Network Address Port Group Translator

draft-meng-behave-napgt

IETF 87-Berlin, July 2013

W. Meng

SCENARIO

Server: Listening at port 2333-2383
192.168.0.1

NAT
Pool: 202.1.1.1
Rule: Dynamic

IPv4 Internet

A small firm
Smart Departments
A college

192.168.0.2
employees/students/terminals

192.168.0.3
employees/students/terminals

An external user
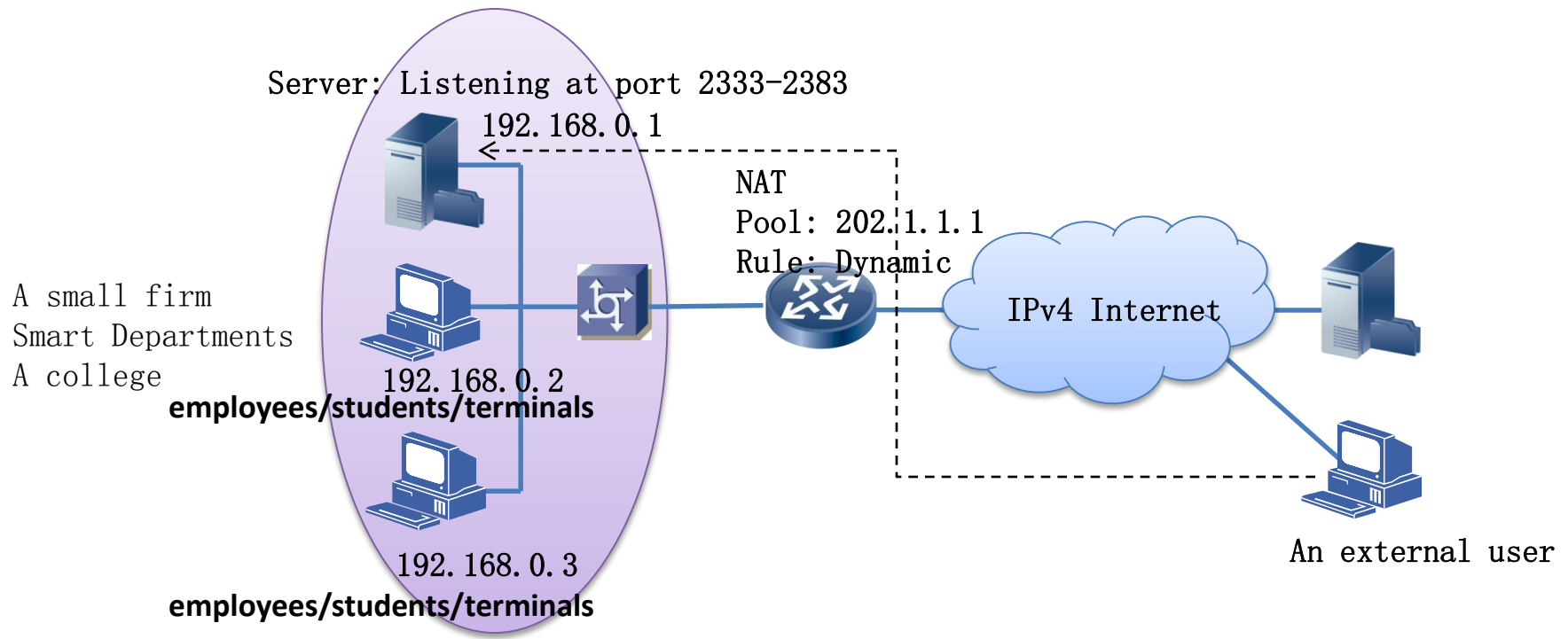
ISSUES

A small firm/Departments/A college apply for only one public IP address from operator, how could it fit the following requirements:

- **Employees/students/terminals and server share only one public IP address.**

- **The server's listening ports MUST not be changed when translating.**

- **NAT MUST not assign the above preservation ports for the translation of the packets from employees/students/terminals.**

- **An external user visits the internal server through accessing the public IP address and the server's listening ports.**

SOLUTIONS

- 1: Configure static rules for server? No.

- 2: Treat 2333-2383 as a ports group. Generate one rule and one piece of mapping item. A sample mapping table is as following:

```
NAT(config)#show nat translations all
=================================================================
Protocol  Type        Local Add:Port          global Add:Port        Destination Add:Port
=================================================================
---       NAPGT       192.168.0.1:<2333-2383>  202.1.1.1:<2333-2383>  *
-----------------------------------------------------------------
UDP       STATIC      192.168.0.2:1024         202.1.1.1:1025         222.1.1.1
-----------------------------------------------------------------
TCP       DYNAMIC     192.168.0.3:2565         202.1.1.1:1030         222.1.1.2
-----------------------------------------------------------------
```

Comments are welcome!