**Lab 1: AWS Essentials & Environment Setup**

*RQF Level 5*

**Objective:**

The goal of this lab is to introduce learners to the fundamental components of Amazon Web Services (AWS) and guide them through the process of setting up a basic AWS environment. Participants will become familiar with the AWS Management Console, AWS Command Line Interface (CLI), and Software Development Kits (SDKs). Additionally, they will configure Identity and Access Management (IAM) users and explore core AWS services.

**Prerequisites:**

* SysOps Advancement Track

**Lab Steps:**

**Step 1: Accessing the AWS Management Console**

- Open a web browser and navigate to the AWS Management Console.

- Log in using the AWS account credentials.

**Step 2: Exploring the AWS Management Console**

- Provide an overview of the AWS Management Console layout.

- Navigate through different services and discuss their functionalities.

**Step 3: Installing AWS CLI**

- Instruct participants to install AWS CLI on their local machine.

```

$ curl "https://d1vvhvl2y92vvt.cloudfront.net/awscli-exe-linux-x86\_64.zip" -o "awscliv2.zip"

$ unzip awscliv2.zip

$ sudo ./aws/install

```

- Verify the installation using `$ aws --version`.

**Step 4: Configuring AWS CLI**

- Guide learners to configure AWS CLI with their AWS credentials.

```

$ aws configure

```

- Input the AWS Access Key ID, Secret Access Key, region, and default output format.

**Step 5: Exploring AWS CLI**

- Introduce basic AWS CLI commands.

- `$ aws ec2 describe-instances`: Lists EC2 instances.

- `$ aws s3 ls`: Lists S3 buckets.

- Encourage participants to explore other services.

**Step 6: Introduction to SDKs**

- Briefly discuss AWS SDKs for different programming languages.

- Provided link of SDK documentation.

<https://aws.amazon.com/what-is/sdk/#:~:text=does%20AWS%20provide%3F-,What%20is%20an%20SDK%3F,operating%20system%2C%20or%20programming%20language>.

**Step 7: IAM User Configuration**

- In the AWS Management Console, navigate to IAM.

- Create a new IAM user with programmatic access.

- Attach policies (e.g., AmazonS3FullAccess) to the user.

**Step 8: Testing IAM User Credentials**

- Use AWS CLI to test the IAM user's credentials.

```

$ aws s3 ls

```

- Ensure the user can perform actions based on attached policies.

**Step 9: Exploring Core Services**

- Introduce core AWS services such as EC2, S3, IAM, and RDS.

- Provide brief explanations of each service.

*Conclusion:*

*By completing this lab, learners have gained hands-on experience with the AWS Management Console, CLI, and IAM. They are now equipped to explore and utilize various AWS services, laying the foundation for more advanced AWS concepts and projects.*