

Life of a System Administrator

Short Story

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Index	Page no
1. Hello World!	3
2. A game of hide and seek	7
3. Are you Sure?	9
4. Scalability	11
5. File organisational automation	12
6. With great power comes great responsibility	14
7. The responsibilities	15
8. Skillsets	25
9. Conclusion	33

Hello World!:

I'm Sreepathy Jayanand, a system administrator at XYZ corporation, working 9 to 5 for 5 days a week and not to mention the overtimes that most of the people in the computer world go through so that we finish our work on time.

Just like the skill set of a computer engineer should be, I write this book with a mixture of both the technical as well as a bunch of non technical aspects of my life.

It all started in the 10th grade. Everyone were telling me to take up computer science as my profession as it would fetch me a decent salary after 4 years. But I was least interested in computer science. I was more into physics and mechanics. My father being a professor in the department of electrical and electronics told me to take up that and follow his legacy. I was in the mix of all of this just like any other 12th standard boy or girl would be in their life. And as most of the students in their life face - "The Entrance Exam" was inevitable. And soon I realised it isn't your interest that guides you to the field you would to be in, but your rank in entrance.

Since whether it be mechanical or computer science, you first have to take up a discipline after 10th right..., and I chose Computer + Sciences, as do most students who want to pursue their career in Engineering.

That was a crucial turning point in my life. As a person who just played games in computer till 10th, my whole view of the field of computer science changed. The world of the underlying maths was what first struck me in to thinking that this could potentially be a career that I could pursue.

The entire 11th and 12th standard was then filled with a wonderful time along with computers. Solving the questions posed by the teachers in the class to be tested in the lab hours was a joy, discussing possible solutions, identifying correct methods from the wrong methods, thinking what would be the approach to solve a particular problem, all were really fun times.

My joy of coding in C since 11th standard has been put to a good test as most of the time is now spent on coding scripts. These are what makes the company have a good fast performing and reliable computer systems and networks.

My first experience writing a script was an interesting one. It was during the time of the release on an amazing movie called Avengers:Infinity War, I was in the second semester of college. We knew exactly at what time the booking site was going to be open. All of us were clicking the refresh button many times over and over again to ensure that one of us got into the site and could buy tickets for the rest of us. It was at this moment that it struck me. Why not make a software that will mimic the clicking of a mouse button in intervals of 5 seconds, while I can just sit staring at the screen eating some snacks while the computer did the hard work. The idea had occurred in the first movie, but the implementation happened in the sequel of the movie, Avengers:Endgame. This time I was ready with my script so that it could start clicking away while I just lay back. I was using a macOS and it already had an inbuilt script writing software which made writing the code a lot easier compared to what it would have been with maybe python.

The code was just :

```
tell application "System Events"  
    tell process "X"  
        click at {x_co-ordinate, y_co-ordinate}  
    end tell  
end tell
```

That was it. Simple and elegant. This made me realise the amount of time it would have saved me if I knew this small piece of knowledge before itself.

From then on I made it a point to read articles on medium so that I don't miss out on small and simple life hacks like this.

One of the task which always makes me connect with my childhood was providing users with technical support both hardware and software based, although this is not the major task in the life of a system administrator, I find it interesting to probe a bit into the system and find what kind of feature do the users need and where to find them. Now, it being more of API related features that a colleague might not know... earlier it used to be telling my mother how to drag column in excel sheet to get serial numbers.

Finding patterns in every day activities make us more efficient in our day to day activities. One that got me going for patterns in the computer world was when I was busy teaching my mother on how to use excel sheets. I used to pretend as if I knew what I was doing but actually I was going with the flow. I found a feature that I didn't know before and I try applying it to another part of the application and it works there too. From all those experiences my knowledge of

arithmetic progressions, geometric progressions all were enhanced and made me a better pattern observer today.

A game of hide and Seek:

I was brought up in a colony with a lot of similar aged kids. Throughout our childhood we played a lot of games. One of that was hide and seek. And I was pretty good at seeking but wasn't a good hider. I knew where most people could be hiding and with a bit of tweaking the search based on certain circumstances I usually would find the hiders.

The same principle applies in my current life. As a computer scientist, most of my relative and well wishers expect me to be coding stuff most of the time. I wish it was like that. Little do they know that most of the time is spent on searching stuff in the internet and trying to understand it and then finally implement it. Anyone who is a keen observer would be able to find out the some of the most worn out keys in the keyboard of a computer engineer would be the "ctrl", "C" and the "V" keys... mostly because of the reasons mentioned above.

Searching is a very important aspect in the the computing world. Not just searching within lists or arrays but searching for existing information in the vast internet. It has vast amounts of resources but it will be of use only if you know to search in the right areas within the internet.

When I was in 12th grade we had our first open book exam. It was more of an open computer exam, as in, we had access to the internet while the exam was going on. Our teacher had asked us to implement an efficient sorting algorithm using any resources found in the internet. Many of us searched for "fastest sorting algorithm" and we found bucket sort and other algorithms that assumed the input comes from a predefined set of numbers. Many of us, including myself implemented

that and found out that, that was not the expected solution. Some other students who searched “fast sorting algorithm” ended up with a merge sort approach which was what the teacher wanted. This experience made me realise the importance of a proper searching technique.

Are you Sure?:

Another important aspect that I learned from the above mentioned experience is importance of understanding exactly what a client wants without assuming things. When a client comes with a set of requirements it is imperative that you understand every aspect. Even if you have a doubt in your mind you have to clear it before you proceed any further, otherwise the whole effort will go down the drain in the end, if the client wasn't expecting something that we thought of.

This also brings the underlying importance of communication. Communication is vital for the development of projects as well as the company. Without proper communication things can go either very slow or in wrong directions. Hence there should be proper communication between the team members, between the client and yourself etc.

Most of the time we try not to reinvent the wheel because once we know how it works we just keep a reference copy of it and use it as the situations arise. The understanding part of this is really important.

I remember in my 9th standard Sanskrit class, I used to muck up sentences, not because I wanted to, but because I wasn't able to understand.

All this was going well because all we had to do was to remember sentences and reproduce it in the exam. But in the 10th standard when we had to write sentences on our own I found myself in a lot of trouble. This was when I understood that without understanding stuff you won't be able to survive in the long run.

Then I had to go for tuitions where they would start from the basics and from then on I “understood” Sanskrit.

This made me a better learner. After that once I saw something new, whether it be a new library, a framework, or an API, I made it a point to understand before I implement stuff using it. I no longer consider things to be a black box but try to understand what is inside that black box. This might be a bad habit in certain other areas.

Once for a coding competition I had to use a binary indexed tree (BIT).

The framework was available to me but I couldn't help but try to figure out how just using binary operations we would traverse the tree and get the cumulative sum of nodes that we required. Even though I could implement this without much effort using the framework that I had, I couldn't because deep in my mind I knew that I didn't know this completely. Finally I ran out of time for implementation and I was mad at myself.

This was an experience which taught me to learn when to break rules if it doesn't hurt anyone.

Scalability:

When I was in 11th standard, I was introduced into the paradigm of functions. When I first learned functions I didn't realise the true importance of it. Today when I try to make software scalable as much as possible I realise the impact of the lesson that I had experienced that time.

When I was learning functions, I knew that everything we could do using functions we could do it inline also. Any user defined function could be copy pasted multiple times within the code. This would make the code faster because there no longer would be context switches between the main() function and the user defined function. But soon during an exam that I had, I realised that the no one really cares about the speed of execution whether it be 1ms or 2ms it doesn't really make a difference. I had implemented a part of code which takes 2 arguments everywhere, and I had implemented all of this inline. I ran into a problem midway and realised everywhere, there had to pointer also. If I had written a function I would've just had to change the function instead of changing it throughout the code.

This simple concept is a sub example of why we need scalability in the codes that we as system administrators write.

It also improves the reliability of the code because we don't re-write the same codes again and again which may cause human error to play a part in the incorrect behaviour.

File organisational automation:

As a system administrator it is my responsibility that file creating and deletions within a system is taken care properly. Automating file operations save a lot of time and time is money for the company.

During my 2nd year of college, I had to do a project involving object detection using YOLO as a part of my product management course. Since most of the framework of YOLO was available online, our work was creating the dataset we had to train. Our project was the implementation of a beach cleaning robot that detected was materials like crushed bottles and stuff like that. Once we created a dataset for our model to train, we had to do a lot of file handling for the API to work properly. This involved the creation of a lot of files which had to be created in a particular format as required by the API. At first we thought we would do it manually. Then soon we realised automating this would be better. This was my first taste of file organisation automation. Even though creating this automation script took time we soon realised that this same software could be used by others if they wanted to train this network on their custom dataset. So automating stuff is always important in the bigger picture, always.

Another important aspect was finding if all the necessary dependencies are already present, without which the software will fail to run properly. While working on this project, we also had to ensure that the whatever dependencies the YOLO framework had, is also available in our systems. We had made a script to ensure that the dependencies are also met.

As a system administrator I have to do these kinds of works now also. Since within a company many software might have different dependencies it is our responsibility that the latest versions of the dependent software are being used and there should be automation scripts that find if there has been a latest version, and if so download and install it to all the servers.

With great power comes great responsibility:

Since being the “admin” user of the company we always have a huge responsibility.

We have to give the correct users the correct file permissions,

We have to give the correct users the correct process permissions,

We have to ensure that the security requirements are upto a given standard and so on.

So thus being a system administrator is of huge responsibility.

Being a single son, I wasn't the most responsible guy out there. But having gained a lot of experience working along with colleagues I can now consider myself as a man who can shoulder a lot of responsibility. And this has come with a lot of experience.

Adding new users and giving them permissions for necessary field is also necessary for an organisation to function properly.

I remember, when I was in 2nd year of college, I was finding it difficult to enter sudo every time when I had to do operate with system files and processes. I found it very troublesome and I researched a while and I found out that all the core users and groups permissions is present in the sudoers file in /etc. I changed my permanent permissions to (all) privileges so that I can avoid typing the root password again and again. As I expected, soon I ran into trouble. When I was in root directory, I thought I was in another project directory and ran “rm -r * “. I couldn't open any applications after that and had to reinstall the OS. From then on I always ensured that I only had minimal permissions within the system and I type sudo to get system related work done, so that now, the computer asks for a confirmation.

The Responsibilities:

One big responsibility that I have is to provide technical assistance for both hardware and software that I have designed. This can be giving ideas on what a certain API can do, what all parameters does it expect, what does it give as output etc.

I also tell how efficient is the API, in terms of execution time, time complexity, space complexity etc.

Some lighter tasks are, diagnosis and troubleshoot software and hardware problems and help our customers install applications and programs. Sometimes, my job also includes resolving network issues, configuring operating systems, and using remote desktop connections to provide immediate support.

Others rely on me to provide timely and accurate solutions to their technical problems. The System Administrator also has responsibility for allocating resources such as bandwidth usage among different users inside his/her organisation's network.

Troubleshooting deployments is easier when you have a well-rounded admin. Everything makes more sense when you can see all sides. This can be done if you have access to the data.

Another important responsibility is the installation, configuration, and testing new software according to the current requirements.

As a system administrator, I install and configure software and hardware according to the needs of the organisation. Maintain security policies and procedures to protect data, equipment, or network from unauthorised access by hackers as well employees who are not authorised for such information.

I recall an incident that I had when I did a computer vision project in python using openCV. In a previous version, a function for calculating the gradient throughout an image required just 1 parameter to be passed. In the newer version it required another additional parameter. Issues like this can stem from upgrading current libraries and frameworks and as a sysadmin it is my duty to do the needful and help the people using this framework avoid any potential errors.

So, I look for errors that can potentially occur in the installation process that affect the user's perception and capability to use the installed software—for example, installing the software in various ways and on the various types of systems and checking for any errors.

I will configure the systems (which is a software testing technique in which the software application is tested with multiple combinations of software and hardware to evaluate the functional requirements and find out optimal configurations under which the software application works without any defects or flaws.)

The system administrator is responsible for installing and maintaining the company's hardware, software as well other related equipment such as printers or scanners that employees may use in their day-to-day tasks of completing projects assigned to them within an allotted time frame; this includes both physical installations at remote sites when needed plus virtual ones on servers accessed remotely via VPNs, etc., where appropriate).

The most straightforward installation approach is to run an install program, sometimes called *package software*. This packaged software typically uses a setup program that acts as a multi-configuration wrapper and may allow the software to be installed on various machine and/or operating environments.

Every possible configuration should receive an appropriate level of testing to release it to customers with confidence. Finally, I will review application logs and also set up accounts and workstations for both the clients and the company workers.

Blackouts or outages are a major problem in the software industry. It can cost a company a lot of money and potential clients if the products we offer suffer from unforeseen blackouts or outages.

It a part of my job to troubleshoot for potential areas for blackout or outages and ways to minimise the hit taken. So that the product or

process back to its working state without much damage in terms of profit loss to the company.

Troubleshooting is the identification or diagnosis of potential problems in the management flow of a system caused by a failure of some kind. The problem is initially described as malfunction symptoms, and troubleshooting is the process of determining and remedying the causes of these symptoms.

Maintaining disaster recovery procedures (plan) for hardware and resident software and related network-related issues is crucial in this step. So, simply troubleshooting the problem isn't sufficient; it needs to be documented for further preventions.

A troubleshooter could check each component in a system one by one, substituting known-good components for each potentially suspects one. However, this process of "serial substitution" can be considered degenerate when components are substituted without regard to a hypothesis concerning how their failure could result in the symptoms being diagnosed.

Another one of my responsibilities is to ensure the required amount of security is available within both the hardware divisions and the software divisions. The current state of cyber attacks are rapidly growing and software patches have to be made available considering all of the current developments.

Technology continues to be a boon for entrepreneurs, offering increased mobility, productivity, and ROI at a shrinking expense. But as useful as modern innovations such as smartphones, tablet PCs, and cloud computing are to small businesses, they also present growing security concerns.

As a system administrator, I need to reduce exposure to hackers and thieves by limiting our technology infrastructure access. Minimise points of failure by eliminating unnecessary access to hardware and software and restricting individual users' and systems' privileges only to needed equipment and programs.

Most of the hackers just use brute force methods to know the passwords. Since I have access to all equipment, wireless networks, and sensitive data, I should ensure that they are guarded with unique user names and passwords keyed to specific individuals stored in a hashed database so that even if a breach occurs the hackers would not be able to procure the real data.

Minimising the scope of potential damage to our networks by using a unique set of email addresses, logins, servers, and domain names for each user, workgroup, or department is crucial.

By checking on it periodically throughout my shift as needed, so there are no interruptions when people need access most urgently. It helps

me know what needs fixing before anything goes wrong because as we all know, prevention is better than cure.

This includes installing new updates, patches, or fixes when available from our vendors and ensuring all of my systems meet minimum requirements for security standards such as firewall protection against malware attacks on your network devices, which can be very costly if not prevented in time.

Another one of my responsibility is to monitor all systems regularly and make necessary changes wherever necessary. Most of today's businesses contain a significant number of different processes across the various areas and functions in which they operate. As organisations become larger and more diversified, complexities inevitably arise, and more and more processes are needed to be monitored.

As a system administrator, I constantly look for updates or upgrade systems with new releases and models. Monitor the system daily and respond immediately to security or usability concerns. Monitor performance and maintain systems according to requirements.

I must ensure that a system's uptime is high enough for users' needs while staying within budget constraints when doing so. This means monitoring performance metrics such as CPU utilisation or disk space usage on servers to identify bottlenecks and take action before they happen (elevating priority).

And it needs to be done at all the 3 levels, Functional monitoring, Technical business process monitoring, and Process monitoring. It prevents incidents, and when these incidents happen, they are detected faster. It also improves the use of the hardware of the company. I also focus on server monitoring rather than databases, application logs, cloud servers, cloud services, etc.

Server monitoring covers a broad range of systems, including servers hosting applications, Active Directory Domain Controllers, file shares, and email servers. Whether it's a Windows, Linux, or Mac machine, most servers will offer some degree of event logging.

Another one of my responsibilities is the documentation of the different works to do during blackout or outages.

In general, documentation refers to a set of records that exist online, on paper, or hard drives. It is material that provides evidence or information to serve as a record. Documenting the present occurred problems will help a lot in the future if the same problem arises again.

It is like building an internal wiki (information) with technical documentation, manuals, and IT policies. So, that they help a lot if that event occurs in the future. As a system administrator, I have to ensure that the documentation is done properly and systematically.

I have to make sure that the documentation is done properly and secured well. It helps a lot in fixing all of the problems clients may

encounter inside company software or hardware, so it's like building an internal wiki with technical documents and manuals of IT policies that can help if it ever occurs again in the future frame.

Another responsibility of a system administrator is handling backups of valuable data.

Every company must designate a Backup Administrator (System administrator in most cases) to handle the entire backup strategy, including backup solutions and tools; the backup scope, schedule, and infrastructure; the network and storage, recovery time objectives (RTOs), recovery point objectives (RPOs), etc.

He should create a disaster recovery plan by knowing the company's backup and restore policies and how often they're tested or updated for any changes in technology that might affect them (e-mail servers going down).

It is also important which data needs backing up: all of it? Just critical files like financial records? What about offsite backups? How long will we be able to use our current equipment before replacing anything? And when do you think this may happen.

Companies and people are very dependent on data. Whereas a person cannot survive without air, water, and food, businesses cannot survive without data. Forty percent of companies that do not have a proper backup or disaster recovery plans in place do not survive a disaster.

Depending on the needs, he needs to schedule the backup. It can be monthly, weekly, daily, every 12 hours or 10 hours, 5 hours, 2 hours, or 1 hour. This entails performing routine backups, so data can't get lost if there were any kind of disaster like fire, flood theft, earthquake storm power outage, blackouts, brownouts, lightning strikes, terrorist attack hacking virus malware.

Another responsibility of a system administrator is the training of new entrants to the company, getting them used to the existing technologies used within the company.

He trains staff members on how best practices can help them with their daily tasks. It includes training staff members about computer operations, including how best practices can be implemented into daily routines of users' jobs tasks e.g installing new application updates).

I also teach users what's happening when something goes wrong - like if there are errors in an installation or configuration process, it will tell us why things went awry so then troubleshooting becomes easier because you know where your problem lies.

He also provides technical support services if needed during emergencies like power outages affecting servers hosting critical business functions) and coordinates efforts between. It also covers topics such as security awareness in order for employees not only to

know what they should do if a virus is detected but, more importantly, why it matters that this happens.

The goal here isn't just to make sure people are doing things right; we want everyone at our company to use these tools correctly, so there aren't any problems down the line when something goes wrong, or an emergency arises.

What skills do you need to become a system administrator?

The skills required for a system administrator are varied and depend on the type of organisation. They need to know how everything works and what can go wrong with them, as well as be able to identify vulnerabilities in their environment that could lead towards an attack on those same servers or networks, which would then put all data at risk for loss if not protected properly by proper security measures.

Sysadmins need to know how it works and what can go wrong with them, as well as be able to identify vulnerabilities in their environment that could lead towards an attack on those same servers or networks, which would then put all data at risk for loss if not protected properly by proper security measures.

A sysadmin should have a good breadth of knowledge in the different operating system and platforms he or she handles. They should possess knowledge in terms of both the depth of topics and breadth wise.

A system administrator is responsible for the upkeep of a computer network, including installing and maintaining software. They are also in charge of troubleshooting any issues that arise on their networks or computers from time to time or course-correcting them.

If need be, ensure they have adequate security measures installed at all times so no one can hack into it without permission (which would result in serious potential damages).

Being familiarised with different operating systems like Windows Mac Linux will help you better understand how these work internally, hence making your job easier when dealing with such problems related to OS.

A sysadmin should also perform the installation and setting up of various softwares and APIs which would be used by the staff of the entire company. Since the entire company depends on this, this part of the work is of very high importance. It's not just the installation but also the upgradation and also the regular updating which should be taken care by the system administrator.

The users will request to install updates, fix the bugs and monitor the transition to a new software for the compatibility issues.

The following tasks should be of top priority:

- Automating mass installations of operating systems
- Maintaining custom OS configurations for the local environment
- Keeping systems and applications patched and up to date
- Managing add-on software packages

Another responsibility of a sysadmin would be net-booting PCs. It is the process of booting a system from a network rather than a local drive.

When installation of the software has to be done in many PC's then running the standard procedure will become very time consuming. Because, the bootable device has to be taken to each individual machines and then the whole process of the installation has to be repeated over and over again. This can be error prone too.

Thus there is an option to install the OS over a network. The most common methods use DHCP and TFTP to boot the system sans physical media, then retrieve the installation files from a network server through HTTP, NFS, or FTP. Network installations are appropriate for sites with more than ten or so systems.

PXE is the network interface system from intel that allows network installation of OS. PXE stands for Pre boot execution environment.

A system administrator should also have advanced knowledge about system vulnerabilities and security issues.

Having advanced knowledge of security issues will be a tremendous plus point as the job requires one to have an in-depth understanding and expertise about all aspects related to IT systems, including hardware configuration management; software installation procedures like patching or upgrading operating environments (OS), etc.

Vulnerabilities are identified through various methods. This could include reviewing vendor advisories when new patches become available, scanning network traffic looking at data packets sent between machines using tools called protocol analysers, or running automated scripts explicitly designed to detect.

Having advanced knowledge of security issues will help in understanding the causes quickly. Security issues can be identified quickly. This will help understand causes and take appropriate actions to mitigate risks associated with vulnerabilities, which is a major responsibility for system administrators.

This also helps them save time when it comes down to identifying new security threats or attacks that might have been missed earlier by other means, like scanning network traffic looking at data packets sent between machines using tools called protocol analysers, etc.

A sysadmin should also have in-depth knowledge in BASH, or Bourne Again Shell. This would help in writing scripts which can help him or her in saving valuable time when performing shell instructions back to back.

Bash is a common interface to Linux systems, BSD (Berkeley Software Distribution), MacOS, and even Windows (under the right conditions). You learn the importance of syntax, so we can quickly adapt to systems like Cisco routers' command line or Microsoft's PowerShell, and

eventually, we can even learn more powerful languages like Python or Go. And we also begin to think procedurally so you can analyse complex problems and break them down into individual components, which is key because that's how systems, like the internet, or an organisation's intranet, or a web server, or a backup solution, are designed.

Another skill that a sysadmin should have is the knowledge of DHCP or Dynamic Host Configuration Protocol. This would help him or her understand how the hosts have to be configured in a given network.

The Dynamic Host Configuration Protocol (DHCP) is the system that assigns IP addresses to devices on a network. At home, the modem or router your ISP (internet service provider) supports probably has an embedded DHCP server in it, so it's likely out of our scope. Logging into your home router to adjust the IP address range or set up a static address for some of your network devices, is kind of the tip of the iceberg. Devices on a network are assigned the equivalent of phone numbers in the form of IP addresses, and computers communicate with one another by broadcasting messages addressed to a specific IP address. Message headers are read by routers along the path, each of which works to direct the message to the next most logical router along the path toward its ultimate goal.

Another responsibility a sysadmin should have is the maintenance of databases. He or she should know basics of structured query language and now No SQL databases are also widely used, in which documents are in a JSON like format.

Over 100,000 systems were hacked into the last two years because their database had been left completely exposed on the public internet.

The irony is that these databases weren't vulnerable because of a security issue; their security document was over 60 pages long. How many people got to reading and implementing proper security practices.

Implementing all the necessary security required for a particular database company is needed. As a system administrator, I need to do that well in advance before anyone hacks into our company's database. Data needs to be processed in a way that ensures nothing is lost.

Even in a non-relational database or in a distributed cluster, there must be ACID guarantees both across the database and throughout the cluster. The challenge for fully transactional databases is performance. ACID costs time. A good database is one that can give you both superior performance and transactional guarantees.

A sysadmin should also have experience with dealing with networks, like LAN, WAN etc.

The risk of attacks occurring on LANs, including small- and medium-sized businesses (SMB), is growing. In fact, two-thirds reported a cyber attack in 2018. The average cost for the attack was \$3 million due to costs sustained system outages and disruption (40 percent of servers were down for 8+ hours when an attack occurred).

Making it crucial for a sysadmin to know about the LAN. There are a number of reasons for this great increase in attacks, but the main one is that the nature of a wireless network is to provide easy access to end-users, but this ease of access creates a more open attack surface.

Unlike a wired network that requires an attacker to access part of the network physically, a wireless network only requires that the attacker is in close proximity (and even this is relative). Also, there is a general lack of knowledge and awareness of wireless networks.

A sysadmin should also have some experience in patch management.

Patching is similar to testing. It is the process by which businesses/IT procure, test, and install patches (changes in code or data) intended to upgrade, optimize, or secure existing software, computers, servers, and technology systems to maintain operational efficacy or mitigate security vulnerabilities.

Patches are designed to repair a vulnerability or flaw identified after an application or software is released. Unpatched software can make the device a vulnerable target of exploits. Software patches are a critical component of IT operations and security.

A solid patch management process is an essential requirement for any size business. Unfortunately, most organisations do not have the expertise, software, or mature processes/systems in place to effectively secure their infrastructure. Then comes the system administrators.

Conclusion:

I have tried to give all kinds of work that a system administrator does. In reality there are a lot more work that they do, and every organisation places their system administrators at the highest standard, because they know that behind all their success there is a piece of code that a sysadmin has written.

Sysadmins also are responsible for forming recommendations on the organisation's IT policies. They also advice Senior Managers on the best practises that can be followed by their teams so that there is an efficient flow of work throughout the team.

By 2028, the Bureau of Labor Statistics predicts that the employment of systems administrators will rise 5 percent. Systems administrators will see the fastest growth of 24 percent in the computer systems design industry. Hiring in the health care IT industry will also skyrocket by 18 percent this decade. Demand for systems administrators will keep growing as new technologies are adopted. Organisations need administrators to invest in newer, faster IT networks, especially cloud services.

So if you are an aspiring to become a system administrator, go for it, because - "Sky's the limit".

