

**CONTAINERIZATION TASK**

**[CSC 2101](https://elearning.utamu.ac.ug/course/view.php?id=1980" \o "J25.CSC 2101 - Operating Systems/CS 201 Operating Systems) OPERATING SYSTEMS**

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**Explain the concept of containerization.**

**Containerization** isa software deployment process that bundles an application’s code with all the files and libraries it needs to run on any infrastructure. It is a lightweight virtualization technique that allows applications to run in isolated environments called containers.

**What are the key use cases of containerization**

The following are some use cases of containerization.

**Cloud migration**

Cloud migration, or the lift-and-shift approach, is a software strategy that involves encapsulating legacy applications in containers and deploying them in a cloud computing environment. Organizations can modernize their applications without rewriting the entire software code.

### **Adoption of micro-service architecture**

Organizations seeking to build cloud applications with microservices require containerization technology. The microservice architecture is a software development approach that uses multiple, interdependent software components to deliver a functional application. Each microservice has a unique and specific function. A modern cloud application consists of multiple microservices. For example, a video streaming application might have microservices for data processing, user tracking, billing, and personalization. Containerization provides the software tool to pack microservices as deployable programs on different platforms.

### **IoT devices**

Internet of Things (IoT) devices contain limited computing resources, making manual software updating a complex process. Containerization allows developers to deploy and update applications across IoT devices easily.