



OSI

OSI Layer	Protocol / Service	Examples
1 2	Physical / Data Link	RS-232, RS-485, USB, Ethernet, CAN, Wi-Fi, ZigBee, LoRa, NFC
3 4 5	Network / Transport	Ethernet, IEEE 802.3, Wi-Fi, IEEE 802.11, PPP, HDLC
6 7	Session / Presentation	IPv4, IPv6, ICMP, ARP
8	Application	TCP, UDP
9	Application	SMB, RPC
10	Application	TLS/SSL, JSON, XML
11	Application	HTTP/HTTPS, FTP/SFTP, SMTP/IMAP/POP3, WebSocket, gRPC

IPC

Category	Protocol	OSI Layer	Application	Service	Example
Application	Modbus, OPC UA	7, 8	Modbus TCP, OPC UA	Modbus RTU, CANopen	Industrial Automation

<p>OSI</p>	<p>Application Presentation Session</p>	<p>Application OSI Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>
<p>OSI</p>	<p>Application Presentation Session</p>	<p>Application OSI Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>
<p>OSI</p>	<p>Application Presentation Session</p>	<p>Application OSI Presentation Session</p>	<p>Application Presentation</p>	<p>Application Presentation</p>	<p>Application Presentation Session Presentation Session</p>
<p>OSI</p>	<p>Application Presentation</p>	<p>Application OSI Presentation Session</p>	<p>Application Presentation</p>	<p>Application Presentation</p>	<p>Application Presentation</p>
<p>OSI Socket TCP/UDP</p>	<p>Application TCP/UDP Presentation Session</p>	<p>Application</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>
<p>OSI Signal</p>	<p>Application Presentation</p>	<p>Application OSI Presentation</p>	<p>Application Presentation Session</p>	<p>Application Presentation</p>	<p>Application Presentation Session</p>
<p>OSI Memory-Mapped Files</p>	<p>Application Presentation Session</p>	<p>Application OSI Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>
<p>gRPC</p>	<p>Application HTTP/2 Presentation Session RPC</p>	<p>Application</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session Presentation Session</p>
<p>REST API</p>	<p>Application HTTP Presentation Session</p>	<p>Application</p>	<p>Application - Presentation Session Presentation Session Presentation Session Web</p>	<p>Application Presentation Session - Presentation</p>	<p>Application Presentation Session Presentation Session</p>
<p>WebSocket</p>	<p>Application TCP Presentation Session</p>	<p>Application</p>	<p>Application Presentation Session Presentation Session</p>	<p>Application Presentation Session</p>	<p>Application Presentation Session Presentation</p>
<p>SignalR</p>	<p>Application WebSocket/SSE/Long Polling Presentation</p>	<p>Application</p>	<p>Application Presentation</p>	<p>Application Presentation Session</p>	<p>Application WebSocket Presentation Long Polling Presentation</p>

