Report 4

Testing squid proxy-server on download process files from Dropbox

This report describes the process of downloading files from Dropbox using a Windows host machine and a Squid proxy server running on a VirtualBox VM. During this process, we successfully downloaded a file from Dropbox even after deleting it from the Dropbox server, demonstrating that the Squid proxy server operates as expected.

Setting up Squid Proxy Server on VirtualBox VM:

We configured a VirtualBox virtual machine (VM) to run a Squid proxy server. The VM was configured with appropriate network settings to allow communication with the Windows host machine. Squid was installed and configured to act as a forward proxy, allowing the Windows host machine to route its web requests through the Squid proxy.

Configuring Windows Host Machine: On the Windows host machine, we configured the proxy settings to route all HTTP and HTTPS traffic through the Squid proxy server running on the VM.

Accessing Dropbox from Windows Host Machine: With the proxy settings in place, we accessed Dropbox from the Windows host machine using a web browser and command-line tool cURL. The default link to file stored on Dropbox is : `https://www.dropbox.com/scl/fi/gxyxow2l4vwxzefkh003x/100MB.zip?rlkey=5cv9vzyn3c9n3flxvm04b2k43&dl=0`

Downloading a File from Dropbox: We initiated a download request for a file hosted on Dropbox using a direct link, using command : `curl -x 192.168.59.101:3128 "https://www.dropbox.com/scl/fi/gxyxow2l4vwxzefkh003x/100MB.zip?rlkey=5cv9vzyn3c9n3flxvm04b2k43&dl=0”.`

```
C:\Users\medya\OneDrive\Desktop>curl -x 192.168.59.101:3128 "https://www.dropbox.com/scl/fi/gxyxow2l4vwxzefkh003x/100MB.zip?rlkey=5cv9vzyn3c9n3flxvm04b2k43&dl=0" -o testFile.zip
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 74193    0 74193    0     0   141k      0 --:--:-- --:--:-- --:--:--  140k
```

File size was 100MB and previously downloaded using proxy server, but after removing the file from Dropbox storage and executing the same command we see that the process was successful which means that Squid proxy server has previously cached that file and we can retrieve it directly from the cache storage of Squid.

SARG Squid Analysis Report Generator

Squid User Access Reports

FILE/PERIOD	CREATION DATE	USERS	BYTES	AVERAGE
2023Oct04-2023Oct04	Mi 04 Okt 2023 12:16:06 CEST	1	32,18M	32,18M
2023Oct02-2023Oct03	Di 03 Okt 2023 11:57:53 CEST	1	815,27M	815,27M
2023Oct02-2023Oct02	Mo 02 Okt 2023 14:29:28 CEST	1	2,67M	2,67M
2023Sep21-2023Sep21	Do 21 Sep 2023 19:52:29 CEST	1	568,93M	568,93M

Simulating File Deletion on Dropbox: Another In another scenario while the download was in progress, we manually deleted the file from Dropbox using the Dropbox web interface. but the process was continuing by the Squid itself, which resumed the process presumably by retrieving necessary parts from its cache.

Squid Analysis Report Generator

Squid User Access Reports

Period: 2023 Okt 04
Sort: bytes, reverse
Top users

Top sites
Sites & Users
Downloads
Denied accesses

NUM		USERID	CONNECT	BYTES	%BYTES	IN-CACHE-OUT		ELAPSED TIME	MILLISEC	%TIME
1		192.168.59.1	120	32,18M	100,00%	99,20%	0,80%	06:06:20	21,980,235	100,00%
		TOTAL	**120**	**32,18M**		**99,20%**	**0,80%**	**06:06:20**	**21,980,235**	
		AVERAGE	**120**	**32,18M**				**06:06:20**	**21,980,235**	

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Observing Squid Proxy Behavior: Despite the file being deleted from Dropbox during the download, the Squid proxy server successfully served the complete file to the Windows host machine, demonstrating that Squid cached the content.

Squid Analysis Report Generator

Squid User Access Reports

Period: 2023 Okt 04
User: 192.168.59.1
Sort: bytes, reverse
User report

ACCESSED SITE	CONNECT	BYTES	%BYTES	IN-CACHE-OUT		ELAPSED TIME	MILLISEC	%TIME
speedtest.tele2.net	3	31,45M	97,75%	100,00%	0,00%	00:00:00	468	0,00%
clientconfig.akamai.steamstatic.com	15	223,89K	0,70%	0,00%	100,00%	00:00:01	1,377	0,01%
www.dropbox.com:443	5	113,21K	0,35%	100,00%	0,00%	00:00:05	5,005	0,02%

The Squid proxy server effectively intercepted and cached the file download request made from the Windows host machine. When the file was deleted from Dropbox during the download process, Squid continued to serve the file from its cache without interruption. The Windows host machine successfully downloaded the entire file from Squid's cache even though the file was no longer available on the Dropbox server. The successful download of a file from Dropbox via the Squid proxy server, even after the file's deletion from the Dropbox server, demonstrates the effectiveness of Squid as a caching proxy in preserving content availability during unexpected events. This capability can improve download reliability and network efficiency in various network environments.