POLITECHNIKA
GDAŃSKA

**Internet Services
Architectures**

Laboratory 5

Basic deployment setup

During fifth laboratory students should get familiar with basic method for applications deployment. The task requires usage of the previous projects as you will be accessing the web page from laboratory 4, that will be communicating with backend from previous laboratories.

In case of remote classes to the eNauczanie you should upload one zip file with:

- deployment instruction – steps needed to perform to run the applications from clean systems, general VM settings, like IP configuration, web sites locations, docker commands if used, etc.
- required configuration files
- compiled packages, e.g. jar file for backend, with the forntend and backend applications
- Dockerfile and docker-compose.yml if used.

DO NOT upload VMs!

In case of normal classes you should present the results to the teacher.

The following tasks must be completed:

1. Create proper VMs or docker containers **(highly recommended during stationary classes in the lab!)** (2 points):
    1. Create 2 virtual machines running any Linux distribution – M1 and M2. M1 should have 2 IP addresses – one reachable form the host (in VirtualBox it will be “Host only network”), the second belonging to some internal network (in VirtualBox in would be set up as “Internal network” with some name, default is “intnet”). M2 should have one interface connected to the same internal network as M1. The physical host should be able to communicate with M1 and M1 should communicate with M2 via internal network (unreachable for the host) (2 points).

       OR:
    2. Create 2 docker containers definitions - M1 and M2. M1 should have a port exposed to the host machine leading to the port occupied by the web server used as a proxy server. Both M1 and M2 should have one network interface each, configured and connected to the same internal network. The physical host should be able to communicate with M1 via the exposed port and M1 should communicate with M2 via internal network.
2. On M2 deploy (3 points)

   1. a server that will host the front end web page developed during laboratory 4. You can use either Apache or Nginx,

   2. the backend application so that the HTML web page with JavaScript will be able to connect to it – you will need a web server hosting the HTML page and the spring application running in the background. For the HTML app you should just export the web page to the proper directory and for the backend app you should package it using maven and run it using java -jar command.

3. On M1 deploy a ReveseProxy server in front of the application deployed on M2 (2 points).

4. The system deployed on M2 should be thus available from the physical host via the web server on M1.