

WordPress Multisite Development:

Configurations, Uses, & SSL Implications



Stefan C. Densmore

About Me

Stefan C. Densmore

Background in Psychology & Human Factors Engineering

WordPress Developer, since 2003

Network Admin (cPanel, WHM, Managed VPS environments, SSL configurations)

IT Consultant, blogger, domain name connoisseur, husband, father of 4...



Configurations, Uses, & SSL Implications

Overview and Census

- Overview of Multisite for those unfamiliar.
- Some of the various configurations and uses of multisite.
- Some of the cautions about using it.
- SSL (https:) Implications.
- Common Problems with SSL
- Using Let's Encrypt with Multisite



WordPress Multisite Development Configurations, Uses, & SSL Implications

What is Wordpress Multisite?

Multisite is a WordPress feature which allows users to create a network of sites on a single WordPress installation. There are a number of practical uses for such networks, and several configuration options. We'll start with an overview of multisite configuration options and the practical uses of each (with business model examples). Then we'll survey the SSL (e.g. https) implications for each configuration, including common problems. We'll conclude with some how-to instructions, plus Q&A.

How to install?

WordPress 3.0+ Activation:

1. Edit your wp-config.php file

```
/* That's all, stop editing! Happy blogging. */  
  
define( 'WP_ALLOW_MULTISITE', true );
```

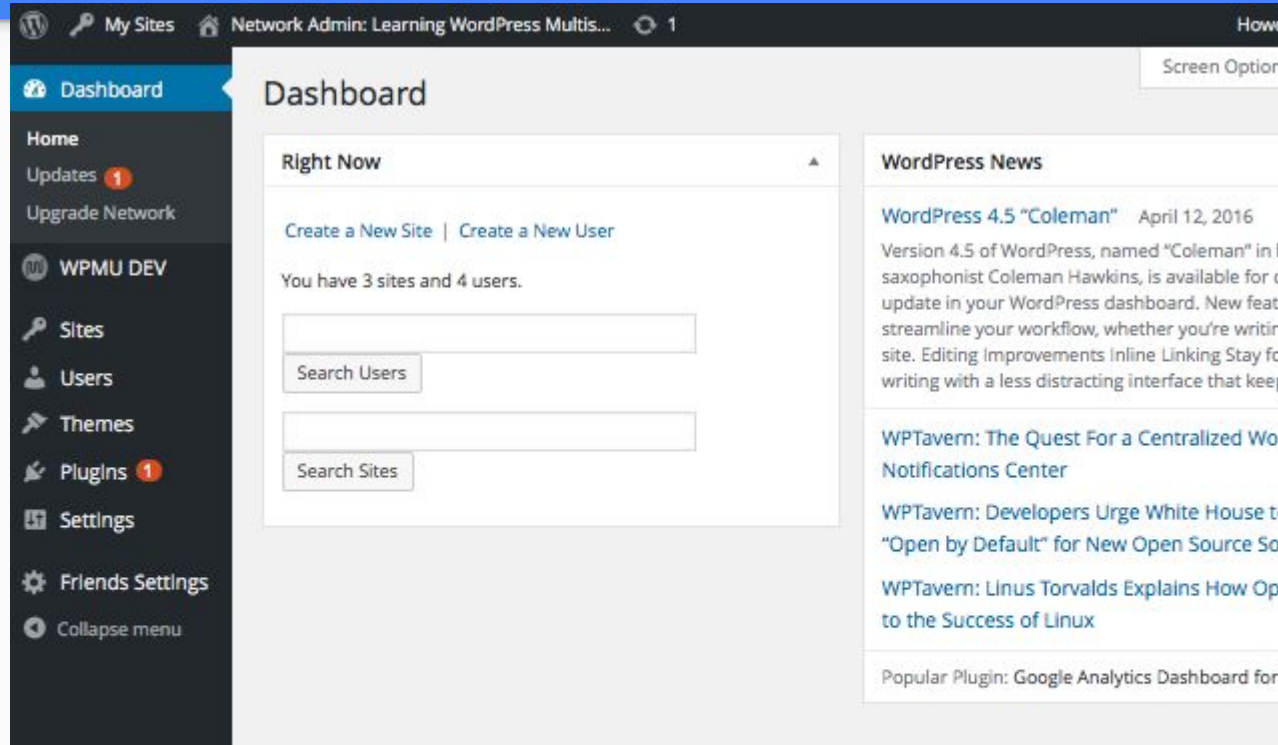
2. In WordPress Admin, go to Tools → Network Setup

Select Subdomain or Subdirectory install, and complete form provided.

3. Copy & Paste the code provided into your wp-config and .htaccess files.

Dashboard Differences: Network Admin

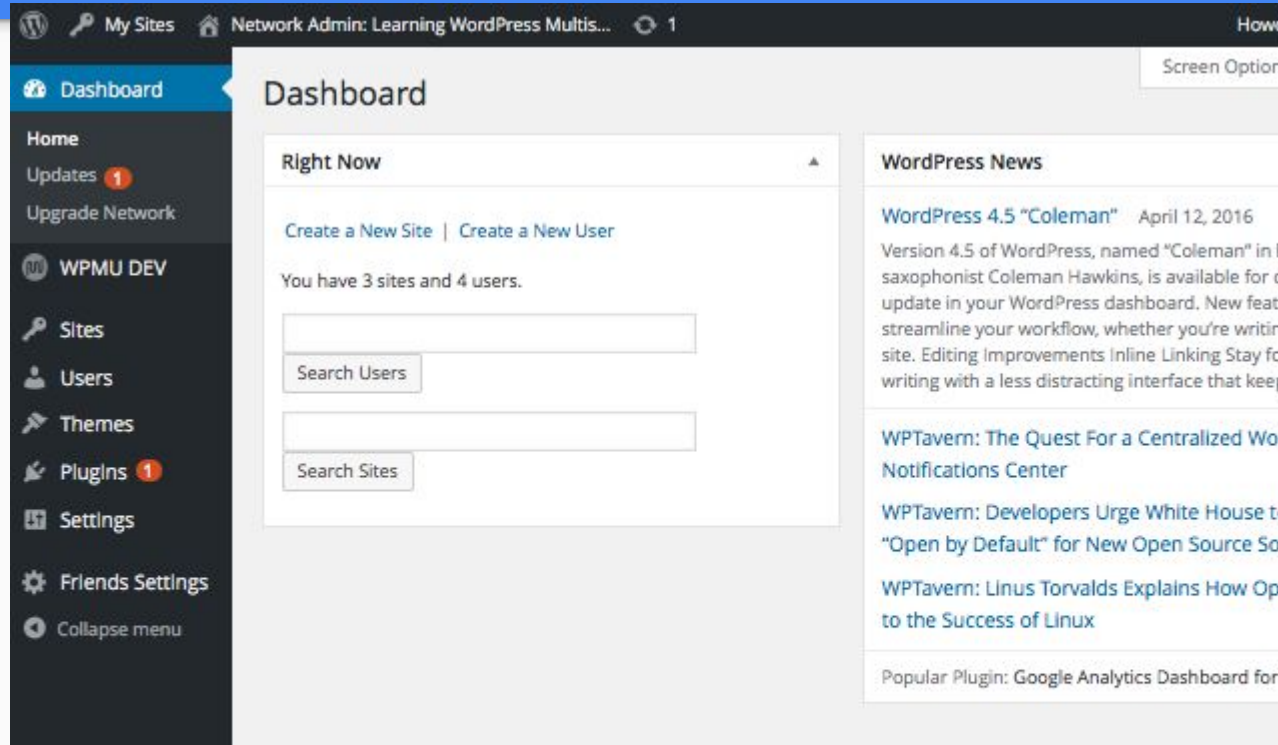
- Sites Menu
 - 2 ways to create sites
 - User created
 - Super Admin created
- Users
 - Password resets
 - Privilege level
- Plugins & Themes Menu
 - Updates
 - Activation
 - Network wide
 - per site



The screenshot shows the WordPress Network Admin Dashboard. The top navigation bar includes "My Sites", "Network Admin: Learning WordPress Multis...", and a refresh icon. The left sidebar menu is expanded to show "Dashboard", "Home", "Updates 1", "Upgrade Network", "WPMU DEV", "Sites", "Users", "Themes", "Plugins 1", "Settings", "Friends Settings", and "Collapse menu". The main content area is titled "Dashboard" and features a "Right Now" section with links for "Create a New Site" and "Create a New User". Below these links, it states "You have 3 sites and 4 users." and provides search boxes for "Search Users" and "Search Sites". On the right side, there is a "WordPress News" section with several news items, including "WordPress 4.5 'Coleman'" dated April 12, 2016, and "WPTavern: The Quest For a Centralized WordPress Notifications Center".

Dashboard Differences: Network Admin p2

- Network Activated Plugins
 - Two general types
 - Those that only show in the network admin area (providing network-wide settings)
 - Those that show on each site of the network (providing

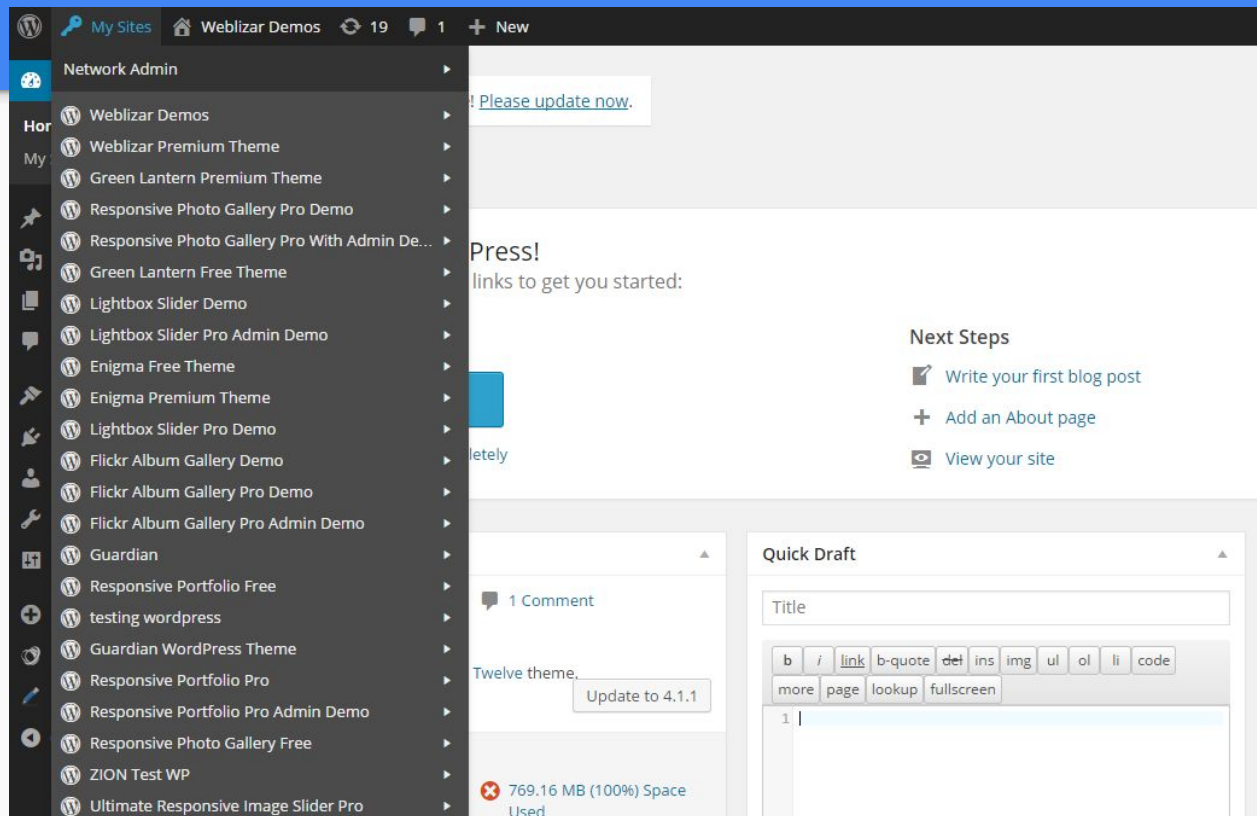


The screenshot shows the WordPress Network Admin Dashboard. The top navigation bar includes 'My Sites', 'Network Admin: Learning WordPress Multis...', and a refresh icon. The left sidebar menu is dark and contains the following items: 'Dashboard' (selected), 'Home', 'Updates' (with a red notification badge '1'), 'Upgrade Network', 'WPMU DEV', 'Sites', 'Users', 'Themes', 'Plugins' (with a red notification badge '1'), 'Settings', 'Friends Settings', and 'Collapse menu'. The main content area is titled 'Dashboard' and features a 'Right Now' section with links for 'Create a New Site' and 'Create a New User'. Below these links, it states 'You have 3 sites and 4 users.' and provides search boxes for 'Search Users' and 'Search Sites'. On the right side, there is a 'WordPress News' section with several article teasers, including 'WordPress 4.5 "Coleman"', 'WPTavern: The Quest For a Centralized WordPress Notifications Center', 'WPTavern: Developers Urge White House to "Open by Default" for New Open Source Software', and 'WPTavern: Linus Torvalds Explains How Open Source Software Contributes to the Success of Linux'. At the bottom right, a 'Popular Plugin' section lists 'Google Analytics Dashboard for WP'.

Managing network sites:

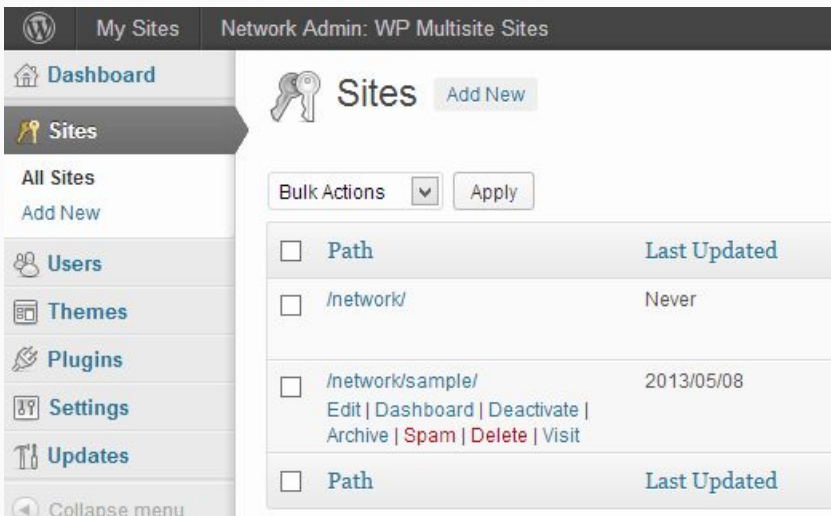
The Drop-Down Site Menu

- My Sites Drop-down
 - Admin dashboards
 - Users, themes, plugins
 - Site-only menus
- Site-only customizations
 - My Sites Dropdown
 - Network site editing page



Managing network sites: The Network Admin Menu

- Network site editing page



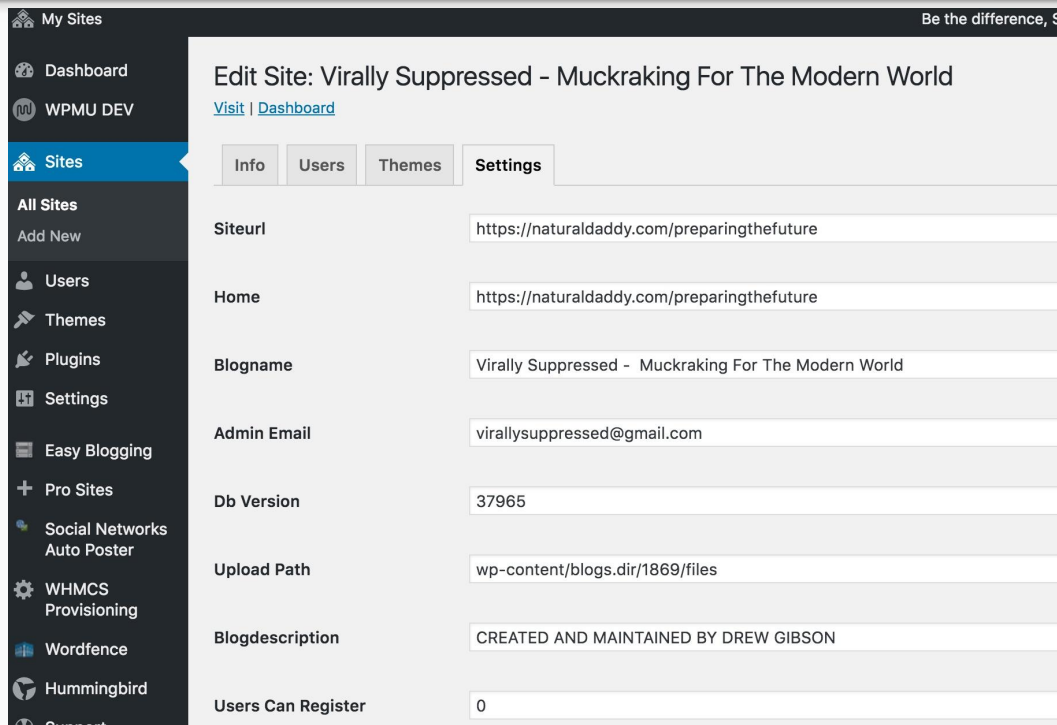
WordPress Network Admin: WP Multisite Sites

Dashboard | **Sites** | Users | Themes | Plugins | Settings | Updates

Sites Add New

Bulk Actions

<input type="checkbox"/>	Path	Last Updated
<input type="checkbox"/>	/network/	Never
<input type="checkbox"/>	/network/sample/	2013/05/08
	Edit Dashboard Deactivate Archive Spam Delete Visit	
<input type="checkbox"/>	Path	Last Updated



My Sites | Dashboard | WPMU DEV | **Sites** | Users | Themes | Plugins | Settings | Easy Blogging | Pro Sites | Social Networks Auto Poster | WHMCS Provisioning | Wordfence | Hummingbird

Edit Site: Virally Suppressed - Muckraking For The Modern World

[Visit](#) | [Dashboard](#)

Info | Users | Themes | **Settings**

Siteurl	<input type="text" value="https://naturaldaddy.com/preparingthefuture"/>
Home	<input type="text" value="https://naturaldaddy.com/preparingthefuture"/>
Blogname	<input type="text" value="Virally Suppressed - Muckraking For The Modern World"/>
Admin Email	<input type="text" value="virallysuppressed@gmail.com"/>
Db Version	<input type="text" value="37965"/>
Upload Path	<input type="text" value="wp-content/blogs.dir/1869/files"/>
Blogdescription	<input type="text" value="CREATED AND MAINTAINED BY DREW GIBSON"/>
Users Can Register	<input type="text" value="0"/>

Helpful Plugins for Multisite Management

- New Blog templates
- Anti-splog
- Pro-sites
- HyperDB, SharDB
- Domain Mapping
- WHMCS Provisioning
- Snapshot (backups of individual blogs), Vaultpress
- Join My Multisite

Professional Developer Community: <https://premium.wpmudev.org>

Multisite Configuration Options

mydomain.com /site1

/site2

/site3

∞

site1.mydomain.com

site2.

site3.

∞

Beyond Standard Structures

Hybrid Configurations: subdomain1.
subdomain2. mydomain.com/site1
/site2
∞
subdomain3.
∞

Network of Multisite Networks: [wp multi network plugin](#)

Examples of Practical Uses:

- Managed WordPress Hosting
 - Your own WordPress.com network (Premium Plugins & Services), your own Niche
 - Easily update the core (and plugins) of 100s of WordPress websites at once.
 - Tiered services. Example: BASIC, PREMIUM, PRO Services
 - Example: NATURALDADDY GREEN WEB HOSTING, BBC, New York Times, Reuters,
- Universities/Schools
 - Separate websites for separate courses/classes
 - Each class a multisite network of student blogs
 - Separate websites for different campuses
 - Examples: University of Denver, Baylor, Cornell, Harvard... and 3rd party provider [Edublogs](#)

Examples of Practical Uses, cont.

- Business Uses
 - Separate websites for regional offices
 - Closed Intranet
 - Separate websites for each department, product division, etc.
 - Separate pages for employees
- SaaS (Software as a Service)
 - WordPress CMS plugins as cloud based applications, examples: calendar services, email subscription lists, directory services, etc.

To Use or Not to Use...

- [Do's and Don'ts of WordPress Multisite](#) (2014, WordCamp Austin)
by Aaron Edwards & Ronnie Burt
- [When NOT to use WordPress Multisite](#) (2015 edit, WordCamp SF)
by Mika Epstein
- There are also a lot of outdated and otherwise incorrect information on the internet about the pros and cons of multisite
- Get a consultant that works with a professional development community specializing in multisite.

To use or not to use, cont.

- **Mika Epstein's (2015) Overview**

- To Categorize Posts
- When You Need the Whole Network to be Homogenous
- For One Special 'Thing', e.g. personal blog sections
- Users Shouldn't Know About Each Other, e.g., separate user database
- Hosting Small Site Clients
- **Users Need to Embed JS Into Posts**
- Same Post, Every Site
- BuddyPress Separation

- **Other System Admin Concerns**

- **If your site or server is experiencing downtime, this will affect all the sites on the network.**
- **Any spike in traffic to any one site on the network may affect the speed of all the other sites on the network.**
- Hosting needs will increase for a multisite. **Not all hosting plans support multisite.**
- Email Server for Mapped Domains
- SFTP for Mapped Domains
- SSL for network and mapped domains*

SSL (e.g. https) Implications

What are the SSL implications for all these different configurations of Multisite?

What is SSL?

- **SSL (Secure Sockets Layer)** is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral.
- Increasing a Best Practice Standard. Historically used just for payment gateways, now Google provides a site ranking boost for use of (properly configured) ssl certificates.

SSL (e.g. https) Implications

What are the SSL implications for all these different configurations of Multisite? p2

Two Environments:

- **Multisite Subdirectory Configuration (Single cPanel environment, just like standard self-hosted WordPress.**
 - Auto installers versus step-by-step.
 - One click and/or submit support ticket.
 - Self signed versus certificate authority.
 - 3rd party certificate authority.
- **Multisite Subdomain Configurations**
 - Wildcard certificates
 - Expense
 - Difficult Configuration
 - Manual Domain by Domain installations

SSL (e.g. https) Implications

What are the SSL implications for all these different configurations of Multisite? p3

https://mydomain.com /site1

/site2

/site3

∞

(single certificate covers all sites)

https://site1.mydomain.com

https://site2.

https://site3.

∞

(single expensive wildcard certificate covers all sites, or install a separate certificate for each site)

How-to install SSL Certificates on Multisite:

Purchasing SSL Certificates

- Expense considerations
- Domain mapping considerations (potentially a major complication)

Let's Encrypt Project

- **Let's Encrypt** is a certificate authority that launched on April 12, 2016 that provides free X.509 certificates for Transport Layer Security (TLS) encryption via an automated process designed to eliminate the current complex process of manual creation, validation, signing, installation, and renewal of certificates for secure websites
- The project is acknowledged to have the potential to accomplish encrypted connections as the default case for the entire web.

Installing & Configuring Let's Encrypt

- Requires WHM root access
- Step-by-step instructions on SSH install & WHM configuration
 - Log in via SSH and run this as root

```
$ /scripts/install_lets_encrypt_autossl_provider
```

- Goto WHM, “manage autoSSL”, to configure it.
- Run autoSSL Check
- Check the AutoSSL Log

Home

Navigation arrows

Server Configuration

- Basic cPanel & WHM Setup
- Change Root Password
- Initial Quota Setup
- Server Time
- Statistics Software Configuration
- Tweak Settings
- Update Preferences

Support






























- Configure Customer Contact
- Support Center

Networking Setup

- Change Hostname
- Nameserver IPs
- Resolver Configuration

Security Center

- Apache mod_userdir Tweak
- Compiler Access
- Configure Security Policies
- cPHulk Brute Force Protection
- Fix Insecure Permissions (Scripts)
- Host Access Control
- Manage root's SSH Keys
- Manage Wheel Group Users
- Password Strength Configuration

 Server Configuration	 Support	 Networking Setup	 Security Center	 Server Contacts
 Resellers	 Service Configuration	 Locales	 Backup	 Cluster/Remote Access
 System Reboot	 Server Status	 Account Information	 Account Functions	 Multi Account Functions
 FrontPage	 Transfers	 Themes	 Packages	 DNS Functions
 SQL Services	 IP Functions	 Software	 Email	 System Health
 cPanel	 SSL/TLS	 Restart Services	 Development	



Providers

Logs

Manage Users

Choose an AutoSSL provider:

- Disabled
- Let's Encrypt™** – Current Setting
- cPanel (powered by Comodo)**

Terms of Service

To use this AutoSSL provider, accept the terms of service as given here:

<https://letsencrypt.org/documents/LE-SA-v1.1.1-August-1-2016.pdf>

- I agree to these terms of service.
- Create a new registration with the provider.

Save

This system's next regular AutoSSL check will occur at 6:52 PM.

[Providers](#)[Logs](#)[Manage Users](#)

Enable AutoSSL for Users on the Server.



Page Size 10



Selected 0

Showing 1 - 10 of 90 items

Enable AutoSSL on selected 0 users

Disable AutoSSL on selected 0 users

Reset AutoSSL on selected 0 users

<input type="checkbox"/>	User ▲	Toggle AutoSSL	Run AutoSSL Check
<input type="checkbox"/>	advenwom	<ul style="list-style-type: none"><input checked="" type="radio"/> Enable AutoSSL Override the feature list setting and force AutoSSL to be enabled.<input type="radio"/> Disable AutoSSL Override the feature list setting and force AutoSSL to be disabled.<input type="radio"/> Reset to Feature List Setting Use setting established by the feature list "default" which is currently set to "enabled".	Check "advenwom"
<input type="checkbox"/>	alanimals	<ul style="list-style-type: none"><input checked="" type="radio"/> Enable AutoSSL Override the feature list setting and force AutoSSL to be enabled.<input type="radio"/> Disable AutoSSL Override the feature list setting and force AutoSSL to be disabled.<input type="radio"/> Reset to Feature List Setting Use setting established by the feature list "default" which is currently set to "enabled".	Check "alanimals"
<input type="checkbox"/>	allwater	<ul style="list-style-type: none"><input checked="" type="radio"/> Enable AutoSSL Override the feature list setting and force AutoSSL to be enabled.<input type="radio"/> Disable AutoSSL Override the feature list setting and force AutoSSL to be disabled.	Check "allwater"

Installing and Configuring Let's Encrypt

There are other 3rd party cPanel plugins you can use to install Let's Encrypt

- Do they provide auto assignment of the certificate?
- Do they provide auto renewal?

Common Problems:

Mixed Content Errors

Rewrite references to http as https or use a plugin to do it for you (e.g., Really Simple SSL, SSL Insecure Content Fixer, etc)

Certificate Mismatch Errors

Typically domain mapping errors.

- Domain Mapping (WordPress) Plugin Configuration
- Addon Domains misconfigured in cPanel



Addon Domains

Video Tutorial

An addon domain allows visitors to reach a subdomain of your site by typing the addon domain's URL into a browser. This means that you can host additional domains from your account, if allowed by your hosting provider. Addon Domains Subdomains are relative to your account's home directory. The icon signifies your home directory which is /home/yourdoma.

Create an Addon Domain

New Domain Name:

Subdomain/FTP Username:

Document Root:

Password:

Password (Again):

Strength (why?): Very Strong (100/100)

Hint: This feature must be enabled for your account before you can use it. Addon domains will not function unless the domain name is registered with a valid registrar and configured to point to the correct DNS servers.

Modify Addon Domain

Search

ADDON DOMAINS	DOCUMENT ROOT	USERNAME	REDIRECTS TO	ACTIONS
No addon domains are configured.				

In Summary

- There are lots of plugins out there that are made specifically for Multisite, and some of those have professional backing.
- If you are curious (as a designer) about multisite, have at it... in a sandbox
 - Investigate the resources available (WPMUDEV.org, The Ultimate Guide To WordPress Multisite, etc.)
- If you are planning on using multisite in a production environment, get a development community membership (for paid/prompt support)
 - Get a consultant (best if that consultant belongs to that community).