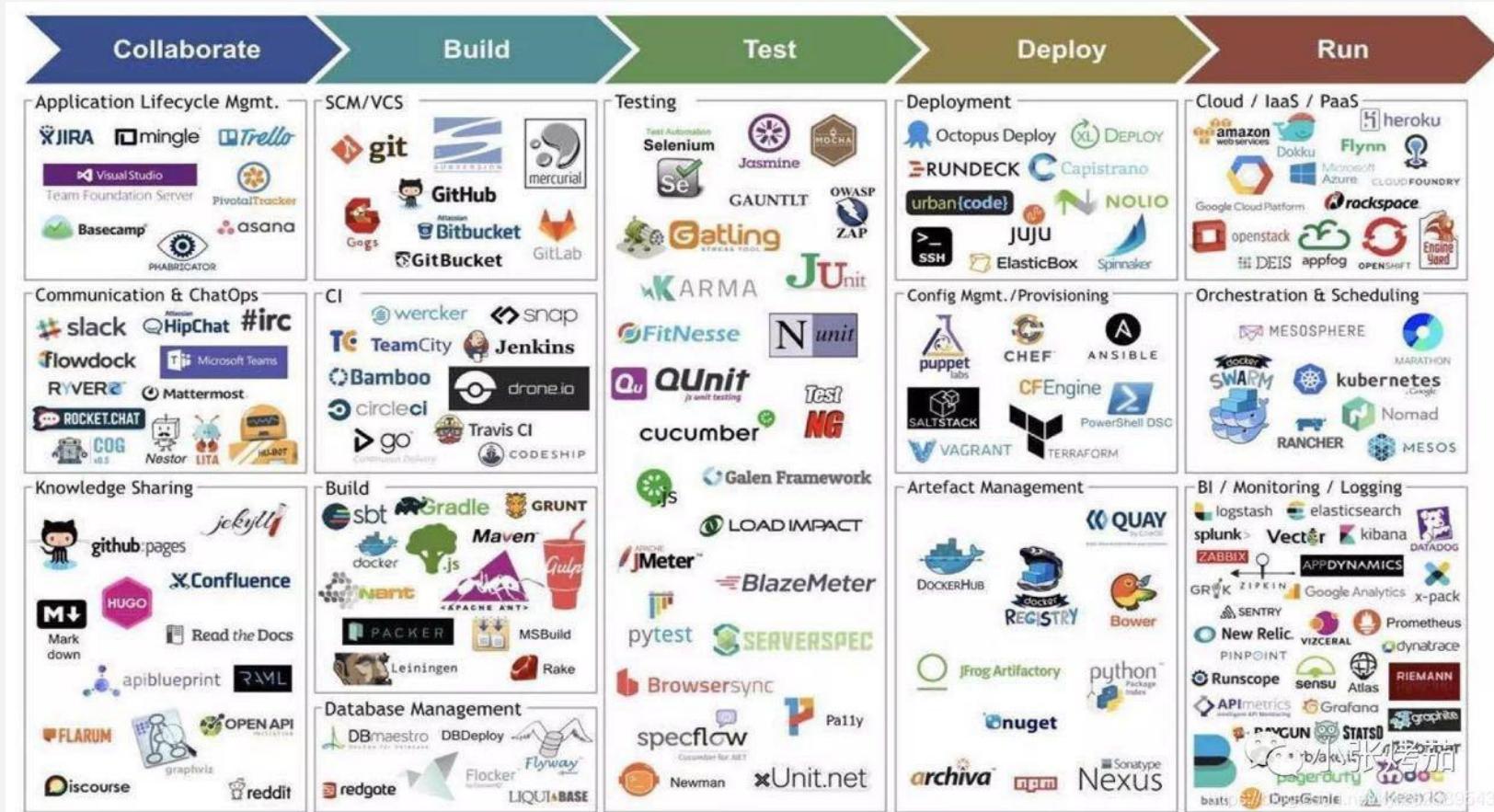
Special

Kubernetes Training Partner

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

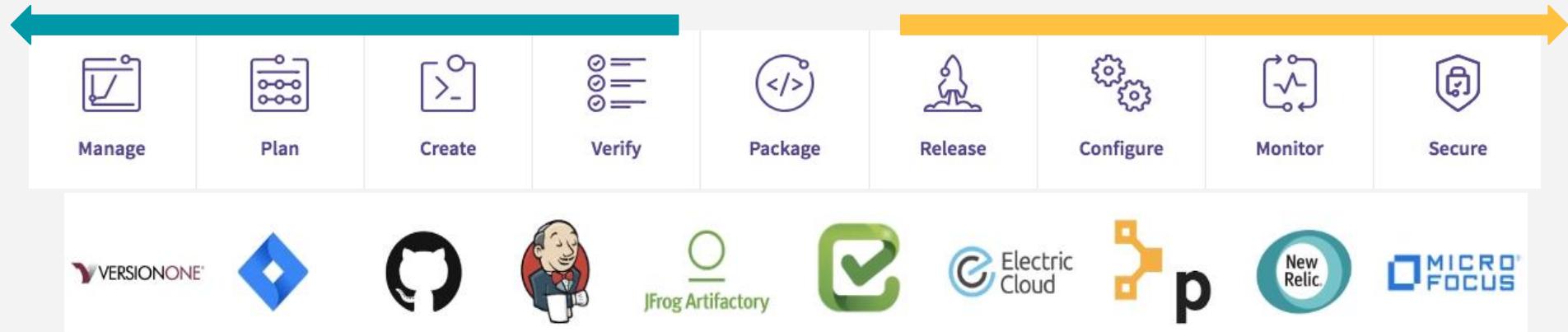
l.cncf.io

The Complex ToolChain





GitLab SDLC



Create

Merge

Build

Verify

Code Quality

Test

Secure	Package	Release	Configure	Monitor
SAST	Container Registry	Review App	Infra Config	Response
Dependency		Deploy	Scale	System
Container				Custom
License				Performance Testing
DAST				



Single Application To Manage

Projects Management (Groups and SubGroups)

Granular User Roles and Permissions

3rd Party Integrations

Imports and Exports

DevOps Score



Value Stream Analytics

GitLab.org > GitLab > Value Stream Analytics

Recent Project Activity

	2796	4093	1327
New Issues		Commits	Deploys

Last 30 days

Stage	Median	Related Merged Requests	Time
Issue	less than a minute	Time between merge request creation and merge/close	
Plan	1 day	Rescue invalid URLs during badge retrieval in asset proxy !26524 · Opened about 3 hours ago by Lucas Charles	1 hr 30 mins
Code	3 minutes	Ensure more of Sidekiq logs are in JSON !26480 · Opened about 9 hours ago by Stan Hu	2 hrs 21 mins
Test	about 1 hour	Resolve "ActionView::Template::Error: undefined method 'concat' for nil:Ni... !26395 · Opened 1 day ago by Juan J. Ramirez	14 hrs 37 mins
Review	about 22 hours	Fix add EC2 instances step !26377 · Opened 1 day ago by Collen	48 mins
Staging	9 minutes	Fix several ID-dependent specs !26372 · Opened 1 day ago by Rémy Coutable	2 hrs 45 mins
Total	4 days	Change "Boolean" to lowercase in docs !26361 · Opened 1 day ago by Marcin Sedlak-Jakubowski	13 hrs 21 mins

Wait for the 'Empty wiki' SVG to load before performing test assertions
!26309 · Opened 2 days ago by Rémy Coutable

1 day 22 hrs

Single Application To Plan



➡ Requirements/Issues/User Stories

➡ Create Labels/Tag Issues

A screenshot of a project management application. At the top, there's a green button labeled "Usage-Breakdown" and a title "Module related to Energy Usage breakdown scenarios". Below the title are buttons for "Project label", a star icon, a pencil icon, and three vertical dots. The main area shows a list of issues. At the top left of the list, there are filters: "Open 27", "Closed 300", and "All 327". On the right, there are buttons for "Edit issues" and "New issue". Below these are search and filter options, including a search bar with placeholder text "Search or filter results..." and a dropdown menu. The list of issues includes: 1. "Admin Dashboard - API For EMS Subscription Details" (opened 1 week ago by praveen), which has a red circle around its title and a red box around its labels "MILESTONE 07 - Energy Usage Breakdown and Ogni Admin Dashboard", "API", "Admin Dashboard", and "Deploy/Development". It also has a red circle around its comment count "1" and a red box around its last update "updated 1 day ago". 2. "Regions and States - A dropdown API to list all states" (opened 1 week ago by praveen), with a red box around its labels "API", "Deploy/Development", and "States and Regions", and a red box around its last update "updated 1 week ago". 3. "Admin Dashboard - Property types - Sub feature level stats" (opened 1 week ago by praveen), with a red box around its labels "API Changes", "Admin Dashboard", and "Deploy/Development", and a red box around its last update "updated 1 day ago".

Open 27

Closed 300

All 327

Module related to Energy Usage breakdown scenarios

Project label



Created date

Search or filter results...

Created date

Admin Dashboard - API For EMS Subscription Details

#327 · opened 1 week ago by praveen MILESTONE 07 - Energy Usage Breakdown and Ogni Admin Dashboard API Admin Dashboard Deploy/Development

1

updated 1 day ago

Regions and States - A dropdown API to list all states 2 of 3 tasks completed

#324 · opened 1 week ago by praveen MILESTONE 07 - Energy Usage Breakdown and Ogni Admin Dashboard API Deploy/Development States and Regions

1

updated 1 week ago

Admin Dashboard - Property types - Sub feature level stats

#323 · opened 1 week ago by praveen MILESTONE 07 - Energy Usage Breakdown and Ogni Admin Dashboard API Changes Admin Dashboard Deploy/Development

1

updated 1 day ago

➡ Define Milestone/Sprint

➡ Map Issues/MR To Milestone

Open 5

Closed 12

All 17

Due soon

New milestone

MILESTONE 07 - Energy Usage Breakdown and Ogni Admin Dashboard

Nov 18, 2020–Nov 30, 2020

11 Issues · 12 Merge Requests

60% complete



Close Milestone

MILESTONE 06 - Water Utility Release

started on Oct 28, 2020

14 Issues · 50 Merge Requests

100% complete



Close Milestone

Single Application To Plan



➡ Track Issues with filters

➡ Multiple Boards For Team

The screenshot shows a Jira board interface with the following elements:

- Top Bar:** Includes dropdowns for "Development" and "Milestone = %"MILESTONE 01 - Backend", and buttons for "Label", "Assignee", "Show labels", "Edit board", "Add list", and "Add issues".
- Left Sidebar:** Labeled "Switch board" with options: "Search", "Development", "My Board", "Create new board", and "Delete board".
- Boards:** Several boards are visible:
 - In Progress:** Contains 5 issues.
 - API - Sensor data, trend alert and value (API, Asset Sensor Module) - Status: In Progress, Due: 16h, ID: #14
 - Setup A Sensor Simulator that generates a mock data on timely basis (Environment Setup) - Status: In Progress, Due: 23h, ID: #23
 - Model Creation Status for MS2 (Data Modeling) - Status: In Progress, Due: 26h, ID: #26
 - An API to get the sensor data, transform and push it to the database (API, Asset Sensor Module) - Status: In Progress, Due: 24h, ID: #24
 - Dev Deployment:** Contains 7 issues.
 - API - Logout User (API, Low priority, User Module) - Status: In Progress, Due: 30m, ID: #19
 - Bug - Typo error in URL of user list (BugFix, Customer Module, User Module) - Status: In Progress, Due: 15m, ID: #17
 - High priority bug fixes needed (BugFix, Customer Module, High Priority, User Module) - Status: In Progress, Due: 40m, ID: #20
 - Bug - API generated same JWT Token for a phononenumber (BugFix, User Module) - Status: In Progress, Due: 15m, ID: #16
 - Backend-Review:** Contains 1 issue.
 - Design Initial data model u (Asset Sensor Module, Custom, Data Modeling, High Priority, User Module) - Status: In Progress, Due: 24h, ID: #1
 - Create a data model Interf:** Contains 1 issue.
 - Asset Sensor Module, Custom, High Priority, User Module - Status: In Progress, Due: 4h, ID: #2
 - Database Modelling - Mod:** Contains 1 issue.
 - Data Modeling, User Module - Status: In Progress, Due: 1h, ID: #8
 - Setup CI & CD for develop:** Contains 1 issue.
 - Environment Setup, Low priority - Status: In Progress, Due: 1h, ID: #9



Single Application To Plan

➡ Comment and Discussions

praveen @praveen · 51 minutes ago
closed the state-based requirements for now. Models are created and dropdown API is deployed. Halted on further progress.

1 1

Write Preview
This is a new strong **highlighted** comment with a sample table with an attachment [new_user_credentials.csv](#)

S.No	ReqID
1	RQ120
2	RQ121

Comment
Add a general comment to this issue.

Start discussion
Discuss a specific suggestion or question.

Start discussion Start discussion & close issue Discard draft

Maintainer

Todo Add todo

Assignee praveen @praveen

Milestone MILESTONE 07 - Energy Usage Breakdown and Ogni Admin Dashboard

Time tracking Spent 5h 30m Est 1d

Due date No due date

Labels API Admin Dashboard Deploy/Development

Confidentiality Not confidential

➡ Estimation

➡ Time Spent

➡ Lock/Restrict Issues

➡ Due Date

Single Application To Design & Document

➡ Manage Designs with versions along with issues

Designs Showing latest version ▾ Select all Arc...

- ✓ Version 3 (latest)
- Version 2
- Version 1

Drop or [upload](#) designs to attach



s.png



s.jpg

Single Application To Design & Document

→ Interactive Digital Documentation - Wiki

→ Main and Sub Sections/Multi-Page

→ API Documentation

→ Design Documentation

→ Manage Pages

Store Module			
Store Module Description			
Store APIs			
S.No	API Name	Description Overview	GraphQL Reference
1	Create store	Adds a new store	Mutation-Create Store
2	Retrieve/Update store	Retrieve a single store by its id and update it.	Get Store/Mutation-Update store
3	Delete store	Delete a single store by its id	Mutation-Delete Store
4	List all stores	List all created stores	Get all stores
5	Get stores Dropdown	Get store list based on city,location and store_type	Get all stores
6	Get Store slots	List slots for store(id) and date with slot availability and color range	Get slots

Single Application To Design & Document

→ Attachments & Hyperlinks

The screenshot displays a single application window with multiple integrated features:

- Top Bar:** Shows "4. Sample Response".
- Left Sidebar:** A navigation menu with items like "Home", "Page versions", "Ref", "Status", and "Sta".
- Central Content:** A "My new page · Changes" section showing "Showing 1 changed file" with "3 additions" and "3 deletions". It includes a "Hide whitespace changes" button and "Inline" and "Side-by-side" view options.
- Diff View:** A detailed "My-new-page.md" diff view. The left column shows line numbers (2, 3, 4, 5, 6, 7, 8, 9) and the right column shows the corresponding text. Colored highlights indicate changes: red for deletions and green for additions. The text content includes Latin placeholder text and some real code snippets.
- Right Panel:** A vertical list of document components with their formats:
 - Format
 - markdown
 - markdown
 - markdown
 - markdown

→ Diff Check

→ Activity Bar Events

Single Application To Create

→ As a version control for Code management

→ Multiple Branches and protected

Programming languages used in this repository

Language	Percentage
Python	96.42 %
HTML	3.21 %
CSS	0.36 %

Commit statistics for development Aug 19 - Nov 27

Total: 964 commits
Average per day: 2.1 commits
Authors: 3

development

enmanv3_backend

Commits per day of month

Commits per weekday

Day	Commits
1	30
2	35
3	15
4	45
5	25
6	40
7	45
8	30
9	35
10	20
11	55
12	25
13	30
14	15
15	35
16	10
17	45
18	50
19	55
20	20
21	30
22	15
23	20
24	10
25	25
26	30
27	20
28	55
29	35
30	25

- Files
- Commits
- Branches
- Tags
- Contributors
- Graph
- Compare
- arts



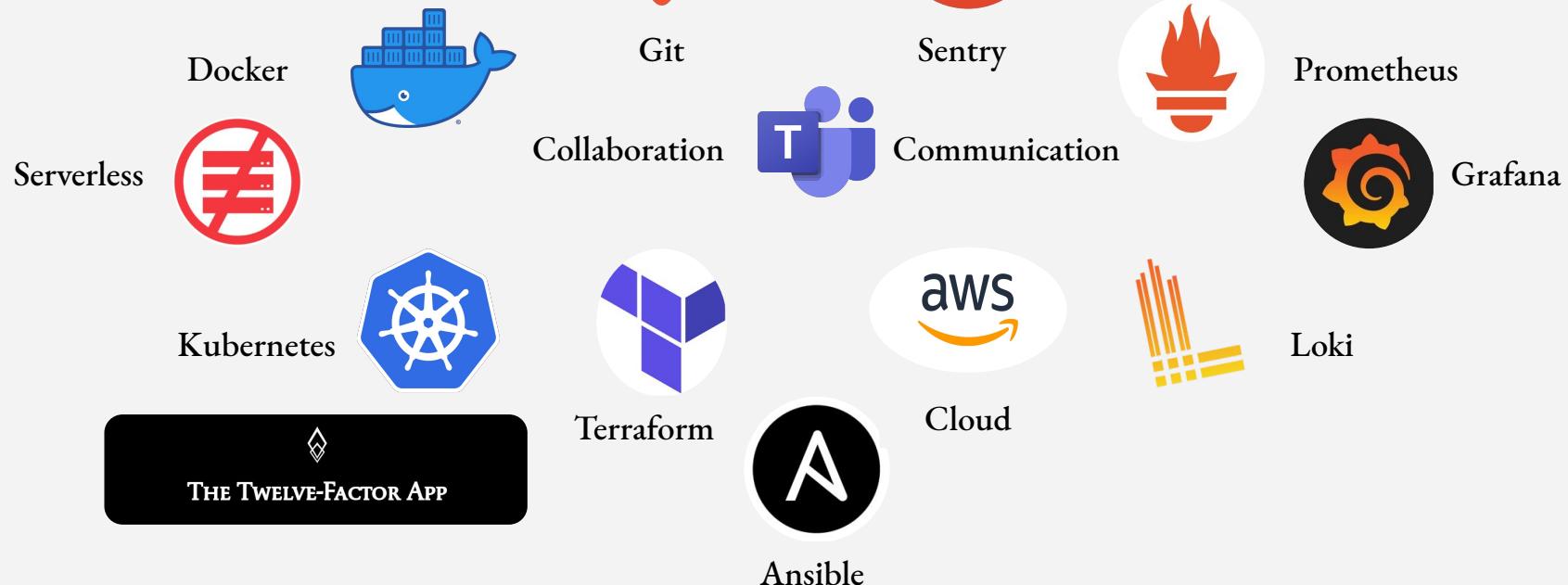
Single Application To Create

- ➡ Activity bar
- ➡ New Releases
- ➡ Burn Down Charts
- ➡ Blocked Issues
- ➡ Issue Weight
- ➡ Multiple Assignees
- ➡ WIP Limit
- ➡ Configurable
- ➡ MR Approval

The screenshot displays a software interface designed for managing projects and code reviews. At the top, there's a navigation bar with a search field and a 'Create new board' button. On the left, a sidebar lists project management options like 'Project overview', 'Repository', 'Issues (25,490)', 'Merge Requests (872)', 'CI / CD', 'Security & Compliance', 'Operations', 'Packages', 'Project Analytics', 'Snippets', and 'Members'. The main area features a 'MILESTONE 01' board with a 'Code Review' section. This section shows merge requests with details such as review time, author, comments, commits, and line changes. One request, 'Prefetch forked repos from source repos d...', has a review time of 328 days. Another, 'Fix object storage deprecation warning', has a review time of 122 days. A third, 'WIP: Add API for view arbitrary commit in ...', has a review time of 122 days. The 'Code Analytics & Review' section below shows a pipeline status: 'Pipeline #66 (#19) passed with warnings for 14600032 on 1-alt-tag-update'. It also displays code quality metrics: 'Code quality improved on 4 points and degraded on 1 point' with a 'Collapse' link. A detailed list of findings follows, including 'Rubocop/Lint/UselessAssignment lib/six.rb', 'Insecure Source Gemfile.lock', 'Insecure Dependency Gemfile.lock', 'Insecure Dependency Gemfile.lock', and 'Rubocop/Lint/UnusedBlockArgument Guardfile'. At the bottom, there are buttons for 'Merge', 'Remove source branch' (with a checked checkbox), and 'Modify commit message'.

➡ Code Analytics & Review

The Final ToolChain



To be Continued In Next Session....

➡ Continuous Integration



➡ Continuous Delivery



Code Quality

Continuous Testing

Security Check

Dev

Staging

Performance Impact

App Metrics

Review App

Pod Logs



Thank
You

ANY QUESTIONS?

