

# Security Measures with Cascade CMS

## A Look at the Security Features of Cascade CMS

- Push vs. Pull
- Comparison with Drupal, WordPress and Joomla
- Deployment Options
- Making Right What Once Went Wrong

Hannon Hill built Cascade CMS to ensure the confidentiality, integrity, and availability of content. That dedication to providing a secure, technologically flexible, and easy-to-use content management system is why Cascade CMS powers more than 25,000 sites and supports 90,000 users across the globe.

## Push vs. Pull

Attention to security is baked into Cascade CMS from the ground up. Unlike strict pull-based CMS solutions that couple with web servers, Cascade CMS is push based with a handful of pull capabilities enabled by web services. Content changes are made in the CMS and then “pushed” (aka published) to the live website. Since content changes are pushed out as static HTML, there’s far less risk of a vulnerability affecting your web server or allowing unauthorized access to your website.

Another benefit of a pushed-based CMS is the ability to test content and publish changes when you’re ready for them to go out. It’s better for resource management because when a pull-based website is loaded, it sends a request back to your database to check against every web asset on the page. This process eats up system resources and can even slow page loading time - and too much strain can lead to a database crash. Worse, because pull-based content management systems are coupled with your web server, your entire website goes down if your CMS is off line. That’s never an issue with Hannon Hill - your live website will never be impacted if Cascade CMS goes off line.

## Comparison with Drupal, WordPress, and Joomla

The National Vulnerability Database, in conjunction with CVE International, stores information on known security vulnerabilities.

A quick comparison of CVE’s vulnerability listings for Cascade CMS and popular open source content management systems shows some interesting results:

638 vulnerabilities for Joomla[1]  
971 vulnerabilities for Drupal[2]  
937 vulnerabilities for WordPress[3]  
1 vulnerability for Cascade CMS[4]

Cascade’s vulnerability was corrected years ago with no impact on current versions of Cascade CMS.

Cascade CMS gives you flexibility while remaining highly expandable and extremely secure. Since we offer unlimited pages, sites, and same-instance domains, you can scale upwards inside Cascade CMS as your web presence grows.

Other content management systems provide extended functionality through add-ons and modules, many of them offered by third party vendors. But Spectate, Hannon Hill's content marketing tool, includes much of that functionality by default at no additional cost. A Pro License of Spectate is included when you purchase Cascade CMS.

Whether it's options like a stale content report to track down and fix outdated content, a broken link checker to eliminate 404 errors, easy to create forms and newsletters, or any of dozens of other built-in tools, you have peace of mind knowing Cascade CMS will continue to meet your digital strategy both now and in the future.

## Deployment Options

Cascade CMS has two deployment options: Cascade Installed and Cascade Cloud. The version that's best for your organization largely depends on if you're looking for control or convenience. Cascade Installed and Cascade Cloud are both highly secure, easy for end users to learn, and offer a great deal of customization.

### Cascade Cloud

A breeze to set up, Hannon Hill can implement your Cascade Cloud instance as soon as we've received your Purchase Order and signed Master Subscription Agreement.

We'll take care of setting up and provisioning two virtual machines - one for your Cascade Cloud CMS and the other for your CMS database. Cascade Cloud is not a SaaS based system - your CMS and database will be stored on their own individual cloud instances.

Hannon Hill maintains a secure cloud environment and keeps all Cascade CMS instances behind firewalls that only allow specific ports (such as those for SSH and web traffic) to remain open. Direct access to application servers requires an SSH key, while database servers can only be reached by the application server. Upon request, our team can configure Apache to allow only a specific IP range to access your Cascade Cloud instance.

Beyond deploying initial security measures, Hannon Hill will work with you to deploy needed security patches, updates, and new releases. We'll even run backups of your CMS database and store them for seven days.

Hannon Hill will host Cascade CMS for you. We'll handle the software and database installation. You'll receive your own dedicated instance and we'll apply upgrades.

With Cascade Cloud, the Hannon Hill team will:

- Provision your Cascade CMS and database on separate cloud instances
- Deploy firewall protection for Cascade Cloud and database
- Turn off all access to the database except through the application server
- Install available patches and updates for your OS and Cascade CMS
- Maintain and manage backups (on a seven-day rotation)
- Use Amazon EC2 security groups to harden your cloud instances and block off all port access except where necessary (SSH, web traffic, etc)
- Turn off all access to your Cascade Cloud instance except from specified IP range

### **Cascade Installed**

Cascade Installed, Hannon Hill's original version of Cascade CMS, is often selected by organizations with stringent security requirements that prefer to host applications on-premise using their own servers.

On-site hosting allows organizations to decide exactly when to handle different activities such as applying system patches and upgrades, installing additional applications, managing backups, storing data, and more. Cascade Installed allows clients to customize security measures to their exact preferences.

One major benefit of Cascade Installed is that additional licenses for development / testing and failover are included by default. Test out any update or change in a development instance prior to applying it to production for no surprise mishaps when upgrading. In the rare case that your primary CMS instance goes off line, minimize downtime by updating your DNS records to point users to a pre-configured standby instance of Cascade CMS. Even if Cascade CMS goes off line entirely, your website isn't impacted!

Cascade Installed users can also deploy VPN protection for their CMS. While Cascade Cloud offers many security measures, a VPN will block any incoming connections that don't originate from a specified internal IP range.

But with great power comes great responsibility. With Cascade Installed, administrators are fully responsible for applying patches, CMS upgrades, hardening systems, and deploying additional security measures such as firewalls, encryption, or VPNs.

Recommended Cascade Installed security measures for your team include:

- Integrate Cascade CMS with LDAP or Active Directory for single sign-on
- Segregate Cascade CMS and your database behind a firewall and VPN
- Use IPtables to restrict port access to only authorized, required ports
- Use your extra installed licenses for development / testing and failover (enterprise Installed clients also have access to load balancing)
- Run system reports to keep track of resource usage and audit them for unusual activity
- Take a backup of your CMS and database before any upgrade is applied and also on a regular, ongoing basis
- Set up alerts for OS and application updates and/or security patches, then responsibly test and deploy them

## Making Right What Once Went Wrong

It shouldn't have happened, but it did. Something somehow has gone wrong. Maybe a user deleted the wrong file or the live site was compromised and inappropriate content was uploaded through the web server. No matter what happened, you need the tools to recover. And Cascade CMS gives them to you.

### Granular User Permissions

Prevent unauthorized changes by ensuring end users have access to only the content that they need and nothing else. With the ability to create unlimited groups and roles, Cascade CMS allows you to set extremely granular, site-specific user permissions. This means that a marketing user can maintain a social media mashup page, but doesn't have access to your homepage. Another user might have near administrative privileges on one site, but only be able to swap out photos on another. Permissions can even be set on individual assets.

### Audits

Cascade CMS offers superior auditing, not just on an individual user basis, but by group, role, and asset. Monitor who's making changes, when they are active, and the IP address they are logging in from. Cascade CMS will automatically enter basic comments regarding certain content changes when new drafts are saved.

Provide the right people with access to the right content. Simplify the user experience by preventing access to technical areas of the system.

## Workflows

Use workflows to ensure updates are approved before content goes live. Workflows give approvers the option to make changes themselves, send back for changes, reject and delete a draft, publish to a staging environment, or publish to production.

## Rollback to previous versions

With full version control, restoring content is a snap. Every page and asset tracks draft changes, so just pull up the preferred version, click to activate, and republish.

## Final Words

2014 was a dangerous year with triple threats of Shellshock, Heartbleed, and POODLE affecting large swaths of the internet. Although Hannon Hill's software was not directly impacted through vulnerabilities found in the operating environment, we were proactive in addressing the issue. We protected our hosted clients by patching our Cascade Cloud servers within 72 hours of learning about the vulnerability. We also contacted our Cascade Installed customers to describe the nature of the vulnerability, the risks, and the steps to mitigate the problem.

This is just one example of our team's history of going above and beyond to help our clients. And Hannon Hill gets it - security is paramount to your business. That's why we do everything that we can to provide a CMS that gives you peace of mind through its superior security measures.

## Sources Cited

- [1] <https://cve.mitre.org/cgi-bin/cvekey.cgi?keyword=joomla>. Accessed Nov 10, 2015.
- [2] <https://cve.mitre.org/cgi-bin/cvekey.cgi?keyword=drupal>. Accessed Nov 10, 2015.
- [3] <https://cve.mitre.org/cgi-bin/cvekey.cgi?keyword=wordpress>. Accessed Nov 10, 2015.
- [4] <http://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2009-1088>. Accessed Nov 10, 2015.

## About Us

Cascade CMS from Hannon Hill powers over 25,000 sites and serves 90,000 users across the globe.

Our content management and content marketing products enable users to be strategic about content, manage it effectively, and promote it via a variety of channels.

Contact us to learn how our comprehensive suite of tools can help you exceed your web development and marketing goals.

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