

Integrating WordPress into the Enterprise

Considerations and Concerns when
Selecting WordPress for use in the
Enterprise Application Portfolio

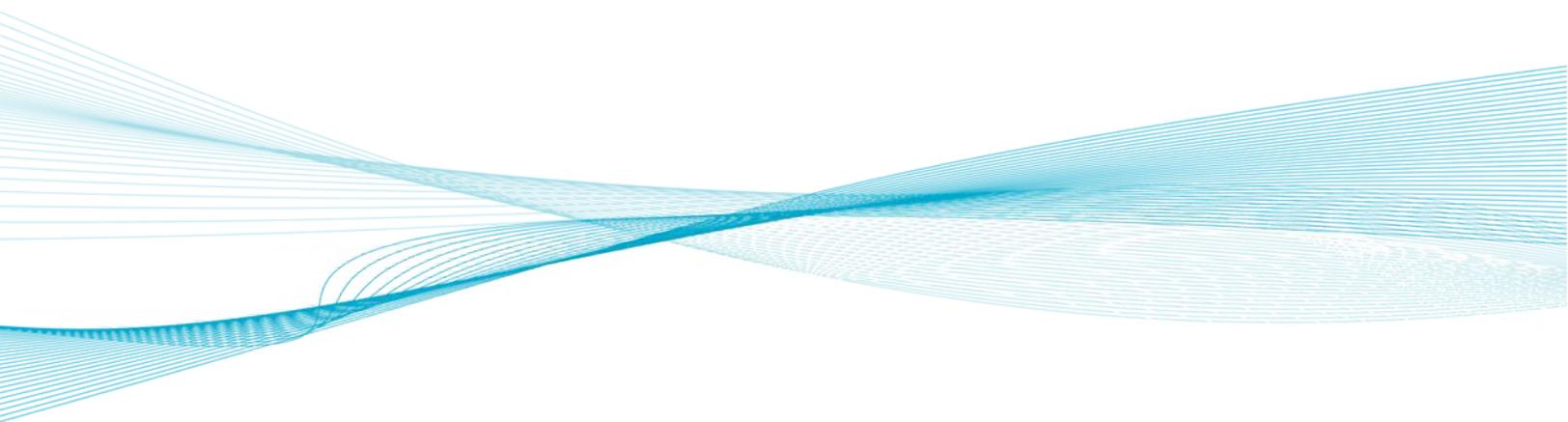


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Problem Statement

The basic architecture of WordPress involves the WordPress core, a theme for visuals, and plug-ins to extend functionality and user experience. Both themes and plug-ins can be used to help tailor sites to multiple user specifications and to meet various business requirements. In addition, commercial themes and plug-ins are common. Any database can be used to underpin WordPress, but MySQL is the most common. WordPress can run on a variety of web server technologies, but Apache and NGINX are most common running on some flavor of Linux. WordPress is free and open source. Because Wordpress is easy to access through a browser, content can be added and removed from the database quickly.

As a result of this architecture, WordPress has quite a few components and interfaces. Management and integration of these is no small task and there is no single vendor for issue escalation. As the WordPress ecosystem grows, the complexity also grows.

In the following section, we have curated important concepts from this complex ecosystem to assist your organization during selection and standardization, as well as improve the operational stance of existing WordPress web properties.

Considerations and Concerns

SPEED AND PERFORMANCE

The speed of search results for the customer is critical to ongoing site success. Since 2010, Google has ranked site speed as key component of customer satisfaction and their ranking algorithm takes this into account. Conflicting components including plug-ins, http calls, JavaScript, jQuery, and fonts are typical issues that impact or prevent sites from working efficiently and effectively. Sites being hosted by shared servers can also greatly impact speed as well as sites that load all content from a single server source.

CDN

For large enterprise systems, Content Delivery Networks, or CDNs, may be leveraged. This includes a distributed system of servers deployed in multiple data centers across the Internet. The goal of a CDN is to serve content to end-users with high availability and high performance. Most web site properties buy their CDN capability from providers (e.g., Akamai) who can provide high service levels with uptime of 99.999 percent. Organizations that have content delivery at its core (e.g., Netflix) often opt to build their own network.

For most companies, delivering assets such as videos, pictures, fonts, and standard jQuery code sets is the basic need. Occasionally, if you own more than one WordPress website using the same theme, a delivery of theme files may be utilized. For most web properties, delivery of these digital assets from a server other than the one hosting your WordPress website will allow the user to download more information faster.

PLUG-INS, SOURCE, PERFORMANCE, COMPATIBILITY

Because plug-ins are so easy to install, often the upfront analysis and testing time is bypassed, which sets the site operator up for failure. To ensure the best uptime and availability for your WordPress website, it is recommended to actively manage selection, installation, and upgrade of all plug-ins. It is critical to ensure that a review of the Wordpress platform is comprehensive and load testing has been performed before any installation or upgrade is completed.

ONGOING MAINTENANCE & UPGRADES

Maintenance and optimization are critical areas that directly impact the performance of the WordPress System. Maintenance includes upgrading WordPress, plug-ins, theme and database. Components are separated in a WordPress environment for independent upgrades, allowing any bugs to be isolated and fixed much quicker. It is very important to eliminate older or unused plug-ins that may have similar programming. This will alleviate the potential crossover or bleeding effects of old accessible code.

Each upgrade should be researched, tested prior to implementation, and monitored after implementation for potential problems. Any upgrade that runs the risk of impacting performance should be performed in a segmented testing environment prior to any modification on a live server.

The most sensitive part of WordPress is the database. Storing nonessential information in the database can lead to a bloated database which will impact performance. Eventually, as the database grows, inefficient communication occurs, leaving the website sluggish and unresponsive.

BACKUP PLANS

Backups are very critical to ensuring a speedy recovery should the website experience a problem. It is critical to complete many levels of backups, including server snapshots and backups of individual themes, database files, and upload folders. Backups should be performed on a regular basis to online sources. They should also be synchronized to local hardware. There are several enterprise cloud service companies today that offer performance, scalability, and single-tenant security of a dedicated server.

SEARCH ENGINE OPTIMIZATION (SEO)

Search Engine Optimization is also a very important part of the maintenance and health plan for a website. This is more easily enabled by having a CMS in place and many plug-ins exist that are specific to WordPress.

There are several types of SEO, such as “Off-Page SEO”, which are links coming in from other pages, and “Social Media Optimization - SMO”, which is what happens when search engines get results from social media feeds like Twitter, Facebook and LinkedIn.

“Organic” or “Native” SEO is the result of when a search engine such as Google indexes your website and thus it shows up for a particular keyword... this is not the same thing as paid advertisements. This practice is commonly known as “on-page” SEO and relies heavily on your website’s actual content and structure. When it comes to getting the best SEO results, the old saying “Content is King”, from the early days of the web, still holds true today. So prioritize opportunities for unique content creation and curation.

METRICS, QUALITY AND ANALYTICS

It is also critical to implement system level monitoring of performance including database viability - throughput, response time, connection use, and link verification analysis.

A link verification analysis may include not only onsite broken links, but also details as to what pages those are on, any orphaned files, structural issues with the site and the types of errors users many experience while navigating the site. This can then improve results and drive up key analytics.



Did You Know?

Single or Multiple Domains

Questions often arise as to whether a single domain or multiple domains should be utilized. It is easier to accumulate and share all available “link value” on a single domain. It also requires less effort to maintain a single domain. However, a single domain may not be the best technical or organizational choice, as it may diminish targeted activities by dilution of content across a single domain. Multiple domains provide the benefit of creating a critical mass of relevant unique links and provide a better chance at having the “right” page for ranking the best language and keywords. The downside of multiple domains, is that it requires more work to maintain because unique content is needed for each domain. Also link building has to be done for every separate domain as well.

CMS systems are great for helping optimize SEO. There are several other important points to consider when optimizing search engine results including:

Keyword Research – Make sure you do your keyword research to know what content you should prioritize. There are many analytical tools that can help make an informed decision.

Site Structure – Good site structure is obvious. The old “3 clicks” to any content is still good advice.

Technical components such as Redirects, Error Pages, and JS Navigation – This makes navigation easy for the simplest of web crawlers. This is also where over-design can get in the way.

Specific Campaign Management – Content specific to the campaign and the message, followed closely by the channels and technology used to deploy and measure that campaign.

Market or Geographical Targeting – It is imperative to get good content based on the market segment a product serves or regionalized content.

Having documented processes and procedures along with routine training of these standards is critical for managing a successful SEO program.

SECURITY

Upgrades are a key component to maintaining a secured system. Unused and outdated plug-ins can provide weakness in the WordPress system for attackers and spammers, since open source code is publicly available. It is important to routinely track and implement upgrades to minimize security risks. In addition to good maintenance, additional penetration testing can be performed using specific web application vulnerability testers or OS distros focused on security testing such as Kali Linux.

TECHNICAL SUPPORT

To ensure the success of a viable and robust WordPress content management and delivery system, a primary technician should be assigned to manage the system. A technician armed with the knowledge and ability to test new functionality and the impact on performance, good system metrics, and a strong dedication to keeping the server and website secure, will lead to a superior user experience. As WordPress is an open source solution, there is no vendor escalation, so this expertise may need to be purchased external to your organization.

FRAMEWORKS AND THEMES

Buying a theme off the shelf or using one of the WordPress built in themes is not always ideal. Without an understanding of how often that theme is upgraded, the security stance or the compatibility issues with the latest WordPress core it is very easy to paint yourself into a corner. Instead, we recommend a couple of frameworks based on our experience for ease of maintenance, upgrade ease and supportability. Many themes reach an end of life because they are no longer technically feasible, so keep a framework mindset in place and don't be drawn in purely because of design.



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Key Takeaways from Brightmill's WordPress in the Enterprise

Consider speed and performance. A combination of CDN and Caching technologies can really help out the user experience. This may also extend to your infrastructure sizing and load balancing.

Have a development and test area. Theme and Plug-in updates, even WordPress core updates can cause performance issues and outages. It is better to promote the upgrades and code through your environments than to upgrade straight to production.

Maintenance and upgrades will be ongoing. There is no escalation path for WordPress. You will need someone to support it and possibly a vendor to provide managed services and escalation. Just because there is no license fee doesn't mean it is free to operate.

Ensure backups are in place. If your managed service provider doesn't do this already, there are add-on services that can help.

Have an SEO plan, structure the site accordingly, and use plug-ins to better manage SEO functions.

Test site quality regularly including broken links, response times and general availability. This impacts user experience and resulting analytics.

Ensure a security testing plan is in place. Bots are constantly trying to compromise your site. Testing and remediation of vulnerabilities is the only way to know.

Using a free theme or buying a cheap theme may seem like the way to go, but this can leave you vulnerable in a variety of ways from security to a lack of upgrade path to incompatibility with key plug-ins.
