

Conceptual NAT (Instructor Version)

Instructor Note: Red font color or Gray highlights indicate text that appears in the instructor copy only.

Objective

Describe NAT characteristics.

This activity introduces students to the concept of network address translation.

Scenario

You work for a large university or school system. Because you are the network administrator, many professors, administrative workers, and other network administrators need your assistance with their networks on a daily basis. They call you at all working hours of the day and, because of the number of telephone calls, you cannot complete your regular network administration tasks.

You need to find a way to limit when you take calls and from whom. You also need to mask your telephone number so that when you call someone, another number is displayed to the recipient.

This scenario describes a very common problem for most small- to medium-sized businesses. Visit, "How Network Address Translation Works" located at <http://computer.howstuffworks.com/nat.htm/printable> to view more information about how the digital world handles these types of workday interruptions.

Use the PDF provided accompanying this activity to reflect further on how a process, known as NAT, could be the answer to this scenario's challenge.

Resources

Internet connection

Directions

Step 1: Read Information on the Internet Site.

- a. Go to "How Network Address Translation Works" located at <http://computer.howstuffworks.com/nat.htm/printable>
- b. Read the information provided to introduce the basic concepts of NAT.
- c. Record five facts you find to be interesting about the NAT process.

Step 2: View the NAT graphics.

- a. On the same Internet page, look at the types of NAT that are available for configuration on most networks.
- b. Define the four NAT types:
 - 1) Static NAT
 - 2) Dynamic NAT
 - 3) NAT Overload
 - 4) NAT Overlap

Step 3: Meet together in a full-class setting.

- a. Report your five NAT facts to the class.
- b. As other students state their interesting facts to the class, check off the stated fact if you already recorded it.

- c. If a student reports a fact to the class that you did not record, add it to your list.

Instructor Resource Information

- It is suggested that you display the Web page used as a basis for this activity while comparing facts students report after reading the article.
- Make sure you correct any misunderstandings found in the reading of the web article before moving to the curriculum content.
- At the end of the class or group meeting, reiterate that NAT is a process used to conserve network address allocations and provide a measure of security for users.

Identify elements of the model that map to IT-related content:

- NAT
- Static NAT
- Dynamic NAT
- NAT Overload
- NAT Overlap