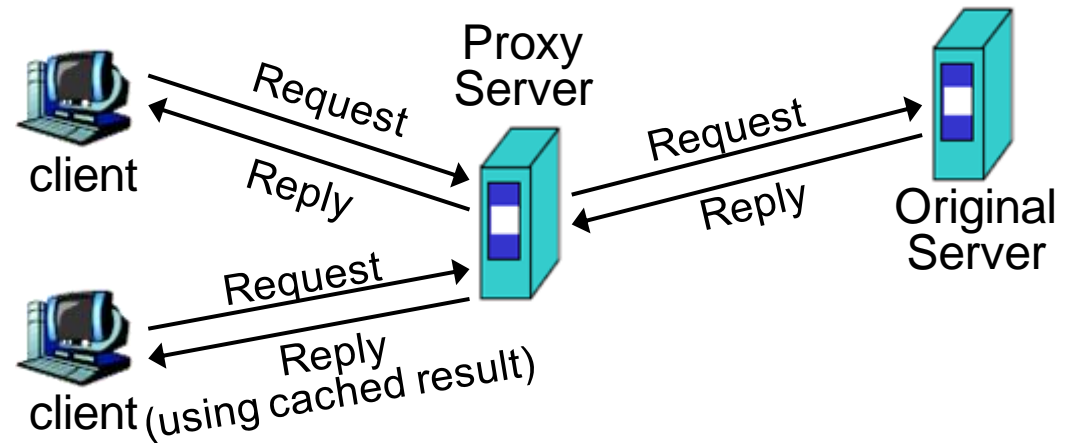


Web Proxy

Proxy

Proxy

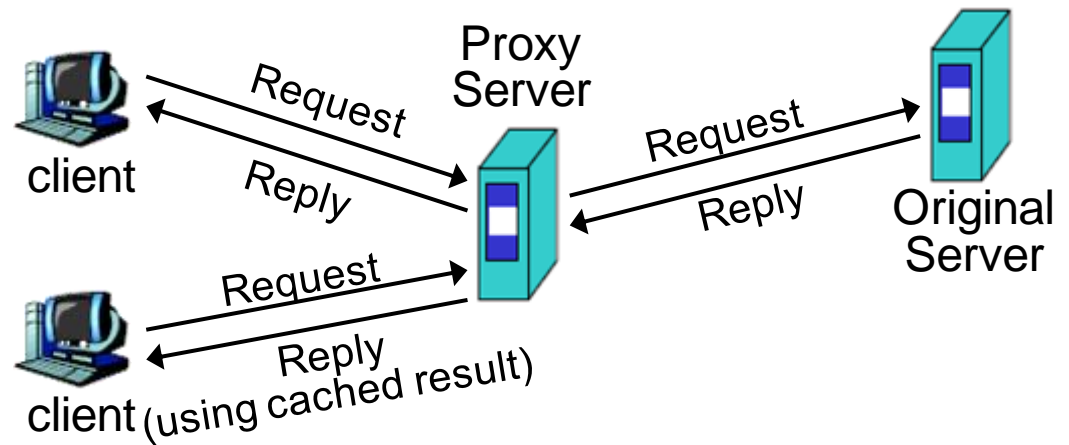
- > A proxy server is a server which services the requests of its clients by:
 - Making requests to other servers
 - Caching some results for further same requests
- > Goals:
 - Performance
 - Stability
 - Central Control
 - ...etc.
- > Roles:
 - Forward Proxy
 - Reverse Proxy
- > Targets
 - Web Pages/FTP Files
 - TCP/IP Connections
 - ...etc.



Proxy

– The Forward Proxy

- Forward Proxy
 - > Proxy the outgoing requests, for the reason of
 - Bandwidth saving
 - Performance
 - Central control
 - > When objects requested are
 - In cache, return the cached objects
 - Otherwise, proxy server requests object from origin server, then cache it and return to client

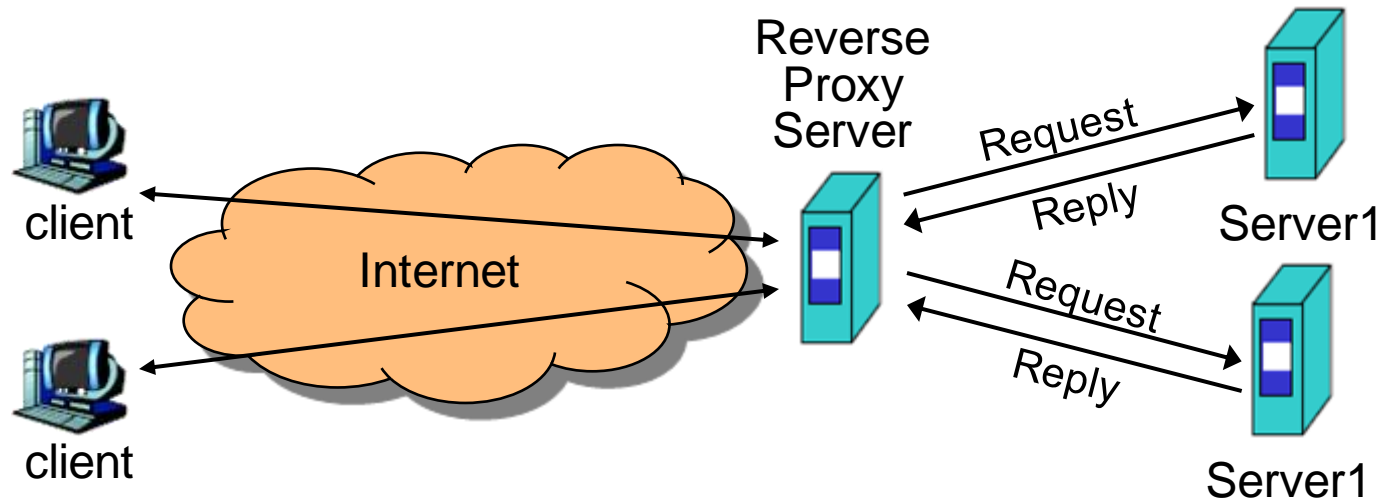


Proxy

– The Reverse Proxy

○ Reverse Proxy

- > Proxy the incoming requests, for the reason of
 - Reducing Server Load (by caching)
 - Load Balance
 - Fault Tolerant
- > Reverse proxy acts as the original server, accept incoming requests, reply corresponding result. SEAMLESS for clients!



Proxy – SQUID



- ◎ A web proxy server & cache daemon.
 - > Supports HTTP, FTP
 - > Limited support for TLS, SSL, Gopher, HTTPS
- ◎ Port install: `/usr/ports/www/squid{,26,30}`
- ◎ Startup:
 - > `/etc/rc.conf`
 - `squid_enable="YES"`
 - `squid_config="/usr/local/etc/squid/squid.conf"`
 - `squid_user="squid"`
 - > `/usr/local/etc/rc.d/squid start`
- ◎ Configuration Sample/Documents:
 - > `/usr/local/etc/squid/squid.conf.default`

Proxy

– SQUID Configuration (1)

- ◎ Listen Port
 - > Service Port
 - http_port 3128
 - > Neighbored Communication
 - icp_port 3130
- ◎ Logs
 - > access_log
 - access_log /var/log/squid/access.log squid
 - > cache_log
 - cache_log /var/log/squid/cache.log
 - > cache_store_log
 - cache_store_log /var/log/squid/store.log

Proxy

– SQUID Configuration (2)

◎ Access Control

> acl – define an access control list

- Format: `acl acl-name acl-type data`

```
acl all src 0.0.0.0/0.0.0.0
```

```
acl NCTU srcdomain .nctu.edu.tw
```

```
acl YAHOO dstdomain .yahoo.com
```

```
acl allowhost src “/usr/local/etc/squid.squid.allow”
```

> http_access – define the control rule

- Format: `http_access allow | deny acl-name`

```
http_access allow NCTU
```

```
http_access allow allowhost
```

```
http_access deny all
```

Proxy

– SQUID Configuration (3)

◎ Proxy Relationship

- > Protocol: ICP (Internet Cache Protocol)
RFC 2186 2187, using **UDP**
- > Related Configuration
 - `cache_peer hostname type http_port icp_port [options]`
 - `cache_peer_domain cache-host domain [domain ...]`
 - `cache_peer_access cache-host allow | deny acl-name`

Proxy

– SQUID Configuration (4)

◎ Cache Control

- > `cache_mem 256 MB`
- > `cache_dir ufs /usr/local/squid/cache 100 16 256`
- > `cache_swap_low 93`
- > `cache_swap_high 98`
- > `maximum_object_size 4096 KB`
- > `maximum_object_size_in_memory 8 KB`

Proxy

– SQUID Configuration (5)

◎ Sample: Proxy Configuration

```
http_port 3128
icp_port 3130

cache_mem 32 MB
cache_dir ufs /usr/local/squid/cache 100 16 256

access_log /var/log/squid/access.log squid
cache_log /var/log/squid/cache.log
cache_store_log /var/log/squid/store.log
pid_filename /usr/local/squid/logs/squid.pid

visible_hostname tproxy.cs.nctu.edu.tw
acl allowhosts src "/usr/local/etc/squid/squid.allow"
http_access allow allowhosts
http_access deny all
```

Proxy

– SQUID Configuration (6)

◎ Sample: Reverse Proxy Configuration

```
http_port 80 vhost
icp_port 3130

cache_mem 32 MB
cache_dir ufs /usr/local/squid/cache 100 16 256

access_log /var/log/squid/access.log squid
cache_log /var/log/squid/cache.log
cache_store_log /var/log/squid/store.log
pid_filename /usr/local/squid/logs/squid.pid

visible_hostname twww.cs.nctu.edu.tw
url_rewrite_program /usr/local/squid/bin/redirect.sh
acl cswww dstdomain csws1 csws2
http_access allow all cswww
always_direct allow cswww
```

Proxy

– SQUID Configuration (7)

```
$ cat /usr/local/squid/bin/redirect.sh

#!/bin/sh

while read line
do
    TIME=`date "+%S"`
    SERV=`expr $TIME % 2 + 1`
    echo $line | sed -e \
"s/^http:\\/\\/www\\.cs\\.nctu\\.edu\\.tw\\/\\/http:\\/\\/csws$SERV\\.cs\\.nctu\\.edu\\.tw\\/\\/"
done
```