AWS Cloud Instance Stores

Topics : [AWS](#)
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In Amazon Web Services (AWS), instance stores are ephemeral, temporary storage volumes that are directly attached to an EC2 instance. Unlike Amazon EBS (Elastic Block Store), which provides persistent block storage that survives the life of an instance, instance store volumes are temporary and are cleared upon instance termination or stoppage. Here are key points about AWS instance stores:

Characteristics of Instance Stores:

1. **Ephemeral Storage:**

   - **Definition:** Instance stores are temporary storage volumes that are physically attached to the host computer of an EC2 instance.
   - **Lifecycle:** The data on an instance store volume persists only for the life of the associated EC2 instance. If the instance is terminated or stopped, the data is lost.

2. **Local Volumes:**

   - **Attachment:** Instance stores are physically attached to the underlying hardware of the host machine.
   - **High Performance:** Instance stores are often faster than EBS volumes because they are directly connected to the instance.

3. **Instance Types with Instance Stores:**

   - **Availability:** Not all EC2 instance types come with instance store volumes. Some instance types have instance stores, while others rely entirely on EBS volumes for storage.
   - **Types:** Instance types that provide instance stores are labeled with the term "instance storage" in their descriptions.

Use Cases and Considerations:

1. **Temporary Storage:**

   - **Use Cases:** Instance stores are suitable for temporary data that can be regenerated or recreated. Examples include cache, scratch data, and temporary files.

2. **Performance Considerations:**

- **High I/O:** Instance stores are often recommended for workloads that require high I/O performance due to their direct attachment to the underlying hardware.

3. **Data Durability:**

- **Caution:** Since instance store data is ephemeral, it is not suitable for data that needs to persist beyond the life of the instance.
- **Risk of Data Loss:** Data stored on instance stores is at risk of loss in case of instance termination, failure, or stoppage.

4. **Data Migration:**

- **Considerations:** If data on instance stores needs to be preserved, it must be migrated to persistent storage (e.g., Amazon EBS) before stopping or terminating the instance.

Instance Store Types by Instance Type:

1. **NVMe Instance Store:**

- **Definition:** Some instance types come with NVMe-based instance stores, which use the Non-Volatile Memory Express (NVMe) protocol for high-speed storage communication.

2. **SSD and HDD Instance Stores:**

- **Definition:** Other instance types may have SSD (Solid State Drive) or HDD (Hard Disk Drive) instance stores.

How to Identify Instance Stores:

1. **AWS Console:**

- **Instance Type Information:** When selecting an instance type in the AWS Management Console, instance stores are often labeled as "instance storage" in the instance details.

2. **API and AWS CLI:**

- **Instance Type Descriptions:** The AWS CLI and API provide detailed information about instance types, including whether they come with instance stores.

Example AWS CLI Command:

```
aws ec2 describe-instance-types --instance-types <instance-type>
```