### Using the OSI Model to Describe Network Operations



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Network Engineer

@bagurdes

#### Module Goals



Introduction to OSI Model

Modeling Telephone Call

**Modeling Networking with OSI** 

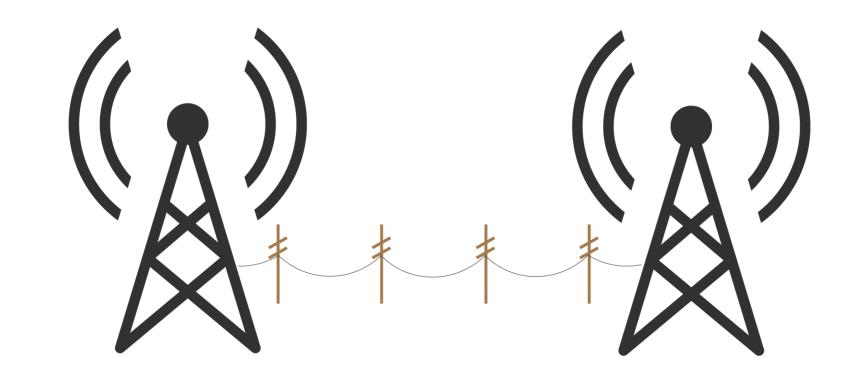


### The OSI Model



### The OSI Model Open Systems Interconnect

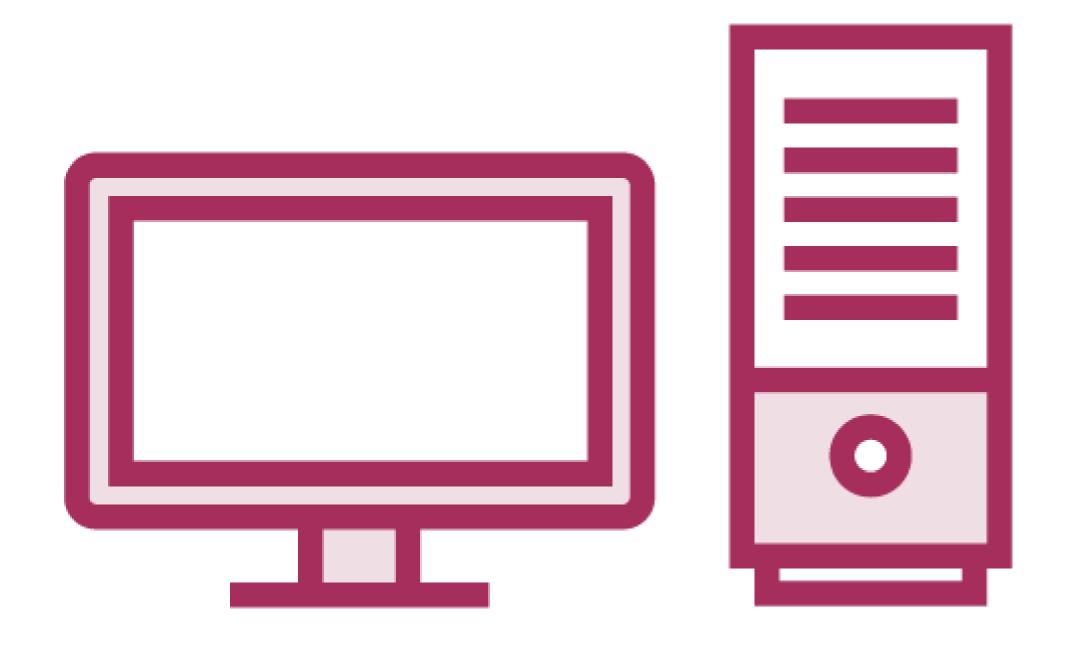




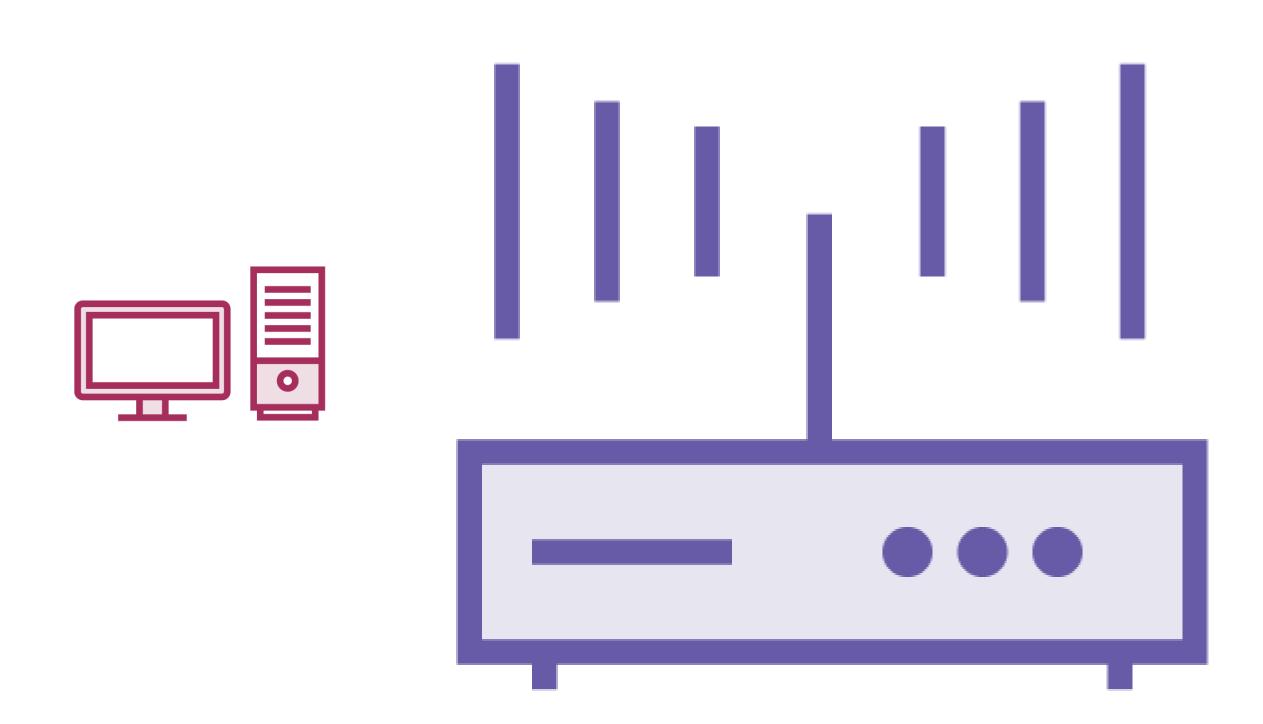




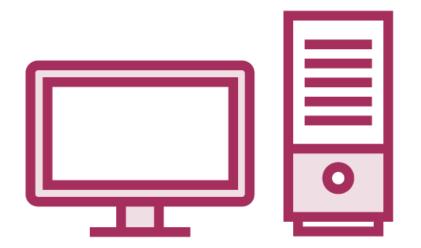


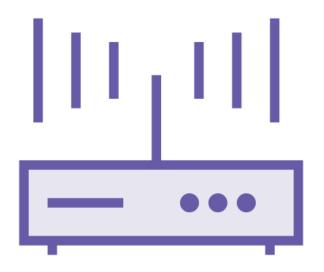








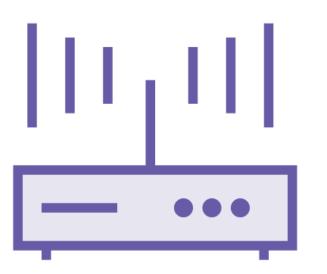


















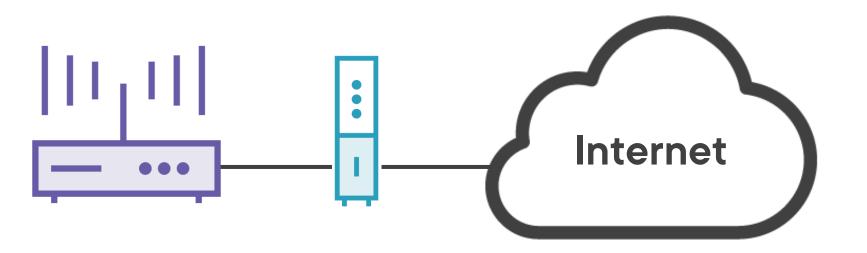






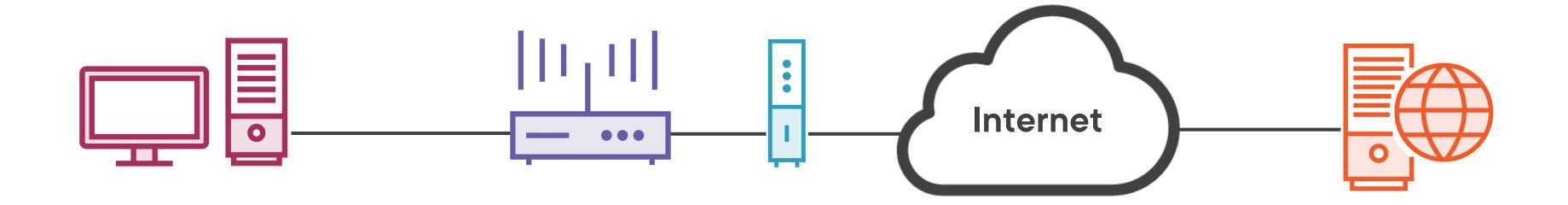


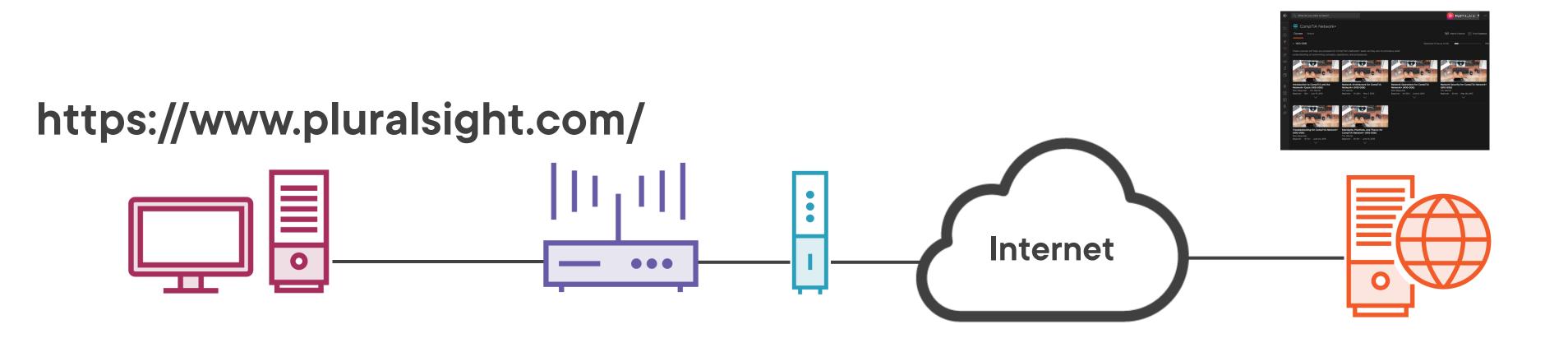


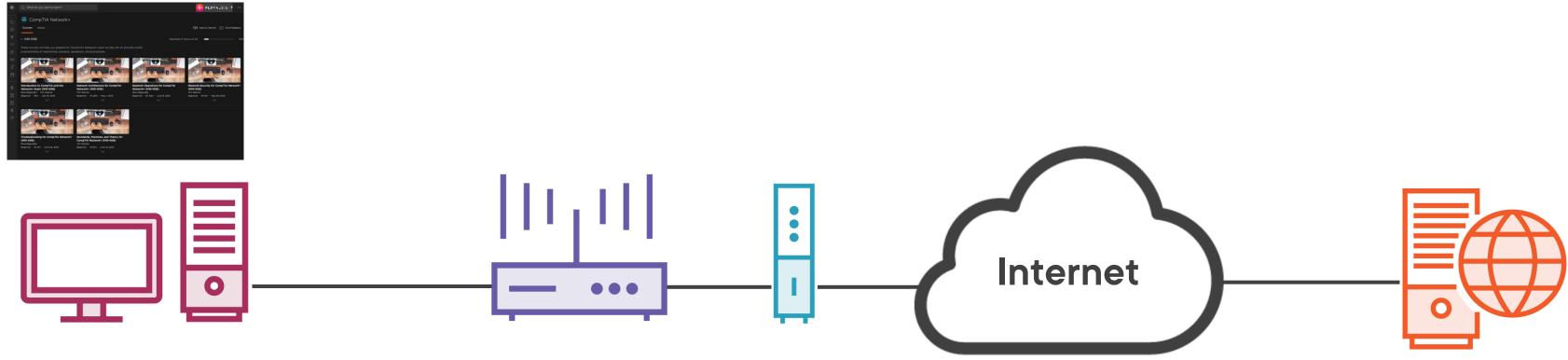


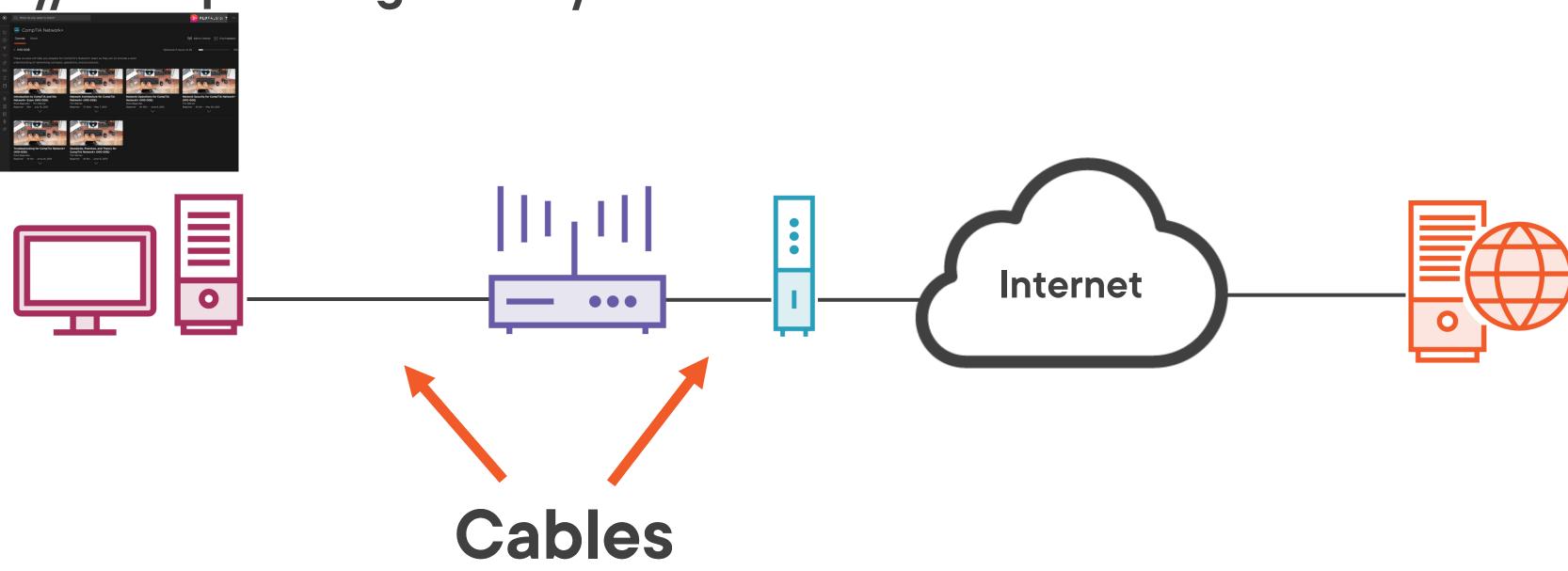


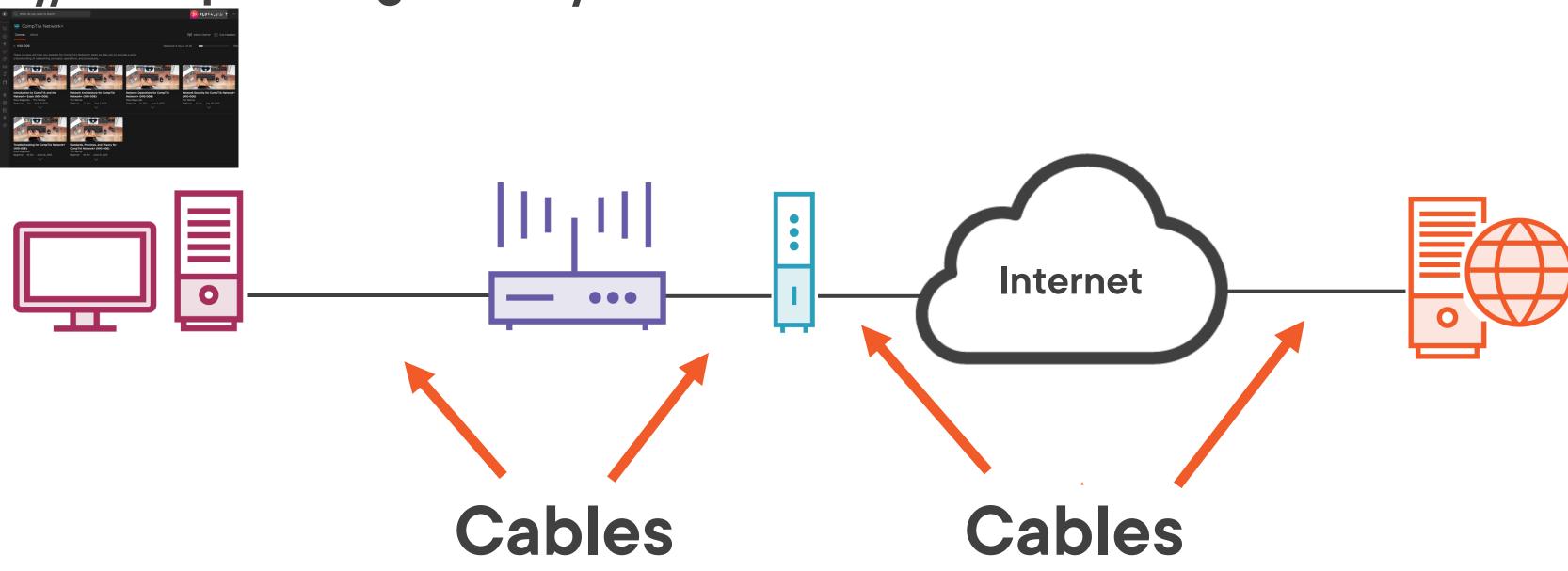


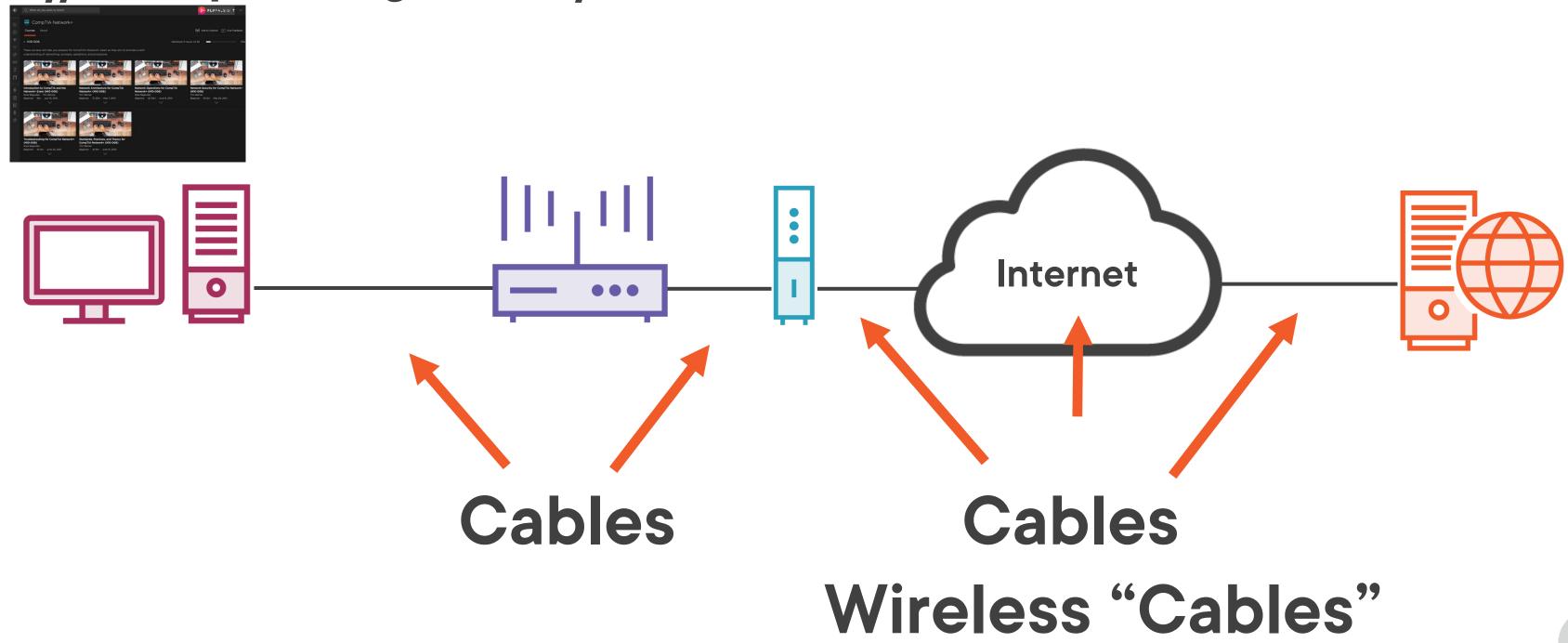




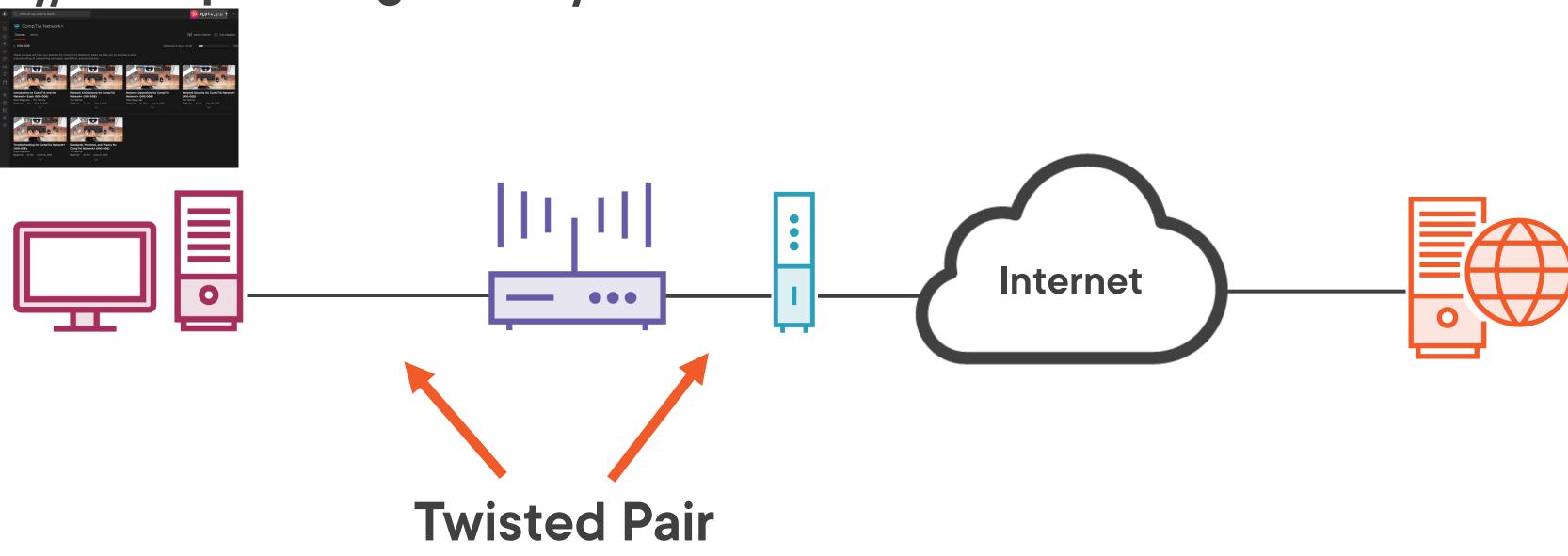


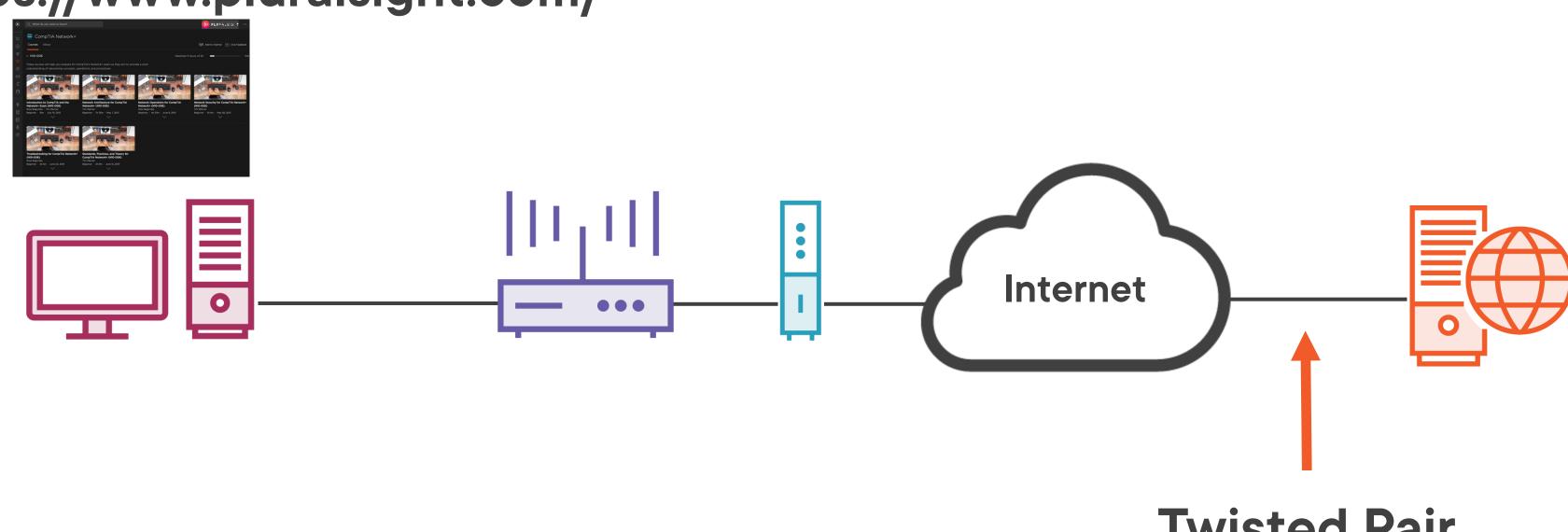






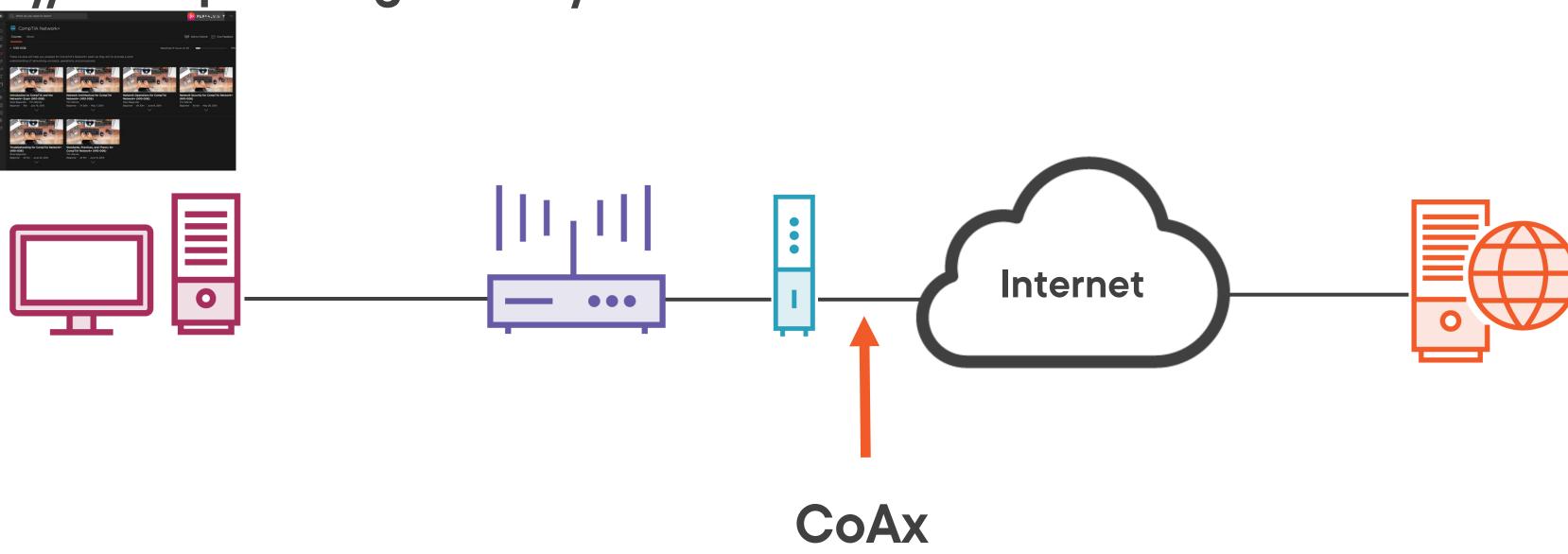


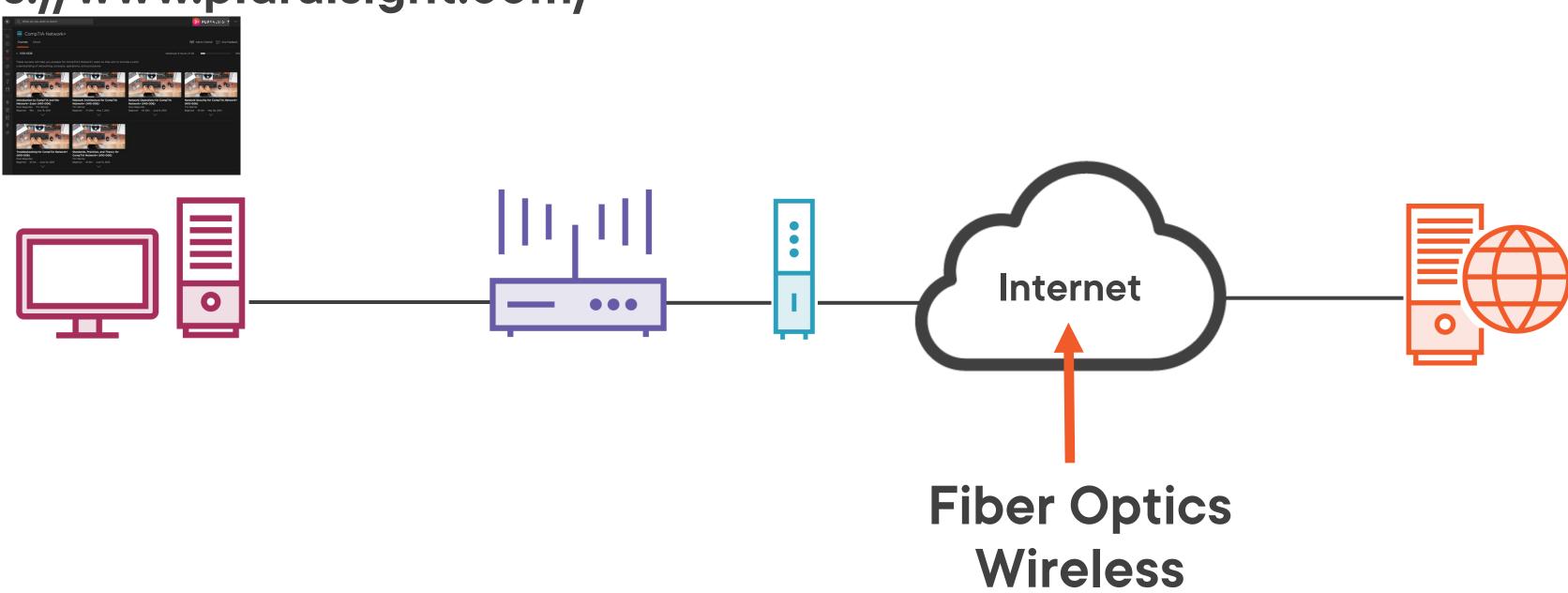


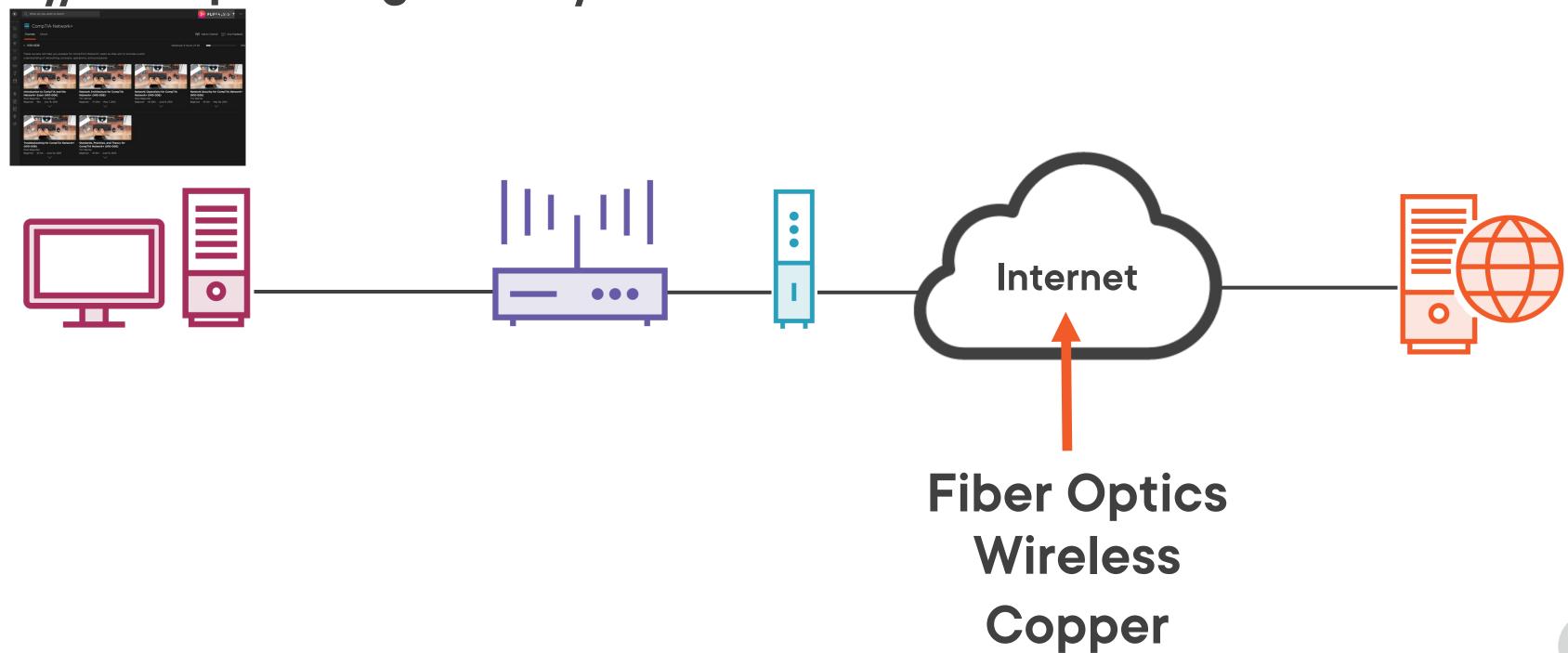


**Twisted Pair** 

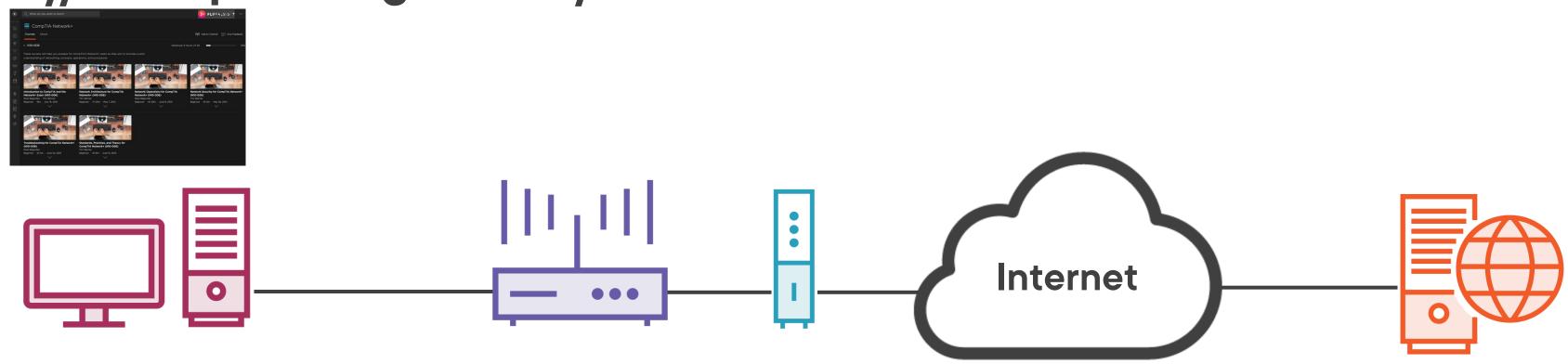












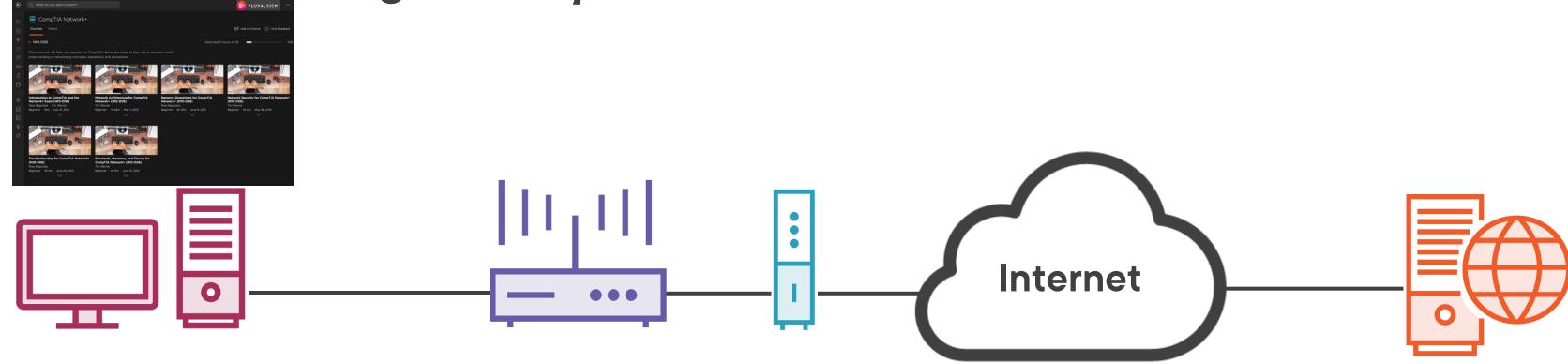
### Physical Layer

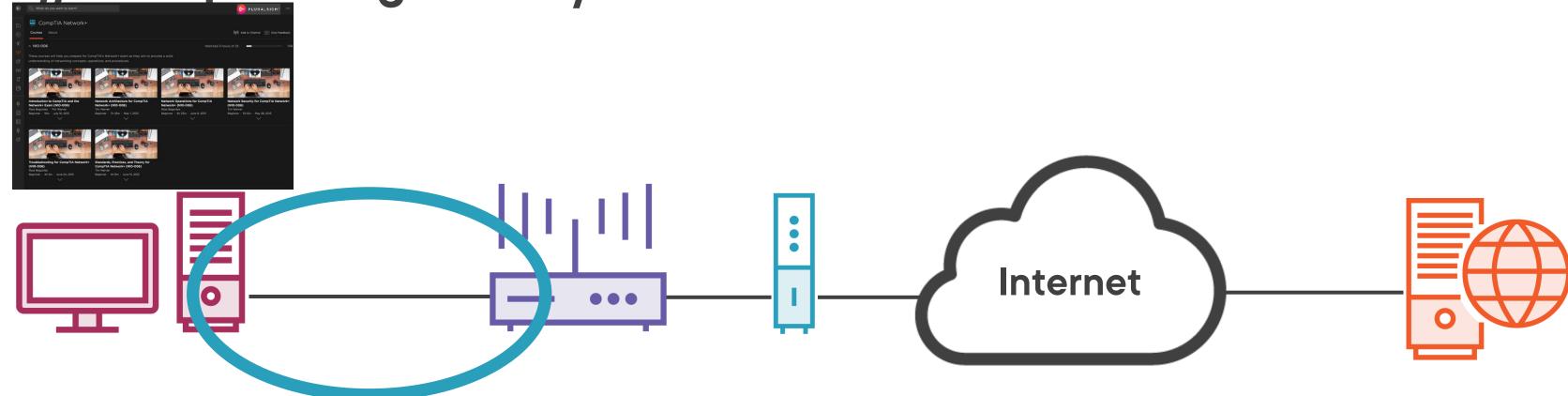


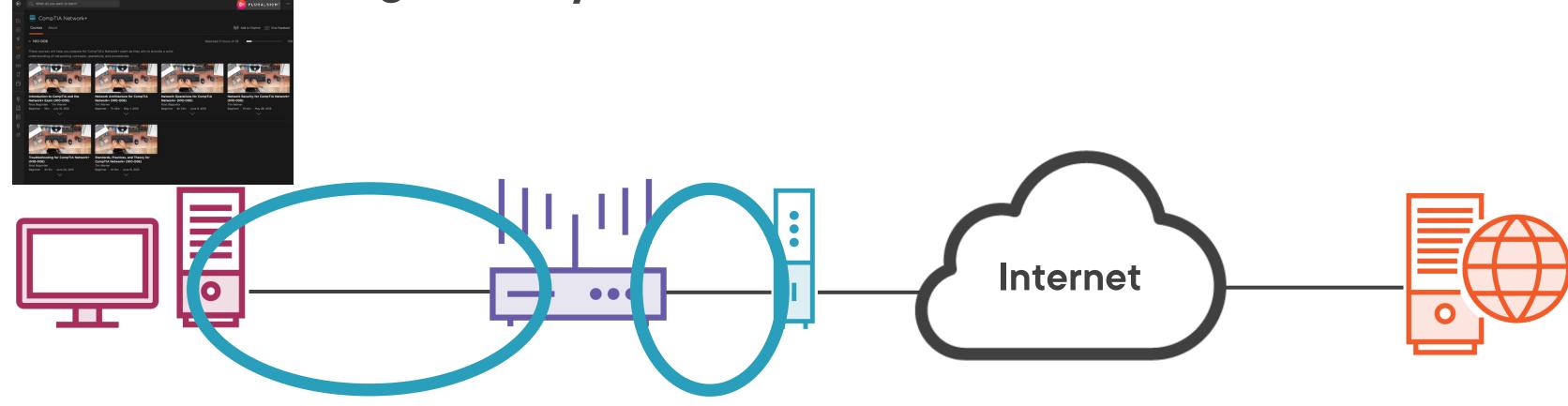
#### OSI Model

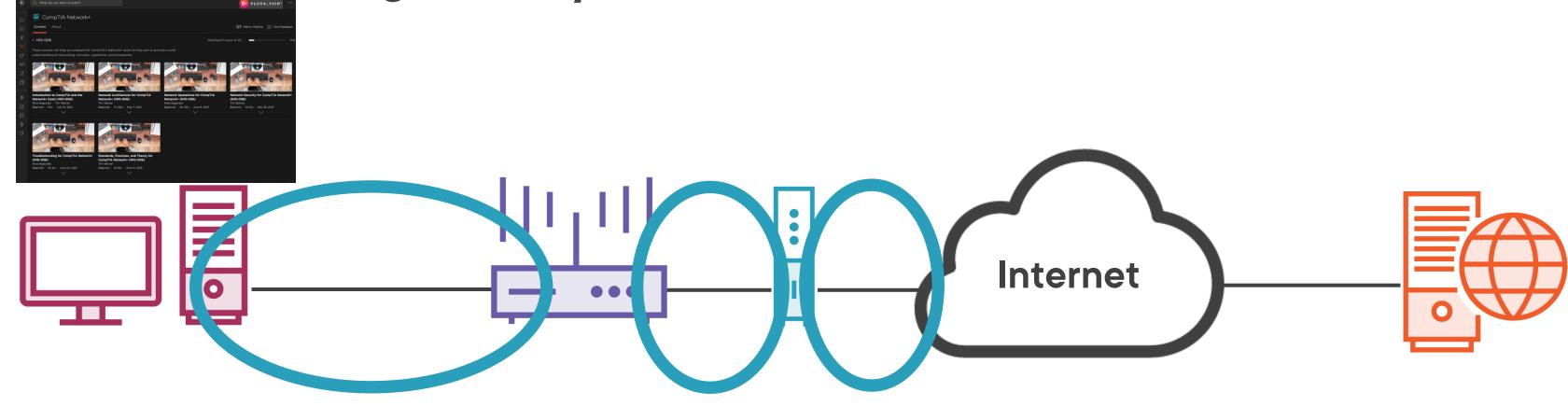
7	
6	
5	
4	
3	
2	
1	Physical Layer

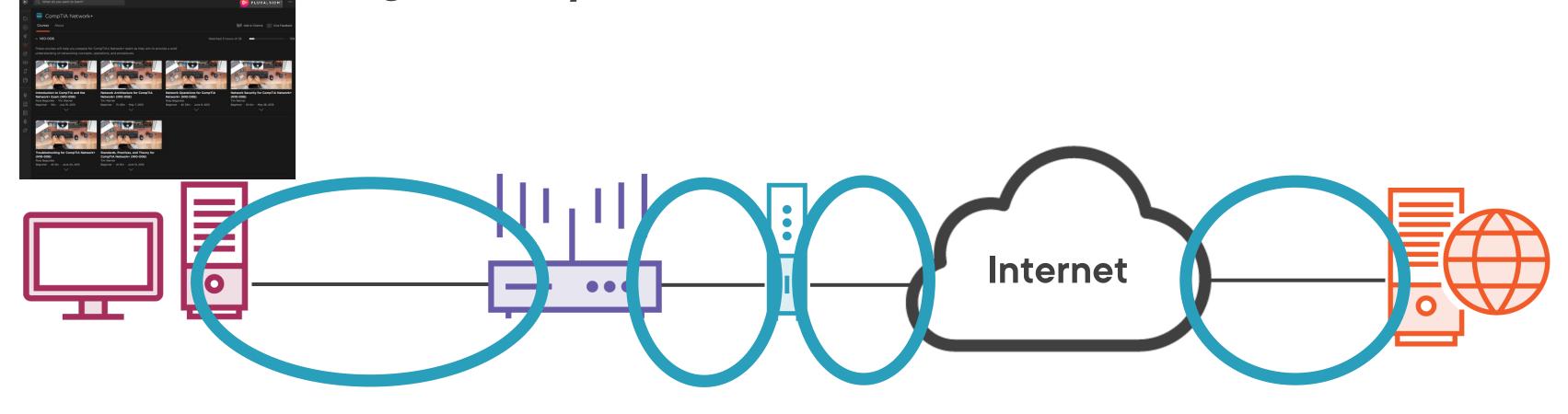


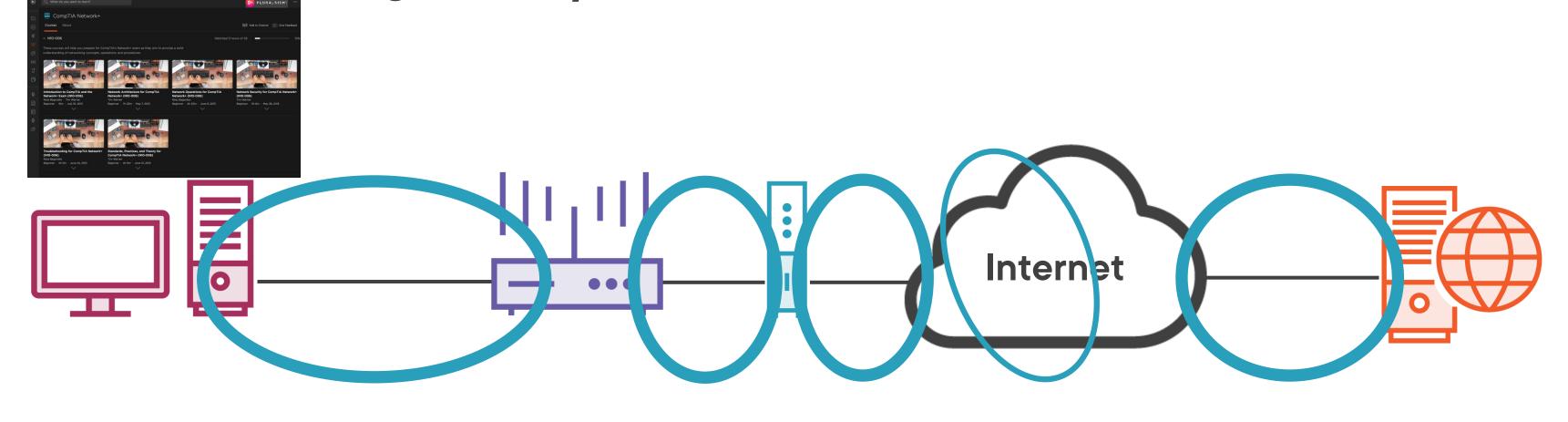


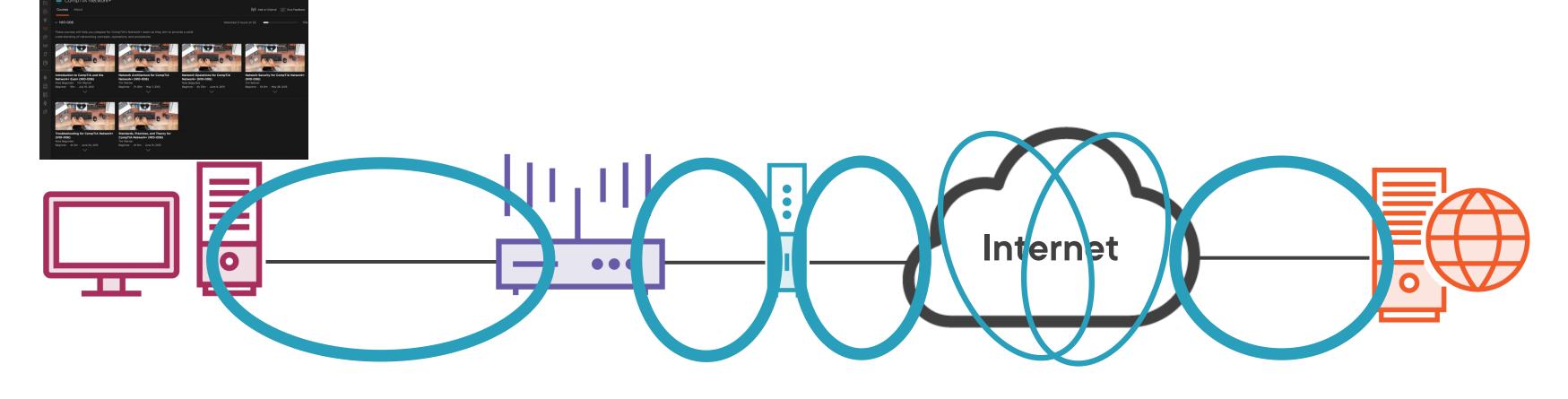


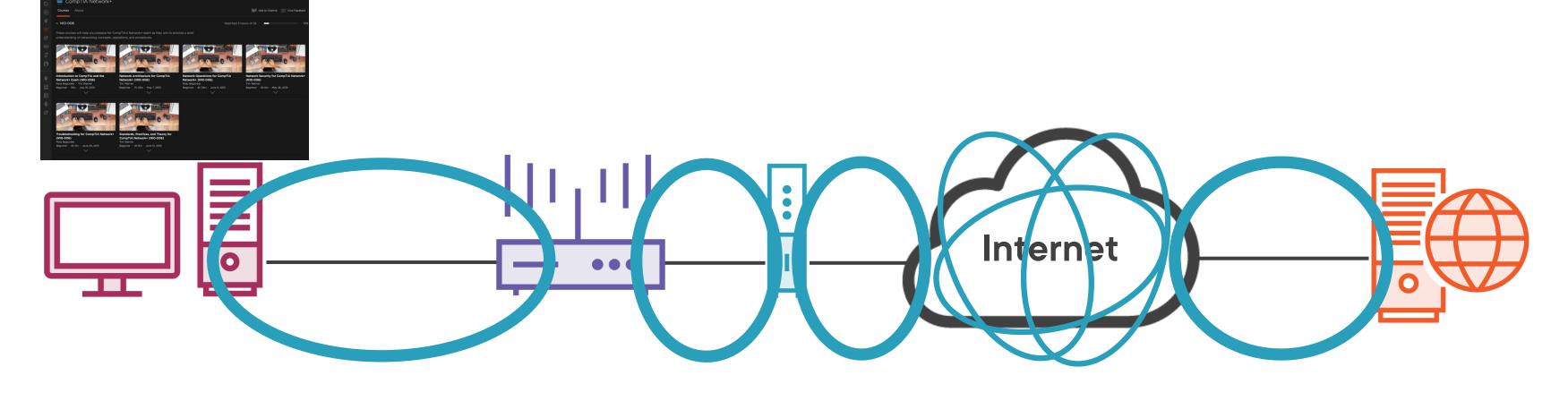


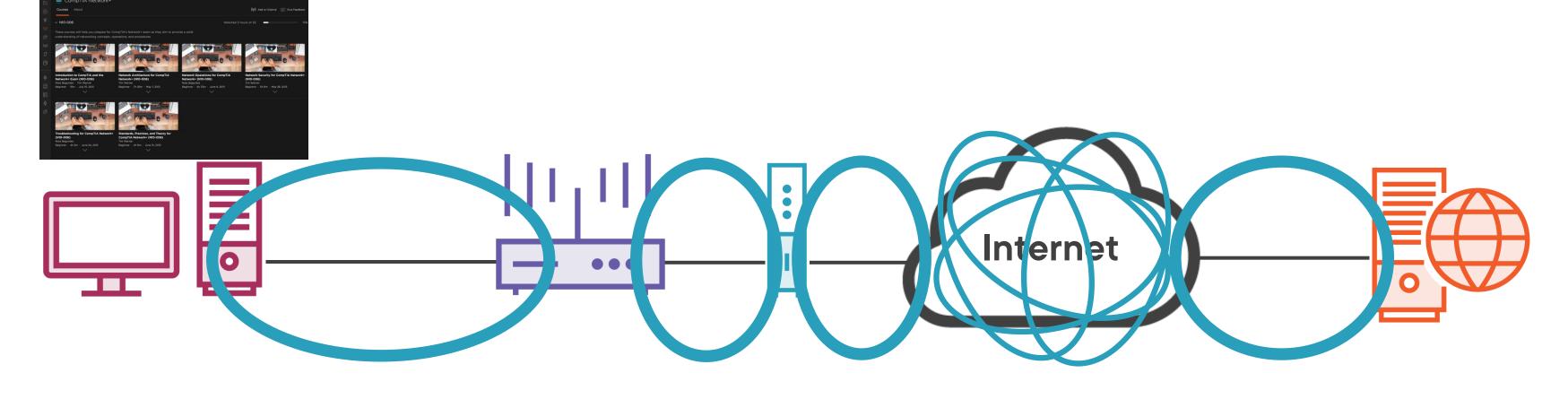


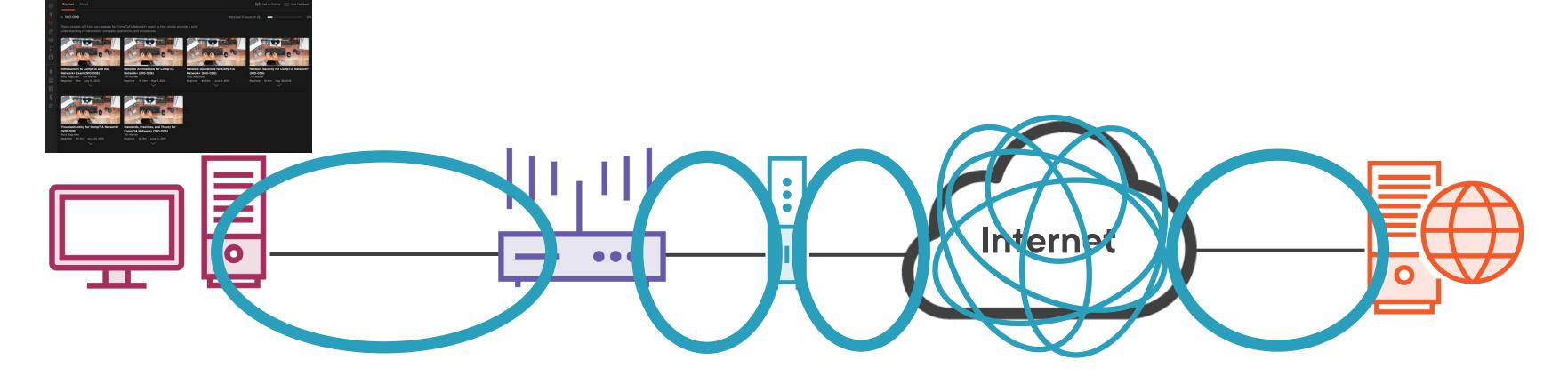


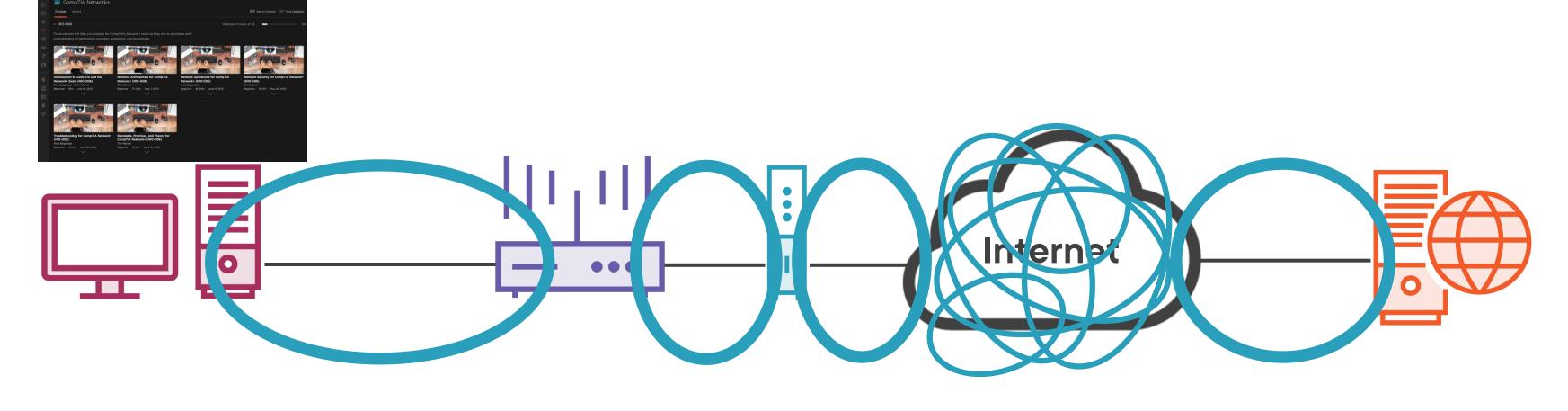


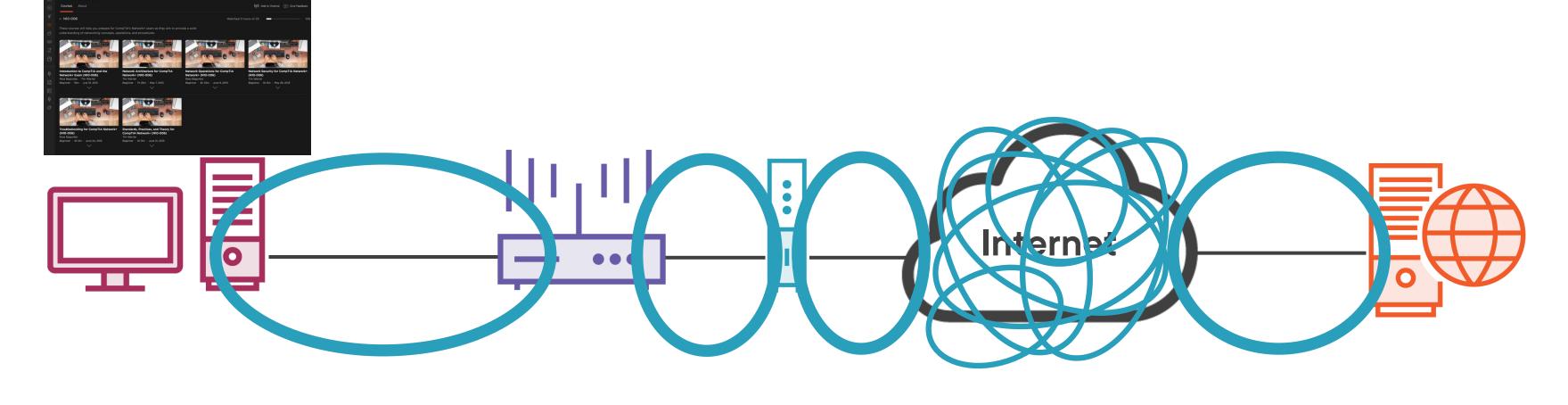


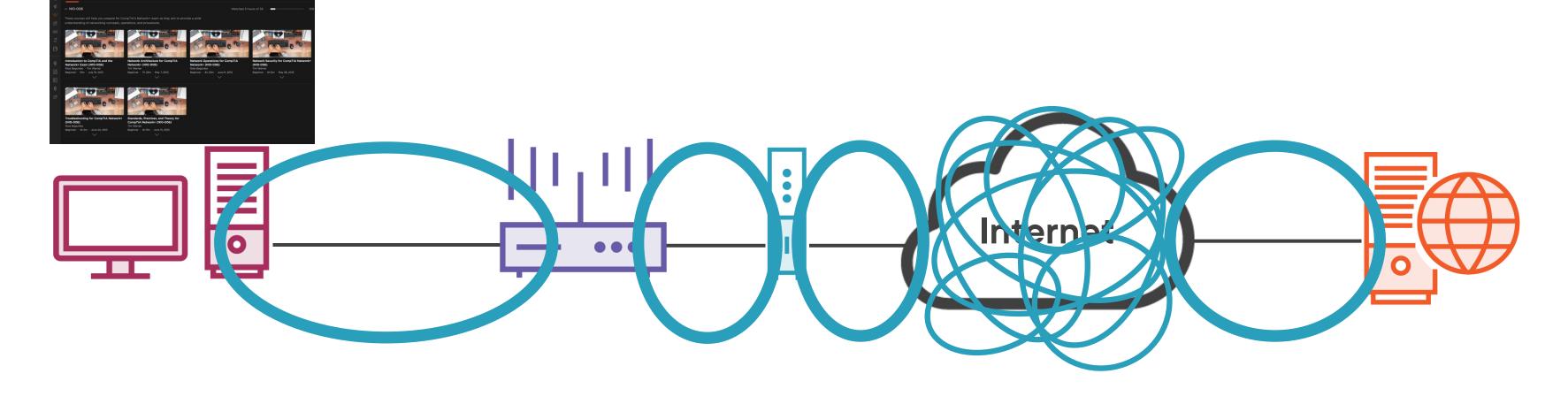






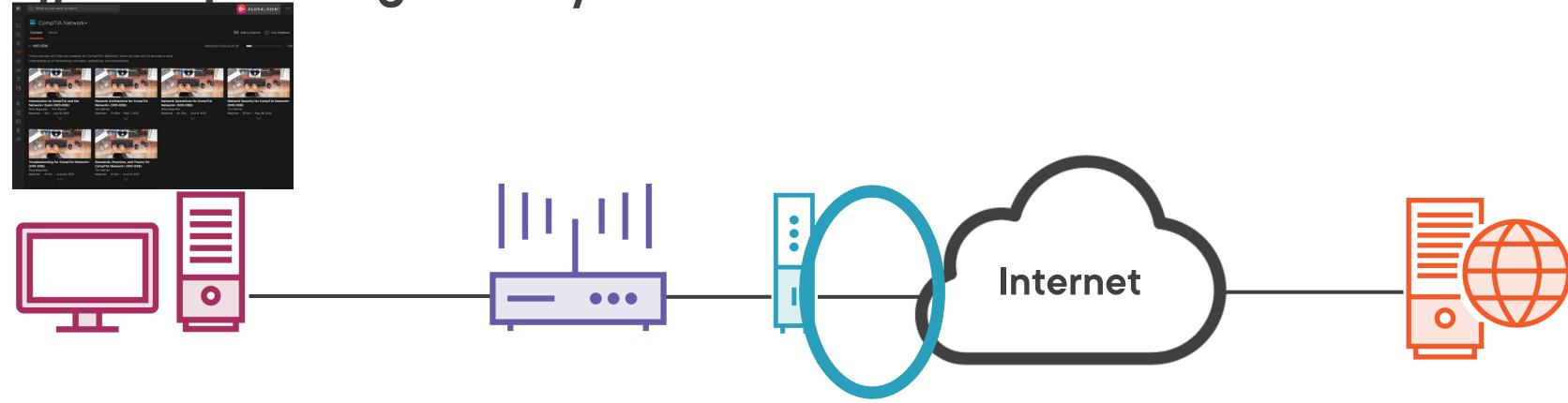






#### Ethernet





#### DOCSIS-3



#### Mainly Ethernet



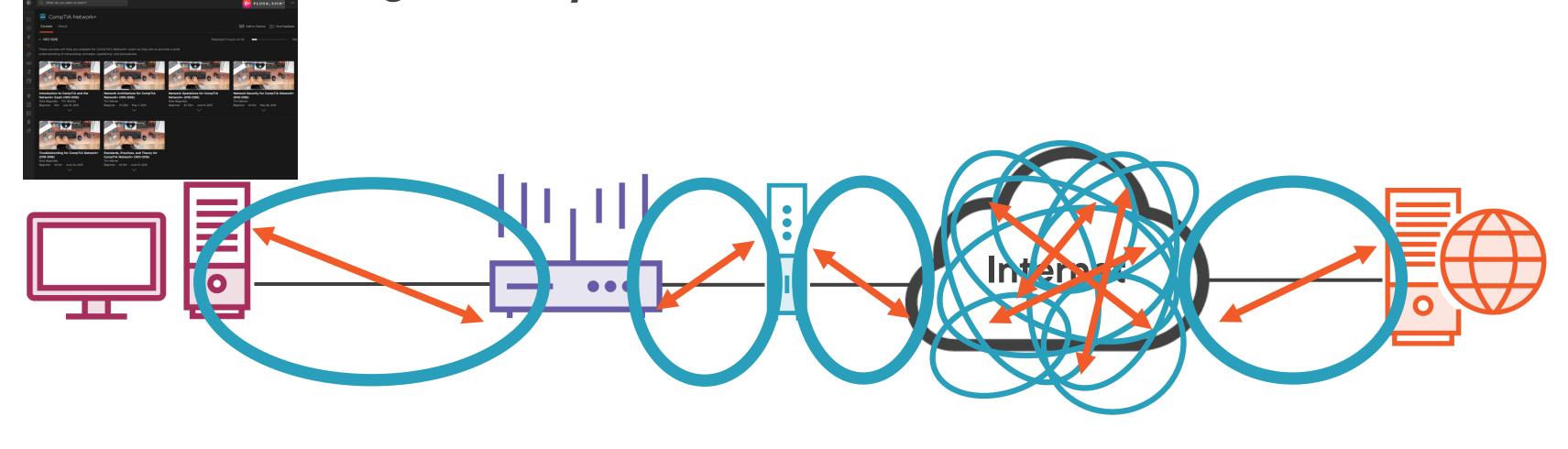
## Data Link Layer



#### OSI Model

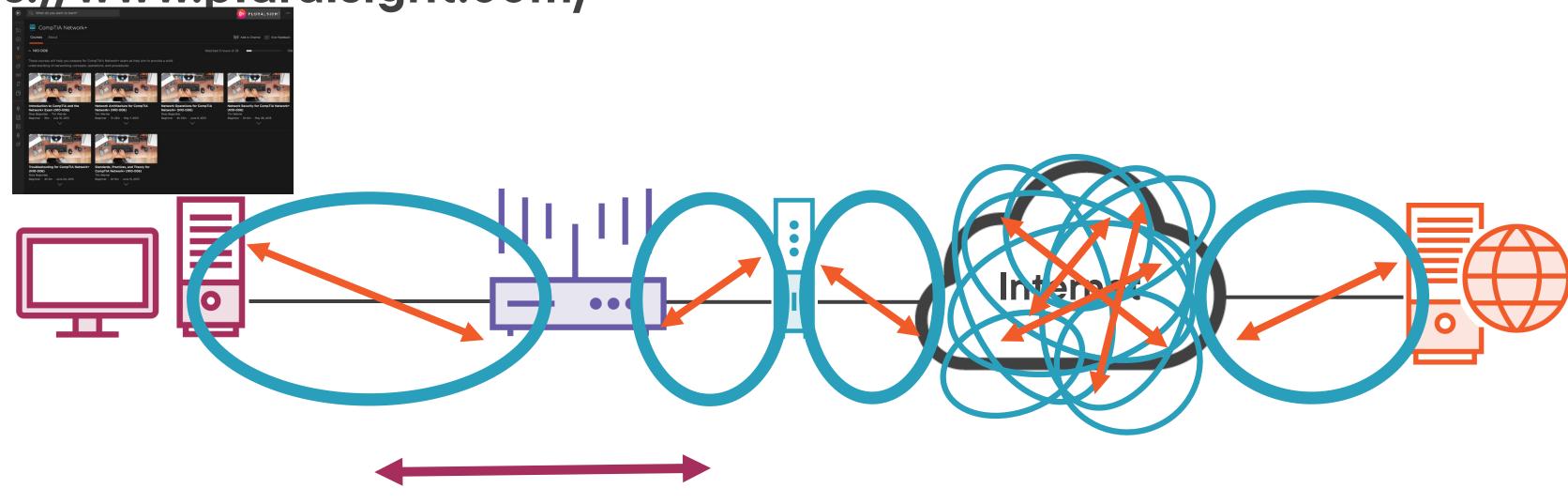
7	
6	
5	
4	
3	
2	Data Link Layer
1	Physical Layer

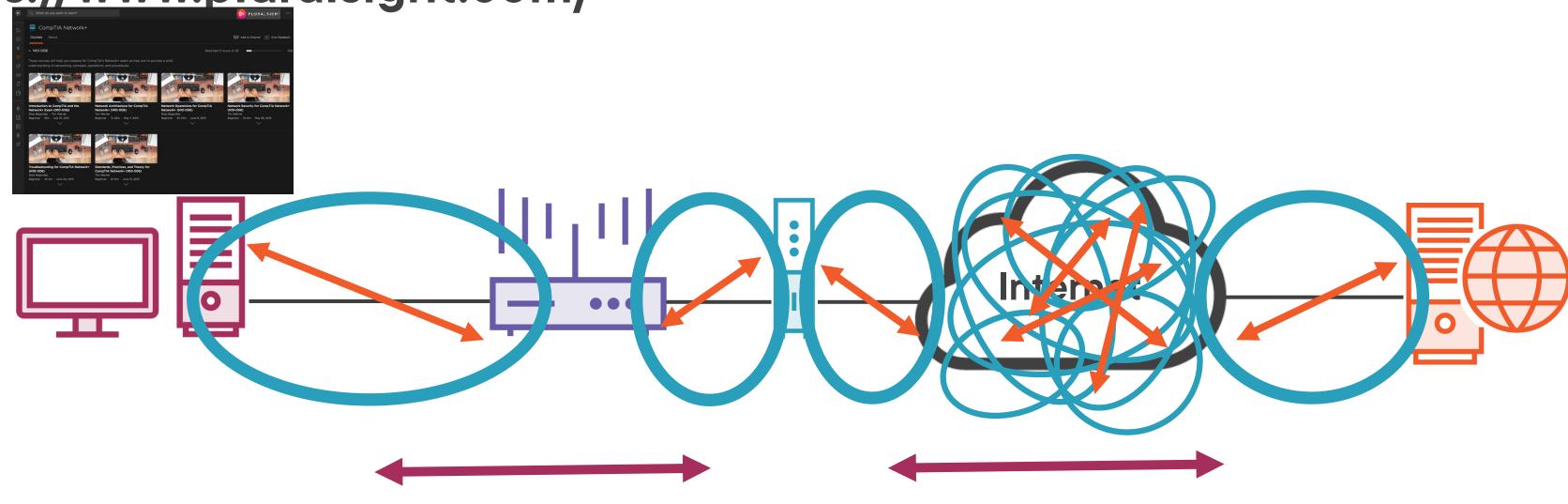


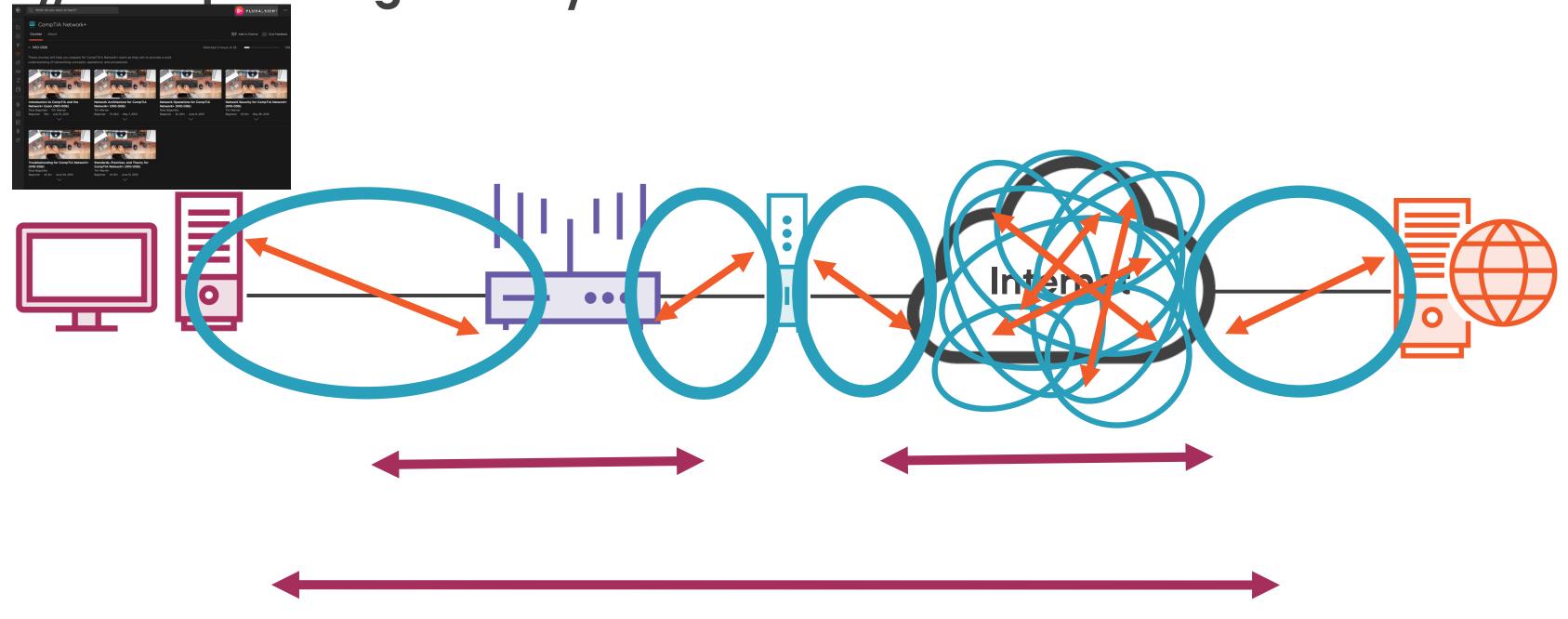


# Data Link Layer



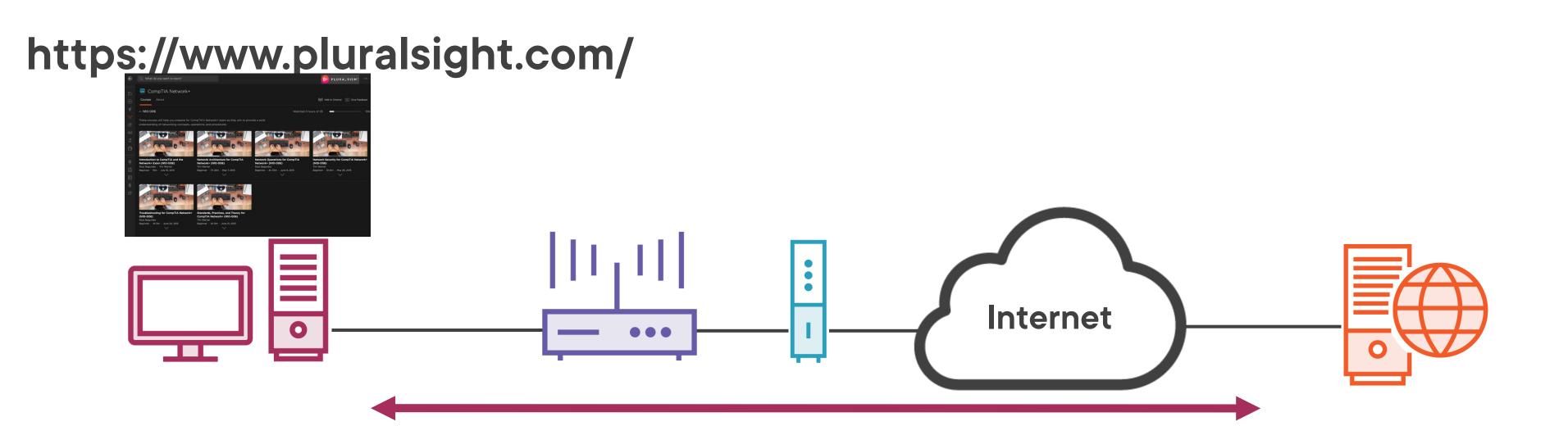






#### IP Addressing





# IP Addressing IP Routing

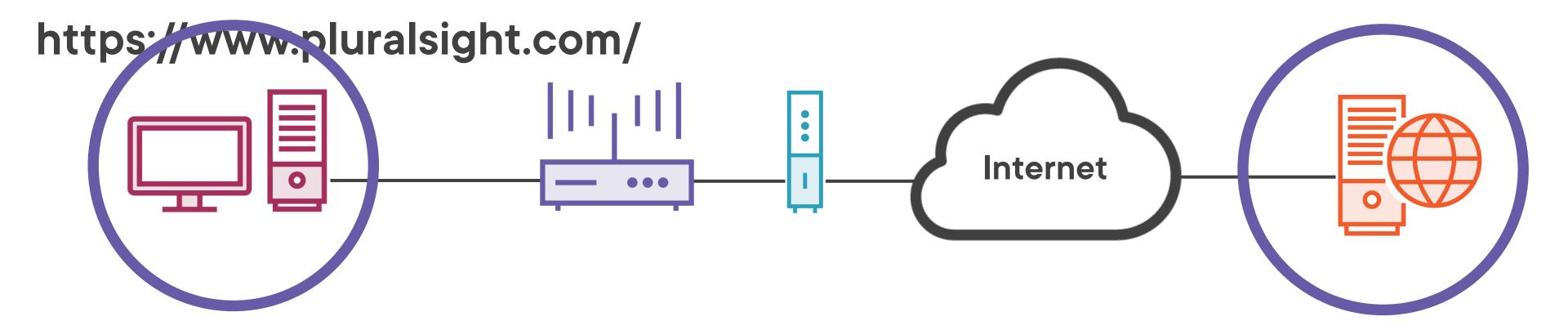


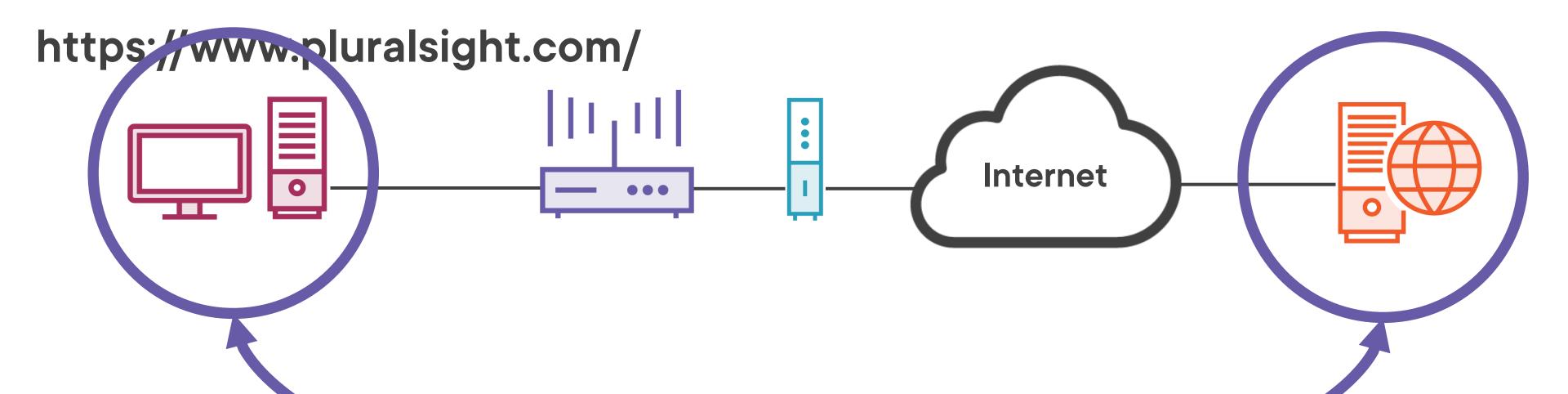
### Network Layer

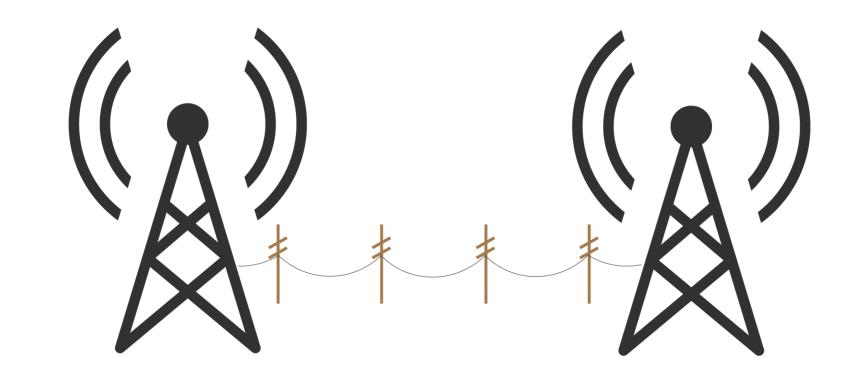


#### OSI Model

7	
6	
5	
4	
3	Network Layer
2	Data Link Layer
1	Physical Layer



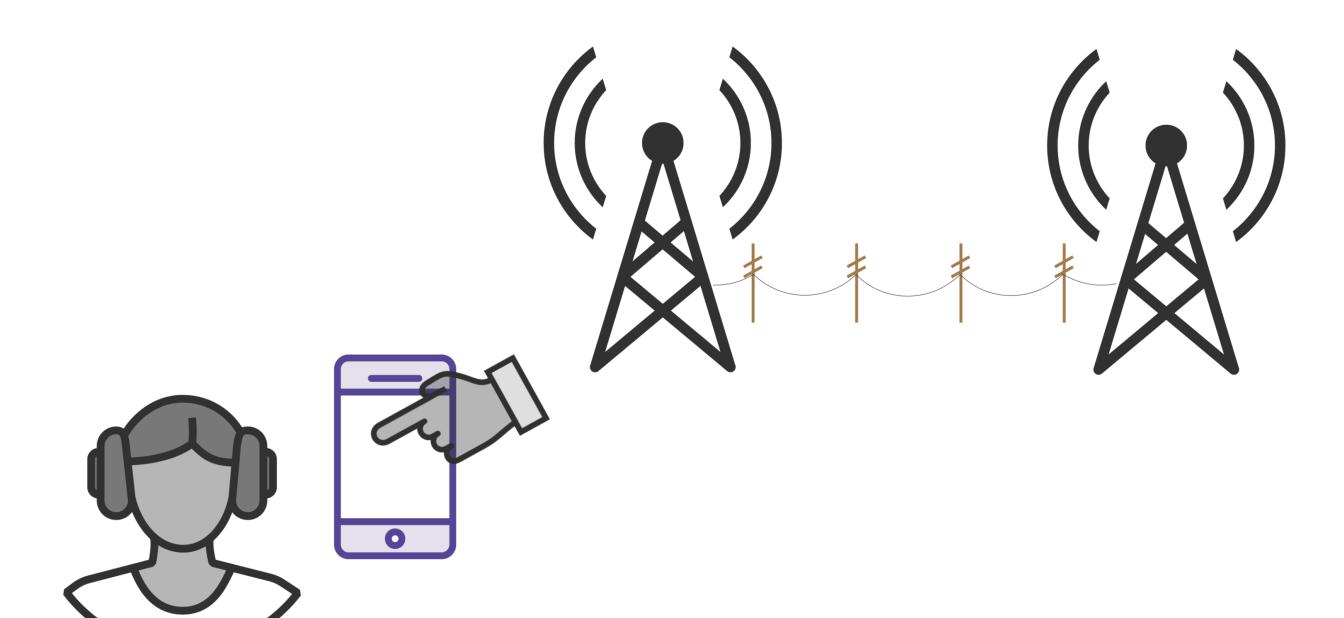






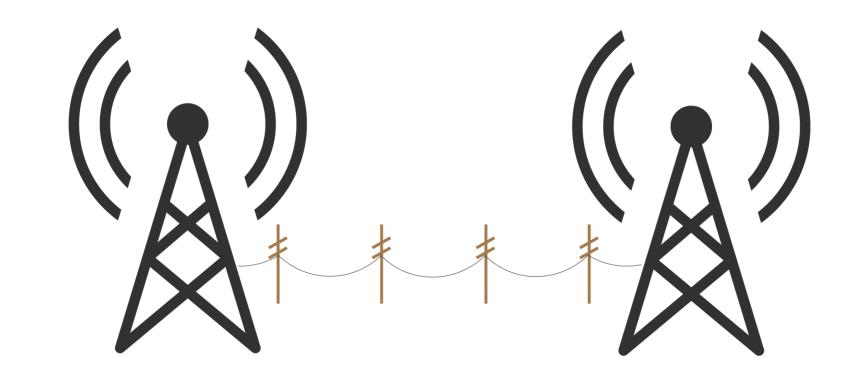








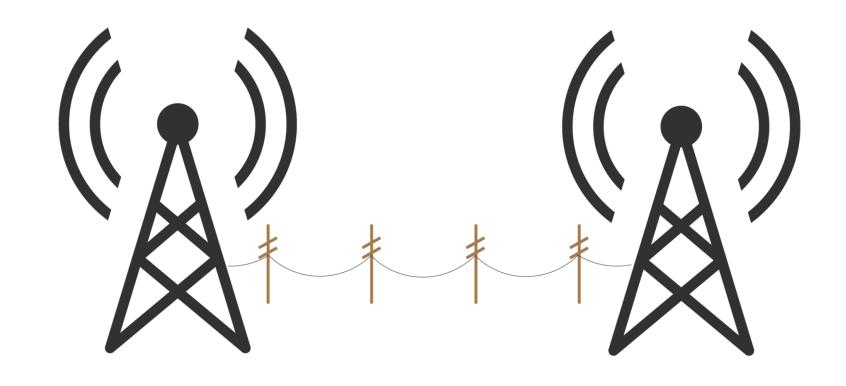






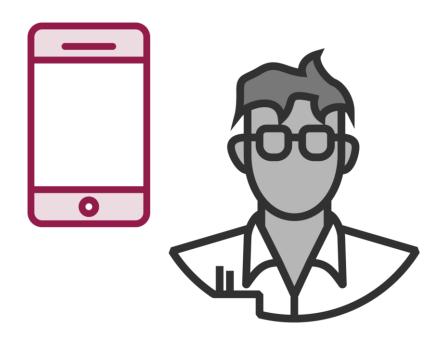






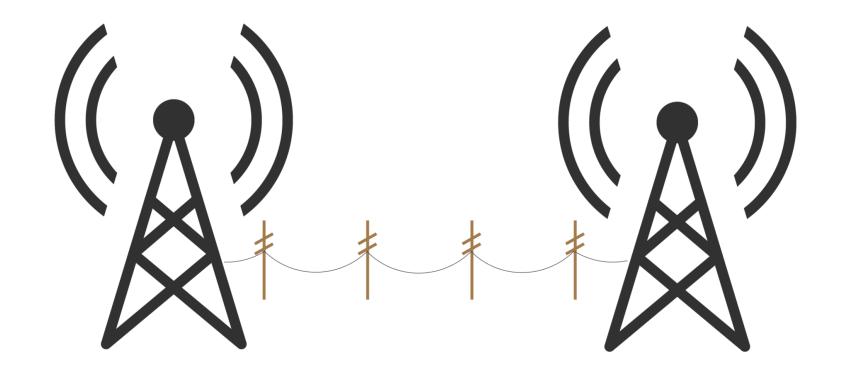
**HELLO?** 







HELLO?



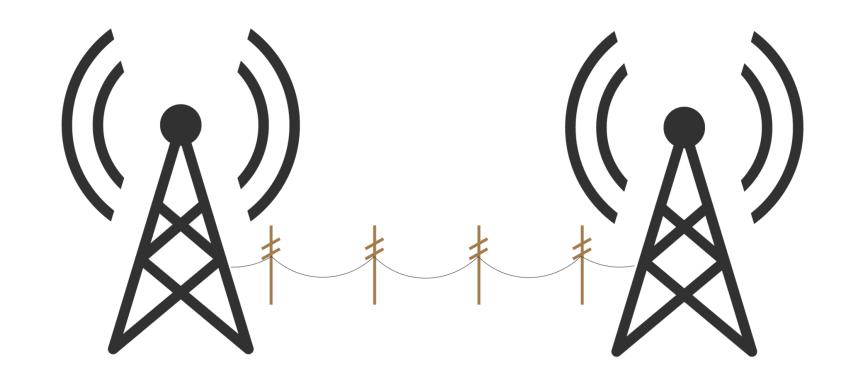
HELLO?

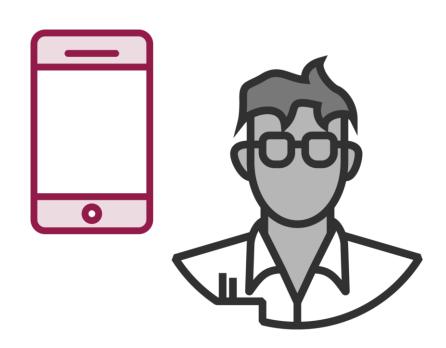




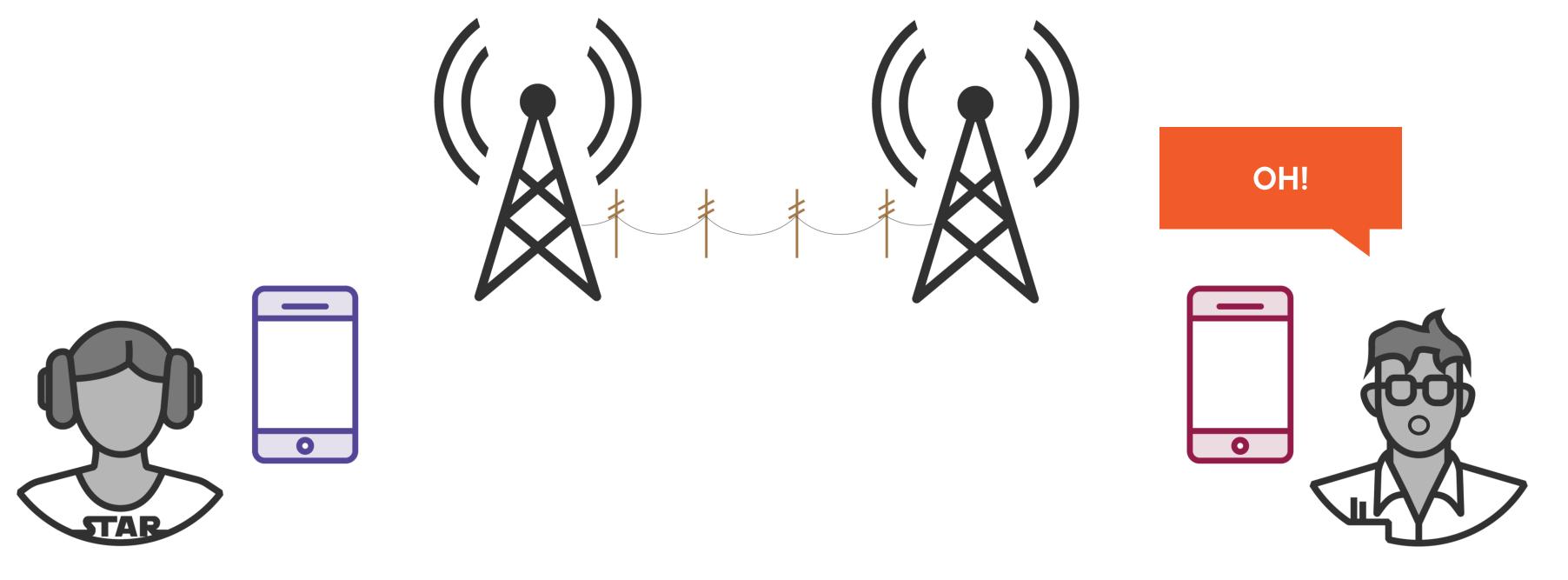
I need some help!

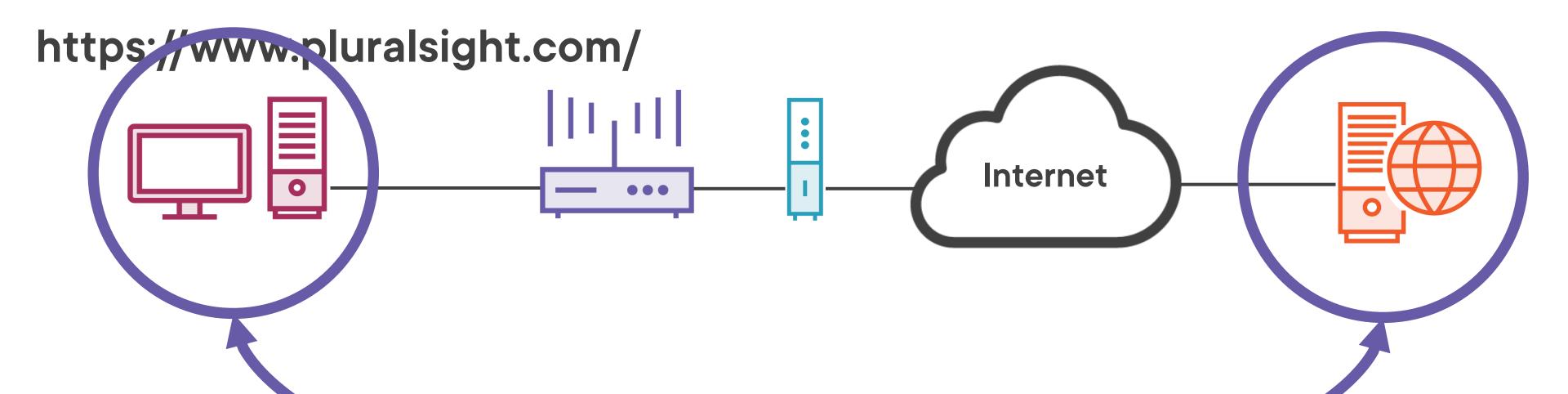


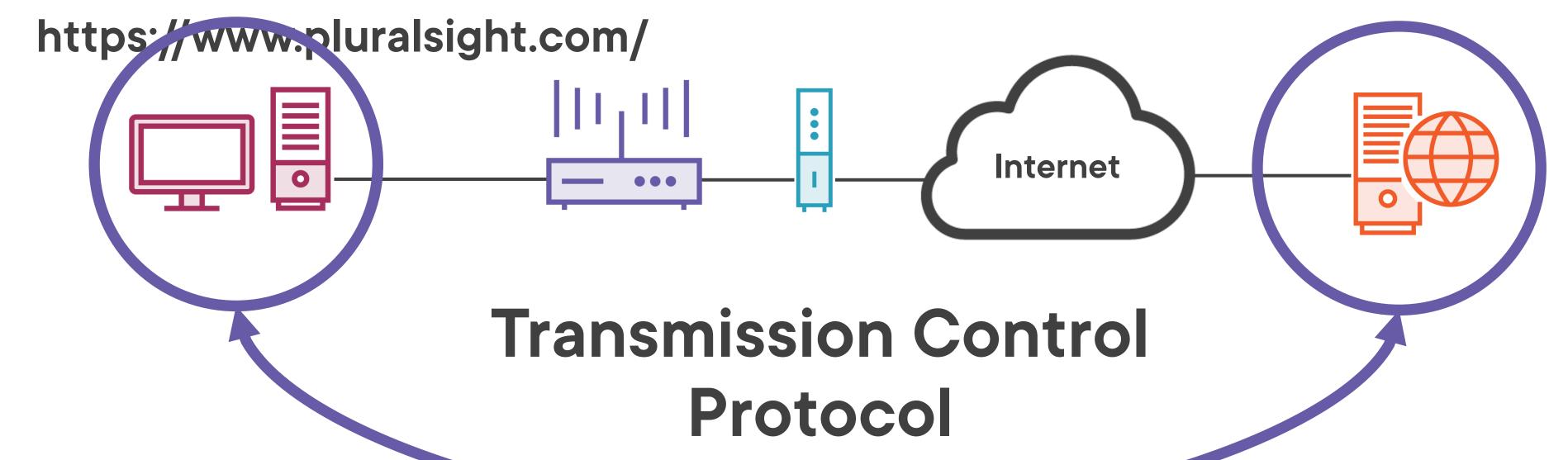




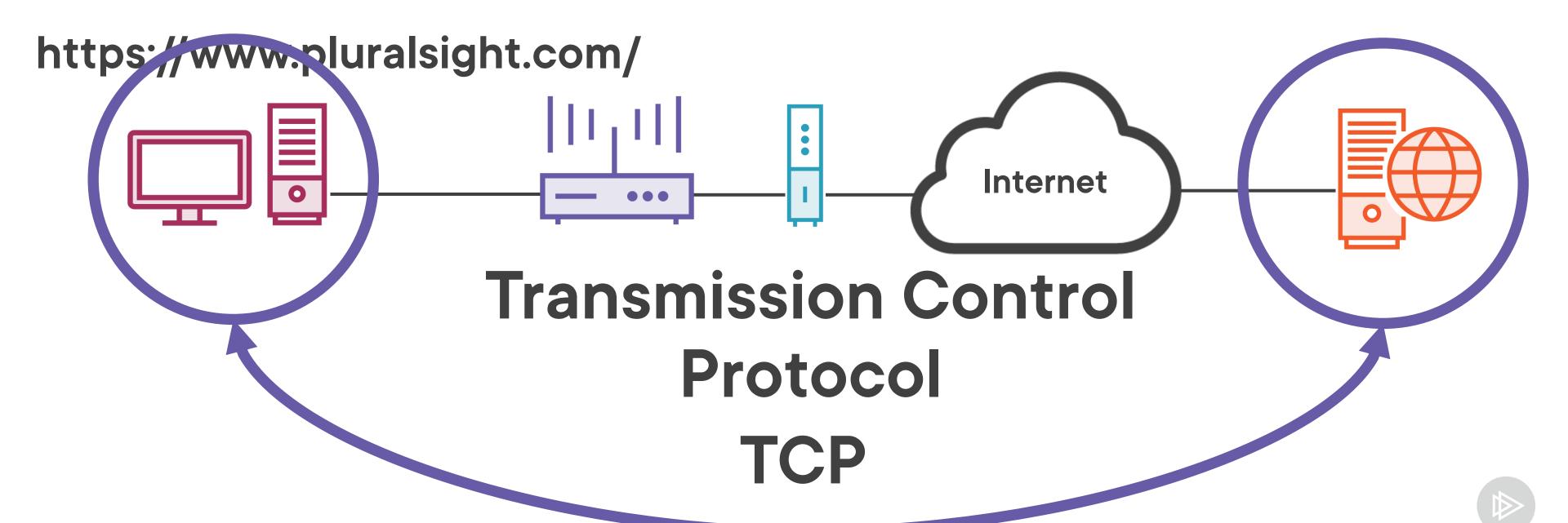


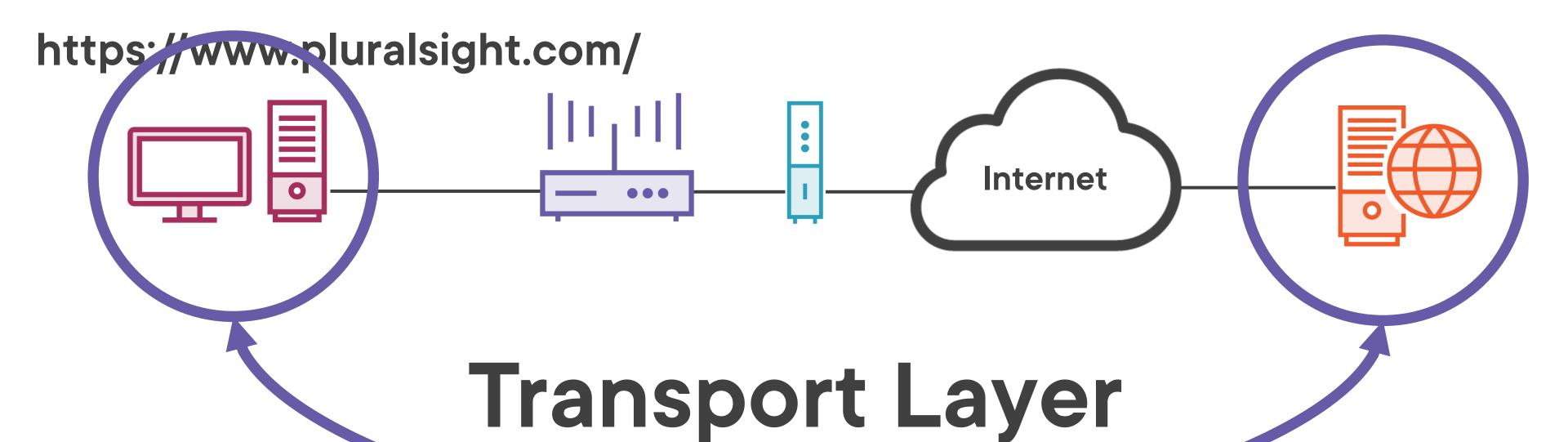






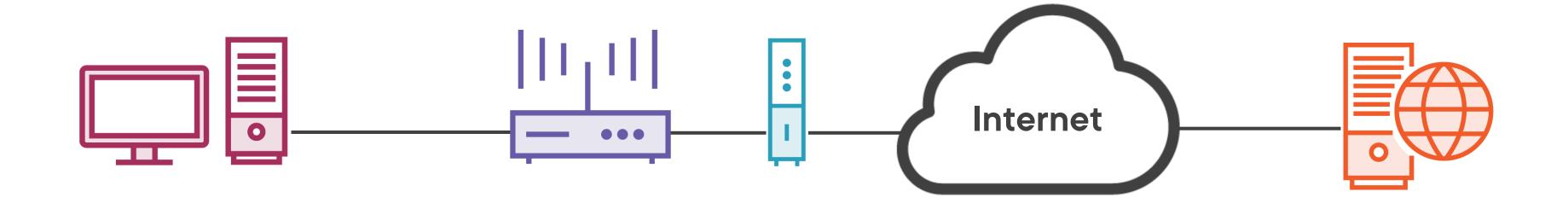




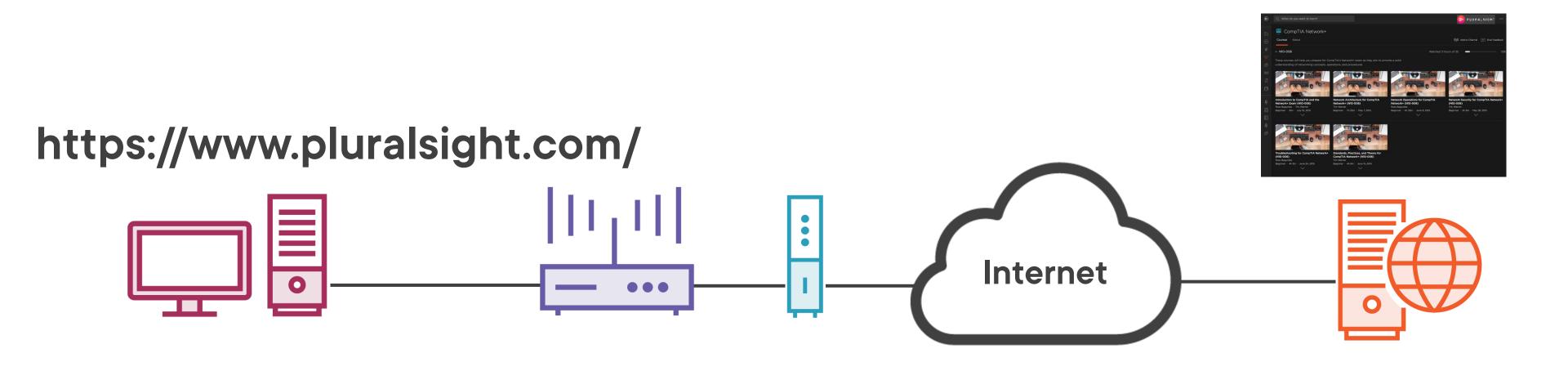


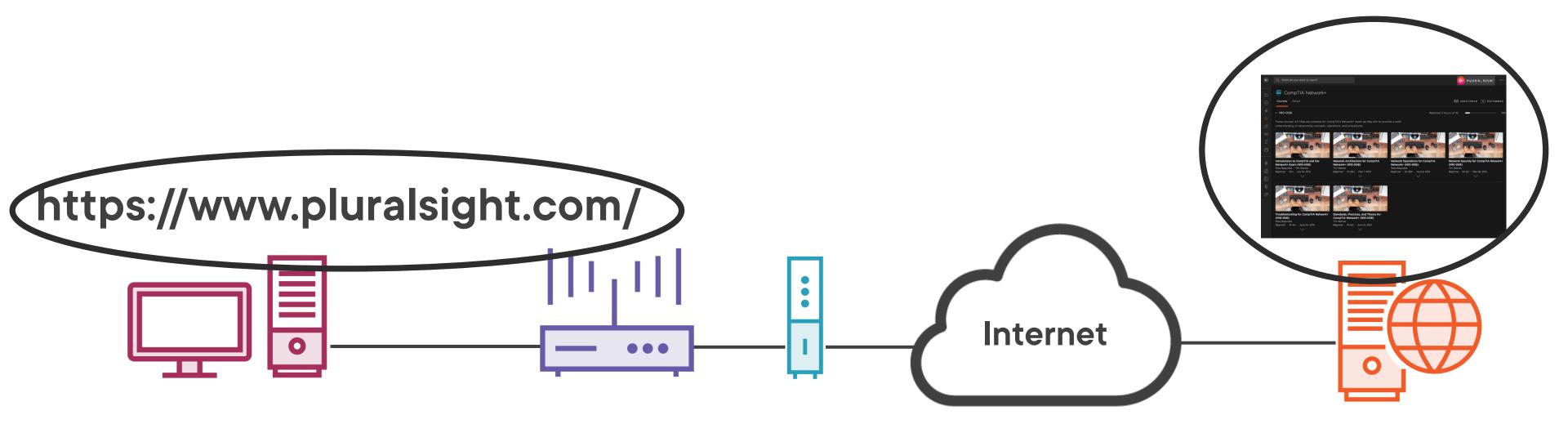


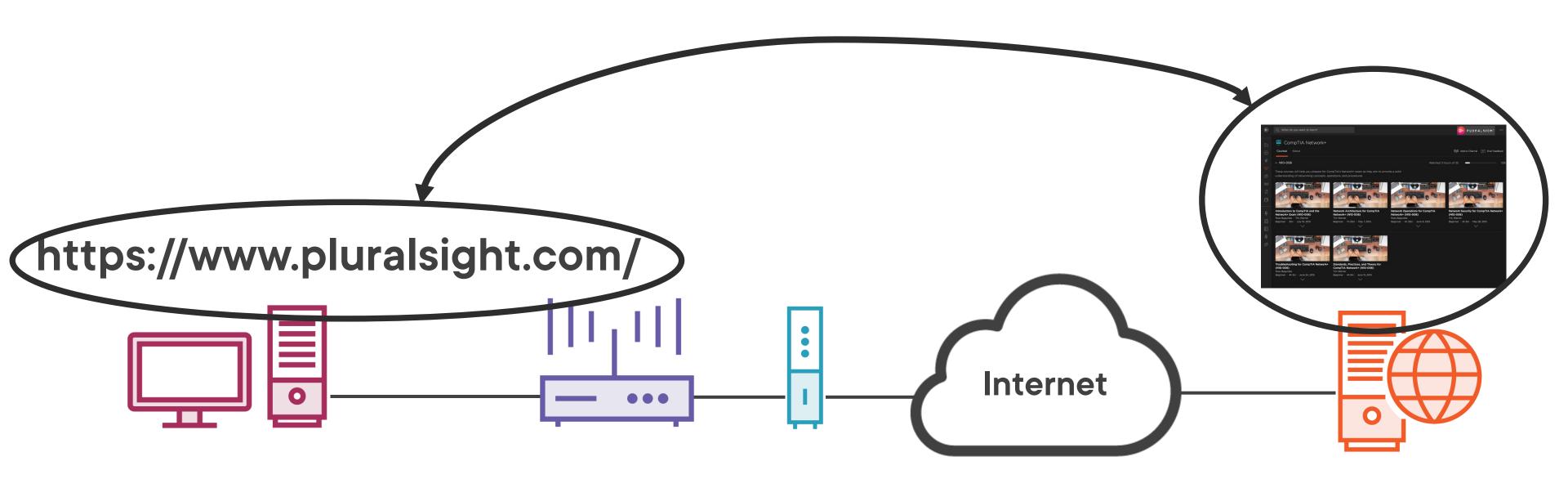
7	
6	
5	
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer

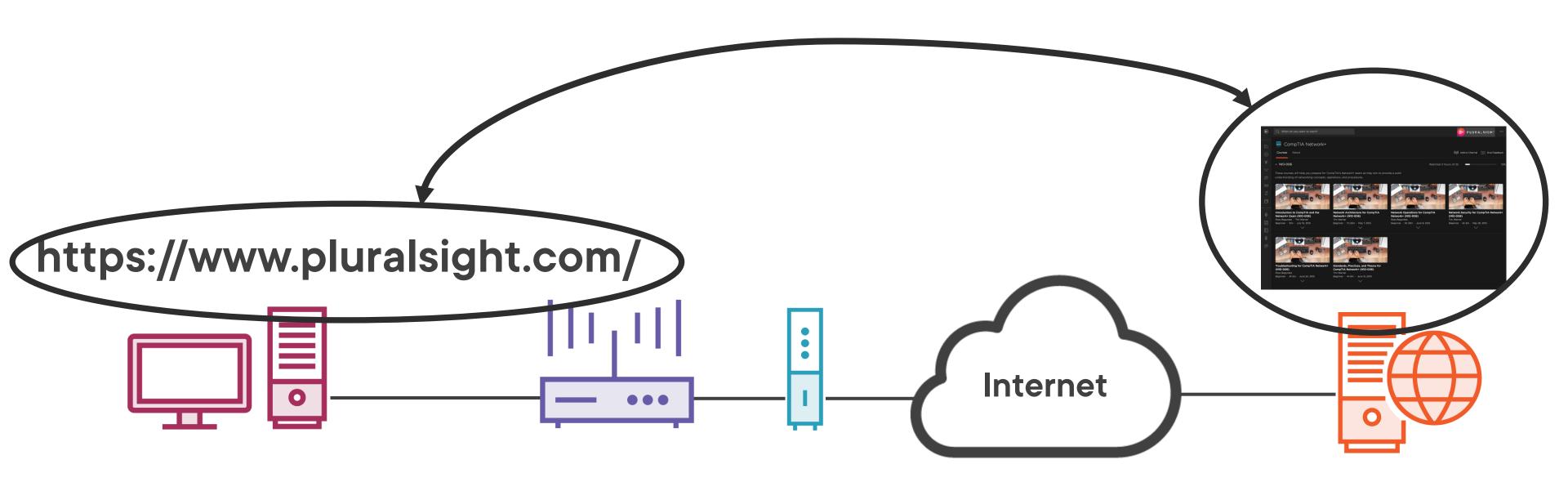


# https://www.pluralsight.com/



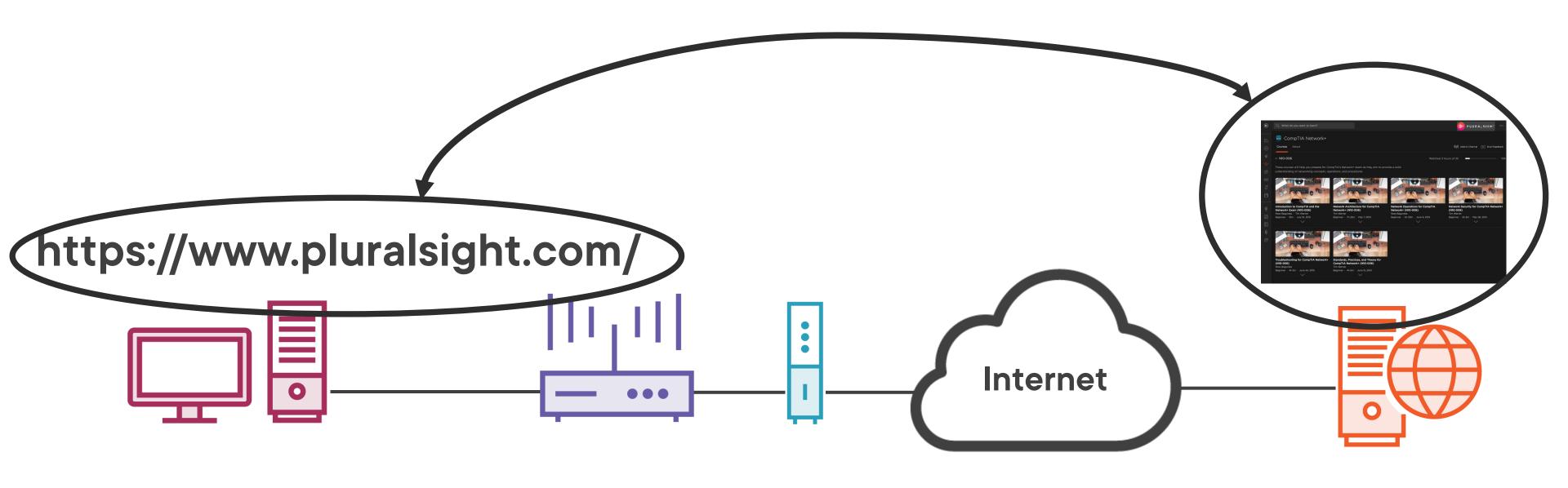






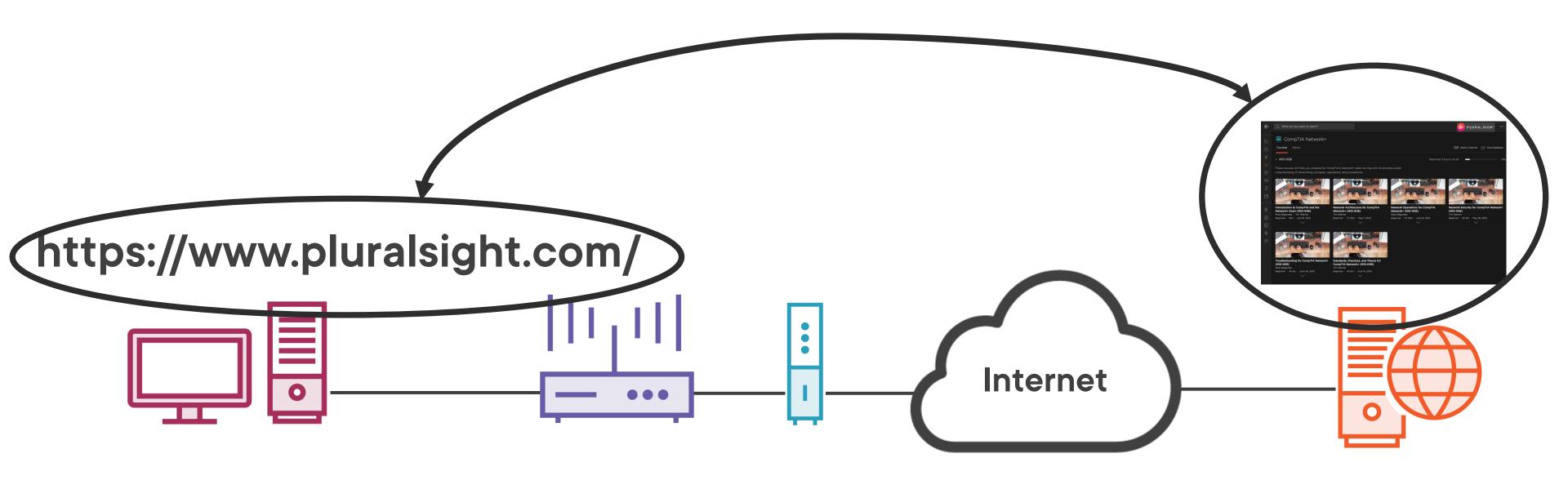
# Hypertext Transfer Protocol





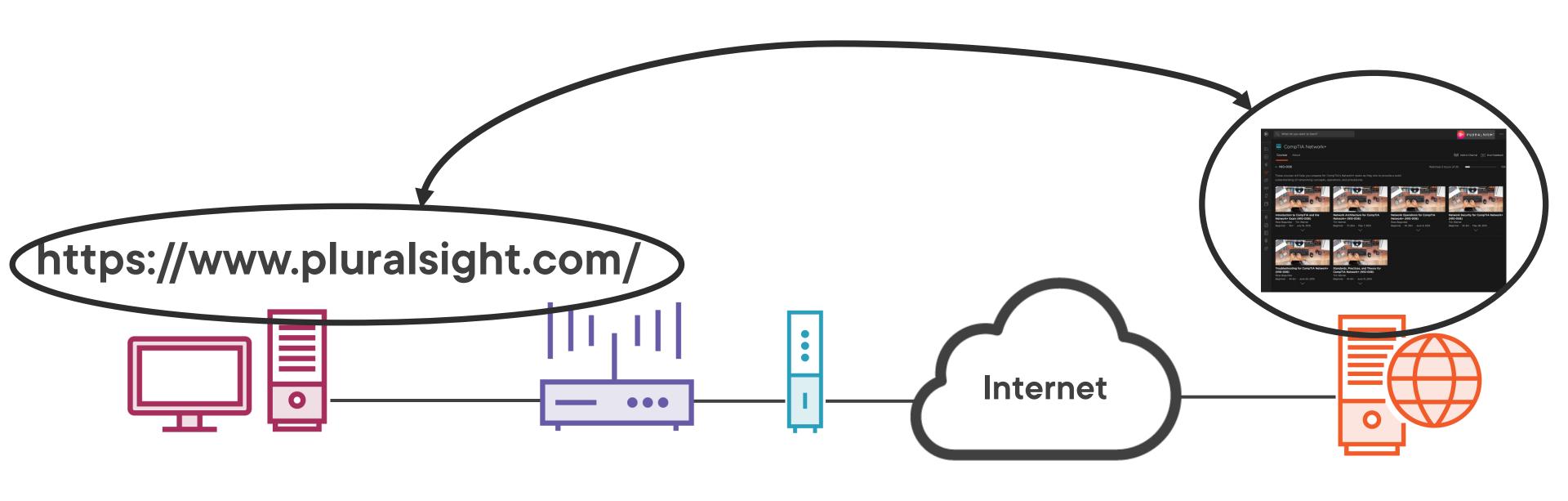
# Hypertext Transfer Protocol http





# Hypertext Transfer Protocol http https





# Application Layer



7	Application Layer
6	
5	
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer

7	Application Layer
6	
5	
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer

7	Application Layer
6	7
5	
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer

7	Application Layer
6	
5	
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer

7	Application Layer
6	Presentation Layer
5	
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer



#### "Don't Panic"

**ASCII** 

D = 44

$$D = 44 \qquad o = 6F$$

$$D = 44$$
  $o = 6F$   $n = 6E$ 

$$D = 44$$
  $o = 6F$   $n = 6E$   $' = 27$ 

#### "Don't Panic"

#### **ASCII**

$$D = 44$$
  $o = 6F$   $n = 6E$   $' = 27$   $t = 74$ 



#### "Don't Panic"

#### **ASCII**

44 6f 6e 27 74 20 50 61 6e 69 63



#### "Don't Panic"

#### **ASCII**

44 6f 6e 27 74 20 50 61 6e 69 63

**EBCDIC** 

C4 96 95 7D A3 40 D7 81 95 89 83



7	Application Layer
6	Presentation Layer
5	
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer

7	Application Layer
6	Presentation Layer
5	Session Layer
4	Transport Layer
3	Network Layer
2	Data Link Layer
1	Physical Layer

# Summary



Introduction to OSI Model

Modeling Telephone Call

Modeling Networking with OSI

