

# APAC CIO

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# Outlook

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**KUSANAGI-**  
**The Next**  
**Gen Ultrafast**  
**CMS Virtual**  
**Machine**

**PRIME**  
**STRATEGY**



Kengyu Nakamura,  
CEO, & Developer of  
KUSANAGI

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# PRIME STRATEGY

## KUSANAGI-The Next Gen Ultrafast CMS Virtual Machine

► BY ANNIE JOHNSON

WordPress has a commanding 70 percent share in the world Content Management System (CMS) sector. The background of this massive shift in the market is the cloudification of websites. There was a time when web servers were on-premises server-information operations, and CMS licenses were budgeted and purchased along with the servers themselves. Now, most websites are built and run via cloud services, so open-source CMSs that can handle cloud-based accounting and construction are much more accessible. Among these, WordPress has nearly 50,000 free plug-ins and themes, allowing for impressive website builds with no licensing fees. Some notable websites based on WordPress are the White House website, and the TED Blog.

But the many websites and blogs that use WordPress experience issues with speed. WordPress generates

HTML upon receiving the user's request, which can adversely affect loading time. In addition, as users install plug-ins and add blog content, site speed decreases over time. Many factors are contributing to this lag in speed, including database load, CPU load, memory, PHP execution time, and, of course, website traffic. This, in turn, can lead to traffic bounce, revenue loss, and decreased conversions and click-throughs.

"We have built and provided maintenance/management for web systems and large-scale WordPress sites of industry-leading companies and educational institutions in Japan and abroad," begins Kengyu Nakamura, CEO of Prime Strategy.

Prime Strategy Group is a cloud integrator based in Japan and across Asia, helping global companies solve their cloud computing issues. With offices in Tokyo, New York, Singapore, the company provides cloud integration services around the world. Their three

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main business areas are cloud-based Website acceleration service, Management service, and System integration service. Among Prime Strategy's customers are many large Japanese companies and educational institutions, including: Mercedes-Benz Japan, Sanrio Company, Sega Holdings, and Kanazawa University.

Prime Strategy has various key cloud partners such as Microsoft Japan Co., Ltd. (Microsoft Azure), Amazon Web Services Japan (Amazon Web Services), Alibaba Cloud Japan Services Corporation (Alibaba Cloud), Google Japan GK (Google Cloud Platform), IBM Japan, Ltd. (IBM Cloud), and Oracle Corporation Japan (Oracle Cloud) among others.

In April 2020, Prime Strategy released an "announcement of company-wide AI integration", whereby it will move toward hyper automation across all areas of the company using the KUSANAGI Stack.

#### HOW IT ALL BEGAN?

Kengyu Nakamura founded Prime Strategy in 2002 at the age of 31. In 2012, Nakamura started writing the most-read WordPress publication in Japan, the "WordPress Textbook" series. It was later translated into Indonesian and Korean. In 2015, he published "Essential WordPress" from computer-related publishing powerhouse O'Reilly Japan, and received a comment from WordPress co-founder Matt Mullenweg. He also supervised the translation of O'Reilly Japan's "Building Web Apps with WordPress." Since then, Nakamura has been leading the development of the KUSANAGI Stack.

The KUSANAGI Stack is a collection of products-an AI system, engine, and OS-based around the ultra-fast and secure CMS virtual machine KUSANAGI.

#### KUSANAGI

Developed by Prime Strategy, KUSANAGI is a free, open-source virtual machine image that runs WordPress at industry-leading speeds. With a quad-core (4vCPU) virtual machine, WordPress execution time is brought to under four milliseconds and can handle over 1,000 requests per second, even without page caching. With page caching, and a 4vCPU, KUSANAGI can process over 60,000-page requests per second.

The ultra-fast CMS virtual machine KUSANAGI was created using virtual machine server-building techniques that Prime Strategy has been developing since 2006. In addition to offering KUSANAGI free of charge on major public cloud services both inside and outside on Japan, the firm also offers the paid KUSANAGI Official Support

Service, where it provides all-inclusive maintenance, management, and speed tuning services for customers' websites. It is available in 198 regions in 26 countries around the world, and 28 major domestic and overseas platforms, and the total number of operating machines exceeds 40,000.

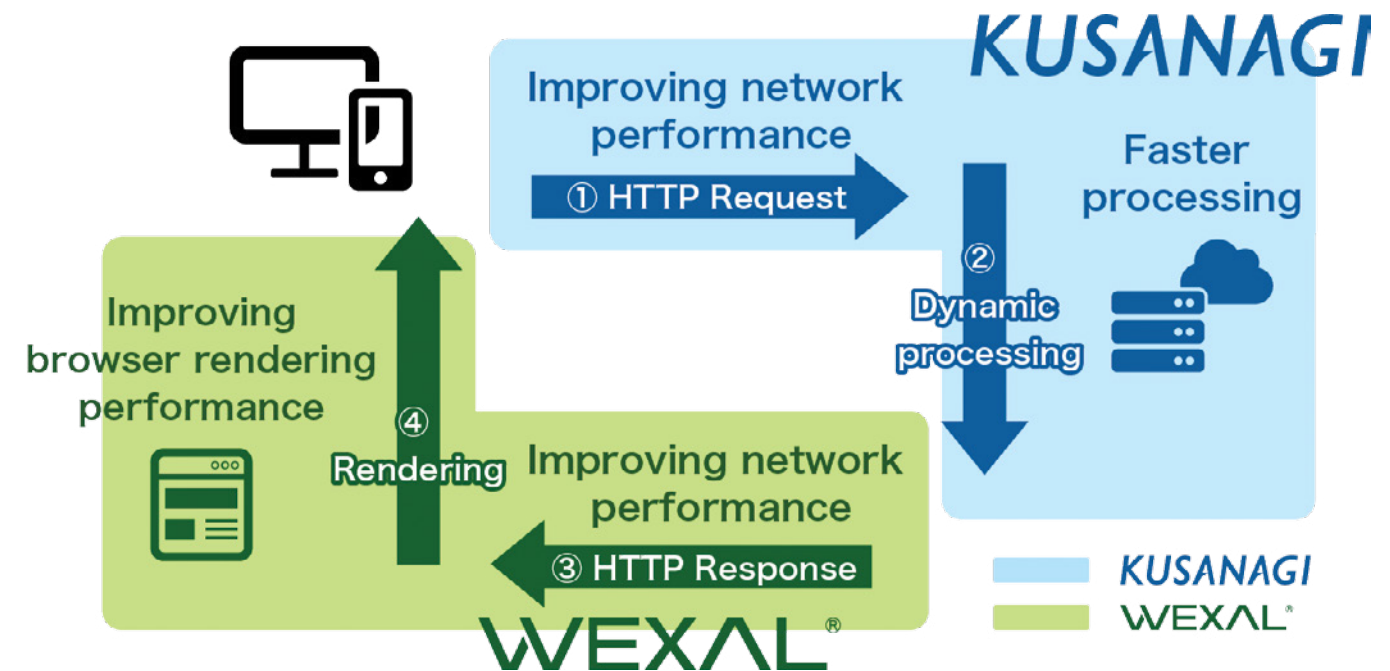
KUSANAGI is an execution environment that supports WordPress and other CMSs and comes fine-tuned for speed and security out of the box. It allows execution speeds up to 10x faster than usual, depending on the usage environment. WordPress's performance always degrades as content volume increases, but KUSANAGI enables this weakness to be shored up, and preventing WordPress from slowing down makes it particularly popular with large enterprises. With page caching enabled, KUSANAGI runs at several thousand times faster speeds than the standard LAMP environment. Even without page caching, it boosts speed

by 10-15x. This means that the server can run stably even during an access spike. KUSANAGI covers the web system security standards necessary for business with features like HTTPS, HTTP/2, and SSL certificates from Let's Encrypt. Since KUSANAGI is built with open source technology, anyone can use it and flexibly configure the environment to fit their application.

Prime Strategy provides KUSANAGI Fully Managed Service, which is batch maintenance and tuning service for everything from server to

WordPress itself. The company will fine-tune everything: the handling of hardware and middleware, revisions of themes and plug-ins, optimization of SQL, and reviewing of the database structure. With measures in place to continuously improve and maintain performance, Prime Strategy offers a whole-package deal where it manages the operation of WordPress sites and servers, including KUSANAGI's cloud hosting. This service eliminates the complications of running and maintaining the web system, keeps the server running stably, and takes care of security. The service also includes technical support, fault handling, monitoring, backups, and updates among others. "We currently support media, educational, corporate sites and other large-scale websites internationally," adds Nakamura.

For instance, in 2017, Mercedes-Benz Japan launched a renewal project to reach a broader customer base. Instead of focusing primarily on the development of Mercedes-Benz



features and performance, the company decided to increase the number of articles and images that would appeal to visitors' feelings and senses in a more right-brained way. Anticipating higher traffic after the renewal as visitors flow in from various media sources, they chose the Microsoft Azure cloud platform to ensure the site's stability. Now, after implementing KUSANAGI, even after a 3.5x increase in page views, the system continues to run reliably.

#### WEXAL PAGE SPEED TECHNOLOGY & AI DAVID

In 2019, Prime Strategy launched WEXAL Page Speed Technology, and the WEXAL Mobile Site Loading Speed-Boost Service, which uses WEXAL Page Speed Technology. It is a web system speed-tuning engine that is available with KUSANAGI's paid Premium Edition. One key feature that cannot be imitated by any other company in the market today is real-time optimization of all web resources (HTML, JS, CSS, images) without any modification of the original website source code necessary. This enables users to speed-tune their system stress-free. For example, when images are optimized, they are converted into the newest image formats, and the web site can respond to the user with the one that will load the fastest. Also, the Engagement Delay feature controls the delaying of resources in compliance with Google's recommendation to postpone running any resources unrelated to the first view. As a result, the Google PageSpeed Insights score is greatly improved.

In 2020, Prime Strategy launched the WEXAL Reverse Proxy Limited Edition, which makes it possible to use WEXAL via reverse proxy, and therefore eliminates the need for server migration. The ongoing development has also included a dedicated administrator panel to make operating WEXAL simple.

Prime Strategy also developed an artificial intelligence system, AI David, that automatically creates the WEXAL optimization strategy for each page. It does this with tools like RPA and machine learning clustering to create a settings file with an optimization strategy for each page. AI David removes manual labor associated with web page speed tuning.

Prime Strategy's WEXAL Mobile Site Loading Speed-Boost Service implements the "WEXAL Page Speed Technology" speed-tuning engine. It speed-tunes each aspect of the site through resource optimization, adjusting execution order, and other methods to boost loading speed. AI directs the optimization, so users do not have to make changes themselves. As a result, no attention needs to be directed towards boosting speed, and time can be spent on building their business site.

#### WHAT LIES AHEAD FOR PRIME STRATEGY

"Everything we do is in the interest of developing the Enterprise Open Source Software ecosystem," states Nakamura. Prime Strategy's mission is to develop an ecosystem allowing customers to use faster, safer, and more reliable open source software for their businesses. Forging ahead, Prime Strategy will continue to develop and offer the AI, engine and OS that make up the KUSANAGI Stack. Prime Strategy also plans to expand its user base and establish KUSANAGI outside of just being a virtual machine into a container and then as part of a cloud service to make it easier to use. "Optimizing and boosting web site speed are challenges that many people are still facing. We will continue to develop new services to take care of these obstacles," adds Nakamura. **ACO**

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## Prime Strategy



*The annual listing of 10 companies that are at the forefront of providing  
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