

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 | <ol style="list-style-type: none">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 | <ol style="list-style-type: none">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 | <ol style="list-style-type: none">1. Any number of features including support from Gitlab are supported2. 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 | <ol style="list-style-type: none">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/Kerberos authentication needs to be setup from End users only. |

Bitbucket (SAAS/Hosted)

| Bitbucket | |
|-----------|--|
| Pros | <ol style="list-style-type: none">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 | <ol style="list-style-type: none">1. Restricted number of users either for free version2. 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 flexibility 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.
