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Technology Stack Paper

Atlassian is a technology company who develop purposed-designed computer enterprise software geared towards project management and customizable developer software. One of those most well-known products, Jira, is a propriety issue tracking system used for both bug and issue tracking and project management (software I personally use at my job as a Web Developer). The hardware, software and systems that power this product will be the focus of my paper.

Jira is a commercial software that can be licensed for on premise running or as a hosted application. However, Atlassian provides the software for free for open source projects to integrate and for non-profit and non-government companies. Some examples of open source projects that run Jira are Apache, MongoDB, and Sonatype. Jira has flexible architecture allows for plugin additions for extra functionality. Jira's application programming interface that allows for third party application incorporation and Jira integrates with source control software like Subversion and Git (important for issue tracking and coding project management).

Jira's architecture is built on the Java programming language, and therefore should run on any supported operating system Jira requires a Java Runtime Environment platform to be installed on a server's operating system. Jira is a web application that requires an application server. Jira distributions are pre-configured with Apache Tomcat, which is a stable, lightweight and fast-performing application server. Jira uses Apache OFBIZ entity engine, a set of tools and patterns used to model and manage entity specific data. Jira also uses WebWork 1 technology stack, which is a web application framework so that web designers never have to touch java code and improve simplicity and productivity for developers.

Given that Jira can be installed on premise on individual basis, the hardware requirements are different based on the different number of configurations involved. These include projects, issues and permissions. The minimum requirements for Jira are 2 GB of available RAM and a hard drive that runs 7200rpm or faster. For a system that will experience a large number of concurrent requests, running JIRA on a multicore CPU machine is recommended. Atlassian's own server to process the over 40,000 issues on their public and support Jira sites has 2 Intel(R) Xeon(R) CPU E5520 running at 2.27GHz (16 logical cores) with 32GB of RAM. This server runs Apache and various monitoring services.

References

Jira Documentation: <https://confluence.atlassian.com/display/JIRA/JIRA+Documentation>

Atlassian Blogs: <http://blogs.atlassian.com/>

Jira Software page: <https://www.atlassian.com/software/jira>

Jira Development Documentation:

<https://developer.atlassian.com/display/JIRADEV/JIRA+Plugin+Guide>