

# Webfem manual

by webfem team

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NOTICE: User manual.

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*Manual for the user*

## 1. Introduction

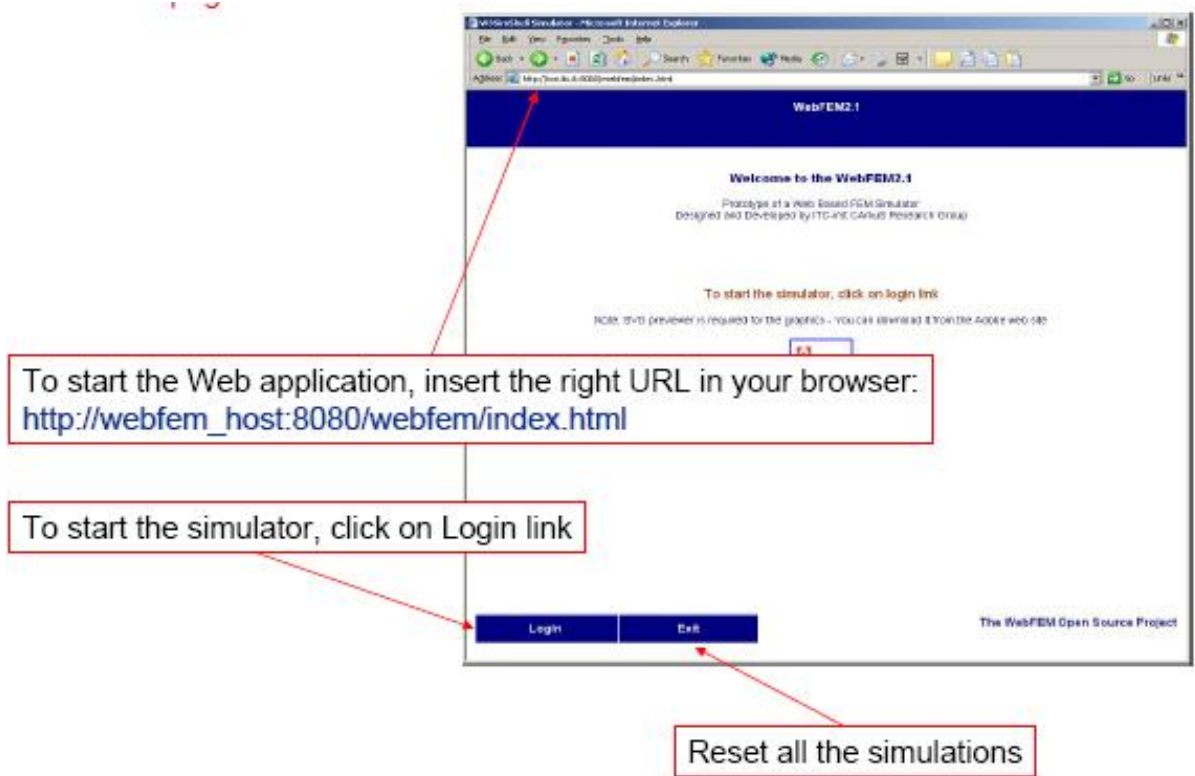
This is a simple manual.

### **FIXME (PC):**

We describe only the use of the SVG interface.

## 2. Welcome page

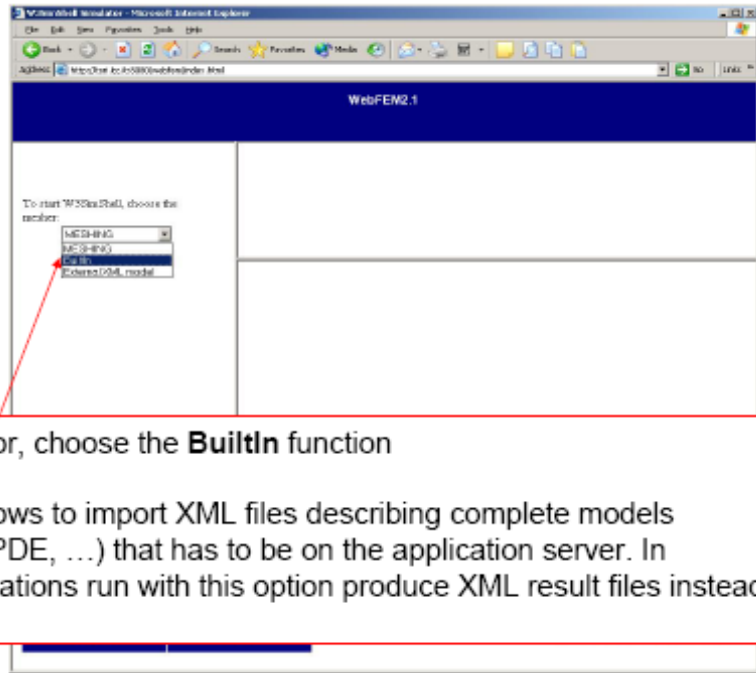
This is the first page of the simulator.



Welcome page

### 3. Mesher choiche

We can import a mesher file or use the simple web client to define the boundary condition.



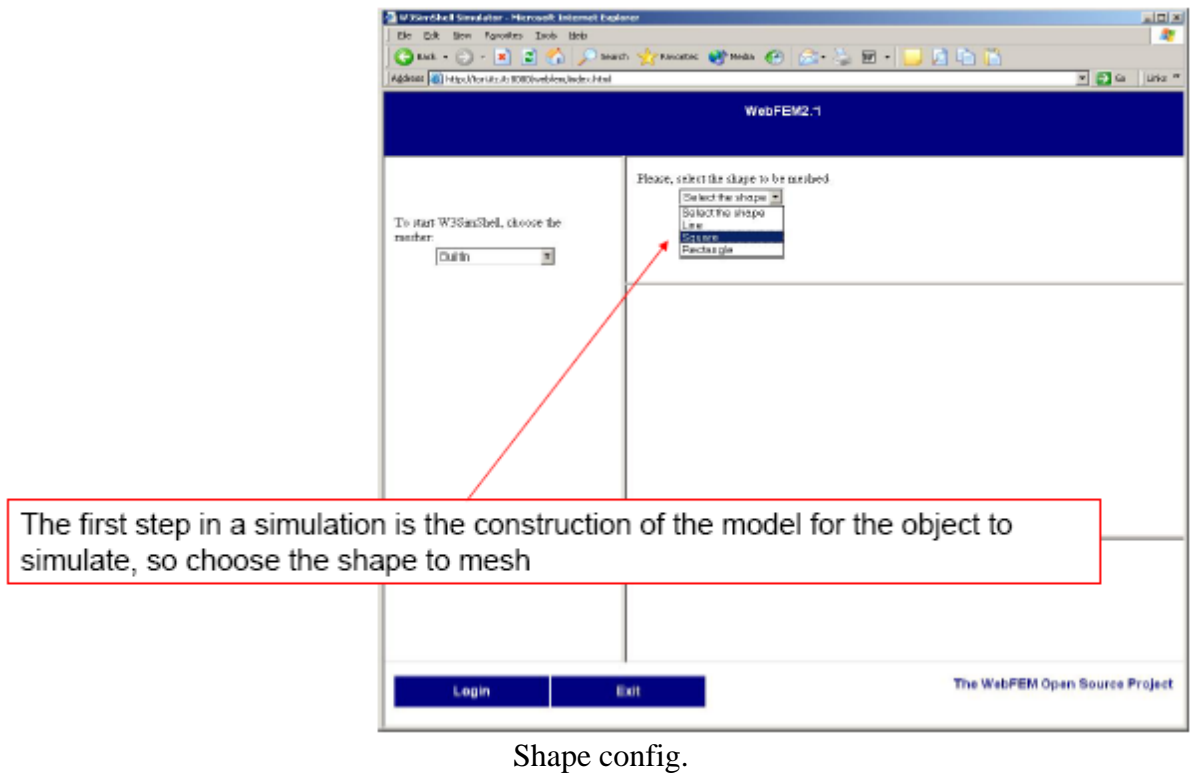
Meshier choiche

#### 4. Shape configuration.

Select the shape to mesh.

**Note:**

At the moment, 2D regular geometries are available



## 5. Shape configuration 2

Define the geometry properties: dimensions and origin coordinates

WebFEM2.1

To start W3SanShell, choose the number:  
Default

Please, select the shape to be meshed:  
Square

Please, fill in the data for the Square

origin x coordinate: 0.0  
origin y coordinate: 0.0  
square side: 200  
Go

Choose the origin position and the dimension of the figure: in this example we fix the side of the square

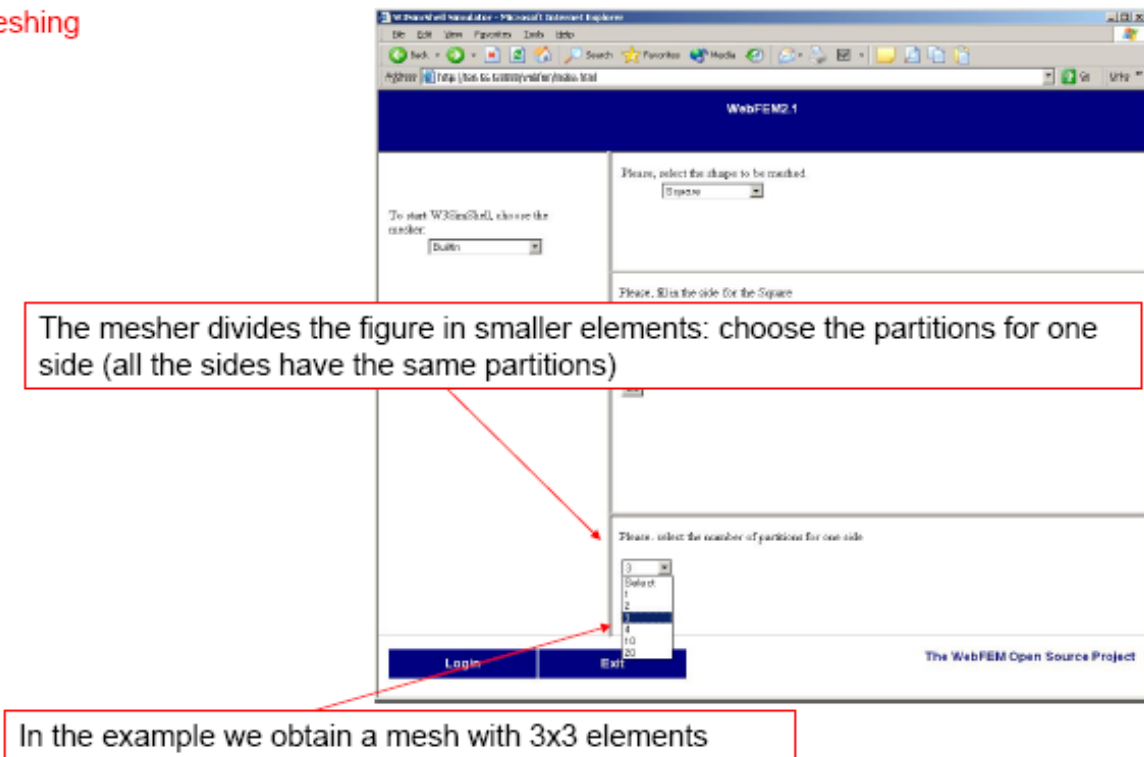
Login Exit The WebFEM Open Source Project

Shape config. 2

## 6. Meshing

Define the meshing properties: number of partitions

## Meshing



## Meshing

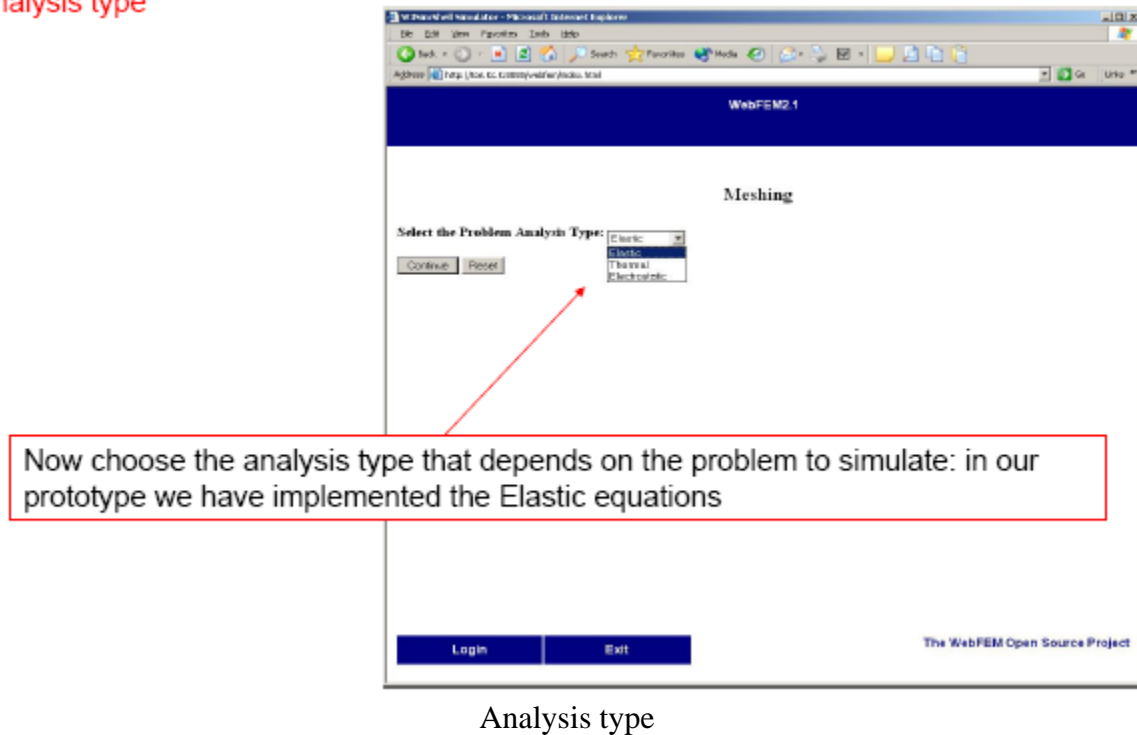
### 7. Analysis type

Define the type of analysis.

#### Note:

At the moment Static Elastic Equation only.

## Analysis type



Analysis type

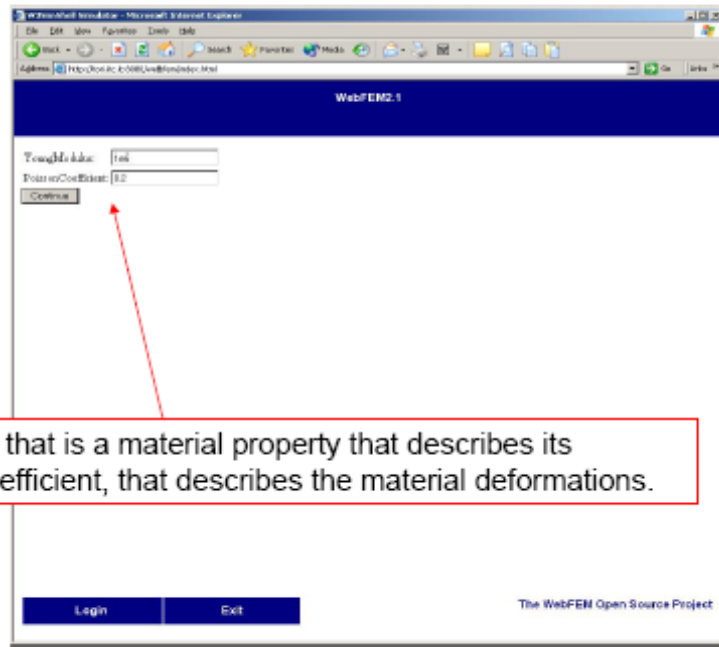
## 8. Material properties

Define material properties.

### Note:

Poisson's has to be specified. It must be between 0 and 0.5.

## Material properties



WebFEM2.1

YoungModulus: 1e6

PoissonCoefficient: 0.2

Continue

Login Exit

The WebFEM Open Source Project

Write the Young's modulus  $E$ , that is a material property that describes its stiffness and the Poisson's coefficient, that describes the material deformations.

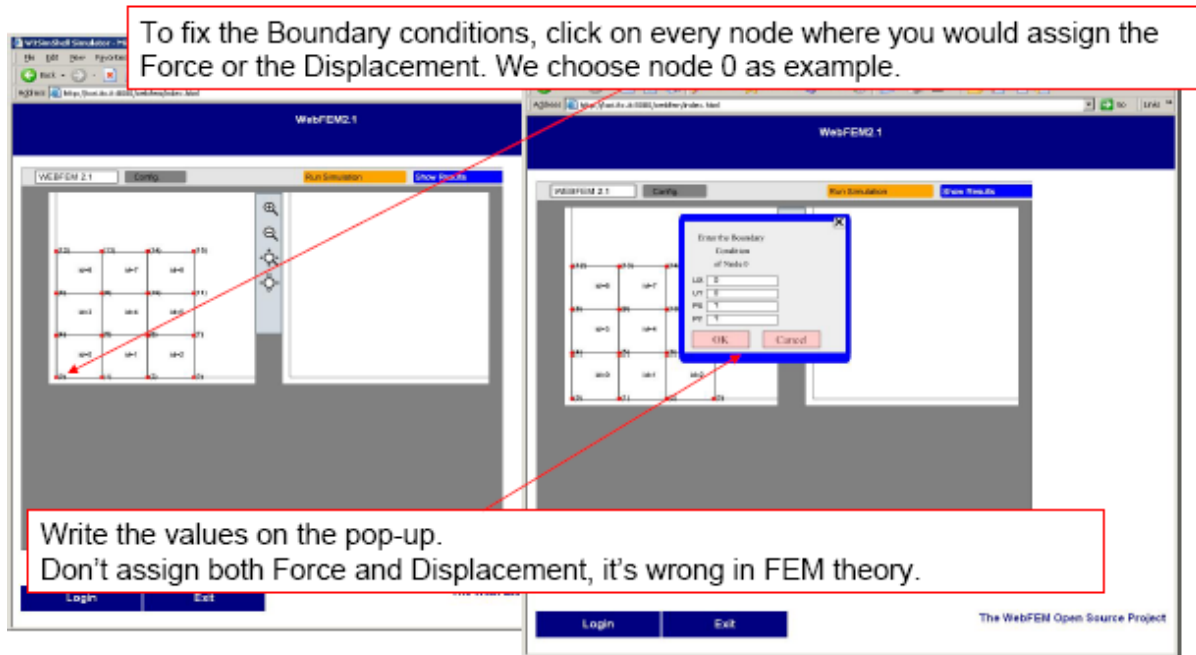
Analysis type

## 9. Boundary Condition

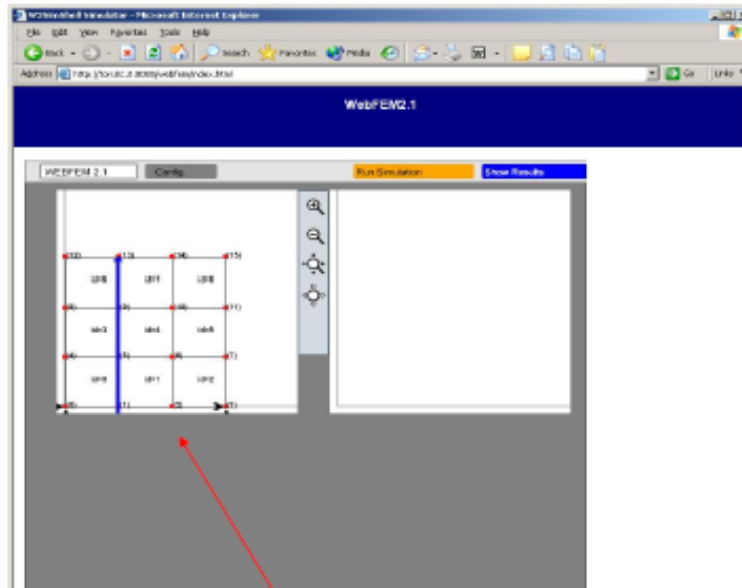
Define the boundary conditions of the problem.

### Note:

Avoid assigning both Force and Displacement on the same node, it is redundant in FEM theory.



boundarycondition



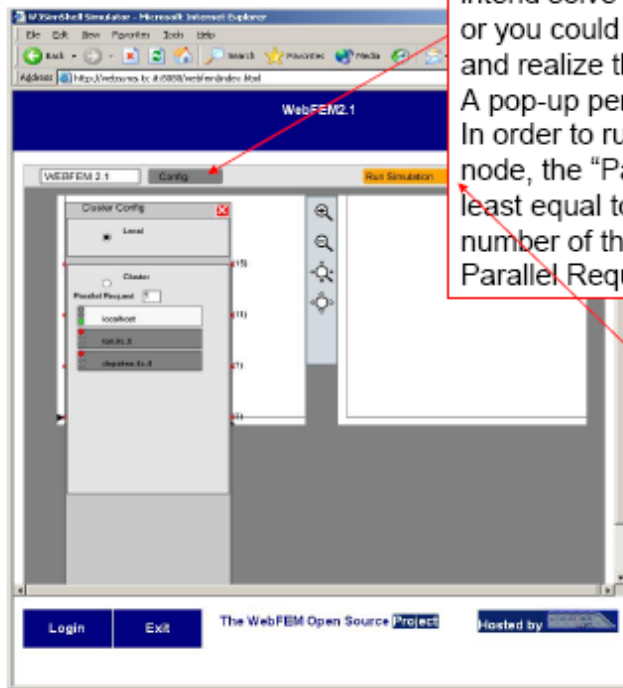
Here we have fixed two displacement to 0 (node 0 and 3) and we have applied a Force in Y direction at node 13.

boundarycondition

## 10. Configuration

Define the configuration of the distributed computing.

## Distributed Computing



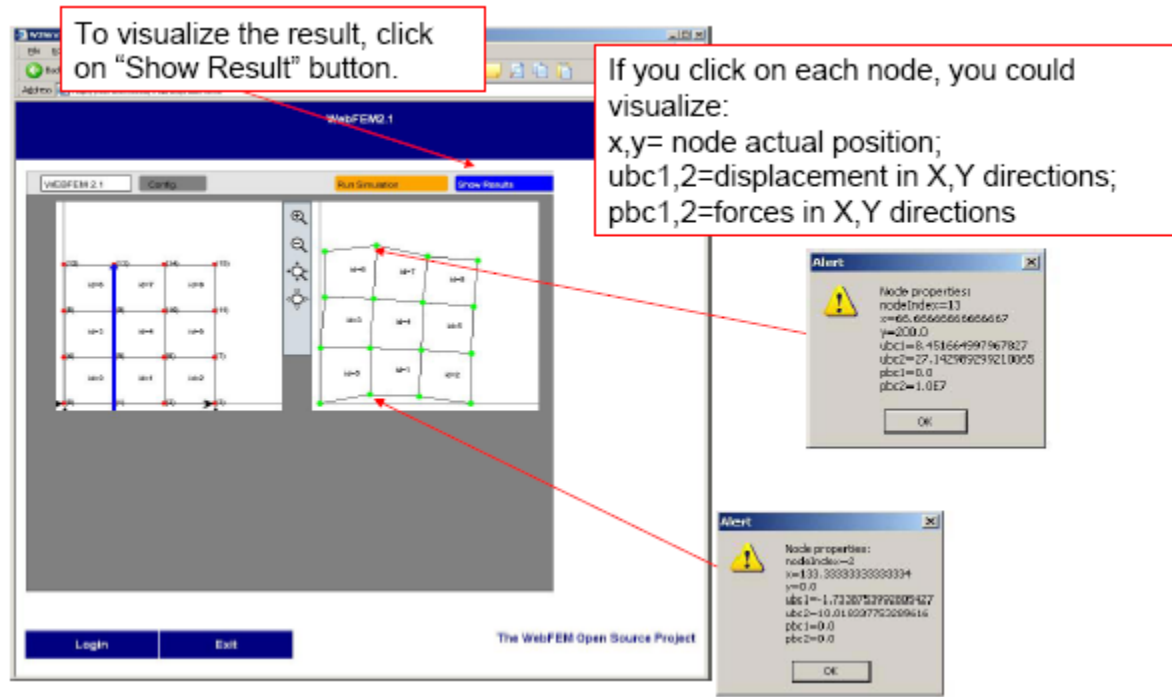
The "Config" button allows to choose where you intend solve your problem: you could do it in local, or you could choose the machines of your cluster and realize the distributed computing. A pop-up permit you to configure the cluster. In order to run at least a thread on each cluster node, the "Parallel Request" value has to be at least equal to the cluster nodes number. The number of thread run on each cluster node is:  $\text{Parallel Request} / \text{cluster node number}$ .

When the cluster is configured, click on the "Run Simulation" button.

Config

## 11. Result

View the result in the SVG gui.



Result

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