WORLDSKILLS SINGAPORE 2025
TECHNICAL DESCRIPTION
Cloud Computing

Skill Competition

1. This competition covers a broad range of activities to analyse, design, test, deploy and troubleshoot cloud computing resources.

2. Conducted as an individual event, competitors are given 16 hours over 3 days to complete the Test Projects for this competition.

Scope of Work

3. Competitors must be able to demonstrate competencies in the following areas:

   ### 3.1. Work Organization and Management

   a) Understand interoperability and relationships of different technologies and services used in a public cloud environment.
   b) Determine the most optimal solution considering organization/technology best practices, business requirements, current infrastructure, and resource expertise.
   c) Identify common cloud reference architecture and deployment methods to create highly available, scalable and secured cloud implementations.
   d) Plan each day's production schedule within deadlines and time boundaries.
   e) Apply research techniques and skills to keep up-to-date with the latest industry guidelines
   f) Review individual performance against the expectations and needs of the client and organization

   ### 3.2. Communication and Interpersonal Skills

   a) Use literacy skills to:
   - Follow documented instructions from supplied guides.
   - Interpret available workplace instructions and other technical documentation.
   - Keep updated with the latest industry guidelines.
   - Engage business units to identify suitable deployment scenarios with considerations to meet business needs and organizational goals and policies.

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TECHNICAL DESCRIPTION
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b) Use oral communication skills to:
- Discover and document key requirements.
- Discuss and offer suggestions regarding system specifications.
- Gather and confirm client requirements.
- Translate business goals and objectives into applicable design.
- Present the proposed implementation design.

c) Use written communications skills to:
- Keep client updated regarding system progress.
- Confirm implementation/deployment meets required specifications and obtain user sign-off for the completed system.

d) Use project management skills to:
- Prioritize and schedule tasks.
- Allocate appropriate/optimized resources to tasks.

3.3. Problem Solving, Innovation and Creativity

a) Use analytical skills to:
- Synthesize complex or diverse information.
- Determine the functional and non-functional requirements of the specifications.

b) Use investigation and learning skills to:
- Obtain client requirements (e.g. interviews, questionnaire, document search and analysis, joint application design, and observation).
- Research encountered problems independently.
- Architect cloud components into a solution for turnkey deployment.

c) Use problem-solving skills to:
- Identify and resolve problems in a timely manner.
- Gather and analyse information skillfully.
- Develop alternatives for decision making, select and produce the most appropriate solution/plan.

3.4. Security
a) Understand the importance of security in cloud infrastructure.
b) Apply security best practices for cloud deployment.
c) Design and develop policies and procedures for connectivity and access to cloud interfaces and services.
d) Implement specific security controls for individual cloud components.
e) Engage users from all levels to ensure good user experience without compromising security requirements.

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TECHNICAL DESCRIPTION
<u>**Cloud Computing**</u>

3.5. <u>Reliability, scalability and elasticity</u>

a) Translate business requirements into operational objectives.
b) Learn and apply principals to architectures for high availability, disaster recovery, blue-green deployments, global load balancing and pilot deployments.
c) Account for organizational / departmental business and technology goals, in relations to Recovery Time objective (RTO) and Recovery Point objective (RPO).
d) Use cloud metrics to define and implement highly available and scalable deployments.

3.6. <u>Performance and optimization</u>

a) Understand how different infrastructure designs affect both performance and cost optimization.
b) Account for performance requirements and ensure design has no bottlenecks.
c) Deploy cost-effective solutions using common vendor opportunities such as using long-term commitment purchases or using available compute cycles at significantly lower costs.
d) Take advantage of modern cloud specific offerings such as server-less computing.

3.7. <u>Operational considerations</u>

a) Maintain functionality and availability of deployed systems and applications.
b) Account for systems, network and application metrics to ensure stability, durability, availability and performance of deployed solutions.
c) Implement/maintain/update response protocols and procedures for various incident types, such as security, availability and performance.

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Assessment

4. Competitors will be assessed based on measurement (objective) and judgement (subjective) marking.

5. The assessment criteria and relative weighting of marks are as follows:

Criterion		Marks
A	Work organization and management	10
B	Communication and interpersonal skills	10
C	Problem solving, innovation, creativity	15
D	Security	20
E	Reliability, scalability, and elasticity	15
F	Performance and optimization	10
G	Operational consideration	10
H	Sustainability	10
	Total	**100**

Major Tools, Materials, Equipment & Software

Tools & Materials

6. The following to   Pens and pencils – competitors will be allowed to bring in their own pen, pencil, highlighter and ruler
    *   Access codes/passwords to competitor's file resources

7. No digital and media devices will be allowed into the competition area. Competitors will not be allowed to use their own peripherals, e.g. keyboard and mouse. Exceptions are only allowed based on medical conditions only. Medical documentation must be provided prior to competition, and on a case by case basis.

Equipment

8. A microcomputer system with the following minimum configuration will be provided in the competition for each competitor:
    *   4 GB of RAM (memory) or more
    *   Standard computer hard drive
    *   Colour monitor capable of 1280x720 (720 p) or higher.
    *   Network connectivity of 100 Mbps or faster
    *   Standard mouse and Standard QWERTY keyboard
    *   USB port for USB compliant devices

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WORLDSKILLS SINGAPORE 2025
TECHNICAL DESCRIPTION
Cloud Computing

9. The following equipment may be shared amongst competitors as necessary:
    - Colour printer /Laser printers (at least 600 dpi resolution); and
    - Local Area Network system access to local servers and cloud computing portal and resources

Software

10. All competitors must be familiar with the following applications and utilities software:
    - Windows Operating Systems
    - SSH client for Windows OS
    - MySQL
    - Filezilla FTP Client
    - Microsoft Office Applications

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