Topic 3 Discussion 1

Your IT manager is determined to use Kubernetes within the Windows Server environment. Your manager asks you to configure this structure; explain your approach to enable Kubernetes and maintain server hardening. Compare your response to those of your peers and determine if the hardening approaches will be effective against cyberattacks. Justify your ideas with specific examples.

Hello Class,

First, we need to ensure that our Windows Server environment meets the minimum requirements for running Kubernetes. This includes having a sufficient amount of RAM, CPU, and storage space(Kubernetes, 2024). We will also need to install the necessary software, such as Docker and Kubectl.

Next, we will need to configure our Kubernetes cluster. This involves creating a cluster of nodes, which are the individual servers that will run our Kubernetes applications. We also need to configure the control plane, which is responsible for managing the cluster.

Once our Kubernetes cluster is up and running, we can start deploying your applications. We can do this by creating Kubernetes deployments, which are the units of deployment for our applications.

**Maintaining Server Hardening**

Using strong passwords and multi-factor authentication - This will help to protect the Kubernetes cluster from unauthorized access(Kubernetes Hardening Guide, 2022).

Restricting access to the Kubernetes cluster - Only allow authorized users to access the Kubernetes cluster(University of Connecticut, 2018).

Keeping the Kubernetes cluster up to date - Regularly update the Kubernetes cluster with the latest security patches.

Monitoring your Kubernetes cluster - Monitor the Kubernetes cluster for any suspicious activity.

**Comparison of Peer Responses**

Looking through my peers responses so far, we all seem to have similar ideas. Looking at hardening the server to help with protecting while using the Kubernetes environment. One example of hardening to prevent cyberattacks would be utilizing network segmentation. Isolating the Kubernetes cluster from other networks can prevent attackers from gaining access to sensitive data(Thevarmannil, 2024).

References:

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