

LEVEL 5 ASSESSMENT SPECIFICATION

Programme:	BSc (Hons) Cloud Computing		
Module:	Network Programmability		
Module code:	ACCA5029	Contribution to Overall Module Assessment (%):	50%
Lecturer:	Sadeque Shaikh	Internal Verifier:	Renuga Jayakumar
Assignment Title:	Assessment 2	Word count (or equivalent):	2500
Submission deadline:	To be announced by the Assessment team- Please refer to the assessments schedule published on Students' Hall in Moodle	Return date of provisional marks & written feedback:	20 working days after submission
Submission method:	All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.) Alternative submission method (if applicable): Late submission of the assessment will result in a late penalty mark. Penalties for late submission: Up to one week late, maximum mark of 40%. Over one week late, 0%. Only the Extenuating Circumstances Panel may approve a change to submission dates.		
Academic honesty / referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

AIM(S)

- To give students the ability to work with network programmability and automation tools, with a further focus on software devops.

Learning Outcomes tested (from module syllabus)	
1. Apply appropriate analysis, design, implementation and testing techniques for programming and automation of network devices.	

Assessment Summary

Activity type	Percentage
Coursework (Implementation + report)	50%
TOTAL	100%

ASSESSMENT

Coursework -50% of the Module

TASK DESCRIPTION

Ansible is the one of the most simple and powerful IT automation engines that has been written in Python. Thousands of companies are using ansible to drive complexity out of their environments and accelerate DevOps initiatives.

For this second assignment - Having successfully submission of your research report about Infrastructure as code IaC, you have been appointed as a team leader of DevOps team for the Network programming and automation team at UWTSD Data Centre Project and you have been asked to produce a project report about installation and configuration of LAMP Stack (Linux, Apache, My SQL, and PHP) using Ansible playbooks. Your report should include the following Lab activities:

Step 1:

- 1.Create one virtual machine Ansible Controller and two Target Virtual Machine using CentOS 7 1804(64 bits). You may Install CentOS from Osboxes.org and check their IP configuration.
- 2.Establish SSH connections for all three Terminals. You may access from MobaXterm for this purpose. Ping the machines.
3. Install Ansible in Ansible Controller machine and check whether Ansible has been installed properly and check the version of the Ansible using command.
4. Check Connectivity using Ansible to other target Machines.

Step 2:

- 1.Generate public key cryptography in controller machine and copy it on target machine for login using Ansible to target machine
- 2.Go to ansible inventory file location and link with target machines of group of target machine (vi /etc/ansible/hosts)
3. Ping Target machine/group of machines located on inventory file location using Ansible for controller using command (ansible -m ping test)

Step 3:

Open ansible playbook and code for installing, configuration and deployment of LAMP Stack (Linux, Apache, My SQL, and PHP).

1. Open ansible playbook and code for installing and deployment of Apache webservice on target machine. Vi apache.yml
- 2.Test Whether webservice is working on target machine with different testing methods (ansi ble-playbook apache.yml -C)
3. Install and deploy Apache webservice for group of machines.
4. Test Target Machine with httpds -v command and also using ip address in the browser.

5. Open ansible playbook and code for installing and deployment of PHP on target machine: vi php.yml
6. Test PHP is working on target machine with different testing methods (ansible-playbook php.yml -C)
7. Install, configure and deploy PHP for group of machines.
8. Open ansible playbook and code for installing and deployment of Apache webservice on target machine. Vi mysql.yml
9. Test Whether webservice is working on target machine with different testing methods (ansible-playbook mysql.yml -C)
10. Install, configure and deploy Mariadb/MySQL to target machines
11. Testing Target Machines using mysql -V

The report should be of 2500 words (IEEE referencing) with the following topics. You also need to include sufficient screenshots of your lab activities.

- Analyse the features of Ansible as network automation tool (25 Marks)
- Installation, configuration and deployment of Apache Server (25 Marks)
- Installation, configuration, and deployment of My SQL (25 Marks)
- Installation, configuration and deployment of PHP (25 Marks)

MARKING CRITERIA – ASSIGNMENT TWO

This section details the assessment criteria. The *extent* to which these are demonstrated by you determines your mark. The marks available for each criterion are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Common Assessment Criteria Applied		Marks available
1. Knowledge and Understanding of Subject Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.		
Suitable development methods employed and justified.		25
2. Analysis Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence		
Provide evidence that the tables will link together in a relational database environment.		20
3. Practical Application and Deployment Deployment of methods, materials, tools and techniques; application of concepts; formulation of innovative and creative solutions to solve problems.		
Successful demonstration of software implementation		45
4. Skills for Professional Practice Attributes in professional practice: individual and collaborative working; deployment of appropriate media; presentation and organisation.		
All work suitable presented and referenced.		10

COMMON ASSESSMENT AND MARKING CRITERIA

	OUTRIGHT FAIL	UNSATISFACTORY	SATISFACTORY	GOOD	VERY GOOD	EXCELLENT	EXCEPTIONAL
Assessment Criteria	0-29%	30-39%*	40-49%	50-59%	60-69%	70-79%	80-100%
1. Research-informed Literature Extent of research and/or own reading, selection of credible sources, application of appropriate referencing conventions	Little or no evidence of reading. Views and findings unsupported and non-authoritative. Referencing conventions largely ignored.	Poor evidence of reading and/or of reliance on inappropriate sources, and/or indiscriminate use of sources. Referencing conventions used inconsistently.	References to a limited range of mostly relevant sources. Some omissions and minor errors. Referencing conventions evident though not always applied consistently.	Inclusion of a range of research-informed literature, including sources retrieved independently. Referencing conventions mostly consistently applied.	Inclusion of a wide range of research-informed literature, including sources retrieved independently. Selection of relevant and credible sources. Very good use of referencing conventions, consistently applied.	A comprehensive range of research informed literature embedded in the work. Excellent selection of relevant and credible sources. High-level referencing skills, consistently applied.	Outstanding knowledge of research-informed literature embedded in the work. Outstanding selection of relevant and credible sources. High-level referencing skills consistently and professionally applied.
2. Knowledge and Understanding of Subject Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.	Major gaps in knowledge and understanding of material at this level. Substantial inaccuracies.	Gaps in knowledge, with only superficial understanding. Some significant inaccuracies.	Evidence of basic knowledge and understanding of the relevant concepts and underlying principles.	Knowledge is accurate with a good understanding of the field of study.	Knowledge is extensive. Exhibits understanding of the breadth and depth of established views.	Excellent knowledge and understanding of the main concepts and key theories. Clear awareness of challenges to established views and the limitations of the knowledge base.	Highly detailed knowledge and understanding of the main theories/concepts, and a critical awareness of the ambiguities and limitations of knowledge.
3. Analysis Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence	Unsubstantiated generalisations, made without use of any credible evidence. Lack of logic, leading to unsupported/missing conclusions. Lack of any attempt to analyse, synthesise or evaluate.	Some evidence of analytical intellectual skills, but for the most part descriptive. Ideas/findings sometimes illogical and contradictory. Generalised statements made with scant evidence. Conclusions lack relevance.	Evidence of some logical, analytical thinking and some attempts to synthesise, albeit with some weaknesses. Some evidence to support findings/views, but evidence not consistently interpreted. Some relevant conclusions and recommendations, where relevant	Evidence of some logical, analytical thinking and synthesis. Can analyse new and/or abstract data and situations without guidance. An emerging awareness of different stances and ability to use evidence to support the argument. Valid conclusions and recommendations, where relevant	Sound, logical, analytical thinking; synthesis and evaluation. Ability to devise and sustain persuasive arguments, and to review the reliability, validity & significance of evidence. Ability to communicate ideas and evidence accurately and convincingly. Sound, convincing conclusions / recommendations	Thoroughly logical work, supported by evaluated evidence. High quality analysis, developed independently or through effective collaboration. Ability to investigate contradictory information and identify reasons for contradictions. Strong, persuasive, conclusions, justifiable recommendations	Exceptional work; judiciously selected and evaluated evidence. Very high quality analysis, developed independently or through effective collaboration. Ability to investigate contradictory information and identify reasons for contradictions. Highly persuasive conclusions
4. Practical Application and Deployment Effective deployment of appropriate methods, materials, tools and techniques; extent of skill demonstrated in the application of concepts to a variety of processes and/or contexts; formulation of innovative and creative solutions to solve problems.	Limited or no use of methods, materials, tools and/or techniques. Little or no appreciation of the context of the application.	Rudimentary application of methods, materials, tools and/or techniques but without consideration and competence. Flawed appreciation of the context of the application.	An adequate awareness and mostly appropriate application of well established methods, materials, tools and/or techniques. Basic appreciation of the context of the application.	A good and appropriate application of standard methods, materials, tools and/or techniques. Good appreciation of the context of the application, with some use of examples, where relevant.	A very good application of a range of methods, materials, tools and/or techniques. Very good consideration of the context of the application, with perceptive use of examples, where relevant. Evidence of some innovation and creativity.	An advanced application of a range of methods, materials, tools and/or techniques. The context of the application is well considered, with extensive use of relevant examples. Application and deployment extend beyond established conventions. Innovation and creativity evident throughout.	Outstanding levels of application and deployment skills. Assimilation and development of cutting edge processes and techniques.
5. Skills for Professional Practice Demonstrates attributes expected in professional practice including:	Communication media is inappropriate or misapplied. Little or no evidence of autonomy in the completion of tasks.	Media is poorly designed and/or not suitable for the audience. Poor independent or collaborative initiative. Work lacks structure,	Can communicate in a suitable format but with some room for improvement. Can work as part of a team, but with limited involvement in	Can communicate effectively in a suitable format, but may have minor errors. Can work effectively as part of a team, with clear contribution	Can communicate well, confidently and consistently in a suitable format. Can work very well as part of a team, with very good contribution	Can communicate professionally and, confidently in a suitable format. Can work professionally within a team, showing	Can communicate with an exceptionally high level of professionalism. Can work exceptionally well and professionally within a team, showing advanced leadership skills. Work is exceptionally coherent, very fluent and is

individual initiative and collaborative working; deployment of appropriate media to communicate (including written and oral); clarity and effectiveness in presentation and organisation.	Work is poorly structured and/or largely incoherent.	organisation, and/or coherence	group activities. Work lacks coherence in places and could be better structured.	to group activities. Mostly coherent work and is in a suitable structure.	to group activities. Work is coherent and fluent and is well structured and organised.	leadership skills as appropriate, managing conflict and meeting obligations. Work is coherent, very fluent and is presented professionally.	presented professionally.
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