

# Design Document: Disk Usage Plugin

## 1. Overview:

The Disk Usage Plugin is a WordPress plugin that provides administrators with information about the disk usage of their websites. It allows them to monitor disk space usage, gather usage statistics, and take necessary actions to optimize disk usage. The plugin will have its own root-level menu in the WordPress Admin, visible only to administrators.

## 2. Functional Requirements:

### 2.1 Menu and Pages:

- The plugin shall have a root-level menu in the WordPress Admin, accessible only to administrators.
- The menu shall include links to two pages: a Main Page and a Settings Page.

### 2.2 Main Page:

- The Main Page shall consist of two sections: The Results Section and Controls Section.
- Results Section
  - If usage statistics have been gathered at least once in the past, this section shall display the disk usage results.
  - If usage statistics have never been gathered, this section shall provide quick instructions on how to initiate the gathering process.
- Controls Section:
  - This section shall include a button that, when clicked, will start gathering the disk usage statistics.
  - A window or portion of the screen should display the data-gathering process while repeated AJAX calls are being made.
  - The Results Tab shall be immediately displayed once the results have been gathered.

### 2.3 Results Tab:

- The Results Tab shall visually present the disk usage statistics in a clean and intuitive manner.
- The representation can be inspired by the file tree of WinDirStat, displaying files and directories based on their size.
- Optional: Include the ability to select and delete files and directories directly from the Results section.

### 2.4 Settings Page:

- The Settings Page shall allow administrators to configure the plugin settings.
- It shall include the following settings:
  - Worker Time: Defines the duration for a worker thread to run before saving state and stopping. The default value is 5 seconds.

### 2.5 AJAX and Chunking:

- The gathering of disk usage statistics shall be implemented using AJAX and chunking.
- The logic should be designed to split the job into multiple requests to handle long-running operations.

### 2.6 Job State and SQL Table:

- The state of the disk usage gathering job shall be saved to a custom SQL table in the WordPress database.
- The SQL table will store the necessary information to track the progress and status of the disk usage gathering process.

### 2.7 Unit Tests:

- The project should include one or more unit tests to verify the correctness and functionality of the plugin.

- Unit tests should cover critical components, such as disk usage calculation, AJAX requests, and state management.

### 3. Design Considerations:

#### 3.1 Separation of Concerns (Design Pattern):

- The plugin will follow the Separation of Concerns design pattern.
- The code will be organised into logical classes and modules, each responsible for a specific task or functionality.
- This design pattern will help improve code maintainability, readability, and testability.

#### 3.2 Class Structure:

- The plugin should have a well-defined class structure, separating different functionalities into appropriate classes.
- Possible classes could include:
  - MainPageController: Handles the rendering and logic of the Main Page.
  - SettingsPage: Handles the rendering and logic of the Settings Page.
  - DiskUsage: Responsible for calculating the disk usage statistics.
  - Ajax: Handles AJAX requests and chunking logic for gathering disk usage statistics.

### 4. Testing and Quality Assurance:

- Unit tests should be developed to verify the correctness and functionality of critical components.
- Integration tests should be performed to ensure seamless integration with other WordPress components and plugins.
- User acceptance testing should be conducted to validate usability, effectiveness, and adherence to requirements.

## 5. Deployment and Maintenance:

- The plugin should be packaged in a standard WordPress plugin format (ZIP file) for easy installation and distribution.
- Documentation should include installation instructions, configuration guidelines, usage details, troubleshooting, and support information.
- The plugin should be designed to support future updates, bug fixes, and compatibility with new versions of WordPress.
- An ongoing maintenance and support plan should be established to address user feedback, bug reports, and feature enhancements.

This design document provides an overview and guidelines for developing the Disk Usage Plugin that meets the specified requirements. Further detailed analysis, architectural design, and implementation will be required during the actual development process.