Session Layer

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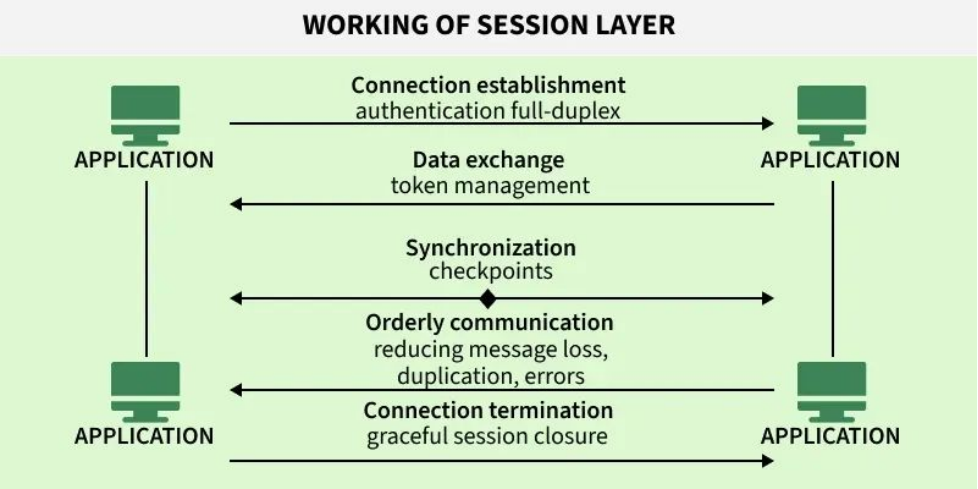
Session Layer Overview

- Fifth layer of the OSI Model
- Manages session setup maintenance, and termination
- Controls dialogue
- Provides synchronization and recovery mechanisms



Sessions challenges and issues that can arise at the layer

This layer is where session hijacking, protocol problems, and session timeouts happen. Examining application logs, examining network traffic, and confirming appropriate session protocols are all part of troubleshooting.

Two common attacks in this layer include:

Session hijacking: An attacker can take control of a web session and obtain private information if a session token is compromised. VPNs, strong passwords, and software updates are examples of defenses.
MiTM attack: In this attack, two parties' communications are intercepted by a threat actor, usually through open, unprotected Wi-Fi. It can be avoided by using secure shell and other secure communication protocols.

How the Transport layer interacts with the Session layer.

Transport Layer (Layer 4) – The Foundation

- Delivers data end-to-end between devices
- Reliable (TCP) or fast/unreliable (UDP)
- Manages **application sessions** (logical conversations between apps)
- Key jobs:
    - **Setup**: Start the session
    - **Maintain**: Sync (checkpoints), control dialog (half/full-duplex turns)
    - **Teardown**: End gracefully

Session Layer (Layer 5) – Builds on Transport

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Simple Analogy

- Transport = The truck that reliably delivers packages (TCP) or quickly drops them off (UDP)
- Session = The conversation manager that decides when to start talking, pause/resume, and say goodbye

Why is the Significance of the Session Layer in an OSI Computer Network

The session layer in OSI computer networks is responsible for managing communication throughout the network and ensuring the user past communication between applications is coordinated and organized. According to Jasud, P. V. (2017), when it comes to the session layer in OSI, it responsible for the handling of communications that are segmented throughout the network. It facilitates the transmission of data packets to the packets of data and allows the user to transfer their documents to different machines. The session layer is essential for network to have proper communicate with each other to prevent problems. For this reason, the session layer plays a crucial role in ensuring efficient and orderly communication within the network.

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