IT-USU: Administrasi dan Desain Jaringan T.A. 2014/2015

[Exercise 6: Virtual Host and Multi Zone DNS]

Most servers only have one or few IP address, therefore to operate many domain name that a server can handle we need to implement virtual host technique and multi zone DNS server.

The highlighted words are something that you must adjust appropriate to your Linux box.

1. Let start from make new directories for new virtual web host, where in here we are going to put our web app data:

   1.1. `$ sudo mkdir -p /var/www/www.it.usu.org/public_html`

   1.2. `$ sudo mkdir -p /var/www/blog.it.usu.org/public_html`

   1.3. `$ sudo mkdir -p /var/www/pasarbulan.com/public_html`

2. Change ownership of these new directories:

   2.1. `$ sudo chown -R www-data.www-data /var/www/www.it.usu.org/public_html`

   2.2. `$ sudo chown -R www-data.www-data /var/www/blog.it.usu.org/public_html`

   2.3. `$ sudo chown -R www-data.www-data /var/www/pasarbulan.com/public_html`

3. And then change mode for all directories in /var/www/

   `$ sudo chmod -R 755 /var/www`

4. Make file index.html for each new virtual web host:

   4.1. `$ sudo nano /var/www/www.it.usu.org/public_html/index.html`

```
<html>
 <head>
  <title>www.it.usu.org page</title>
 </head>
 <body>
  <h1>Website IT USU is working!</h1>
 </body>
</html>
```

   4.2. `$ sudo nano /var/www/blog.it.usu.org/public_html/index.html`

```
<html>
 <head>
  <title>blog.it.usu.org page</title>
 </head>
 <body>
  <h1>Blog IT USU is working!</h1>
 </body>
</html>
```

   4.3. `$ sudo nano /var/www/pasarbulan.com/public_html/index.html`

```
<html>
 <head>
  <title>www.pasarbulan.com page</title>
 </head>
 <body>
  <h1>Pasar Bulan is up!</h1>
 </body>
</html>
```

5. For each new virtual web host we need new file configuration:

   5.1. $ **sudo nano /etc/apache2/sites-available/www.it.usu.org.conf**

   ```
   <VirtualHost *:80>
     ServerAdmin webmaster@www.it.usu.org
     ServerName www.it.usu.org
     DocumentRoot /var/www/www.it.usu.org/public_html
     ErrorLog ${APACHE_LOG_DIR}/error.log
     CustomLog ${APACHE_LOG_DIR}/access.log combined
   </VirtualHost>
   ```

   5.2. $ **sudo nano /etc/apache2/sites-available/blog.it.usu.org.conf**

   ```
   <VirtualHost *:80>
     ServerAdmin webmaster@blog.it.usu.org
     ServerName blog.it.usu.org
     DocumentRoot /var/www/blog.it.usu.org/public_html
     ErrorLog ${APACHE_LOG_DIR}/error.log
     CustomLog ${APACHE_LOG_DIR}/access.log combined
   </VirtualHost>
   ```

   5.3. $ **sudo nano /etc/apache2/sites-available/pasarbulan.com.conf**

   ```
   <VirtualHost *:80>
     ServerAdmin webmaster@pasarbulan.com
     ServerName pasarbulan.com
     ServerAlias www.pasarbulan.com
     DocumentRoot /var/www/pasarbulan.com/public_html
     ErrorLog ${APACHE_LOG_DIR}/error.log
     CustomLog ${APACHE_LOG_DIR}/access.log combined
   </VirtualHost>
   ```

6. Now we have to enable those configurations:

   6.1. $ **sudo a2ensite www.it.usu.org.conf**

   6.2. $ **sudo a2ensite blog.it.usu.org.conf**

   6.3. $ **sudo a2ensite pasarbulan.com.conf**

7. Reload Apache web service:

   $ **sudo service apache2 reload**

8. After we are have successfully configured web server now the time we need to configure Primary and Secondary DNS.

   At Primary DNS server, add new lines that give information about two sub-domain newly added under it.usu.org domain:

   $ **sudo nano /etc/bind/db.it.usu.org**

   ```
   $TTL    604800
   @       IN      SOA     ns1.it.usu.org. admin.it.usu.org. (
                                 1         ; Serial  # Increase manually each time  you have changed this file
                            604800         ; Refresh
                             86400         ; Retry
                           2419200         ; Expire
                            604800 )       ; Negative Cache TTL
   ;
   ; Name Servers - NS Records
                                 IN      NS              ns1.it.usu.org.
                                 IN      NS              ns2.it.usu.org.
   ;
   ```

```
; Name Servers - A Records
ns1.it.usu.org.          IN      A          192.168.1.200
ns2.it.usu.org.          IN      A          192.168.1.201
;
; 192.168.1.0/24 - A Records
server01.it.usu.org.     IN      A          192.168.1.100
gateway.it.usu.org.      IN      A          192.168.1.1
www.it.usu.org.          IN      CNAME      server01.it.usu.org
blog.it.usu.org.         IN      CNAME      server01.it.usu.org
```

9. And then add new lines to file named.conf.local informing that there is new zone named “pasarbulan.com”:

```
$ sudo nano /etc/bind/named.conf.local
```

```
zone "it.usu.org" {                                  # Old Zone name
      type master;
      file "/etc/bind/zones/db.it.usu.org";          # Old Zone name database
      allow-transfer { 192.168.1.201; };             # Name Server 02 (ns2)
};
zone “pasarbulan.com” {                              # Newly Created Zone name
      type master;
      file “/etc/bind/zones/db.pasarbulan.com”;      # Newly Created Zone name database
      allow-transfer { 192.168.1.201 };
};
zone "1.168.192.in-addr.arpa" {
      type master;
      file "/etc/bind/zones/db.1.168.192";           # 192.168.1.0/24 subnet
      allow-transfer { 192.168.1.201; };             # Name Server 02 (ns2)
};
```

10. Also add new file configuration for newly created zone “pasarbulan.com”:

```
$ sudo nano /etc/bind/zones/db.pasarbulan.com
```

```
$TTL    604800
@       IN      SOA     ns1.pasarbulan.com. admin.pasarbulan.com. (
                              1         ; Serial  # Increase manually each time  you have changed this file
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
; Name Servers - NS Records
                        IN      NS              ns1.pasarbulan.com.
                        IN      NS              ns2.pasarbulan.com.
;
; Name Servers - A Records
ns1.pasarbulan.com.     IN      A               192.168.1.200
ns2.pasarbulan.com.     IN      A               192.168.1.201
;
; 192.168.1.0/24 - A Records
pasarbulan.com.         IN      A               192.168.1.100
www.pasarbulan.com.     IN      CNAME           pasarbulan.com.
```

11. Confirm the configuration:

```
$ sudo named-checkconf
$ sudo named-checkzone it.usu.org db.it.usu.org
$ sudo named-checkzone pasarbulan.com db.pasarbulan.com
$ sudo service bind9 restart
```

12. At Secondary DNS server, don't forget to add new lines to file named.conf.local:

```
$ sudo nano /etc/bind/named.conf.local
```

```
zone "it.usu.org" {
        type slave;
        file "db.it.usu.org";
        masters { 192.168.1.200; };    # Name Server 01 (ns1)
};
zone "pasarbulan.com" {
        type slave;
        file "db.pasarbulan.com";
        masters { 192.168.1.200; };    # Name Server 01 (ns1)
};
zone "1.168.192.in-addr.arpa" {
        type slave;
        file "db.1.168.192";
        masters { 192.168.1.200; };    # Name Server 01 (ns1)
```

13. Also confirm the configuration at Secondary DNS server:

```
$ sudo named-checkconf
$ sudo service bind9 restart
```

14. *to be continued …*
    - *running Joomla/Drupal*
    - *running Wordpress*
    - *running OpenCart*
    - *etc…*