Subject: Measuring CPU usage
Posted by gurtaj on Mon, 09 Feb 2009 16:39:29 GMT
View Forum Message <> Reply to Message

Hello, all. I've written a couple of Python methods to gather CPU usage statistics of the containers running in a Hardware Node.

I'm working with Centos 5.2, with this OpenVZ kernel: 2.6.18-92.1.13.el5.028stab059.6

If you find it useful, good. If you feel something is wrong, let me know please. =)

```
def gatherCpuStats():
 dict = {}
 stats = file('/proc/vz/vestat')

 # should check if the file exists and the operation was successful

 # read the first line (version number) and the second one (parameter names)
       stats.readline()
       stats.readline()

 # now, for each line create a ContainerStats
 while True:
  line = stats.readline()
  if len(line) == 0:
   break

  # create a ContainerStats for each line and place them inside a dictionary
  elems = line.split()

  # (parameter names) - second line, already read
  # VEID user nice system uptime idle strv uptime used maxlat totlat numsched
  cont = ContainerStats(int(elems[0]))
  cont.setUptime(int(elems[7]))
  cont.setUsedtime(int(elems[8]))

  dict[cont.getVeid()] = cont
 stats.close()
 return dict


def calculateCpuUsage():
 global oldSet
 global newSet

 newSet = gatherCpuStats()
```

```
 for veid, newCont in newSet.iteritems():
  if veid in oldSet:
   oldCont = oldSet[veid]
   oldUptime = oldCont.getUptime()
   oldUsedtime = oldCont.getUsedtime()
  else:
   oldUptime = 0
   oldUsedtime = 0

  # CPU_USAGE_% = [(NEW_USED - OLD_USED) / CPU_MHZ] / [(NEW_UPTIME -
OLD_UPTIME) / CPU_MHZ]
  cpuUsage = (float(newCont.getUsedtime() - oldUsedtime) / cpuCycles) /
(float(newCont.getUptime() - oldUptime) / cpuCycles)

  # in order to store cpuUsage as a percentage value (xx.xx%)
  # I multiply cpuUsage by 100 and truncate it
  newCont.setCpuUsage(int(cpuUsage * 100))



# the following is a simple loop to test the previous methods

i = 0
while (i < 10):
 print '+ + + + + + + + + + + + + + + + + + + +'
 print 'Start:', time.strftime('%H%M%S')
 print

 calculateCpuUsage()
 oldSet = newSet  # the current info becomes the _old_set_ of info

 for veid, cont in oldSet.iteritems():
  print 'VEID:', cont.getVeid(), '- CPU usage:', cont.getCpuUsage()
 print
 i += 1
 time.sleep(10)
```

Subject: Re: Measuring CPU usage
Posted by gurtaj on Mon, 09 Mar 2009 15:34:39 GMT
View Forum Message <> Reply to Message

```
# CPU_USAGE_% = [(NEW_USED - OLD_USED) / CPU_MHZ] / [(NEW_UPTIME -
OLD_UPTIME) / CPU_MHZ]
cpuUsage = (float(newCont.getUsedtime() - oldUsedtime) / cpuCycles) /
```

(float(newCont.getUptime() - oldUptime) / cpuCycles)

The other day I was doing some refactoring of the code and suddenly realized that it was kind of stupid what I did in that formula: dividing both terms by CPU_MHZ.

I believe the rest remained the same.
