

# System administration

## Table of Contents

Introduction.....	2
Intended Learning Outcomes .....	2
System Administrator .....	2
Roles of System Administrator .....	3
1. User administration.....	3
2. System maintenance.....	3
3. Documentation.....	3
4. System health monitoring .....	4
5. Backup and disaster recovery .....	4
6. Application compatibility .....	4
7. Web service administration and configuration .....	4
8. Network administration .....	4
9. Security administration .....	4
10. Database administration .....	5
11. Installation and patching .....	5
12. User training.....	5
Sysadmin certifications and education.....	5
Common skills of system administrators.....	5
References.....	6

## **Introduction**

In this module we discuss system administrator as vital role in an organization applying IT hardware and software services. Common system administrator tasks may range from installation and deployment of servers to providing troubleshooting and technical support for projects.

## **Intended Learning Outcomes**

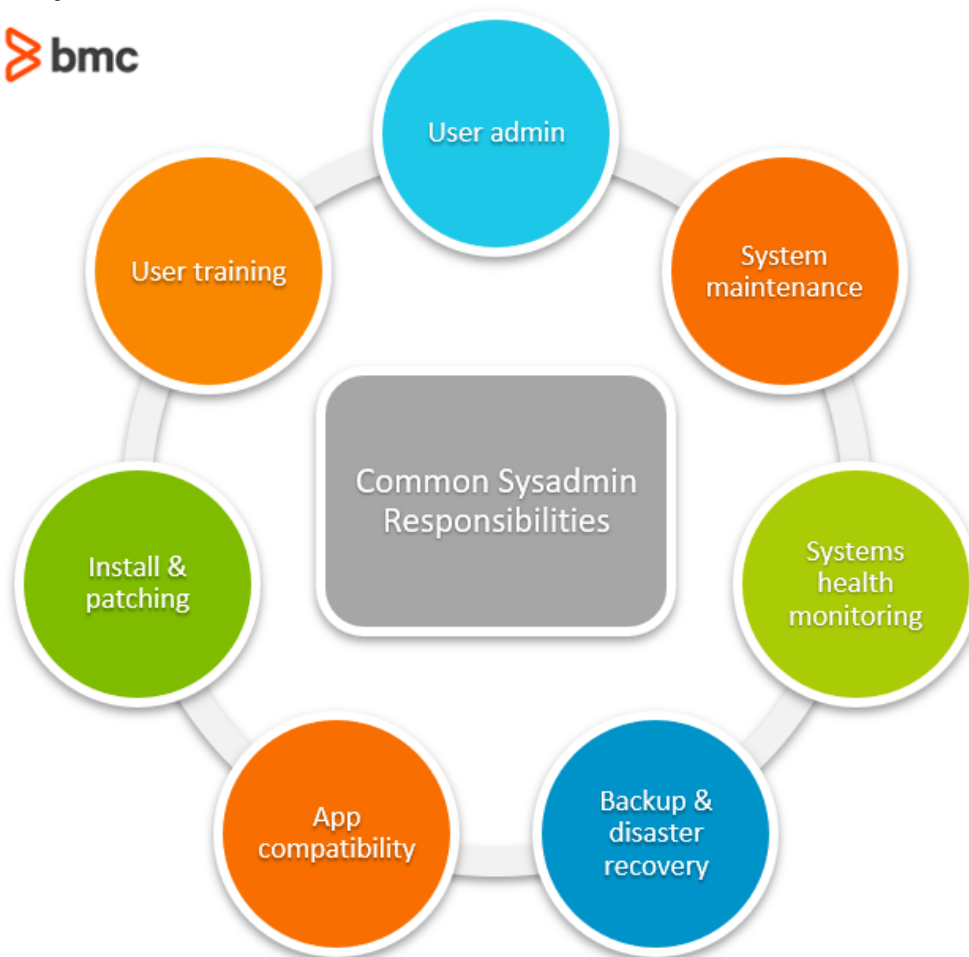
At the end of the module, the students are expected to:

1. Define system administrator.
2. Identify the different roles of system administrator.
3. Identify the education and certifications of system administrators.

## **System Administrator**

- A person responsible for setting up and maintaining a system or a server.
- A person who manages the computer systems in an organization.

# Roles of System Administrator



## 1. User administration

- Support reliable and effective use of complex IT systems by end users (internal or external).
- Manages user groups and user accounts for a centralized user management.

## 2. System maintenance

- Responsible for the availability of IT systems.
- Troubleshoots and fix issues that comprise system performance or access to an IT service.
- Tasks includes regular system improvements, such as upgrades on evolving end-user and business requirements.

## 3. Documentation

- Maintains records of IT assets usage.
- Plans for future IT investments and upgrades documenting:
  - End-user requests

- Business requirements
  - IT issues
- Documentation also underpins regulatory compliance.

#### **4. System health monitoring**

- Most IT issues go unnoticed until the impact reaches end users therefore system admin monitor system health and identify anomalous network behavior, which may include sensitive activities such as unauthorized network access and data transfer.
- As administrators you may need advance tools for monitoring.

#### **5. Backup and disaster recovery**

- Scheduled backup
- Plans disaster recovery strategies
- Facilitate end-users in accessing data that may have been deleted or unavailable.

#### **6. Application compatibility**

- Ensures that software systems and feature releases are compatible with the IT infrastructure. Example:
  - Testing server load performance
  - Install/upgrade hardware components

#### **7. Web service administration and configuration**

- Sysadmins regularly perform web service administration and configuration management activities, including ensuring that configuration changes are documented and follow organizational policies associated with access and cybersecurity.
- Refer to this reference on web services:

IBM. (n.d.). *What is a web service?* © Copyright IBM Corporation 2019. Retrieved January 5, 2022, from <https://www.ibm.com/docs/en/cics-ts/5.1?topic=services-what-is-web-service>

#### **8. Network administration**

- Maintains network integrity by following network interactions follow organizational policies and protocols.
- Requires a background in networking or network engineering to perform mission-critical network administration activities if you do not have a separate network department.

#### **9. Security administration**

- Network monitoring and analysis
- Identity and access management
- Maintaining security of hardware components
- Managing software licensing, updates, and patching

## **10. Database administration**

- Maintains integrity, performance, and efficiency of database systems.
- Database management may include migration, design, configuration, installation, and security of the organization's data assets.

## **11. Installation and patching**

- Responsible for managing, troubleshooting, licensing, and updating hardware and software assets.
- You make sure that appropriate measures are proactively followed in response to unforeseen issues such as IT downtime or zero-day exploits.

## **12. User training**

- Sometimes you conduct trainings programs to bring users up to date with new software installations or IT system changes.

## **Sysadmin certifications and education**

Courses may be:

Computer Science or Information Technology

With certifications such as:

- Microsoft Windows Server and Desktop Certifications
- CompTIA Network+ and A+
- Unix
- Linux
- Cloud certifications (new)

## **Common skills of system administrators**

- Subject matter expertise on the following areas:
  - Computer systems
  - Networks
  - Hardware and software troubleshooting
  - Databases
  - Web services
- Problem solving since you will be the first person called upon to deal with a problem
- Strong interpersonal and communication skills (both written and verbal). You will be talking with both technical and non-technical persons.

## References

1. Raza, M. (2019, October 14). *Sysadmin: Role, Responsibilities, Job Description & Salary Trends*. BMC Blogs. Retrieved January 5, 2022, from <https://www.bmc.com/blogs/sysadmin-role-responsibilities-salary/>
2. Direct Link from Job Portals: <https://www.indeed.com/recruitment/job-description/system-administrator>