



# FIT3142 Tutorial #5

## Performance of Distributed Systems Part 2

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# 1 Tutorial Format

*Preparation is required for this tutorial. Do not plan to complete the tutorial preparation during the tutorial.*

Students should produce written answers to the tutorial questions prior to starting the tutorial.

The answers will be reviewed in a question and answer format during the tutorial. Each student will explain their answer.

Students will need to submit their answers before each tutorial via Moodle [Turnitin].

All questions are based on lecture slides, and lecture slides are in effect the “answer sheets” for these tutorials.

Worked answers **will not be posted after tutorials as the answers are already in the lecture slides.**

## 2 Tutorial Questions

### 2.1 Question 1 (25%)

Explain the behaviour of Amdahl's Law in *Distributed Systems* where  $s_{comp} \gg s_{network}$ ,  $s_{comp} \simeq s_{network}$  and  $s_{comp} \ll s_{network}$ . When can you neglect the effects of a network or fabric?

### 2.2 Question 2 (25%)

Explain the network saturation problem. Why does it matter?

### 2.3 Question 3 (25%)

Explain the limitations of bandwidth reservation. When is bandwidth reservation useful?

### 2.4 Question 4 (25%)

Explain the partitioning problem in a *Distributed Application*. Is the problem applicable to *parametric computing* problems?