How to - Version Control Assessment (GitLab and BitBucket)

Pre-requisites to assess Version Control systems

The assessment is based on Comparison between features of Gitlab - CE , Gitlab - EE and Bitbucket.

Gitlab - CE   An community edition of Gitlab for end user to use a free ware.

Gitlab - EE   An Enterprise edition to Gitlab for end user to use a licensed version for various features to be enabled.

Bitbucket   An Atlassian product used to manage repositories and administrate them.

Prominent features available on each of the repositories.

Sr.no	Gitlab-CE	Gitlab-EE	Bitbucket
1.	Build in CI/CD	Next business day Support	Access Control
2.	Free space for hosting Repository	Multiple approves in code review	Workflow Control
3.	Project/group Issue board	Merge approvals	Jira Integration
4.	Time Tracking	Code Quality	Repository management
5.	Cycle Analytics	Multiple Group Issue Boards	Free space for hosting repository
6.	Publish Static sites with Git lab pages	Priority Support	Full Rest API
7.	Track new releases using Git lab releases	Multi-project pipeline graphs	Web hooks available
8.	Free of Cost	Deploy Boards	Flexibility towards Atlassian Products
9.	Supports Hosted as well as SAAS.	Timed and manual incremental roll out deployments	Pull Requests
10.	Can be Up-gradable	Application performance alerts	CI/CD Integration for other tools (Jenkins)

Bit bucket SAAS/Hosted version features.

	Free	Standard	Premium	Hosted Version
User Limit	Upto 5 Users	Unlimited	Unlimited	Based on the Pricing
Unlimited Private repositories	Present	Present	Present	Present
Jira Software Integration	Present	Present	Present	Present
Trello CI/CD integration	Present	Present	Present	Present
CI/CD	Present	Present	Present	Present
Merge Checks	Present	Present	Present	Present
Enforced Merge checks	NA	NA	Present	Present
Deployment permissions	NA	NA	Present	Present
Git Large file storage	1GB	5GB	10GB	According to space available on Server
Build Minutes	50 min/mo	2500 min /mo	3500 min/mo	Server configuration made on server

Differences between Gitlab(SAAS/Hosted) and Bitbucket (SAAS/Hosted).

Feature	Gitlab - CE (SAAS/Hosted)	Gitlab - EE (Hosted/SAAS)	Bitbucket SAAS (Free)	Bitbucket SAAS (Standard/Premium)	Bitbucket (Hosted)
User limit	unlimited	unlimited	limited to 5 users	unlimited	Based on the pricing
Pricing	Free	Paid (Ultimate/Premium)	Free	Paid (Standard/Premium)	Paid per user
Unlimited Pricing Repository	Present	Present	Present	Present	Present

CI/CD	Present	Present	Present	Present	Present
Jira Software Integration	Present	Present	Present	Present	Present
Merge Checks	Present	Present	Present	Present	Present
Merge Approvals	Present	Present	Present	Present	Present
Git Large file storage	Free	Free	Present	10GB max.	According to the server
Pull Request/Merge Request	Present	Present	Present	Present	Present
Web-hooks	Present	Present	Present	Present	Present

Pricing available of Gitlab and Bitbucket.

Note : Gitlab - CE This is a free Version on Gitlab.

Gitlab -EE Pricing.

Gitlab Hosted	Pricing	Gitlab SAAS	Pricing
Core	$4/month	Bronze	$4/month
Premium	$19/month	Silver	$19/month
Ultimate	$99/month	Gold	$99/month

Note : The subscription for Gitlab (Hosted/Cloud) is billed annually.

Bitbucket SAAS Pricing

Type of account	Pricing	Features
Free	$0 for up to 5 Users	File storage for LFS: 1 GB
Standard	$3/User/Month for the first 100 Users $2.85/User/Month for the next 150 Users $2.55/User/Month for additional Users	File storage for LFS: 5 GB
Premium	$6/User/Month for the first 100 Users $5.50/User/Month for the next 150 Users $5/User/Month for additional Users	File storage for LFS: 10 GB

Bitbucket Hosted Version Pricing Details.

Users	Commercial	Academic
1 - 10	USD 10	USD 10
11 - 25	USD 1,450	USD 725
26 - 50	USD 2,600	USD 1,300
51 - 100	USD 4,750	USD 2,375
101 - 250	USD 9,500	USD 4,750
251 - 500	USD 12,650	USD 6,325
501 - 1,000	USD 17,500	USD 8,750
1,001 - 2,000	USD 34,900	USD 17,450

Note : There is also a new feature available on Bitbucket called Data Center

Data Center :

Data Center is a deployment option providing high availability and performance at scale for your mission critical Atlassian applications.

Costs,features and FAQS are available on the below Link.

https://www.atlassian.com/licensing/data-center#null

Gitlab - Community Edition Pros and Cons.

Gitlab - CE	
Pros	1. As the Edition is not priced it would help in Cost cutting of Budget. 2. Beginners with Gitlab can use the Version comfortably.
Cons	1. Only minimum functionality is available on the hosted/Cloud Version of Community Edition(Gitlab). 2. As it is a free-ware all the new feature needs to be enabled using a license. 3. It is only a free ware which would give an understanding to the end user about the working of Gitlab - CE. 4. Simple Projects without any automation can only be used on Gitlab - CE. 5. Individual Features cannot be used on Gitlab - CE as the features can be brought only in a particular package.

Gitlab - Enterprise Edition

Gitlab - EE	
Pros	1. Any number of features including support from Gitlab are supported 2. High end Automation is an available feature on Enterprise edition. 3. The features can be enabled based on the package provided both on SAAS/Hosted version of Gitlab. 4. Can select the list of packages(features) available and use them based on the project requirements.
Cons	1. Very expensive. 2. More the features required from Gitlab,More the cost incurred to the team. 3. Not very flexible to other tools for integrations. 4. Billed annually. 5. Hosted version needs LDAP/Kerbros authentication needs to be setup from End users only.

Bitbucket (SAAS/Hosted)

Bitbucket	
Pros	1. More flexible to Atlassian products work flow. 2. Work with multiple Tools such as Jira,Confluence. 3. Has the hosted version feature available on Gitlab. 4. Bitbucket offers free Issue tracker as well as Wiki. 5. Has inbuilt tools for testing.
Cons	1. Restricted number of users either for free version 2. Restricted number free repository available on SAAS. 3. All the billing is based on number of user using the application.

Tool chain supported by Bitbucket (Atlassian)

The best supported tool chain by Bitbucket.

Jira Bitbucket

Jira and Bitbucket are both Atlassian products help extend support mutually and add various advantages to automation between them.

Bitbucket Jenkins

Flexibility is available between Bitbucket and Jenkins which would reflect changes in the repository to the CI/CD tool and also the CI/CD tools to publish the build status to Bitbucket.

Bitbucket SonarQube

SonarQube status can be published directly to Bitbucket to check the status of code quality and code analysis directly on the dash board of Bitbucket.

The Bitbucket being an Atlassian product the more support is from the Atlassian tools such as Jira.

The document has considered cost effective setup hence has not inculcated the details of Atlassian Bamboo as the CI/CD tool.

Tool chain setup supported by Gitlab.

The best supported tool set available for Gitlab.

Jira Gitlab

Jira provides flexiblity to interact with Gitlab to showcase the details of Gitlab repositories and enable smart commits such as creating branches from Jira as well as merge feature.

Gitlab Jenkins

Jenkins is a common CI/CD tool available for Gitlab support for build and release activities and also publish build status of Jenkins to Gitlab branches.

Hence Gitlab supports the above list of tools for Integrations.