**Overview of Azure Kubernetes Service (AKS) Cluster Creation**

When setting up an AKS cluster, Azure automates several processes to ensure a seamless

deployment. Below is a breakdown of the steps and configurations involved:

* **Default AKS Cluster Setup**

1. **Resource Group Management**: Azure creates or uses a resource group to organize all resources associated with the AKS cluster.
2. **Virtual Network Configuration**:
   * A new virtual network (VNet) is created by default.
   * Subnets are automatically configured within this VNet to host cluster resources.
3. **Networking Setup**:
   * Azure sets up pod networking using either **Azure CNI** or **Kubenet**.
   * Integrations with Azure Load Balancers and ingress controllers are configured for traffic management.
4. **Node Pool Creation**:
   * A default node pool is provisioned using virtual machines (VMs) managed through a **VM Scale Set**.
5. **Kubernetes Control Plane**: Azure deploys and manages the control plane to handle the cluster's core operations.
6. **RBAC Configuration**: Role-Based Access Control (RBAC) is enabled to secure access to Kubernetes resources.
7. **Monitoring and Insights**:
   * Azure Monitor and Container Insights are enabled for cluster performance tracking and diagnostics.

* **Deploying AKS on an Existing Virtual Network**

If you choose to deploy the AKS cluster on your own virtual network, additional steps are

required:

1. **Create a Resource Group**: Set up a resource group to manage the virtual network and its components.
2. **Set Up the Virtual Network and Subnet**:
   * Create a virtual network.
   * Define a subnet within the network to host the cluster resources.
3. **Cluster Deployment**:
   * Create the AKS cluster in the same resource group.
   * Assign the custom subnet to the default node pool.
4. **Additional Resource Group**: AKS automatically creates a secondary resource group to manage supplementary cluster resources, such as load balancers.