

Introduction to CIT Hosting Services Cornell Stack

The Cornell Stack provides a consolidated Static, ColdFusion, and LAMP service.

Customer can host different types of websites using different technology on one VM which provides ease of administration and provides potential cost savings.

A summary of the updated features:

- 64-bit RHEL 6 (Coldfusion can allocate more than 2 GB of memory)
 - CF9/LAMP currently using 32-bit RHEL5
- Coldfusion 10 using Java 1.7
 - CF9 currently using CF9 with Java 1.6
- PHP 5.4
 - LAMP2 currently uses PHP 5.3
- Python 2.7
 - No change from LAMP2
- Ruby 1.9.3
 - LAMP2 currently uses Ruby 1.8.7
- Perl 5.16
 - No change from LAMP2
- MySQL 5.5
 - Same version from LAMP2
 - MySQL database located on same VM versus separate
- Local storage
 - No longer use NFS (Shared File Service) for storage
 - Customers can opt to continue to use SFS, but will incur additional charges

Details

Software Versions

	Static	CF9	LAMP2	Cornell Stack
Apache	2.2	2.2	2.2	2.2
Coldfusion		9.0.1		10
mod_php			5.3	5.4
php-fpm				5.4
Python			2.7	2.7
Ruby			1.8.7	1.9.3

Shared vs. Standalone Apache

In CF9/LAMP2 each "instance" represented a separate apache instance that could be started/stopped independently. This provides a high level of isolation, but can also consume more system resources and complicate server administration. The "shared" apache instance makes it possible to host a larger number of instances on a single apache instance while still providing isolation between the instances.

	Standalone	Shared
Apache	2.2	2.2
Start/Stop Apache	Yes	Yes*
mod_cgi	Yes	No
Custom virtualhost include	Yes	Yes
mod_php	Yes	No
PHP-FPM	Yes	Yes
Start/Stop PHP-FPM	Yes	Yes
Coldfusion	Yes	Yes
Start/Stop Coldfusion	Yes	Yes
Python	Yes	Yes
Ruby	Yes	Yes

****Will start/stop ALL sites that are behind the shared Apache***

How many instances

Using a VM with 2 GB of memory the following are some guidelines on possible deployments. Individual applications may vary (i.e. it's possible to have a single PHP/Python/Ruby/Perl application that consumes 100% of the memory. Increasing the amount of memory may make it possible to run more instances, but it is not a recommended best practice.

Please note that each instance could host anywhere from 1 website to 100 websites depending on how the software is configured (i.e. a single multisite drupal instance serving 100 websites).

Coldfusion

- 2 instances shared or standalone

PHP

- 3 standalone
- 9 shared

Python

- 3 standalone
- 9 shared

Ruby

- 3 standalone
- 9 shared

Static

- 3 standalone
- 100 shared

The estimates below are based on the following observed utilization

	Memory (MB)
Apache (mod_php)	85
php-fpm	35
coldfusion	350