Experiment No. 3

Aim: To study and Implement Platform as a Service using AWS Elastic Beanstalk.

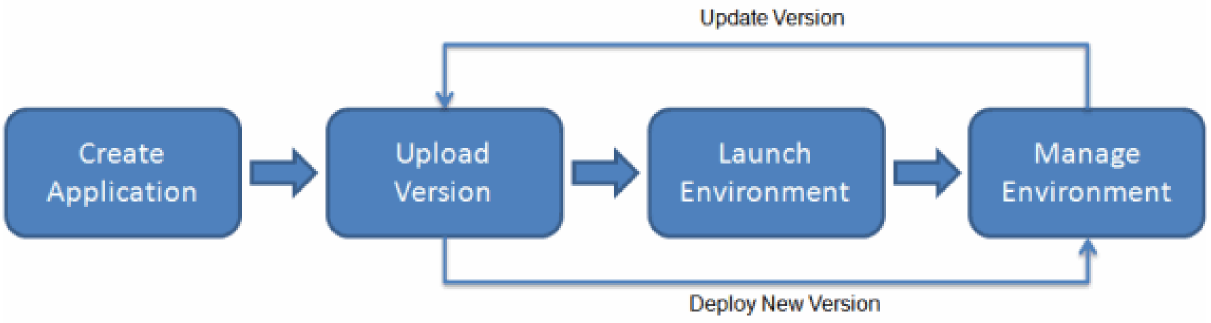
Objective: Understand the concept of PaaS and implement using Own Cloud which gives universal access to files through a web interface.

Theory:

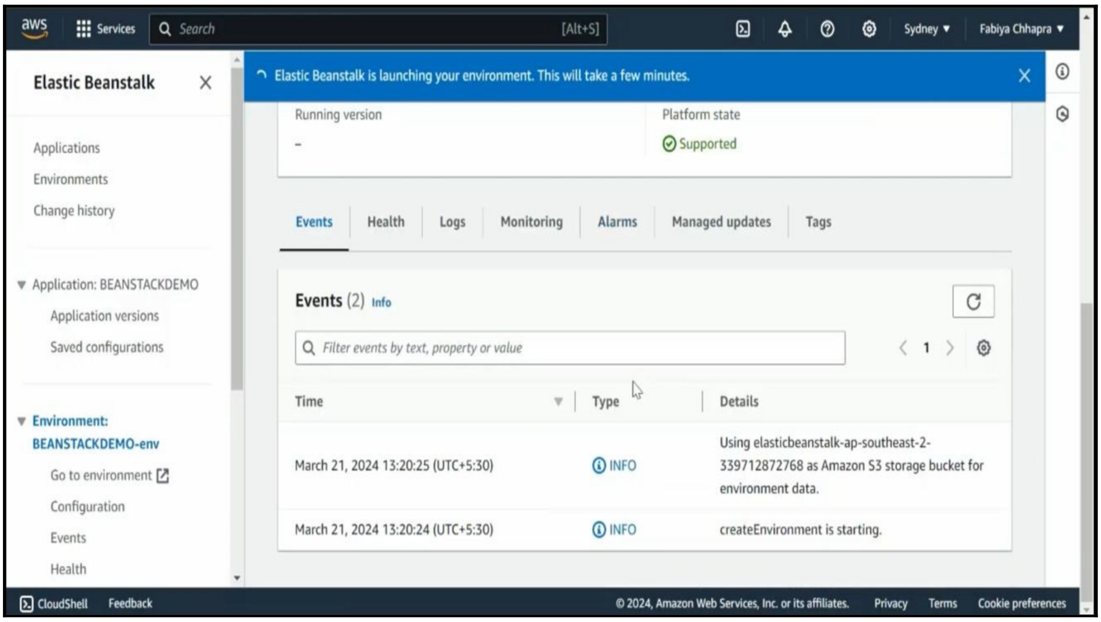
Platform as a Service (PaaS) is a complete cloud environment that includes everything developers need to build, run, and manage applications—from servers and operating systems to all the networking, storage, middleware, tools, and more.

PaaS is a platform for programming developers and brings benefits such as ease of use without buying and maintaining web development. PaaS has a similarity with SaaS except that SaaS delivers software over the web.

- *Advantages of PaaS:*
  - Scalability: Scales to a wide range of users from hundreds to thousands.
  - Prebuilt Business Plans: PaaS vendors provide pre-defined business functionality for users to directly start their project.
  - Low Cost: Development via PaaS requires a computer & a good internet connection and less investment in hardware & software.
  - Instant Community: PaaS providers facilitate user providing online communities where a developer can get new ideas & share their experience & advice.
  - Simple & easy to use.
- *Disadvantages of PaaS are as follows:*
  - Vendor Lock-in: Migration from one PaaS vendor's application to another PaaS vendor can cause problems.
  - Data Security: Security of the application completely depends on the PaaS vendor, which may be a concern for some organizations.
  - Mix-up Complexity: Some of the applications developed may be local while others are from the cloud, which may increase the complexity of managing them.



Output:



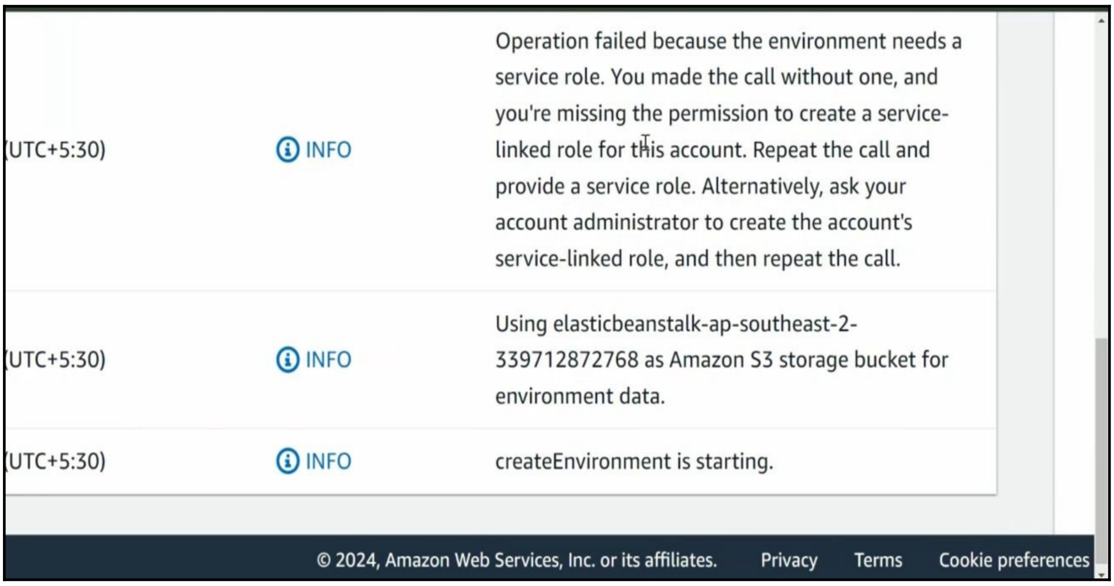
Elastic Beanstalk is launching your environment. This will take a few minutes.

Running version: -

Platform state: Supported

Events (2) Info

Time	Type	Details
March 21, 2024 13:20:25 (UTC+5:30)	INFO	Using elasticbeanstalk-ap-southeast-2-339712872768 as Amazon S3 storage bucket for environment data.
March 21, 2024 13:20:24 (UTC+5:30)	INFO	createEnvironment is starting.



(UTC+5:30)	INFO	Operation failed because the environment needs a service role. You made the call without one, and you're missing the permission to create a service-linked role for this account. Repeat the call and provide a service role. Alternatively, ask your account administrator to create the account's service-linked role, and then repeat the call.
(UTC+5:30)	INFO	Using elasticbeanstalk-ap-southeast-2-339712872768 as Amazon S3 storage bucket for environment data.
(UTC+5:30)	INFO	createEnvironment is starting.

Conclusion:

Comment on the features provided by Elastic Beanstalk

- **Simplified Deployment:** Upload your code and Elastic Beanstalk handles provisioning resources, load balancing, auto-scaling, and monitoring.
- **Broad Language Support:** Works with popular languages like Java, Python, Ruby,etc.
- **Monitoring and Logging:** Provides a unified interface to monitor application health, view key metrics, and access logs. Integrates with CloudWatch for deeper insights.
- **Security Features:** Integrates with IAM for access control and offers built-in security features like SSL/TLS encryption.
- **Multiple Environment Management:** Manage development, staging, and production environments easily within Elastic Beanstalk.