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Providing Virtual Servers of Amazon EC2 through Parallels

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Abstract— Amazon Elastic Compute Cloud is a web service that provides virtual servers in the cloud. This package allows resellers to offer Amazon EC2 instances through parallel PA server. The end users can select from available EC2 offerings, collectively called as Amazon Machine Images (AMIs). The end user can turn on and off these services and monitor information related to their usage. The end users will be charged as per the usage statistics.
Keywords-PA (Parallel Automation), APS (Application Packaging Standard)

I. INTRODUCTION

Cloud computing is a vast and emerging technology hitting the market. Many types of services are provided by different service providers. Vendors prepare the product and providers will take care of its marketing and selling responsibility. Different service providers use different techniques to reach the customers and to make their services user friendly. Parallel Automation is one of the service providers in which the products from different vendors can be bundled and made as package and that can be accessed by the customers easily by logging into the PA. Automated billing system is available which makes the provider's task easier.

A. Why Amazon EC2 is good as a service provider?

Amazon EC2 is a simple web service interface that allows the user to access the virtual server in pay as you go model. It provides with complete control of computing resources that allows the user run on Amazon's computing environment. The service provider Amazon EC2 reduces the time required to boot a new server instances and obtain it very quickly. It allows the users to scale the capacity both up and down according to the requirements change. Amazon EC2 becomes very convenient by allowing the user to pay only for the capacity that the user actually use[6].
Tools to build a failure free application is also provided by Amazon EC2

II. RELATED WORK

"Cloud Computing", is nothing but the term used to deliver the IT resources and applications on-demand through internet with pay as you go model. To access the servers, application services and the databases through internet we follow pay as you go model in cloud computing. Cloud Computing providers such as Amazon Web Services own and maintain the hardware required for these application services which is connected to network.
Amazon Elastic Compute Cloud (Amazon EC2) is a service provided by amazon for accessing the resizable computing resources as the user need. Amazon EC2 charges based on the actual usage of the user and you don't have to pay even if you have not used the services.Amazon EC2 provides wide range of selection in the instance types based on the requirement for example :T1.micro,T2.micro,S3 etc.
Parallel Automation(PA) is the only platform to provide cloud service delivery to the largest IT distributors and hosters ,which will also take a responsibility of automating the services.It allows you to bundle different services from different vendors under the standard called as APS packaging and user can access these as a package

III. SYSTEM DESIGN

A. Introduction

System design is the evaluation of alternative solutions and the specification of a detailed computer-based solution. System design is the process of specifying in detail how the many component parts of the information system should be physically implemented.

B. Flowchart

The Fig 1 shows the flow of the data to different functional module used in the application and depicting the input and output of different modules.
User has to register then he can login into the parallel panel and access all the available modules.

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Once the user purchase the subscription by placing the order in PA, the customer control panel login will be provided for each customer. To create an instance the user has to create the keypair first. If the API call is successful then the keypair is created and sent to the customer. Then the user can create an instance.

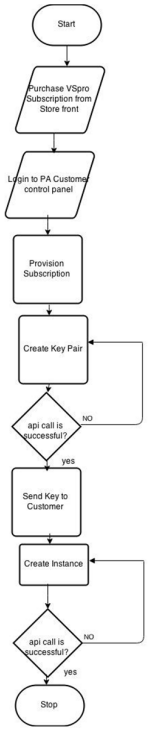

Fig 1 Flowchart

IV. PROPOSED FRAMEWORK

The APS package and supporting scripts will be built using PHP and it's supporting Aspects in accordance with the APS standard. This will mean that the environment that you wish to install the package in must have PHP installed/enabled and all other standard APS requirements

The APS package will be making web service calls to Amazon API, for managing end user accounts, creating auto-login URL'S to Amazon control panel etc. Amazon API should be complete for these calls prior to the start of development and fully documented for the team to review. Any changes to the API or lack of proper documentation for the API calls that will be used in this project may cause a delay in deliver and grounds for re-estimation.

A. *Modules*

Services provided by the amazon EC2 is provided through PA server which is achieved by using the APIs of AWS and the APS package to implement. Implementation of the T1.micro is done and successfully provided that service through PA.

1) Resellers will configure the services(AMIs) that they are going to offer
2) End users sign up for AWS accounts either through package with reseller.
3) End user can select from the AMIs, what they want to provision (example: Linux Ubuntu with Magento)
4) End user can turn on and off these AMIs and monitor information related to their usage.
5) Resellers must be able to charge the end users as per usage statistics
6) Amazon will charge resellers and is out of the scope of the APS package.
7) Interface Will display an auto-login URL to Amazon control panel

B. System Features

Features	Descriptions	Priority
Global- Settings	This include the followings 1. Global variables for storing partner API credentials	1
Root(main) - Service	This include the followings 1. Manage custome Account	2
Sub Service	This include the followings 1. Manage Key pair 2. Mange Instance.	3

In global settings all the API credentials which are required to access the Amazon console is given. That is Access key and Secret key has to be entered.
In the main service customer account is managed .If the Email address has to be edited then it is done here in this service tab.It has got 2 sub services one is Manage keypair which is used to configure the keypair and the second one is manage instance that is used to create ,start and stop the instances.

V. RESULTS AND ANALYSIS

Subscription will take the following inputs (shown in table below) from the customers. These values are passed to the Amazon API along with customer account details (provided by Parallels) to create new subscriptions.

A. Amazon service subscription(main service)

Use Case / Stimulus / Trigger / Input	**Business Rule (Product Response)**
api_accesskey [Textbox]	This field is used to enter api user-name • Type: String • Required: yes • Validation: no
api_password [textbox]	This field is used to enter api password • Type: String • Required: yes

B. Manage KeyPair (sub service)

Below values are passed to the Amazon API to install AMIs. Any response that is sent from the Amazon API will be displayed to the user.

Use Case / Stimulus / Trigger / Input	Business Rule (Product Response)
Keypair name	This field is used to enter name for key • Type: String • Required: yes Validation: no
Click on create Button	Clicking on OK button will createkey pair. We will store the key in PA for future use.
Click on CANCEL Button	Clicking on CANCEL button will take back to application screen.

C. Manage Instance (sub service)

Below values are passed to the Amazon API to install AMIs. Any response that is sent from the Amazon API will be displayed to the user.

Use Case / Stimulus / Trigger / Input	Business Rule (Product Response)
instance_type [Dropdown]	We will be populating server types mentioned by admin in Global settings as drop-down. User can select any server type.
amazon_image [Dropdown]	We will be populating all the available images in amazon as drop-down for customer to select.
Click on OK Button	Clicking on OK button will install selected image on selected server
Click on CANCEL Button	Clicking on CANCEL button will take back to application screen.
Click on remove	clicking on REMOVE button the selected instance will be removed

D. Customer control panel view screenshots

Fig 2 is the application home page where customers can use their application by subscribing it

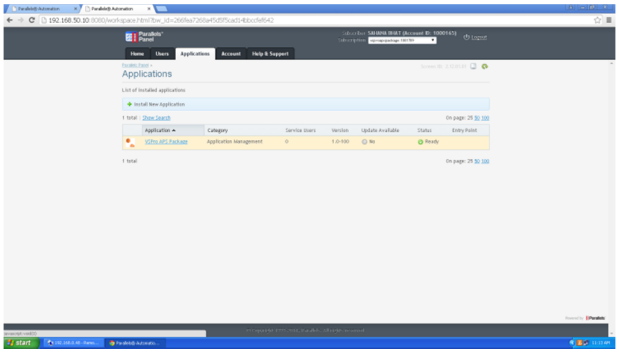

Fig 2 CCP Application home Page

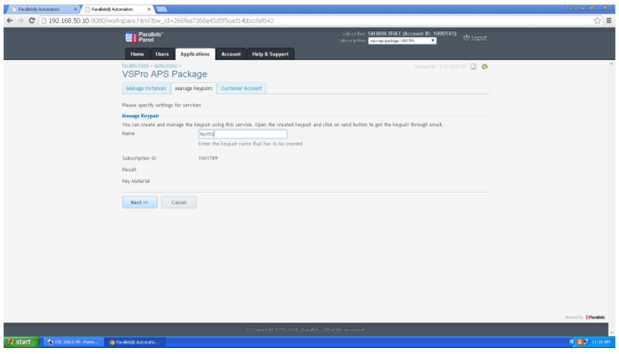

Fig 3 creation of keypair

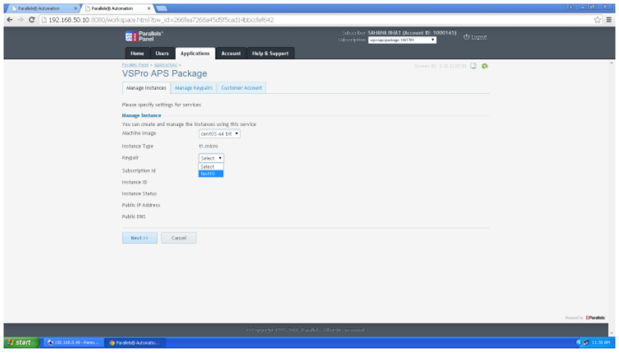

Fig 4 add new instance page

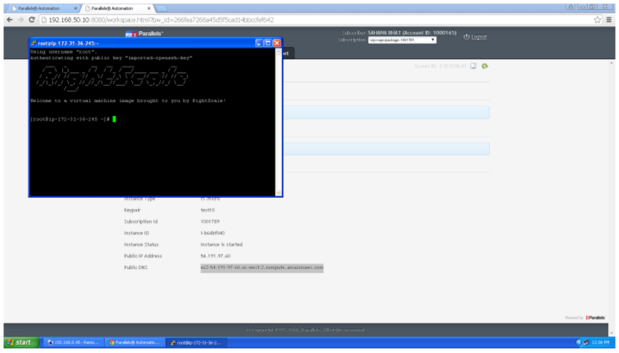

Fig 5 shows the virtual machine of the instance

VI. CONCLUSION

Deploying this EC2 instances in the parallels automation makes the parallels customers to access the amazon services in parallels itself by directly creating the interface and connecting those using the APIs in the APS packages.

Different services provided by different providers also can be bundled for the user's convenience. The PA provider don't have to setup the costly servers to provide the IaaS if the requests from the customers are less and can go for this AWS instance deployment to take the burden away of setting up, deploying and maintaining the servers in the lab. This package allows the user to access the services provided only by the amazon Ec2 service provider and some more services provided by different service providers like IBM can also be deployed in future.

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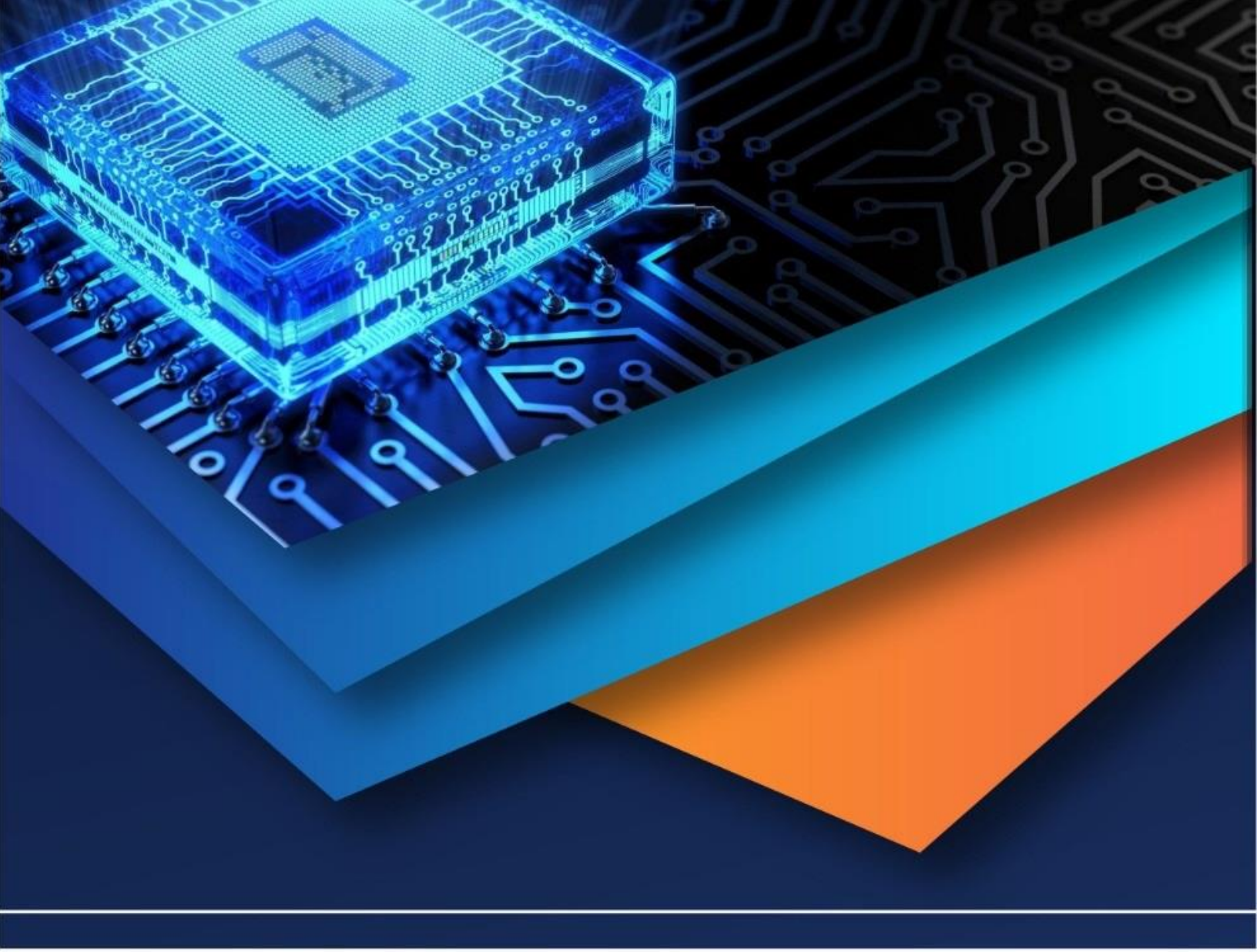

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