CS 744 - Management Issues in Software Engineering
Spring 2018
A Visual Tool for Monitoring Network Communication
Changes to the project description

All changes are concerned with the network only.

- The network is now divided into regions. Each region includes one or more relay stations. All stores in a region are connected only to the relay stations belonging to that region. See Figure 1 for a snapshot of the network with regions. Every store in a region must be connected to at least one relay station in that region. It cannot be connected to any relay station outside the region.
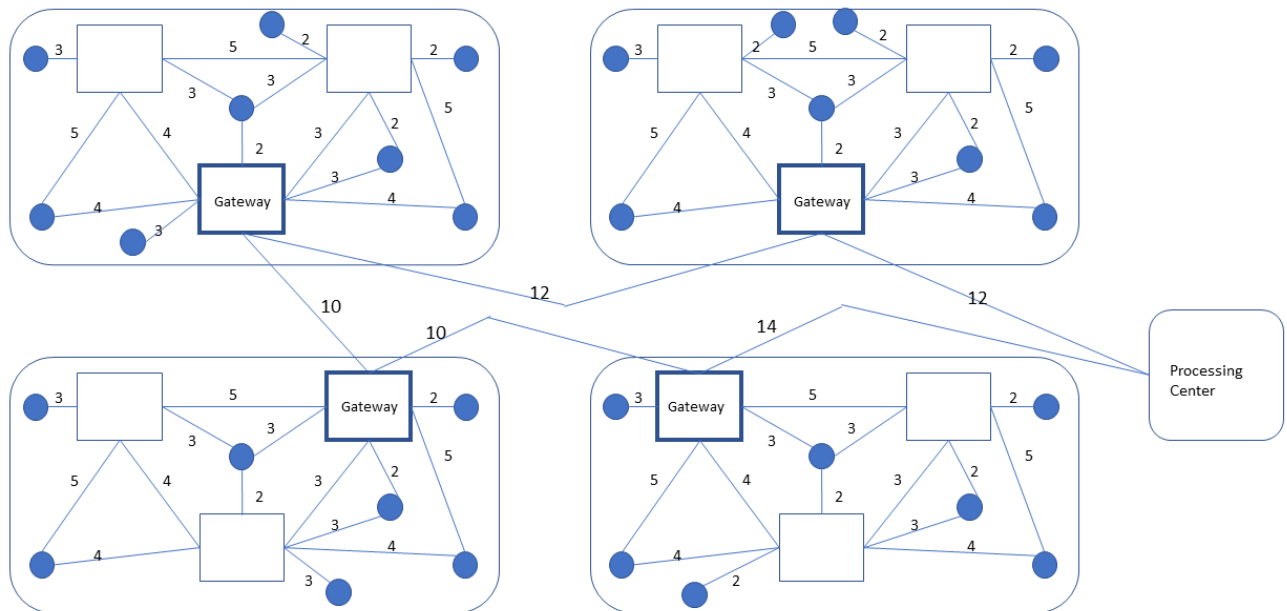

Figure 1: A Snapshot of the Network

- The processing center does not belong to any region. It stands alone by itself.

- Every region has one (and only one) designated relay station called the "Gateway" of that region. All incoming and outgoing transactions from this region must pass through the Gateway of the region. The only connection between two regions is through their Gateways. A Gateway will be connected to one or more Gateways and/or to the processing center.

- A relay station in a region, except its Gateway, cannot be connected to any other node outside of its region.

- A region cannot be empty. It must have a minimum of one relay station and one store.

- The constraints on the minimum number of stores and the minimum number of relay stations remain the same (i.e., the entire network must have a minimum of 30 stores and 10 relay stations). However, the network must have a minimum of four regions.

- An administrator must be able to add a new store at any time. Similarly, an administrator must be able to add a new relay station at any time. No store or relay station will be deleted or modified.

- Every relay station, even if it is a Gateway, has a limit on the number of transactions it can hold in the queue at any one time. This limit varies among relay stations. For example, a relay station that is not a Gateway may have a limit of 10, while a Gateway may have a limit of 100. If the number of transactions in the queue of a relay station has reached its limit, then no further transaction will be accepted by this relay station until one of the transactions in the queue is dispatched.

- An administrator must be able to change the limit on the number of transactions of a relay station at any time. In order to do so, the administrator must first make the relay station inactive, change the limit, and then make it active again.