



# 프로그래머스 과제-2

프로그래머스 자율주행 코스 1기 조정민

# 데이터 크기에 따른 전송속도 검사- 코드

src > sender\_speed.py

```
1  #!/usr/bin/env python
2
3  import rospy
4  from std_msgs.msg import String
5
6  rospy.init_node('sender')
7
8  pub = rospy.Publisher('long_string',String)
9
10 rate = rospy.Rate(2)
11
12 size = 50000000
13 while not rospy.is_shutdown():
14     pub.publish('#' * size)
15     rate.sleep()
16
17
```

src > receiver\_speed.py

```
1  #!/usr/bin/env python
2
3
4  import rospy
5  from std_msgs.msg import String
6  import time
7
8  prev_time = time.time()
9
10 size = 50000000 # 데이터 크기
11 def callback(msg):
12     global prev_time, size
13     curr_time = time.time()
14     # 속도 및 데이터 크기, 걸린 시간 출력
15     rospy.loginfo("%d bytes %f seconds \n speed : %f byte/s \n"
16                  "%(size , (curr_time - prev_time), size / (curr_time - prev_time))")
17     prev_time = curr_time
18
19 rospy.init_node('receiver')
20
21 sub = rospy.Subscriber('long_string',String,callback)
22
23 rospy.spin()
```

# 데이터 크기에 따른 전송속도 검사- 출력 화면

```
speed : 10363783.450677 byte/s
[INFO] [1608717710.438918]: 5000000 bytes 0.465996 seconds
speed : 10729716.192204 byte/s
[INFO] [1608717710.965616]: 5000000 bytes 0.526689 seconds
speed : 9493275.970399 byte/s
[INFO] [1608717711.462017]: 5000000 bytes 0.496416 seconds
speed : 10072205.321696 byte/s
[INFO] [1608717711.956290]: 5000000 bytes 0.494272 seconds
speed : 10115882.859138 byte/s
[INFO] [1608717712.462340]: 5000000 bytes 0.506039 seconds
speed : 9880653.932211 byte/s
[INFO] [1608717712.965577]: 5000000 bytes 0.503249 seconds
speed : 9935440.896465 byte/s
```

```
speed : 20227027.170727 byte/s
[INFO] [1608717798.721053]: 10000000 bytes 0.496158 seconds
speed : 20154874.709099 byte/s
[INFO] [1608717799.221802]: 10000000 bytes 0.500737 seconds
speed : 19970555.802088 byte/s
[INFO] [1608717799.724518]: 10000000 bytes 0.502731 seconds
speed : 19891340.637994 byte/s
[INFO] [1608717800.224657]: 10000000 bytes 0.500138 seconds
speed : 19994498.812764 byte/s
[INFO] [1608717800.724506]: 10000000 bytes 0.499849 seconds
```

```
[INFO] [1608717839.300733]: 20000000 bytes 0.508944 seconds
speed : 39297051.623064 byte/s
[INFO] [1608717839.791842]: 20000000 bytes 0.491109 seconds
speed : 40724185.490366 byte/s
[INFO] [1608717840.296807]: 20000000 bytes 0.504965 seconds
speed : 39606681.466946 byte/s
[INFO] [1608717840.792303]: 20000000 bytes 0.495496 seconds
speed : 40363573.023998 byte/s
[INFO] [1608717841.300522]: 20000000 bytes 0.508218 seconds
speed : 39353187.081568 byte/s
[INFO] [1608717841.791821]: 20000000 bytes 0.491301 seconds
speed : 40708256.800596 byte/s
```

```
speed : 1999415.568474 byte/s
[INFO] [1608717759.077401]: 1000000 bytes 0.499858 seconds
speed : 2000568.551472 byte/s
[INFO] [1608717759.577518]: 1000000 bytes 0.500151 seconds
speed : 1999394.600119 byte/s
[INFO] [1608717760.077141]: 1000000 bytes 0.499570 seconds
speed : 2001722.864996 byte/s
[INFO] [1608717760.576539]: 1000000 bytes 0.499454 seconds
speed : 2002185.345772 byte/s
```

데이터 사이즈 50 배 증가..!

```
[INFO] [1608717882.274776]: 50000000 bytes 0.496317 seconds
speed : 100741987.581340 byte/s
[INFO] [1608717882.780140]: 50000000 bytes 0.505367 seconds
speed : 98938038.234398 byte/s
[INFO] [1608717883.279932]: 50000000 bytes 0.499790 seconds
speed : 100042074.732740 byte/s
[INFO] [1608717883.785025]: 50000000 bytes 0.505097 seconds
speed : 98990904.070275 byte/s
[INFO] [1608717884.286020]: 50000000 bytes 0.500994 seconds
speed : 99801553.498226 byte/s
[INFO] [1608717884.761987]: 50000000 bytes 0.475963 seconds
speed : 105050156.937667 byte/s
```



## 실행 방법

```
roscore
```

```
roslaunch msg_send sender_speed.py
```

```
roslaunch msg_send receiver_speed.py
```



## 데이터 크기에 따른 전송속도 검사- 결론

데이터 크기가 50배 증가 했지만, 속도면에서는 차이가 없었다. 따라서 데이터 크기와 전송속도는 관련이 없다고 판단했다.