



CONTEST DESCRIPTION

# IT Network systems administration

SECONDARY

## Table of Contents

<b>1 THE ESSENTIAL SKILLS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY .....</b>	<b>3</b>
<b>2 CONTEST INTRODUCTION .....</b>	<b>3</b>
<b>3 CONTEST DESCRIPTION .....</b>	<b>4</b>
<b>4 EQUIPMENT, MATERIAL, CLOTHING .....</b>	<b>5</b>
<b>5 SAFETY REQUIREMENTS.....</b>	<b>6</b>
<b>6 ASSESSMENT .....</b>	<b>6</b>
<b>7 CONTEST SPECIFIC RULES.....</b>	<b>6</b>
<b>8 ADDITIONAL INFORMATION .....</b>	<b>7</b>
<b>9 NATIONAL TECHNICAL COMMITTEE MEMBERS .....</b>	<b>8</b>

## **1 THE ESSENTIAL SKILLS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY**

SCC is currently working with Employment and Social Development Canada (ESDC) in order to bring awareness to the importance of Essential Skills that are absolutely crucial for success in the workforce. Part of this ongoing initiative requires the integration and identification of Essential Skills in contest descriptions, projects, and project documents. The next phase and very important aspect of our Essential Skills (ES) initiative is to provide an ES report card to each competitor at the Skills Canada National Competition. The purpose of the ES report card is to inform the competitor about their current level of essential skills based on their competition scores. With this knowledge, the competitor will be made aware which essential 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 essential skills for the workplace in the legend below:

<sup>1</sup>Numeracy, <sup>2</sup>Oral Communication, <sup>3</sup>Working with Others, <sup>4</sup>Continuous Learning, <sup>5</sup>Reading Text, <sup>6</sup>Writing, <sup>7</sup>Thinking, <sup>8</sup>Document Use, <sup>9</sup>Digital

These essential skills have been identified in section 2.4 and/or 3.2 of your Contest Description and if applicable, in your Project and all other supporting project documents.

## **2 CONTEST INTRODUCTION**

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

<http://skillscompetencescanada.com/en/careers/information-technology/it-network-support/>

### **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

## 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.

DOCUMENT	DATE OF DISTRIBUTION VIA WEBSITE
No other competition document will be released prior to the competition	

### 3.2 Tasks that may be performed during the contest

#### 3.2.1 Essential Skills

- Create, interpret, and modify network diagrams<sup>8</sup>
- Create, interpret, and modify network, and system documentation, and processes
- Use Windows capture technology such as Windows Steps Recorder and Snipping tools<sup>9</sup>

#### 3.2.2 Physical system setup<sup>9</sup>

- Identify, install, connect and test hardware components<sup>7</sup>
- Setup and network workstations<sup>7</sup>
- Create and test networking cabling<sup>7</sup>
- 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, printers<sup>7</sup>
- Configure and verify proper home computer security practices (eg anti-virus)
- Use built-in system tools to automate tasks.

### 3.2.4 Networking<sup>7</sup>

- Operate basic network diagnostic software utilities such as ping, ipconfig, 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 Troubleshooting

### 3.2.5 Troubleshooting<sup>7</sup>

- 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 problems<sup>7</sup>
- Problem examples might include things like: inability to login, cannot access website, or machine not starting properly

### 3.2.6 Cyber-Security<sup>7</sup>

- 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, ...)

*Essential Skills – <sup>7</sup>Thinking (Critical Thinking, Problem Solving, Job Task Planning and Organizing), <sup>8</sup>Document Use, <sup>9</sup>Digital*

## 4 EQUIPMENT, MATERIAL, CLOTHING

### 4.1 Equipment and material provided by Skills/Compétences Canada.

- Suitable computer hardware, both physical, virtual and or a combination depending on availability.
- Suitable computer software
- VMWare virtualization software
- Windows Desktop Operating systems (Windows 7 or newer)
- Linux Desktop Operating systems (Debian 9.9 or newer with Gnome)

### 4.2 Equipment and material provided by the competitor.

- Pen and Pencil
- Appropriate tools to create network cable (category 5)
- Appropriate tools for computer assembly/disassembly

#### 4.3 Required clothing provided by the competitor.

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

### 5 SAFETY REQUIREMENTS

#### 5.1 Safety workshop.

Upon arrival at the Skill area, 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 List of required personal protective equipment (PPE) provided by Skills/Compétences Canada.

- No PPE required

#### 5.3 List of required personal protective equipment (PPE) provided by the competitor.

- No PPE required

### 6 ASSESSMENT

#### 6.1 Point breakdown

POINT BREAKDOWN	/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 competitor orientation.

TOPIC/TASK	CONTEST SPECIFIC RULE
Use of technology - personal laptops, tablets	<ul style="list-style-type: none"> <li>• Competitors are not allowed to bring USB/memory sticks into the skill area</li> <li>• Competitors should not expect access to the internet during the competition.</li> </ul>

and mobile phones	<ul style="list-style-type: none"> <li>Competitors are not allowed to bring personal laptops tablets or mobile phones into the skill area</li> </ul>
Source file/notes	<ul style="list-style-type: none"> <li>Competitors are not allowed to bring notes into the skill area. All notes made at the Competitor workstation must remain on the Competitors desk at all times. No notes may be taken outside of the skill area.</li> </ul>
Equipment failure	<ul style="list-style-type: none"> <li>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</li> <li>No additional time will be granted for work not saved prior to the equipment failure</li> </ul>
Breaks	<ul style="list-style-type: none"> <li>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.</li> </ul>
National Technical Committee (NTC) room	<ul style="list-style-type: none"> <li>Competitors are not allowed to enter the National Technical Committee meeting room in the skill area</li> </ul>

## 8 ADDITIONAL INFORMATION

### 8.1 Interpreter

If a competitor needs an interpreter at the Competition, provincial or territorial branch must advise Skills/Compétences Canada at least one month before the contest. Otherwise this service may not be available.



## 8.2 Ties

- 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 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
Ontario	John Ulakovich
Québec – Co-Chair	Jean-François Savard
Newfoundland & Labrador	James Pelley
British Columbia - Chair	Nolan Fretz
Prince Edward Island	Rob Blanchard
Saskatchewan	Heath Armbruster
Manitoba	Gursharn Wander

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