

# Introduction

### 6.0.1

## Why should I take this module?



## Welcome to NAT for IPv4!

IPv4 addresses are 32-bit numbers. Mathematically, this means that there can be just over 4 billion unique IPv4 addresses. In the 1980s, this seemed like more than enough IPv4 addresses. Then came the development of affordable desktop and laptop computers, smart phones and tablets, many other digital technologies, and of course, the internet. Rather quickly it became apparent that 4 billion IPv4 addresses would not be nearly enough to handle the growing demand. This is why IPv6 was developed. Even with IPv6, most networks today are IPv4-only, or a combination of IPv4 and IPv6. The transition to IPv6-only networks is still ongoing, that is why Network Address Translation (NAT) was developed. NAT is designed to help manage those 4 billion addresses so that we can all use our many devices to access the internet. As you can see, it is important that you understand the purpose of (NAT) and how it works. As a bonus, this module contains multiple Packet Tracer activities where you get to configure different types of NAT. Get going!

### 6.0.2

What will I learn to do in this module?



**Module Title:** NAT for IPv4

**Module Objective:** Configure NAT services on the edge router to provide IPv4 address scalability.

Topic Title	Topic Objective
NAT Characteristics	Explain the purpose and function of NAT.
Types of NAT	Explain the operation of different types of NAT.
NAT Advantages and Disadvantages	Describe the advantages and disadvantages of NAT.
Static NAT	Configure static NAT using the CLI.
Dynamic NAT	Configure dynamic NAT using the CLI.
PAT	Configure PAT using the CLI.
NAT64	Describe NAT for IPv6.