

Network Services & Linux

- Squid, LAMP & Ntop
- - Configuring squid
- - Apache in suse 9.1 & enabling & disabling with yast2
- - How php works & some coding styles.
- - How mysql integrates well with lamp structure
- - how ntop can be a ver of top for network monitoring. Other tools include ethereal, iperf, etc.

What i am going to talk about

- What squid is & how to configuring for a reasonable performance.
- What apache is & how yahoo's apache is different from apache 2.x
- What php is & how it fits well in LAMP structure & some mysql with php
- How ntop cab be a ver of top for network monitoring. Other tools include ethereal, iperf, etc.

Squid

- Squid – a high performance caching server. Basically a proxy server that can also be made as a web-server.
- Configuring squid for performance: (i used the one that came as default with fc4)
 - The first thing to increase performance of squid is to allocate a separate partition or better still a separate drive to squid that is formatted as reiserfs. I prefer reiserfs over ext3 because in ext3 both data & meta-data are journalised, which is not required in the case of squid. So i would prefer reiserfs or xfs.

Squid configuring (Contd.)

- The next thing to do is to edit the squid config file to our requirements, which is located in the usual /etc directory. Certain things i find worth editing are:
 - Cache_dir: Specifies the location of cache dir & other parameters for the cache dir. The example syntax of cache_dir is
cache_dir /usr/local/squid/cache/ 100 16 25
edit the space allocated (100) in MB
edit the max. sub. Dir. Allocated (16) to ur requirement.
 - http_port: Specifies the port to be used for incoming request. Change from the default 3128

Squid configuring (Contd.)

- To something like 8080. Just for security reasons. By security, i mean security by obscurity. You can also specify a secondary port to listen, the syntax would be:
 - `http_port 8080 8031`
- `Cache_mgr`: Sends an email to the email specified here when squid dies unexpectedly.
- Other editables: `cache_effective_user` & `cache_effective_group` : Squid starts as root then switch to the specified the user id & group id given here.
- Access Control List (`acl`) : Specifies what

Squid configuring (Contd.)

- control each can have & who can access.
Some controls provided are:
 - icp_access, http_access, other less important.
The most important i feel here is the http_access. The example of general systax for all controls are:
 - http_access allow 10.0.1.0/255.255.255.0
- Acl list based on regex:
 - ***acl*** QUERY ***urlpath*** cgi-bin
 - ***no_cache deny*** QUERY

Squid configuring (Contd.)

- After, you are satisfied with squid configuration. You will have to test run squid b4 deploying. To test run squid, run:
 - \$ /usr/local/squid/bin/client -h www.google.com
-p 80
- Now try accessing the same page from squid cache:
 - \$ /usr/local/squid/bin/client -h
<cache1.domain.example> -p 3128
<http://www.google.com>
 - Where <cache1.domain.example>. Should be replaced by appropriate entry u find in squid.conf

Squid configuring (Contd.)

Now your squid is ready to Rock N Roll.

Apache HTTP Server

- Apache server is the most popular project of apache software foundation's projects. Other popular projects include: Jakarta, Perl, SpamAssassin, Tomcat, etc.
- Apache is a robust, commercial grade, feature rich & freely available source code implementation of an HTTP server. The project is managed by a group of volunteers located around the world.

Apache's Brief History

- World's first web-server was written in 1995 Feb. by Rob McCool at National Center for Supercomputing Application (NCSA). However development stalled after Rob left NCSA. Then development was fragmented. Brian Behlendorf & others tried to unite developers & the result is Apache web-server. This turned out to be a big-hit with the first release at mid 1995. By 1996 it reached release 1.0 & was stated as #1 web-server by Netcraft survey.

Apache features

- It is HTTP/1.1 compliant web-server
- Implements all latest protocols (RFC2616)
- Highly configurable & extensible with third party modules (this is how php is enabled in apache)
- Source code comes under unrestrictive license.
- Runs on windows, OS/2, most versions of UNIX (includes Linux) and many other operating systems.

Troubleshooting apache

In case of trouble with Apache server you could take the follow steps:

- 2) **Error Logs:** Error logs provide enough details for diagnosing and fixing the problem under most conditions. The default location of error log in linux is
`/usr/local/apache2/logs/error_log`
- 3) Check Apache's bug database if its commonly occurring bug with apache.
- 4) If both the above fails to resolve the issue:
 - 1) Ask in user forum

Troubleshooting apache (contd..)

- 1) If you dont get reply within 2 weeks, file a bug in Apache's bug database.
- 1) If conditions doesn't allow you to wait for 2 weeks, then you could try commercial support include (but not limited to):
 - Aexon/Xe Technology Pte Ltd.
 - Hewlett-Packard (HP)
 - Alcove

PHP Intro

- PHP is a recursive acronym for PHP hypertext preprocessor (just like GNU).
- Its a widely used open source, general purpose, server side, scripting language that can be embedded in HTML.
- One of the stongest & significant feature in php is the support for wide range of database. Supported database include (but not limited to):
 - Oracle
 - MySQL

PHP Intro (contd..)

- IBM DB2, etc.
- To test php modules installation in the web server, you could run the following script:
 - `<?php phpinfo(); ?>`
 - This code will display system information from php as a web-page in the browser.

Simple php script

- A simple example of php:

```
<html>
```

```
<head>
```

```
<title> A simple php script </title>
```

```
</head>
```

```
<body>
```

```
<?php
```

```
echo "Hi! This is a simple php script.";
```

```
?>
```

```
</body>
```

```
</html>
```


Simple php with MySQL

- The o/p of the above code will be:
 - Hi! This is a simple php script.
 - In above code note that the echo line ends with a semicolon. Most lines in php end with an semicolon.
- A simple php script that interacts with MySQL:

```
<html>
<head>
<title> A simple php script </title>
</head>
<body>
```

Simple php with MySQL (contd.)

```
<?php
$user="username";
$password="password";
$database="database";
mysql_connect(localhost,$user,$password);
@mysql_select_db($database) or die( "Unable to
select database");
```

Simple php with MySQL (contd.)

```
$query="CREATE TABLE contacts (id int(6) NOT
NULL auto_increment,first varchar(15) NOT
NULL,last varchar(15) NOT NULL,phone
varchar(20) NOT NULL,mobile varchar(20) NOT
NULL,fax varchar(20) NOT NULL,email
varchar(30) NOT NULL,web varchar(30) NOT
NULL,PRIMARY KEY (id),UNIQUE id (id),KEY
id_2 (id))";
mysql_query($query);
mysql_close();
?>
</body>
</html>
```

Simple php with MySQL (contd.)

- What the above code does is to create connection with MySQL & create a table contacts in mysql with details of id, first name, last name, phone #, fax #, email id, web url.

- Name	Type	Other details
id	int(6)	NOT NULL, auto_increment
first	varchar(15)	NOT NULL
last	varchar(15)	NOT NULL
phone	varchar(20)	NOT NULL
fax	varchar(20)	NOT NULL
email	varchar(30)	NOT NULL
web	varchar(30)	NOT NULL

Ntop Intro

- Ntop is a network traffic probe that shows network usage, similar to top command in unix.
- Ntop works both in windows & unix platform.
- Ntop users can use web-browser to browse thro' ntop traffic information & get a dump of network status.
- Ntop uses reduced cpu & mem. Usage (vary according to network size & traffic)
- Ntop suitable for monitoring various kinds of network.

Ntop at work



About Summary IP Media Admin Utils

Traffic

Hosts

Network Load

ASN Info

VLAN Info

Network Flows

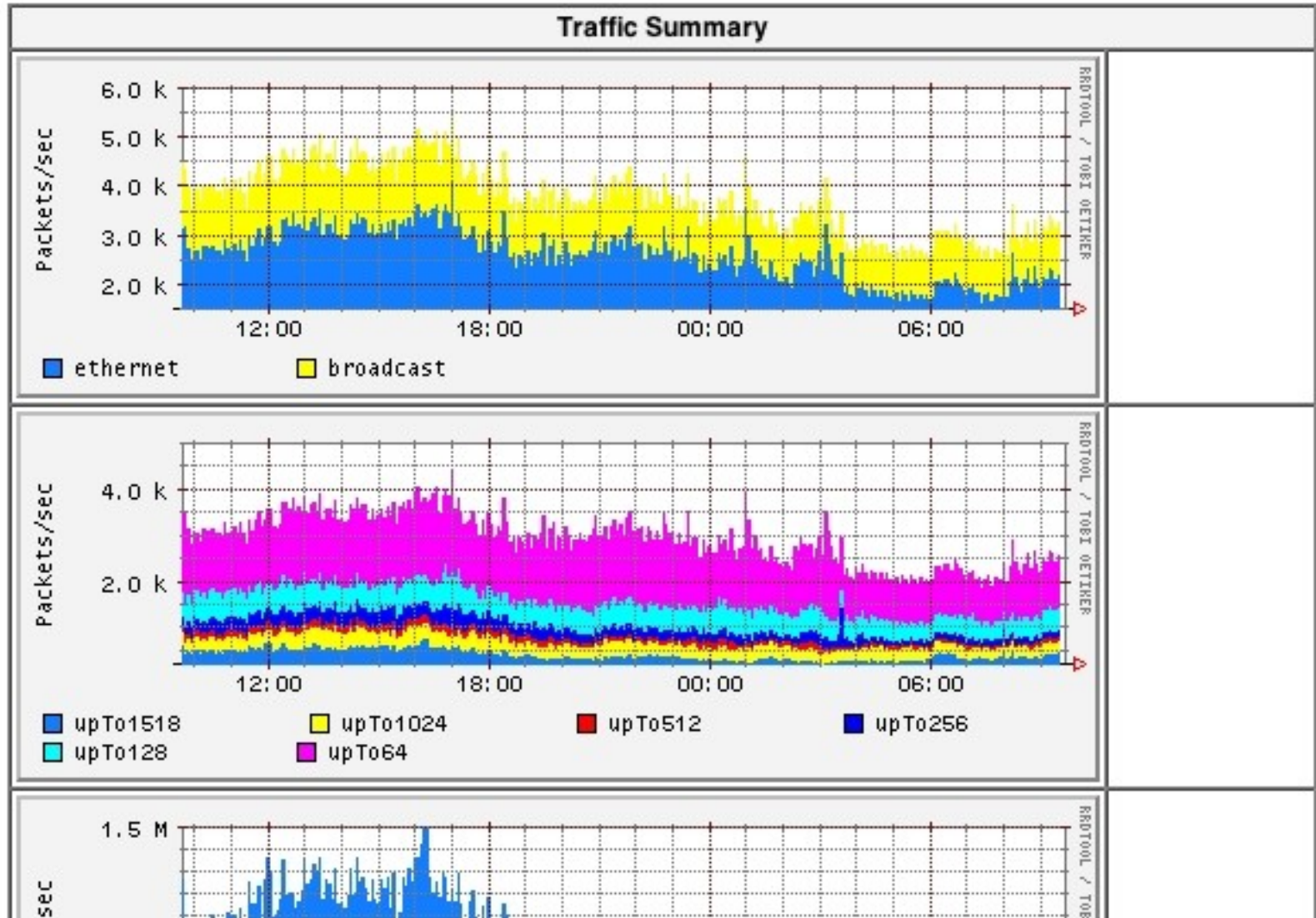
Host Information

	Domain	IP Address	MAC Address	Other Name(s)	Bandwidth	Nw Board Vendor	Hops Dis
host254		83.149.145.254					
host078-144		83.149.144.78					
host005-160		83.149.160.5					
host019-154		83.149.154.19					
host017-148		83.149.148.17					
host081-144		83.149.144.81					
host016-148		83.149.148.16					
host067-144		83.149.144.67					
host153-147		83.149.147.153					
host095-144		83.149.144.95					
host019-146		83.149.146.19					
host014-148		83.149.148.14					
freebsd.computerhouseprato.com		83.149.154.10					
freebsd.giovannelli.com		83.149.149.149					
host012-144		83.149.144.12					
host023-146		83.149.146.23					



Info about interface Consiag

View: [year] [month] [week]



Ntop features

- Sort traffic according to protocols.
- Sort traffic according to various criteria.
- Display total traffic statistics in near real time.
- Show IP traffic distribution

The end

As we enjoy great advantages from the invention of others, we should be glad of an opportunity to server others by an invention of ours; and this we should do freely & generously.

- by Benjamin Franklin.