Project Name
Switched LANs

Project Purpose
To compare a LAN performance for using Hub and Switch with opnet.

Project Steps
Don’t forget to save project frequently.

1) Open opnet and create a new project and a new scenario. (Project Name:SwitchedLAN Scenario Name: OnlyHub)

2) From Startup Wizard; Create Empty Scenario / Office / (Only Enter 3 times)

3) We create a small network which has 16 nodes.
   a. Topology / Rapid Configuration/ Star press OK
   b. Click Select Model and select ethernet
   c. Set Center Node Model ➔ ethernet16_hub,
      Periphery Node Model ➔ ethernet_station,
      Link Model ➔ 10BaseT,
      Number ➔ 16,
      X ➔ 45,
      Y ➔ 45,
      Radius ➔ 40

4) Right click node_16, which is hub ➔ Edit Attributes ➔ Change the name to Hub1 and click OK. Your Project will be similar to Picture 2.

5) Configure the Network Nodes
   a. Select one of the nodes (node_0 .. node_15)
   b. Right Click ➔ Select Similar Nodes Right Click ➔ Edit Attributes
      From the opened windows Check the Apply Changes to Selected Objects Open Traffic Generation Parameters and Packet Generation Arguments set values like Picture 3

6) Choose Statistics
   a. Right-click anywhere in the project workspace and select Choose Individual Statistics from the pop-up menu.
   b. In the Choose Results dialog box, choose the shown four statistics in Picture 4.
7) Configure Simulations
   a. Configure ➔ Run Simulation
   b. Duration ➔ 2.0 minutes, click OK.

8) Duplicate Scenario
   a. Scenario ➔ Duplicate Scenario
   b. The name of new scenario is HubAndSwitch
   c. Add one hub and one switch from Object Palette
   d. Change new hub name ➔ Hub2, new switch name ➔ Switch
   e. Reconfigure the network like Picture 5.
   To add new links, use 10BaseT at Object Palette

9) Run Simulation
   a. Scenario ➔ Manage Scenario
   b. Change the values under Result <collect> (if you run it before, choose <recollect>)
   c. Click OK to run, this may take several minutes to complete.

10) View Results
    a. Results ➔ Compare Results
    b. Change graphic type ➔ time average
    c. To show the graphics select the marked lines on Picture 6 and click show.

Project Benefits
It is clear in this simulation that A LAN which is operated with switch and hub has better performance than LAN which is operated with only hub.

Project Links
All project files:
http://goo.gl/IkuzwZ