

# Application Autoscaling

Scaling applications under load

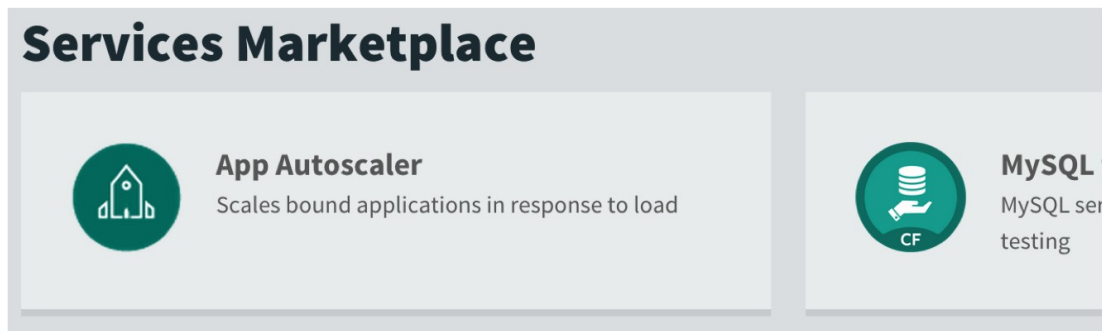
# Scaling Options

- Cloud Foundry enables horizontal scaling of applications
  - Increase the number of instances to increase the scale
  - Controllable via cf CLI, the manifest, Apps Manager console and scripting
  - Can also automatically scale with App Autoscaler...



# App Autoscaler

- CPU usage or time-based schedule can be used to scale application instances
- It is a service in the marketplace



# App Autoscaler Service – Steps

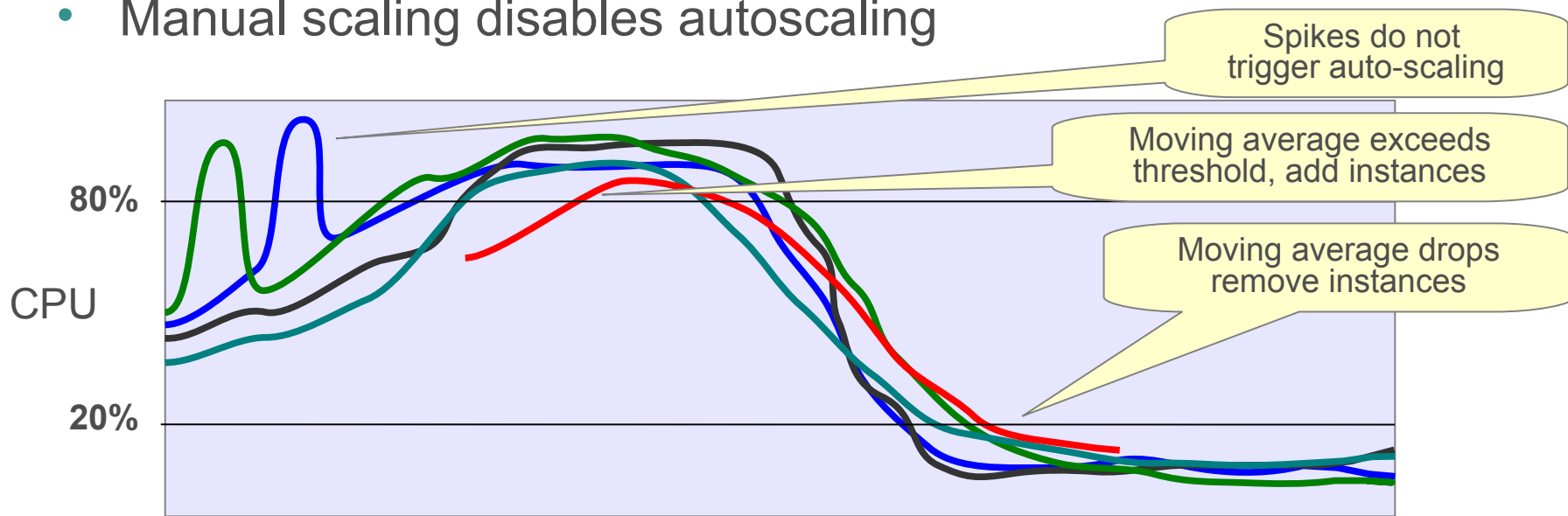
- 1) Create a service instance in for the space (if necessary)
- 2) Bind to an application
- 3) Set the desired scaling parameters
  - a) Add instance whenever high CPU threshold is reached
  - b) Subtract instance whenever low threshold is reached

The screenshot shows the Pivotal Autoscale interface for an application named 'my-app'. It includes a table for scaling instances and CPU thresholds, a section for the last event, and a scheduling section.

PIVOTAL™ AUTOSCALE			
my-app			
INSTANCES		CPU THRESHOLDS	
min	2	low	20%
max	5	high	80%
LAST EVENT			
Scaled app from 1 to 2 instances 09/11/14 @ 23:15:56 UTC			
SCHEDULING			
0 rules		Next: No Upcoming Events	

# Autoscaling – Moving Average

- Scaling activity based on moving averages
  - Softens effect of temporary spikes
- Manual scaling disables autoscaling



# App Autoscaling – Scheduling

- Autoscaling events can be scheduled
- Changes autoscaling behavior on the given date / time
- May be a single or recurring event

The screenshot shows the 'SCHEDULING: MY-APP' interface. At the top right, it says 'SERVER TIME: 09/12/14 @ 21:27:22 UTC'. On the left, there's a list of scheduled events:

- + New** (UNSAVED)
- 11/21/2014 / 02:00 (5 to 10 instances) [X]
- Mon, Fri / 04:00 (10 to 20 instances) [Pause] [X]

On the right, there's a form to create a new event:

- on** 11/28/2014 **at** 4:00 [dropdown]
- \*All times are UTC
- repeats every** ☐ S ☐ M ☐ T ☒ W ☐ T ☐ F ☐ S
- min** 2 **low** 20%
- max** 5 **high** 80%
- ADD** button

# Lab

## Use application autoscaling