Mass Virtual Hosting with Apache 2.0

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Virtual Hosts

- IP Address
  - Required for HTTPS
- The 'Host' Header
- Mass Virtual Hosting?
  - HTTPD's Default configuration doesn't deal well with thousands of Virtual Hosts!
Considerations

- **Security**
  - Suexec?
  - PHP?
  - Perchild?
  - Root?

- **Performance**
  - Hits/Second
  - Memory

- **Maintainable**
  - You have to Administrate it!
Logging

- Standard log files?
  - Multiple Server?
  - Thousands of Virtual Hosts?
  - 'Split Later'
- Piped Logging
- `mod_log_spread`
Static Vhosts

- httpd.conf
- Include vhosts.d/* .conf
  - foo.bar.com.conf
Advantages

• Speed
  - No special lookup methods
• Configuration
  - Every Directive is available
Problems

• Scripting?
  – mod_macro lessens the complexity
• Requires Graceful Restarts
  – Add A Vhost
  – Change a Vhost
• Wasted Memory
  – Many sites are rarely
• Multiple Servers?
• Root?
  – How can you edit or script the configuration files?
  – Restarting Apache?
• Using a RewriteMap:
  RewriteMap lowercase int:tolower
  RewriteMap vhost txt:/etc/httpd/conf/vhost.map
  RewriteCond %{HTTP_HOST} !^$
  RewriteCond ${lowercase:%{HTTP_HOST}}|NONE ^(.+)$
  RewriteCond %{vhost:%1} ^/(.*)$
  RewriteRule ^/(.*)%1/$1

  [E=VHOST:${lowercase:%{HTTP_HOST}}]
Advantages

- Speed
  - Fast Lookups -- To a Point!
- Easy to add a Virtual Host
Problems

- Security?
  - PHP?
  - Suexec?
- Multiple Servers?
- Root?
  - Edit RewriteMap File
mod_vhost_alias

- Uses the host header to determine the filename:
  VirtualDocumentRoot /vhosts/%0
- Use Symlinks for ServerAliases?
Advantages

• Easy to Setup
• Fast!
  – No external lookups
• Based on file system layout
  – Can be shared across servers.
Problems

• Security?
  – Suexec – Can work
  – PHP

• Root?
  – Changing a file system?
mod_vhost_dbi

• Uses a LibDBI database to provide information about a Vhost.

mod_vhost_dbi
mod_dbi_pool
libdbi
MySQL
Postgres
Oracle
SQLlite
<table>
<thead>
<tr>
<th>PoolDbiDriver</th>
<th>Server1</th>
<th>mysql</th>
</tr>
</thead>
<tbody>
<tr>
<td>PoolDbiHost</td>
<td>Server1</td>
<td>10.0.0.20</td>
</tr>
<tr>
<td>PoolDbiUsername</td>
<td>Server1</td>
<td>myuser</td>
</tr>
<tr>
<td>PoolDbiPassword</td>
<td>Server1</td>
<td>mypass</td>
</tr>
<tr>
<td>PoolDbiDBName</td>
<td>Server1</td>
<td>vhost_dbi</td>
</tr>
<tr>
<td>PoolDbiConnMin</td>
<td>Server1</td>
<td>1</td>
</tr>
<tr>
<td>PoolDbiConnSoftMax</td>
<td>Server1</td>
<td>1</td>
</tr>
<tr>
<td>PoolDbiConnHardMax</td>
<td>Server1</td>
<td>5</td>
</tr>
<tr>
<td>PoolDbiConnTTL</td>
<td>Server1</td>
<td>30</td>
</tr>
</tbody>
</table>
mod_vhost_dbid

<VirtualHost *:80>
VhostDbiEnabled On
VhostDbiConnName Server1
VhostDbiQuery "SELECT ServerName, DocumentRoot, UserName FROM VhostInfo WHERE ServerName = "&{RequestHostname}""
</VirtualHost>
Advantages

- Security
  - Suexec
  - PHP OpenBaseDir
    - Not Perfect!
- Root?
  - No Need
    - No Configuration Files to Change
    - No Server to Restart
Problems

- Depends on a Database Server
  - Performance Implications
  - Uptime?
Resources

• Slides, mod_vhost_db:  
  – http://www.outoforder.cc/

• Virtual Hosts:  
  – The Apache Documentation!  
    • http://httpd.apache.org/docs-2.0/vhosts/
Questions?