

# Advanced Computer Networking (ACN)

## Exercise 3 – Autonomous Systems and Routing Tables

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Tutorial 3 – Problem 1: Autonomous Systems

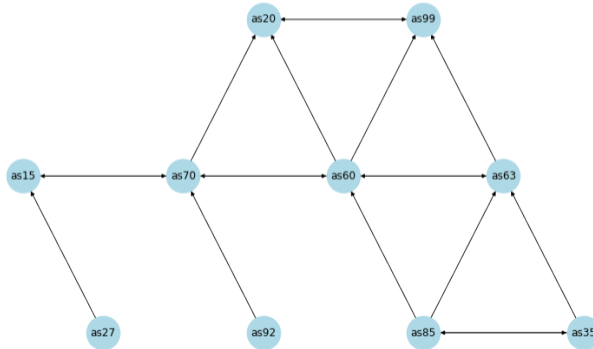
Tutorial 3 – Problem 2: Routing Tables

Organizational Matters

## Tutorial 3 – Problem 1: Autonomous Systems

### Problem 1: Autonomous Systems

- Implement the k-core algorithm
- Understand terms like peering and transit
- Apply AS routing on a sample topology



## Tutorial 3 – Problem 2: Routing Tables

## Problem 1: Routing

- Combine different IPv4 subnets
- Implement Longest-Prefix Matching (LPM)
- Reason about LPM lookup complexity

Prefix	Egress Interface
192.0.2.0 /30	4
10.0.0.4 /30	0
10.0.0.8 /30	0
192.0.2.4 /30	4
192.0.2.2 /31	5
192.0.2.8 /29	4
10.0.8.0 /24	1
10.0.9.0 /24	5
10.0.10.0 /24	4
10.0.11.0 /24	1
0.0.0.0 /0	3

## Organizational Matters

### Deadlines, Release and Important Notes

#### For questions and problems:

- Always use this mail address: `acn@net.in.tum.de`

#### Deadlines

Start	November 20, 16:00
First submission	November 27, 14:00
Exercise lecture	November 27, 14:00
Second submission	December 2, 16:00

#### Availability

- Available in the template Git (branch: `tutorial`) after the lecture
  - `tutorial/tutorial3/tutorial3_1.ipynb`: Autonomous Systems
  - `tutorial/tutorial3/tutorial3_2.ipynb`: Routing Tables

#### Important Notes

- Never duplicate a cell in your Jupyter notebook!
- Never change the type of a given Jupyter cell!
- Otherwise, your solution may not be graded!