



PERFECTLYSOFT INC. SUCCESSFULLY SCALES WEB SERVER FOR NEW RELEASE

PerfectlySoft Inc. has created a web server and toolkit allowing developers to become more productive by building end-to-end applications using one programming language: Swift. Before releasing the newest version of its software, PerfectlySoft Inc. leveraged CENG's infrastructure services to run several test scenarios measuring the increased performance of its newest version of software and comparing it to eight others in the industry.

PerfectlySoft Inc. is a startup that enables the creation of mobile and cloud technologies for iOS, MacOS, Linux environments, and more by offering a high-performing web server and toolkit. The company released an open source project titled Perfect that allows developers to use the Swift programming language to create end-to-end applications and other REST services. In addition to the web server and toolkit, PerfectlySoft Inc. offers full support to developers for the creation of better applications and products in reduced time. PerfectlySoft Inc. was founded in 2015 backed by its parent organization, Treefrog, and is based out of Newmarket, Ontario.

TOO MANY LANGUAGES

In mobile apps and cloud technology, developers typically need to understand several programming languages in order to create a successful and high-performing end-product. More often than not, the developer needs to use a specific programming language to write a line or two of code for a very small portion of the application. This leads to an increased amount of time learning a new language for a small but necessary task. PerfectlySoft Inc. is reducing the time required for app development by allowing these programs to be built using one language: Swift. Swift is a safe, fast, and clean programming language highly regarded for its clean syntax allowing developers to write less code in their projects.

PERFECT AND SWIFT

Perfect is a web server and toolkit that developers can use to write all client-facing and server-side applications using the Swift programming language. By using Perfect, developers eliminate the need to use other programming languages like Java, Ruby, or Python. The support offered by PerfectlySoft Inc. in conjunction with their web server allows developers to be more productive, write less code, and work in one fundamental language to create web apps, wearable technologies, games and more.

Benefits of Perfect:

- Shorter product development and testing times
- Easy deployment to both front-end and back-end for development teams
- Support to reduce deployment cycle times and errors
- Scalable development platform and architecture

Use Perfect for:

Library:	Bytes	Cookies	CURL	Directory and File Management	FastCGI
	HTTP Server	HTTP2 Client	HTTPS Server	iOS Notifications	JSON Enc/Dec
	LogManager	MIME Parsing	Mustache Support	Process Management	Sessions
	SSL	TCP	Threading Tools	UNIX Socket Files	URL Routing
	WebResponse	WebSockets	XML	Zip	
Connectors:	MySQL	PostgreSQL	MongoDB	SQLite	Redis
				FileMaker	
Servers:	Standalone	Apache	Nginx		

CENG MEMBERS

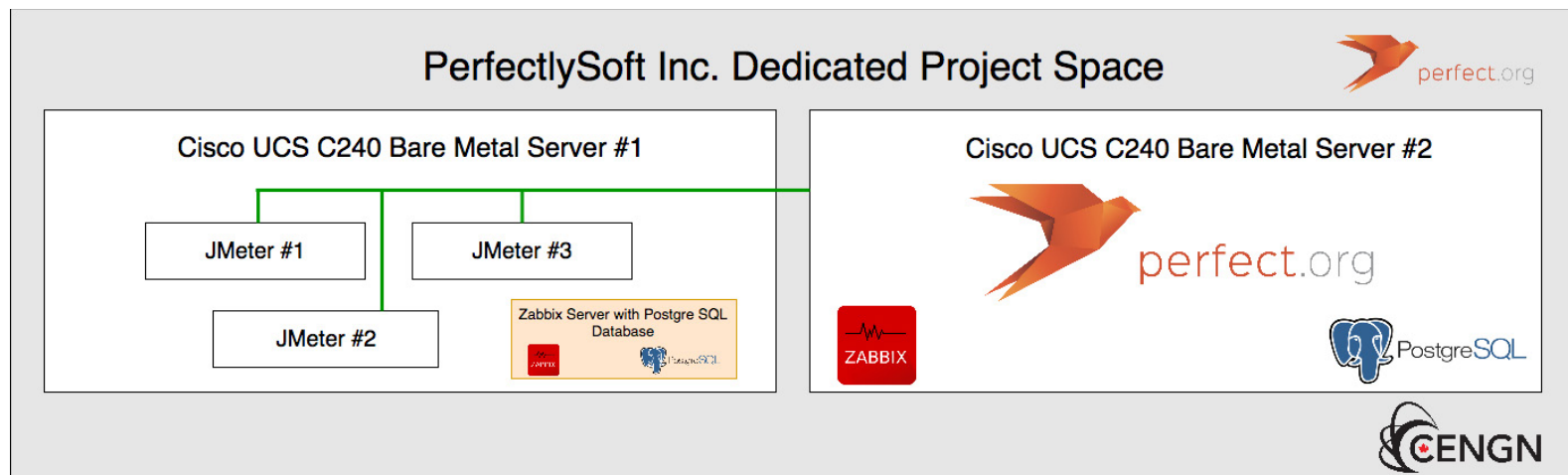


PROJECT OBJECTIVES AND SETUP

Benchmark the performance of the new Perfect web server version against eight competitors in the industry by simulating traffic to the server and measuring:

- Resource utilization (CPU)
- Number of requests the server can process in different scenarios
- Compare the new version of their web server to the old Perfect web server

The CENGN Project utilized two bare metal servers. Three JMeter traffic generators were deployed on one bare metal server sending HTTP requests to the server. Bare metal server #2 replicated a complete client server setup. Throughout the project, Zabbix monitored resource utilization and Postgre SQL was used as the storage database.



PERFORMANCE TESTING

The following tests were conducted throughout the duration of the project:

- Establishing baseline and best-case performance using empty requests
- Measuring response time with varying request sizes and reading/decoding client requests of varying types
- Measuring timeliness of processing randomized requests

Of the eight different web servers tested in this project, Perfect consistently ranked top 1 and 2 in terms of number of requests handled per second and the number of clients in which the server can process from.

THE CENGN ADVANTAGE

This CENGN Project has provided PerfectlySoft Inc. with a clear future direction for the next release of Perfect. The purpose of the project was to benchmark Perfect against competitors in the industry while also comparing the new and current version of the Perfect software. Before releasing a new version to users, PerfectlySoft Inc. wanted to ensure that a new networking system would improve the performance of the web server. While carrying out testing, the team at Perfect was able to make adjustments to its product on the fly. These enhancements in product development and the ability to immediately run tests at CENGN showed that the new version of Perfect outperformed the previous version in almost every aspect.

For PerfectlySoft Inc., performing these tests on their own would not have been feasible due to the cost of creating the infrastructure and constructing client traffic. Testing at CENGN significantly expedited the product development efforts for the release of the newest version of Perfect. The infrastructure at CENGN allowed Perfect to carry out independent testing and eliminate any extraneous variables that would skew the results. This provided Perfect with an accurate representation of the performance of its software and also validated that their software is a top performer in the industry.