**Requirements: System Expert**

The student can

• manage the system

• develop and maintain the system.

The student demonstrates his skills on the screen in system administration, development and maintenance tasks in an information and communication technology environment.

**Display environment and work tasks**

**(Student fills in):**

E.g.

The number of employees in the company is approximately 250. The size of the information management is 15 people. The IT environment includes e.g., AD, Office 365, data center and local network. In total, there are more than 50 servers in the environment, 90% of which are virtual servers. The virtualization solution is VMware, and the physical hardware is Rack servers and disk systems with a SAN network. As a cloud, we use Azure for some of the services.

My tasks include the installation and maintenance of the server and network infrastructure of the data centre, the maintenance of virtual servers and cloud services (O365/Azure) and, if necessary, I help the helpdesk team in resolving tickets.

1. **The student manages the system.**

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| **Criteria for acceptable performance** | **Degree completion**  **(Student fills in)** | **Supplementary documents**  **(The student fills in)** | **Evaluators and date** | **Evaluation reasons of the working life representative** | **Evaluation justifications of the educational institution's representative** |
| Works in accordance with the service production process | I know the basic IT service production processes of my workplace, e.g., ITIL and I acted accordingly.  **My note:** | IT service process diagram X  **My note:** |  | The contractor has shown that he has mastered the most important ICT service processes of the workplace and understands their importance for business and knows how to take them into account in his work. |  |
| Knows the layer structure of the data network to solve data and  network problems | I know and can use and make limitations in fault diagnosis of the network topology of my operating environment and the most important devices and services, considering the principles of the model.  **My note:** | Service/device diagram of the network management model.  **My note:** |  | The contractor knows the topology, technical structure and most important services, network connections and TCPIP configurations of his work environment. He knows how to use his network skills when doing fault diagnostics related to e.g., network settings and physical, virtual or wireless network functionality. |  |
| Manages virtualized platforms | I have installed and maintained Hyper-V and VMware as well as Azure-based virtual servers and services, using the services' own management tools, system center, Intune, O365 and Azure management websites and, if necessary, e.g., PowerShell.  **My note:** | **My note:** |  | The contractor has installed and maintained Hyper-V and VMware and Azure-based virtual servers and services, using the services' own management tools. |  |
| Supports and guides system users. | In my duties, I have also worked in user support, supporting and guiding customers in the use of workstations, mobile and peripheral devices and applications.  **My note:** | Commissioning of workstation and remote connection instruction X.  **My note:** |  | The contractor has worked in helpdesk and system support tasks and provided necessary support and guidance to workstation users and other IT support personnel. |  |
| Resolves system-level service requests. | My responsibility also includes the maintenance and management of the domain environment's basic services and M365 and Azure, as well as solving support tasks.  **My note:** | Example ticket x.  **My note:** |  | The contractor's duties include maintaining and supporting the servers and services of On-premises and Azure cloud services, as well as solving service requests or redirecting them if necessary. |  |
| Messages to system users in exceptional situations | If necessary, i.e., in the most significant disruptions affecting the production environment, maintenance work and matters related to information security, I also inform customers well in advance if necessary and possible. Information is provided via Intra's/Entra’s webpages, e-mail and social media tools.  **My note:** | Trouble bulletin Z.  **My note:** |  | If necessary, the contractor will notify our personnel about maintenance/service interruptions in our production environment and other disruptions related to the use of systems. |  |
| Uses cloud environment management tools. | I have installed and maintained Azure-based virtual servers and services using the services' own management tools, Windows Admin Center, Intune, O365 and Azure management websites and, if necessary, e.g., PowerShell.  **My note:** |  |  | The contractor has installed and maintained Azure-based virtual servers and services using Azure management websites and, if necessary, e.g., PowerShell. He has also used Windows Admin Center, Intune and M365 dashboard. |  |

1. **The student develops and maintains the system.**

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| **Criteria for acceptable performance** | **Degree completion**  **(Student fills in)** | **Supplementary documents**  **(The student fills in)** | | **Evaluators and date** | | **Evaluation reasons of the working life representative** | | **Evaluation justifications of the educational institution's representative** |
| Schedules and plans system maintenance | System updates and maintenance work are scheduled and partially automated, and workstation updates are handled centrally, mostly based on standardized schedules.  **My note:** | Server maintenance, on-call and backup plan.  **My note:** | |  | | The contractor has scheduled and planned system updates and maintenance work, and workstation updates are also handled centrally based on standardized schedules. | |  |
| Manages the system and prepares and implements system-level changes | I have installed physical and virtual servers considering the hardware requirements. My duties include servicing, monitoring, maintaining and updating server and workstation hardware and peripherals.  I have installed Windows Server 2019 server operating systems with basic services and standard Windows 10 workstations.  **My note:** |  | |  | | The contractor has installed virtual servers with the necessary services, considering the hardware requirements, and monitors, maintains and updates the systems if necessary.  He has installed e.g., Windows Server 2019 server operating systems with basic domain services. | |  |
| Monitor server activity and predict problem situations using monitoring tools | I maintain AD's/AZURE AD’s structure, groups/users with the help of ADUC, Azure management, Admin center and Intune and, if necessary, using PowerShell.  I monitor servers and the most critical server applications with local operating system and server manufacturer tools, System Center and Azure management monitoring tools, and proactively strive to implement maintenance and device/resource management.  **My note:** |  | |  | | The contractor monitors the systems using Admin Center and Intune and, if necessary, using PowerShell.  He monitors servers and the most critical server applications with local operating system and server manufacturer tools, System Center, as well as monitoring tools for cloud Azure management and tries to anticipate possible failure situations. | |  |
| Automate system-level tasks | I manually and automatically update servers and workstations and, if necessary, test before.  **My note:** | **My note:** | |  | | The contractor has partially updated servers and workstations and e.g., the backup is scheduled. He does part of the maintenance using PowerShell and response files/templates. | |  |
| Implements system backup and recovery policies. | I know the security procedures and applications of my workplace and can restore systems/data if necessary.  **My note:** | Veeam backup enabled.  **My note:** | |  | | The contractor knows workplace data management and can back up and restore data from different services and systems if necessary. | |  |
| Ensures system functionality and information security. | Fault diagnosis and management of the IT side is part of my daily job description. In the maintenance of On-premises/Cloud environments, I have considered information security, e.g., GPOs, hardening and firewall/anti-malware. |  |  | | Fault diagnosis and management of the IT side is part of the performer's daily job description. He has considered information security in the maintenance of On-premises/Cloud environments, e.g., GPOs, hardening and firewall/anti-malware. | |  | |
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| **Assessment Summary** | Evaluate your own skills, work and performance in relation to your degree achievements in this part of the degree.  For example, I think I can work, and I know enough things about working in server and workstation support. I have worked as a systems expert for many years, and I feel that I have no problems acquiring, installing and maintaining servers and standardized workstation environments in on-premises and cloud environments. | |  |
| Performer's self-assessment  (Student fills in) |  | |  |
| **SUMMARY OF COMPLETION OF THE EXAMINATION PART** (Evaluators fill in). Transferred to the individual evaluation summary in Sopro.  **My note:** | |  |  |