Analyzing a Simple Social Network using ORA

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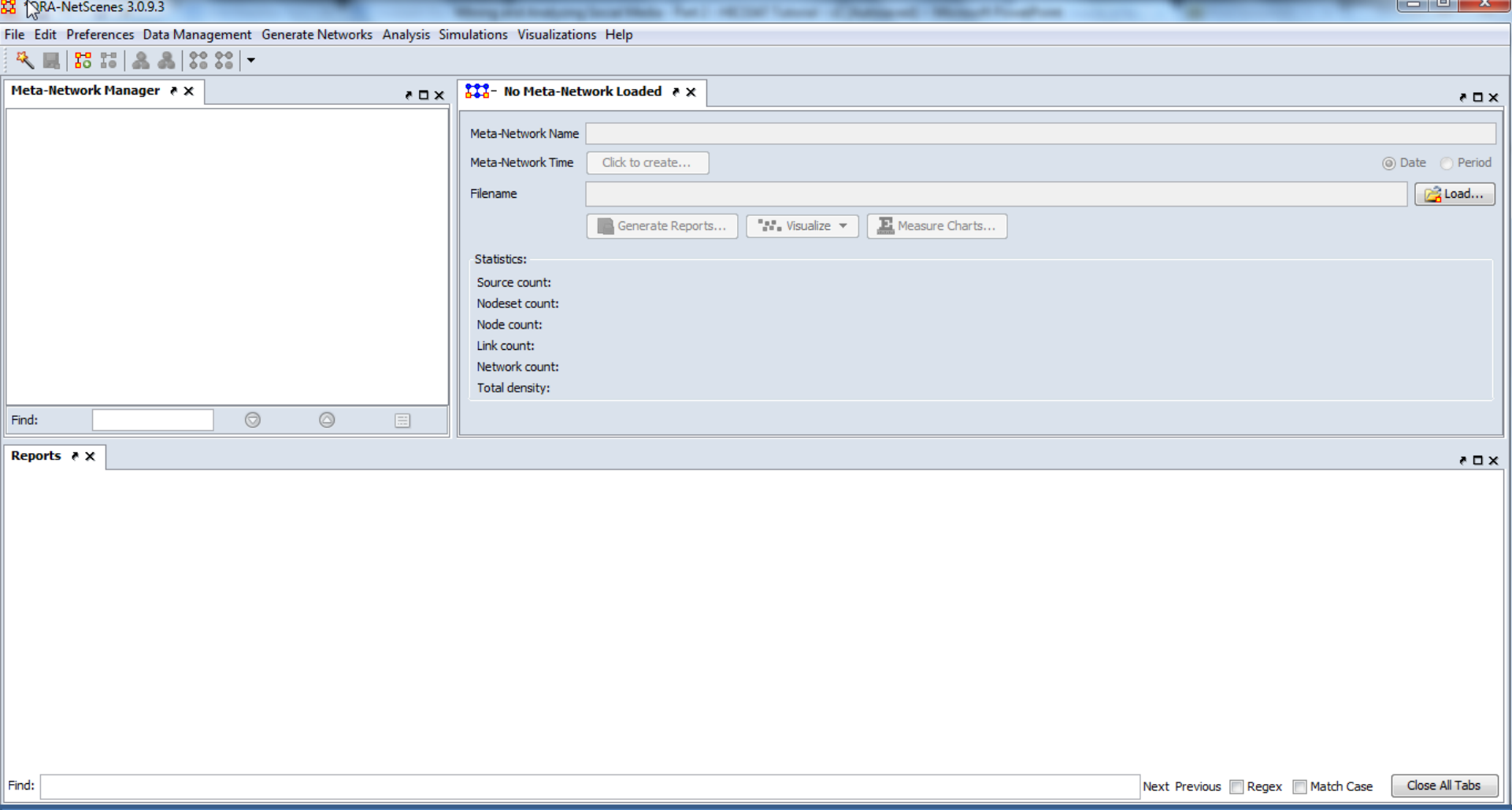
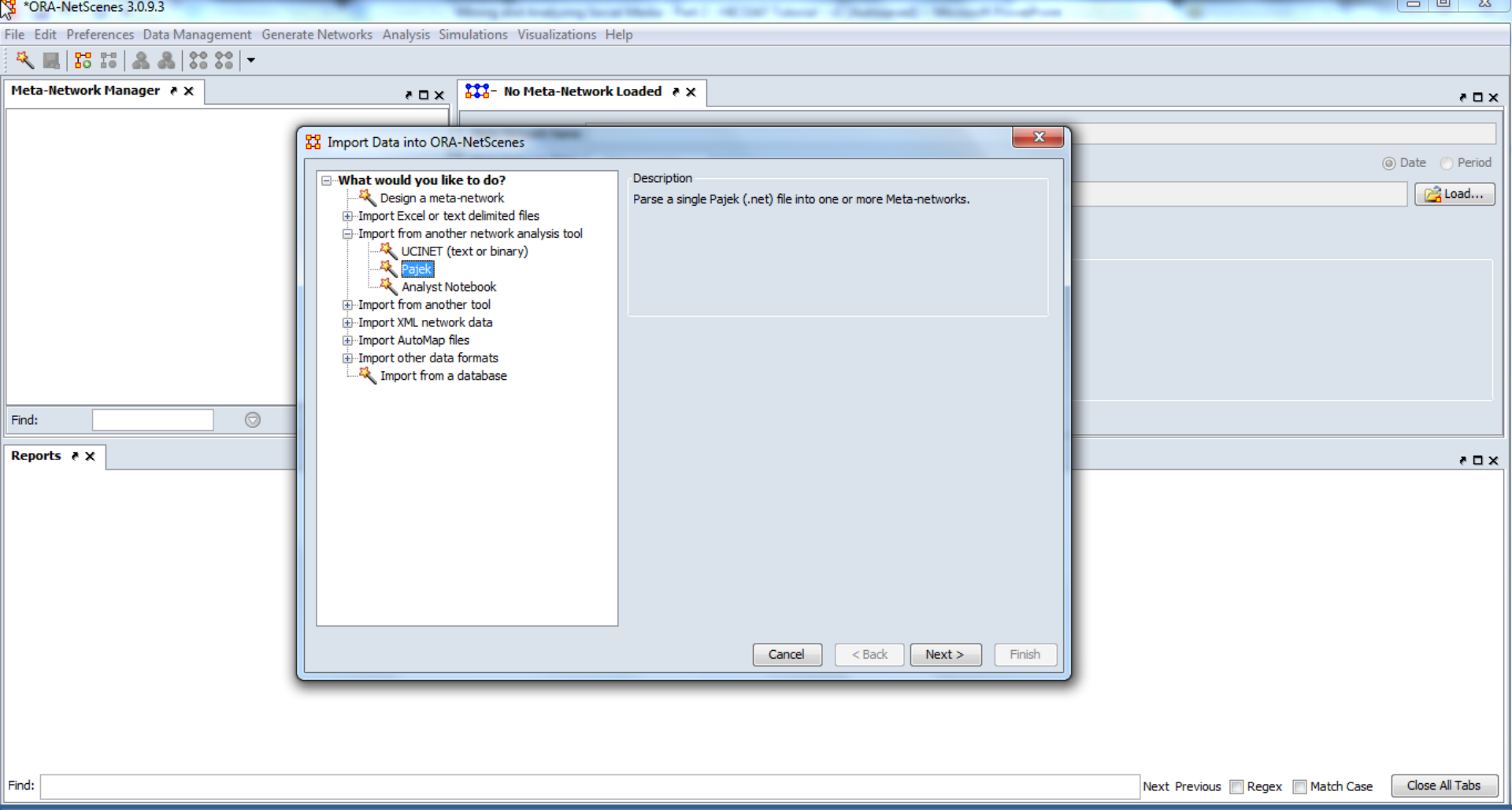
HICSS 47

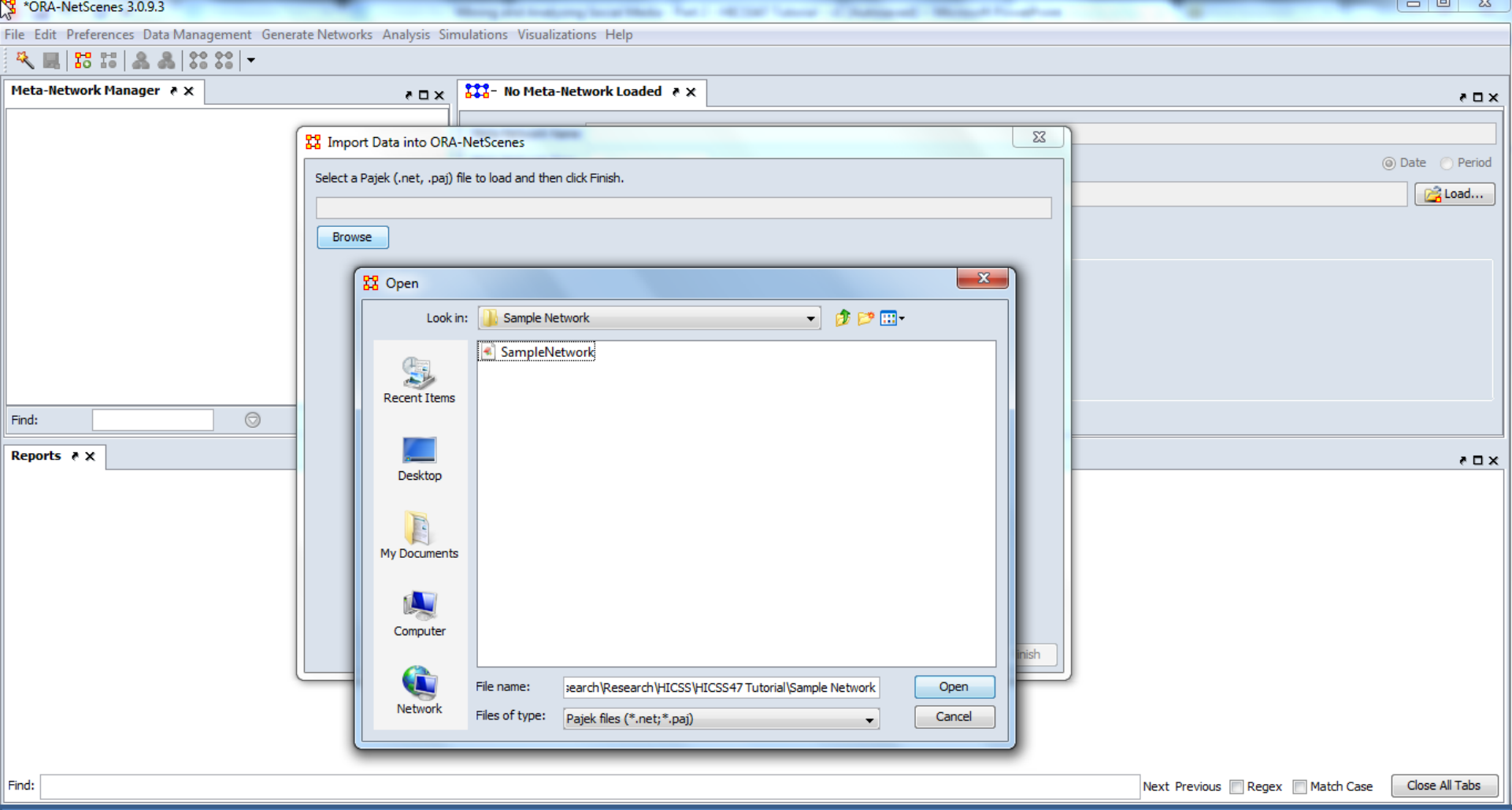
2014



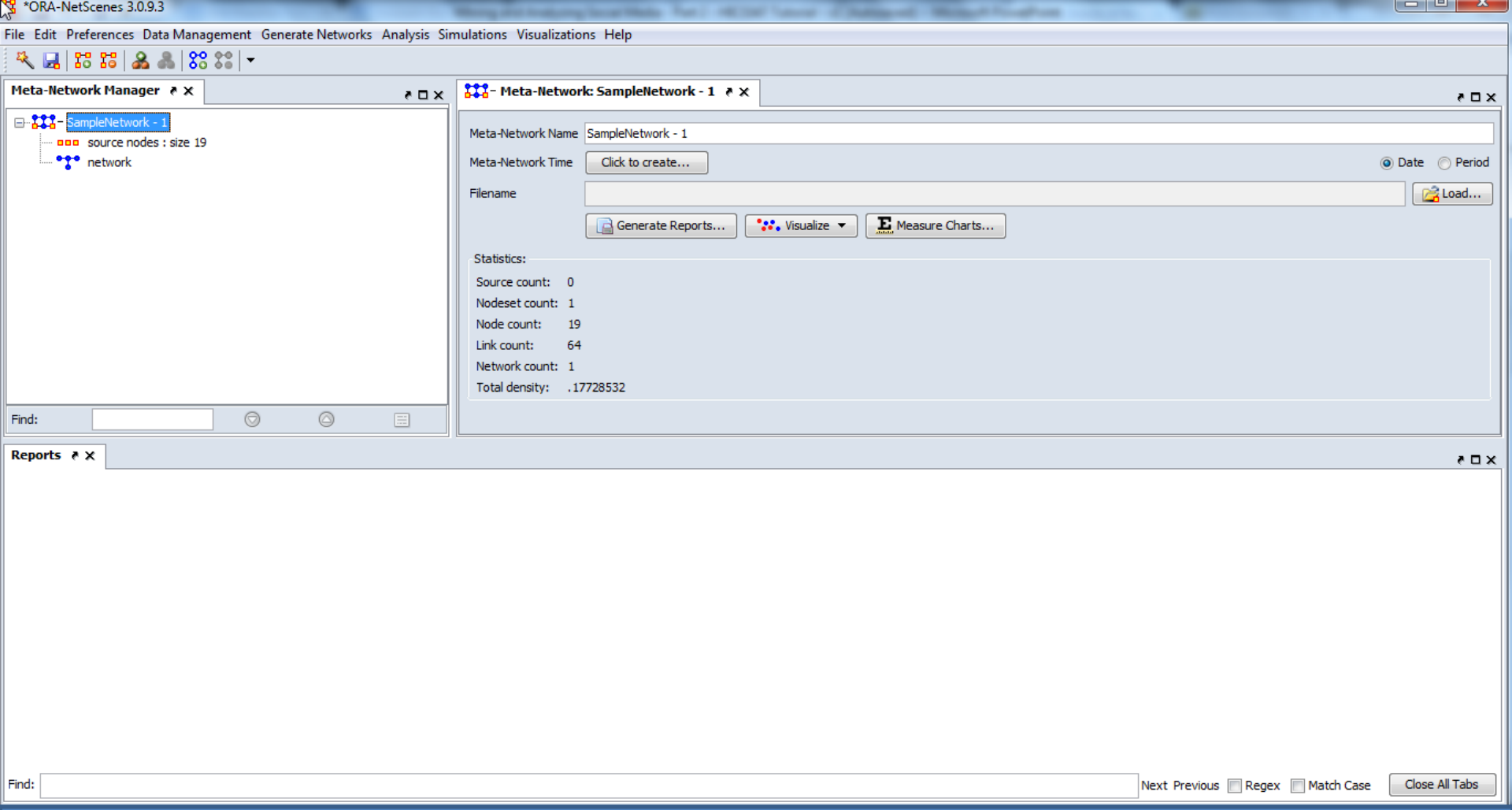
Step 1A: Open ORA



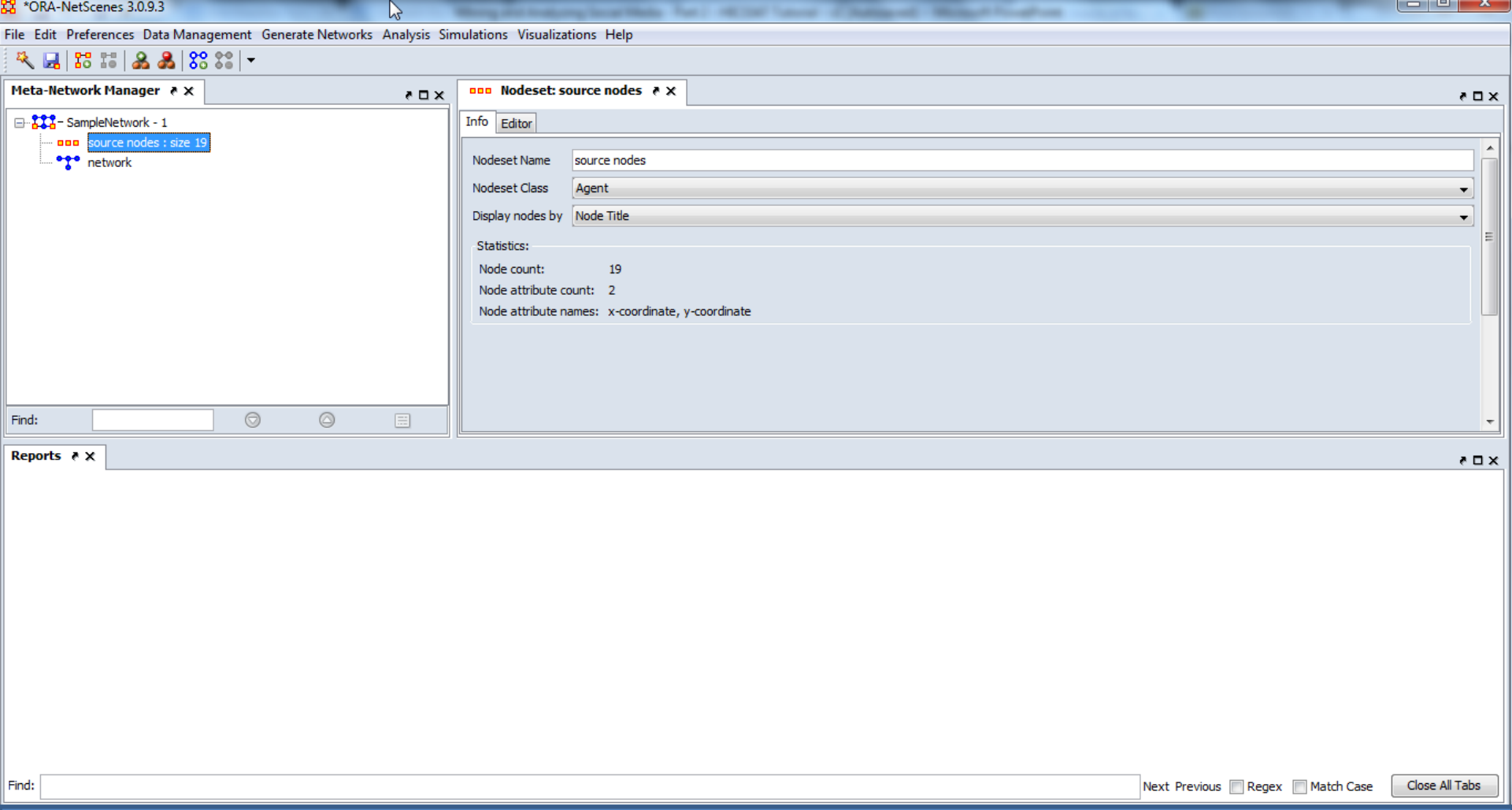
Step 1B: Importing Pajek File



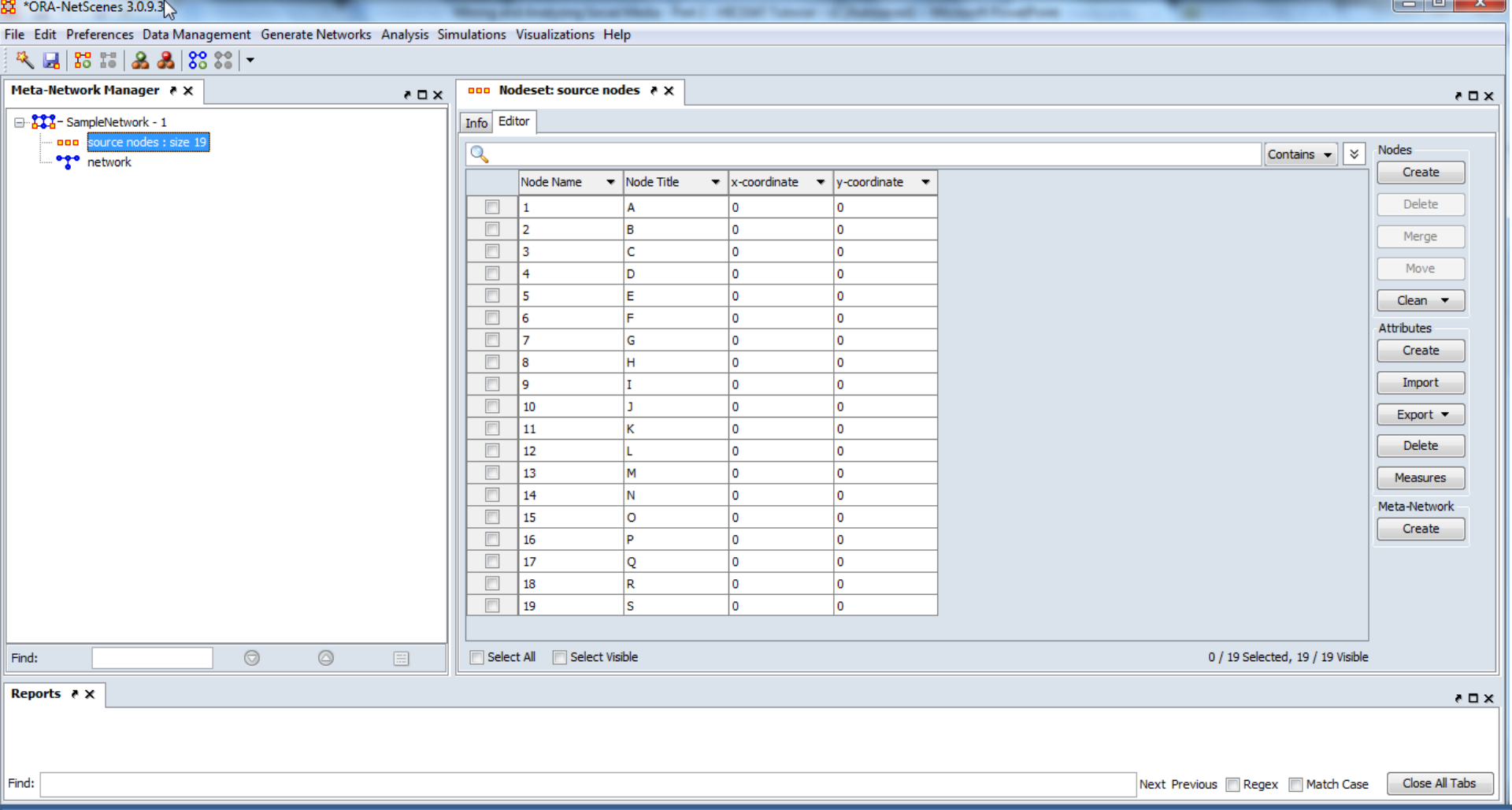
Step 1C: Selecting SampleNetwork.net file



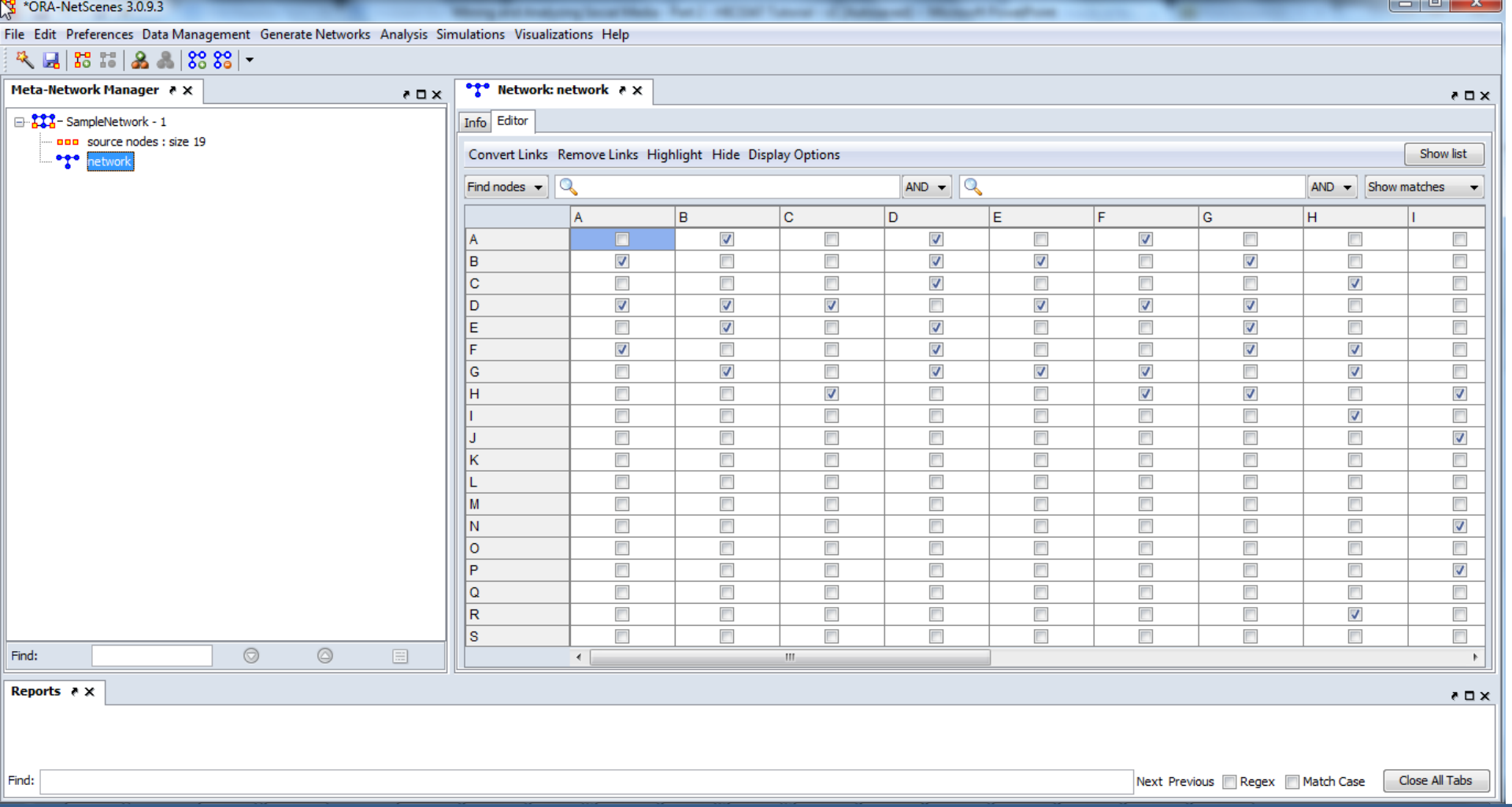
Step 1D: Nodes & Network Edges loaded



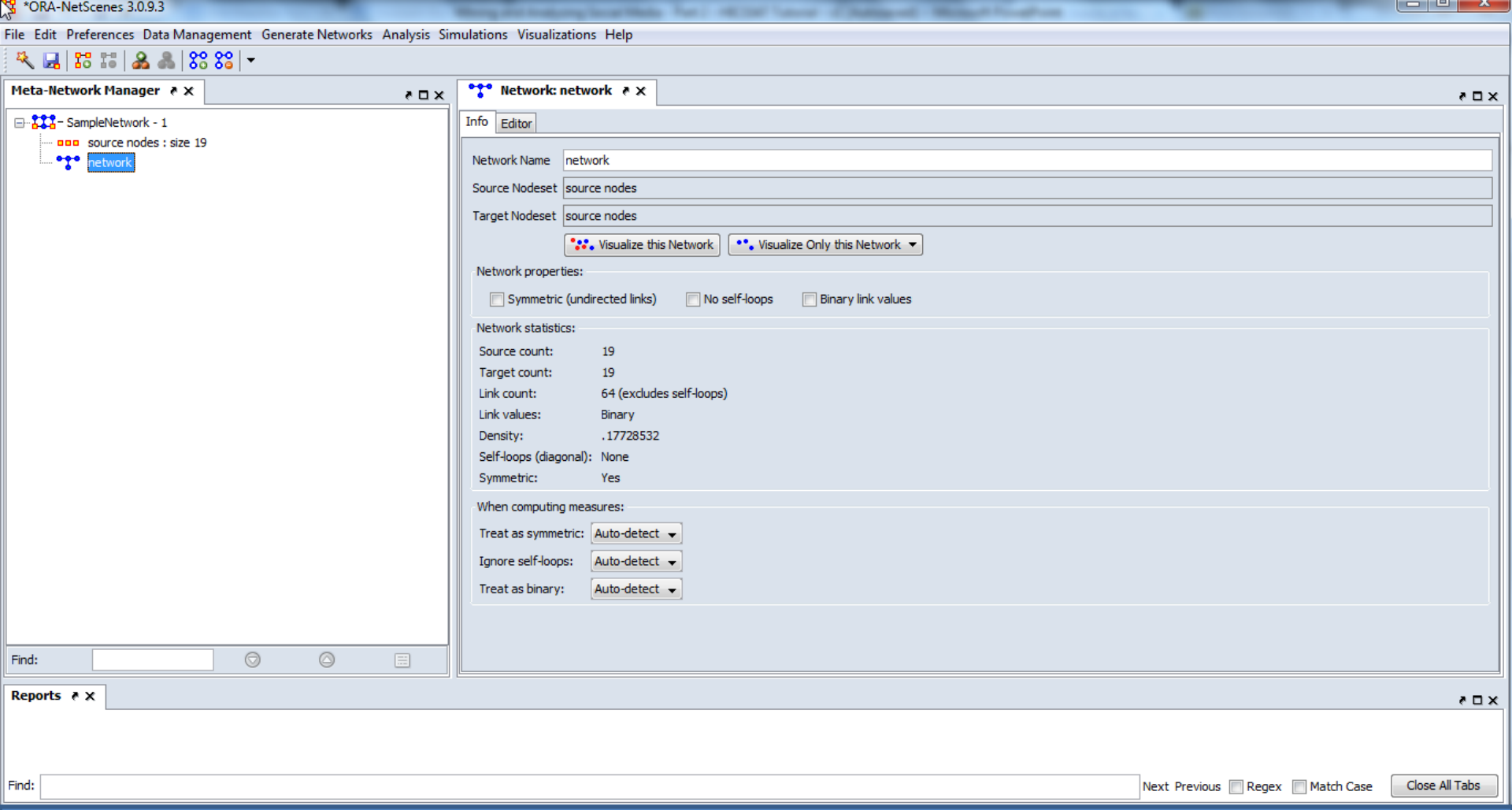
Step 1E: Examining Nodes (Vertices)



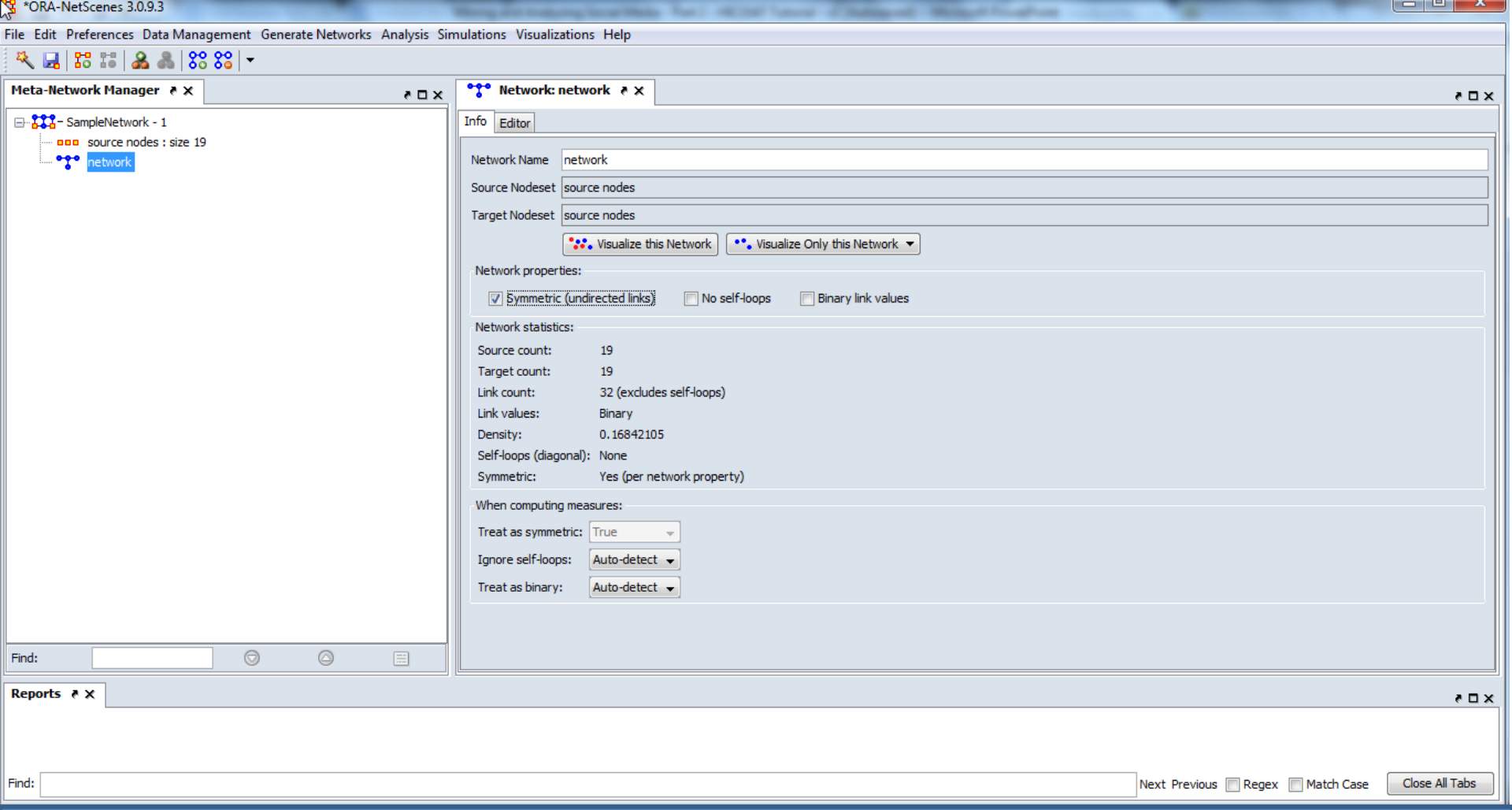
Step 1F: Table of Nodes (Vertices)



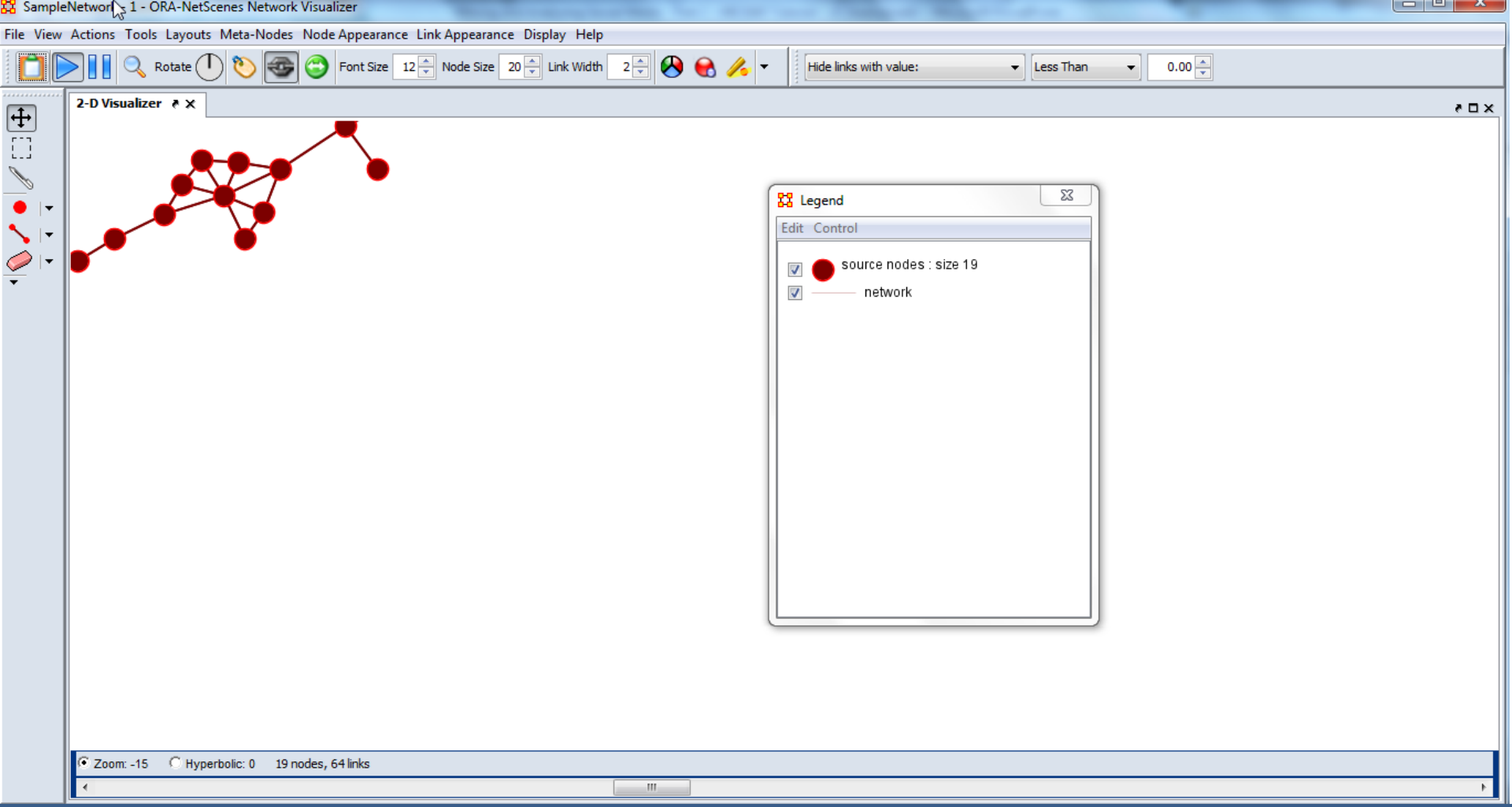
Step 1G: Examining Adjacency Matrix



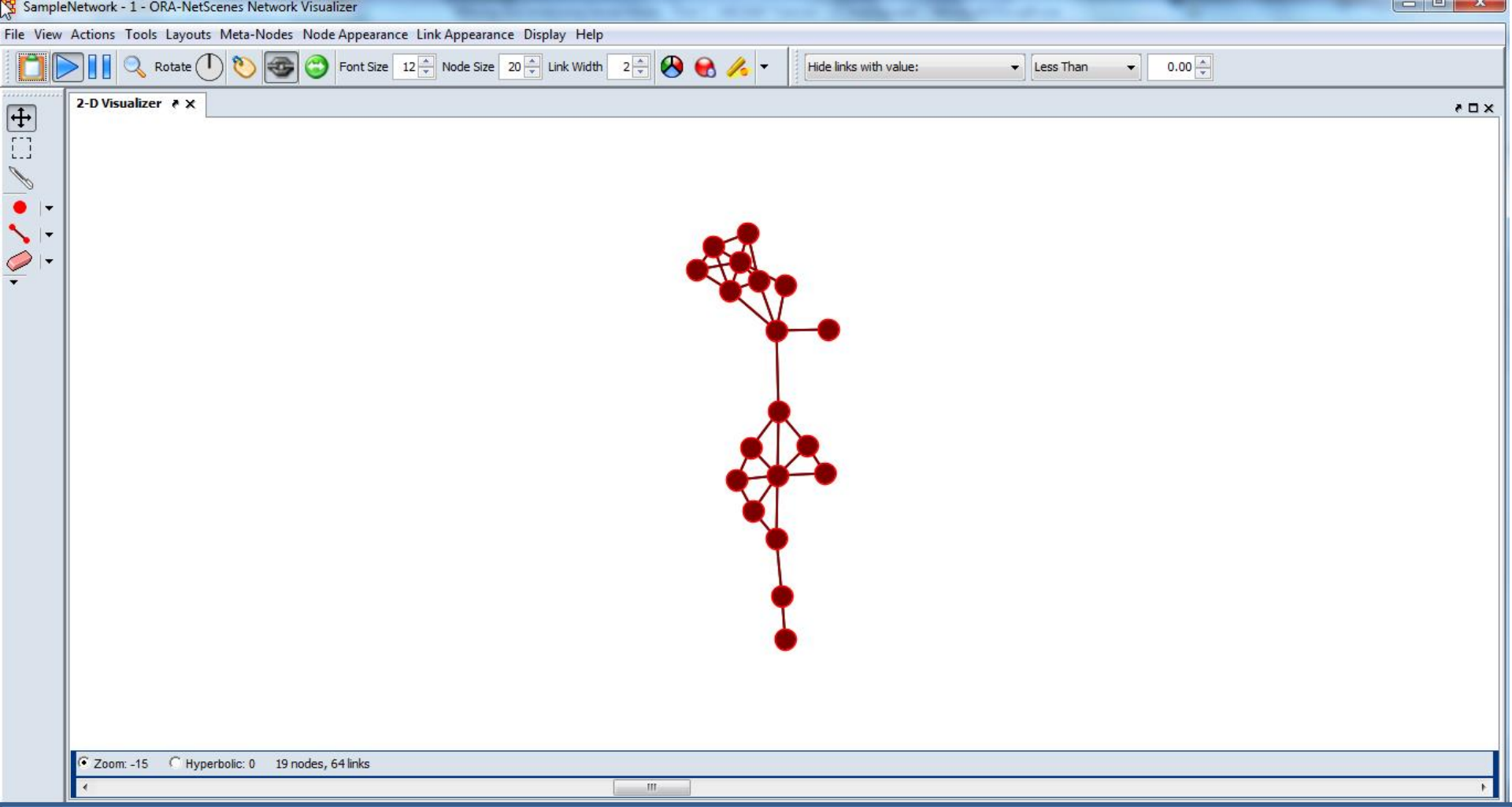
Step 1H: Choosing Symmetric (Unidirected) Setting



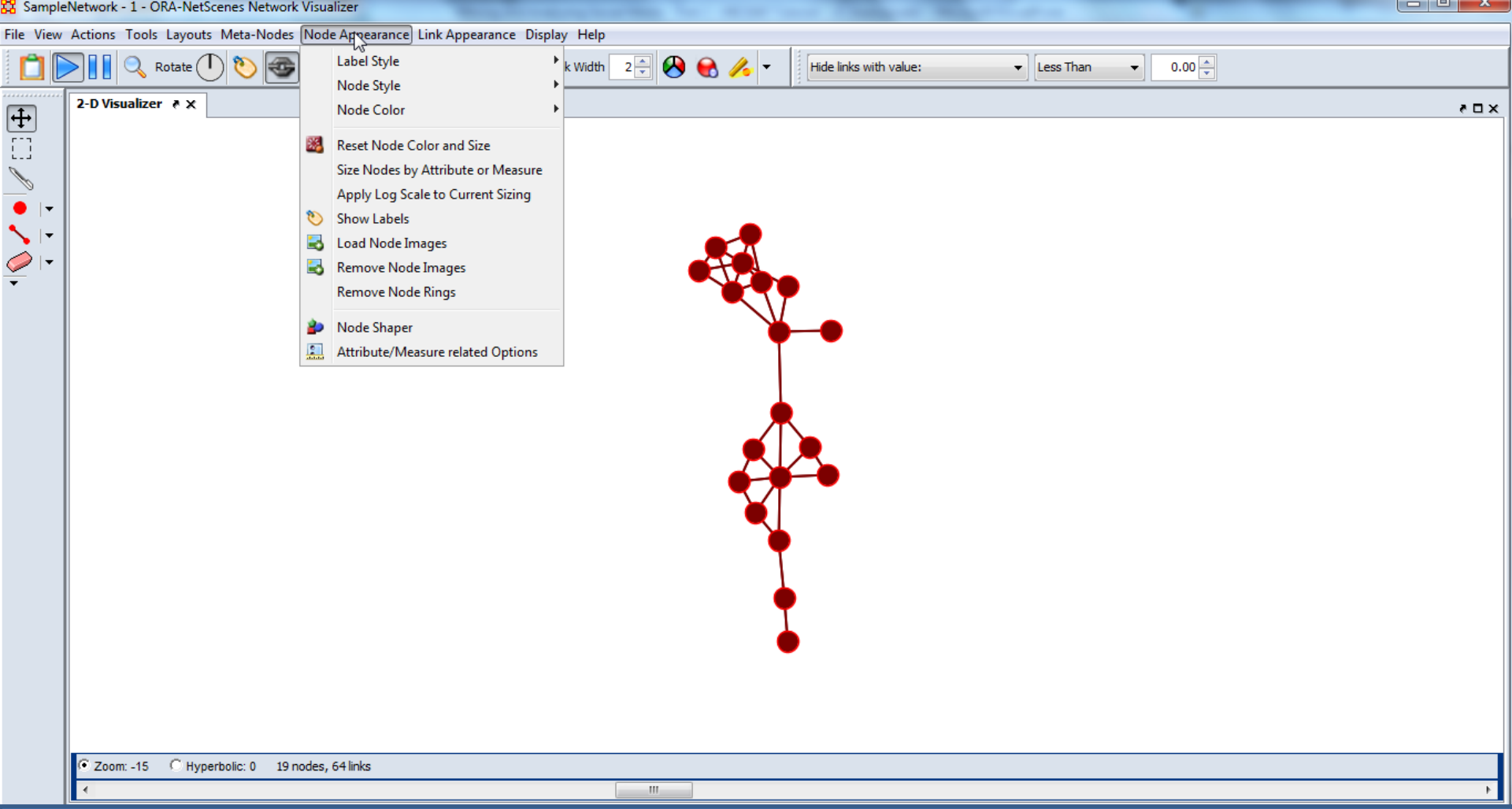
Step 2A: Visualizing the Network



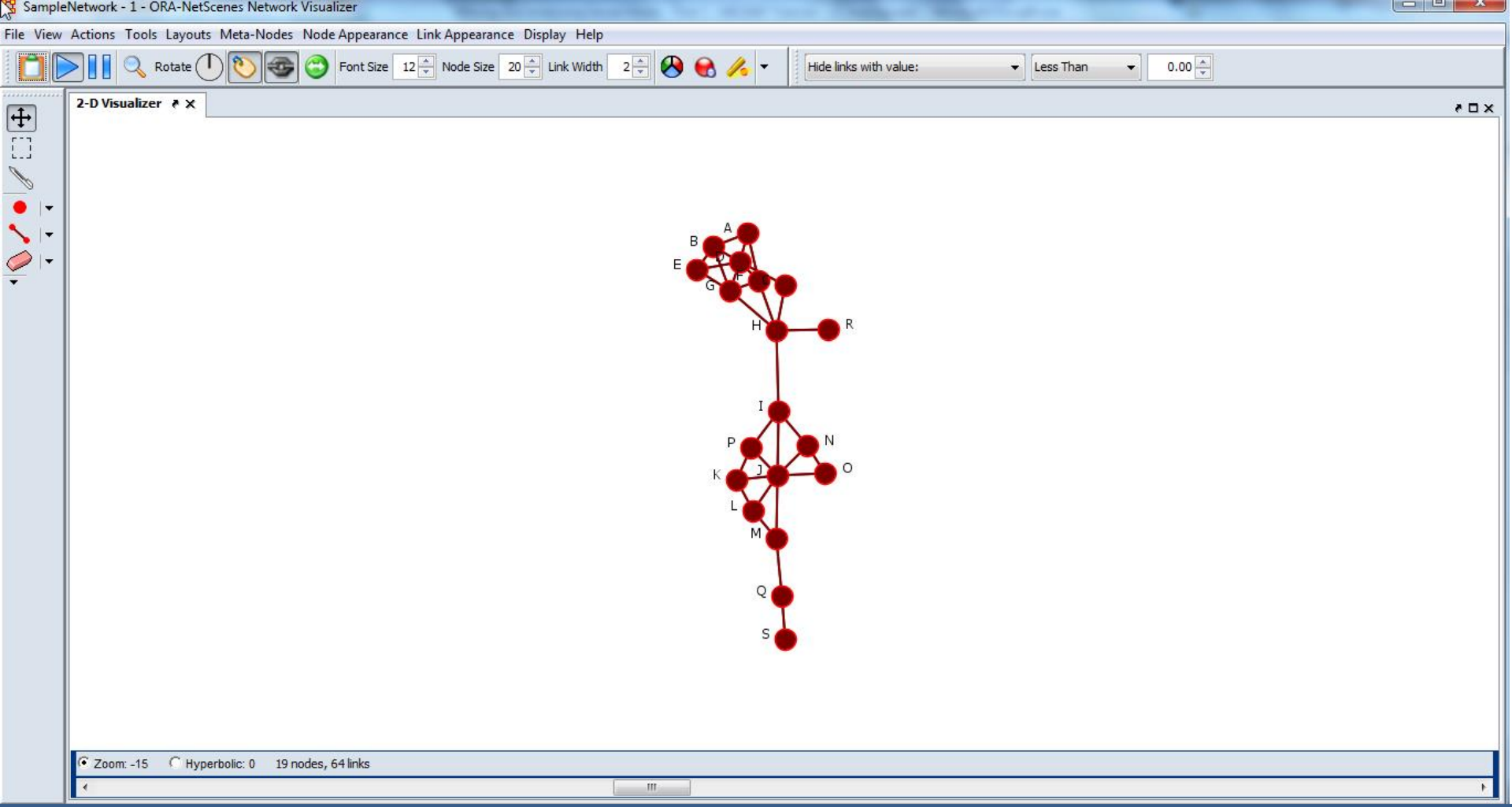
Step 2B: Random Layout Produced



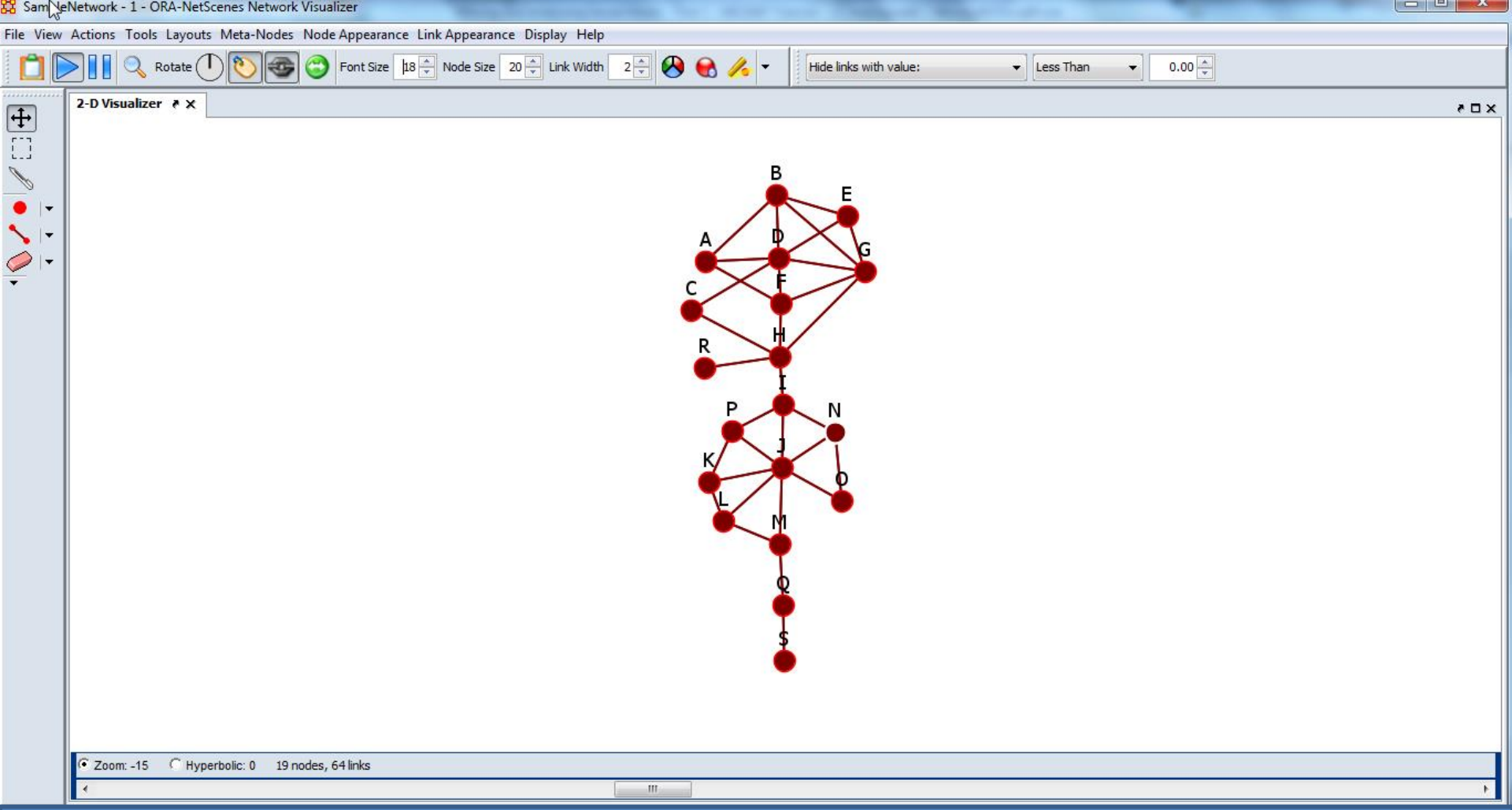
Step 2C: Graph dragged to center and orientation adjusted by hand



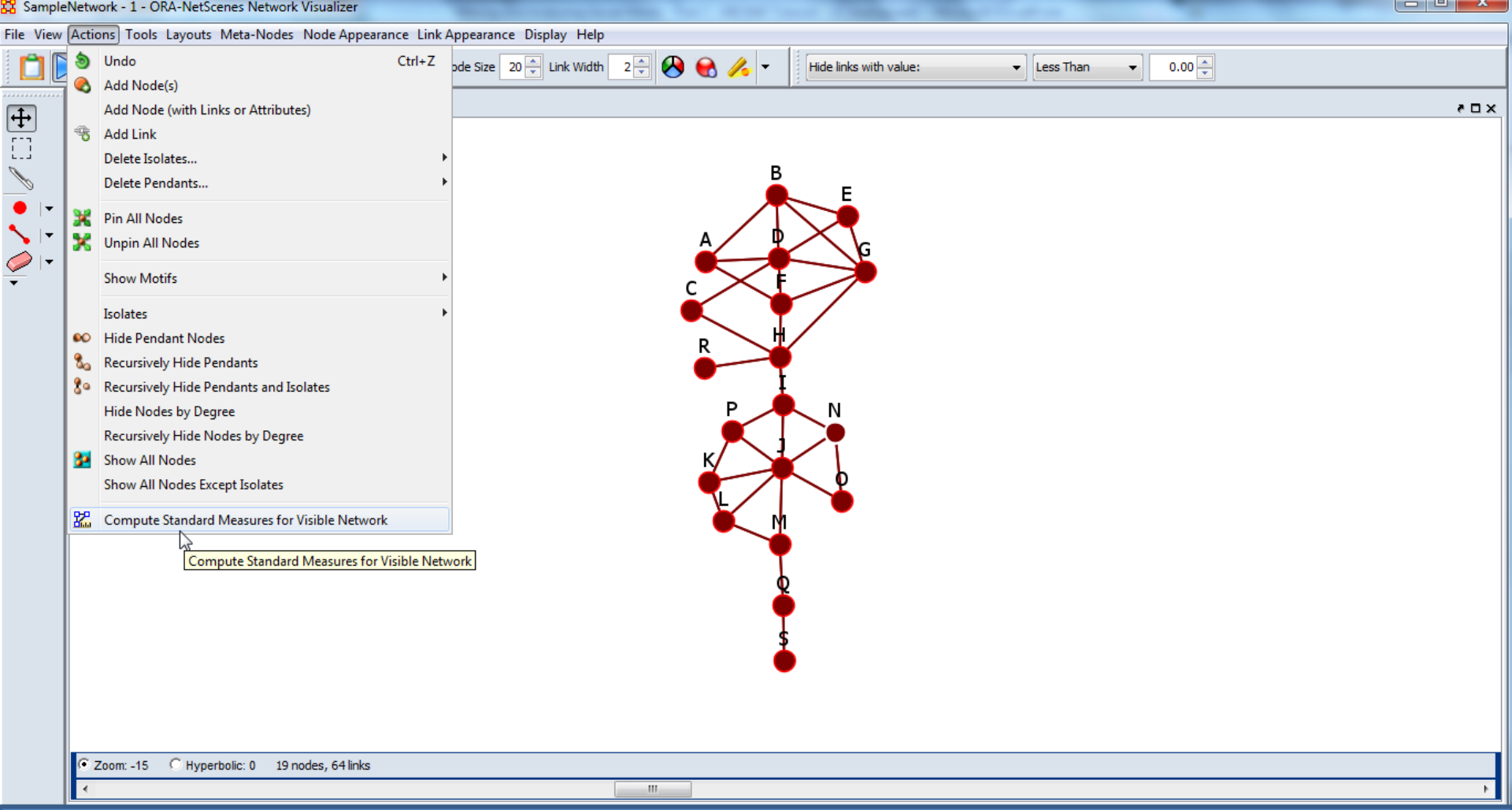
Step 2D: Show Labels Toggled



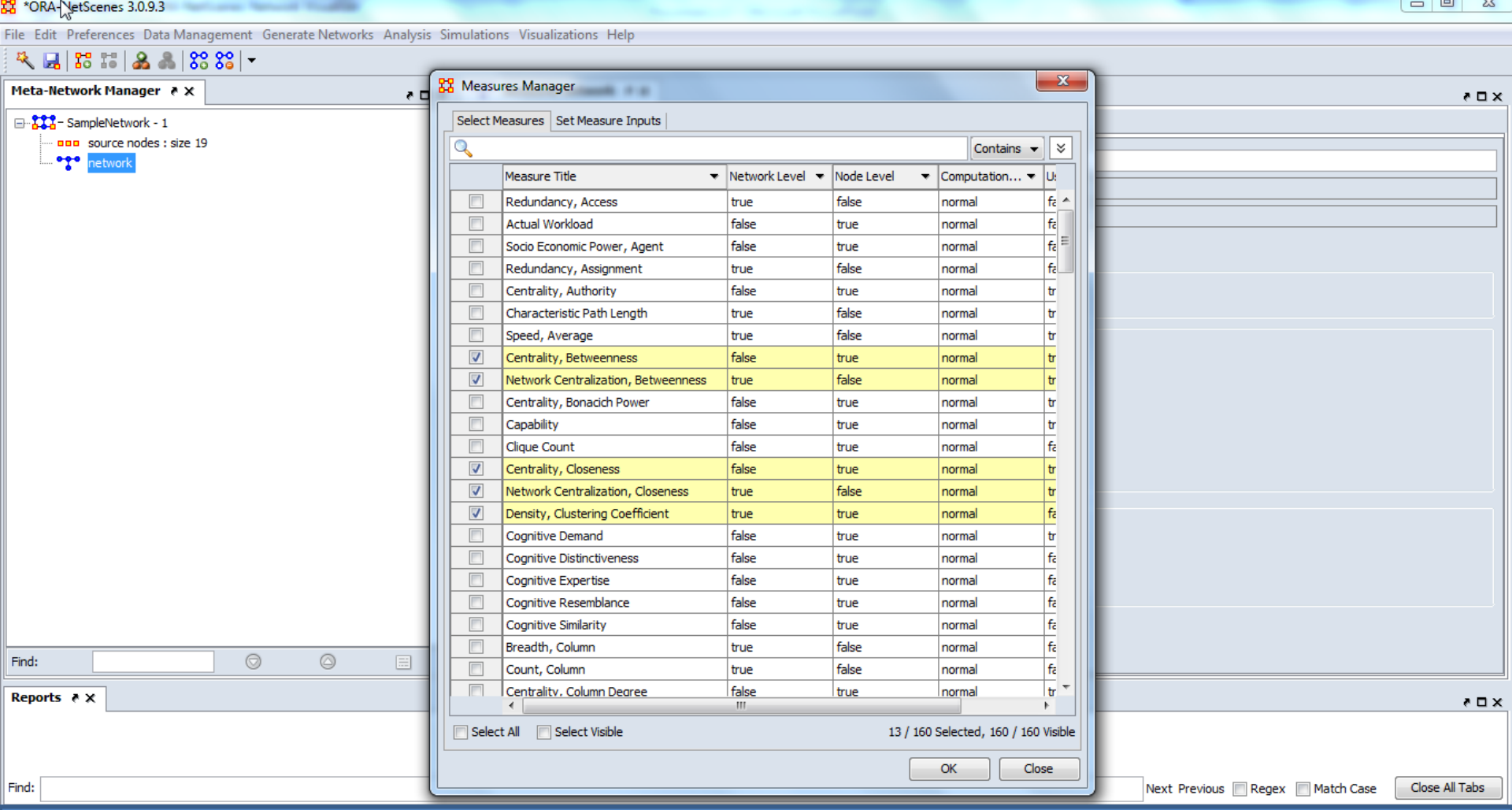
Step 2E: Labels appear



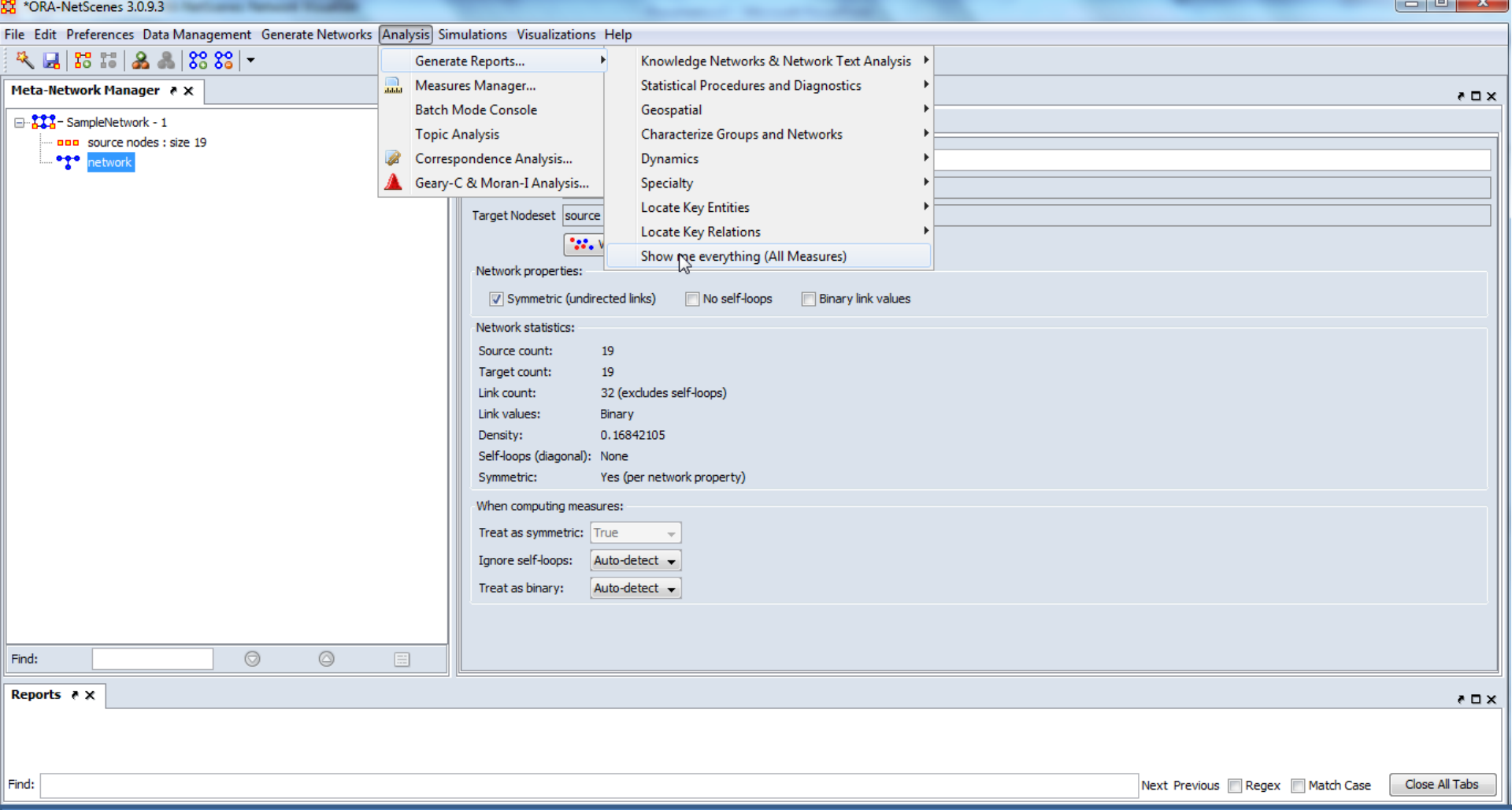
Step 2F: Graph pinned and location of Nodes adjusted by hand



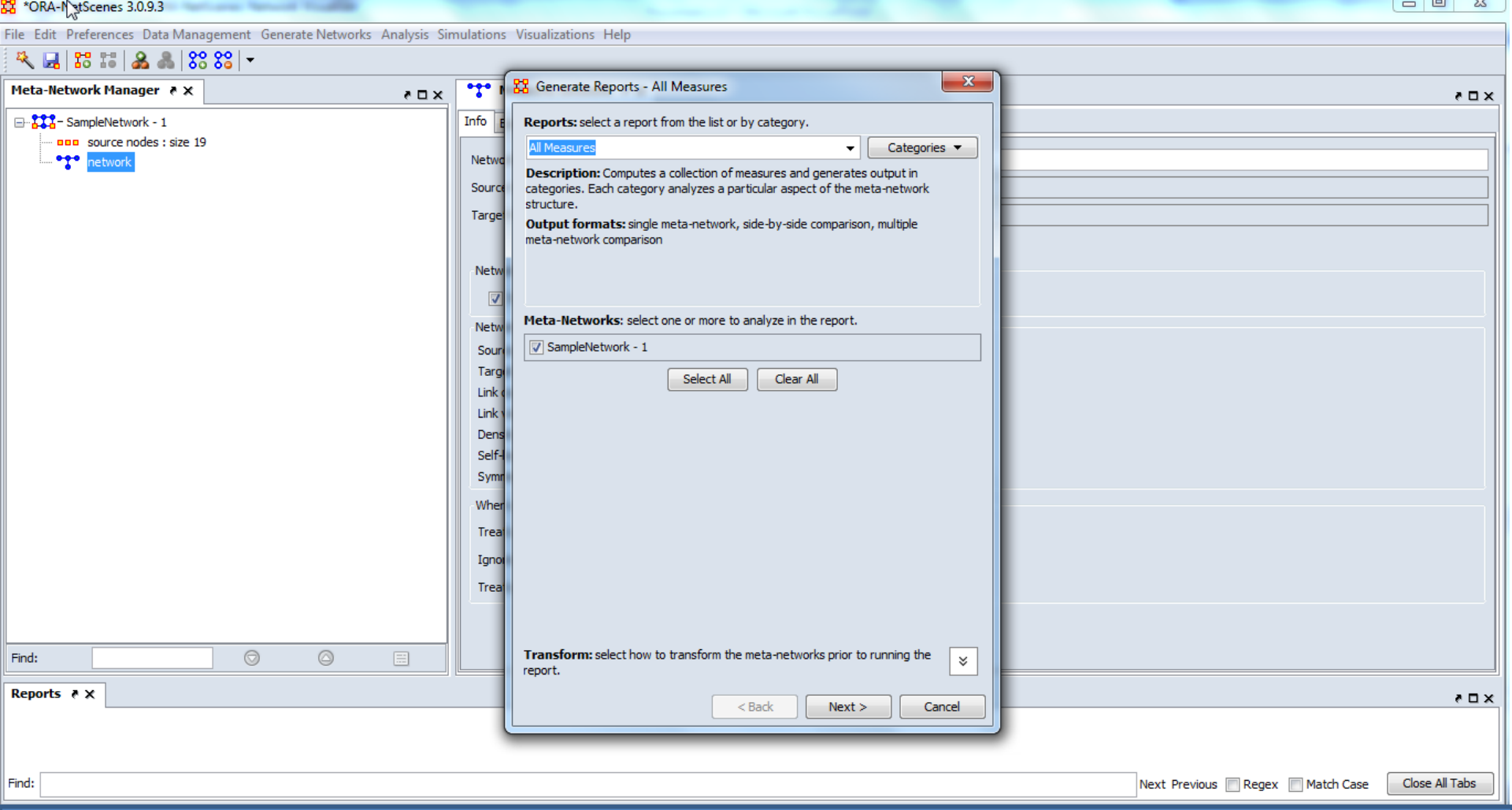
Step 3A: Starting Computation of Standard Measures



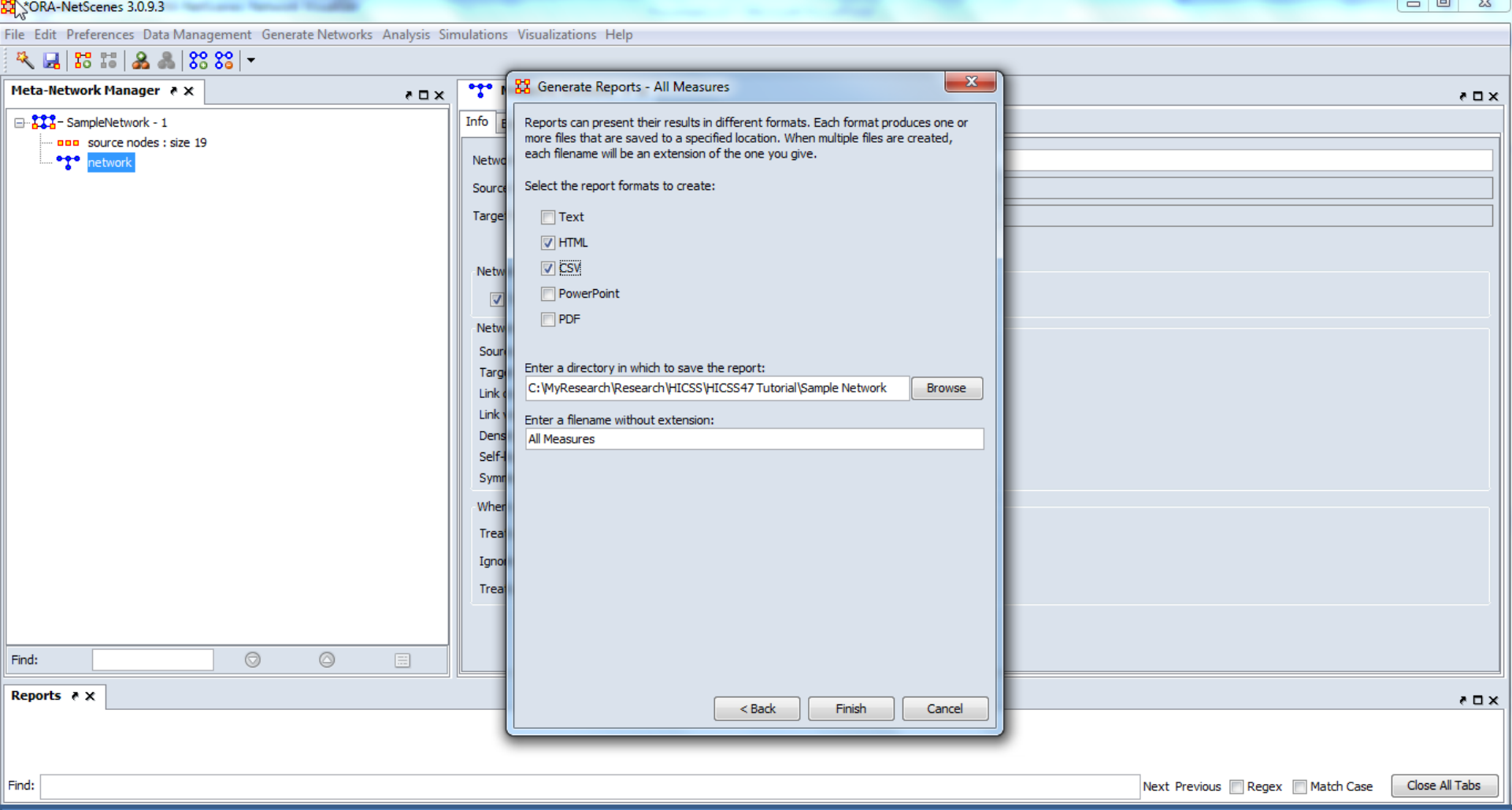
Step 3B: Selecting desired measures from list of 160 available for final reports



Step 3C: Requesting reports for All (selected) Measures



Step 3D: .GDF File Opening



Step 3E: Requesting report formats

file:///C:/MyResearch/Research/HICSS/HICSS47%20Tutorial/Sample%20Network/All%20Measures.html

ALL MEASURES REPORT

Input data: SampleNetwork - 1

Start time: Sun Jan 05 20:59:40 2014

Data Description

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Analysis for network network

Analysis for nodeset source nodes

Produced by ORA-NetScenes, a joint product of the CASOS center at Carnegie Mellon University and Netanomics

Step 3F: Reviewing HTML Reports

file:///C:/MyResearch/Research/HICSS/HICSS47%20Tutorial/Sample%20Network/All%20Measures_network-measures.html

Input data: network

Start time: Sun Jan 05 20:59:40 2014

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These measures take as input only the network network and output a single value (network-level measures) or a collection of values (node-level).

Network-Level Measure	Value
Characteristic Path Length	3.064
Characteristic Path Length	3.064
Density, Clustering Coefficient	0.445
Density, Weighted	0.187
Diameter	7.000
Diameter	7.000
Network Centralization, Betweenness	0.479
Network Centralization, Betweenness	0.479
Network Centralization, Closeness	0.269
Network Centralization, Closeness	0.269
Network Centralization, Eigenvector	0.456
Network Centralization, In-Closeness	0.269
Network Centralization, In-Closeness	0.269
Network Centralization, Total Degree	0.225
Network Levels	7.000
Network Levels	7.000
Speed, Average	0.326

Step 3G: Review Network Level Measures

Source nodes-level Measures

Input data: SampleNetwork - 1

Start time: Sun Jan 05 20:59:40 2014

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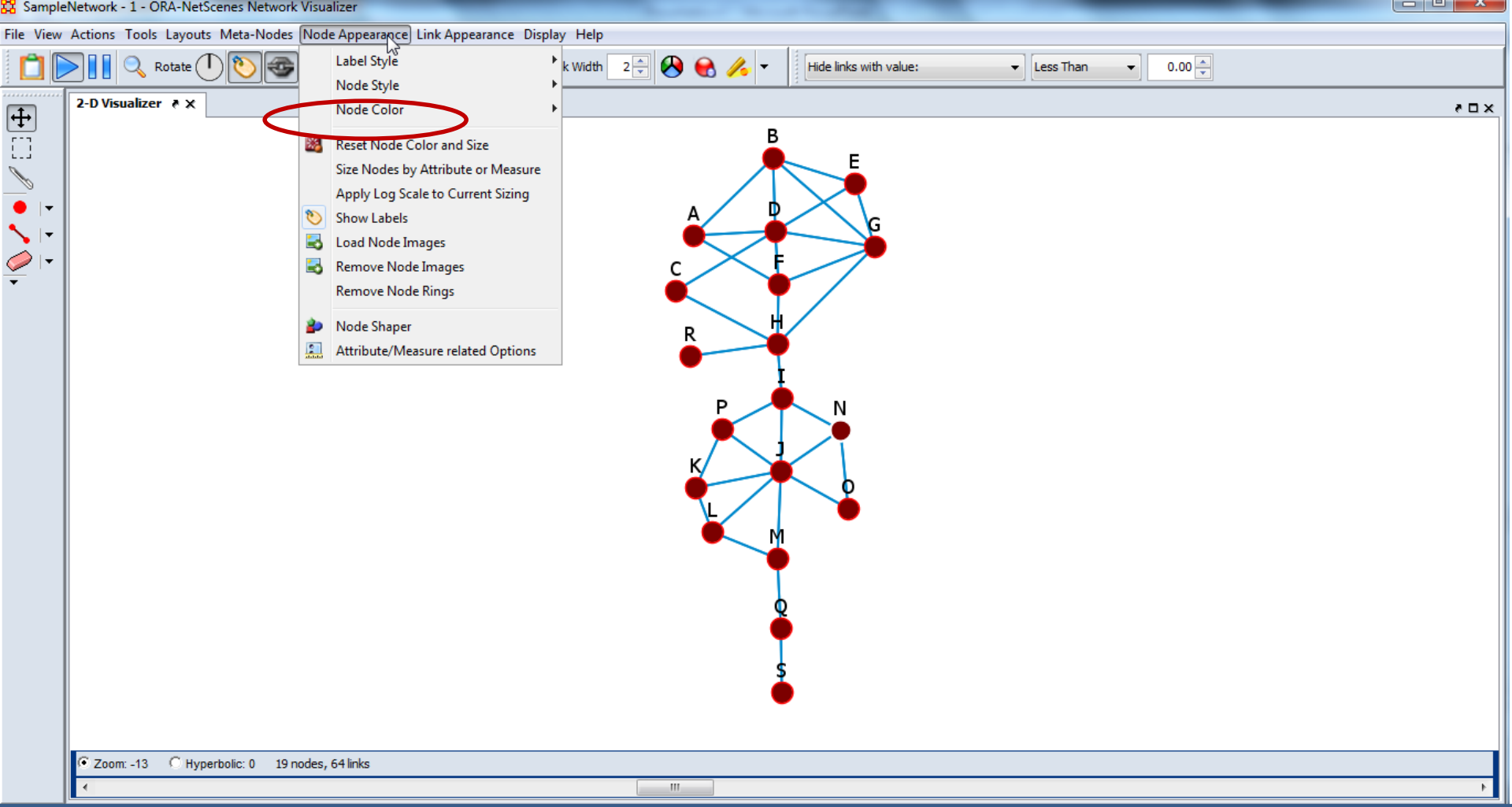
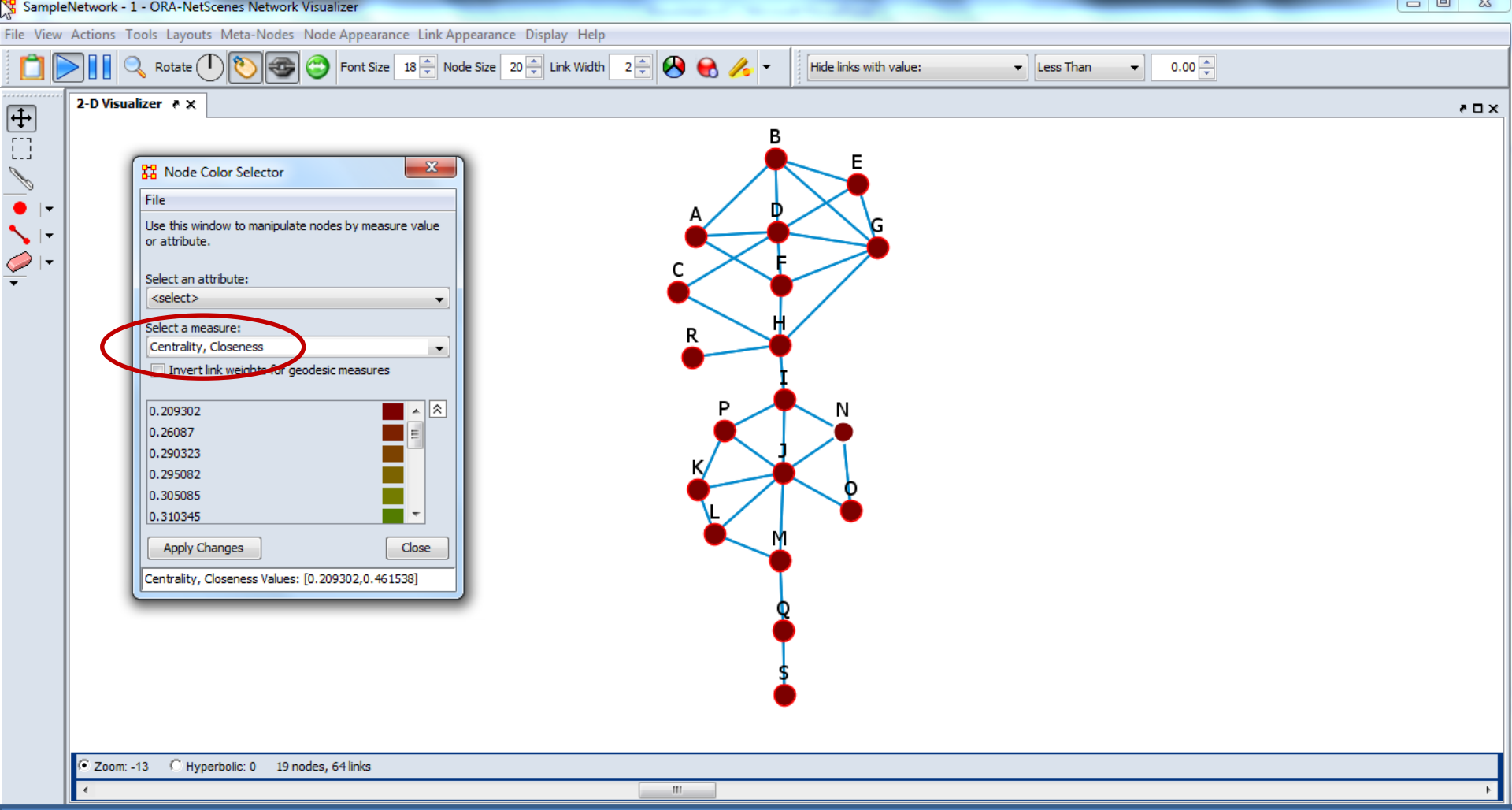
	Centrality, Betweenness: network	Centrality, Betweenness: network, [unscaled]	Centrality, Betweenness: network, inverted = 1	Centrality, Betweenness: network, inverted = 1, [unscaled]	Centrality, Closeness: network	Centrality, Closeness: network, [unscaled]	Centrality, Closeness: network, inverted = 1	Centrality, Closeness: network, inverted = 1, [unscaled]	Centrality, Eigenvector: network	Centrality, Eigenvector: network, [unscaled]	Centrality, In-Closeness: network	Centrality, In-Closeness: network, [unscaled]
A	0.002	0.333	0.002	0.333	0.290	0.016	0.290	0.016	0.405	0.286	0.290	0.016
B	0.005	0.833	0.005	0.833	0.295	0.016	0.295	0.016	0.509	0.360	0.295	0.016
C	0.026	4.000	0.026	4.000	0.346	0.019	0.346	0.019	0.257	0.181	0.346	0.019
D	0.037	5.667	0.037	5.667	0.305	0.017	0.305	0.017	0.6571*	0.4647*	0.305	0.017
E	0.000	0.000	0.000	0.000	0.290	0.016	0.290	0.016	0.430	0.304	0.290	0.016
F	0.107	16.333	0.107	16.333	0.360	0.020	0.360	0.020	0.502	0.355	0.360	0.020
G	0.188	28.833	0.188	28.833	0.367	0.020	0.367	0.020	0.606	0.429	0.367	0.020
H	0.5752*	88.0000*	0.5752*	88.0000*	0.450	0.025	0.450	0.025	0.400	0.283	0.450	0.025
I	0.533	81.500	0.533	81.500	0.4615*	0.0256*	0.4615*	0.0256*	0.188	0.133	0.4615*	0.0256*
J	0.435	66.500	0.435	66.500	0.429	0.024	0.429	0.024	0.166	0.117	0.429	0.024
K	0.003	0.500	0.003	0.500	0.316	0.018	0.316	0.018	0.084	0.060	0.316	0.018
L	0.010	1.500	0.010	1.500	0.327	0.018	0.327	0.018	0.076	0.054	0.327	0.018
M	0.209	32.000	0.209	32.000	0.333	0.019	0.333	0.019	0.063	0.044	0.333	0.019

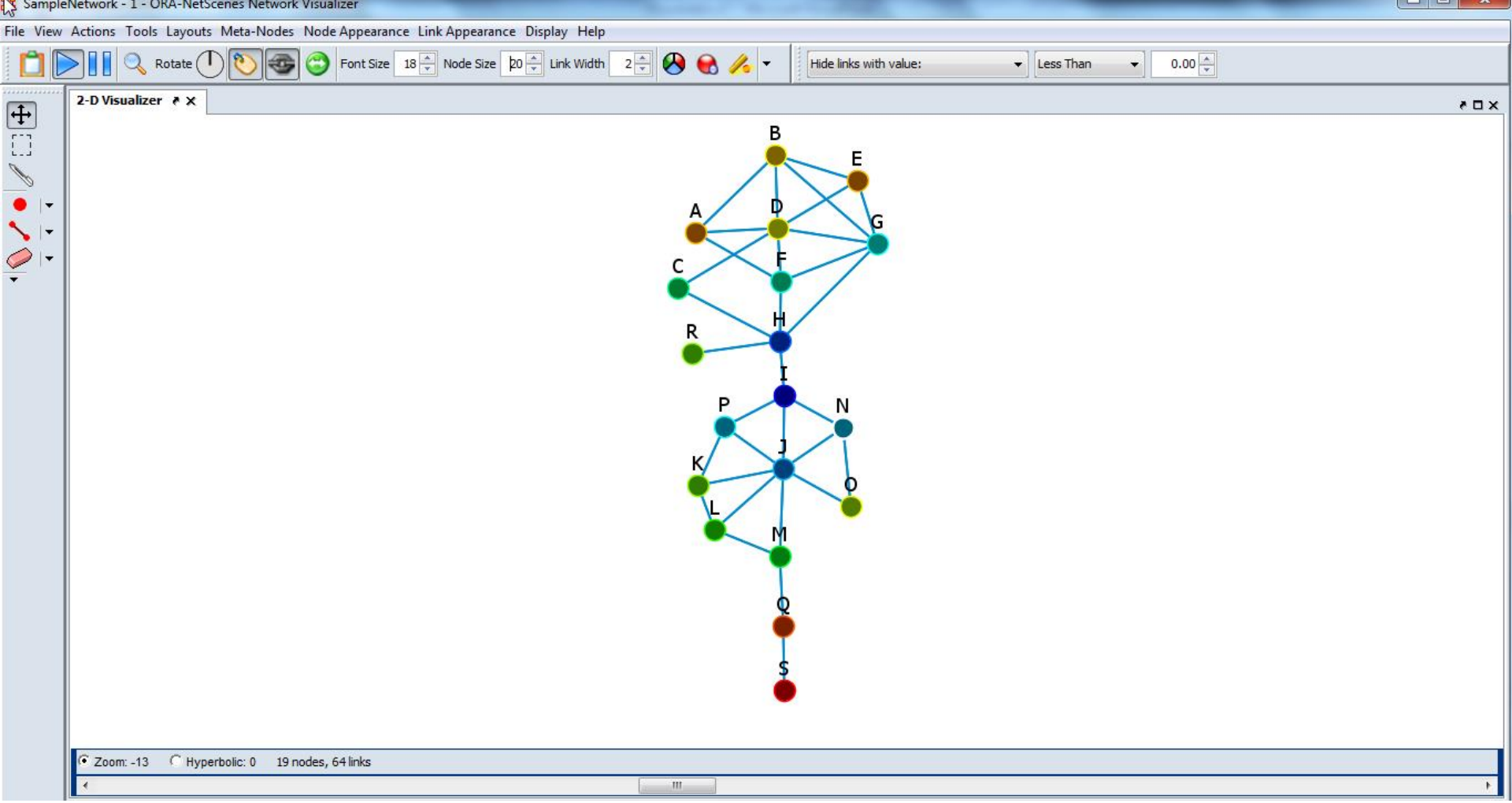
Step 3H: Reviewing Node-Level Measures



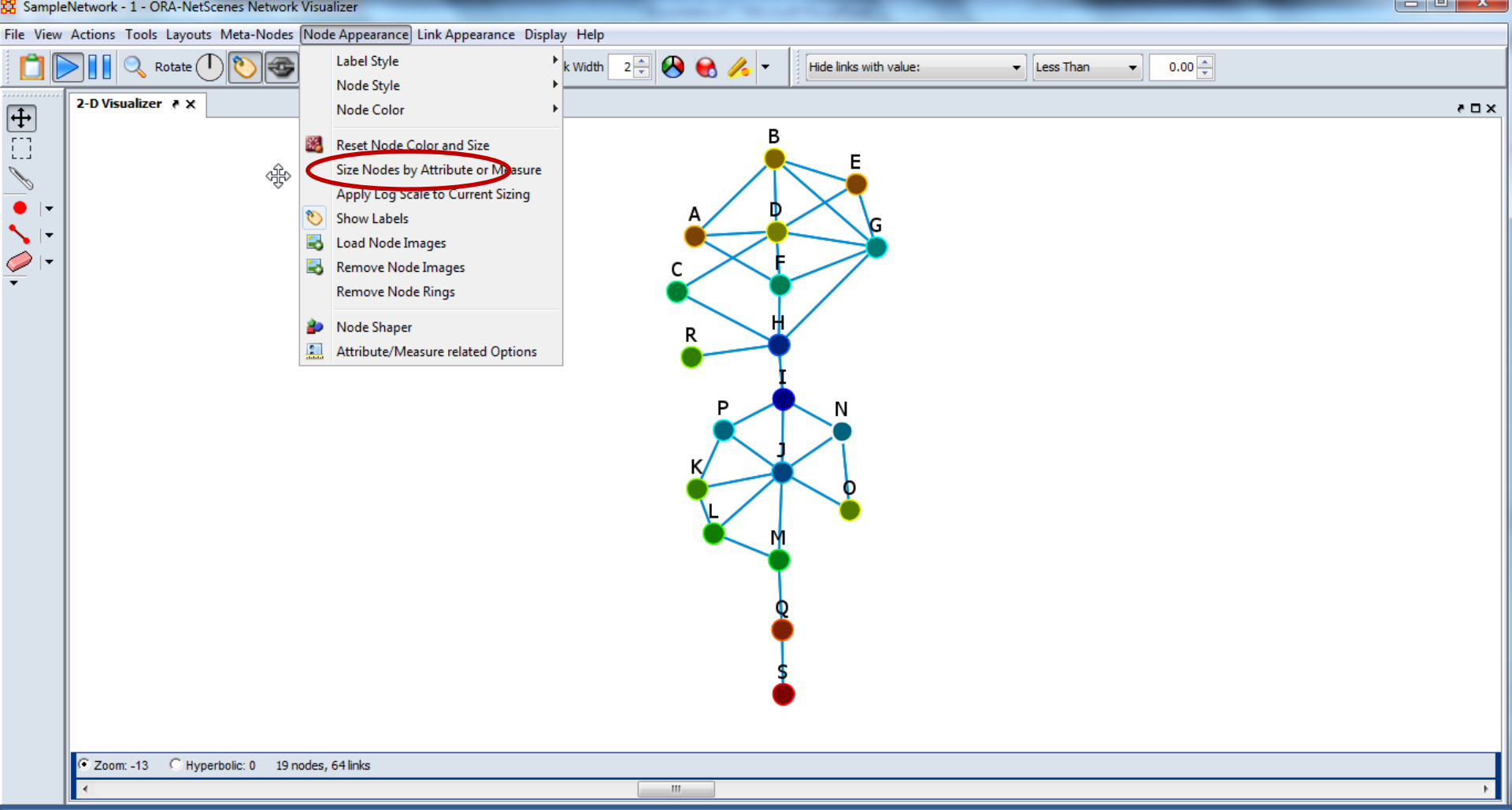
Step 4A: Adjusting Node Color



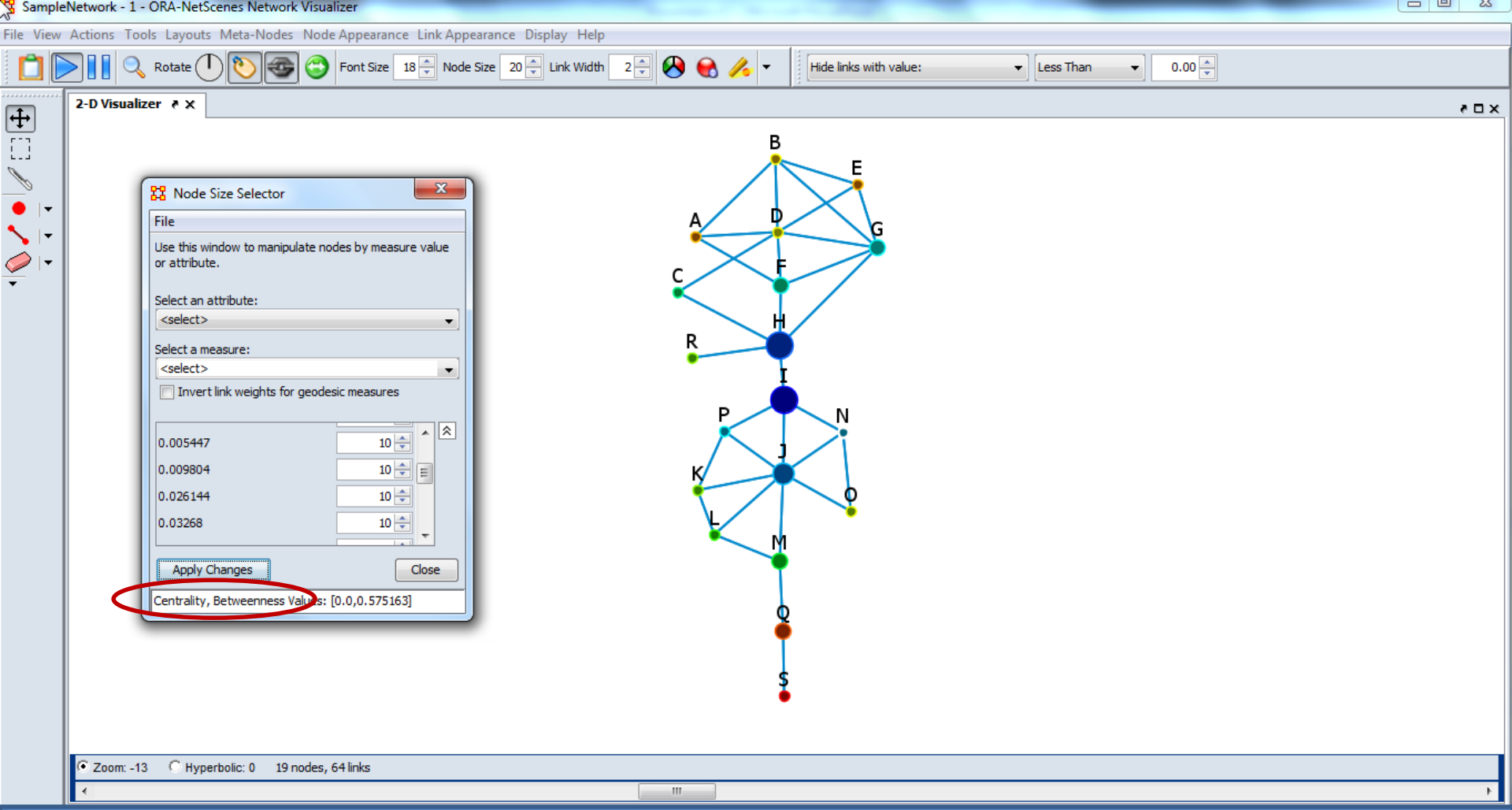
Step 4B: Color Based on Centrality-Closeness



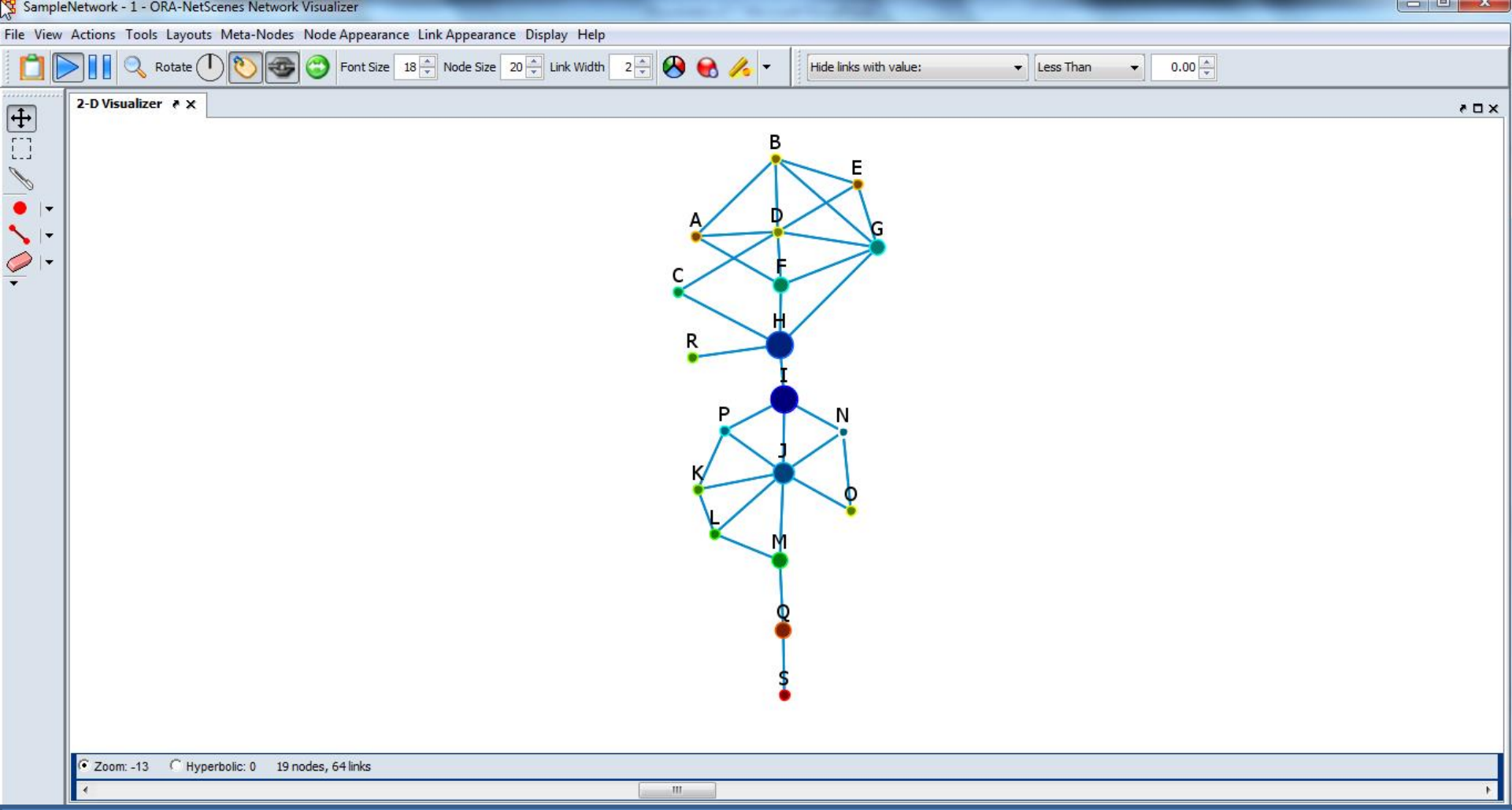
Step 4C: Highest Closeness -> Blue



Step 4D: Adjust Node Size



Step 4E: Size Based on Centrality-Betweenness



Step 4F: Color -> Closeness, Size 0-> Betweeness