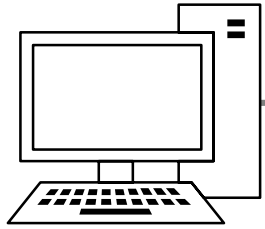


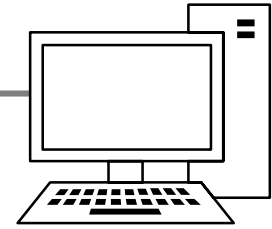
The OSI Open Systems Interconnect Model

- The OSI reference model is a standard of the International Organization for Standardization (ISO).
- It is a general-purpose framework that characterises and standardises how computers communicate with one another over a network.
- Its seven-layered approach to data transmission divides the operations into specific related groups of actions at each layer.
- A layer serves the layer above it and is served by the layer below it.

OSI Reference Model - Encapsulation



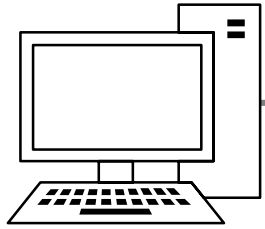
Sender



Receiver

Layer	Name	Includes	Devices
7			
6			
5			
4			
3			
2			
1			

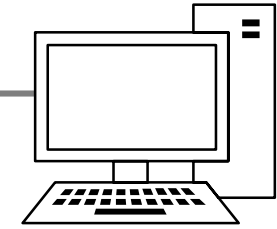
OSI Reference Model - Encapsulation



Sender

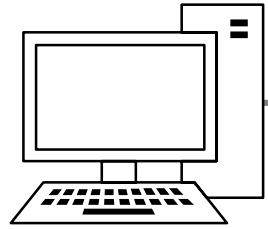


Layer	Name	Includes	Devices
7	Application		
6			
5			
4			
3			
2			
1			



Receiver

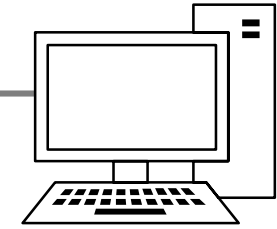
OSI Reference Model - Encapsulation



Sender

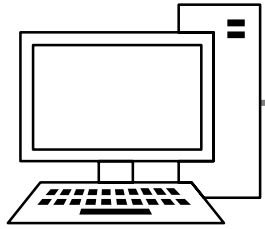


Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5			
4			
3			
2			
1			



Receiver

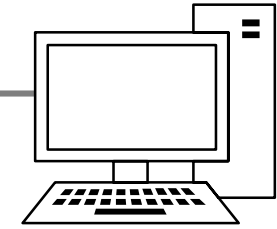
OSI Reference Model - Encapsulation



Sender

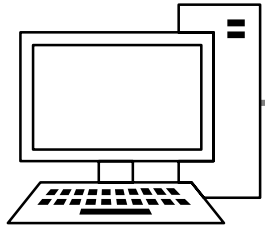


Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4			
3			
2			
1			



Receiver

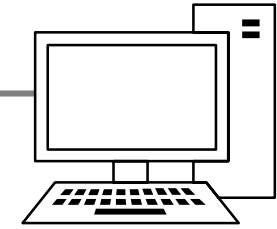
OSI Reference Model - Encapsulation



Sender



Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3			
2			
1			



Receiver

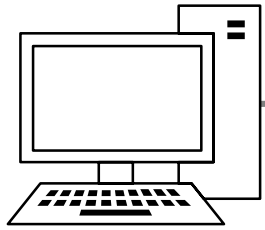
L4

L5

L6

L7

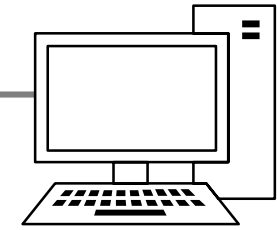
OSI Reference Model - Encapsulation



Sender



Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2			
1			



Receiver



OSI Reference Model - Encapsulation



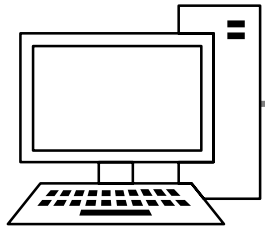
Sender

Receiver

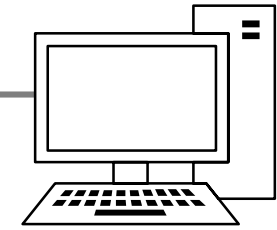
Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1			



OSI Reference Model - Encapsulation



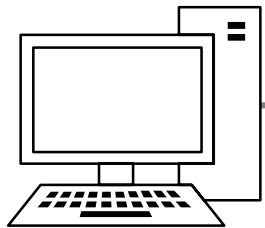
Sender



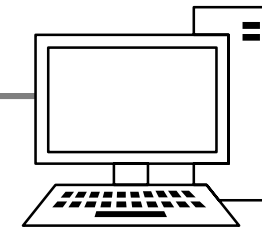
Receiver

Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		Hubs

OSI Reference Model – De-encapsulation



Sender

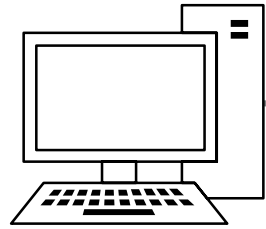


Receiver

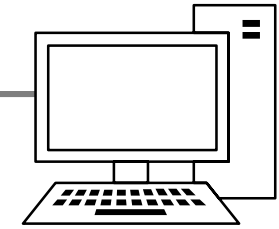
Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		



OSI Reference Model – De-encapsulation



Sender

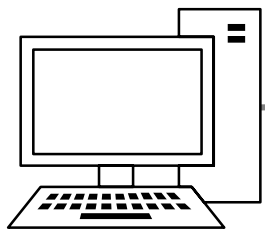


Receiver

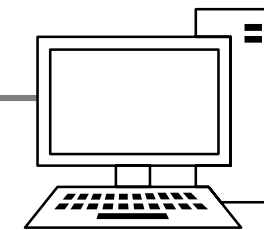
Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		



OSI Reference Model – De-encapsulation



Sender

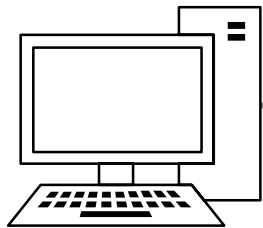


Receiver

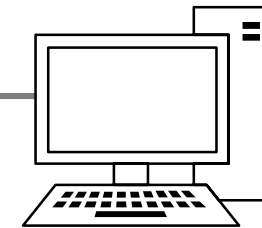
Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		



OSI Reference Model – De-encapsulation



Sender

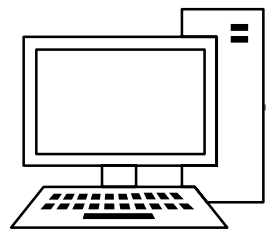


Receiver

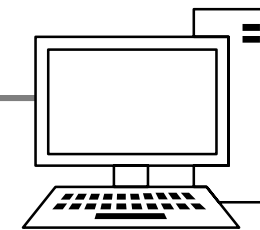
Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		



OSI Reference Model – De-encapsulation



Sender

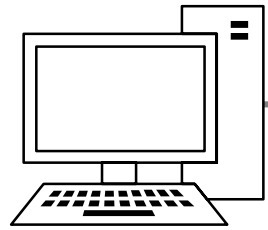


Receiver

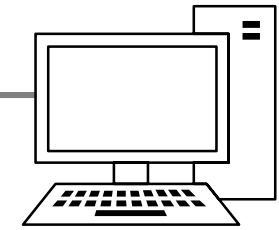
Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		



OSI Reference Model – De-encapsulation



Sender



Receiver

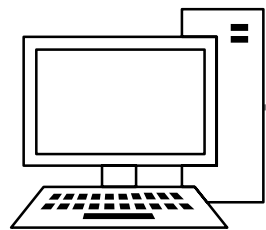
Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		



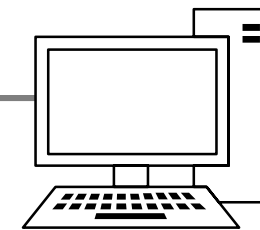
L6

L7

OSI Reference Model – De-encapsulation



Sender



Receiver

Layer	Name	Includes	Devices
7	Application		
6	Presentation		
5	Session		
4	Transport	TCP/UDP, Port	
3	Network	IP Address	Routers
2	Data-Link	Ethernet MAC Address	Switches
1	Physical		



L7

OSI Model Benefits



- Engineers do not need to design a technology to work end to end from top to bottom of the model. They can just focus on their layer of expertise, and make sure they comply with the standards for the layers above and below.
- This leads to open standards and multi-vendor interoperability.
- For example: If you're an application developer, you can just focus on the top three layers, the lower layers are the domain of network engineers.
- Troubleshooting is easier because you can analyse a problem in a logical fashion layer by layer.

The OSI Open Systems Interconnect Model

- It's difficult to overstate how important the OSI Model is to computer networking.
- As you become more experienced you will 'think' according to the OSI model when you are troubleshooting or learning a new network technology.
- On the job you will hear technologies and problems being described according to their OSI layer.

OSI Acronyms



- The Classic: Please Do Not Throw Sausage Pizza Away
- Network Relevant: Please Don't Need Those Stupid Packets Anyway
- Us Relevant: Please Do Not Teach Students Pointless Acronyms
- Useful: Please Do Not Take Sales People's Advice
- My Favourite: Please Do Not Touch Superman's Private Area