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Introduction to the software Net2plan

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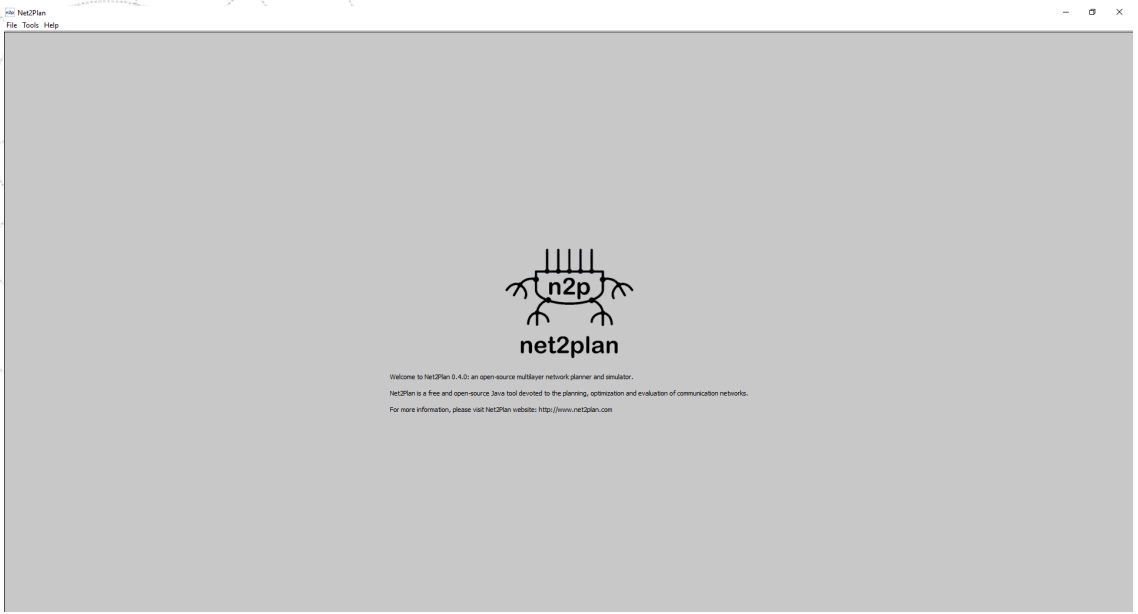
Net2Plan download and installation

- **Step 1 :** Since Net2plan coded in Java, first step is to make sure that computer has necessary **Java Runtime Environment**. This can be downloaded from `https://java.com/en/download/` and install it in your computer.
- **Step 2 :** Next download & install Net2plan software. Net2plan is available on `http://net2plan.com/download.php`.
  - There are several versions available on the website, however, please download a stable version "net2plan-0.4.2.zip".
  - Extract it and find the executable jar file with the name of "Net2Plan".
  - Double click on it and it'll open the following window (see next page):

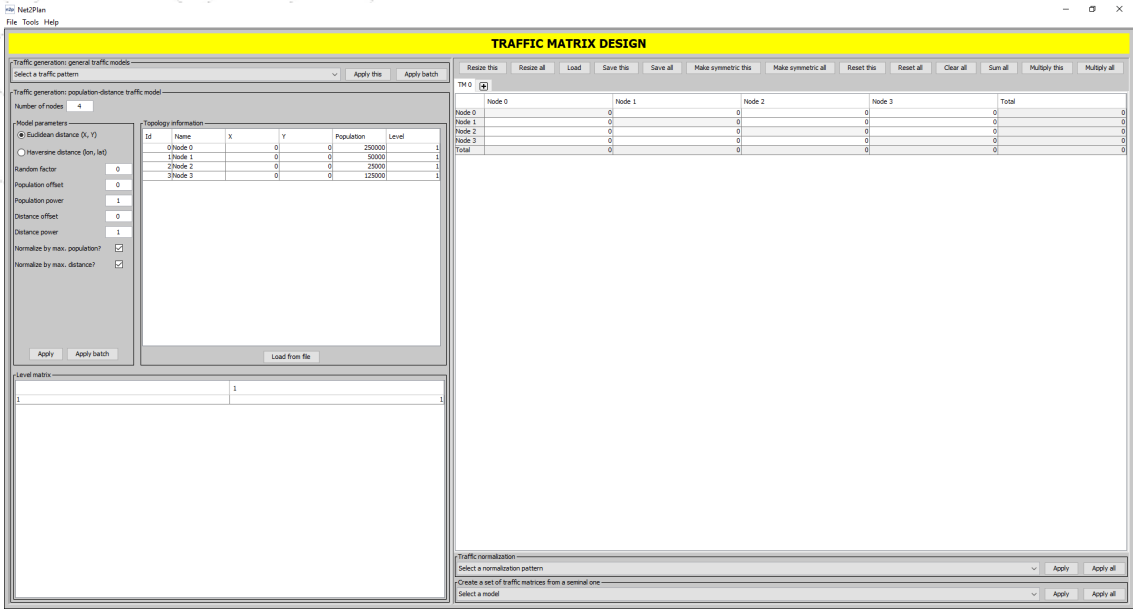


Now we have Net2plan software installed in our computer !!!

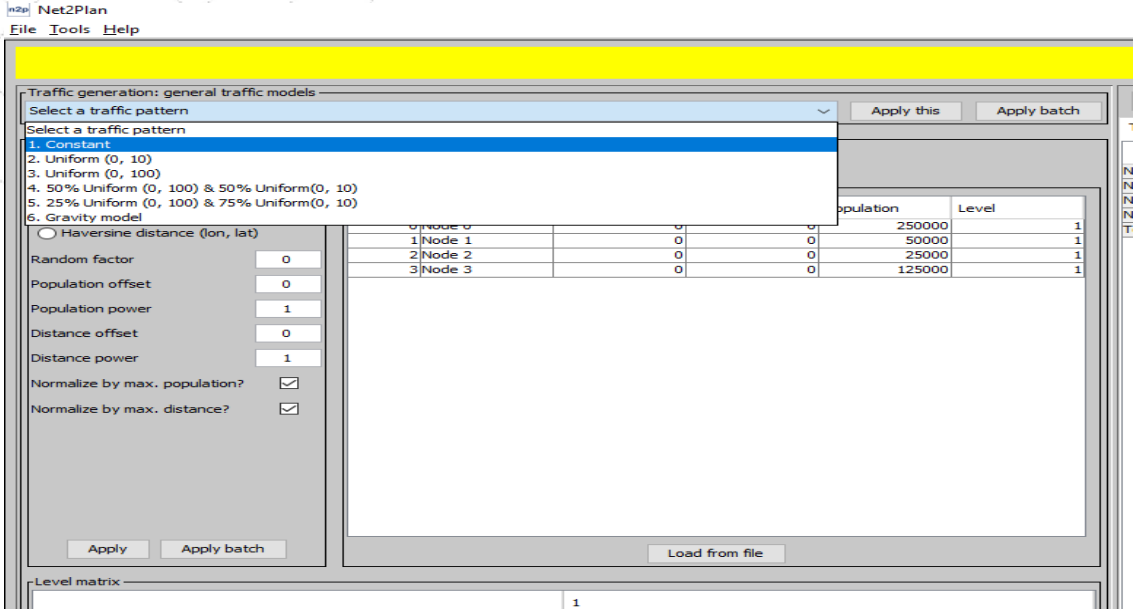
Net2plan Tools

- **Creating Traffic Matrices :**

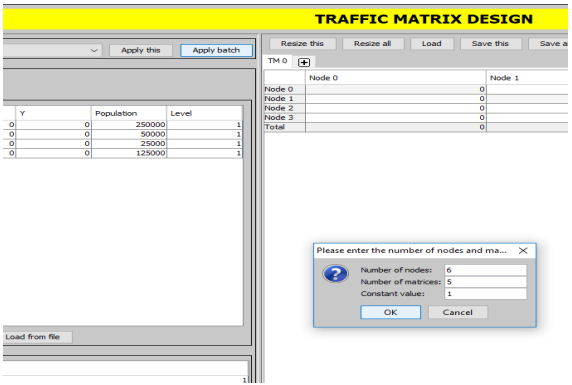
  Step 1 : To start creating a traffic matrix in Net2Plan go to "Tools → Traffic matrix design" or press "Alt +2". This will pop-up the following window:



- **Step 2 :** Click on the top left side "select a traffic pattern". This will open a palate which includes several types of option for traffic pattern. From these options, select "Constant" (see the following figure).

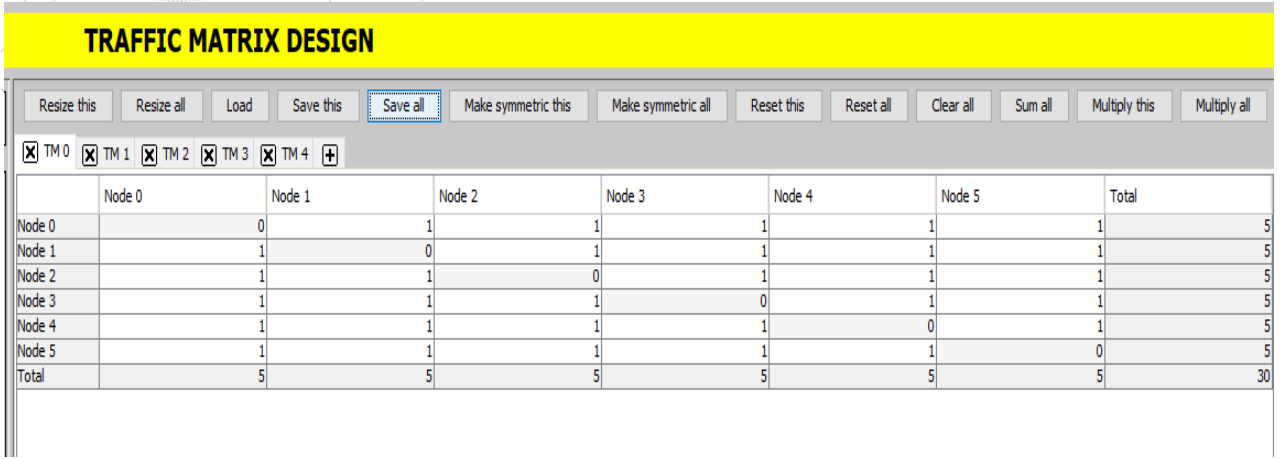


- **Step 3 :** Next we'll create batch of matrices with constant traffic. for that click "Apply batch". This will pop-up a new box (see the figure) and fill all the value as per the following:
  Number of nodes$\longrightarrow$ 6
  Number of matrices $\longrightarrow$ 5
  Constant value $\longrightarrow$ 1



- **Step 4 :** This will create 5 different matrices. Now update the value of all the matrices according to your ODU matrices (To edit its value, double click on it).

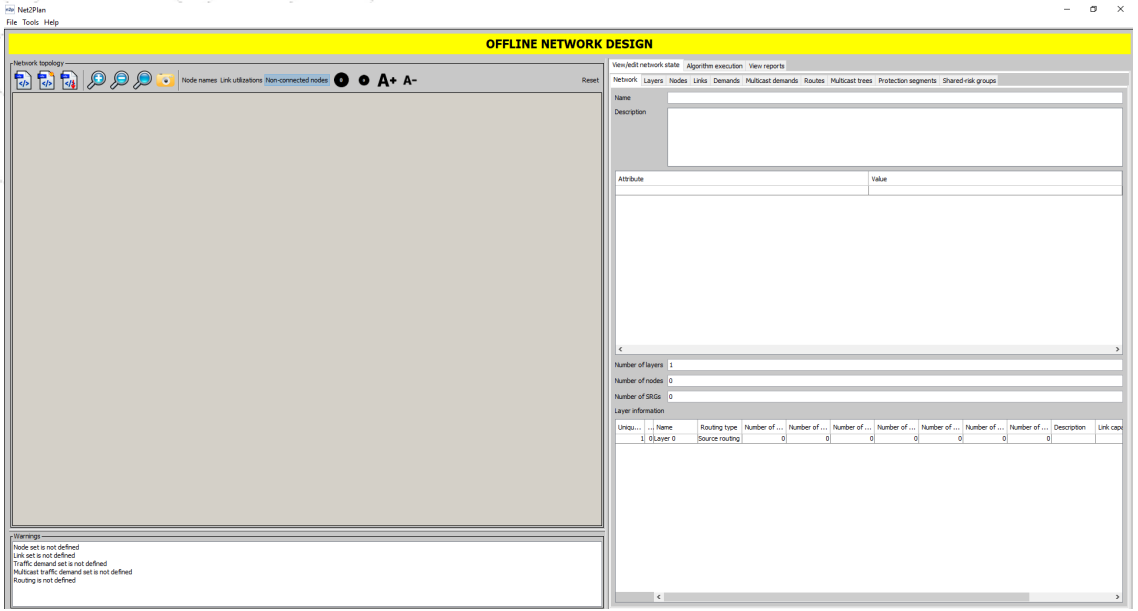
  Next click on "Save all" to save all these matrices.



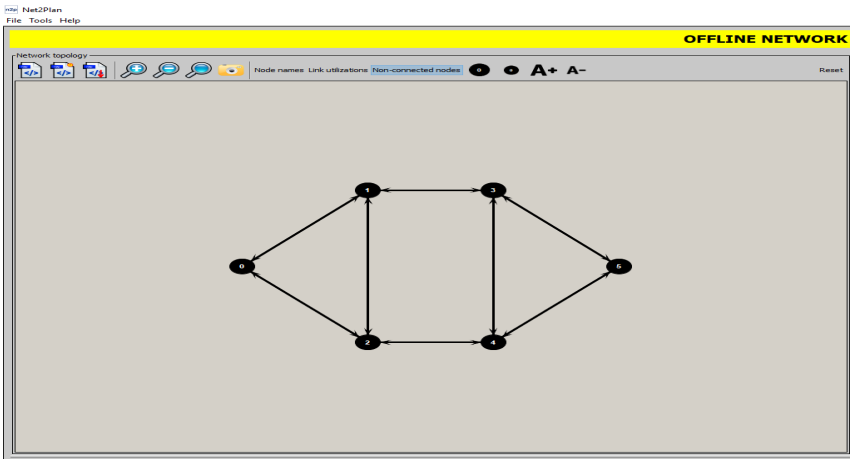
	Node 0	Node 1	Node 2	Node 3	Node 4	Node 5	Total
Node 0	0	1	1	1	1	1	5
Node 1	1	0	1	1	1	1	5
Node 2	1	1	0	1	1	1	5
Node 3	1	1	1	0	1	1	5
Node 4	1	1	1	1	0	1	5
Node 5	1	1	1	1	1	0	5
Total	5	5	5	5	5	5	30

- **Creating the Network topologies :**

  Step 1 : To start the network creation in Net2plan go to "Tools → Offline network design" or press "Alt +1". This will pop-up the following window:

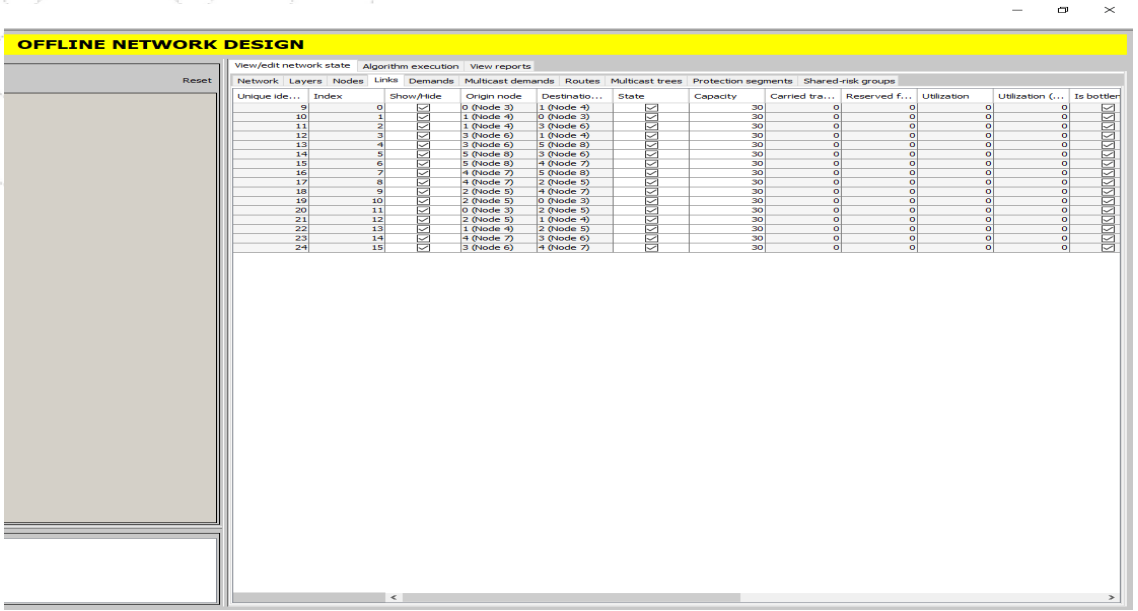


- **Step 2 :** To start creating a new network, first nodes have to be introduced by right clicking on the gray area and choosing "Add node here".
  - Links between nodes are created by holding a click on the origin node and dragging until the destination node, holding shift before releasing the click creates bidirectional links.
  - Create a full network as shown in figure.

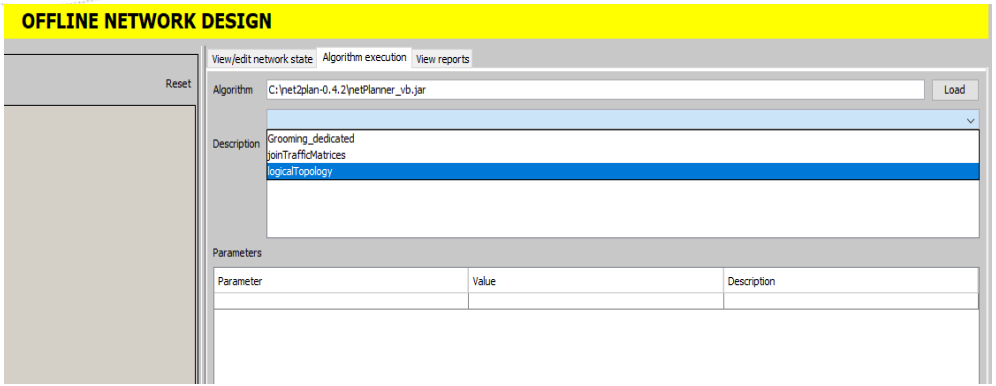


- **Step 3 :** View/edit network states

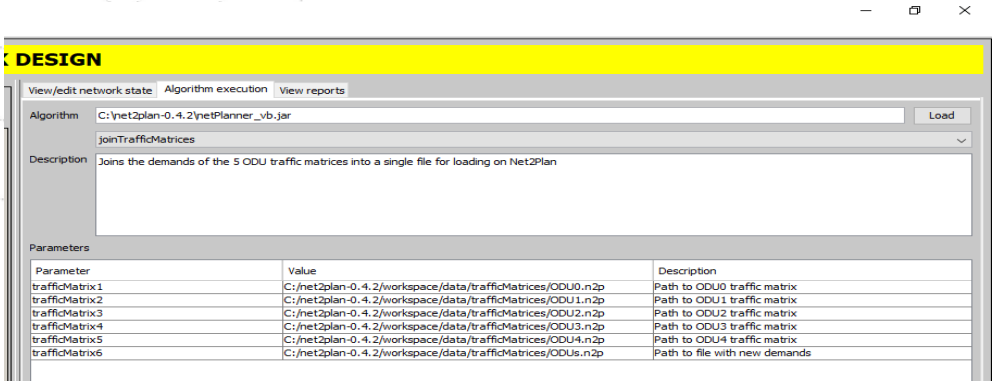
  It displays all the characteristics/states of our network. Modify it where where applicable (i.e. in "links", we can set the capacity of the each link.)



- **Step 4 :** Algorithm execution
  - Set the path of the algorithm (i.e. C:/Net2plan-0.4.2/NetPlanner_vb.jar). This includes three different algorithm :
    1. joinTrafficMatricies
    2. logicalTopology
    2. Grooming_dedicated

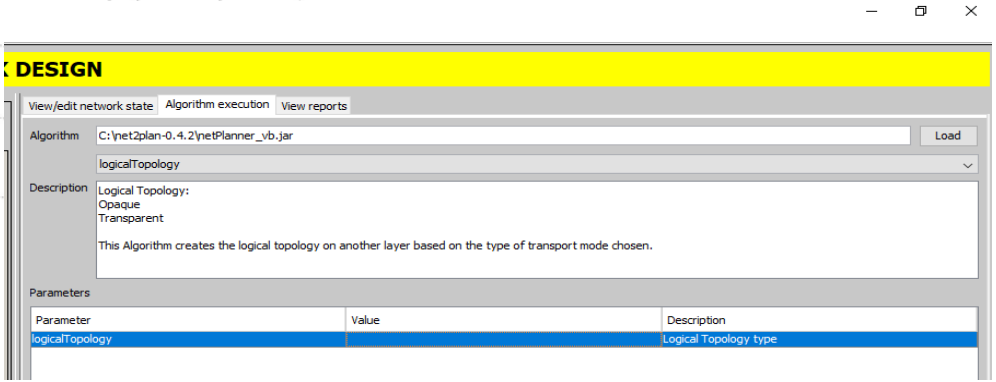


- **Step 5 :** From the palate, first select "jonTrafficMatricies".
  Now set the path of the all ODU matrices which we have created earlier.
  (i.e. C:\net2plan-0.4.2/workspace/data/trafficMatrices/ODU0.n2p)



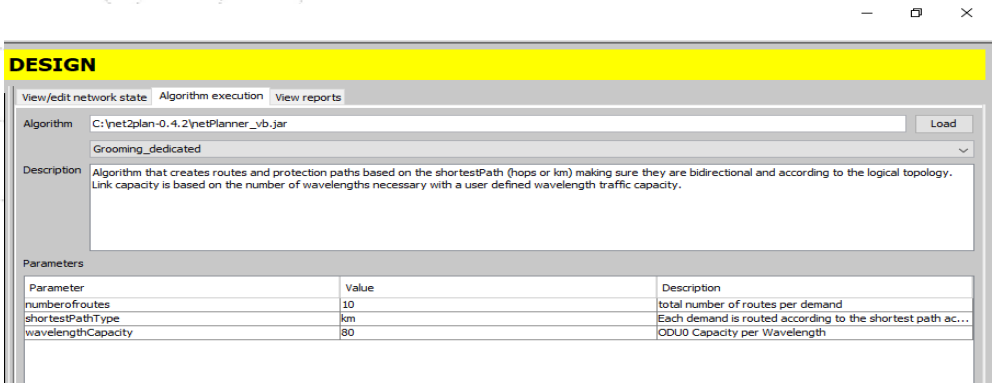
After setting all path of ODUs, click on the "Execute" buttons.

- **Step 6 :** From the palate, select "logicalTopology".
  Read the description in the Net2plan to understand the function of the algorithm.



click on the "Execute" buttons.

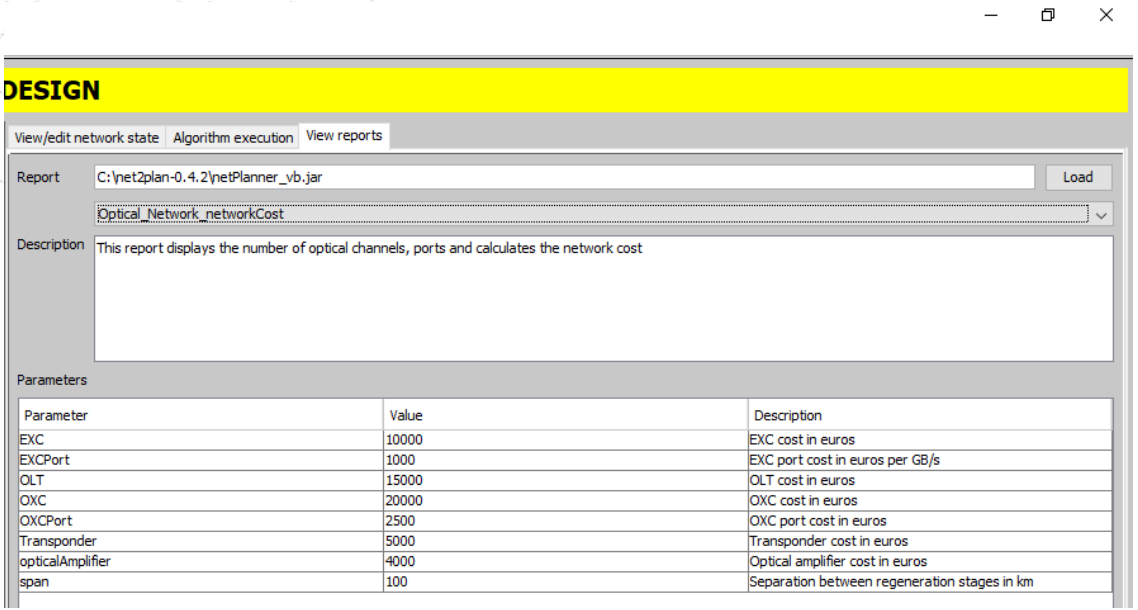
- **Step 7 :** From the palate, select "Grooming_dedicated".
  Read the description in the Net2plan to understand the function of the algorithm.



click on the "Execute" buttons.

- **View Reports :**

  This section will generate a table which includes number of optical channels, ports and calculates the network cost.



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