

Overview Model

Server Design for Web Content Management (WCM)

Hardware

To ensure high reliability, a web content management system (WCM) is built on two servers:

- *production server* for live sites
- *staging server* for backup, development, and file version control.

Virtual Machines (VM)

All live web sites are hosted within one *virtual machine* (VM) on the production server, with three more VMs on staging:

- backup VM
- development and testing VM
- version repository VM

Each virtual machine (VM) contains the database, files, server applications, and an operating system needed to deploy a complete web server. VMs enable simplified and rapid backup, development and deployment. A separate VM is used to track all file changes with version-control software, such as Subversion, git, or CVS.

Content Management

Web authors edit their site content in the authoring interface on the Live VM. The WCM platform is built on a set of databases. To ensure that the site databases are not altered during an upgrade cycle, all web authors' editing access can be temporarily disabled.

Upgrade Cycle

A consistent upgrade cycle is essential for server security:

1. Copy Live VM to Backup VM.
2. Copy Backup VM to Develop/Test VM.
3. Apply updates from Versioning VM to Develop/Test VM and test sites locally.
4. After testing, the committed changes are deployed from Develop/Test VM to Live VM during non-peak hours.

Backup

Regular backups are from the Live VM to Backup VM.

Backups of the Live VM contain all the files and databases to quickly recover any lost data.

If errors are found following an upgrade cycle, then the Backup VM is restored to Live VM, overwriting changes.

Recovery

Administrator or developers can revert specific code changes with Versioning VM to Develop/Test VM.

In the event of hardware or software failure on the Production server, the Backup VM can be substituted immediately for the Live VM.

