

Application Lifecycle Management

An overview of existing tools

Pedro Tavares
up201708899@fe.up.pt

Faculty of Engineering of the University of Porto

15 December 2017

Application Lifecycle Management

Definition (Application Lifecycle Management)

Is the product lifecycle management of software.

It covers the entire lifecycle from the **idea conception**, through to the **development**, **testing**, **deployment**, **support** and ultimately **retirement** of systems.

Consists in three core aspects: **governance**, **development**, and **operations**.

Application Lifecycle Management

Definition (Application Lifecycle Management)

Is the product lifecycle management of software.

It covers the entire lifecycle from the **idea conception**, through to the **development, testing, deployment, support** and ultimately **retirement** of systems.

Consists in three core aspects: **governance, development, and operations.**

Application Lifecycle Management

Definition (Application Lifecycle Management)

Is the product lifecycle management of software.

It covers the entire lifecycle from the **idea conception**, through to the **development**, **testing**, **deployment**, **support** and ultimately **retirement** of systems.

Consists in three core aspects: **governance**, **development**, and **operations**.

Application Lifecycle Management



Figure: ALM should cover every stage of Software Development Lifecycle.

Core Aspects of ALM

- **Governance:** extends over the entire application lifecycle to make sure the application always provides what the business needs;
- **Development:** occurs in the first part of an applications lifecycle, then happens periodically as the application is updated;
- **Operations:** begins shortly before an application is deployed, then continues until the application is removed from service.

Core Aspects of ALM

- **Governance:** extends over the entire application lifecycle to make sure the application always provides what the business needs;
- **Development:** occurs in the first part of an applications lifecycle, then happens periodically as the application is updated;
- **Operations:** begins shortly before an application is deployed, then continues until the application is removed from service.

Core Aspects of ALM

- **Governance:** extends over the entire application lifecycle to make sure the application always provides what the business needs;
- **Development:** occurs in the first part of an applications lifecycle, then happens periodically as the application is updated;
- **Operations:** begins shortly before an application is deployed, then continues until the application is removed from service.

Why the need of ALM Tools?

"More and more software development companies realize that relying on inadequate legacy tools and loads of manual work is no longer feasible."

Why the need of ALM Tools?

Companies realized that with proper ALM tooling they can have integrated teams that:

- **Collaboratively** define **software requirements**;
- Plan **sprints** and **releases**;
- **Test** the product **during development**;
- **Continuously deploy** the latest product updates.

Why the need of ALM Tools?

Companies realized that with proper ALM tooling they can have integrated teams that:

- **Collaboratively** define **software requirements**;
- Plan **sprints** and **releases**;
- Test the product **during development**;
- **Continuously deploy** the latest product updates.

Why the need of ALM Tools?

Companies realized that with proper ALM tooling they can have integrated teams that:

- **Collaboratively** define **software requirements**;
- Plan **sprints** and **releases**;
- **Test** the product **during development**;
- **Continuously deploy** the latest product updates.

Why the need of ALM Tools?

Companies realized that with proper ALM tooling they can have integrated teams that:

- **Collaboratively** define **software requirements**;
- Plan **sprints** and **releases**;
- **Test** the product **during development**;
- **Continuously deploy** the latest product updates.

The problem of most ALM tools

- GitHub follow a **marketplace strategy** where other vendors cover most of the product categories;
- Atlassian covers most of the product categories but the user or **reseller has to integrate** them together;
- Requires **multiple applications** to cover the ALM stages.

The problem of most ALM tools

- GitHub follow a **marketplace strategy** where other vendors cover most of the product categories;
- Atlassian covers most of the product categories but the user or **reseller has to integrate** them together;
- Requires **multiple applications** to cover the ALM stages.

The problem of most ALM tools

- GitHub follow a **marketplace strategy** where other vendors cover most of the product categories;
- Atlassian covers most of the product categories but the user or **reseller has to integrate** them together;
- Requires **multiple applications** to cover the ALM stages.

GitLab: The single application



"GitLab is a single application that does everything from planning to monitoring."

Advantages of a single application

- **Single** Authentication/Authorization;
- Single Project/Setup;
- Single Interface/Data-Store/Overview;
- Single Vendor;

Advantages of a single application

- **Single** Authentication/Authorization;
- **Single** Project/Setup;
- **Single** Interface/Data-Store/Overview;
- **Single** Vendor;

Advantages of a single application

- **Single** Authentication/Authorization;
- **Single** Project/Setup;
- **Single** Interface/Data-Store/Overview;
- **Single** Vendor;

Advantages of a single application

- **Single** Authentication/Authorization;
- **Single** Project/Setup;
- **Single** Interface/Data-Store/Overview;
- **Single** Vendor;

GitLab Features

- **Planning** Issue tracking and Kanban boards;
- **Creating** Version control and Code reviews;
- **Verifying** Continuous integration;
- **Releasing** Continuous deployment;
- **Monitoring**;

GitLab Features

- **Planning** Issue tracking and Kanban boards;
- **Creating** Version control and Code reviews;
- **Verifying** Continuous integration;
- **Releasing** Continuous deployment;
- **Monitoring**;

GitLab Features

- **Planning** Issue tracking and Kanban boards;
- **Creating** Version control and Code reviews;
- **Verifying** Continuous integration;
- **Releasing** Continuous deployment;
- **Monitoring**;

GitLab Features

- **Planning** Issue tracking and Kanban boards;
- **Creating** Version control and Code reviews;
- **Verifying** Continuous integration;
- **Releasing** Continuous deployment;
- **Monitoring**;

GitLab Features

- **Planning** Issue tracking and Kanban boards;
- **Creating** Version control and Code reviews;
- **Verifying** Continuous integration;
- **Releasing** Continuous deployment;
- **Monitoring**;

Planning: GitLab Issues (Issue tracking)

The screenshot displays the GitLab Issues interface. On the left, a sidebar contains navigation links: Overview, Issues (14,303), List, Boards, Labels, Milestones, Merge Requests (872), and Members. The main content area shows the 'Issues' page for the 'GitLab.org' group. It features a summary bar with 'Open 14,291', 'Closed 28,169', and 'All 42,460' issues. Below this is a search bar and a 'Last updated' dropdown. A note states: 'Only issues from the GitLab.org group are listed here. To see all issues you should visit dashboard page.' The list of issues includes:

- docker gitlab-runner alpine-v10+ cannot download artifacts from previous stage**
gitlab-runner#2805 - opened 4 days ago by Chris Fitzpatrick (2 updates, 2 minutes ago)
- It is not downloading the JasperReports dependency.**
gitlab-runner#2804 - opened 4 days ago by John Wilson López Vega (1 update, 5 minutes ago)
- Runner fails due to timeout exceeded (Cloning repository...)**
gitlab-runner#2803 - opened 4 days ago by Andrew Red (1 update, 9 minutes ago)
- DeleteUserService#execute deletes the user before deleting its projects so projects deletion fail**
gitlab-ce#25107 - opened 10 months ago by Rémy Coutable @ 10.1 (Platform, Locked, Bug) (1 update, 12 minutes ago)
- Acceptance Testing: Conversation CommitService::FindCommit** 19 of 44 tasks completed
gitlab#514 - opened a month ago by Andrew Newdgate @ 2017-10-04 - Weekly Deliverables (AT Production Initial, Acceptance Testing, Infrastructure Deliverable) (Landed in GitLab 10.0, Moved x1) (12 updates, 13 minutes ago)
- Left side bar Members inconsistency when collapsed**
gitlab-ce#38648 - opened a day ago by homer (UX, Content, Navigation, User management) (4 updates, 15 minutes ago)

Planning: GitLab Boards (Kanban boards)

The screenshot displays the GitLab Boards interface, which uses a Kanban-style layout to manage issues. At the top, there are tabs for 'Issues', 'Board', 'Labels', and 'Milestones', with 'Board' currently selected. Below the tabs are filters for 'Author', 'Assignee', 'Milestone', and 'Any Label', each with a dropdown arrow. A green 'Create new list' button is located on the right. The main area contains three boards: 'Development' (8 items), 'Testing' (4 items), and 'Production' (4 items). Each board has a title bar with a trash icon and a count. The 'Development' board lists issues like '#19052 Frontend P1 Performance Testing customer+', '[Meta] Code review improvements #19049 Backend P1 code review customer+', 'Issue Boards #17907 Frontend P1 direction feature proposal', and 'Improve performance of Projects::IssuesController#show so it's not terribly slow #15607 P1 Performance'. The 'Testing' board lists issues like '#19052 Development Frontend P1 Performance customer+', 'Multiple Issue templates #18656 Frontend P1 direction feature proposal issues', 'Cache rendered Markdown in the database instead of in Redis #18337 Accepting Merge Requests Backend P1 Performance banzai database', and 'In the merge request view tick the 'remove branch' by default #14413 P2 feature proposal'. The 'Production' board lists issues like 'Expand diff to have more context #19054 Backend P1 code review customer+ direction feature proposal merge requests needs weight', ''post-receive' job is too slow when pushing a rebased branch #18663 P1 Performance', 'Make Move Project Dropdown Performant #17932 Frontend P1 Performance customer+ database', and 'Release 8.10.7 #20981 Accepting Merge Requests CI P1 Release'.




Creating: GitLab SCM (Version control)




[Open](#) Merge request !7046 opened about 9 hours ago by  **Marcia Ramos** [Edit](#) [Close merge request](#) 


Add screenshots to features.yml


closes [#1587](#)


cc/ [@JobV](#)

Request to merge [features-add-screenshots](#)  into **master** (21 commits behind) [Check out branch](#)  




 Pipeline [#10561170](#) passed with stages   for [7b241398](#).

 Deployed to [review/features-add-screenshots](#) on [features-add-screenshots.about.gitlab.com](#) about 8 hours ago [Stop environment](#)


[Merge](#) ☒ Remove source branch ☐ Squash commits  [Modify commit message](#)

 Closes issue [#1587](#).

You can merge this merge request manually using the [command line](#).

 0  0 

Creating: GitLab SCM (Code review)




Connor Shea @connorshea started a discussion on [the diff](#) 21 minutes ago
Last updated by Luke Bennett 20 minutes ago

[Toggle discussion](#)





app/views/admin/ip_blocking/_blocking_ips.html.haml 0 → 100644


```
1 +%ul.content-list
2 + - if @collection.blank?
3 +   %li
4 +     .nothing-here-block No IP addresses to show
5 + - else
6 +   .table-holder
7 +     %table.table.builds
8 +       %thead
9 +         %tr
10 +           %th IP
```



Connor Shea @connorshea commented 21 minutes ago
I think this should probably be expanded to "IP Address".
Edited 6 minutes ago



Developer




Luke Bennett @lbennett commented 20 minutes ago
Sounds good to me 👍
Edited 6 minutes ago

Developer

Reply...

Resolve discussion 

Verifying: GitLab CI (Continuous integration)

GitLab CI				
Add Project Users Background Jobs 👤 dmitry.zapozhety@gmail.com Logout				
Project: GitLab View on GitLab Details 🔗 Edit				
All builds master stable 4-0-stable				
Status	Commit	Branch	Duration	Finished at
success	48a5012b2	master	29 minutes	10 minutes ago
failed	9c993972	4-0-stable	15 minutes	about 1 hour ago
success	bd0ead9ef	master	25 minutes	about 1 hour ago
canceled	b08bb2097	master		
failed	9115e4f92	master	16 minutes	about 4 hours ago
failed	b53ca0bcf	master	32 minutes	about 4 hours ago
success	64bd51f4b	master	25 minutes	about 20 hours ago
success	72908ba7a	master	25 minutes	about 23 hours ago
success	a39c91061	master	25 minutes	about 24 hours ago
success	13978f33d	master	25 minutes	1 day ago
success	c9e681ba5	master	26 minutes	1 day ago
failed	3d57755b7	master	25 minutes	1 day ago

Releasing: GitLab CD (Continuous deployment)

GitLab / GitLab.org / GitLab Community Edition

Pipelines

Project
Repository
Issues (6,464)
Merge Requests (422)
Pipelines
Jobs
Schedules
Environments
Charts
Wiki
Snippets
Settings

GitLab / GitLab.org / GitLab Community Edition

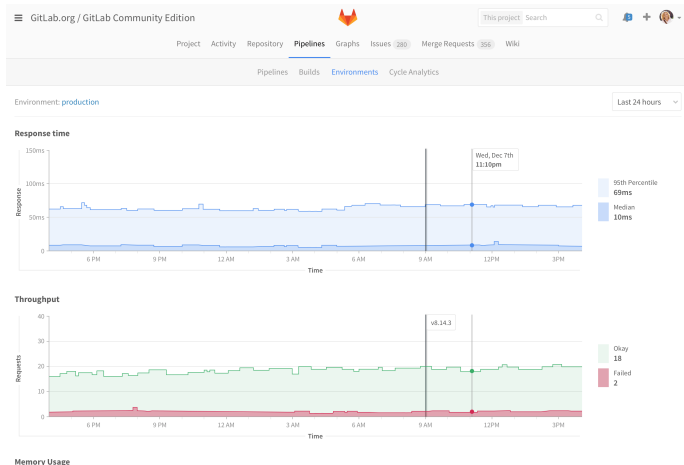
Pipelines

All 57691 Pending 0 Running 0 Finished 55395 Branches Tags

Run Pipeline CI List

Status	Pipeline	Commit	Stages
running	#10572747 by	P master -> def9d9d Merge branch 'ts-minor-banza-perf' int...	
running	#10572744 by	P 35729-user-dra -> a16a6540 Fixes problem due to bad conversion of...	
running	#10572623 by	P gitaly-404-com -> 924f9cfb stupid ruby	
failed	#10571382 by	P bvl-show-proje... -> 471a64c1 Include star_count in project json for da...	00:50:19 4 minutes ago
failed	#10570982 by	P 39343-projects... -> f0f5211a Fix project item styling	00:56:26 15 minutes ago
failed	#10570829 by	P 32844-isuable... -> 369671e9 Move some after_create parts to worke...	01:06:07 14 minutes ago
failed	#10570408 by	P 35283-uuid-sta... -> fc7c4dca New storage is now 'hashed' instead o...	01:01:28 34 minutes ago
failed	#10569760 by	P gitaly-404-com -> 1dffbce3 formatting	00:59:18 55 minutes ago

Monitoring: GitLab Metrics



Application Lifecycle Management

An overview of existing tools

Pedro Tavares
up201708899@fe.up.pt

Faculty of Engineering of the University of Porto

15 December 2017