Commonly Used Ports in Network

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Date: April 23, 2023

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What is a Port?

A port is a virtual point where network connections start and end. Ports are software-based and managed by a computer's operating system.

What is a Port Number?

Ports are standardized across all network-connected devices, with each port assigned a number. Most ports are reserved for certain [protocols](https://www.cloudflare.com/learning/network-layer/what-is-a-protocol/) — for example, all [Hypertext Transfer Protocol (HTTP)](https://www.cloudflare.com/learning/ddos/glossary/hypertext-transfer-protocol-http/) messages go to port 80. While [IP addresses](https://www.cloudflare.com/learning/dns/glossary/what-is-my-ip-address/) enable messages to go to and from specific devices, port numbers allow targeting of specific services or applications within those devices.

Ports that are commonly used

Some of the most commonly used ports, along with their associated networking protocol are:

* Port 21: FTP (File Transfer Protocol)
* Port 22: SSH (Secure Shell)
* Port 23: Telnet (Unencrypted Text Communication)
* Port 25: SMTP (Simple Mail Transfer Protocol)
* Port 53: DNS (Domain Name System)
* Port 80: HTTP (Hypertext Transfer Protocol)
* Port 110: POP3 (Post Office Protocol version 3)
* Port 143: IMAP (Internet Message Access Protocol)
* Port 443: HTTPS (HTTP Secure)
* Port 3389: RDP (Remote Desktop Protocol)

A table that lists the port number, protocol, and function for each port.

| **Port Number** | **Protocol** | **Function** |
| --- | --- | --- |
| 21 | FTP | File Transfer Protocol |
| 22 | SSH | Secure Shell |
| 23 | Telnet | Unencrypted Text Communication |
| 25 | SMTP | Simple Mail Transfer Protocol |
| 53 | DNS | Domain Name System |
| 80 | HTTP | Hypertext Transfer Protocol |
| 110 | POP3 | Post Office Protocol version 3 |
| 143 | IMAP | Internet Message Access Protocol |
| 443 | HTTPS | HTTP Secure |
| 3389 | RDP | Remote Desktop Protocol |

A brief description on the network ports.

* Port 21 (FTP): This port is used for transferring files between servers and clients using the File Transfer Protocol (FTP).
* Port 22 (SSH): This port is used for secure remote access to servers using the Secure Shell (SSH) protocol.
* Port 23 (Telnet): This port is used for unencrypted text communication with remote devices using the Telnet protocol.
* Port 25 (SMTP): This port is used for sending email messages between servers using the Simple Mail Transfer Protocol (SMTP).
* Port 53 (DNS): This port is used for resolving domain names into IP addresses using the Domain Name System (DNS).
* Port 80 (HTTP): This port is used for transferring web pages and other data over the World Wide Web using the Hypertext Transfer Protocol (HTTP).
* Port 110 (POP3): This port is used for retrieving email messages from a remote server using the Post Office Protocol version 3 (POP3).
* Port 143 (IMAP): This port is used for accessing and managing email messages on a remote server using the Internet Message Access Protocol (IMAP).
* Port 443 (HTTPS): This port is used for secure web browsing over the World Wide Web using the HTTP Secure (HTTPS) protocol.
* Port 3389 (RDP): This port is used for remote desktop access to Windows servers and clients using the Remote Desktop Protocol (RDP)

Why is it important to know these ports and their functions?

Knowing the ports and their functions is important for troubleshooting network issues and identifying potential security vulnerabilities. For example, if a server is not responding to requests on a specific port, it could indicate a problem with the service running on that port or a firewall blocking that port.

It also helps in configuring firewalls and network security policies to allow or block specific ports and protocols based on the organization's security policies.

It is important to know these ports and their functions for network administration and management.Additionally, network administrators need to have an understanding of these ports to secure and protect the network from potential attacks and unauthorized access.

Understanding which services are running on which ports can help optimize network performance and ensure that network resources are being used efficiently.

Examples of situations where knowledge of these ports and their functions would be useful are:

Troubleshooting network connectivity issues.

* Knowing which port a specific service or application uses can help diagnose problems and find solutions for users unable to access it.

Configuring firewall rules.

* Network administrators can use their knowledge of port functions to configure firewall rules to allow or block specific ports and protocols according to their organization's security policies.

Securing the network.

* Identifying which ports are open and which services are running on those ports can help to identify potential security vulnerabilities, allowing steps to be taken to secure the network.

Optimizing network performance.

* Understanding which services are running on which ports can help in optimizing network performance and ensuring network resources are being used

Appendix

Port Numbers (Internet Assigned Numbers Authority): [https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml](https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml" \t "https://chat.openai.com/c/_new)

Understanding TCP/IP Port Numbers (Webopedia): [https://www.webopedia.com/quick\_ref/portnumbers.asp](https://www.webopedia.com/quick_ref/portnumbers.asp" \t "https://chat.openai.com/c/_new)

TCP/IP Ports and Sockets Explained (Lifewire): [https://www.lifewire.com/tcp-ip-ports-and-sockets-explained-817800](https://www.lifewire.com/tcp-ip-ports-and-sockets-explained-817800" \t "https://chat.openai.com/c/_new)

TCP/IP Ports and Protocols (TechTarget): [https://searchnetworking.techtarget.com/definition/TCP-IP-ports-and-protocols](https://searchnetworking.techtarget.com/definition/TCP-IP-ports-and-protocols" \t "https://chat.openai.com/c/_new)

Port Scanner (Nmap): [https://nmap.org/book/man-port-scanning-basics.html](https://nmap.org/book/man-port-scanning-basics.html" \t "https://chat.openai.com/c/_new)