



Cloud Computing Services

GENCC501

CompetenceCompetence

RQF Level: 5 Learning Hours

50

Credits: 5

Sector: ICT and Multimedia

Trade: Computer System and Architecture

Module Type: General Module

Curriculum: ICTCSA501 TVET CERTIFICATE V IN COMPUTER

SYSTEM AND ARCHITECTURE

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Issue Date: March,2024

| Purpose statement | This general module describes the skills, knowledge and attitudes required to consume cloud computing services. This module is intended to prepare learners pursuing TVET Level 5 in Computer System and Architecture. Upon completion of this module, the learner will be able to Create Cloud Computing Account, manage cloud computing resources, and perform maintenance on cloud computing environment. | | | | | |
|---------------------------------|--|-----|------|-------------------------|-------|------------|
| Learning assumed to be in place | N/A | | | | | |
| Delivery modality | Training delivery | | 100% | Assessment Total 100% | | Total 100% |
| | Theoretical content | | 30% | | 30% | |
| | Practical work: | | | | | |
| | Group project and presentation | 30% | 70% | Formative assessment | 70% | 50% |
| | Individual project /Work | 40% | | | | |
| | | | S | ummative Asses | sment | 50% |

Elements of Competence and Performance Criteria

| Elements of competence | Performance criteria |
|-------------------------------------|---|
| Create Cloud Computing Account | 1.1 Cloud Computing Service Models Are Properly Selected in Line with Cloud Compliance Standards And Business Needs |
| | 1.2 Cloud Computing Service Provider Is Appropriately Selected Based on SLA (Service Level Agreement) |
| | 1.3 customer's account is appropriately managed based on service deployment models and user needs |
| 2. Manage cloud computing resources | 2.1 cloud resources are effectively provisioned based on workload demands |
| | 2.2 cloud resources are properly monitored in accordance with scaling strategies for optimal performance |
| | 2.3 cloud resources utilization is correctly optimized in accordance with resource constraints |
| | 2.4 cloud environment security measures are properly applied based on service provider requirement and SLA |
| 3. Perform Maintenance | 3.1 Cloud resources backup strategies are appropriately applied |

| based on industry standards for data resilience |
|---|
| 3.2 Patches are effectively applied based on the latest stable versions |
| 3.3 Errors are correctly fixed based on cloud computing service functionality |

| Knowledge | Skills | Attitude |
|--|---|---|
| Description of cloud computing service models Description of Service Level Agreement Description of cloud computing service providers Description of cloud resource Description of cloud resource Identification of cloud environment security Measures | Selection of Cloud computing service providers Management of customer's account Monitoring cloud resources Performing cloud resources provisioning Fixing errors on cloud computing services Creation of account Backup and Disaster Recovery Applying cloud resources utilization optimization strategies | Being passionate Having critical thinking Having persistence Being curious Having patience Being creative Being lnnovative Being attentive |

| Course content | | | |
|--|--|--|--|
| Learning outcomes | At the end of the module the learner will be able to: 1. Create cloud computing account. 2. Manage cloud computing resources. 3. Perform maintenance. | | |
| Learning outcome 1: Create Cloud Computing Account | Learning hours: 15 | | |
| | Indicative content | | |
| Selection of cloud computing se | rvice models | | |
| ✓ Definition of key terms: | | | |
| Cloud computing | Cloud computing | | |
| ♣ Service models | | | |
| ✓ Description of cloud computing service models | | | |
| Infrastructure as a Service (laaS) | | | |
| Platform as a Service (PaaS) | | | |
| Software as a Service (SaaS) | | | |
| ✓ Selection criteria of cloud computing service models | | | |
| | | | |
| ♣ Pricing | Pricing | | |
| Operation | | | |

- **Selection of Cloud Computing Service Provider**
 - ✓ Description of SLA
 - Definition
 - **4** Components
 - **4** Types

| 4 Benefits | | |
|--|--|--|
| ✓ Description of cloud computing service providers | | |
| ♣ Definition | | |
| 🖶 Types (p | rivate, public, hybrid, multi cloud) | |
| ♣ Case stu | dies (pros and cons) | |
| ✓ Selection criteri | a of Cloud computing service providers | |
| ↓ User nee | eds | |
| ♣ Pricing | | |
| ♣ Operatio | ons | |
| Management of custor | ner's account | |
| ✓ Description | | |
| ♣ Types of | customer's account | |
| Usage and billing | | |
| Security and access control | | |
| ✓ Creation of account | | |
| ✓ Identity and Access Management (IAM) | | |
| ✓ Backup and Disa | aster Recovery | |
| Resources required for the learning outcome | | |
| Equipment | Computer | |
| | • UPS | |
| • projector | | |
| Materials | Internet | |

Cables

| Tools | Web browser |
|---|------------------------------|
| Facilitation techniques or Learning activity | Practical Exercise |
| | Individual and group work |
| | Demonstration and Simulation |
| | Trainer guided |
| | Group discussion |
| Formative assessment methods /(CAT) | Written assessment |
| | Performance assessment |
| | Project assessment |
| | Product assessment |

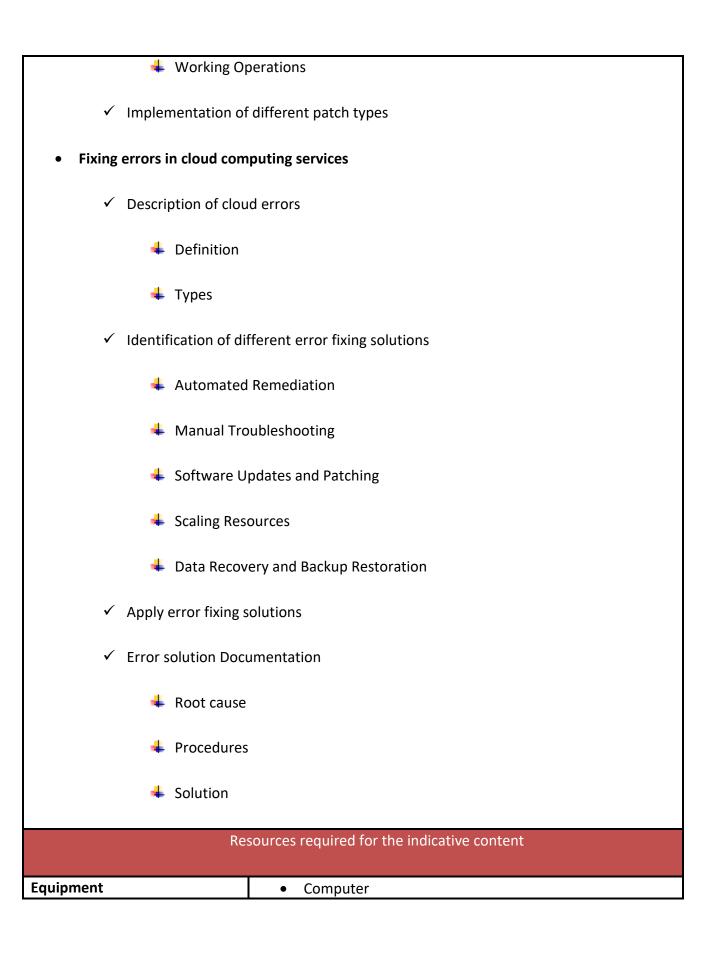
| Learning outcome 2: Manage cloud computing resources | Learning hours: 20 | |
|--|--------------------|--|
| | Indicative content | |
| Provisioning cloud resources | | |
| ✓ Description of cloud resource | | |
| Definition | | |
| ♣ Types | | |
| ✓ Perform cloud resources provisioning | | |
| Assessment of Requirements | | |
| Selection of cloud resource (VM, DB, Storage) | | |
| Configure cloud resources | | |

- ✓ Deprovisioning cloud resources
- Monitoring cloud resources
 - ✓ Identification of cloud monitoring tools
 - ♣ Digital Ocean monitoring and uptime
 - AWS Cloud watch
 - Microsoft Azure monitor
 - Google cloud operations
 - ✓ Description of scaling strategies
 - Vertical
 - Horizontal
 - ✓ Applying cloud monitoring tools.
- Optimization of cloud resources utilization
 - ✓ Identify Cloud resources utilization optimization.
 - Strategies
 - Best practices
 - ✓ Apply cloud resources utilization optimization strategies.
- Applying cloud environment security measures
 - ✓ Description of security measures
 - Definition
 - Types
 - Benefits
 - ✓ Identify cloud environment security Measures.
 - ✓ Secure cloud environment

| Resources required for the indicative content | |
|---|--|
| Equipment | ComputerUPSProjector |
| Materials | InternetCables |
| Tools | Web browser |

| Facilitation techniques or Learning activity | Practical Exercise Individual and group work Demonstration and Simulation Trainer guided Group discussion |
|---|---|
| Formative assessment methods /(CAT) | Written assessment Performance assessment Project assessment Product assessment |

| Learning outcome 3: Perform Maintenance | Learning hours: 15 | | |
|--|--------------------|--|--|
| Indicative content | | | |
| Applying cloud resources backup strategies | | | |
| ✓ Description | | | |
| Backup definition | n | | |
| Types of backups | ■ Types of backups | | |
| ♣ Benefits of backı | qp | | |
| ✓ Identification of backup strategies | | | |
| ✓ Implement cloud backup strategies. | | | |
| Applying patches | | | |
| ✓ Description of patches | | | |
| ↓ Definition | | | |
| ↓ Types | | | |



| | Projector |
|----------------------------|--|
| Materials | Internet |
| | • Cables |
| Tools | Web browser |
| Facilitation techniques or | Practical Exercise |
| Learning activity | Individual and group work |
| | Demonstration and Simulation |
| | Trainer guided |
| | Group discussion |
| Formative assessment | Written assessment |
| methods /(CAT) | Performance assessment |
| | Project assessment |
| | Product assessment |

References

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