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Assignment# 4

The article "Virtualization vs. Containerization, a Comparative Approach for Application Deployment in the Computing Continuum Focused on the Edge" by Sturley et al. talks about two different technologies used when running applications: virtualization and containerization. The authors explain that both methods are common in modern computing, especially when dealing with cloud and edge systems. They point out that edge computing is becoming more important because many devices now collect and process data closer to where it is used. This change has led to the need for faster and more efficient ways to deploy applications.

In the article, virtualization is described as a method where entire operating systems are copied into separate virtual machines. This gives each application its own environment, but it also uses a lot of memory and processing power. On the other hand, containerization uses shared resources and only packages the application and its basic dependencies. Because of this, containers are smaller, faster, and easier to move around compared to virtual machines. The authors show that containers are generally better when working on edge devices that have limited resources.

The researchers tested both virtualization and containerization in real environments to see how they perform. They focused on speed, memory usage, and how easy it is to manage each method. Their results show that containers usually work better in edge computing because they start faster and take up less space. However, virtualization is still useful in cases where strong security and isolation are more important. The article suggests that choosing between the two depends on the system’s needs and limitations.

In conclusion, the authors highlight that both virtualization and containerization play important roles in modern computing, but containers are becoming more popular for edge computing. The main reason is their efficiency and ability to run smoothly on smaller devices. The article helped me understand that when creating or deploying an application, it is important to consider the environment it will run in. This helps developers choose the best method to balance speed, security, and system resources.