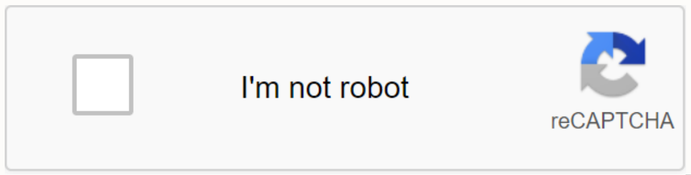

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Compare and contrast osi and tcp/ip models ccna

OSI originally competed with the TCP/IP model. But now the protocol has been shut down and TCP/IP dominates the market. However, the terminolgia used to describe OSI has remained and is still used to describe the network and the TCP/IP model, although it does not directly translate. OSI levels are: Physical Data Link Network Transport Session Presentation Application Contrast this to the TCP/IP model layers: Link Internet Transport Application Most people refer to TCP/IP with corresponding OSI layers. Often refers to the Layer 2 switch or layer 3 switch. Means a switch that can only change Ethernet frames (level 2) or perform packet re-routing (Level 3 – IP Routing). The image below shows a table of how the TCP/IP model fits into the OSI model: Please Do Not Throw Sausage Pizza Away is a neat way to remember the shape of the OSI model. Here's a quick breakdown of the original OSI layers and how they work (ccna's official certificate guide): 7.) Application layer. Provides a user interface from the application to the network by attaching activities relevant to the application to the protocol, such as retrieve the Web page object. 6.) Presentation level. This level negotiates data formats, such as ASCII text, or image types such as JPEG. 5.) Level of session. Use this layer to group multiple bidirectional messages into a workflow, making it easier to manage and easier for jobs that occur when an entire workflow fails. 4.) Transport layer. Like the TCP/IP transport layer. This level focuses on providing data between two endpoint hostesses (for example, error recovery). 3.) Mesh layer. Like the TCP/IP network level (Internet), this level specifies the logical addressing, routing (overhead), and routing protocols that are used to learn routes. 2.) Data link level. Like the TCP/IP data link layer, this layer defines protocols for delivering data over a specific type of physical network (for example, Ethernet data link protocols) 1.) Physical layer. This layer determines the physical characteristics of the transmission device, including connectors, pins, use of pins, electric current, encoding, light modulation, and so on. Here's an example of how the OSI model applies to the TCP/IP model: Application, presentation and session (levels 5-7): Telnet, HTTP, FTP, POP3, VoIP, SNMP Transport (Layer 4): TCP, UDP Network (Layer 3): IP Data Link (Layer 2): Ethernet (IEEE 802.3), HDLC Physical (Layer 1): RJ45, RJ45, Ethernet (IEEE 802.3) View all publications with clinetworking Published June 9, 2018October 28, 2018 1 Comparison and contrast between the OSI and TCP/IP Model 2 subnet or Network AccessIntroduction The topics we discuss would be based on the diagram below. OSI TCP / IP Application (Layer7) Presentation (Layer6) Session (Level 5) Migration (Level 4) Transport Network 3) Internet Data Link (Layer 2) subnet or Network Access Physical (Level 1) 3 Comparison Compare matching protocol layers. General Comparison Allocation Reliability Control Roles Host System De-jure vs. De-facto 4 Upper Layers Session Presentation Application OSI TCP/IPApplication (Layer7) Application Presentation (Layer6) Presentation Presentation Application 5 Session Level Session Level allows two parties to keep traffic running called throughout the session online. This TCP protocol cannot be found in the TCP/IP model in TCP/IP. (Migration Layer) 6 Presentation Level The presentation layer processes data format data for network communication. This is done by converting the data into a general format that could be understood by both parties. The application layer cannot be found in the TCP/IP model in TCP/IP. for example, the multifunctional Internet e-mail extensions (MIME) of the External Data Representative Standard (XDR) 7 Application Layer The application layer is the top layer of the reference model. It provides apps with interfaces that gain access to online services, as well as access to online services that support apps directly. OSI FTAM (File Transfer, License, and Management — such as TCP/IP FTP and NFS) VT (Virtual Terminal Protocol – Such as TCP/IP Telnet) MHS (Message Processing System — Such as TCP/IP SMTP and Other Protocols) DS (Directory Services, subsequently modified for TCP/IP stack as LD) Common Management Information Protocol (CMIP) such as TCP/IP SNMP) TCP/IP FTP (File Transfer Protocol) SMTP (Simple Mail Transfer Protocol) TELNET DNS (Domain Name Service) SNMP (Simple Network Management Protocol) Although the concept of application process is common to both, their approaches to building application units are different. 8 ISO Approach Sometimes called Horizontal ApproachOSI claims that distributed application usage levels work in a strict layer hierarchy and are built from a common tool set of standardized application service elements. In OSI, each distributed application service selects functions from a large global toolbox in the application service element and complements them with application service elements that perform functions specific to a specific end-user service . 9 TCP/IP approach, sometimes called vertical approach in TCP/IP, each application unit consists of all the functions it needs to stop final transport in support of a distributed messaging service. Most of these application processes are based on what it needs and only assume that the underlying transfer mechanism (datagram or connection) is offered. 10 Transport Layer OSI TCP / IP Transport (Layer 4) Transport (TCP/UDP) The functionality of the transmission layer is to provide from the open system at source to the open system at the target end (ISO / IEC 7498: 1984). 11 Transport of the transport layer shall be responsible for establishing and maintaining the basic communication link between open systems, ensuring that the bits delivered to the receiver are the same as bits transmitted by the consignor; in the same order and without modification, loss or copying 12 OSI transfer layer It exports the data to be transmitted and divides it into individual packages (segments) sent and compiled into a complete message by the transport layer of the receiving node. If receipt confirmation is not received, transport layer can resend the package or time out the connection and report error 14 OSI Transport Layer Transport protocols can also mark packets with sequence data so that the target system can properly order packets if received outside the sequence. 15 OSI Transport Layer Transport protocols allow multiple application processes to access the network by using individual local addresses to configure the target process for each stream of data. 16 TCP/IP Transport LayerConficial two standard transport protocols: TCP and UDP TCP implement a reliable data stream protocol connection UDP implements an unreliable data stream-free 17 TCP/IP transport layerMany programs use a separate TCP connection as well as a UDP connection - FTP, For example, 18 TCP/IP Transport LayerTCP is responsible for data recovery by assigning a sequence number to each package sent by TCP that requires ACK (ackowledgement) to ensure that that the correct information is received The package can be resended if an error is detected in the use of the 19 TCP/IP transport transfer layer ACK 20 TCP/IP Transport LayerFlow with window (sliding windows) by specifying the acceptable sequence number range 21 TCP/IP Transport LayerTCP and UDP Ports concept General ports and services : FTP 21 and 20 telnet 23 SMTP 25 http 80 POP 22 TCP/IP Transport LayerBy configures ports and contains port numbers in TCP/UDP data, multipleksing reach multiplexing allows simultaneous network connections Port numbers and data source and destination addresses determine opposite 23, as well as comparison of model transport UDP and TCP properties specified in the TCP/IP transfer layer meet many requirements of the OSI transfer layer. The OSI session layer has a slightly cumbed after sequential numbers, and port values can help allow the operating system to track sessions, but most TCP and UDP functions and configurations are mapped to the OSI transfer level. 24 Both model transport comparisonSCP/IP and OSI architecture models use both connection and connection models on the transport layer. However, internet architecture refers to two models of TCP/IP simply as connections and datagrams. But the OSI reference model, with a penchant for precise terminology, uses the terms connection mode and connection-centry and unconnected mode for the connection model. 25 Network vs. Internet OSI TCP /IP Network (Layer 3) Internet Like all other OSI layers, the network layer provides both connection-free and connection-oriented services. (But note that this is for WAN only. With LÄN networks, layer 3 and its protocol (IP) is a tightly connected layer.) For TCP/IP architecture, the Internet layer is exclusively connected. 26 Data link / Physical vs. SubnetOSI TCP / IP Data Link (Level 2) Subnet Physical (Level 1) The communication layer function enables physical layer control and detects and potentially corrects any errors that may occur (IOS/IEC 7498:1984). In other words, Data Link Layer converts raw bit (0s and 1s) streams from physical to data frame and provides flawless transfer from one node to another, by allowing the layers above it to assume virtually flawless transmission 27 Data link/Physical vs. subnetPhysical layer The function of the physical layer is to provide mechanical, electrical, functional and procedural means to activate the physical connection for bit transfer (ISO/IEC 7498:1984). Basically, this means that the typical role of the physical layer is to convert bits of the computer system into electromagnetic (or similar) signals for a specific means of transmission (wire, fiber, ether, etc.) 28 Data link / Physical vs. subnetCompensation to TCP/IP These OSI 2 layers correspond directly to the subnet layer of the TCP/IP model After long consideration by the organisations, it was decided that the network interface layer of the TCP/IP model corresponds to the combination of the network site functions of the OSI Data Link Layer and the OSI network layer. 29 De-jure vs. De-facto (OSI)Standard set by the official recognised body. (ISO) OSI reference was developed before the invention of the protocols. This order means that the model was not biased against a particular set of protocols, which made it quite common. The downside of this subscription is that the designers didn't have much experience on the subject and didn't have a good idea of what functions to put on which floor. In general, OSI model protocols are better hidden than in the TCP/IP model and can be replaced relatively easily as technology changes. Not so widespread compared to TCP/IP. (complex, expensive) More generally as teaching tools. 30 De-jure vs. De-facto (TCP/IP)Standards adopted for widespread use. No, no, no. The protocols were first, and the model was really just a description of existing protocols. There were no problems with the model fitting protocols, but it is hardly possible to get to describe the other models. Job done orientation. Over the years, it has addressed most challenges by growing to meet needs. A more popular standard for Internet work for a number of reasons: relatively simple and durable compared to alternatives such as OSI, which is available on virtually all hardware and operating system platforms (often free of charge) in the protocol software on which the Internet depends. 31 A more popular standard for Internet work for a variety of reasons : relatively simple and durable compared to options such as OSI available on almost all hardware and operating system platforms (often free) protocol package on which the Internet depends. Depends on.