For Query:

To_query_From_LayerId_DateTime.xml

Example: **rm_query_cm_00_2021-12-29T12:29:20.113113.xml**
Communication Manager wants the IP address and/or Port Number of a node from the Routing Manager. Then it will be called a query. (A query is a very short and brief data/information transfer/extraction).

The queries corresponding to Routing Manager are:
getSystemIP()
getLayerID()
getSystemMACAddress()
getNodeID()
findNextHop(String hashID, int layerID)

Layer ID is the corresponding Layer ID, like 00, 01, 02, 03, etc. upto 99.
Date format: (Year: YYYY)-(Month: MM)-(Day: DD)T(Hour: hh):(Minute: mm):(Seconds: ss).(nanosecond: nnnnnn)

For Process:

To_process_From_LayerId_DateTime.xml

Example: **rm_process_cm_00_2021-12-29T12:29:20.113113.xml**
Communication Manager wants to sends the Routing table information to the Routing Manager. Then it will be called a process. (A process is a long and detailed data/information transfer/extraction).

File f1 = new File("filename.txt");
String str1 = f1. getName(); //Type: String, Use: Returns the name of the file.

How to get the To and From names and how to know whether it is a query or a process?
Answer: using the split() method, we can split the name using "_" .
Syntax: String[] arrOfStr = str.split(String regex, int limit);
Program: String str = "geekss@for@geekss";
String[] arrOfStr = str.split("@", 2);
Output: String[0] = geeks
String[1] = for@geekss

Single Query

```
<xml>
    <query get_from = “RM” type = “single”>
        <q_name> getSystemIP() </q_name>
    </query>
</xml>
```

Multiple Query Multiple Module

```
<xml>
    <query_details number_of_query = “368” type = “multiple”>
        <query id = “0001” get_from = “RM”>
            <q_name> getSystemIP() </q_name>
        </query>
        <query id = “0002” get_from = “RM”>
            <q_name> getSystemMACAddress()</q_name>
        </query>
        <query id = “0003” get_from = “IM”>
            <q_name> getXyz() </q_name>
        </query>
        <query id = “0004” get_from = “RM”>
            <q_name> getNodeID()</q_name>
        </query>
    </query_details>
</xml>
```

Multiple Query Multiple Module with Parameters:

```
<xml>
    <query_details number_of_query = “368” type = “multiple”>
        <query id = “0001” get_from = “RM”>
            <q_name> findNextHop() </q_name>
            <q_param name = “hashID”> 176FD856 </q_param>
            <q_param name = “layerID”> 03 </q_param>
        </query>
        <query id = “0002” get_from = “RM”>
            <q_name> findNextHop() </q_name>
            <q_param name = “hashID”> 923FD856 </q_param>
            <q_param name = “layerID”> 01 </q_param>
        </query>
```

```
        <query id = “0003” get_from = “IM”>
            <q_name> findNextHop() </q_name>
            <q_param name = “hashID”> 627FD856 </q_param>
            <q_param name = “layerID”> 04 </q_param>
        </query>
        <query id = “0004” get_from = “RM”>
            <q_name> findNextHop() </q_name>
            <q_param name = “hashID”> 662AB352 </q_param>
            <q_param name = “layerID”> 01 </q_param>
        </query>
    </query_details>
</xml>
```

Generating Response (having multiple attributes) for Multiple Query Multiple Module with Parameters: (Glue Code will generate this response file and transfer it to the module which initially demanded for all these information.)

```
<xml>
    <query_details number_of_query = “368” type = “multiple”>
        <query id = “0001” get_from = “RM”>
            <q_name> findNextHop() </q_name>
            <q_param name = “hashID”> 176FD856 </q_param>
            <q_param name = “layerID”> 03 </q_param>
            <q_resp name = “systemIP”> 127:34:24:243 </q_resp>
            <q_resp name = “systemMACAddress”> 00:1b:44:11:3a:b7 </q_resp>
            <q_resp name = “portNumer”> 8080 </q_resp>
        </query>
        <query id = “0002” get_from = “RM”>
            <q_name> findNextHop() </q_name>
            <q_param name = “hashID”> 923FD856 </q_param>
            <q_param name = “layerID”> 01 </q_param>
            <q_resp name = “systemIP”> 124:34:24:243 </q_resp>
            <q_resp name = “systemMACAddress”> 04:1b:44:11:3a:b7 </q_resp>
            <q_resp name = “portNumer”> 8045 </q_resp>

        </query>
        <query id = “0003” get_from = “IM”>
            <q_name> findNextHop() </q_name>
            <q_param name = “hashID”> 627FD856 </q_param>
            <q_param name = “layerID”> 04 </q_param>
```

```
                <q_resp name = “systemIP”> 127:34:24:243 </q_resp>
                <q_resp name = “systemMACAddress”> 00:1b:44:11:3a:b7 </q_resp>
            </query>
            <query id = “0004” get_from = “RM”>
                <q_name> findNextHop() </q_name>
                <q_param name = “hashID”> 662AB352 </q_param>
                <q_param name = “layerID”> 01 </q_param>
                <q_resp name = “systemIP”> 112:34:24:243 </q_resp>
                <q_resp name = “systemMACAddress”> 00:14:c4:11:3a:b7 </q_resp>
                <q_resp name = “portNumer”> 8084 </q_resp>
            </query>
        </query_details>
</xml>
```