Essential Port Numbers Every DevOps Engineer Should Know

As a DevOps engineer, you're the backbone of modern infrastructure, bridging development and operations seamlessly. Whether you're configuring servers, troubleshooting networking issues, or deploying applications, understanding the right port numbers is crucial to ensuring everything runs smoothly. From secure remote access to database connections and monitoring services, knowing these key ports is vital for a successful DevOps workflow. Here’s a list of the most important port numbers you should keep in your toolkit to optimize your day-to-day tasks and boost productivity.

Common Service Ports:

1. **SSH (Secure Shell)**
    - Port: **22**
    - Used for: Remote login to servers securely.
2. **HTTP (Hypertext Transfer Protocol)**
    - Port: **80**
    - Used for: Serving web pages over the internet.
3. **HTTPS (Hypertext Transfer Protocol Secure)**
    - Port: **443**
    - Used for: Secure communication over the web.
4. **FTP (File Transfer Protocol)**
    - Port: **21**
    - Used for: File transfer between systems.
5. **SFTP (Secure File Transfer Protocol)**
    - Port: **22** (same as SSH)
    - Used for: Secure file transfer (works over SSH).

6. **FTPS (FTP Secure)**

   - Port: **990**
   - Used for: FTP over SSL/TLS for secure file transfer.

7. **SMTP (Simple Mail Transfer Protocol)**

   - Port: **25**
   - Used for: Sending emails.

8. **POP3 (Post Office Protocol v3)**

   - Port: **110**
   - Used for: Receiving email (retrieving emails from a mail server).

9. **IMAP (Internet Message Access Protocol)**

   - Port: **143**
   - Used for: Receiving email (allows for more advanced mail management than POP3).

10. **MySQL (Database service)**

    - Port: **3306**
    - Used for: MySQL database connections.

11. **PostgreSQL (Database service)**

    - Port: **5432**
    - Used for: PostgreSQL database connections.

12. **Redis (In-memory data store)**

    - Port: **6379**
    - Used for: Redis server connections.

13. **MongoDB (Database service)**

    - Port: **27017**

- Used for: MongoDB database connections.

14. **RDP (Remote Desktop Protocol)**
    - Port: **3389**
    - Used for: Remote desktop access to Windows servers.

15. **DNS (Domain Name System)**
    - Port: **53**
    - Used for: Resolving domain names to IP addresses.

16. **DHCP (Dynamic Host Configuration Protocol)**
    - Port: **67 (server), 68 (client)**
    - Used for: IP address assignment in local networks.

17. **SNMP (Simple Network Management Protocol)**
    - Port: **161 (agent), 162 (trap)**
    - Used for: Monitoring network devices.

18. **NTP (Network Time Protocol)**
    - Port: **123**
    - Used for: Synchronizing clocks across networks.

19. **VNC (Virtual Network Computing)**
    - Port: **5900**
    - Used for: Remote desktop access.

20. **Elasticsearch**
    - Port: **9200**
    - Used for: Accessing Elasticsearch for searching and analytics.

21. **Kafka**
    - Port: **9092**

- Used for: Kafka messaging service.

22. **Docker Daemon**

- Port: **2375 (non-secure), 2376 (secure)**
- Used for: Docker API access.

23. **Kubernetes (API server)**

- Port: **6443**
- Used for: Communicating with the Kubernetes cluster API server.

24. **Consul (Service Discovery and Configuration)**

- Port: **8500**
- Used for: Accessing the Consul agent’s HTTP API.

25. **RabbitMQ (Message Broker)**

- Port: **5672**
- Used for: AMQP communication (default port for RabbitMQ).

26. **Elasticsearch**

- Port: **9200**
- Used for: Accessing Elasticsearch HTTP API.

27. **MongoDB (NoSQL Database)**

- Port: **27017**
- Used for: MongoDB database connections.

28. **Prometheus (Monitoring)**

- Port: **9090**
- Used for: Accessing Prometheus UI and API.

29. **Grafana (Dashboarding)**

- Port: **3000**
- Used for: Accessing the Grafana web interface.

30. **Jenkins (Continuous Integration/Deployment)**

    - Port: **8080**
    - Used for: Jenkins web interface.

Special Ports:

- **Cloud Management Ports (AWS, Azure, etc.)**: These typically don't require specific ports to be managed directly, but knowing ports for services like **SSH (22)** or **HTTP(S) (80/443)** is important for cloud-based resources.

Ports for Security and Monitoring:

- **Syslog**
  - Port: **514 (UDP)**
  - Used for: Sending logs to a syslog server.
- **Nagios**
  - Port: **5666**
  - Used for: Monitoring and alerting with Nagios.

Final Thoughts

Mastering port numbers is more than just a technical necessity for a DevOps engineer—it's a cornerstone of efficient system management, security, and troubleshooting. With the right knowledge of key ports, you'll be able to configure networks, deploy applications, and monitor services with confidence. Whether you're working with databases, cloud environments, or communication protocols, having these port numbers at your fingertips ensures that you can address issues quickly and keep systems running smoothly. Stay informed, stay secure, and continue to build robust, scalable infrastructure with ease!