

SimNetwork Rules

Revision history

Revision	Date	Comments
1	-	Document created
2	-	Revised customer requirements

The player's job is to construct a network, from a set of two network elements, that connects the customers wanting to communicate with each others.

Network elements

These are the **objects** which player can build

1. Wires (fiber optic cables)
2. Routers

Each of these two elements have associated attributes and State variables. Attributes are used to define varieties of an element (E.g. 2 Mbps fiber optics vs 10 Mbps fiber optic, 4 interfaces router vs 8 interfaces router). State variables defines current status of a network element

Element	Attributes	State variables
Fiber optic	Bandwidth: maximum bandwidth cable can carry	Utilization: percentage of bandwidth being consumed
	Cost: per mile	Age: number of time units since cable was laid
Router	Interfaces: max number of cables router can connect	Utilization: percentage of bandwidth being consumed
	Bandwidth: maximum bandwidth the router can handle	Age: number of time units since router was laid
	Cost: per unit	

Before building anything, the terrain must be cleared of any obstacles (trees) and the trench must be build before wires can be laid. Hence these 2 tools:

1. Demolish tool
2. Trench tool

Just like in SimCity, we can have auto_demolish feature (player can choose on/off) that will demolish anything automatically when laying down trench or putting routers in place

Customers

There are **three** types of customers:

1. Residential neighborhoods
2. Businesses
 1. Offices
 2. Corporates
3. Educational/Industrial
 1. Public library
 2. Research lab
 3. University

Each customer has **3** types of requirements

1. Amount/month customer is willing to pay (negotiable)
2. Minimum bandwidth
3. Targets: the set of other customers that particular customer would like to communicate with

The **state variables** of customers are

1. Current usage: subject to change with time
2. Contract status: can be one of the following:
 1. Not interested in being connected
 2. Interested in being connected, but not contracted
 3. Contracted

Global parameters

These parameters indicate **how well player is doing**:

1. Customer satisfaction
2. Balance

Things not yet covered

1. Maintenance costs