**ASSIGNMENT**

**LAB 7**

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| Instructions |  |
| 1.0 Install Hyper-V by **Powershell**  **NOTE:** To install hyper-v in PowerShell you will need to go to the CLI server directory folder and add the following command  **CPUID.V0="FALSE"**  Change **guestos ="WinHyperV'**  2.0 Enable Remote Access[ Other users with RDP can connect to your server]  3.0 Install on a Windows 10 [separate machine] Windows Admin center [ require internet]  4. Connect to your CLI [core server]  5. Create a new Folder called ISO into C:\  6. Add a win10.ISO into the ISO folder  7. With WAD create a Win10 virtual machine  8. With 1-2 GB of RAM [note you might need to add 6 -8 GB to your CLI server]  9. With 30 GB of Storage  10. RDP into the Server to ensure it function   1. PS of Hyper is installed by powershell     2.0 PS of WAD is running    3.0 PS of ISO file is uploaded into**C:\ ISO**    **4.**PS of a new WIn10 VM is created by powershell     1. PS that you can remote into the newly created VM     **Theoretical part**  **1.0 What is the purpose of virtualization [150-200 words]**  Virtualization offers numerous benefits that revolutionize the way we utilize computer resources. Firstly, it reduces cost through server consolidation, enabling multiple virtual machines to run on a single physical server. This improves efficiency by optimizing the use of hardware resources. Secondly, virtualization enhances disaster recovery capabilities as virtual machines can be easily backed up, migrated, or restored, minimizing downtime and ensuring business continuity. Additionally, it improves scalability by rapidly providing virtual machines to meet changing demands. Moreover, virtualization enhances resource utilization by allowing for the dynamic allocation of resources based on workload requirements. This flexibility ensures efficient resource allocation and maximizes performance. Lastly, virtualization simplifies the management and administration of IT infrastructure by centralizing control and allowing for easier deployment, monitoring, and maintenance of virtual machines.  **2.0 Difference between Type 1 and Type 2 virtualization [100-150 Words]**  Type 1 and Type 2 virtualization differ in several key aspects. Type 1, or bare metal or native virtualization, runs directly on the host machine's hardware without an underlying operating system. This allows for better performance, efficiency, and security. In contrast, Type 2 virtualization, also called hosted virtualization, requires an existing operating system. This introduces some overhead and can impact performance. Additionally, Type 1 virtualization is generally used in enterprise environments where security and isolation are crucial, while Type 2 virtualization is more commonly used by individual users or small businesses for desktop virtualization. It is essential to consider these differences when deciding which type of virtualization is most suitable for your specific requirements.  **3.0 What is the purpose of hypervisor [100-150 Words]**  One of the critical benefits of hypervisor technology is its ability to enable server consolidation. Using a hypervisor, multiple virtual machines can run on a single physical server, reducing hardware costs and improving resource utilization. Additionally, hypervisors provide improved flexibility and scalability, allowing for easy allocation and reallocation of computing resources as needed. Another advantage is the isolation between virtual machines, which increases security and reduces the risk of one virtual machine impacting others. Furthermore, hypervisor technology enables organizations to streamline their IT infrastructure, reducing complexity and simplifying management tasks. Overall, the purpose of hypervisors is to optimize server performance, increase efficiency, and enhance the overall functionality and management of virtualized environments.  **4. What is the purpose of HAL [100-150 Words]**  HAL, an abbreviation for Highly Advanced Logic, represents a breakthrough in recent technological advancements. This exceptional technology, with its primary function to serve a specific purpose, brilliantly combines sophisticated algorithms and artificial intelligence. This combination is designed to improve decision-making processes across a spectrum of environments. The fundamental objective that drives HAL is to interpret massive amounts of data and, based on this analysis, provide valuable insights or solutions. These properties assist various businesses and organizations in enhancing operational efficiency, bolstering problem-solving skills, and boosting overall performance. Additionally, the function of HAL stretches beyond current scenarios as it seeks to overcome increasingly complex challenges in the future. This opens fresh avenues for growth, offering the potential for innovation and progress across numerous sectors. | |