



**Level 6 Advanced Diploma in Web Development (902)**  
**153 Credits**






<b>Unit:</b> Web Server Configuration	<b>Guided Learning Hours:</b> 260
<b>Exam Paper No.:</b> 3	<b>Number of Credits:</b> 26
<b>Prerequisites:</b> Familiarity with the Web and its terminology.	<b>Corequisites:</b> A Pass or better in Diploma in e-Commerce & Web Design or equivalence.
<p><b>Aim:</b> This unit explores the role of server administration and its contribution to planning, deployment, and management of a web application. It introduces tools and techniques to assist with capacity planning, monitoring of workloads, identification of performance bottlenecks, and security failures. A web server is the key to dynamic and responsive applications, hence essential to monitor performance and tune its configuration. Server configuration is also critical to application security through the use of access controls and security protocols. Learners will also learn about the role of routers, firewalls, and proxy servers in building network architectures. Web administration is the back end of Web development. Administrators keep the Web servers up and running, making sure the hosting continues to work, the servers are secure and keeping track of the logs. Web administration is a vital part of any Web operation and understanding the back end will help a Web designer understand how it all works together. The program that handles Web pages on the back end is called a Web server. The web server can impact and affect Web pages. Security, speed and scalability are all impacted by the Web server. Web servers often play a critical role in the workflow of building a website. While most small and medium sized websites have only one web server (the production server), larger companies may have many more than that for building and maintaining their website. This unit enable learners learn the different types of servers might appear in a web design workflow. Web cache is a very advanced topic, for server developers who want to speed up their Web servers. Caching will help speed up frequently accessed pages. Web caching is a tool to improve the performance of Web servers. Caches store the Web pages in a central place and only update them every once in a while. They make the pages appear to load faster, while sacrificing timeliness.</p>	
<b>Required Materials:</b> Recommended Learning Resources.	<b>Supplementary Materials:</b> Recommended textbooks and lecture notes.
<p><b>Special Requirements:</b> This is a hands-on unit, hence practical use of computers is essential. Requires intensive lab work outside of class time.</p>	
<p><b>Intended Learning Outcomes:</b></p> <ol style="list-style-type: none"> <li>The procedures for installing, configuring a HTTP Server Web Server or FTP server and creating server failover solutions.</li> <li>What Internet servers do and how they work with Internet clients to bring the Web to clients.</li> </ol>	<p><b>Assessment Criteria:</b></p> <ol style="list-style-type: none"> <li>Describe web server process</li> <li>Describe URL ports</li> <li>Describe how computers are linked to the internet</li> <li>Define client and server</li> <li>Describe IP address components</li> <li>Describe well known ports</li> <li>Demonstrate some special Web server configurations</li> </ol> <ol style="list-style-type: none"> <li>Define Web/Internet server</li> <li>Describe how Web Servers Work</li> <li>Describe the underlying structure of the internet</li> <li>Explain functions of the router</li> <li>Describe the process through which DNS works and how DNS is used to map a domain name to an IP address.</li> <li>Define domain names</li> <li>Describe the process of creating a domain name</li> <li>Describe how DNS servers work like translators by translating a network</li> </ol>

		address
	2.9	Describe the tools used in configuring DNS
3. The term Application Service Provider (ASP) and how an (ASP) offers individuals or enterprises access over the Internet to applications and related services.	3.1	Define an ASP
	3.2	Outline ASP features
	3.3	Demonstrate how enterprises seek to maximize efficiency by outsourcing some parts of business operations to application service providers
4. How e-mail works; how e-mail servers deliver messages and how MIME helps files of all kinds hop on emails to travel.	4.1	Describe email server
	4.2	Define SMTP server
	4.3	Compare and contrast POP3 vs IMAP servers
	4.4	Describe email etiquette
	4.5	Explain a POP3 server and how it holds mail
	4.6	Describe the connection to a Simple Mail Transfer Protocol (SMTP) server
	4.7	Describe how E-mail Works
5. How different file sharing methods work including peer to peer file sharing works and how Internet cookies raise privacy concerns.	5.1	Describe Napster's architecture
	5.2	Describe Gnutella's architecture
	5.3	Evaluate and explain file sharing legal issues
	5.4	Describe how Peer-to-Peer File Sharing works and how the law barely allows it.
	5.5	Explain how they can also make the Web easier to navigate
	5.6	Describe cookies
	5.7	Outline how cookies move data
	5.8	Describe how websites use cookies
	5.9	Describe advantages and disadvantages of cookies
6. General purpose Internet sharing and how Network Address Translation (NAT) allows private network to participate on the public network (the Internet) and how VPN (Virtual Private Network) connection allow users to connect to corporate services behind a network firewall from a remote location.	6.1	Describe what NAT does
	6.2	Describe NAT configuration
	6.3	Define dynamic NAT
	6.4	Define NAT overloading
	6.5	Describe firewall operations
	6.6	Define multi-homing
	6.7	Describe VPN technology
	6.8	Describe VPN benefits
	6.9	Describe VPN security protocols
	6.10	Describe how VPN software provides a secure connection between user computer and the corporate network
7. How a web server supports CGI web server interaction and can be configured to interpret a URL.	7.1	Describe CGI mechanism
	7.2	Demonstrate how to create simple CGI scripts
	7.3	Describe HTML forms
	7.4	Demonstrate how to create form input controls
	7.5	Explain the search engine strategy, tips and techniques used to narrow connecting search terms.
	7.6	Define web crawling

<p>8. How affiliate programs work and how to set up and run a successful Affiliate Program.</p> <p>9. Web Hosting features across shared Web hosting, VPS, and dedicated server products available in the web hosting industry.</p>	<p>7.7 Define meta tags 7.8 Describe data index 7.9 Describe Boolean operators</p> <p>8.1 Define an affiliate program 8.2 Analyse affiliate program payment arrangements 8.3 Analyse affiliate program administration 8.4 Describe how to become an affiliate 8.5 Explain how to build effective, affordable website design solutions for an online business. 8.6 Describe elements of an ecommerce site 8.7 Describe organisations that succeeded in ecommerce 8.8 Describe advantages and disadvantages of ecommerce 8.9 Demonstrate how to build an ecommerce site</p> <p>9.1 Describe how web servers work 9.2 Demonstrate how to configure a console 9.3 Describe server management tasks 9.4 Demonstrate how to manage hosts 9.5 Describe Internet Server Application Programming Interface (ISAPI) components</p>
<p><b>Methods of Evaluation:</b> A 3-hour written examination paper with five essay questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake project/coursework in Web Server Configuration with a weighting of 100%.</p>	

### Recommended Learning Resources: Web Server Configuration

<p><b>Text Books</b></p>	<ul style="list-style-type: none"> <li>• Web Server Configuration for an Academic Intranet by Stamatios Baltzis ISBN-10: 1423533399</li> <li>• Administering Web Servers, Security and Maintenance by Eric Larson and Brian Stephens ISBN-10: 0130225347</li> <li>• Web Server Management Software by Hephaestus Books ISBN-10: 1242540105</li> <li>• Administering Web Servers, Security and Maintenance by Eric Larson and Brian Stephens ISBN-10: 0130225347</li> </ul>
<p><b>Study Manuals</b></p> 	<p>BCE produced study packs</p>
<p><b>CD ROM</b></p> 	<p>Power-point slides</p>
<p><b>Software</b></p> 	<p>Web Server software</p>