# Case Study Assessment

# Teacher & Assessor Marking Guide

## Criteria

### Unit code and name

ICTNWK420 | Install and configure virtual machines

ICTNWK422 | Install and manage servers

### Qualification/Course code and name

Teaching staff/student to select the correct qualification the student is enrolled in from the dropdown list:

ICT40120 | Certificate IV in Information Technology

Version: *20230613*

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For queries, please contact:

Technology and Business Services SkillsPoint

Ultimo

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This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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### Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Instructions for the Teacher/Assessor** | This is a case study assessment that assesses the student on their knowledge and performance skills required for the unit.  This assessment is in four parts:   * Scenario * Report * Organisational feedback * Revise report   And is supported by:   * Assessment feedback (not included here) * Supporting documents * [Cl\_VirtualServer\_AE\_Appx.zip](https://share.tafensw.edu.au/share/items/f1c94a4f-68c3-4080-8c4f-f06c0f82a14e/0/?attachment.uuid=8dd6cefe-fb49-44d2-8fbf-8feeee9ed8a4) including: * Cl\_VirtualServer\_AE\_CS\_Email (docx) * Cl\_VirtualServer\_AE\_CS\_Gelos\_Report\_Template (docx)   Model answers, sample responses or criteria for each question are provided.  The Assessment feedback page must be signed by both the student and the Teacher/Assessor so the student displays that they have received, understood and accepted the feedback.  Complete the assessment feedback to the student and ensure you have taken a copy of the assessment if the student has not submitted it online.  For guidance on applying reasonable adjustment refer to [Assessment Guidelines for TAFE NSW (WDETG18411)](https://staff.tafensw.edu.au/documents/2018/10/wdetg18411-guidelines-assessment-guidelines.pdf/). |
| **About this marking guide** | The student’s response to each task or activity must contain the criteria indicated in this marking guide for their response to be correct.  All tasks and activities must be completed correctly to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each response meets the criteria based upon the rules of evidence and principles of assessment. |
| **Student must provide** | * TAFE NSW student account username and password. If you do not know your username and password, contact your campus or service centre on 131601. * Computer or other devices with word processing software and internet access. * Writing materials, calculator, pens, and measuring equipment, if required. |
| **Assessor must provide** | Access to this assessment and learning resources, including the student workbook and supporting documents and/or links. This includes the student assessment resources folder:   * [Cl\_VirtualServer\_AE\_Appx.zip](https://share.tafensw.edu.au/share/items/f1c94a4f-68c3-4080-8c4f-f06c0f82a14e/0/?attachment.uuid=8dd6cefe-fb49-44d2-8fbf-8feeee9ed8a4) including: * Cl\_VirtualServer\_AE\_CS\_Email (docx) * Cl\_VirtualServer\_AE\_CS\_Gelos\_Report\_Template (docx) |
| **Due date**  **Time allowed**  **Location** | Refer to the UAG.  4 hours (indicative only).  Assessment may be completed out of class. |

## Specific task instructions

The instructions and the criteria in the case study will be used by the Teacher/Assessor to determine whether the student has satisfactorily completed each scenario. Use these instructions and criteria to ensure the student demonstrates the required knowledge.

## Part 1: Scenario

To complete this part of the assessment, you will be required to read the Case Study Scenario.

Once you have read the information, you are required to complete your written report. Please ensure that you take note of the volume of response requirements where indicated.

Once completed, you will need to submit this assessment to your assessor for marking.

**Scenario:**

Gelos Enterprises is an information technology company that commenced operations in 2004. The focus of the business at that time was IT and network consultancy services for small to medium-sized businesses.

Three years ago, the company decided to add services for the design and development of websites, multimedia products and customised applications.

The company has the following departments:

* Development: carries out the creation of custom-built software solutions and dynamic websites.
* Multimedia Productions: including video, postproduction and animation.
* Sales and Marketing: includes work on advertising campaigns, the company’s social media presence, attends industry and community events, visits clients and identifies prospective clients.
* Human Resources: manages the recruitment of full time and contract staff and their entitlements, such as leave and superannuation.
* IT Support: manages the GE network and provides IT support to all staff.
* Accounts: looks after the payments into and out of the company (accounts payable and receivable).

To date, the company employs 40 full-time staff with up to 20 additional contract staff utilised to cover specific projects.

The Head office is located in Sydney, but the company is looking to expand into other cities and major centres around Australia.

To stay ahead of its competition, Gelos Enterprises has decided to establish a new research department. Through research, the company is hoping to design new products and improve their existing offers.

At the same time, the company is looking to expand their sales footprint and are considering opening a sales office in Perth, Western Australia. Gelos have started marketing their products to the mining industry and it is expected that this office will expand quickly over the next five years.

### Current requirements

To support this new department and sales office, the following services will be required:

1. A DNS and Directory Services server.
2. An additional DNS and Directory services server.
3. An SQL server.
4. A File server.
5. A Print server.

While management is keen to set up this new department and sales office, they are conscious of the cost of the hardware that would be required to run all these services.

Terrence Stewart, the Network Manager, has discussed with management about using a virtual solution using virtual machines.

Management is interested in this as they are forecasting that sales growth will increase by a minimum of 15% per year once the new department has been implemented.

Initially, the Perth office will be staffed by three sales representatives and an office assistant, and will not have any local tech support. Terrence Stewart thinks that the office could be supported using a Virtual Desktop Infrastructure (VDI).

Because this new virtual solution will be a portal where electronic payment by credit and debit cards will processed, compliance with any industry and government standards and regulations regarding virtualised environments must be followed.

Server hardware utilisation should be between a minimum of 50% up to a maximum of 80%.

### Future Requirements

The business is predicted to have a high growth period over the five years, following the implementation of the Research department. This will mean that the recommended solution must be able to expand as business expands.

The solution should provide the ability to migrate to a cloud-based provider at a later date. In line with the expected growth of the business, Gelos management has been informed that the internal network will need to be expanded to meet the growth requirements.

### Supporting documents

The following documents are provided:

* Email from Network Manager providing guidance on how to proceed (Cl\_VirtualServer\_AE\_CS\_Email.docx).
* Current system diagram (Gelos\_HeadOfficeNetwork.jpg).
* Recommendation Report Template (Cl\_VirtualServer\_AE\_CS\_Gelos\_Report\_Template.docx).
* IT Procurement and Installation Policy (Gelos\_ProcurementPolicy.pdf).

### Required server applications and features

1. Identify the types of server applications that might be required, depending on each department.
2. What aspects should be considered when making the server application features?
3. While adding the application features, what are the most suitable operating system features and network services that must be included?

### Documenting server configuration and operational changes

1. List how server configuration and operational changes should be documented as per the organisational policies and procedures.
2. Identify what is required to keep the workplace safe and clean.
3. List the e-waste that should be disposed of as per the requirement.

## Part 2: Report

You are to write a recommendation report that will be used by management to decide about going ahead with a virtualisation solution for the Research department and implementing VDI for the Perth office.

Ensure you read and respond to the detailed information and questions provided in the Recommendation Report Template (Cl\_VirtualServer\_AE\_CS\_Gelos\_Report\_Template.docx).

In your report, you need to:

* Research and analyse any government and industry policies or guidelines that relate to the use of virtualisation for either servers or desktops.
* Consider the current and future requirements of the company based on the scenario requirements.
* Identify the advantages and disadvantages to Gelos of desktop and server virtualisation.
* Evaluate features that are available in current virtualisation software that would be required by Gelos to implement a virtualised solution. The discussion should include the required tools and software for virtual machine management.
* Recommend a preferred virtualisation solution that will meet the needs of Gelos.
* Detail the technical and infrastructure requirements necessary to implement the preferred virtualisation solution. This should also include an outline of the process for the disposal of excess equipment according to organisational and e-waste policies. You should document your proposed timings for site access and develop a deployment including potential downtime expectations.

### Report structure

Use the Recommendation Report Template (Cl\_VirtualServer\_AE\_CS\_Gelos\_Report\_Template.docx).

The report should have the following structure:

1. Executive summary (300 -500 words).
2. Problem statement (300 – 500 words).
3. Options (250- 500 words).
4. Evaluation of options (250- 500 words).
5. Recommendation (250 – 500 words).
6. Requirements (300 - 600 words).
7. Agreement.

### Presentation

This report is to be formatted in a professional manner.

Tables and diagrams should be included where they add to the clarification of the point.

## Part 3: Organisational feedback

Before the report is presented to the management, Terrence Stewart would like to meet with you to provide feedback regarding the recommended virtualisation solution and the technical requirements identified in your report.

You are required to gather operational feedback by making an appointment with the assessor. It is suggested that the feedback session be between five and ten-minutes duration. Your assessor will organise for someone to play the role of the client, Terrence Stewart (this may be another teacher, student or industry representative).

To ensure you are prepared for the feedback session, refer to the observation checklist in table 2.

Keep the feedback restricted to:

* The selected virtualisation solution.
* Technical requirements and documented components.

The assessor will need to provide written feedback that the student can incorporate into the revised report.

Table 2 Organisational Feedback: Virtualisation solution

|  |  |
| --- | --- |
| Organisational Feedback: Virtualisation solution | |
|  | The presentation contains a sound thought processes, justified arguments, and coherent statements. |
|  | Recommendations are supported by the conclusion. |
|  | Recommendations are stated in unambiguous terms. |
|  | The presentation identified and described the technical requirements that need to be addressed concerning the recommended virtualisation technology. |
|  | A network diagram is produced, outlining the proposed solution. |
|  | Diagram has a viable design. |
|  | Client needs to be identified and addressed. |
| **Assessor name:**  **Assessor signature:**  **Date:** |  |

Table 3 Organisational Feedback: Technical requirements

|  |  |
| --- | --- |
| Organisational Feedback: Technical requirements | |
|  | Technical requirements addressed. |
|  | Scalability/Growth allowed for. |
|  | Identified the required hardware, software and infrastructure components that will be required to implement the recommended solution. |
|  | Technical diagram shows which virtual servers are running on which physical server. |
|  | Virtualisation hosts labelled. |
|  | RAM required per VM and Host specified. |
|  | Hardware requirements are specified for physical machines that will be hosting the VM’s. |
|  | Host server specifications based on the requirements to run the host, as well as all the VM OS’s as well as SQL. |
|  | Server Host OS specified. |
|  | Licensing addressed. |
|  | VM’s running on which physical hosts specified. |
|  | Roles configured on each VM specified. |
|  | VM network connectivity identified. |
|  | VDI addressed. |
|  | Disposal of excess equipment outlined. |
|  | Access to site arranged and users advised of deployment and downtime expectation. |
|  | Backup solution for the network (optional). |
|  | Cloud Migration (optional). |
| **Assessor name:**  **Assessor signature:**  **Date:** |  |

Do not make a judgement of the solution during this feedback session, instead, concentrate on the evidence provided to support the recommendation. Look for features/functions that have not been included in the evaluation that if included make a stronger case.

Use the list of given technical requirements as a guide to what might be appropriate to include as part of the organisational feedback.

**Observation Checklist P3**

The Observation Checklist will be used by your assessor to mark your performance in any of the previous event types. Use this Checklist to understand what skills you need to demonstrate in the practical task demonstration. The Checklist lists the assessment criteria used to determine whether you have completed this assessment event. All the criteria must be met. Your demonstration will be used as part of the overall evidence requirements of the unit. The assessor may ask questions while the demonstration is taking place or if appropriate directly after the task/activity has been completed.

Table 4 Observation Checklist

| Task/Activity Performed | S | U/S | Assessor Comments (Describe the student’s ability in demonstrating the required skills and knowledge) |
| --- | --- | --- | --- |
| 1. Used listening skills to respond appropriately. |  |  |  |
| 1. Responded to client questions using suitable language. |  |  |  |
| 1. Seeked feedback using questioning techniques to confirm an understanding of the clients. |  |  |  |
| 1. Arranged access to the site and advised users of deployment and downtime expectations. |  |  |  |

## Part 4: Revise report

The assessor is to ensure that the feedback provided in the organisational feedback session has been incorporated into the revised report.

As part of the organisational feedback meeting, you will receive written and oral feedback on the recommended solution and the technical requirements. The feedback is to be incorporated into a revised report that will then be submitted for marking.

## Part 5: What to submit

This assessment requires that you submit the following at the time and date indicated by your assessor:

* **Submission 1:** This is the submission of your initial report before organisational feedback has been provided.
* **Submission 2:** This includes the revised submission and the organisational feedback document that the assessor has provided.

## Part 6: Assessment checklist

The student’s copy of the assessment checklist will be used by you to capture evidence of their performance in any type of project. This checklist outlines all the required criteria you will be marking the student on. All criteria described in the assessment checklist must be met. The following checklist contains benchmark responses for you to use when assessing to ensure the reliability of judgement.

Table 5 Assessment checklist

| Task/Step # | Instructions | S | U/S | Assessor comments |
| --- | --- | --- | --- | --- |
| 1 | Research and determine government and industry guidelines and policies for use of desktop and server virtualisation. |  |  |  |
| 2 | Determine and document current and future requirements of organisations based on guidelines, policies and organisational structure. |  |  |  |
| 3 | Select virtualisation solutions based on the current and future needs of the organisation. |  |  |  |
| 4 | Seek and obtain feedback on selected virtualisation solutions from the organisation, and incorporate feedback into selected virtualisation solutions. |  |  |  |
| 5 | Identify, clarify, and document technical requirements of the organisation relating to virtualisation technologies including virtual machines, virtual networks, and virtualisation software. |  |  |  |
| 6 | Identify and document hardware, software, network, and infrastructure components required to be installed and configured to meet technical requirements. |  |  |  |
| 7 | Seek and obtain feedback on technical requirements and documented components from the organisation and incorporate feedback into technical requirements and documented components. |  |  |  |
| 8 | Dispose of excess equipment according to organisational and e-waste policies. |  |  |  |
| 9 | Arrange access to the site and advise users of deployment and downtime expectations. |  |  |  |

*NOTE: This section* ***must*** *have the assessor signature and student signature to complete the feedback.*

### Assessment outcome

Satisfactory

Unsatisfactory

### Assessor Feedback

Was the assessment event successfully completed?

If no, was the resubmission/re-assessment successfully completed?

Was reasonable adjustment in place for this assessment event?  
*If yes, ensure it is detailed on the assessment document.*

Comments:

### Assessor name, signature and date:

### Student acknowledgement of assessment outcome

Would you like to make any comments about this assessment?

### Student name, signature and date

***NOTE: Make sure you have written your name at the bottom of each page of your submission before attaching the cover sheet and submitting it to your assessor for marking.***