

THE COORDINATOR VIEW OF THE p2p SYSTEM

As we see that there are some file names which have more than one value associated(server:host) associated with and so some file sharing did take place and the server request load is balanced. The RMIServer(Peers) are starting from 1-4 in RMIClient/configuration/configs.txt and the 0th index node is purely a coordinator for lifetime so it doesn't appear in any of the values of keys below.

```
COORDINATOR HASH {12bff27d-a078-4c4f-8535-242949ef78d8.txt=[localhost:4542],
07cb0433-9150-41de-b69b-3652ec48b997.txt=[localhost:4542],
064d9056-f2f6-47c2-af24-1035c090cd6a.txt=[localhost:4542],
95f9f718-8f61-4b48-8874-cd3813247682.txt=[localhost:4542],
b0164316-b7fe-4b7e-a246-41c7089d1563.txt=[localhost:4542],
a82455d6-33ae-4c7d-a977-fefcfb2b5bc4.txt=[localhost:4542],
bcf66fd8-eeca-4631-9832-cc72768358a9.txt=[localhost:2334],
e8fdf041-412e-467a-b6dc-cd50296366d0.txt=[localhost:3445],
e235a7cc-e6b0-48fa-961e-f8694357c9f3.txt=[localhost:4542],
5c366066-1c1e-4339-9c2f-38e36a1d6ad5.txt=[localhost:3445],
9dd633f9-ff64-400b-985a-3213ddde5feb.txt=[localhost:4542],
b9fa2a57-805d-4166-9b2f-79acb87034bb.txt=[localhost:4542],
3bede441-19c9-4001-9530-6008b20c5ac1.txt=[localhost:4542],
546990fb-a90d-463c-90a3-6c250e1d2aae.txt=[],
32595025-3184-4308-8392-34b0ed2c6540.txt=[localhost:2334],
b2f17a06-2731-434e-9fc2-e3e3ef3692e0.txt=[localhost:4542],
28c556d1-7a19-4cf2-8189-94ca97289df3.txt=[localhost:2334],
e842c49b-f3aa-4865-af60-f2cfd5485ac7.txt=[localhost:4542],
693205ab-200f-42bf-8dc0-9a1f3b8765fb.txt=[localhost:3445],
07840cbd-b73e-4d14-b973-b768923e7b6a.txt=[localhost:2345],
75493751-dd0c-4046-ba52-faab17211bc8.txt=[localhost:2345],
5dd79aff-304b-4a91-b43a-7cb91378e99b.txt=[localhost:2334],
ad535508-731c-45b6-b655-b574e9e70750.txt=[localhost:4542],
05e002d6-4368-4cbe-b239-f8343913f046.txt=[localhost:4542],
055c5f1e-1b2d-47d0-b606-aaa8c7c725c9.txt=[localhost:4542],
19eebcea-a897-4ee7-845a-b363644e7710.txt=[localhost:3445],
6eaad9d1-ad82-4561-b54e-0ed8b8c8e846.txt=[localhost:4542],
a86ffb0d-eec5-4400-b8a8-72f7ddf9e2d3.txt=[localhost:2334],
a99e70a8-491b-4006-8fc9-bc1c33538e8f.txt=[localhost:4542],
ae6b8f88-2d26-49bf-8665-5a1f5b60cc99.txt=[localhost:4542],
db07d4fd-ec1e-4071-8533-28e1a5f41028.txt=[localhost:4542],
1f2aa84b-246a-4d3c-96fa-9e99cde81e7f.txt=[localhost:2345],
3ab58636-3c11-46a7-8919-275a2603742c.txt=[localhost:4542],
896f50d2-6f5c-4c0b-890a-a910073d08e6.txt=[localhost:2345],
b69e5132-d781-4b77-ba12-d29317e78ba1.txt=[localhost:2345, localhost:4542],
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fbf15d1f-67b4-465e-a342-3bfcba0d4ac1.txt=[localhost:3445],
ea5106c7-d600-40d7-892c-07e8b2f58fa1.txt=[localhost:4542],
21cbed16-c872-4c85-971d-180ca15068fb.txt=[localhost:4542],
f6e752cf-5299-4b84-b50d-e0204f038b8f.txt=[localhost:2334],
293822b3-21ea-46b7-952a-57379f5a04de.txt=[localhost:2345],
cf7531e0-6229-4e30-bb2f-c8a9f2bc6c22.txt=[localhost:2345],
50335ea7-9076-4989-8551-d59504c17175.txt=[localhost:2334],
27c87e5d-45a6-4880-84af-adeec17c46f9.txt=[localhost:2345, localhost:4542],
949c0c5b-22cc-4ceb-b24e-9e371c835f09.txt=[localhost:4542],
bff3920e-34af-4ae6-96de-cd8885e0fead.txt=[localhost:3445],
eff177e2-3654-4905-9c49-a50e14f835e3.txt=[localhost:2345],
778cc552-ade9-4308-a649-04b9745c20c1.txt=[localhost:3445],
36eeb27b-892f-413c-87f9-030b323fed6b.txt=[localhost:4542],
4178eea2-8e11-46c6-b119-471188360815.txt=[localhost:2345],
c1817a80-5c70-4b90-a255-83a38a5eca33.txt=[localhost:4542],
f22fcf69-b3be-4c3f-bc33-4fa36f1e893d.txt=[localhost:2345],
19e4a9ef-8eef-4a49-bfe5-3cf96f42ffaf.txt=[localhost:2345],
054ec947-1227-4b41-ba62-e9ea17699b38.txt=[localhost:4542],
61281213-0a27-462f-94ff-1c1b8cd9337f.txt=[localhost:4542],
52da964e-654a-4cf4-bd8f-8243e7aa2122.txt=[localhost:2345],
b7271812-d5e4-4503-9199-8e1c282b0b66.txt=[localhost:4542],
adcc67f9-9a78-4591-9bf8-ec47abaf9fd6.txt=[localhost:4542],
473bc316-28e6-4729-a993-21c3ae0b54d9.txt=[localhost:2334],
1af74b72-d347-468f-b62f-831487c9c95f.txt=[localhost:3445],
c3f49e40-6404-472e-8837-9c2133488484.txt=[localhost:4542],
c630f6c8-4b3a-461a-8363-38a562ae7640.txt=[localhost:2345, localhost:4542],
83764396-a14f-44d6-b9f6-0869c302c636.txt=[localhost:2345],
1e1e7b51-b40f-46bd-b35d-3ecd96e149c8.txt=[localhost:4542],
811f784c-e2dd-4186-a3c7-23278f70ab33.txt=[localhost:4542],
f1ed5429-cf9d-4e98-b0af-35af9c50c225.txt=[localhost:3445, localhost:2345, localhost:4542],
alpha.txt=[localhost:2334, localhost:4542],
59dffe76-3db4-46f7-bc53-3cf0975d94f2.txt=[localhost:4542],
bf9d2bde-be6c-485b-a36d-053300315ce3.txt=[localhost:2345],
a26ca71f-6a2f-40e7-8a11-21654316746e.txt=[localhost:2345],
c738d044-fb5d-44d2-8bdd-2451dcc694ac.txt=[localhost:4542],
64ae66e5-3555-48e7-8899-c36712ac876b.txt=[localhost:3445],
d16b0466-b51f-4ef4-895c-15e25010d525.txt=[localhost:2345],
406fae9c-e708-4f80-a809-5f3a818d1f9f.txt=[localhost:4542],
14f717de-6f78-4a5c-a916-886fcdea5ee0.txt=[localhost:4542],
194f0540-35fa-47f0-8588-cd1798a75c9a.txt=[localhost:2345, localhost:4542],
31d28b6c-10b8-43a7-873e-950f9d852cd9.txt=[localhost:4542]}
2022-02-21 22:12:10,660 [INFO]project3.RMIServerInterfaceImpl[RMIServerInterfaceImpl] No
such file on any peer

INTEGRATION TESTS PASS.

The integration tests tested for various things like the file monitoring ability of the software.

- 1. As we can see new test files were added to the p2p system on just creation (as a sync) with no need for the peer to manually have to register its files. It happens on file creation or modification as the unit test did pass.*
- 2. Newly created files were downloaded by other peers so the system membership protocol works.*
- 3. Since, all peers were deregistered by the system following which a retrieve was called on the system and p2p system responded with no such peer, the p2p system is correct.*

Where could it fail?

A modify of a file may or may not mean its the latest copy of the file. Any peer owning a file happens to believe its the same version of the file so data will be non-serializable.

Added NEW TEST FILES ['546990fb-a90d-463c-90a3-6c250e1d2aae.txt',
'bf9d2bde-be6c-485b-a36d-053300315ce3.txt', '1f2aa84b-246a-4d3c-96fa-9e99cde81e7f.txt',
'896f50d2-6f5c-4c0b-890a-a910073d08e6.txt']

- [Executed RETRIEVE AS Server 4 output: Loading configurations from configs.txt..
2022-02-21 22:12:04,147 [INFO|project3.RMIClient|RMIClient] Client on Server #4 RUNNING
RETRIEVE :File 546990fb-a90d-463c-90a3-6c250e1d2aae.txt Downloaded at localhost:4542
]
- [Executed RETRIEVE AS Server 4 output: Loading configurations from configs.txt..
2022-02-21 22:12:04,749 [INFO|project3.RMIClient|RMIClient] Client on Server #4 RUNNING
RETRIEVE :File 546990fb-a90d-463c-90a3-6c250e1d2aae.txt Downloaded at localhost:4542
]
- [Executed SEARCH AS Server 3 output: Loading configurations from configs.txt..
2022-02-21 22:12:05,355 [INFO|project3.RMIClient|RMIClient] Client on Server #3 RUNNING
SEARCH :localhost:2345
]
- [Executed REGISTER AS Server 2 output: Loading configurations from configs.txt..
2022-02-21 22:12:06,062 [INFO|project3.RMIClient|RMIClient] Client on Server #2 RUNNING
REGISTRY :ACCEPT
for file 546990fb-a90d-463c-90a3-6c250e1d2aae.txt]
- [Executed SEARCH AS Server 3 output: Loading configurations from configs.txt..
2022-02-21 22:12:06,616 [INFO|project3.RMIClient|RMIClient] Client on Server #3 RUNNING
SEARCH :localhost:2345
]
- [Executed RETRIEVE AS Server 4 output: Loading configurations from configs.txt..
2022-02-21 22:12:07,749 [INFO|project3.RMIClient|RMIClient] Client on Server #4 RUNNING
RETRIEVE :File 546990fb-a90d-463c-90a3-6c250e1d2aae.txt Downloaded at localhost:4542
]
- [Executed RETRIEVE AS Server 4 output: Loading configurations from configs.txt..

2022-02-21 22:12:08,402 [INFO|project3.RMIClient|RMIClient] Client on Server #4 RUNNING
RETRIEVE :File 546990fb-a90d-463c-90a3-6c250e1d2aae.txt Downloaded at localhost:4542
]

9. [Executed SEARCH AS Server 3 output: Loading configurations from configs.txt..

2022-02-21 22:12:09,058 [INFO|project3.RMIClient|RMIClient] Client on Server #3 RUNNING
SEARCH :localhost:2345
]

10. [EXECUTED REGISTRY AS Server 2 output: Loading configurations from configs.txt..

2022-02-21 22:12:10,189 [INFO|project3.RMIClient|RMIClient] Client on Server #4 RUNNING
DEREGISTER :ACCEPT
]

11. [Executed RETRIEVE AS Server 4 output: Loading configurations from configs.txt..

2022-02-21 22:12:10,662 [INFO|project3.RMIClient|RMIClient] Client on Server #4 RUNNING
RETRIEVE :No such file on any peer
]

Ran 1 test in 7.433s

OK