# **ICTNWK615 Design and configure desktop virtualisation**

# **Student Assessment Pack**

## **Student Details**

| **Student ID** |  |
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| **Student name** |  |
| **Contact number** |  |
| **Email address** |  |
| **Trainer/Assessor name** | . |

## **Course and Unit Details**

| **Unit code** | ICTNWK615 |
| --- | --- |
| **Unit name** | Design and configure desktop virtualisation |

## **Assessment Submission Method**

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| --- | --- | --- |
| ☐ By hand to trainer/assessor | ☐ By email to trainer/assessor | ☐Online submission via Learning Management System (LMS) |
| ☐ By Australia Post to RTO | ☐ Any other method \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (Please mention here) | |

**Student Declaration**

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| * I certify that the work submitted for this assessment pack is my own. I have clearly referenced any sources used in my submission. I understand that a false declaration is a form of malpractice; * I have kept a copy of this assessment pack and all relevant notes, attachments, and reference material that I used in the production of the assessment pack; * For the purposes of assessment, I give the trainer/assessor of this assessment the permission to:   + Reproduce this assessment and provide a copy to another member of staff; and   + Take steps to authenticate the assessment, including communicating a copy of this assessment to a checking service (which may retain a copy of the assessment on its database for future plagiarism checking).   Student signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Date: \_\_\_\_/\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

## **Assessment Plan**

To demonstrate competence in this unit, you must be assessed as satisfactory in each of the following assessment tasks.

| **Evidence recorded** | **Evidence Type/ Method of assessment** | | | **Sufficient evidence recorded/Outcome** |
| --- | --- | --- | --- | --- |
| **Unit Assessment Task 1** | Unit Knowledge Test (UKT) | | | S / NS (First Attempt)  S / NS (Second Attempt) |
| **Unit Assessment Task 2** | Unit Project (UP) | | | S / NS (First Attempt)  S / NS (Second Attempt) |
| **Unit Assessment Task 3** | Unit Project (UP) | | | S / NS (First Attempt)  S / NS (Second Attempt) |
| **Final result** | C/NYC | **Date assessed** |  | |
| **Trainer/Assessor Signature** |  | |

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# **Assessment Task**

## **Assessment Task 1 - Unit Knowledge Test (UKT)**

**Assessment type:**

* Written Questions

**Assessment task description:**

* This is the first (1) unit assessment task you have to successfully complete to be deemed competent in this unit of competency.
* The Unit Knowledge Test is comprised of fifteen (15)written questions
* You must respond to all questions and submit them to your Trainer/Assessor.
* You must answer all questions to the required level, e.g. provide the number of points, to be deemed satisfactory in this task
* You will receive your feedback within two weeks - you will be notified byyour Trainer/Assessor when results are available.

**Applicable conditions:**

* All knowledge tests are untimed and are conducted as open book tests (this means you are able to refer to your textbook during the test).
* You must read and respond to all questions.
* You may handwrite/use computers to answer the questions.
* You must complete the task independently.
* No marks or grades are allocated for this assessment task. The outcome of the task will be Satisfactory or Not Satisfactory.
* As you complete this assessment taskyou are predominately demonstrating your written skills and knowledge to yourtrainer/assessor.
* The trainer/assessor may ask you relevant questions on this assessment task to ensure that this is yourown work.

**Resubmissions and reattempts:**

* Where a student’s answers are deemed not satisfactory after the first attempt, a resubmission attempt will be allowed.
* You must speak to your Trainer/Assessor if you have any difficulty in completing this task and require reasonable adjustments (e.g. can be given as an oral assessment)
* For more information, please refer to your RTO Student Handbook.

**Location:**

* This assessment task may be completed in a learning management system (i.e. Moodle) or independent learning environment.
* Yourtrainer/assessor will provide you further information regarding the location for completing this assessment task.

**Instructions for answering written questions:**

* Complete a written assessment consisting of a series of questions.
* You will be required to correctly answer all the questions.
* Do not start answering questions without understanding what is required from you. Read the questions carefully and critically analyse them for a few seconds, this will help you to identify what is really needed.
* Your answers must demonstrate an understanding and application of relevant concepts, critical thinking, and good writing skills.
* Be concise to the point and write answers according to the given word-limit to each question and do not provide irrelevant information. Be careful, quantity is not quality.
* Be careful to use non-discriminatory language. The language used should not devalue, demean, or exclude individuals or groups on the basis of attributes such as gender, disability, culture, race, religion, sexual preference or age. Gender inclusive language should be used.
* When you quote, paraphrase, summarise or copy information from the sources you are using to write your answers/research yourwork, you must always acknowledge the source.

**How your trainer/assessor will assess your work?**

* This assessment task requires the student to answer all the questions.
* Answers must demonstrate the student’s understanding and knowledge of the unit.
* If all assessment tasks are deemed Satisfactory (S), then the unit outcome is Competent (C).
* If at least one of the assessment task is deemedNot Satisfactory (NS), then the unit outcome is Not Yet Competent (NYC).
* Once all assessment tasks allocated to this Unit of Competency have been undertaken, trainer/assessor will complete an Assessment plan to record the unit outcome. The outcome will be either Competent (C) or Not Yet Competent (NYC).
* The “Assessment Plan” is available with the Unit Assessment Pack (UAP) – Cover Sheet.

## **Assessment Task 1 - Unit Knowledge Test (UKT)**

**Instructions:**

* This is an individual assessment.

The purpose of this assessment task is to assess the students’ knowledge required to ensure secure file encryption is selected, implemented and monitored on a computer network or local environment.

* To make full and satisfactory responses you should consult a range of learning resources, other information such as handouts and textbooks, learners’ resources and slides.
* All questions must be answeredin order to gain competency for this assessment.
* You may attach a separate sheet if required.
* You must include the following particulars in the footer section of each page of the attached sheets:
  + Student ID or Student Name
  + Unit ID or Unit Code
  + Course ID or Course Code
  + Trainer and assessor name
  + Page numbers
* You must staple the loose sheets together along with the cover page.
* You must attach the loose sheets chronologically as per the page numbers.
* Correction fluid and tape are not permitted. Please do any corrections by striking through the incorrect words with one or two lines and rewriting the correct words.

Resources required to complete the assessment task:

* Learner guide
* PowerPoint presentation
* Unit Assessment Pack (UAP)
* Access to other learning materials such as textbooks
* Access to a computer, the Internet and word-processing system such as MS Word.

1. Answer the following questions:

A) Briefly explain latest five (5) policies of government and industry related to the development of efficient and reliable ICT environments? Write your response in 200-250 words.

B) Explain the three (3) current guidelines for government and industry to develop efficient and reliable ICT environment. Write your response in 130-180 words.

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1. Answer the following questions:
2. Explain the three (3) latest technologies to produce an efficient and reliable ICT environment. Write 50-100 words for each technology.
3. List any five (5) current processes designed to produce an efficient and reliable ICT environment.

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| 1. Tech companies often gain competitive advantage by causing market disruption through their ability to understand and act on technology trends. Like waves in the ocean, it’s much easier to ride these trends if you can see them coming and read them right.   Some of the technologies to produce an efficient and reliable ICT environment are listed below:   1. Spreading Intelligence throughout the cloud   Connected smart machines, such as robots and autonomous vehicles, are fundamental to the evolving Networked Society. Enhanced cloud architecture that can distribute and share machine intelligence will enable smart connected machines to work on an increasingly higher level.  Supported by advancements in artificial intelligence (AI) – particularly in the areas of big data analytics, machine learning and knowledge management – rapid progress has been made in terms of what smart machines can do. Developments in connectivity and cloud technologies are making it possible to distribute and share machine intelligence more easily, at a lower cost, and on a much wider scale than before.  When connected to the cloud, smart machines will be able to use the powerful computational, storage and communication resources of state-of-the-art data centers. Today’s intelligent software robotics systems are capable of supporting repetitive administrative tasks with current development pushing toward advisory tasks. Cloudification shifts the capabilities of these systems into a new sphere that includes complex problem-solving and decision-making on a mass-market scale.   1. Self Managing Devices   Combining sensory data with AI techniques enables the data from massive numbers of sensors to be merged and processed to create a higher-level view of a system.  Connected smart devices will change our lives in many ways. These range from simple services that open your garage door as your car approaches, for example, to radically new business opportunities involving services yet to be invented and markets yet to be discovered. Combined with intelligent handling of data, smart devices can boost the productivity and profitability of any business. But to enable the deployment of billions of smart devices, the cost of managing and monitoring them needs to be low. Evolving software and communications technology are shifting toward the creation of autonomous and self-managing devices.  The Internet of Things (IoT) means automation and intelligence in everything that is connected. This implies that a collective intuitive behavior among a wide range of devices for a wide range of applications is possible in the future. The connectivity allows objects to be sensed and actuated remotely, creating a bridge between the physical and digital world.   1. Communication beyond sight and sound   Communication will evolve in a highly remarkable way over the coming years, as interaction between human beings and machines evolves to include additional experiences and senses. The internet you can feel is on the horizon.  Emerging technologies in the fields of the tactile internet, virtual reality and augmented reality – supported by 5G network evolution – are showing signs that the ability to experience an event virtually is no longer science fiction, but a feasible reality, and indicate a giant step forward in innovation.  Reference: 2020. [online] Available at: <https://www.ericsson.com/en/reports-and-papers/ericsson-technology-review/articles/technology-trends-2016> [Accessed 9 November 2020]. |

1. Answer the following questions:

A) List the five (5) tools along with their applications for the management of the virtual desktop environment. Write your response in 150-200 words.

B) Summarise three (3) software applications and their application to manage the virtual desktop environment. Write your response in 200-250 words.

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| 1. ***Long ago, when servers still came one to a box, "sysadmins" spent all their time running from one machine to another, with boxes of tools and utilities designed to squeeze out every bit of performance and stability from physical servers.***   ***Now, virtual servers outnumber the physical in most data centers. And neither budgets nor toolboxes are over-provisioned with resources for fine-tuning virtual infrastructures.***  ***Companies expanding beyond the pilot phase and moving into large-scale server or desktop virtualization need to realize that utilities from third parties—not just the platform vendors—are what will help them make virtual infrastructures as stable as the real ones, some analysts say.***  ***It's impossible to say which utilities or ISVs offer the best tool for every environment, Shields says. But five specific types are particularly important to getting virtual infrastructures humming right now.***   1. ***Capacity Management***   ***"Virtualization is taking what became sort of an also-ran activity, capacity management, and showing why it's really a critical step," Shields says.***  ***Multi-processor, muti-core servers and acres of RAM made planning for server capacity almost moot, Shields says. With virtual servers, however, the question isn't the power of the server, it's how that capacity is doled out to specific workloads on specific virtual machines, and monitoring the performance of the VMs to make sure all the resource demands are satisfied.***  ***"It goes beyond not being able to automate anything until you know what you have," Wolf. "Without capacity management you don't know what a particular service is costing the organization and that makes it harder to build out your infrastructure as a service."***  ***VMware's vCenter CapacityIQ is effective at identifying utilization gaps, Shields says, but there are plenty of other options. These range from old-school IT favorites retooled to cover virtual as well as physical, such as BMC's Capacity Management and HP's Insight Dynamics, to purpose-built virtualization management tools from VKernel, VMTurbo and Embotics.***     1. ***Performance Management***   ***Performance problems in physical servers are relatively easy to spot because most functions are associated with a specific component. Swap it out and you're good to go.***  ***"On a virtual server a performance issue could be related to spindle contention in storage, an oversubscription of RAM, and undersubscription of RAM, under or over subscription of processors, bandwidth utilization—a whole series of dependencies that make it hard to put your finger on the problem without a deep analysis of what's going on inside," Shields says.***  ***Hyper9, for example, offers a set of tools called Hyper9 VEO (Virtual Environment Optimization) designed to discover all the VMs in an infrastructure, all the applications running on them, the relationships between the applications, VMs and physical servers and to collect data on performance, configuration and capacity.***  ***Those capabilities were de rigeur in the physical world, but are still uncommon in the virtual, Wolf says. ISVs such as Akorri, Netuitive and VMware's CapacityIQ are also making good progress on performance optimization tools, he says.***   1. ***Storage Management***   ***Storage continues to be one of the most consistent source of headaches for virtual-infrastructure managers, Wolf says.***  ***Converting physical servers to virtual requires more back-end storage space—a problem exacerbated by VM sprawl—and not even virtual storage systems are typically designed in ways that make it easy for virtual servers to run at their best, Wolf says.***  ***"Companies have been able to plan their CPU and memory density, anticipate boot storms that generate a lot of I/O, but they haven't always been able to optimize tiered storage for virtual servers, or do things like queue data locally so you aren't pushing as much data through the pipe," Wolf says.***  ***Three-year-old ISV Virsto tries to address VM storage problems by reducing the amount of disk space used for VMs by eliminating the need to store the same data for 100 golden images, and improve performance by reducing the number of data-packet collisions VMs generate at storage I/O busses by not coordinating their timing the way a single server would.***   1. ***Virtual Enterprise Management Suites***   ***Not surprisingly, a lot of the physical-IT-management vendors have been eager to expand their reach into the virtual world as well -- and have done so very effectively, Wolf says.***  ***VMware partners BMC, CA, HP and IBM have all been making creditable forays into virtual-enterprise management, even against VMware's claim that its vCloud Director is purpose-built for the environment, Wolf says.***  ***"You have a lot of very sophisticated capabilities coming in from these platforms, like the service automation suite HP got from OpsWare," Wolf says. "There's more pull there from that level of capability and because VMware knows it's not going to be a device-management company, so it's not reaching down where some of the enterprise ISVs already go."***   1. ***Desktop Virtualization Planning and Management***   ***"Virtual server environments are an order of magnitude more complex than physical server environments because of the additional ecosystem they add to the physical one," Shields says. "Desktop virtualization adds even one more ecosystem and a lot more."***  ***Virtual desktops can also be delivered in more ways than virtual servers—ranging from full-on VDI in which each user gets a dedicated VM with a single OS running on a backend server, to virtual applications that can be viewed from almost any machine, Shields says.***  ***Reference:*** Fogarty, K., 2020. *Virtualization Management: 5 Tools That Matter Most*. [online] CIO. Available at: <https://www.cio.com/article/2415009/virtualization-management--5-tools-that-matter-most.html> [Accessed 9 November 2020].   1. ***Implementing a virtual desktop infrastructure (VDI) requires careful planning for its implementation to be successful. And it all begins with choosing the right virtual desktop infrastructure software for your organization. At this stage, it is important to pay attention to the features, tools, and capabilities of various solutions.***   ***Some of the software related to virtual desktop environments are listed below as:***   1. ***V2 Cloud***   ***Through the software, businesses can use fully managed, scalable platform for deploying virtual desktops, which come in handy for remote teams and individuals who work outside the office.***  ***Using V2 Cloud, admins can add up to 250 users to a desktop, and users can have their own private folders and use public shared folders while using the same virtual machine. Programs and applications need to be installed only once, helping reduce hardware and licensing costs. Administrator permissions ensure full control over access to apps and files.***  ***V2 Cloud also provides full admin access, so admins have a full 360-degree view of all cloud desktops. With full access, admins can easily manage users, install applications remotely, and monitor remote connections as needed.***  ***V2 Cloud makes it easy to manage virtual desktops over remote connections. Admins have full access for managing cloud desktops, so installing remote applications is easier. Applications will also have to be installed only once for all users, reducing licensing costs. From V2 Cloud’s centralized dashboard, admins can also add up to 250 concurrent users to each workplace while controlling access levels for these users.***  ***V2 Cloud provides businesses with virtual desktops that are easy to use. These cloud desktops can be accessed through Web browsers and offer bidirectional copy-paste functions and printing. Built-in HTTPS encryption and two-step authentication ensures utmost network security and data protection. All these features allow users to work within a personalized cloud infrastructure.***  ***V2 Cloud can help businesses protect their data and desktops against ransomware attacks. The platform ensures that all communications within cloud desktops are encrypted and enables automatic daily backups for desktops. These features ensure that data can be easily recovered in the event of cybersecurity attacks.***   1. ***Amazon Workspaces***   ***Amazon WorkSpaces is a managed, secure cloud desktop service designed to improve user productivity while reducing overhead costs. You can use Amazon WorkSpaces to provision either Windows or Linux desktops in just a few minutes and quickly scale to provide thousands of desktops to workers across the globe. You can pay either monthly or hourly just for the WorkSpaces you launch. This helps you save money when compared to traditional desktops and on-premise VDI solutions.***  ***Among its most prominent features is the elimination of many administrative tasks associated with managing your desktop lifecycle, including provisioning, deployment, maintenance, and recycling of desktops. There is less hardware inventory to manage and no need for complex virtual desktop infrastructure deployments that don’t scale.***  ***Amazon WorkSpaces is a cost-efficient solution for cloud desktops as it has multiple pricing tiers that meet your most pressing requirements. It has five bundles depending on your focus: performance, power, graphics, value, and standard services. Aside from that, you can opt for hourly or monthly billing so you can better control your usage and expenses. Moreover, this gives you full control over your desktop resources to further cut operational costs.***  ***Rather than forcing you to spend time on creating a new directory, Amazon WorkSpaces lets you connect to your existing Active Directory. This way, you can easily manage and modify user access rights from a single interface and roll it throughout the organization with ease.***   1. ***IBM Cloud***   ***IBM Cloud is an accelerated virtual desktop infrastructure software that is integrated with industry-standard graphics and storage capabilities to eliminate productivity barriers. The platform empowers mobile workforces to gain workstation-like experience on any device. This gives them fast and convenient access to graphics-intensive applications and files anytime, and anywhere there is an internet connection.***  ***IBM Cloud reviews show that the platform’s robust VDI functionalities are backed by security safeguards to protect in-transit and at-rest content from loss and theft. The system configures and scales computing and storage options housed in different data centers worldwide. This is complemented by GPU technology that speeds up access to graphics-intensive materials.***  ***IBM Cloud allows organizations to switch from a capital expense (CAPEX) to operating expense (OPEX) model for their infrastructure, while also reducing total cost of ownership as users become less reliant on desktop workstations and standalone software licenses. The software is also easy to set up, with on-demand access to top compute services and desktop virtualization solutions.***  ***Teams can increase productivity with improved collaboration as IBM Cloud speeds up access to graphics files. The system can be quickly configured with high-performance NVIDIA GRID GPUs, which allow multiple users to access and share the graphics processing power of a single GPU.***  ***Reference:*** Financesonline.com. 2020. *20 Best Virtual Desktop Infrastructure Software In 2020 - Financesonline.Com*. [online] Available at: <https://financesonline.com/virtual-desktop-infrastructure/> [Accessed 9 November 2020]. |

1. Explain the configuration of the software applications for the management of the virtual desktop environment. Write your answer in 150-200 words.

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1. Explain the factors to consider while formulating the configuration required to integrate virtual machines into the existing network design. Write your response in 200-250 words.

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1. Answer the following questions:

A) Explain the structure and business organisation of the client virtualisation. Write your answer in 200-250 words.

B) What are the four (4) functions of client virtualisation? Write 50-100 words for each function.

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Question 7: Explain the term “virtual desktop infrastructure”? Write 200-250 words in your response.

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| ***Virtual desktop infrastructure (VDI) is a desktop virtualization technology wherein a desktop operating system, typically Microsoft Windows, runs and is managed in a data center. The virtual desktop image is delivered over a network to an endpoint device, which allows the user to interact with the operating system and its applications as if they were running locally. The endpoint may be a traditional PC, thin client device or a mobile device.***  ***The concept of presenting virtualized applications and desktops to users falls under the umbrella of end-user computing (EUC). The term VDI was originally coined by VMware and has since become a de facto technology acronym. While Windows-based VDI is the most common workload, Linux virtual desktops are also an option.***  ***How the user accesses VDI depends on the organization's configuration, ranging from automatic presentation of the virtual desktop at logon to requiring the user to select the virtual desktop and then launching it. Once the user accesses the virtual desktop, it takes primary focus, and the look and feel are that of a local workstation. The user selects the appropriate applications and can perform their work.***  ***VDI may be based on a server or workstation operating system. Traditionally, the term VDI has most commonly referred to a virtualized workstation operating system allocated to a single user, but that definition is changing.***  ***Reference:*** SearchVirtualDesktop. 2020. *What Is Virtual Desktop Infrastructure? VDI Explained*. [online] Available at: <https://searchvirtualdesktop.techtarget.com/definition/virtual-desktop-infrastructure-VDI> [Accessed 9 November 2020]. |

Question 8: Answer the following questions:

1. Summarise the comparison between Citrix XEN Desktop and Microsoft Remote Desktop Services.
2. Explain the three (3) components of Virtual Desktop Infrastructure? Write your response in 50-100 words for each component.
3. List five features of virtual desktop infrastructure.

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| 1. Microsoft Windows Remote Desktop Services (Terminal Services) is a component of the Windows Server operating systems. Citrix XenApp (Presentation Server) uses this system component and extends it or facilitates scalability and administration. However, Microsoft supplements and optimizes Remote Desktop Services with each new version of Windows Server. More and more the question comes up whether Citrix XenApp is still necessary.   Reference: FirstAttribute. 2020. *Microsoft Windows Remote Desktop Services Vs. Citrix Xenapp - Firstattribute AG*. [online] Available at: <https://www.firstattribute.com/en/news/microsoft-windows-remote-desktop-services-vs-citrix-xenapp/> [Accessed 9 November 2020]. |

Question 9: Explain the following:

1. Limitations of Virtual Development Infrastructure
2. Desktop specific design objectives of Virtual Desktop Infrastructure
3. Requirements for Virtual Desktop Infrastructure

Write 150-200 words for each in your response.

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Question 10: What are the ten (10) factors to consider for planning the implementation and deployment of virtualisation?

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Question 11: What are the hardware and software features of a Virtual machine? Write 250-300 words for each in your response.

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Question 12: Explain the process involved in implementing and deploying the application virtualisation software. Write your response in 150-200 words

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Question 13: What information should you include in a virtualisation plan? Write your response in 250-300 words.

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Question 14: List the ten (10) steps involved for tuning the virtual environment.

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Question 15: How to deploy a virtual application package for testing? Write your response in 250-300 words.

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# **Unit Assessment Task (UAT)**

**Assessment Task 2 - Unit Project (UP)**

**Instructions to complete this assessment task**:

* Please write your responses in the template provided.
* You may attach a separate sheet if required.
* You must include the following particulars in the footer section of each page of the attached sheets:
  + Student ID or Student Name
  + Unit ID or Unit Code
  + Course ID or Course Code
  + Trainer and assessor name
  + Page numbers
* You must staple the loose sheets together along with the cover page.
* You must attach the loose sheets chronologically as per the page numbers.
* Correction fluid and tape are not permitted. Please do any corrections by striking through the incorrect words with one or two lines and rewriting the correct words.
* The premise of the project must be closely related to the previous assessment task.
* This submission must be well presented and follow the guidelines and instructions provided.
* Please follow the format as indicated in the template section below.
* One of the most important steps that you can take: proofread your project.
* Project must be of 500-800 words in length, using 11-point font, double-spaced, and must include a cover page, table of contents, introduction, body, summary or conclusion, and works cited.
* Appropriate citations are required.
* All RTO policies are in effect, including the plagiarism policy.

Resources required to complete the assessment task:

* Computer
* Internet
* MS Word
* A site desktop virtualisation may be conducted
* A live network
* Servers

**Scenario: -**

HUNE City Council is responsible for the welfare of the people and for managing a better lifestyle for its people. The council is responsible for emergency management, media, publications, welfare services, fines and infringements, legislation, town planning, leisure sports and recreation, libraries and learning, waste management, building and construction. The council has been transformed into a paperless organisation and all the services are handled on different information systems implemented at the council’s head office. The size of the data is immense and the information retrieval is also an ongoing process. Also, a team of developers is continuously working on development of different projects so that an efficient and effective system has to be implemented as per the requirements of the council. The data centre is also hosted in the building of the head office and all the computers, servers, printers, scanners and hand-held devices are connected to the network and an authorised and authenticated security setup has been implemented on the network to obtain the optimal performance of all the information systems.

The ICT environment implemented at the council is according to the guidelines, regulations and policies as per the government defined Occupational Health and Safety parameters. The OHS/WHS codes of practice followed by the council are as below:

Health and safety is the responsibility of everyone working in the council.

Each individual staff member must recognise their responsibility in regard to health and safety, whether they are working in the office.

The Council Safety Policy is directed by the policies of the Occupational Health and Safety Unit and includes the main concerns being focused on the care of staff in the engineering network and IT infrastructure. Each working area is unique in its safety requirements and as such, each work area will have variations in policy. The relevant safety requirements applicable to a work area will be displayed in a prominent position in the work area.

Individuals should understand the parameters of their workplace and be conscious of any constraints or limitations that apply in particular areas. It is also important that individuals are familiar with any other workplaces they may visit during their course of work or study. People should never become complacent with their surroundings.

Should any health and safety problems arise that cannot be resolved easily, the matter should be directed to the [Workplace Health and Safety Committee](http://www.itee.uq.edu.au/itee-workplace-health-safety-committee) for action.

Staff should be aware of the correct work practices that apply to individual work areas they encounter. The [Work Health and Safety Act 2011](http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/W/WorkHSA11.pdf) sets very clear guidelines as to what the employers responsibilities are in relation to health and safety.

Responsibilities

* Supervisors are responsible for ensuring that risk analyses are performed by or on behalf of staff operating in areas for which they are responsible
* Network manager and high risk environments have been risk assessed
* A risk assessment should be carried out on computer network to ensure the layout of computers does not contribute to eye strain, bad posture etc
* The Information Technology Manager is responsible for conducting risk assessments of IT infrastructure

Electrical Safety

Electrical safety regulations require that regular inspection and testing of specified electrical equipment is carried out in accordance with the relevant Australian Standard.

It is the IT staff responsibility to:

* Visually inspect any equipment prior to use
* Ensure that it is fit for the intended purpose
* The test and tag label is current
* That cords and leads are run in such a way as to be protected from harm and not present a risk to others

Environmental guidelines:

Information Management & Technology Services believes that sustainability should be built into each of our IT services and solutions. We're currently undertaking a number of initiatives to reduce our environmental impact and have even more in the pipeline for the coming months.

Some of these changes will have direct measurable data to support them, such as electricity consumption, while others will meet sustainability objectives over time.

* Encouraging staff to turn off their monitors when they leave their desk for an extended period.
* Recycling waste both at our desks and the product packaging we deploy.
* Promoting sustainability initiatives.
* Encouraging the integration of sustainability into decision making.
* Data centre optimised to increase efficiency of air flow and reduce air conditioning requirements.
* Continuing to invest into virtualisation technologies to support services.
* Continuing to replace older less energy efficient hardware.
* Selecting products by integrating sustainability into the procurement process. During the next tender process for server equipment a sustainability component will be built in.

Mark is the IT Manager and is the team lead of all the developers, IT personnel, and network and system administrators. While, Steve is working as the System Administrator and is responsible for the smooth and efficient working of the information systems across the organisation. The job details of IT Manager and System Administrator as follow:

IT Manager Job description:

* Supports team manager and performs management duties when manager is absent or out of office
* Manages inventories and stock, including keeping detailed records of inventory use and sales, and advising management on ordering where necessary
* Provides encouragement to team members, including communicating team goals and identifying areas for new training or skill checks
* Assists management with hiring processes and new team member training
* Answers team member questions, helps with team member problems, and oversees team member work for quality and guideline compliance
* Communicates deadlines and sales goals to team members
* Develops strategies to promote team member adherence to company regulations and performance goals
* Managing information technology and computer systems
* Controlling and evaluating IT and electronic data operations
* Managing IT staff

System Administrator Job Description:

* Install and configure software and hardware
* Manage network servers and technology tools
* Set up accounts and workstations
* Monitor performance and maintain systems according to requirements
* Troubleshoot issues and outages
* Ensure security through access controls, backups and firewalls
* Upgrade systems with new releases and models
* Develop expertise to train staff on new technologies
* Build an internal wiki with technical documentation, manuals and IT policies
* Installing and configuring software, hardware and networks
* Monitoring system performance and troubleshooting issues
* Ensuring security and efficiency of IT infrastructure

Due to financial constraints and increasing amount of data along with the fact of continuous development of different applications for the use of council, it has been decided by the management and the IT department to implement the desktop virtualisation solution for the optimal performance and also for the testing of different applications as virtualisation not only help to save the costs of the hardware but also provide the facility of multiple platforms across the same machine which can be very beneficial for implementation of different applications along with their testing. Steve being the System administrator will be responsible for the implementation of the desktop virtualisation environment, while Mark IT manager will supervise and manage all the virtualisation process.

**Activity 1: (Planning of the desktop virtualisation environment)**

So, in this activity you need to research and analyse for different available Virtualisation solutions available optimal for the organisation. You will act as Steve, the System Administrator and will plan the implementation of the desktop virtualisation environment under the supervision of Mark, the IT manager which will be acted by the trainer/assessor. The planning phase will help to ensure the designing and implementation of the virtualisation environment as per the requirements of the organisation. The planning phase also includes the documentation process that can help to understand the design, implementation and configuration of the desktop virtualisation environment.

So, for the planning phase you need to perform the following task:

* Analyse different desktop virtualisation software vendors.

Note: You need to research different virtualisation software over internet

* Analysis of the desktop virtualisation environment and ensure that your analysis is based on Windows platform has been used across the IT infrastructure.
* Analysis of the features and functions of the desktop virtualisation environment.
* Analysis objectives, hardware requirements and limitations of the desktop virtualisation environment
* Document the design infrastructure, the document includes the planning phase for the implementation and deployment of the desktop virtualisation environment.
* Also, complete the given template for the documentation of the VDI including the analysis and planning of the desktop virtualisation environment.

**Template 1 to Document the Desktop Virtualisation Environment**

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| --- |
| **Purpose**  **What should the Project Plan cover?**  **Key considerations in developing the Plan**  ***Analysis of the Desktop Virtualisation Software:***  ***Analysis of the Desktop Virtualisation Software:***  ***Features and functions of Desktop Virtualisation Solution:***  **Analysis objectives, hardware requirements and limitations *Virtualisation software*:**    **How to use this template**  **Individual project data**  **Text styles**    **Executive Summary** |

## **Assessment Task 3 - Unit Project (UP)**

**Instructions to complete this assessment task**:

* Please write your responses in the template provided.
* You may attach a separate sheet if required.
* You must include the following particulars in the footer section of each page of the attached sheets:
  + Student ID or Student Name
  + Unit ID or Unit Code
  + Course ID or Course Code
  + Trainer and assessor name
  + Page numbers
* You must staple the loose sheets together along with the cover page.
* You must attach the loose sheets chronologically as per the page numbers.
* Correction fluid and tape are not permitted. Please do any corrections by striking through the incorrect words with one or two lines and rewriting the correct words.
* The premise of the project must be closely related to the previous assessment task.
* This submission must be well presented and follow the guidelines and instructions provided.
* Please follow the format as indicated in the template section below.
* One of the most important steps that you can take: proofread your project.
* Project must be of 500-800 words in length, using 11-point font, double-spaced, and must include a cover page, table of contents, introduction, body, summary or conclusion, and works cited.
* Appropriate citations are required.
* All RTO policies are in effect, including the plagiarism policy.

Resources required to complete the assessment task:

* Computer
* Internet
* MS Word
* A site where desktop virtualisation may be conducted
* A live network (LAN)
* Servers and computers
* Switches and routers
* Workplace health and safety (WHS) standards, environmental guidelines (Provided in scenario)

**Activity 1 (Implementation of the Desktop virtualisation environment)**

This activity is continuation of assessment task 2. You are required to participate in a practical demonstration task. You need to complete this activity in 2 to 3 hours. Additional time will be provided for analysis and preparing documentation.

Note: For This activity ATIC Assessor will provide you the following:

* **A site where desktop virtualisation may be conducted**
* **A live network (LAN)**
* **Servers and computers**
* **Switches and routers**

Now, considering yourself as the System Administrator Steve, you need to implement and configure the desktop virtualisation environment and the devices. You need to work as per the instructions of the IT Manager which will be acted by the trainer/assessor and he will be responsible to provide stimulated environment for the implementation of the virtualisation. For this activity you need to perform the following tasks,

* Obtain the Desktop virtualisation software and that is to be provided by the trainer. As discussed in the plan as the Windows platform has been used across the council office and data centre so VMware workstation is the appropriate one. You also need to implement the desktop virtualisation technologies as per the given scenario.
* Install and configure the Virtual desktop environment. The following must be done:
  + Select Deployment Type
  + Review of role Services
  + Specify which server to act as the RD Connection Broker Server
  + Specify which server to act as the RD Web Access Server
  + Specify the RD Virtualisation Host
* Implement the specific features and function of Virtual desktop infrastructure
* Manage and implement the testing process on the desktop virtualised setup
  + View performance charts
  + Check physical performance
  + Check antivirus is up to date
  + Check system is up to date

You trainer will observe your performance and complete the following checklist.

**Activity 2: (Implementation of the application virtualisation software)**

This activity is continuation of previous task. You are required to participate in a practical demonstration task. You need to complete this activity in 2 to 3 hours. Additional time will be provided for analysis and preparing documentation.

Note: For This activity RTO/Assessor will provide you the following:

* A site where desktop virtualisation may be conducted
* A live network (LAN)
* Servers and computers
* Switches and routers

After the implementation of the desktop virtualisation environment, as a System Administrator, you need to implement the application virtualisation software. You will perform the implementation as per the instructions and under the supervision of the trainer/assessor. For this activity you need to perform the following tasks:

* Prepare an implementation plan for the application virtualisation software and complete the given template 2 for planning of the application feature.
  + Analyses of the Application Software
  + Identify the software, hardware and tools required for implementation of application virtualisation
  + Implementation of Application Software
* Configure/install the application virtual software
* Test the application virtual software
* Manage, update and tune the system components

You trainer will observe your performance and complete the following checklist.

**Template 2 for planning of Application virtualisation**

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| --- |
| **Project Goals****Organisation****Analysis of the Application Software** **Identify the software, hardware and tools required for implementation of application virtualisation** **Implementation of Application Software** |