# Multi-Agent System in Data Center

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# Problem Statement

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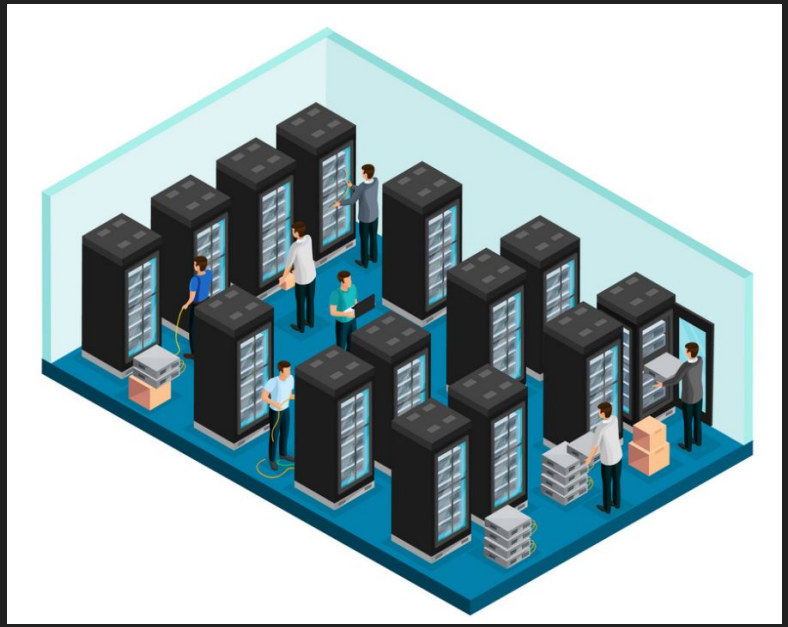
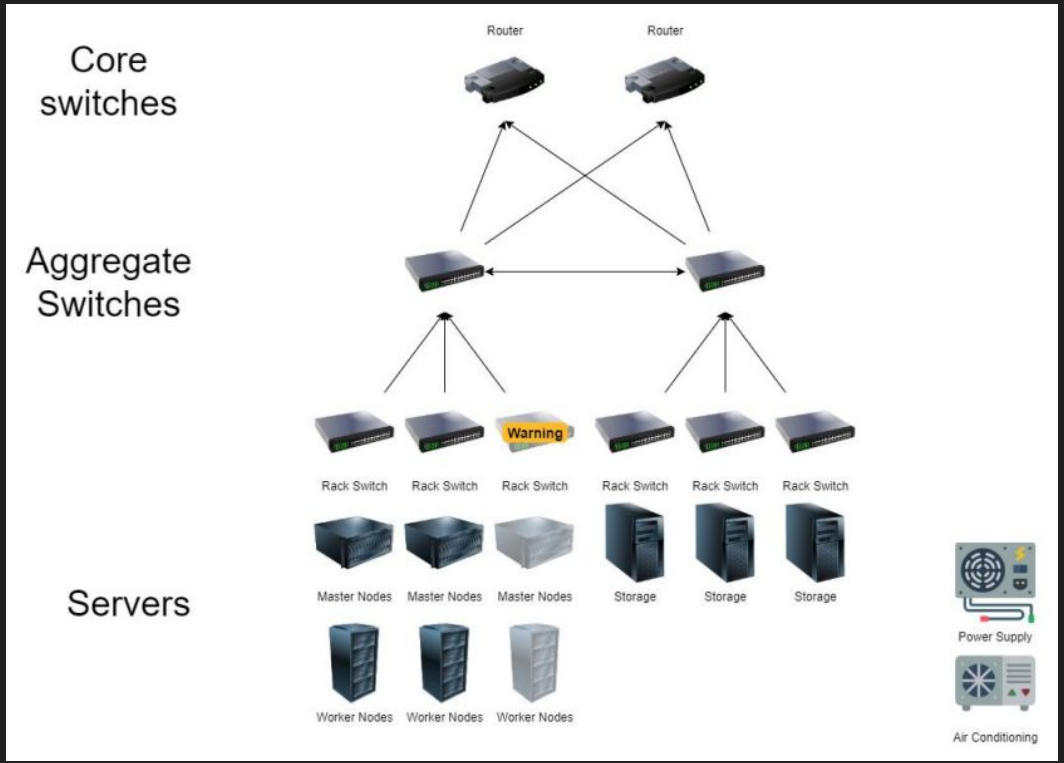
Data centers are complex systems, its components are fully integrated and an impact in one of these components can affect other components.

Engineers need to solve critical incidents in a timely fashion.

Knowledge bases are built to help these engineers to follow a plan for fixing known issues.



# The impact of a failure



# Modeling Overview

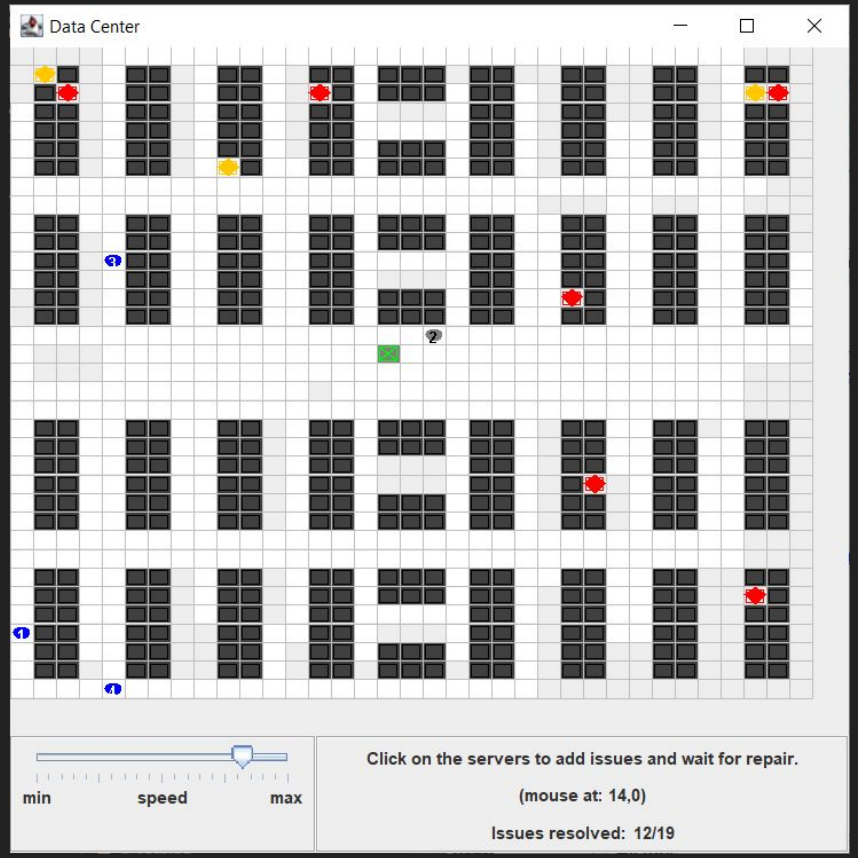
# Environment

A Grid World with 35x35.

(racks: 40, servers: 410)

**Labels**

- **Red**: Hardware issues;
- **Orange**: Software issues;
- **Dark Gray**: Servers;
- **Light Gray**: Free cells unvisited by the agents;
- **White**: Free cells visited by the agents;
- **Green**: Command Center.

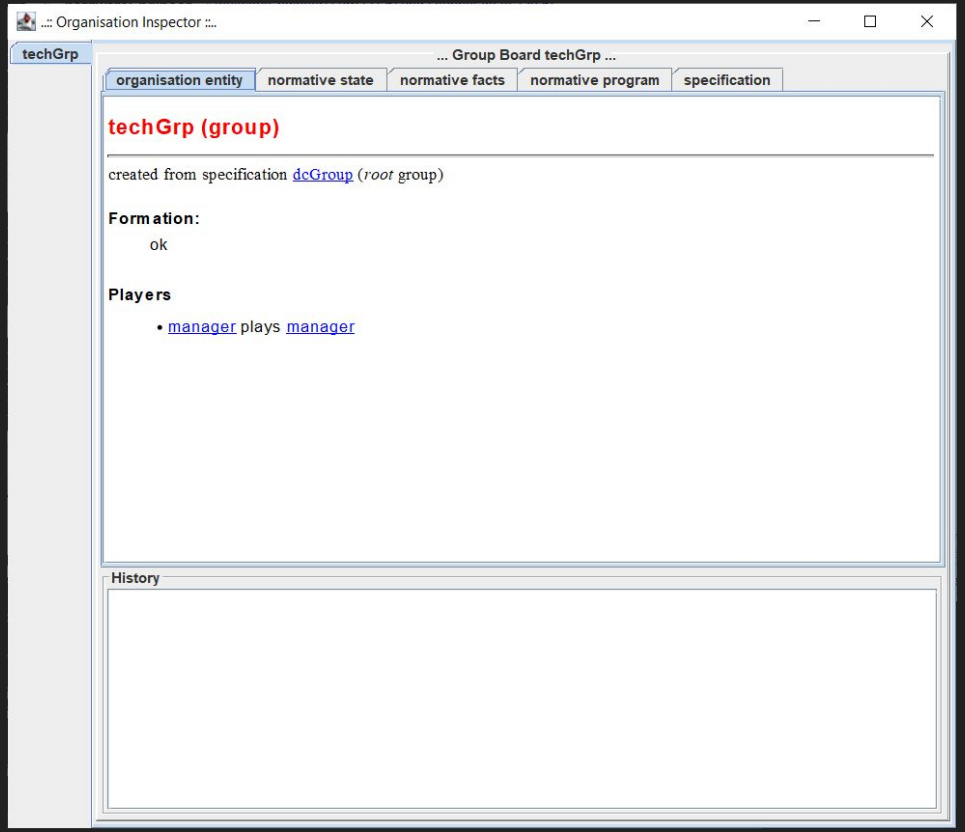


# Organisation

Our organisation has two roles:

- Technician
- Manager

Each role has a different mission.



# Agents

Two types of agents with their own goals, beliefs and artifacts.

**Technician**

**Manager**

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## Technician

**Facilities Technician / Hardware Engineer / Network Engineer**

shares the base agent (base.asl).

handle with hardware issues.

**System Admin**

handle with software issues.

## Manager

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**System Admin**

- handle with software issues.

## Manager

- Alocates teams in the world.
- Controls team scores.

# Future work

- Add more types of issues;
- Issues that requires more than one agent;
- Should return to the Command Center based on issue type;
- Add more components.

# Hands on

Questions? :)