# Competition Digital Toolkit
# Network Systems Administrator

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## Network Systems Administrator Sponsors

We would like to thank all our industry leading sponsors that are passionate about finding the top talented apprentices and make this competition possible

Cardiff and Vale College



This WorldSkills UK competition is managed by WSUK

**Overview:**

The competition will challenge competitors to test their skills in configuring and administering a Windows 10 and Windows Server 2016/2019 based network.

The competition will test the knowledge and skills learned in the Microsoft Official Curriculum range of qualifications.

This WorldSkills UK competition is managed by WSUK This competition consists of:
- a passive stage, a virtual task to indicate to yourself and WorldSkills you have the competences to proceed
- a national qualifier, which will also be a virtually led stage
- the WorldSkills UK national final, taking place at a venue in the UK.

Competitors will undertake a series of practical tasks which will demonstrate their abilities and skills in Microsoft networking.

The practical tasks will be carried out using virtual machines.

All machines will be hosted in a virtual environment using Oracle Virtual Box.

The full competition brief will be provided to each competitor on the morning of the competition qualifiers.

**Career Pathway:**

**What is the job role?**
Computer networks are critical parts of almost every organisation. Network and computer systems administrators are responsible for the day-to-day operation of these networks. They organise, install, and support an organisation's computer systems, including local area networks (LANs), wide area networks (WANs), network segments, intranets, and other data communication systems.

**Roles and Responsibilities**
Network and computer systems administrators typically do the following:
- determine an organisation's system needs and install network hardware and software
- make needed upgrades and repairs to networks and ensure that systems are operating correctly
- maintain network and computer system security
- evaluate and optimise network or system performance
- add users to a network, and assign and update security permissions on the network
- train users in the proper use of hardware and software
- interpret and solve problems when a user or an automated monitoring system alerts them that a problem exists

Administrators manage an organisation's servers and desktop and mobile equipment. They ensure that email and data storage networks work properly. They also make sure that employees' workstations are working efficiently and stay connected to the central computer network. Some administrators manage telecommunication networks.
Administrators may help network architects design and analyse network models. They also participate in decisions about buying future hardware or software to upgrade their organization's network. Some

administrators provide technical support to computer users, and they also may supervise computer support specialists who help solve users' problems.

Qualifications

There are a number of technical qualifications including: -

Microsoft (MOU), CompTIA, CISCO (CCNA)

A minimum of a BTEC, degree or equivalent relevant practical experience.

Average UK salary for IT careers

- Information technology and telecommunications directors – £78,637
- IT business analysts, architects, and systems designers – £50,127
- Information technology and telecommunications professionals – £45,943
- IT project and programme managers – £54,545
- IT specialist managers – £52,716
- IT user support technicians – £30,825
- IT operations technicians – £32,813
- Programmers and software development professionals – £45,153
- Information technology technicians – £31,731

Average salary rates sourced from here

## Resources and Registration:

For information and resources, including how to register, competition rules, and the steps to competing, visit our website.

## Pre-Competition Activities:

Competitors should try to familiarise themselves with competition style activities even if you have a fellow student to judge a completed work task during a practical session at college/training provider, this will help prepare you for the competition.

Also familiarise yourself with current industry processes and procedures for completing a range of tasks you may need to complete.

One resource that competitors should familiarise themselves with to prepare for the competition is the pre-competition activity, made available on our website.

## Competition Structure:

The Network Systems Administrator competition is split into 3 stages

Stage 1: Passive Stage

A virtual led competition activity to illustrate competence and skill for Network Systems Administrator and allow selection to Stage 2

Stage 2: Qualifier
This will be another virtually led competition round. You will be competing amongst other people across the country in this round. The top 8 scores from the qualifiers will be then allowed to go through to the next round

Stage 3: National Final
Competitors who achieve the highest marks across all national qualifiers will be invited to compete at the UK Final. There is no automatic entrance to the UK Final for winners of national qualifiers. WSUK will inform finalists following moderation of marks.

Competitors will undertake a series of practical tasks which will demonstrate their abilities and skills in Microsoft networking.

The practical tasks will be carried out using virtual machines.
All machines will be hosted in a virtual environment using Oracle Virtual Box.
The full competition brief will be provided to each competitor on the morning of the competition stages.

The Microsoft Network Administrator competition will test the knowledge and skills gained through the Microsoft Official Academic Curriculum range of courses. The scope of the competition is as follows:
- installation of Windows operating systems
- configuration of software RAID
- setting up a client/server network
- the installation of Active Directory including multiple domain controllers
- the creation of users and groups
- troubleshooting
- server services (DHCP, DNS, etc)
- print services
- web services
- remote access
- file and folder security
- local and group policy
- configuring and managing security (VPN, IPSec, encryption)
- installing other Microsoft products that are essential to running a good network.

## Specification of the Tasks

Competitors taking part in this competition should have familiarity with the following:

| Competence | Passive | Qualifier | Final Stage |
|---|---|---|---|
| Installation of Windows operating systems | Yes | Yes | Yes |
| Configuration of software RAID | Yes | Yes | Yes |
| Setting up a client/server network IP Addressing and NIC configuration | Yes | Yes | Yes |
| The installation of Active Directory including multiple domain controllers Correct site naming | Yes | Yes | Yes |
| File and Folder security Local and Group Policy | Yes | Yes | Yes |

| | | | |
|---|---|---|---|
| Firewall rules<br>File and folder auditing | | | |
| The creation of OU's users and groups<br>Account security settings | Yes | Yes | Yes |
| Server Services (DHCP, DNS, etc)<br>Print Services<br>Storage quotas<br>Web Services<br>Mail services | Yes | Yes | Yes |
| Remote Access<br>Troubleshooting | No | No | Yes |
| Configuring and managing security (VPN, IPSec, encryption) | No | No | Yes |
| Installing other Microsoft products that are essential to running a good network | No | No | Yes |

## Marking and Assessment:

Each competition module will be assessed and marked independently of any other competition activity.

A panel of judges has been selected from a range of industry, college and training provider representatives. The judges' decisions will be moderated and quality assured by WorldSkills UK before being confirmed.

Please note that competitors who achieve the highest marks across all national qualifiers will be invited to compete at the UK Final. There is no automatic entrance to the UK Final for winners of national qualifiers. WSUK will inform finalists following moderation of marks.

## Judges Top Tips:

## Preparation and Practice
A successful competitor you need to be confident, calm and self-assured when competing.
Prepare by practicing your skills and techniques to ensure you get the required standard/results you want without any surprises.

## Time Management
Learn to manage your time effectively when completing tasks by working smart not fast!
The tasks have allocated times, so practice working to time and under pressure to perfect your timing.
If you run out of time in the competition you will lose marks.

## Planning
Make your own plans for how to complete each task, work methodically and even write it down to help you prepare.

## Organisation
Make sure you are organised, make sure all stages of a task are completed.
Organise all your equipment and materials for the task.

## Health & Safely
In any IT work environment Health & Safety is especially important, make sure you use the appropriate PPE for the task, keep your work area tidy and work safely.

## Clean and Tidy
Keep your working area tidy as you can be more efficient in a tidy work area. Make sure that when you present your work to the judges it is clean and ready for final judging.

## Understanding
Read the task brief thoroughly and make sure you understand what you need to do.
Do not be afraid to ask questions, remember there is only one silly question……the one you don't ask!

## Do not worry!

If a part of a task has not gone as well as you might have wanted don't worry or dwell on it, just draw a line under that and get on with the next task. Always focus on the marks you can gain not what you might have lost.

# Enjoy

To get to the WorldSkills UK national qualifiers or the WorldSkills UK national finals is in itself a massive achievement that you should be extremely proud of! Make the most of the whole WorldSkills UK/NAS Skills Competitions process and enjoy it!

## National Final – Network Systems Administrator, What to expect:

The competitors will complete two overarching tasks over the spand on two competition days.  The day 1 task will be held on the Thursday and the day 2 task on the Friday of the competition.

Task duration will be 5 hours per day starting at approx 1000 and finishing at approx 1600. Day 1's task will be marked on Thursday and day 2's will be marked on Friday. Day 2's task is a distinctly separate task to the first day's task.

A period of familiarisation is scheduled (usually on Wednesday) to allow you to become acquainted with the tools, materials and equipment you will use during the competition and the tasks to be completed. Use this time to ensure you are confident in the use of application of all the equipment you will use.

Saturday activity: IT Skills Team Challenge - The Saturday showcase activity gives you a chance to work in a multi-disciplinary team and to show your skills to the public and visitors without the pressure of the competition.

On the Saturday, 8 teams of 5 competitors will be formed. Each team will comprise of a Web Design, IT Support, IT Software Network Systems and Network Infrastructure Finalist. The Task will be to design build and host Web Content based on a given theme.

## Training for the National Finals

The network systems administrator competition manager will provide a range of documentation to prepare you for the national final.

## Digital Resources:

In addition to the pre-competition activity, there are other free resources that can help prepare you for the competition which are listed below.

- Technology for Teachers and Students

- Cobuman

- Sakitech

- Geek's Lesson

## Competition Rules

A completed registration is an indication that you have agreed to the following:
    a) WorldSkills UK Competition Rules
    b) WorldSkills UK Terms and Conditions

Please ensure that you are familiar with these documents ahead of any competition activity.

In addition, competitors must abide by the following competition-specific rules:

- mobile phones to be switched off during competition activity
- listening to music via headphones is not permitted during competition activity
- any questions during competition activity should be addressed to the competition Judge
- competitors should not communicate with other competitors during competition activity
- it is the responsibility of each competitor to arrive on time for each competition session. No additional time will be allowed if you arrive late.
- technical failure of your equipment should be reported immediately to your judge. Additional time will be allocated if the fault is beyond the control of the competitor.

## Beyond the National Finals:

The WorldSkills UK / Network Systems Administrator competition's national finals also form part of the selection process for WorldSkills International competitions.

Further details of the international competitions including eligibility criteria can be found on the WorldSkills International website.  You will be notified if you are age eligible.

Those who are not eligible for international competitions may join the Champions programme, which allows continued involvement, including the opportunity to work with WorldSkills UK and visit schools, colleges, and events to inspire the next generations.

Alternatively, if training is of interest to you, you could consider supporting WorldSkills UK with organising and training, and even helping to run the National finals.

Get inspired and become a part of Team UK today!