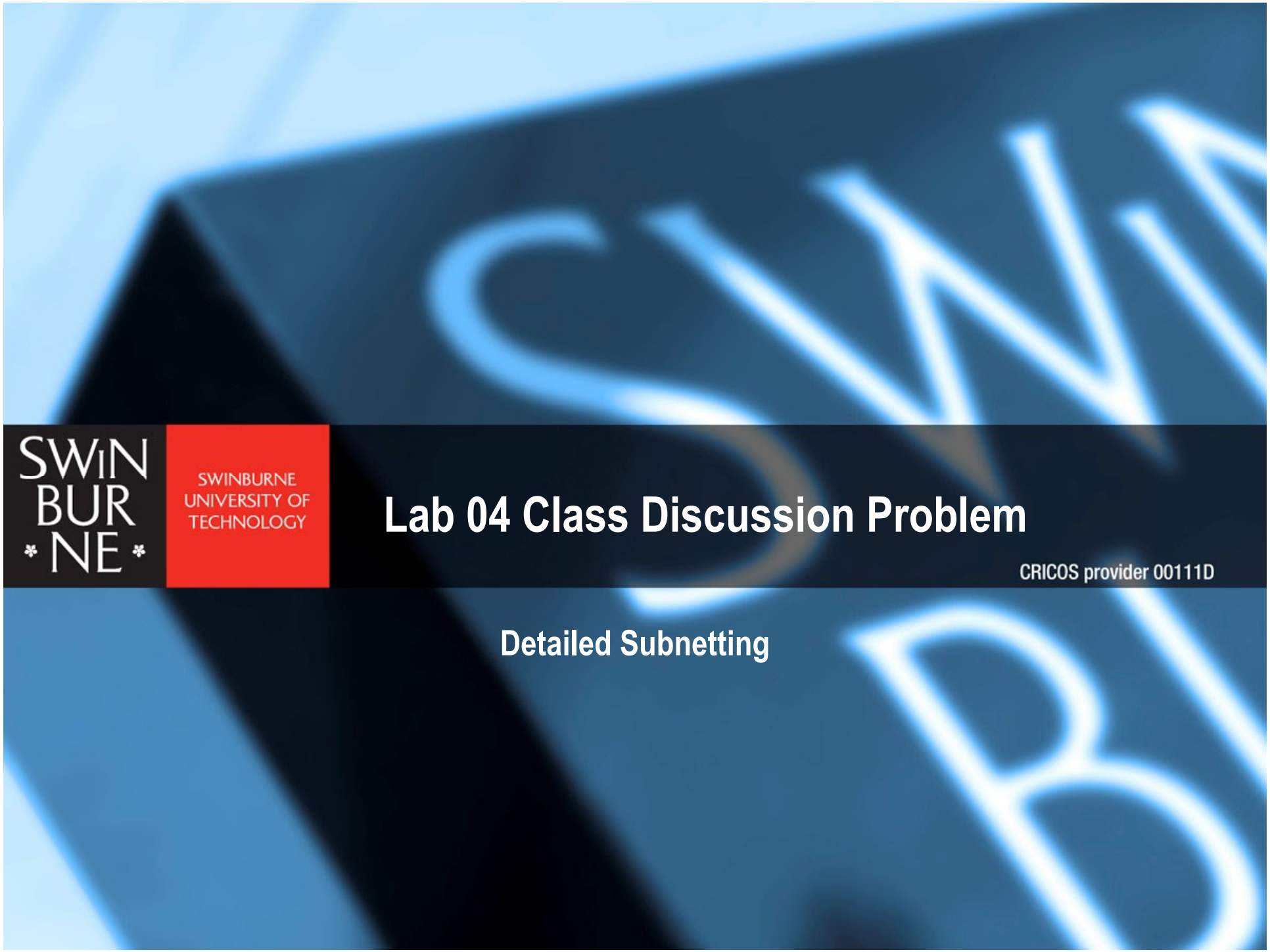

Lab 04 Class Discussion Problem

CRICOS provider 00111D

Detailed Subnetting

Scenario

Summarise:
- 22 branches
- at least 1000 devices each branch
- NW=139.203.0.0/16
- priority: subnet size > number of subnet

Nadir is an established manufacture of sheep skin products from Invercargil in New Zealand. They are planning on launching **22** new branches in cities throughout South East Asia where they currently have no existing branches. Consequently Nadir need a new subnetting plan to support these branches. As some branches may become manufacturing centres the CIO has asked that each subnet should host at least **1000** devices. If a choice needs to be made between the number of subnets and the size of each subnet, then the subnet size should be maximised as much as possible in order to allow growth in each of the branches.

Nadir has obtained a network address of 139.203.0.0/16.

This address needs to be subnetted further.

You have been allocated the responsibility of configuring subnets 4 and 22.

Create an addressing plan for these subnets, outlining the subnet ID, broadcast address and relevant addresses as outlined in the scenario.

22 branches --> 2^5 = 32 >22 --> 5 borrowed bits --> /16 +5 = /21--> 255.255.248.0
2^10-2 = 1022 > 1000 --> 10 host bits
256 - 248 = 8 --> 8 address in each subnet
subnet 4:
  SubnetID= 139.203.32.0
  FirstIPAddress= 139.203.32.1
  LastIPAddress= 139.203.39.254
  BroadcastAddress= 139.203.39.255

subnet 22:
  SubnetID= 139.203.176.0
  FirstIPAddress= 139.203.176.1
  LastIPAddress= 139.203.183.254
  BroadcastAddress= 139.203.183.255