The cloud is gaining more and more importance. Almost every IT decision maker and IT professionals have to deal with cloud technology. What do the job descriptions around the cloud look like?

Career Prospects in the Data Cloud: What actually does a cloud administrator do?

Empowering technical competence.

Specialists with knowledge of the cloud are in high demand. As the data cloud continues to gain importance for companies and the public sector, IT decision-makers and IT professionals must work out how to keep pace with its dynamic development. The same applies to IT specialists, who want to prepare for the demands of today and tomorrow. To facilitate a practical qualification, TÜV Rheinland, Germany's largest private education provider, has developed the first manufacturer-dependent cloud competence model for IT decision-makers and IT professionals: In a three-part series, Peter Holländer and Mandy Tiedemann of TÜV Rheinland Academy describe the spectrum of functions and the professional prospects for cloud specialists such as cloud administrator, cloud developer and cloud architect.

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"The cloud administrator is an essential key competence in the company. The focus is on the administrative area of the systems." Peter Holländer, TÜV Rheinland
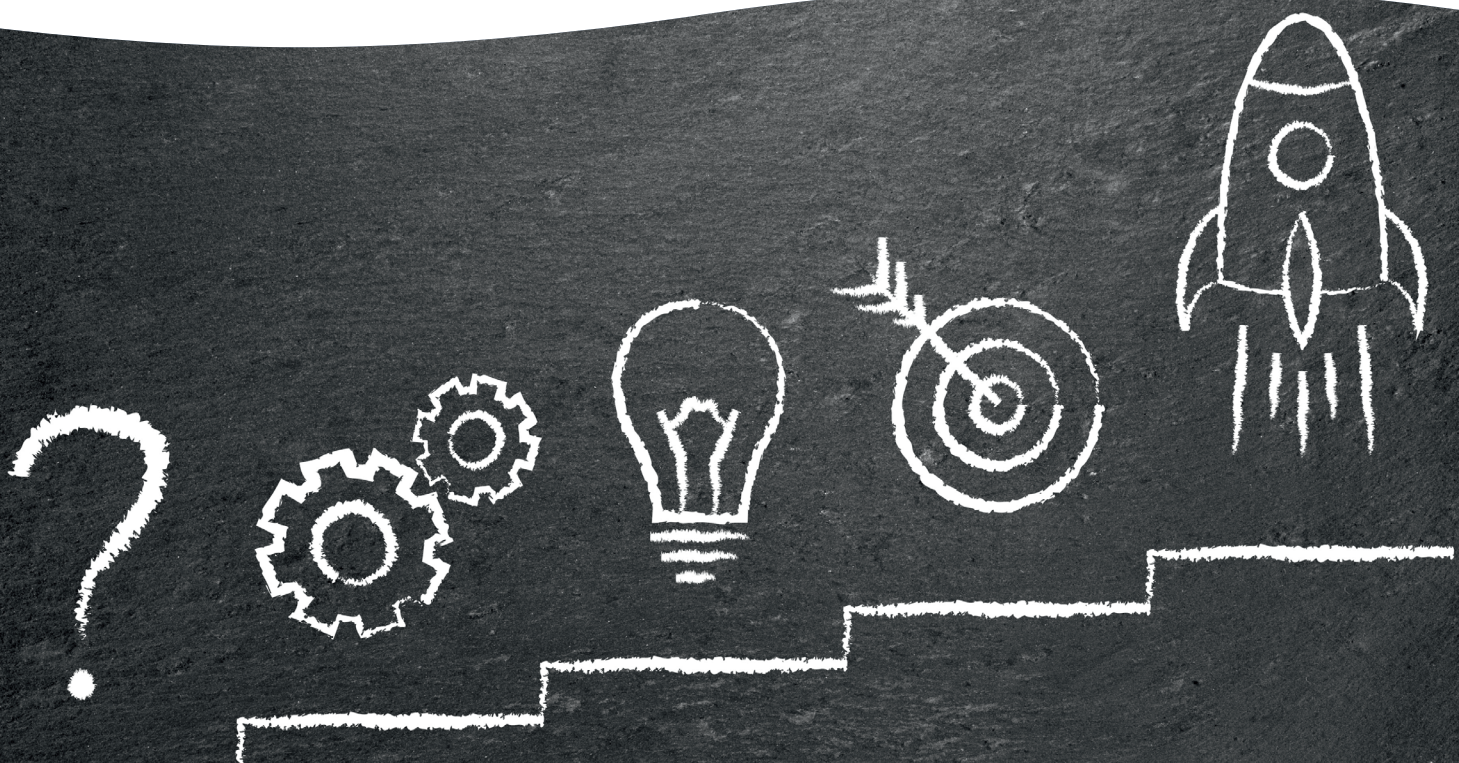
As part of digital transformation, the cloud is a fundamental technology long used as standard by the largest companies. Most often it is top management who associate the cloud cost advantages with improvements in results and potential for innovation. The technical fields also are clear drivers for its use. Cost reduction, scalability, high availability, an accelerated product development, standardization or centralization: The list of arguments for using the cloud is long and even skeptics are now coming to recognize them.

Nevertheless, many German companies are plagued now as before with security concerns at varying levels by the different internal stakeholder groups. While technical functions and stakeholders from business processes see first and foremost accelerated dynamics for their business, the functions of IT security and data protection view the topic rather critically based on their experience: Including the lack of companies with qualifications or specialists who really know the topic inside and out. In view of the nearly empty specialist market, companies must think more intensively about further putting internal employees through qualification to become cloud specialists. A management function, which must be controlled top-down, because frequently the matter entails no less than the future of the company.

The path to the data cloud is always a change process because the cloud means giving up sovereignty and control of its own assets. The internal IT department adopts the vital function of the control room because the technical requirements for using the cloud must be properly managed. To do so, IT know-how is needed, potentially including defining new processes, competences and interfaces, but as well understanding the technology and the processes of the cloud provider. In the future, it is now even more important than ever that internal IT specialists engage in dialog with the experts in the technical fields and develop an understanding of the opportunities and challenges on all sides that come with collaborating within the cloud.

What differentiates cloud specialists? Dr. Constantin Söldner, CEO of Söldner Consult GmbH and Cloud Training Specialist put it this way: "The cloud removes silo thinking, away from specialists for networking or storage, to generalists, who find their way in many different areas. Cloud experts must therefore take on a big picture view of the specific requirements of their applications in the cloud." In light of the dynamic threat level and more and more restrictive regulatory requirements, awareness for sensitive topics such as cyber-security and data protection become ever more relevant in the opinion of cloud training experts. "Topics such as Docker and DevOps require new strategies and more interdisciplinary thinking. The minimum requirements demanded include developer skills such as command of script languages," Dr. Söldner knows from his many years of training and consulting business.

Because companies must respond more and more quickly and agile in the framework of digital transformation, cloud specialists must not only know their way around automation tools. They are also cost controllers: "While the expense in the cloud is charged on-demand, they must keep the ongoing costs in mind, to be able to regularly check the status of existing architecture," says Dr. Söldner. A further function that secures them an important role in the company and promises exciting and dynamic duties in a future-oriented environment.

To facilitate a practical qualification for companies as well as IT professionals, TÜV Rheinland developed the manufacturer-neutral cloud competence model. It covers the three most important key qualifications required by companies and markets today: **The cloud administrator, cloud developer and the cloud architect.** Advanced training, incidentally in which management are also able to build up know-how, confers more security for decisions during the transition from on-premises infrastructures to the cloud.

The cloud administrator has an indispensable key competence in the company, but what does one actually do exactly? According to the competence model that TÜV Rheinland had developed, the focus here lies more in the administrative area of the system. They know the options that cloud structures offer to companies and are experts in managing, maintaining and patching in the cloud.

The primary role of cloud administrator encompasses the installation, configuration and administration of manufacturer technologies, consisting of on-premises infrastructure, private, hybrid and public cloud solutions. Fundamental basic knowledge for security and user administration are among the core competences required. Essential administration duties and responsibilities concern the administration of the active directory, hosted exchange as well as the third-party provider email archiving. Professional cloud administrators should be knowledgeable about data cloud products from the cloud provider and manufacturers such as Microsoft, Oracle, VMware and Amazon AWS.

As part of the TÜV Rheinland Academy competence model, cloud admins learn how to plan a cloud from the ground up, procure it with optimum timing, monitoring it and to safely analyze all systems. They learn how on-premises infrastructure is installed and private, hybrid and public cloud solutions are established. They are finally able to administer multiple servers in the cloud, know the differences between the cloud technologies and know what is suitable for which needs in companies. Furthermore, they understand how the cloud interacts with the existing IT infrastructure of the company in its own data processing center. They can install Office 365 and independently administer and ultimately also not only operate and monitor a private cloud but also independently configure and procure it. At the end of the qualification as offered by TÜV Rheinland, they are able to administer several thousand servers in the cloud and know

helpful strategies for secure and efficient operation, including incident response management or the integration of cloud strategies with identity and access management.

Conclusion: The cloud administrator is the "temple guardian" of the corporate cloud architecture and at the same time the business enabler, because he or she knows what the company requires for resources on the business side, is familiar with the cloud service provider's products and knows which product is best suited to cover the technological requirements of the company. The qualification for cloud administrator includes theory and application examples and, depending on the previous knowledge and desired depth, lasts between 10 and 25 days, so long as manufacturer-specific competences shall also be developed as part of conti-

nuing education. It has three stages in which the modules build on each other. The prerequisites for certification as a cloud administrator by TÜV Rheinland are knowledge and experience in customary IT infrastructures.
Currently a cloud administrator earns between 2600 to 5400 EUR monthly depending on qualifications, location, company size and level of personal responsibility – and therefore is lower than that of a cloud developer. To learn more about the functions of the cloud developer and how this role is different from the cloud admin, go to the next section- 2. Series:
What actually does a ...cloud developer do? For further information on cloud qualification at TÜV Rheinland Academy visit http://www.tuv.com/cloud-profi

Peter Holländer,
TÜV Rheinland Academy

ABOUT TÜV RHEINLAND

A world without technical specialists is unthinkable. And the economy is changing very dynamically. Traditional jobs give way, and new ones are emerging. The need for technical know-how and well-trained specialists is higher than ever and will continue to increase worldwide. The TÜV Rheinland Academy is the leading competence partner for excellent technical qualification. With innovative learning solutions based on technical know-how and decades of experience. For the success of people and companies.
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