**Threading**

As usual before going to python. In general what is threading.

Threading – also known as multi-processing. Consider your python script as mother process and which can create a child process which can run without interrupting mother process’s flow but mother process can communicate with child process at any time to start, stop or join back with mother process.

To explain with our domain, imagine we have Common NMS which is connected to multiple NMS which can control different set of network networks. Common NMS the mother process which created remaining NMS to share the load and run things in parallel but generalized common NMS at any point of time can start another NMS, kill it or take over it.

Ok now let’s go back to python,

There is a class called threading in python which is used to implement the same. It provides functionalities like start, run, join, is\_alive, lock, release, notify, wait etc. lets not see all today, we will start with simple, once you get familiar we can with others.

Simple Example,

import **threading**

**def** worker(num):

*"""thread worker function"""*

**print** 'Worker: **%s**' % num

**return**

threads = []

**for** i **in** range(5):

t = threading.Thread(target=worker, args=(i,))

threads.append(t)

t.start()

Output:

$ python -u threading\_simpleargs.py

Worker: 0

Worker: 1

Worker: 2

Worker: 3

Worker: 4

In the above example, the function worker called using threading. It is created first using below line,

t = threading.Thread(target=worker, args=(i,))

and started later using the line,

t.start()

What is the difference between this one and normal function call?

Let’s say the function takes 5 mins to complete, in normal function call it executes first one takes 5 mins than 2nd one takes 5 mins and so on. The total execution time would be 25 mins. If the function can be run parallel then you can use thread it will complete in 5 mins as all of them run together.

One more our domain scenario, in our evolution upgrade, consider we have a function which can copy the package to remote and run package install shell script. And you can call them using thread on all the remotes at the same time and make upgrade faster ☺ I hope you get the basics of threading. Will explain more on coming days once you get comfortable with basics.