



CONTEST DESCRIPTION

IT Network Systems Administration

SECONDARY

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1 THE SKILLS FOR SUCCESS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY

In response to the evolving labour market and changing skill needs, the Government of Canada has launched the new Skills for Success (*former Essential Skills*) model defining nine key skills needed by Canadians to participate in work, in education and training, and in modern society more broadly. SCC is currently working with Employment and Social Development Canada (ESDC) to bring awareness of the importance of these skills that are absolutely crucial for success in Trade and Technology careers. Part of this ongoing initiative requires the integration and identification of the Skills for Success in contest descriptions, projects, and project documents. The next phase and very important aspect of our Skills for Success (SfS) initiative is to provide a *Skills Report Card* to each competitor at the Skills Canada National Competition. The purpose of the report card is to inform the competitor about their current level of nine identified Skills for Success based on their competition scores. With this knowledge, the competitor will be made aware which skill may require improvement. Full implementation is expected in the next Skills Canada National Competition.

The following 9 skills have been identified and validated as key skills for success for the workplace in the legend below:

¹Numeracy, ²Communication, ³Collaboration, ⁴Adaptability, ⁵Reading, ⁶Writing, ⁷Problem Solving, ⁸Creativity and Innovation, ⁹Digital

These Skills for Success have been identified in section 2.3 and/or 3.2 of your Contest Description and if applicable, in your Project and supporting documents.

2 CONTEST INTRODUCTION

2.1 Description of the associated work role(s) or occupation(s)

https://www.skillscompetencescanada.com/en/skill_area/it-network-systems-administration/

2.2 Purpose of the Challenge

To evaluate each competitor's skills and to recognize excellence and professionalism in the field of IT network systems administration.

2.3 Duration of contest

12 hours, over 2 days.

2.4 Skills and Knowledge to be tested.

The competition evaluates a competitor's knowledge of computer and network system.

3 CONTEST DESCRIPTION

3.1 List of documents produced and timeline for when competitors have access to the documents on the Skills/Compétences Canada website

DOCUMENT	DATE OF DISTRIBUTION
Release of Reference Architecture document	February 2023

3.2 Tasks that may be performed during the contest

3.2.1 Skills for Success

- Create, interpret, and modify network diagrams^{5, 6}
- Create, interpret, and modify network, and system documentation, and processes⁷
- Use Windows capture technology such as Windows Steps Recorder and Snipping tools⁹

3.2.2 Physical system setup⁹

- Identify, install, connect and test hardware components⁷
- Setup and network workstations⁷
- Create and test networking cabling⁷
- Evaluate and justify component selection for particular tasks
- Basic system configuration as required

3.2.3 Desktop system configuration

- Install and configure virtual machines
- Install Operating Systems (User desktops in both Windows and Linux)
- Install, setup, and configure corporate productivity software products
- Install and verify correct operation of peripheral devices
- Use disk, system, and file management tools
- Configure operating system functionality including tasks such as: setting themes and control panel settings
- Configure networking in a workgroup environment including shares, permissions, printers⁷
- Configure and verify proper home computer security practices (eg anti-virus)
- Use built-in system tools to automate tasks.

3.2.4 Networking⁷

- Operate basic network diagnostic software utilities such as ping, ipconfig, traceroute, etc.
- Calculate and apply to a network, an IPv4 and/or IPv6 addressing scheme using subnetting and/or Variable Length Subnet Mask (VLSM)
- Configure a secure home wireless routing/firewall solution

3.2.5 Troubleshooting⁷

- Analyze and resolve common Desktop problems
- Analyze and resolve common home Network problems
- Use available documentation and logs to identify and resolve problems
- Fix and document resolution using customer complaint descriptions
- Troubleshoot software installation problems⁷
- Problem examples might include things like: inability to login, cannot access website, or machine not starting properly

3.2.6 Cyber-Security⁷

- Recognize safe online practices
- Maintaining and hardening critical services
- Recognize the need for and implement protections from malware attacks
- Answering forensics questions (need for Cybersecurity, attacks, Concepts and Techniques, ...)

Skills for Success – ⁵Reading, ⁶Writing, ⁷Problem Solving, ⁹Digital

4 EQUIPMENT, MATERIAL, CLOTHING

4.1 Equipment and material provided by Skills/Compétences Canada

- Suitable computer hardware
- VMWare Player 16 or higher Desktop virtualization software
- Cisco Packet Tracer 8.1.1 or higher
- .iso files for Windows 10 (or newer) and Ubuntu 22.04 or newer
- Internet connection
- Pen and Pencil

4.2 Equipment and material provided by the competitor

- Pen and paper

4.3 Required clothing provided by the competitor

- Competitors must be dressed as appropriate for an office environment.

5 HEALTH AND SAFETY

5.1 Safety program

SCC has implemented a comprehensive safety program as health and safety is an integral part of our competitions. Our safety program includes guidelines and procedures to make the work environment in each skill area safer.

5.1.1 Safety manual

As part of our program a safety manual has been created to monitor and document health and safety within each skill area. It includes a definite plan of action designed to prevent accidents. The safety manual will be provided for every skill and these instructions must be followed and respected by all participants and officials at the SCNC.

5.1.2 Safety workshop

During orientation, Competitors will participate in a Safety workshop and they will be expected to work and maintain a safe working area during the competition. Any Competitor breaking any health, safety, and environmental rules, may be required to undertake a second safety workshop, this will not affect the Competitor's competition time.

5.2 COVID-19 Protocol

The COVID-19 guidelines will be shared as soon as they are available. The COVID-19 guidelines will be subject to change based on the COVID-19 guidelines in place at the time of the competition.

5.3 List of required personal protective equipment (PPE) provided by Skills/Compétences Canada

- N/A

5.4 List of required personal protective equipment (PPE) provided by the competitor

- N/A

6 ASSESSMENT

6.1 Point breakdown

Note: This list is subject to change.

TASKS	/100
PC hardware & Networking	25
Desktop configuration	25

Desktop support & troubleshooting	25
Cyber-Security	25

7 CONTEST SPECIFIC RULES

Contest specific rules cannot contradict or take priority over the Competition Rules. They do provide specific details and clarity in areas that may vary from contest to contest. Any additional contest rules will be reviewed during the competitor orientation.

TOPIC/TASK	CONTEST SPECIFIC RULE
Use of technology - personal laptops, tablets and mobile phones	<ul style="list-style-type: none"> • Competitors are not allowed to bring USB/memory sticks into the skill area • Competitors should not expect access to the internet during the competition. • Competitors are not allowed to bring personal laptops tablets or mobile phones into the skill area
Source file/notes	<ul style="list-style-type: none"> • Competitors are not allowed to bring notes into the skill area. All notes made at the Competitor workstation must always remain on the Competitors desk. No notes may be taken outside of the skill area.
Equipment Failure	<ul style="list-style-type: none"> • In the occurrence of equipment failure Competitors must notify the National Technical Committee (NTC) immediately by raising their hand. NTC members will take note of the time that the Competitor is not able to make use of their equipment. Any time lost due to equipment failure will be provided to the Competitor at the end of the standard Module time • No additional time will be granted for work not saved prior to the equipment failure
National Technical Committee (NTC) room	<ul style="list-style-type: none"> • Competitors are not allowed to enter the National Technical Committee meeting room in the skill area

Breaks	<ul style="list-style-type: none"> • No extra time will be given to Competitors who stop work during competition time to go to the bathroom or for those who break for a food and/or drink. When time is completed, all Competitors must stop all work on their computer immediately.
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8 ADDITIONAL INFORMATION

8.1 Interpreter

If a competitor requires the help of an interpreter once onsite during the competition, the Skills/Compétences Canada Provincial/Territorial offices must advise Skills/Compétences Canada National Secretariat a minimum of 1 month prior to the competition or this service may not be guaranteed.

8.2 Ties

If a competitor requires the help of an interpreter during the competition, the Skills/Compétences Canada Provincial/Territorial offices must advise Skills/Compétences Canada National Secretariat a minimum of 1 month prior to the competition or this service may not be guaranteed.

- **Tiebreaker #1:** The competitor with the highest score in the Desktop support & troubleshooting module will be declared the winner.
- **Tiebreaker #2:** The competitor with the highest score in the PC hardware and networking module will be declared the winner.
- **Tiebreaker #3:** The competitor with the highest score in the Desktop configuration module will be declared the winner.

8.3 Test Project change at the Competition

Where the Test Project has been circulated to Competitors in advance, NTC shall change a maximum of 30% of the work content. Please refer to the Competition Rules.

8.4 Competition rules

Refer to the competition rules of the Skills Canada National Competition which can be found on our website.

9 NATIONAL TECHNICAL COMMITTEE MEMBERS

MEMBER ORGANIZATION	NAME
Newfoundland and Labrador	James Pelley – Chair
Prince Edward Island	Donnie MacKinnon
Ontario	John Ulakovich – Co-Chair
Manitoba	Gursharn Wander
Alberta	Gerald Chung
British Columbia	Andrew Mueller

Contact the Skills/Compétences Canada national secretariat for any questions or concerns: Nathalie Maisonneuve (nathaliem@skillscanada.com).