

Virtual Hosting & Virtual Machines

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Similar to the network partitioning schemes described previously, there exist a menu of options that enable a single piece of server hardware to be partitioned so as to provide varying levels of isolation to the applications and users served by this hardware.

Common Virt. Hosting Schemes

Virtual Hosting
Common Virt.
Hosting Schemes

Environment
Virtual Hosting
Environment
Virtual Hosting
(cont.)

Environment
Virtual Hosting
(dia.)

Further Reading

Virtual hosting methods to be covered:

Environment: Apache virtual-hosting, Java VM

OS Level: chroot, Jails, User-mode-Linux

Hypervisors: VirtualBox, VMWare, Xen

Emulation: Bochs, VMWare & VirtualBox under special configuration

In *Environment Virtual Hosting*, virtualization of the hosted applications are configured within the space of another application instance (typically a parent instance).

Environment Virtual Hosting (cont.)

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(cont.)

Environment
Virtual Hosting
(dia.)

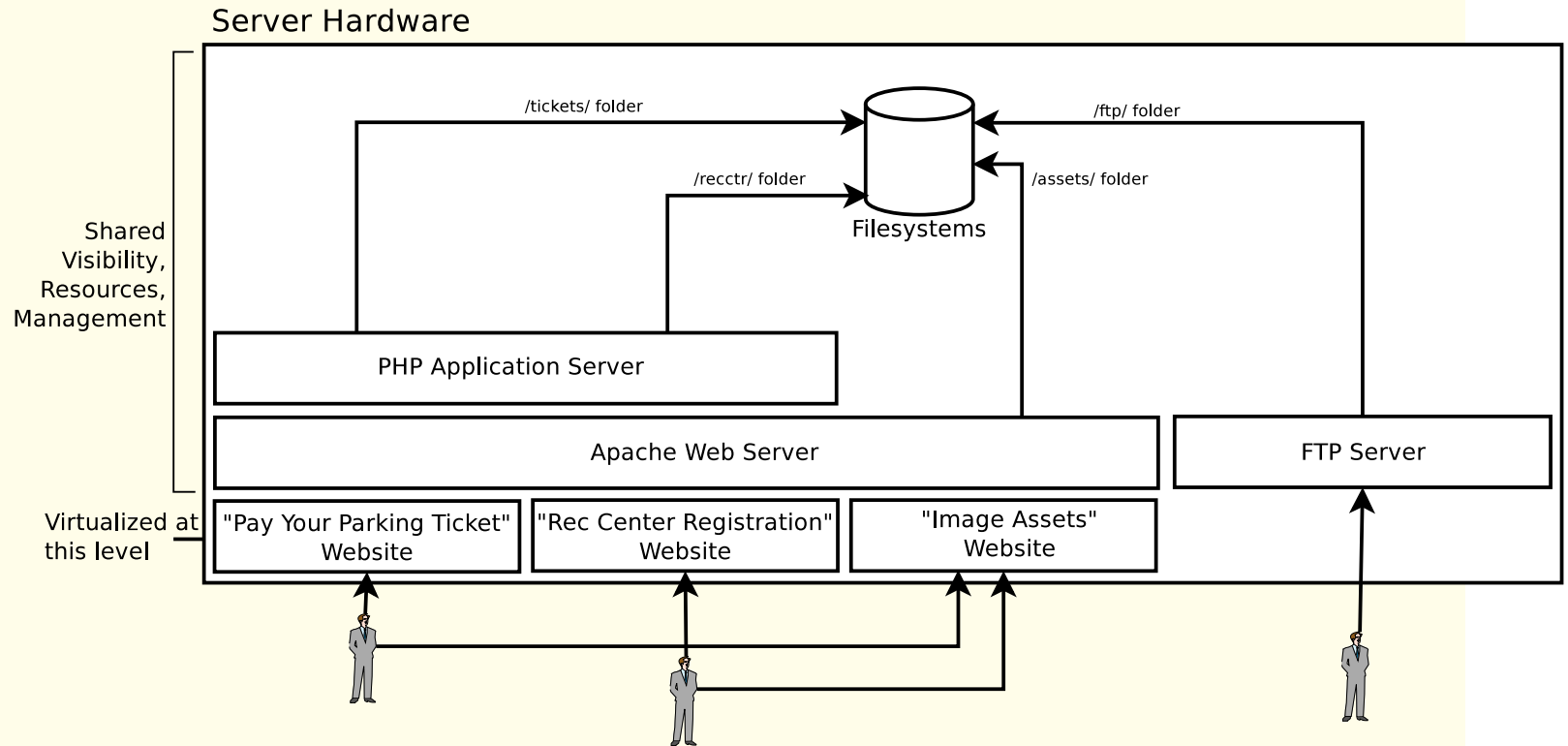
Further Reading

Generally the following ground rules are true:

- The administrator of the server hardware has full visibility and control inside the virtual environments
- The virtual applications may share, privileges, storage and RAM, unless specifically configured not to
- Virtual processes are still visible to each other on the server-side
- The shared nature of the infrastructure is generally opaque to the end-user, but counter-measures must be authored into the applications in order to ensure this remains true.
- Compromising one virtual server can put all other virtual servers at risk

Environment Virtual Hosting (dia.)

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(cont.)
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(dia.)
Further Reading



- **Apache "VirtualHost" examples:**
<http://httpd.apache.org/docs/2.2/vhosts/examples.html>
- **Best Practices for UNIX chroot() Operations:**
<http://www.unixwiz.net/techtips/chroot-practices.html>
- **FreeBSD Handbook, Chapter 15. Jails:**
http://www.freebsd.org/doc/en_US.ISO8859-1/books/handbook/jails.html
- **User Mode Linux:** <http://usermodelinux.org/>
- **VirtualBox Documentation:** <https://www.virtualbox.org/wiki/Documentation>
- **Xen Project:** <http://www.xenproject.org/>