Subnetting Networks

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Module Goals

Address Type Review

Breaking networks into smaller networks

Variable Length Subnet Masks

Additional Learning

Components of an IP Network

Network IP Address

Components of an IP Network

`all binary 0's in host portion`

Network IP Address

Components of an IP Network

all binary 0's in host portion

Network IP Address

Broadcast IP Address

Components of an IP Network

all binary 0's in host portion

Network IP Address

Broadcast IP Address

all binary 1's in host portion

Components of an IP Network

all binary 0's in host portion

Network IP Address

Host IP Addresses

Broadcast IP Address

all binary 1's in host portion

Subnetting Basics

10.0.0.0/8

Subnetting Basics

10.0.0.0/8

10.0.0.0
255.0.0.0

Subnetting Basics

10.0.0.0/8

10.0.0.0
255.0.0.0

10.0.0.0 – 10.255.255.255

Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

```
N 00001010 00000000 00000000 00000000
B 00001010 11111111 11111111 11111111

  11111111 00000000 00000000 00000000
```

Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

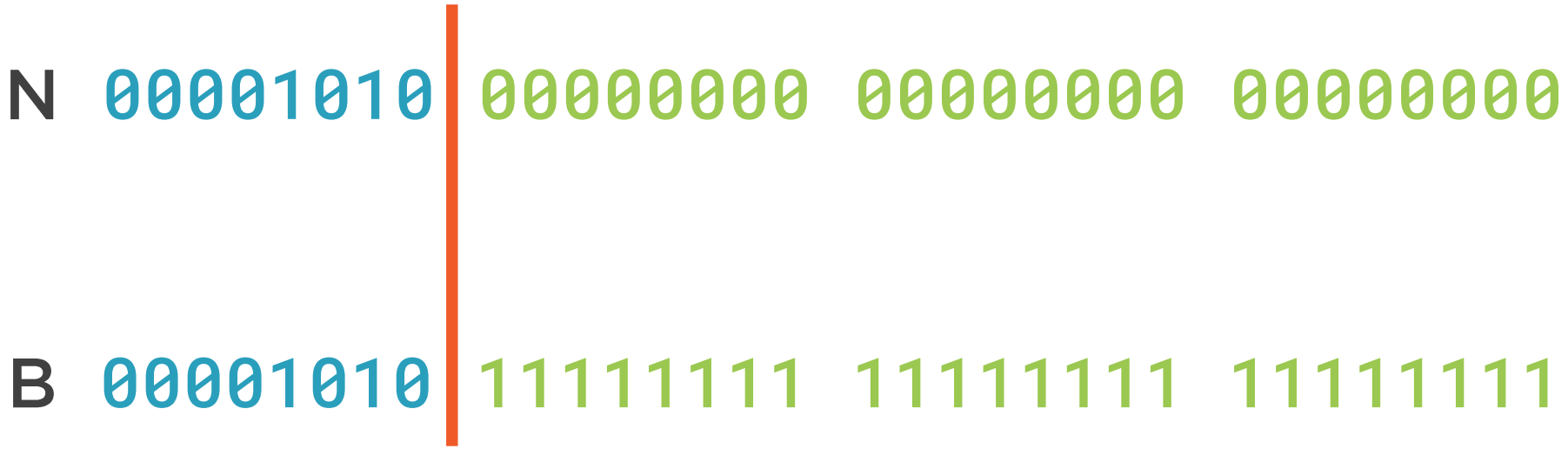
```
N  00001010 | 00000000 00000000 00000000
B  00001010 | 11111111 11111111 11111111

   11111111 | 00000000 00000000 00000000
```

Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255



Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

10.0.10.0

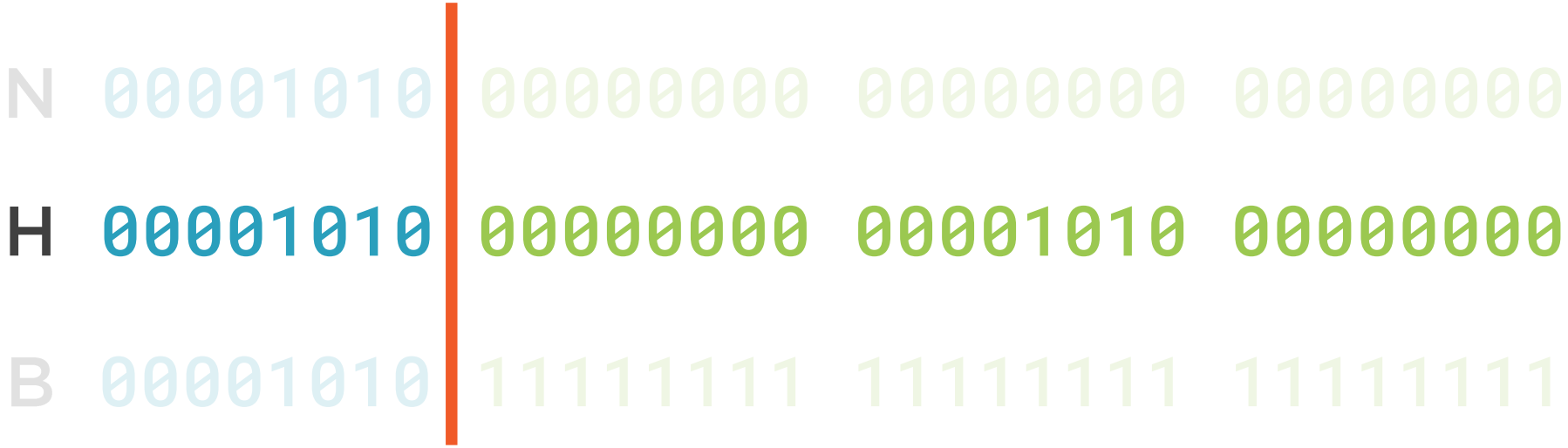
N	00001010	00000000 00000000 00000000
H	00001010	00000000 00001010 00000000
B	00001010	11111111 11111111 11111111

Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

10.0.10.0

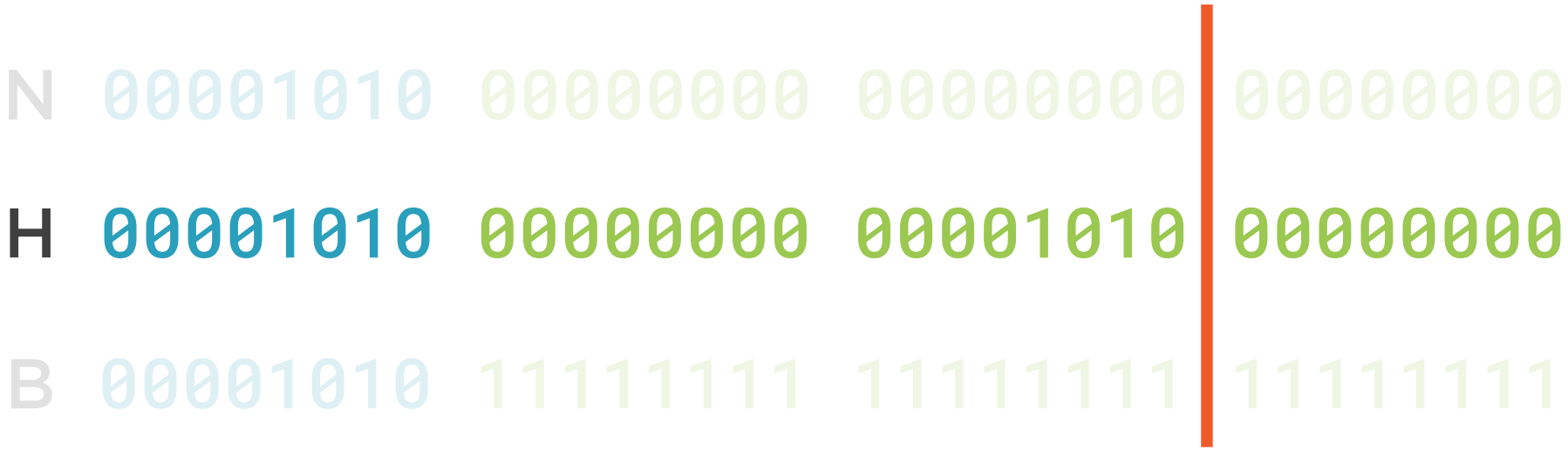


Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

10.0.10.0



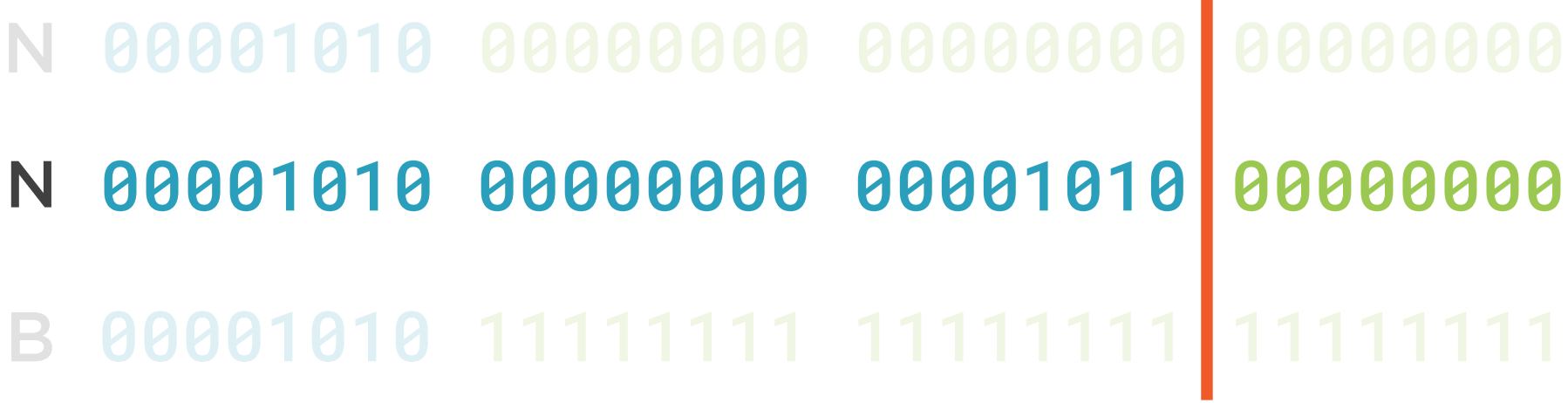
Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

10.0.10.0

/24

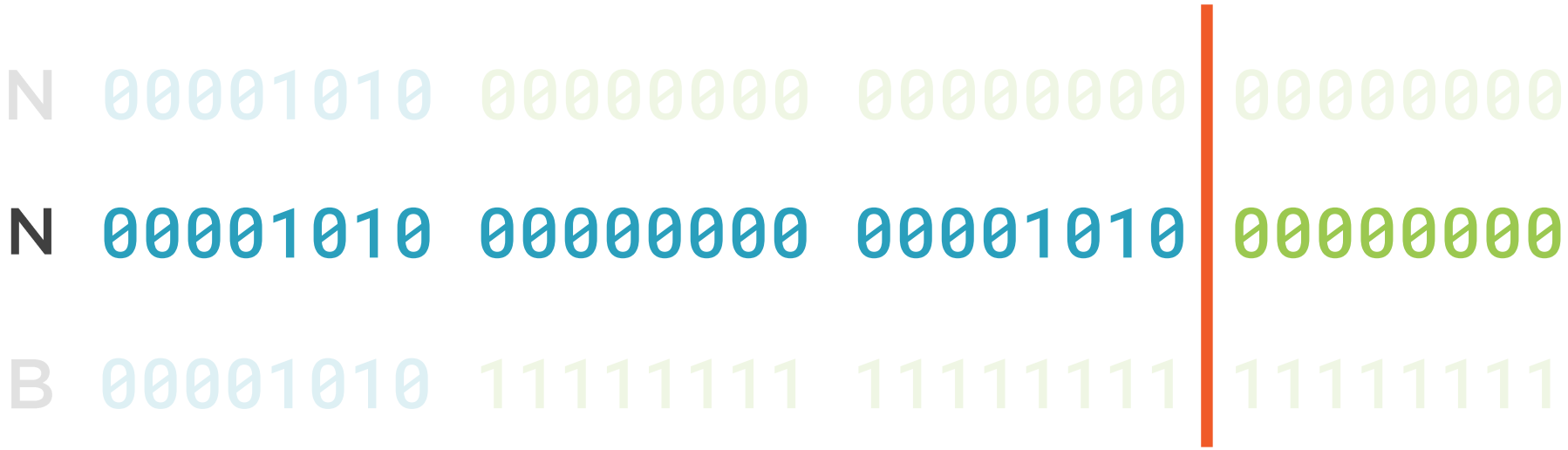


Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

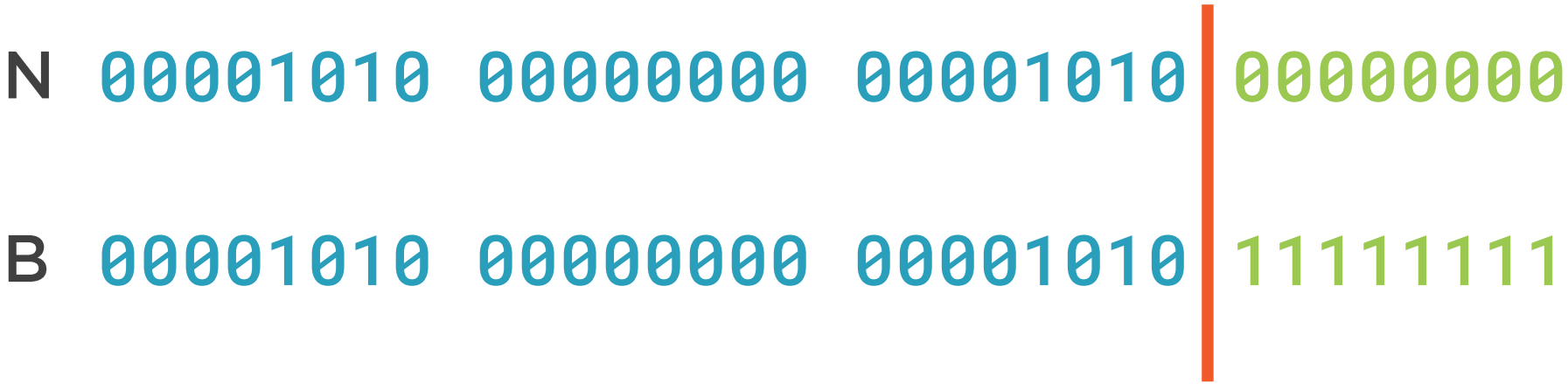
10.0.10.0/24



Subnetting Basics

10.0.0.0 – 10.255.255.255

10.0.10.0/24

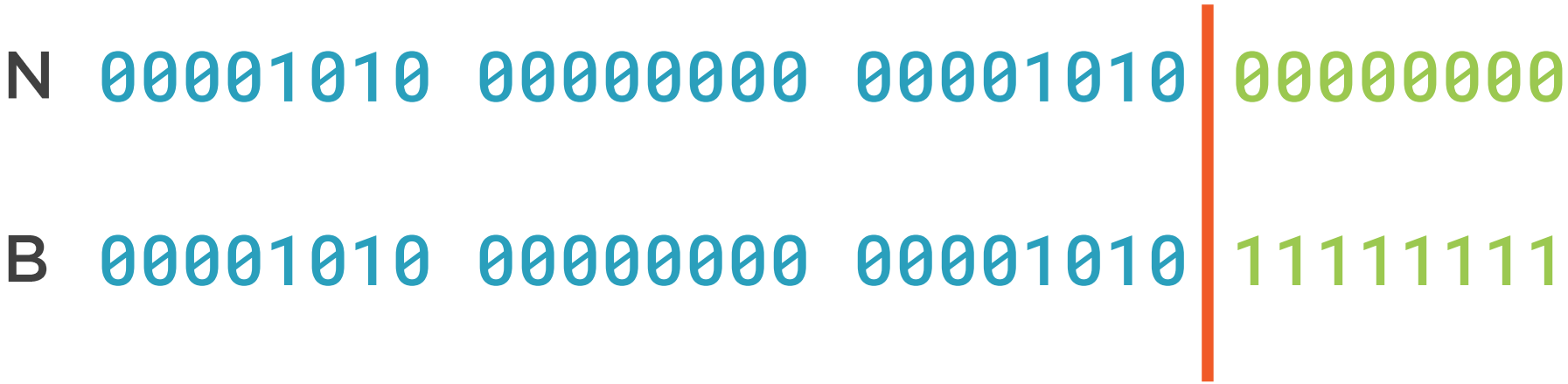


Subnetting Basics

10.0.0.0 – 10.255.255.255

10.0.10.0/24

10.0.10.0 – 10.0.10.255



Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

10.0.10.0/24

10.0.10.0 – 10.0.10.255

Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255

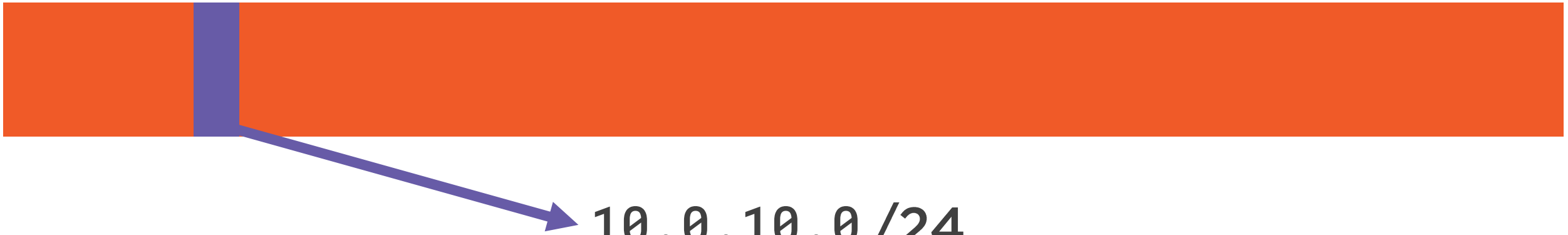
10.0.10.0/24

10.0.10.0 – 10.0.10.255

Subnetting Basics

10.0.0.0/8

10.0.0.0 – 10.255.255.255



10.0.10.0/24

10.0.10.0 – 10.0.10.255

Subnetting Basics

10.0.0.0/8		
10.0.0.0/24	10.0.10.0/24	10.0.20.0/24
10.0.1.0/24	10.0.11.0/24	10.0.21.0/24
10.0.2.0/24	10.0.12.0/24	10.0.22.0/24
10.0.3.0/24	10.0.13.0/24	10.0.23.0/24
10.0.4.0/24	10.0.14.0/24	10.0.24.0/24
10.0.5.0/24	10.0.15.0/24	10.0.25.0/24
10.0.6.0/24	10.0.16.0/24	10.0.26.0/24
10.0.7.0/24	10.0.17.0/24	10.0.27.0/24
10.0.8.0/24	10.0.18.0/24	10.0.28.0/24
10.0.9.0/24	10.0.19.0/24	10.0.29.0/24

Subnetting Basics

10.0.0.0/8		
	10.0.10.0/24	
	10.0.16.0/22	
	10.1.0.0/16	
	10.2.0.0/30	

Subnetting Basics

Variable Length Subnet Masking
VLSM

10.0.0.0/8		
	10.0.10.0/24	
	10.0.16.0/22	
	10.1.0.0/16	
	10.2.0.0/30	

Advanced Subneting

Network Layer Addressing and Operation for Cisco CCNA 200-125/100-105

Summary

- Address Type Review
- Breaking networks into smaller networks
- Variable Length Subnet Masks
- Additional Learning