WordPress
Security Implementation Guideline

Good practices and
epic fails of WordPress implementations

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About Me

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- Information Security Consultant
  - Application Security
  - Secure SDLC

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Why do I talk about **WordPress**?

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- I use WordPress
- Previous talk @OWASP Ro InfoSec Conf 2013
- Working with 3rd parties on secure WordPress implementation

- The project:

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Why do I talk about **WordPress**?

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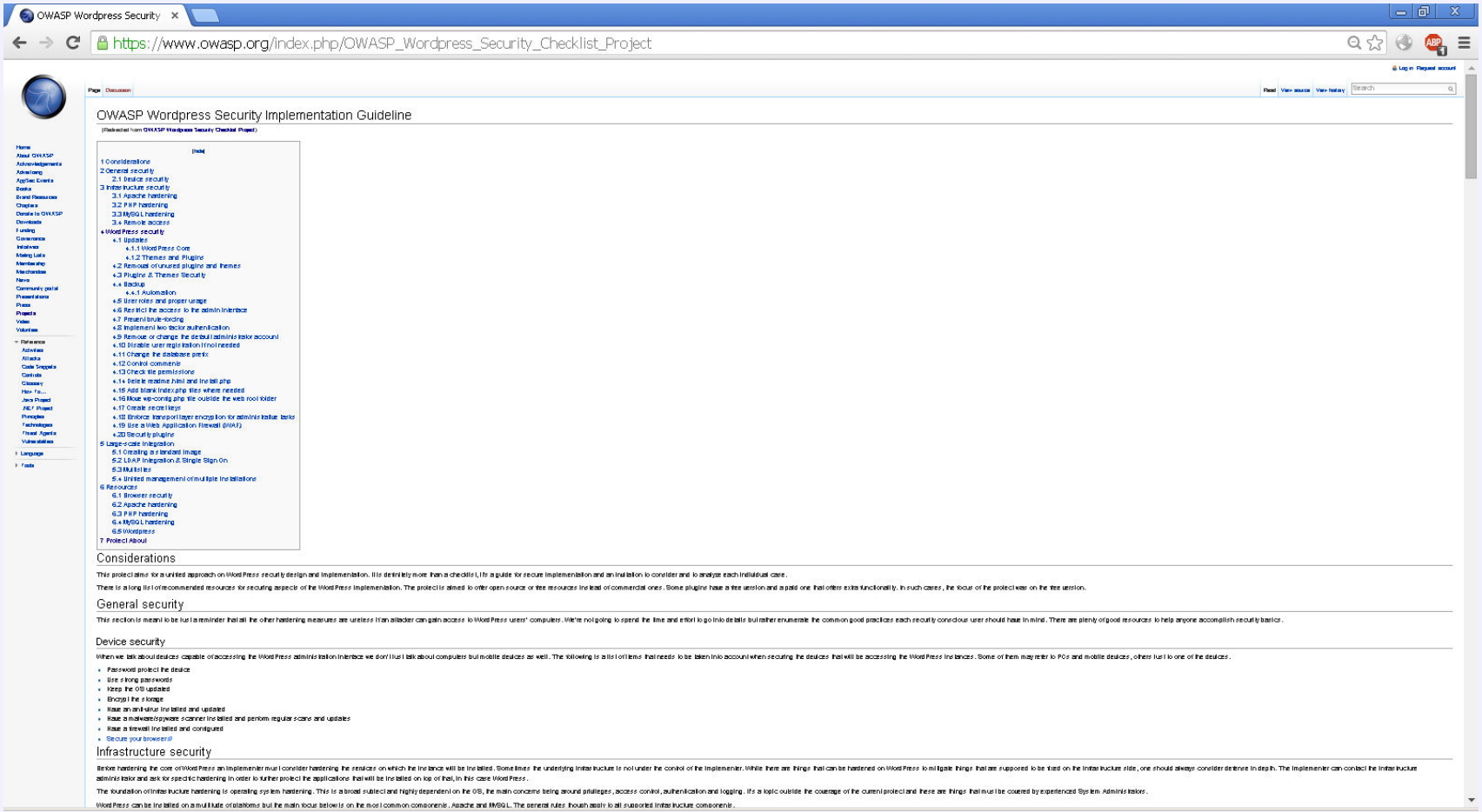

Scope

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- Not just WordPress but Open Source adoption
- Framework for secure implementation
- Large scale integration

Scope

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- General security
- Infrastructure security
- WordPress security
- Large-scale integration

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- **General security**
- Infrastructure security
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General security

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- General security
- **Infrastructure security**
- WordPress security
- Large-scale integration

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Infrastructure security

Scope

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- General security
- Infrastructure security
- **WordPress security**
- Large-scale integration

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20 subjects

3 main components:

- Core
- Plugins
- Themes

Manual activities & plugin alternatives

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Updates

3 main types of updates:

- Core
- Minor
- Major

WordPress > v3.7 – automatic updates for Minor

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Updates

Turn on auto-updates for Major/Core

```
define( 'WP_AUTO_UPDATE_CORE', true );
```

For plugins and themes add a filter

```
add_filter( 'auto_update_plugin', '__return_true' );
add_filter( 'auto_update_theme', '__return_true' );
```

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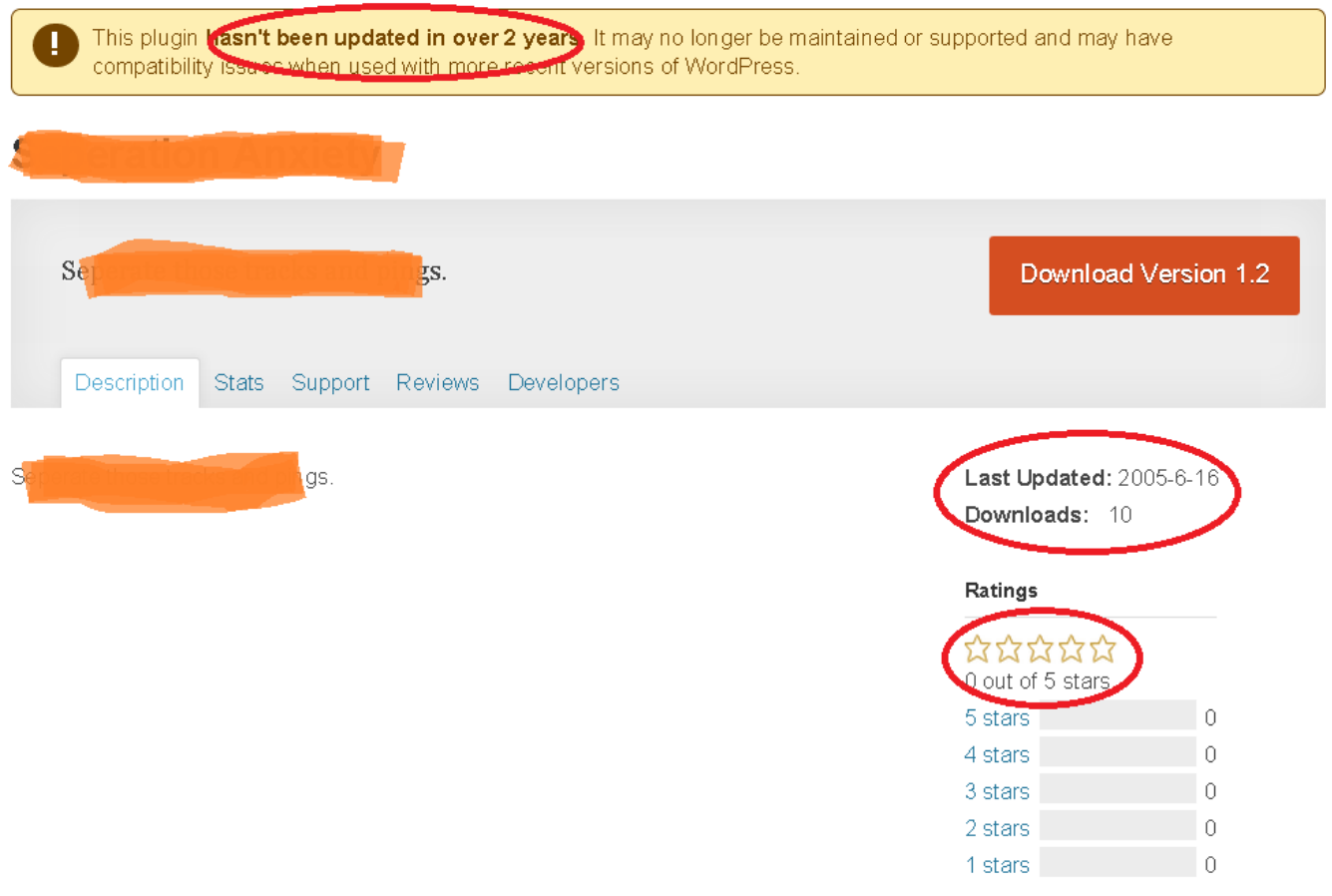
Choose plugins carefully



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Backup

What?

- *Files*
  - Core installation, plugins, themes, images & files
- *Database*

How?

Manual vs Automatic

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Backup horror story 1

The good

- Daily backup, files & database, 365 days retention policy

The bad

- No geographical redundancy, no disaster recovery plan

The ugly

- HDD fail on main machine, faulty HDD on the backup machine
- Missing data and database structure

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Backup horror story 2

The good

- Proper backup to the cloud

The bad

- Backup credentials stored in clear text

The ugly

- Attacker compromising site and deleting backups

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User roles

- Super Admin
- Administrator
- Editor
- Author
- Contributor
- Subscriber

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Restricting access

Sensitive areas of the application must be protected from unauthorized access.

.htaccess

```
Order Deny,Allow
Deny from all
Allow from 127.0.0.1
```

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Prevent brute-forcing

- Add CAPTCHA
- Blacklist attackers
- Lock accounts

Write a plugin that will lock an account for a predefined period of time after a number of failed attempts.

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Add blank index.php

This should be covered by Apache configuration, but it’s not always the case.

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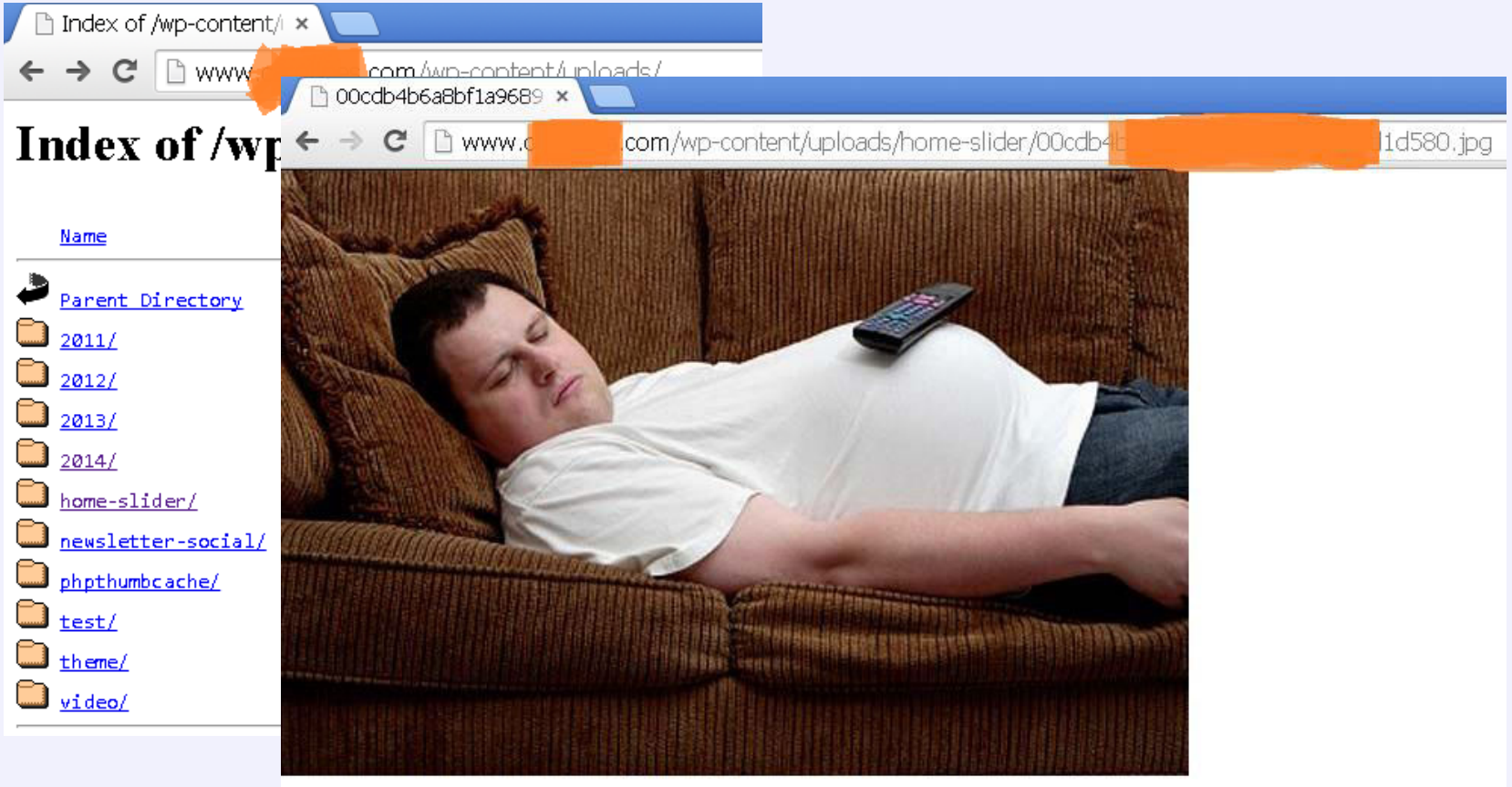
Missing blank index.php



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Force encryption on data in transit

There are cases where both port 80 and 443 are used.

Sensitive operations must use SSL:

```
define('FORCE_SSL_LOGIN', true);
define('FORCE_SSL_ADMIN', true);
```

Scope

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- General security
- Infrastructure security
- WordPress security
- **Large scale integration**

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Large scale integration

- Creating a standard image
- LDAP integration & Single Sign On
- Multisites
- Unified management of multiple installations

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Creating a standard image

- Blank image (no data)
- All the updates
- All the basic shared plugins and themes (&data?)

Purpose:

- Testing ground for new stuff
- Create new instances, secure by default

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LDAP integration & Single Sign On

- Integration with Active Directory
- Single Sign On (SSO)

Why?

- Centralized user management
- Use existing hierarchy

Multisites

- Built-in WordPress functionality
- End users can create their own sites on demand

Downside

- Shared components (plugins)

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Unified management of multiple installations

- Self-hosted and cloud solutions

Why?

- Centralized login and management
- Push updates to all instances

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Next steps

- Contribute to the project

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- Share the knowledge
- Write secure code for WordPress
- Help others

Q&A

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