

Output of P2P Replica Management

1. Config Properties

```
TTR=120000
# Peer details
peerid.1.ip=localhost
peerid.1.port=7001
peerid.2.ip=localhost
peerid.2.port=7002
peerid.3.ip=localhost
peerid.3.port=7003
peerid.4.ip=localhost
peerid.4.port=7004
peerid.5.ip=localhost
peerid.5.port=7005
peerid.6.ip=localhost
peerid.6.port=7006
peerid.7.ip=localhost
peerid.7.port=7007
peerid.8.ip=localhost
peerid.8.port=7008
peerid.9.ip=localhost
peerid.9.port=7009

peerid.1.Master=/home/TTU/mkotapat/Test/Master/peer1
peerid.1.Replica=/home/TTU/mkotapat/Test/Replica/Peer1
peerid.2.Master=/home/TTU/mkotapat/Test/Master/peer2
peerid.2.Replica=/home/TTU/mkotapat/Test/Replica/Peer2
peerid.3.Master=/home/TTU/mkotapat/Test/Master/peer3
peerid.3.Replica=/home/TTU/mkotapat/Test/Replica/Peer3
```

```
28 peerid.4.Master=/home/TTU/mkotapat/Test/Master/peer4
29 peerid.4.Replica=/home/TTU/mkotapat/Test/Replica/Peer4
30 peerid.5.Master=/home/TTU/mkotapat/Test/Master/peer5
31 peerid.5.Replica=/home/TTU/mkotapat/Test/Replica/Peer5
32 peerid.6.Master=/home/TTU/mkotapat/Test/Master/peer6
33 peerid.6.Replica=/home/TTU/mkotapat/Test/Replica/Peer6
34 peerid.7.Master=/home/TTU/mkotapat/Test/Master/peer7
35 peerid.7.Replica=/home/TTU/mkotapat/Test/Replica/Peer7
36 peerid.8.Master=/home/TTU/mkotapat/Test/Master/peer8
37 peerid.8.Replica=/home/TTU/mkotapat/Test/Replica/Peer8
38 peerid.9.Master=/home/TTU/mkotapat/Test/Master/peer9
39 peerid.9.Replica=/home/TTU/mkotapat/Test/Replica/Peer9
40 # Neighbor details
41 #3X3 Mesh
42 peerid.1.neighbors=peerid.2,peerid.4
43 peerid.2.neighbors=peerid.1,peerid.3,peerid.5
44 peerid.3.neighbors=peerid.2,peerid.6
45 peerid.4.neighbors=peerid.1,peerid.5,peerid.7
46 peerid.5.neighbors=peerid.2,peerid.4,peerid.6,peerid.8
47 peerid.6.neighbors=peerid.3,peerid.5,peerid.9
48 peerid.7.neighbors=peerid.4,peerid.8
49 peerid.8.neighbors=peerid.5,peerid.7,peerid.9
50 peerid.9.neighbors=peerid.6,peerid.8
51
```

- ii) Run 9 peers in separate instances as shown below

```
mkotapat@leaflock: ~
mkotapat@leaflock:~$ java p2pReplica/Peer
Enter the peerid
1
Session for peer id: 1 started...
Peer 1 acting as server on 127.0.0.1:5001
***** Main Menu *****
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH)
*****
Select your choice
E
E
E
E
E
E
E
```

```
mkotapat@leaflock: ~  
-The location you are trying to connect from (on- or off-can  
-Specific error messages.  
  
Last login: Wed May  4 03:40:59 2016 from 75-111-243-183.lbbkcm  
enlink.net  
mkotapat@leaflock:~$ 2  
-bash: 2: command not found  
mkotapat@leaflock:~$ java gnutellaP2P/Peer  
Enter the peerid  
2  
Enter the port  
^Cmkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
2  
Session for peer id: 2 started...  
Peer 2 acting as server on 127.0.0.1:5002  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice
```

```
mkotapat@leaflock: ~  
If you have any problems, please email support.coe@ttu.edu  
and include any relevant information such as:  
  
-Name of operating system and version that you are using  
-Particular software programs and versions you are using  
-The full DNS name of the machine you are accessing  
-The location you are trying to connect from (on- or off-  
-Specific error messages  
  
Last login: Wed May  4 03:26:10 2016 from 75-111-243-183.lbb  
enlink.net  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
3  
Session for peer id: 3 started...  
Peer 3 acting as server on 127.0.0.1:5003  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice  
█
```

```
mkotapat@leaflock: ~  
If you have any problems, please email support.coe@ttu.edu  
and include any relevant information such as:  
  
-Name of operating system and version that you are using  
-Particular software programs and versions you are using  
-The full DNS name of the machine you are accessing  
-The location you are trying to connect from (on- or off-campus)  
-Specific error messages  
  
Last login: Wed May  4 03:41:04 2016 from 75-111-243-183.lbbkcmt  
enlink.net  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
4  
Session for peer id: 4 started...  
Peer 4 acting as server on 127.0.0.1:5004  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice  
█
```

```
mkotapat@leaflock: ~  
If you have any problems, please email support.coe@ttu.edu  
and include any relevant information such as:  
  
-Name of operating system and version that you are using  
-Particular software programs and versions you are using  
-The full DNS name of the machine you are accessing  
-The location you are trying to connect from (on- or off-ca  
-Specific error messages  
  
Last login: Wed May  4 03:41:16 2016 from 75-111-243-183.lbbkc  
enlink.net  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
5  
Session for peer id: 5 started...  
Peer 5 acting as server on 127.0.0.1:5005  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice  
█
```



```
mkotapat@leaflock: ~  
If you have any problems, please email support.coe@ttu.edu  
and include any relevant information such as:  
  
-Name of operating system and version that you are using  
-Particular software programs and versions you are using  
-The full DNS name of the machine you are accessing  
-The location you are trying to connect from (on- or off  
-Specific error messages  
  
Last login: Wed May  4 03:41:26 2016 from 75-111-243-183.l  
enlink.net  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
6  
Session for peer id: 6 started...  
Peer 6 acting as server on 127.0.0.1:5006  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice  
█
```

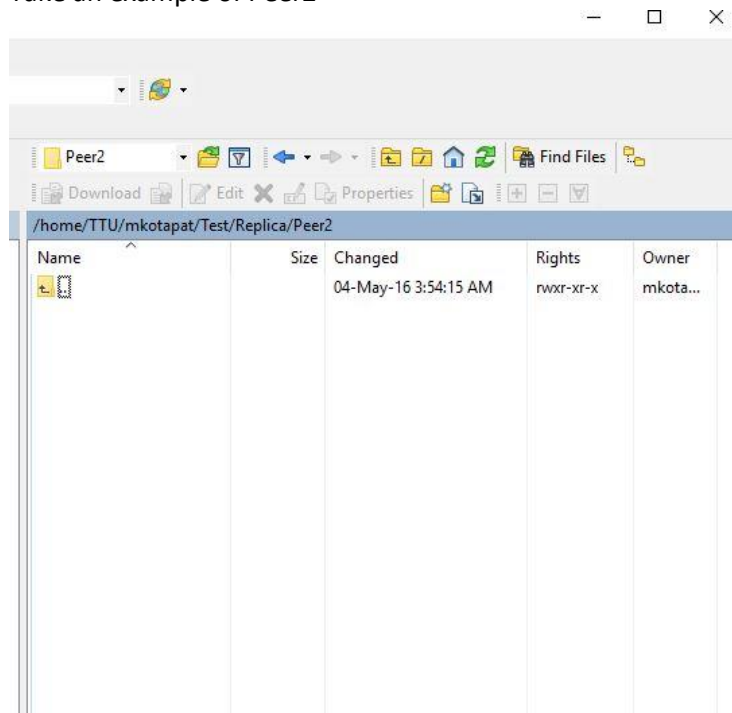
```
mkotapat@leaflock: ~  
If you have any problems, please email support.coe@ttu.edu  
and include any relevant information such as:  
  
-Name of operating system and version that you are using  
-Particular software programs and versions you are using  
-The full DNS name of the machine you are accessing  
-The location you are trying to connect from (on- or off  
-Specific error messages  
  
Last login: Wed May  4 03:42:03 2016 from 75-111-243-183.l  
enlink.net  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
7  
Session for peer id: 7 started...  
Peer 7 acting as server on 127.0.0.1:5007  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice  
█
```

```
mkotapat@leaflock: ~  
If you have any problems, please email support.coe@ttu.edu  
and include any relevant information such as:  
  
-Name of operating system and version that you are using  
-Particular software programs and versions you are using  
-The full DNS name of the machine you are accessing  
-The location you are trying to connect from (on- or off-campus)  
-Specific error messages  
  
Last login: Wed May  4 03:46:01 2016 from 75-111-243-183.lbbkcmk0  
enlink.net  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
8  
Session for peer id: 8 started...  
Peer 8 acting as server on 127.0.0.1:5008  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice
```



```
mkotapat@leaflock: ~  
If you have any problems, please email support.coe@ttu.edu  
and include any relevant information such as:  
  
-Name of operating system and version that you are using  
-Particular software programs and versions you are using  
-The full DNS name of the machine you are accessing  
-The location you are trying to connect from (on- or off-campus)  
-Specific error messages  
  
Last login: Wed May  4 03:46:15 2016 from 75-111-243-183.lbbkcmk04  
enlink.net  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
9  
Session for peer id: 9 started...  
Peer 9 acting as server on 127.0.0.1:5009  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice
```

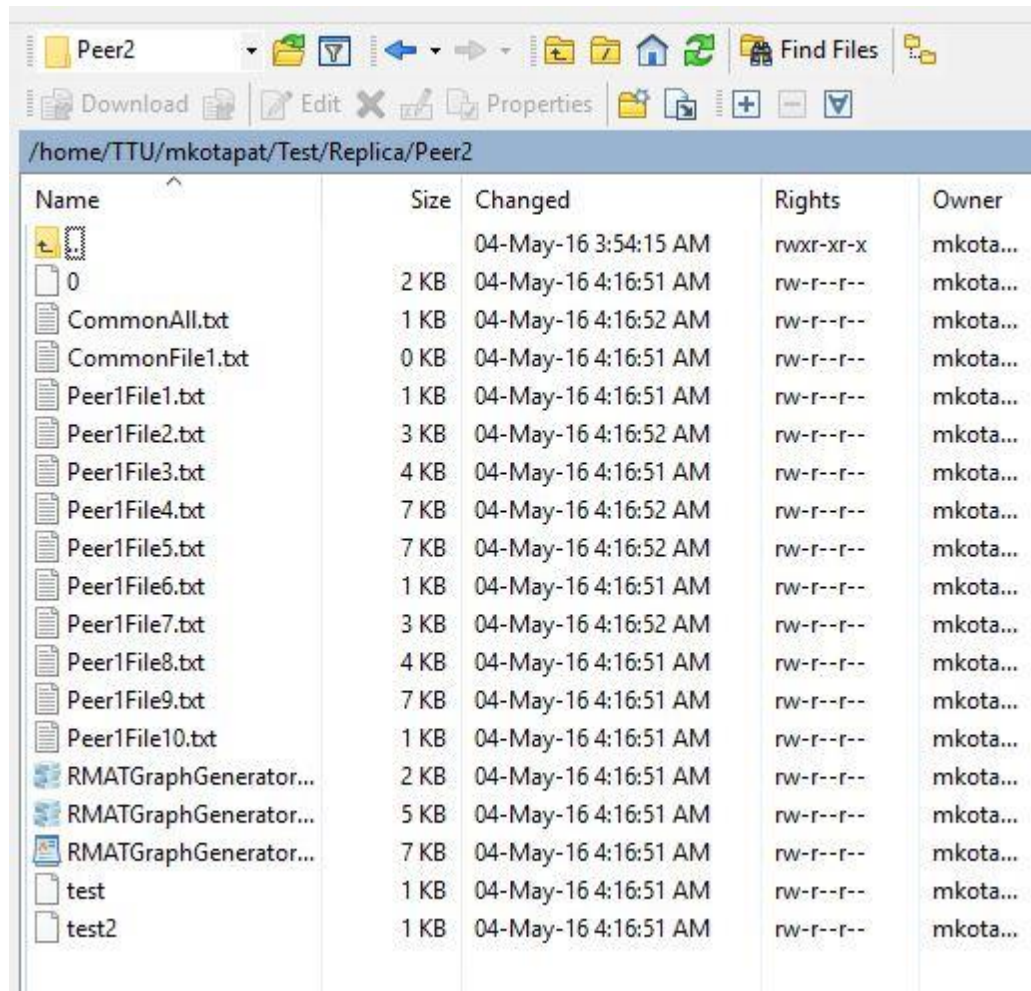
- iii) Perform PUSH in peer 1, so that all Replica peers will be updated
Take an example of Peer2



Push from Peer1 Master

```
mkotapat@leaflock: ~  
Select your choice  
^Cmkotapat@leaflock:~$ clear  
mkotapat@leaflock:~$ java p2pReplica/Peer  
Enter the peerid  
1  
Session for peer id: 1 started...  
Peer 1 acting as server on 127.0.0.1:5001  
***** Main Menu *****  
1. Push(Send Master copy to all replicas)  
2. Pull(Update replica on TTR expriy or version change)  
3. Modify File(Without PUSH - To test PULL)  
4. Modify File(With PUSH  
*****  
Select your choice  
1  
Message id for search: Peer1.Iteration1.Version1.Peer1File7.txt  
Sending PUSH request to peerid.2 5002  
Sending PUSH request to peerid.4 5004  
Message id for search: Peer1.Iteration1.Version1.Peer1File8.txt  
Sending PUSH request to peerid.2 5002  
Sending PUSH request to peerid.4 5004  
Message id for search: Peer1.Iteration1.Version1.CommonAll.txt  
Sending PUSH request to peerid.2 5002  
Sending PUSH request to peerid.4 5004  
Message id for search: Peer1.Iteration1.Version1.test  
Sending PUSH request to peerid.2 5002  
Sending PUSH request to peerid.4 5004  
Message id for search: Peer1.Iteration1.Version1.Peer1File9.txt  
Sending PUSH request to peerid.2 5002  
Sending PUSH request to peerid.4 5004
```

Check Master copy of Peer1 in peer 2 replica



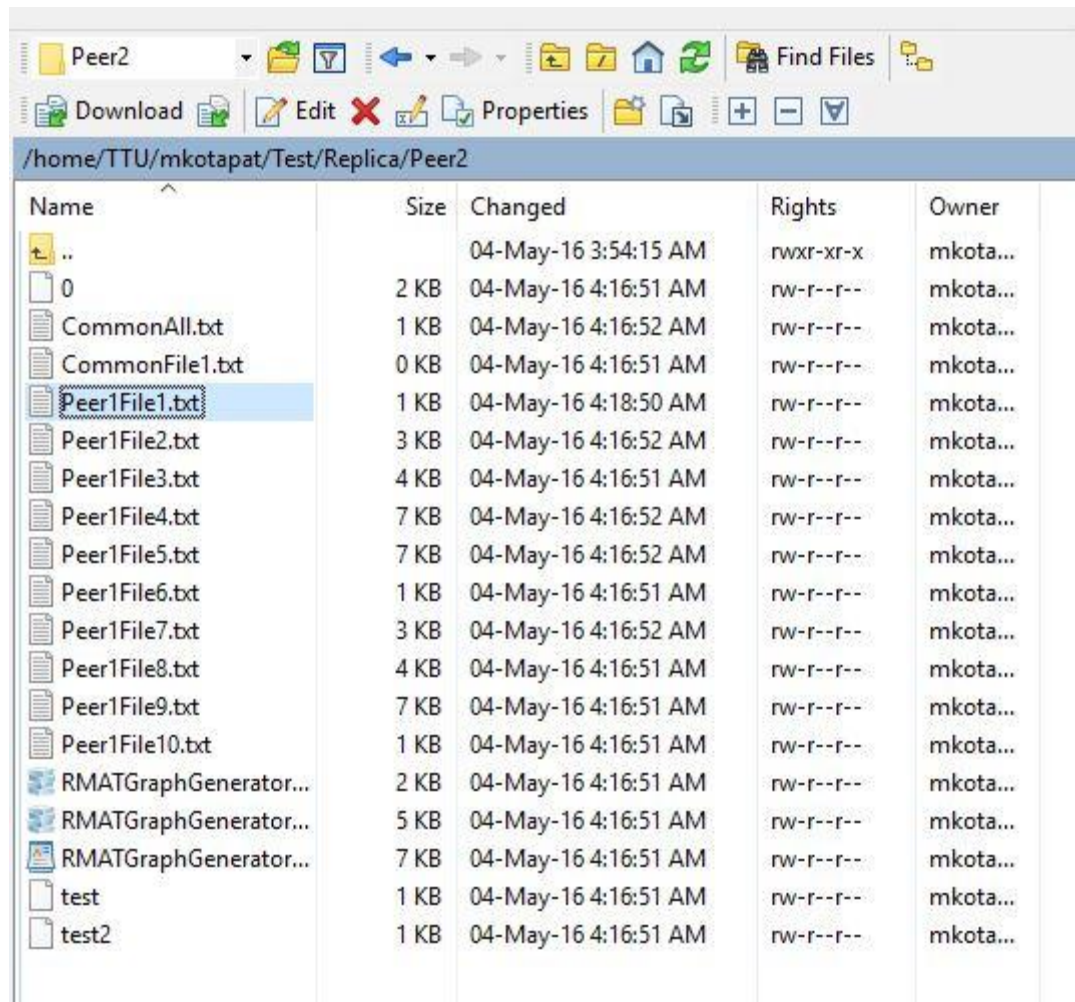
Name	Size	Changed	Rights	Owner
0		04-May-16 3:54:15 AM	rw-r--r--	mkota...
0	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
CommonAll.txt	1 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
CommonFile1.txt	0 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File1.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File2.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File3.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File4.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File5.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File6.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File7.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File8.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File9.txt	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File10.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMatGraphGenerator...	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMatGraphGenerator...	5 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMatGraphGenerator...	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test2	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...

iv) File Modify and PUSH the copy

mkotapat@leaflock: ~

```
Message id for search: Peer1.Iteration1.Version1.Peer1File10.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.Peer1File5.txt
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
Message id for search: Peer1.Iteration1.Version1.RMATGraphGenerator.java
Sending PUSH request to peerid.2 5002
Sending PUSH request to peerid.4 5004
***** Main Menu *****
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expiry or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*****
Select your choice
4
Enter the file name that to trigger the modify function and PUSH
Peer1File1.txt
Message id for search: Peer1.Iteration2.Version2.Peer1File1.txt
Sending request to peerid.2 5002
Sending request to peerid.4 5004
***** Main Menu *****
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expiry or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*****
Select your choice
```

Option 4 and change file Peer1File1.txt



Name	Size	Changed	Rights	Owner
..		04-May-16 3:54:15 AM	rw-r--r--	mkota...
0	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
CommonAll.txt	1 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
CommonFile1.txt	0 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File1.txt	1 KB	04-May-16 4:18:50 AM	rw-r--r--	mkota...
Peer1File2.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File3.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File4.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File5.txt	7 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File6.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File7.txt	3 KB	04-May-16 4:16:52 AM	rw-r--r--	mkota...
Peer1File8.txt	4 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File9.txt	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
Peer1File10.txt	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	2 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	5 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
RMATGraphGenerator...	7 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...
test2	1 KB	04-May-16 4:16:51 AM	rw-r--r--	mkota...

Observe the timestamp of Peer1File1.txt file

- v) PULL after the Time expiry
TTR is set as 120000 (2 minutes) , after 2 minutes do PULL from Peer 2

```
Peer1File1.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
2
"test2" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"RMATGraphGenerator.java" downloaded to path: //home//TTU//mkotapat//Test//Repli
ca//Peer2
"Peer1File5.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File10.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer
2
"CommonFile1.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer
2
"Peer1File7.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"0" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File3.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"RMATGraphGenerator.class" downloaded to path: //home//TTU//mkotapat//Test//Repl
ica//Peer2
"test" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File2.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File9.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"CommonAll.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File8.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File6.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File4.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"Peer1File1.txt" downloaded to path: //home//TTU//mkotapat//Test//Replica//Peer2
"RMATGraphGenerator$Edge.class" downloaded to path: //home//TTU//mkotapat//Test/
/Replica//Peer2
***** Main Menu *****
1. Push(Send Master copy to all replicas)
2. Pull(Update replica on TTR expriy or version change)
3. Modify File(Without PUSH - To test PULL)
4. Modify File(With PUSH
*****
Select your choice
█
```


Name	Size	Changed	Rights	Owner
..		04-May-16 3:54:15 AM	rwxr-xr-x	mkota...
0	2 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
CommonAll.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
CommonFile1.txt	0 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File1.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File2.txt	3 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File3.txt	4 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File4.txt	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File5.txt	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File6.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File7.txt	3 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File8.txt	4 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File9.txt	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
Peer1File10.txt	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
RMATGraphGenerator...	2 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
RMATGraphGenerator...	5 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
RMATGraphGenerator...	7 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
test	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...
test2	1 KB	04-May-16 4:20:28 AM	rw-r--r--	mkota...

Observe the timestamps