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SWANSEA - ABERTAWE

Applied Computing

Wales Institute of Science and Art (WISA)

Advanced Networking (ACCA5024)

Home Work 2: IPv4 VLSM Subnetting

Submission Deadline: **On or before 27 / 11 / 2020 23.59 Hrs.**

Submission Via Moodle Link.

Objectives

To understand the IPv4 Addressing scheme and variable length subnet mask implementation.

Required Resources

- Device with Internet access

Task**Scenario**

The company named “**Always Victory**” is thinking of broadening their Infrastructure from the existing 4 departments in 1 office as stated here.

Head of Operations – 5 members,

Human Resource Department - 10 members,

Production Unit – 45 members and

Marketing – 15 members

They are currently using 192.168.1.0/24 network for their infrastructure.

However, they are planning to add another 3 departments (Finance, Advisory Board, and Production Unit 2) and 2 more branches all over the country with the same departments in each branches. They are looking to accommodate the following numbers of employees (maximum) in each of their branches.

Head Office:

Head of Operations – 15 members,

Advisory Board – 100 members

Human Resource Department - 300 members,

Production Unit 1– 50000 members

Production Unit 2 - 75000members

Marketing – 300 members

Finance – 1000 members

Branch Office 1:

Head of Operations – 05 members,

Advisory Board – 05 members

Human Resource Department - 30 members,

Production Unit 1– 100 members

Production Unit 2 - 50 members

Marketing – 20 members

Finance – 10 members

Branch Office 2:

Head of Operations –15 members,
 Advisory Board – 10 members
 Human Resource Department – 30 members,
 Production Unit 1– 1000 members
 Marketing – 50 members
 Finance – 20 members

As a Consultant, you are asked to plan, design and implement feasible IP Addressing scheme for all the offices of this company. So, recommend appropriate IP Addressing Scheme in a detailed Addressing table for each locations (Head Office and Branches) which includes IP Address Ranges, Subnet Masks for each branches. Also, allow your network design to accommodate guest users in each branch with 100 users maximum.

Sample Table Structure for each Office. Example: Head Office

Block of IPv4 Address Used		192.168.10.0/24				
Office Used	IP Address/Prefix	Subnet Mask	Network Address	First Host Address	Last Host Address	Broadcast Address
<i>Head of Operation</i>	<i>192.168.10.0/25</i>	<i>255.255.255.128</i>	<i>192.168.10.0</i>	<i>192.168.10.1</i>	<i>192.168.10.126</i>	<i>192.168.10.127</i>

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