LONDON CAPITAL COMPUTER COLLEGE

Diploma in Database Administration (990) – Oracle Solaris Network Administration

Prerequisites: Detailed knowledge of Solaris commands and Solaris Network Administration	**Corequisites:** A pass or higher at Diploma level.

Aim: The Oracle Solaris Network Administration for the Solaris Operating System course provides candidates with the knowledge and skills necessary to perform network administration tasks, such as configuration and troubleshooting of a Local Area Network (LAN). The course also provides hands-on experience with topics, such as Internet Protocol (IP) routing, Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), IP version 6 (IPv6) and the Solaris IP Filter firewall. Experienced system administrators who are or will be responsible for administering Oracle on a Sun system in a networked environment that includes LANs and the Solaris Operating System (Solaris OS). In this course, candidates gain the knowledge critical to properly implement and manage important capabilities in the Oracle Solaris Operating System. The course provides System Administrators, Database Administrators, and Support Personnel with advanced configuration, maintenance, and troubleshooting skills and procedures for Oracle Solaris system. Solaris Operating System is the most efficient, secure, and reliable operating system ever built; combined with Oracle; the best and most reliable Database System; this course gives candidates direct experience with the most essential system administration tasks in the networking field.

Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.

Special Requirements: The course requires a combination of lectures, demonstrations, discussions, and hands-on labs.

Intended Learning Outcomes:	Assessment Criteria:
1. Demonstrate how configuration, administration and basic troubleshooting a network.	1.1 Identify network topology 1.2 Determine how to handle name services 1.3 Analyse how IPv4 and IPv6 addressing 1.4 Be able to configure daemons, files and TCP/IP services
2. Be able to monitor a system by displaying all sockets, routing table entries for the inet address family for IPv4 and inet6 address family for IPv6.	2.1 Analyse TCP/IP administrative tasks 2.2 Be able to monitor interfaces and IP addresses 2.3 Be able to use TCP/IP monitoring tools and commands 2.4 Demonstrate how to display Statistics by Protocol 2.5 Demonstrate how to display the Status of Sockets 2.6 Demonstrate how to display Network Interface Status 2.7 Demonstrate how to Display the Status of Transmissions for Packets of a Specific Address Type
3. Describe how to configure IP tunnels and explore the history of IP Tunnels.	3.1 Define IP tunnelling 3.2 Be able to create tunnels 3.3 Be able to configure IP tunnelling 3.4 Describe how you manually configure IP in IP tunnels.

	3.5	Explain Virtual Private Network (VPN) concepts
	3.6	Outline L2 in L3 tunneling mechanisms
4. Demonstrate how Dynamic Host Configuration Protocol (DHCP) server computers centrally manage IP addresses, other related configuration parameters and outline how DHCP client computers request IP addresses.	4.1	Explain the DHCP concepts
	4.2	Describe advantages and disadvantages of using DHCP
	4.3	Explore how DHCP server works
	4.4	Be able to configure DHCP services
	4.5	Explore DHCP Manager tasks and utilities
	4.6	Be able to enable, disable, configure and administer DHCP client
	4.7	Be able to troubleshoot DHCP server and client problems
	4.8	Analyse files associated with DHCP
	4.9	Describe the two primary differences between DHCP and BOOTP
5. Outline the Network IP Security (IPSec) architecture and be able to demonstrate IP Security Protocol Suite, IPSec Support Components and IPSec Core Protocols.	5.1	Outline IPSec tools and components
	5.2	Describe IPSec security associations
	5.3	Analyse procedures for implementing IPSec
	5.4	Describe Internet Key Exchange (IKE)
	5.5	Be able to configure IKE
	5.6	Analyse IP filtering
	5.7	Be able to create and edit IP filtering configuration files
6. Describe how a network monitoring system help administrators to identify, eliminate and prevent malfunction of hardware and software before end users encounter the problem.	6.1	Describe load balancing capabilities and algorithms
	6.2	Describe Solaris load-balancing features
	6.3	Be able to install and configure Integrated Load Balancer (ILB)
	6.4	Describe Virtual Router Redundancy Protocol (VRRP) technology
	6.5	Be able to configure VRRP
	6.6	Explore network congestion
	6.7	Analyse congestion control mechanism
7. Describe how IP Quality of Service (IP QoS) provide ways to give preferential treatment to certain types of IP traffic.	7.1	Define quality of service
	7.2	Describe Differentiated Services (Diffserv) architecture
	7.3	Be able to create IPQoS configuration files
	7.4	Describe flow accounting and statistical information

Recommended Learning Resources: Oracle Solaris Network Administration

Text Books	• Oracle Solaris Cluster Essentials (Solaris System Administration) by Tim Read. ISBN-10: 0132486229 • DTrace: Dynamic Tracing in Oracle Solaris, Mac OS X and FreeBSD by Brendan Gregg, Jim Mauro, Chad Mynhier, Tariq Magdon-Ismail. ISBN-10: 0132091518 • OCA Oracle Solaris 11 System Administrator Exam Guide by Paul Watters. ISBN-10: 0071775749
Study Manuals	BCE produced study packs
CD ROM	Power-point slides
Software	Solaris Operating System / Oracle Database