**Lab Documents:**

* [https://github.com/paulnguyen/cmpe281/blob/master/aws/2-aws-as-elb-classic.md (Links to an external site.)](https://github.com/paulnguyen/cmpe281/blob/master/aws/2-aws-as-elb-classic.md)
* [http://docs.aws.amazon.com/autoscaling/latest/userguide/as-register-lbs-with-asg.html (Links to an external site.)](http://docs.aws.amazon.com/autoscaling/latest/userguide/as-register-lbs-with-asg.html)
* [http://docs.aws.amazon.com/autoscaling/latest/userguide/autoscaling-load-balancer.html (Links to an external site.)](http://docs.aws.amazon.com/autoscaling/latest/userguide/autoscaling-load-balancer.html)
* [http://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-create-https-ssl-load-balancer.html (Links to an external site.)](http://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-create-https-ssl-load-balancer.html)
* [http://docs.aws.amazon.com/autoscaling/latest/userguide/as-add-availability-zone.html#as-add-az-console (Links to an external site.)](http://docs.aws.amazon.com/autoscaling/latest/userguide/as-add-availability-zone.html#as-add-az-console)

**PART 1 - CREATE LAUNCH CONFIG AND AUTOSCALE GROUP**

# Tutorial: Set Up a Scaled and Load-Balanced Application  
  
    DOC:  http://docs.aws.amazon.com/autoscaling/latest/userguide/as-register-lbs-with-asg.html  
      
## Create or Select a Launch Configuration  
  
    Select My AMI:                     aws-php-ami  
    Instance Type:                     T2-Micro (Free Tier)  
    Launch Configuration Name:  aws-php-autoscale  
    Enable Monitoring:                Enable CloudWatch detailed monitoring  
    Select Public IP:                    Assign a public IP address to every instance.  
    Security Group:                     cmpe281-dmz (SG)  
    Select Key Pair:                     cmpe281-us-west-1  
    Select VPC:                           cmpe281 (VPC) & Public Subnet  
      
  
## Create an Auto Scaling Group  
  
    Create Auto Scale Group:        aws-php-autoscale  
    Group Size (Starts with):        1  
    Network:                               cmpe281 (VPC) | Public Subnet  
      
    Use scaling policies to adjust the capacity of this group  
  
    Scale between:                    1 - 3 instances  
    Increase when:                    AVG CPU >= 40% (for at lease 1 minute)  
    Decrease when:                   AVG CPU <= 15% (for at lease 1 minute)

**PART 2 - CREATE CLASSIC LOAD BALANCER**

# Tutorial: Set Up a Scaled and Load-Balanced Application  
  
    DOC:  http://docs.aws.amazon.com/autoscaling/latest/userguide/as-register-lbs-with-asg.html  
      
## Create or Select a Launch Configuration  
  
    Select My AMI:                     aws-php-ami  
    Instance Type:                     T2-Micro (Free Tier)  
    Launch Configuration Name:        aws-php-autoscale  
    Enable Monitoring:                Enable CloudWatch detailed monitoring  
    Select Public IP:                Assign a public IP address to every instance.  
    Security Group:                     cmpe281-dmz (SG)  
    Select Key Pair:                    cmpe281-us-west-1  
    Select VPC:                        cmpe281 (VPC) & Public Subnet  
      
  
## Create an Auto Scaling Group  
  
    Create Auto Scale Group:        aws-php-autoscale  
    Group Size (Starts with):        1  
    Network:                            cmpe281 (VPC) | Public Subnet  
      
    Use scaling policies to adjust the capacity of this group  
  
    Scale between:                    1 - 3 instances  
    Increase when:                    AVG CPU >= 40% (for at lease 1 minute)  
    Decrease when:                    AVG CPU <= 15% (for at lease 1 minute)  
  
  
## Using a Load Balancer With an Auto Scaling Group      
    DOC: http://docs.aws.amazon.com/autoscaling/latest/userguide/autoscaling-load-balancer.html  
      
      
## Create ELB (Classic Load Balancer)  
  
        Name:         aws-php-elb-classic   
        VPC:         cmpe281 (select public subnet)  
        SG:            cmpe281-dmz  
        Port:         80  
        Health Check: Default path, Unhealthy Checks: 2, Healthy Checks: 4  
        Add Instances: Select running instance (from aws-php-autoscale)          
        Edit Auto Scale Group:    aws-php-autoscale  
        Select ELB: aws-php-elb-classic  
      
      
## Expanding Your Scaled and Load-Balanced Application to an Additional Availability Zone  
  
    DOC:  http://docs.aws.amazon.com/autoscaling/latest/userguide/as-add-availability-zone.html#as-add-az-console  
      
    Select Auto Scale Group:        aws-php-autoscale  
    Select Edit / Details / AZs:    Select two Public Subnets (in us-west-1a and us-west-1b)  
    Set the Desired and Min to:    two instances    