Amazon Web Services & Docker

Primo Docker Meetup - Milano 11 Dicembre 2014

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Topics

- Amazon Web Services
  - Deployment and management
- Elastic Beanstalk
  - Elastic Beanstalk & Docker
  - Demo
- Elastic Container Services (ECS)

Amazon Web Services

*Delivery of IT resources and applications by **API** with pay-as-you-go pricing.*

AWS Deployment & Management

All AWS Services

Compute

Storage & Content Delivery

Database

Networking

Administration & Security

Analytics

Application Services

Deployment & Management >

Mobile Services

Enterprise Applications

Elastic Beanstalk

AWS Elastic Beanstalk is an application container for deploying and managing applications.

CloudFormation

AWS CloudFormation lets you create and update a collection of related AWS resources in a predictable fashion.

OpsWorks

AWS OpsWorks is a DevOps platform for managing applications of any scale or complexity on the AWS cloud.

CodeDeploy

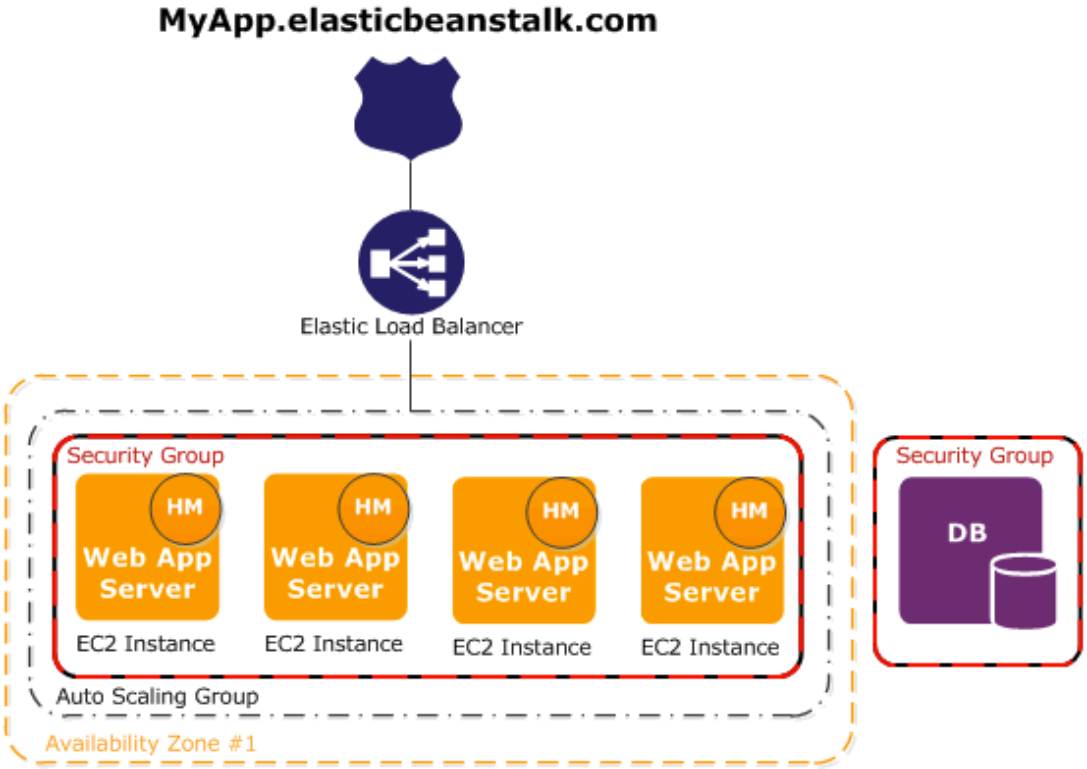
new

AWS CodeDeploy lets you fully automate code deployments.

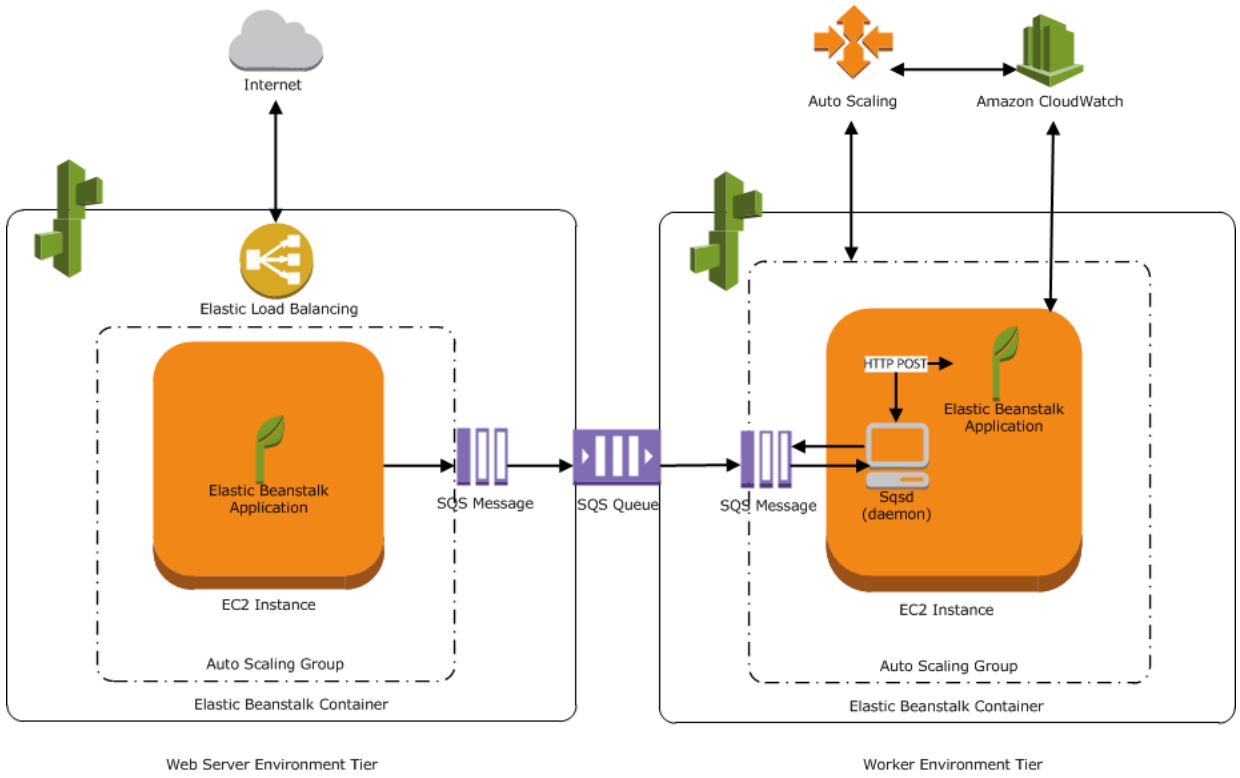
Elastic Beanstalk

- Possiamo fare il deploy delle applicazioni in maniera rapida e semplice senza preoccuparci dell'infrastruttura.
  - Riduce le complessità lasciando comunque libertà di azione (posso sempre accedere alle risorse dalla console)
- Environment
  - Deafult Tier (Web Server e Workers) or custom
- Platform
  - Java, .Net, PHP, etc.
- Provisioning, load balancing, scaling and monitoring fully managed by AWS Elastic Beanstalk

Environments: Web Server Tiers



Environments: Workers Tiers



Platforms

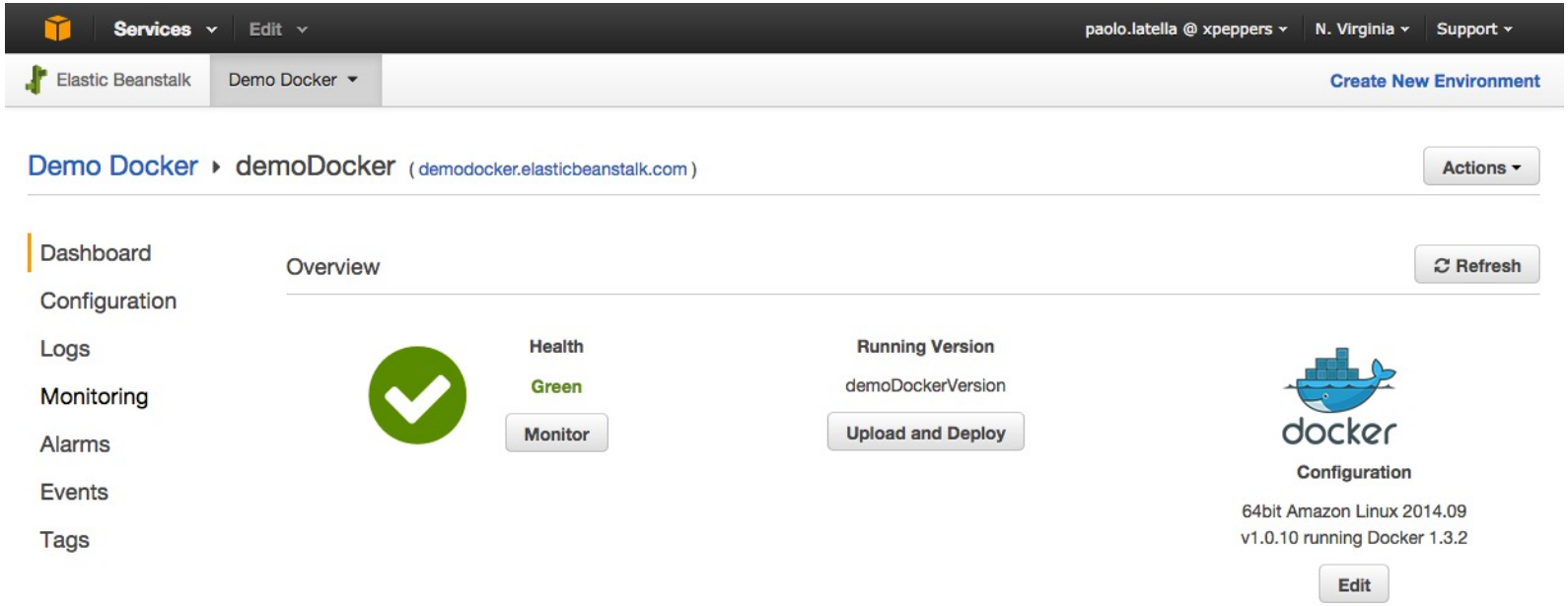
- The software stak on EC2 instances depend of selected platform
  - **Docker container**
  - Java (Java + Tomcat + Apache)
  - .Net (IIS)
  - Node.JS (Node.JS + Nginx o Apache)
  - PHP (PHP + Apache)
  - Python (Python +Apache + mod_wsgi)
  - Ruby (Ruby + Nginx + Passenger/Puma)

Elastic Beanstalk & Docker: demo

Elastic Beanstalk & Docker: dockerfile

```
FROM ubuntu:14.04
# Ubuntu and nodeJS for ElasticBeanstalk
#
# VERSION               0.0.1

FROM ubuntu:14.04
MAINTAINER Paolo Latella <paolo.latella@xpeppers.com>

#Port mapping
EXPOSE 8080

#Update and install nodejs
RUN apt-get update && apt-get install -y nodejs

#Copy files for nodejs application
RUN mkdir /var/www/
ADD myws.js /var/www/

#Start application
CMD /usr/bin/nodejs /var/www/myws.js
```

Elastic Beanstalk & Docker: console



Elastic Container Services

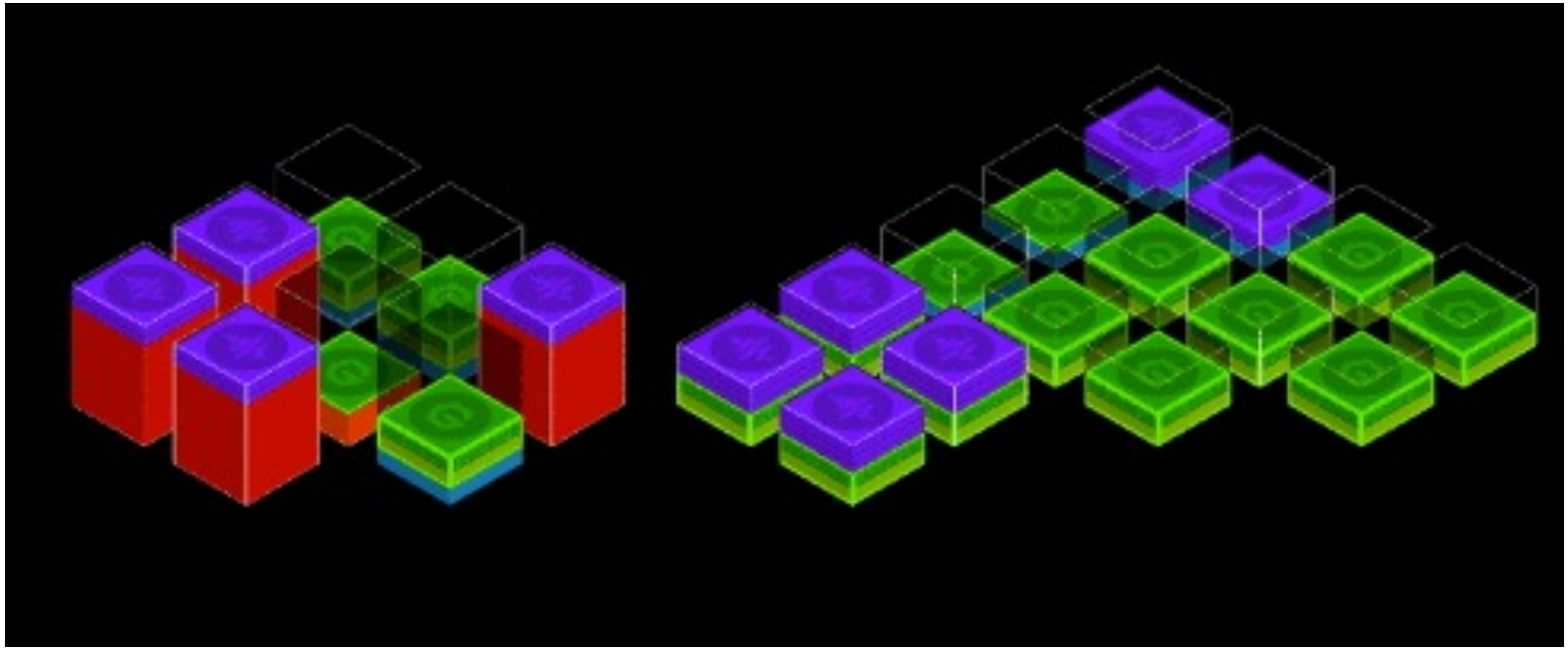
- Cluster of container on EC2 instances
  - Configuration management and Monitoring fully managed by ECS
- Docker compliant
  - EC2 instance has a Docker agent and run one or more containers
- Task e Scheduler
  - Ttask (Json file) define how the container work on task, the computing resources (CPU and RAM) and the dependency
  - The scheduler launch the on Cluster with goal to optimize the resources of instances.

Elastic Container Services: task

task.json

```
{
    "family": "DemoDockerMeetup-Milano",
    "version": "1.0",
    "containers": [
        {
            "name": "webserver",
            "image": "nginx: latest",
            "cpu": 512,
            "memory": 128,
            "portmapping": [
                {
                    "containerport": 9443,
                    "hostport": 443
                }
            ],
            "links": [
                "rails",
                "dbms"
            ]
        },
        {
            "name": "rails"
            ...
            ...
        },
        {
            "name": "dbms",
            "image": "mysql: latest",
            "cpu": 512,
            "memory": 128,
            "portmapping": [
                {
                    "containerport": 3306,
                    "hostport": 3306
                }
            ]
        }
    ]
}
```

Elastic Container Services



Riferimenti

Application Management
http://aws.amazon.com/application-management/

Elastic Beanstalk
http://aws.amazon.com/documentation/elastic-beanstalk/

Amazon ECS
http://aws.amazon.com/ecs/

Deploy docker on AWS
http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create_deploy_docker.html

Grazie!