

Data Center Manager

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Introduction

It is my assumption that management of a data center would be a rewarding long-term career in the information technology field. The high growth of data centers across the globe is undisputed. The ever growing demand for IT infrastructure virtualization, cloud services and Internet of Things (IoT) applications is causing a rapid increase in the number of data centers spread all over the world (Rossi, Luca and Roberto). However, the characteristics of a data center that driving my interest are less well known. Each of the characteristics below make a career in the data center industry intriguing.

- Requires strong leaders
- Require teams of people
- Long term demand and growth
- High end hardware and software
- Must be a reliable ecosystem
- Cyber and physical security mix
- Housed in an advanced facility

Prior to deciding a career path, most people consider the following. Job security, compensation, culture, enjoyability, and interesting. The order of that list may not be consistent from person to person, but important areas to consider. Although I don't have any experience working in a data center, through research I believe managing a data center has a high potential to meet those expectations.

Job Posting Research

The most well communicated description of a data center manager would clearly be the various job descriptions available throughout the internet. Although there are thousands, I will use one in order to establish what I found to be average requirements and ensure a data center manager is indeed an information technology position.

SAIC is a premier technology integrator solving our nation's most complex modernization and readiness challenges across the defense, space, federal civilian, and intelligence markets (SAIC). They have hundreds of positions posted in a variety of information technology disciplines.

The desired qualifications section lists "Advanced ITIL certifications" (SAIC HR). Information Technology Infrastructure Library is an acronym used to describe a framework for creating an information technology ecosystem. The ITIL 4 is the most current version of the certification pursued by many IT professionals (AXELOS Global Best Practice).

The primary role of a data center manager is to first and foremost be a leader. The first two characteristics listed in the introduction of this paper are, require strong leadership and require teams of people. In the past, I haven't found jobs to be interesting or engaging when not working as a member or leader of a team. There are several bullets in the SAIC job description focused around managing

people. An excellent example being, “Leads cross-functional teams to troubleshoot and resolve complex problems that may be across multiple systems and subsystems requiring in depth knowledge of the highly sophisticated Data Center environment and IT infrastructure” (SAIC HR).

In addition to the human aspect of the position, the advanced hardware and software involved in data center operations creates high demand. The job posting includes Architect, implement, and maintain hardware and configurations as a bullet point. When combined with the secure nature of data centers, the IT professional’s toolbox must be extensive.

Advanced Technology Management

A data center manager must be familiar with some of the most cutting edge and interesting technologies. On the hardware side for example, Seagate Technologies LLC. is a leading provider of storage hardware. Just that one company alone has 4 lines of hard drives which each have one to two product lines (Seagate Technologies LLC). The variation in specifications of each of those lines must be understood by the data center manager. Especially when considering the bullet from this paper’s introduction making the claim that data centers must have extremely high reliability.

Along with the hardware, the ecosystem the software that operates a data center is constantly evolving. A data center manager must keep up with the decision making required to implement the software stack. Red Hat is a version of Linux that is considered to be enterprise grade. Red Hat Enterprise Linux for Virtual Datacenters allows for the deployment of unlimited guests in dense virtualized environments on supported hypervisors, like Red Hat Virtualization, VMware, and Microsoft HyperV (Red Hat). Red Hat is just one of the wide varieties of interesting software’s that a data center manager must understand and if mastered will support a long career in an age of automation.

Cyber and Physical Security Mix

An under emphasized characteristic of the modern data center is the ability to secure data physically and through software. Data center managers must be extremely trustworthy. Cyber security is often handled at the software level with a defined plan and may not be handled locally within the data center. However, physical security is local by definition.

Physical security is so important that the U.S. Government passed a bill in 2013 called Federal Data Center Consolidation Act of 2013 (Federal Data Center Consolidation Act of 2013). The bill states, “Requires an agency or department that is required to implement a data center consolidation plan under this Act and migrate to cloud computing to do so in a manner consistent with federal guidelines on cloud computing security, including: (1) applicable provisions in the Federal Risk and Authorization Management Program (FedRAMP), and (2) guidance published by the National Institute of Standards and Technology (NIST).”

In my professional life a company I worked for in the past had an off-site data center. That data center could only be accessed by personnel on a previously established list and required biometrics at the point of entry.

Surprises learned during research

Two roles of a data center manager that never crossed my mind are the contract and project management roles. The SAIC job description contains an roles and responsibilities bullet suggesting the data center manager is responsible for master service agreements (SAIC HR). Ensuring the data center upholds its portion of a contract and the client receives the appropriate service level is another task that will be difficult to automate away.

The project management aspect is less surprising. I had not thought about the data center manager in terms of PMP type qualifications. However, the PMP and other Project Management Institute certifications are very common in the IT profession.

Conclusion

The data center manager position covers a wide range of responsibilities. Future growth of consolidating computing power and renting that computing power out seems to add longevity to the position. As far as an IT position goes, the data center manager checks many boxes.

References

- AXELOS Global Best Practice. *ITIL Certifications*. 2020. HTML. 21 February 2020.
- Federal Data Center Consolidation Act of 2013. No. S.1611. 113th US Congress (2013-2014). 30 October 2013.
- Red Hat. *Red Hat Store*. 2020. HTML. 21 February 2020. <<https://www.redhat.com/en/store/red-hat-enterprise-linux-virtual-datacenters>>.
- Rossi, Maurizio, et al. "Non-invasive cyber-physical system for data center management." *Sustainable Computing: Informatics and Systems* 16 (2017): 66-75. EBSCOhost.
- SAIC. *ABOUT SAIC*. 2020. HTML. 21 February 2020.
- SAIC HR. *Data Center Operations Manager*. Rockville, 13 February 2020. Job Search. <<https://jobs.saic.com/jobs/5046868-data-center-operations-manager>>.
- Seagate Technologies LLC. *Internal Hard Drives*. 2020. HTML. 21 February 2020. <<https://www.seagate.com/internal-hard-drives/hdd/>>.