This is the addendum to the PEN-4578 lab, Building Your Own On-prem Cloud with Node.js and Java. This addendum extends the lab by adding an additional exercise to demonstrate administrative scaling for Node.js applications.

In this exercise you will perform the following tasks:

1. Initial setup
2. Administrative scale-out
3. Administrative scale-in

Setup

Setup is simple. Just one command sets up the exercise. Just issue the following commands:

1. cd ~/PEN-4578
2. ./setup.sh

This command does the following for you:

1. Updates your WebSphere Liberty with some updates that didn't make it onto the original lab image in time. Yes, there are deadlines ☺
2. Updates the Collective Controller to mark the cluster named strongLoopCluster as enabled scaling. In the finished product this will be automatic. For the purposes of this exercise using the February 2016 Liberty Beta, we have to simulate it.
3. Creates a scaling policy for strongLoopCluster and adds it to controller1's configuration.
4. Enables the Config Tool for controller1 by enabling remote access for controller1.

Administrative Scale-out

For this task, you will update the scaling policy for strongLoopCluster to designate 2 instances are required. Do this by setting min and max both to 2 – e.g.

<scalingPolicy id=”strongLoopCluster” min=”2” max=”2”/>

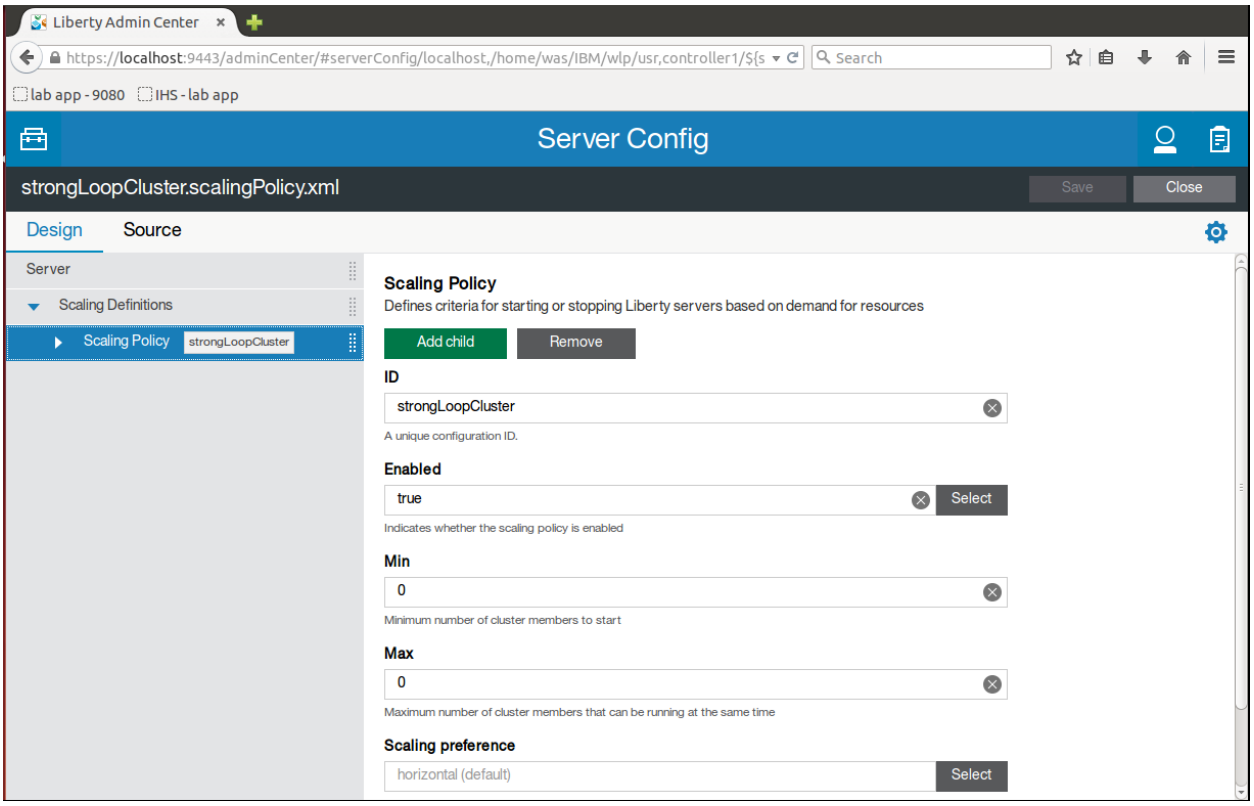
<server description="Scaling policy configuration for cluster strongLoopCluster">

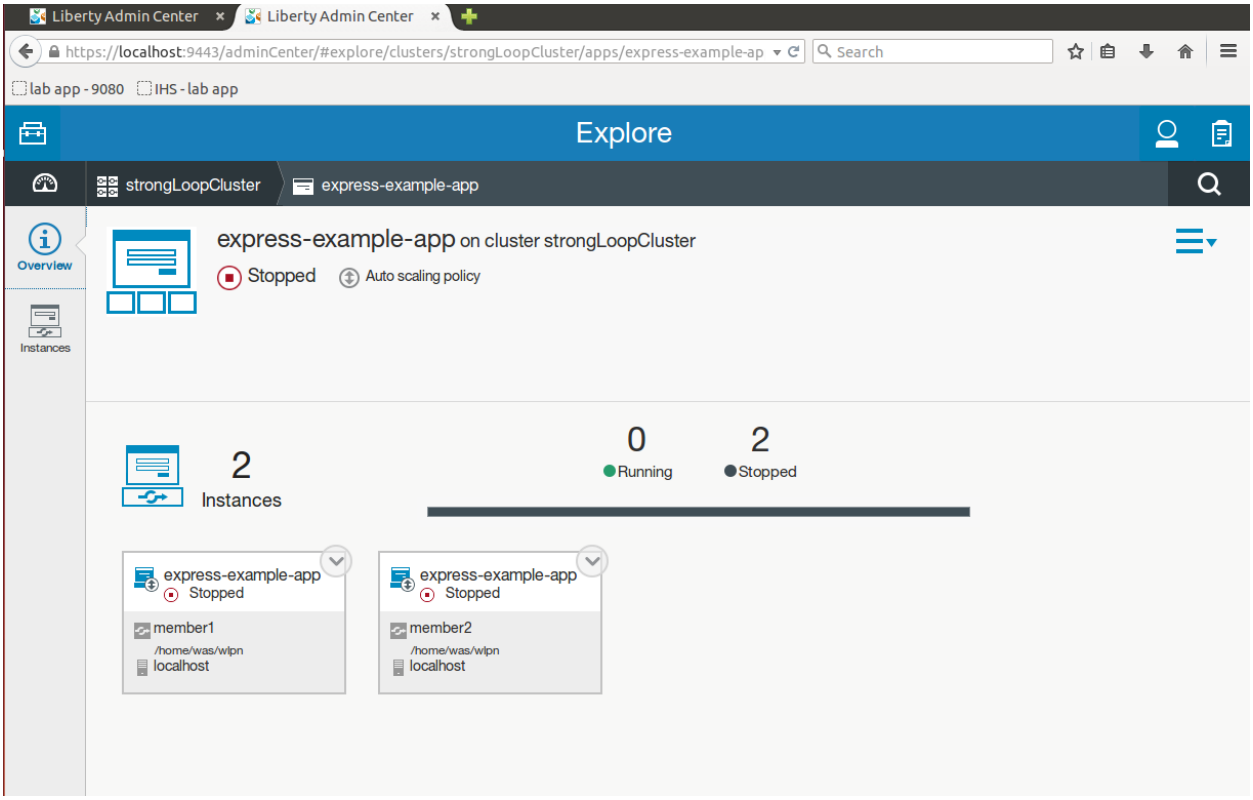
<scalingDefinitions>

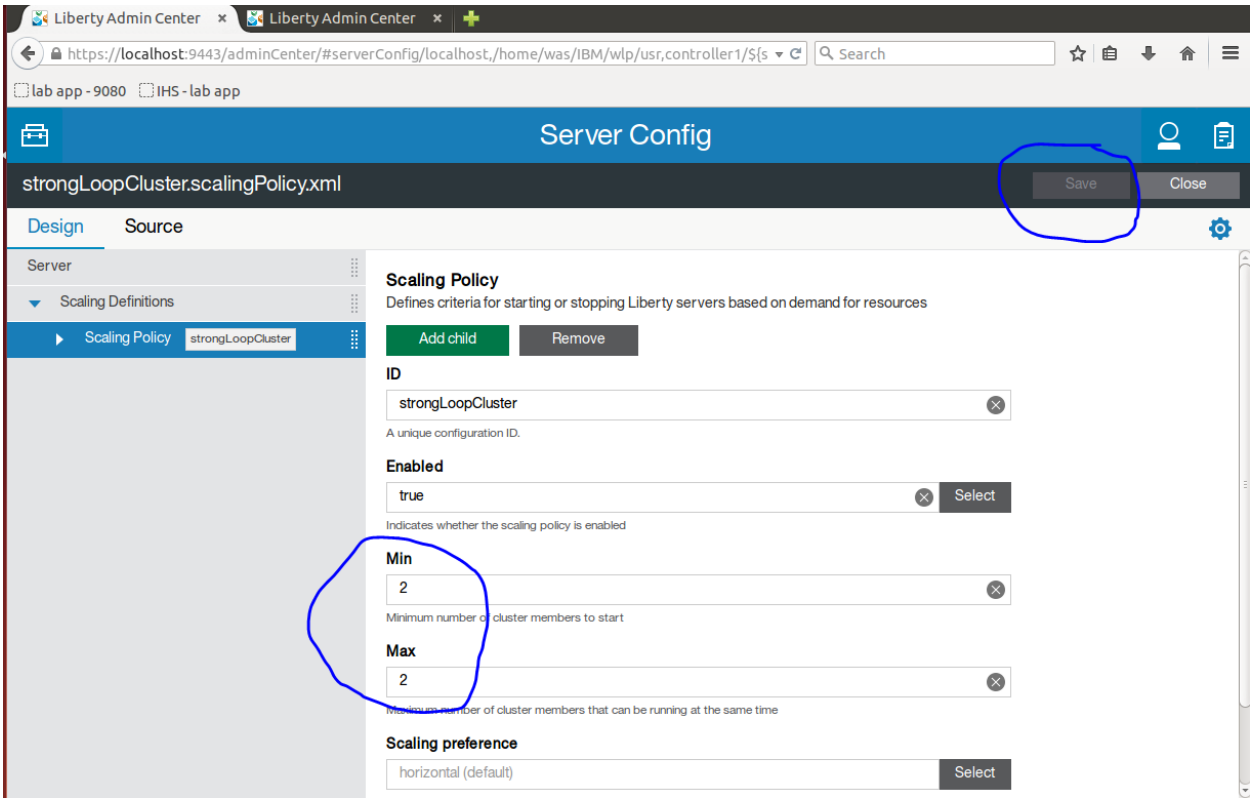
```
    <scalingPolicy id="strongLoopCluster" enabled="true" min="0" max="0">
      <metric name="heap" min="0" max="1"/>
      <bind clusters="strongLoopCluster"/>
    </scalingPolicy>
  </scalingDefinitions>
</server>
```

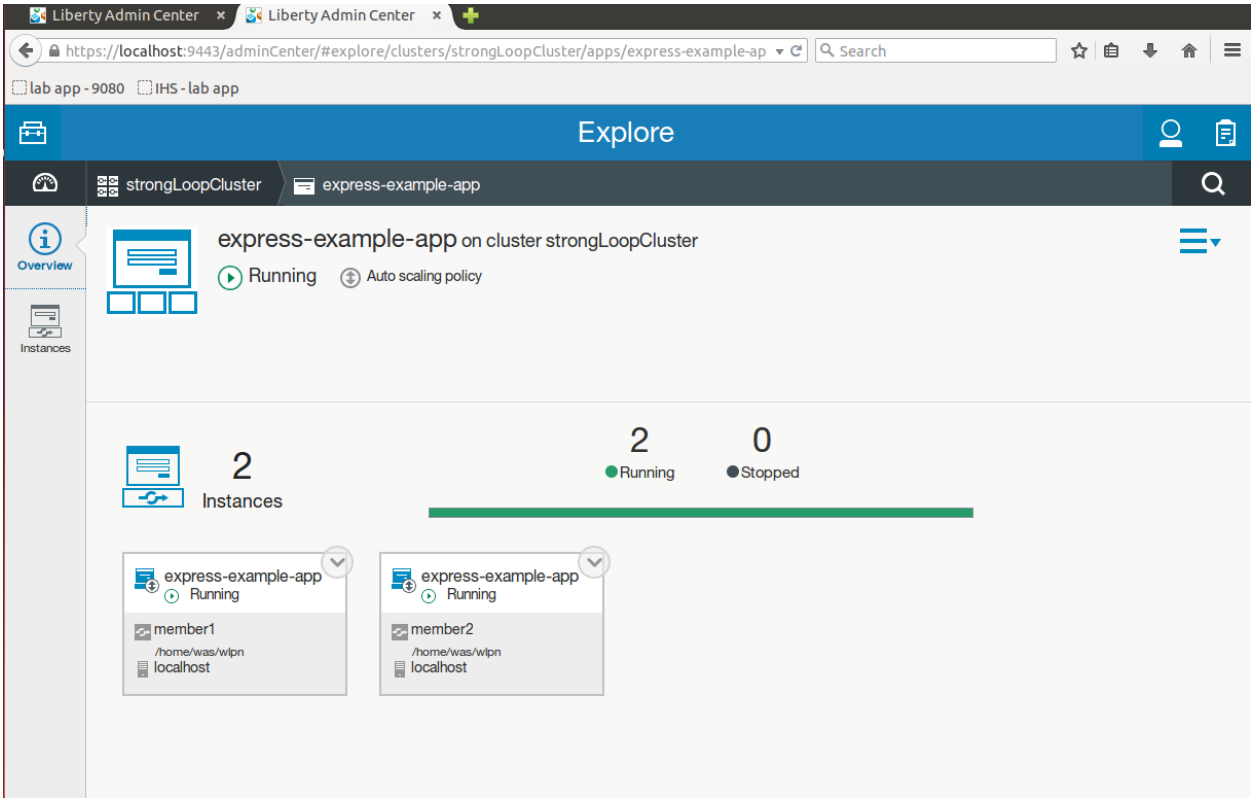
You can do this be editing /home/was/wlp/usr/servers/controller1/configDropins/overrides/strongLoopCluster.scalingPolicy.xml

Or in the Admin Center Config Tool:




Liberty Admin Center
Liberty Admin Center
https://localhost:9443/adminCenter/#explore/clusters/strongLoopCluster/apps/express-example-ap
Search
lab app - 9080
IHS - lab app
Explore
strongLoopCluster
express-example-app
Overview
Instances
express-example-app on cluster strongLoopCluster
Stopped
Auto scaling policy
2
Instances
0
Running
2
Stopped
express-example-app
Stopped
member1
/home/was/wlpn
localhost
express-example-app
Stopped
member2
/home/was/wlpn
localhost


Liberty Admin Center
Liberty Admin Center
https://localhost:9443/adminCenter/#serverConfig/localhost,/home/was/IBM/wlp/usr,controller1/${s
Search
lab app - 9080
IHS - lab app
Server Config
strongLoopCluster.scalingPolicy.xml
Save
Close
Design
Source
Server
Scaling Definitions
Scaling Policy
strongLoopCluster
Scaling Policy
Defines criteria for starting or stopping Liberty servers based on demand for resources
Add child
Remove
ID
strongLoopCluster
A unique configuration ID.
Enabled
true
Select
Indicates whether the scaling policy is enabled
Min
2
Minimum number of cluster members to start
Max
2
Maximum number of cluster members that can be running at the same time
Scaling preference
horizontal (default)
Select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https://localhost:9443/adminCenter/#explore/clusters/strongLoopCluster/apps/express-example-ap
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Explore
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express-example-app
Overview
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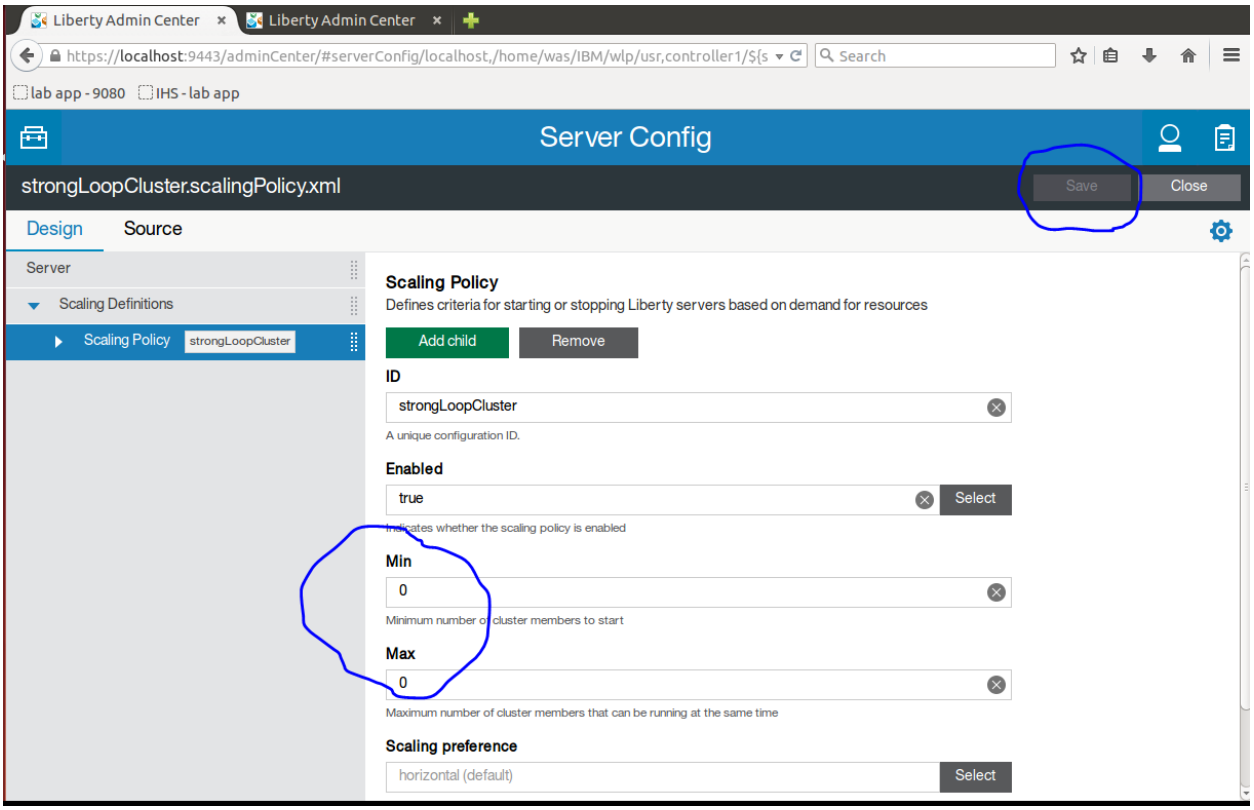
express-example-app on cluster strongLoopCluster
Running
Auto scaling policy
2
Instances
2
Running
0
Stopped
express-example-app
Running
member1
/home/was/wlpn
localhost
express-example-app
Running
member2
/home/was/wlpn
localhost

Scale-in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Scaling Policy
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strongLoopCluster
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Scaling preference
horizontal (default)
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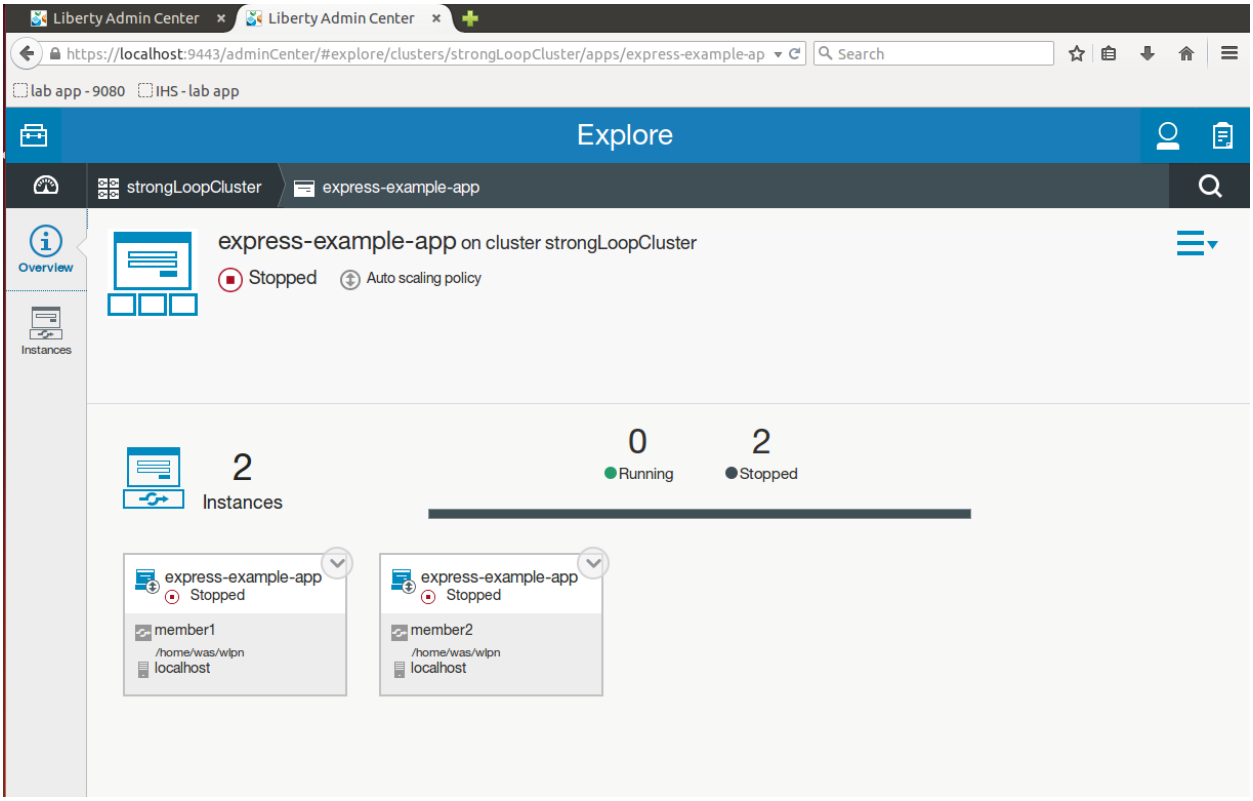

Result: member1 and member2 of strongLoopCluster start and appears with Running status in the Admin Center Explorer Tool.