

The First World Vocational College Skills Competition

Competition Rules

I. Name of the Skill

No.: W07

Chinese name: 信息安全管理与评估

English name: Information Security Management and Evaluation

Industry: Electronics and information

II. Competition Purpose

The World Vocational College Skills Competition aims to bring together standards, technologies, equipment, teachers and students in the field of vocational and technical education at home and abroad, adhere to promoting Chinese vocational education to go global and serve international cooperation in production capacity, build an important platform for teachers and students of international vocational schools to deepen friendship, exchange skills and show styles, and promote the construction of a world community of skills. Through skills competitions, displays and experience exchanges, the best practices of international vocational and technical education are shared, the influence of Chinese vocational and technical education in the world in this field is enhanced, and China's vocational and technical education is aligned with global vocational and technical education.

The Information Security Management and Evaluation Skill Competition in the First World Vocational College Skills Competition (the “Competition”) is designed to familiarize the competitors with the professional standards and specifications of information security management and evaluation projects, to test the competitors' capabilities with respect to network formation and security operation and maintenance, security audit, network security emergency response, digital forensics and investigation, application security and network attack and defense, and to test the comprehensive professionalism of the participating teams such as planning, organizing and teamwork, with emphasis on the cultivation of students' creativity and practical skills to enhance their vocational competence and the quality of employment.

In line with the higher vocational standards of national information security technology application, the Competition covers “information security technology and implementation”, “information security

product configuration and application”, “network security system integration “, “network attack and defense training”, “network security operation and maintenance”, “operating system security configuration”, “web penetration testing techniques” and other professional core curricula.

The Competition is based on the mainstream technology and current business process design in the field of information security. Experts from the information security industry work closely with education experts from educational institutions to complete the conversion of the competition content to teaching reform before the Competition, so as to achieve the innovation of teaching-industry integration by promoting teaching, learning, reform and development through the Competition.

The Competition will serve as a platform to promote the skills sharing and cultural exchange among the skilled vocational talent around the world, and advance the international process of Chinese vocational education, thereby enabling the world to understand the unique features and advantages of Chinese vocational education, and allowing Chinese vocational education to go global and become a vital force in driving the development of international vocational education.

III. Competition Content

The Competition focuses on the assessment of the competitors' comprehensive practical skills in network formation and security operation and maintenance, security audit, network security emergency response, digital forensics and investigation, application security and network attack and defense, specifically including:

- i. The competitors can connect network equipment, security equipment and servers according to the business requirements and the actual engineering application environment, and achieve interconnection of equipment through debugging.
- ii. The competitors can configure various protocols and services on the provided network equipment and servers to enable the operation of the network system, and configure various security policies according to the network business requirements to build a network that meets the application requirements.
- iii. The competitors can analyze, investigate and collect evidence for network security incidents, audit malicious attacks, and perform security analysis of code.
- iv. The competitors are required to perform security assessments on the target system using various security penetration testing means and common testing tools to identify security weaknesses and critical information.
- v. Competition marking weights and time distribution

No.	Module content	Competition duration
Phase I Weight 40	Network system integration and security protection	C1 (240 minutes)
Phase II Weight 30	Response to network security incident, digital forensics and investigation, application security	C2 (180 minutes)
Phase III Weight 30	Network security penetration (Capture the Flag Challenge CTF)	C2 (180 minutes)

IV. Competition Method

i. Team formation requirements

1. “0.5+0.5” hand-in-hand Chinese-foreign mixed team (“mixed team”) is adopted, which consists of two Chinese competitors and one foreign competitor, all of them should be students. Competitors should sign up, compete and win prizes in teams. Each team can have 2 instructors, one of whom is the in-service teacher of the school of the Chinese participant and the other is the in-service teacher of the school of the foreign participant.

2. Domestic competitors must be registered full-time students in higher vocational colleges, as well as registered undergraduate students in vocational colleges.

3. Foreign competitors must be foreign full-time students in related majors of vocational schools or colleges and universities providing vocational education, and international students of undergraduate schools in China are also encouraged to participate.

4. Competitor replacement: If a competitor is unable to attend for any reason, the relevant department should issue a written explanation ten working days before the start of the corresponding Competition. The competitor will be replaced after verification by the office of the Executive Committee. After the Competition starts, the team is not allowed to replace the competitor.

ii. Competition method

The Competition will be conducted in the forms of on-site Competition + recorded broadcast. Domestic competitors will compete on site; if foreign competitors are unable to attend the on-site competition, they will compete through recorded broadcast. Foreign competitors must send the competition video that meets the competition requirements to the mailbox designated by the Executive Committee seven days before the official competition day, and the Executive Committee will check and try to broadcast the videos and seal them for the record. On the official competition

day, the videos should be unsealed by the jury, and those from the foreign competitors should be broadcast on the big screen on site. The marking criteria should be the same as those for on-site competition. Requirements for competition video: The file format is MP4; the resolution is not less than 1280*720, the recommended aspect ratio is 16:9, and the video content needs to fully display the competition process.

V. Competition Process

i. Competition Process Flow Chart

The competition procedure for information security management and evaluation consists of three phases, as shown in Figure 1.

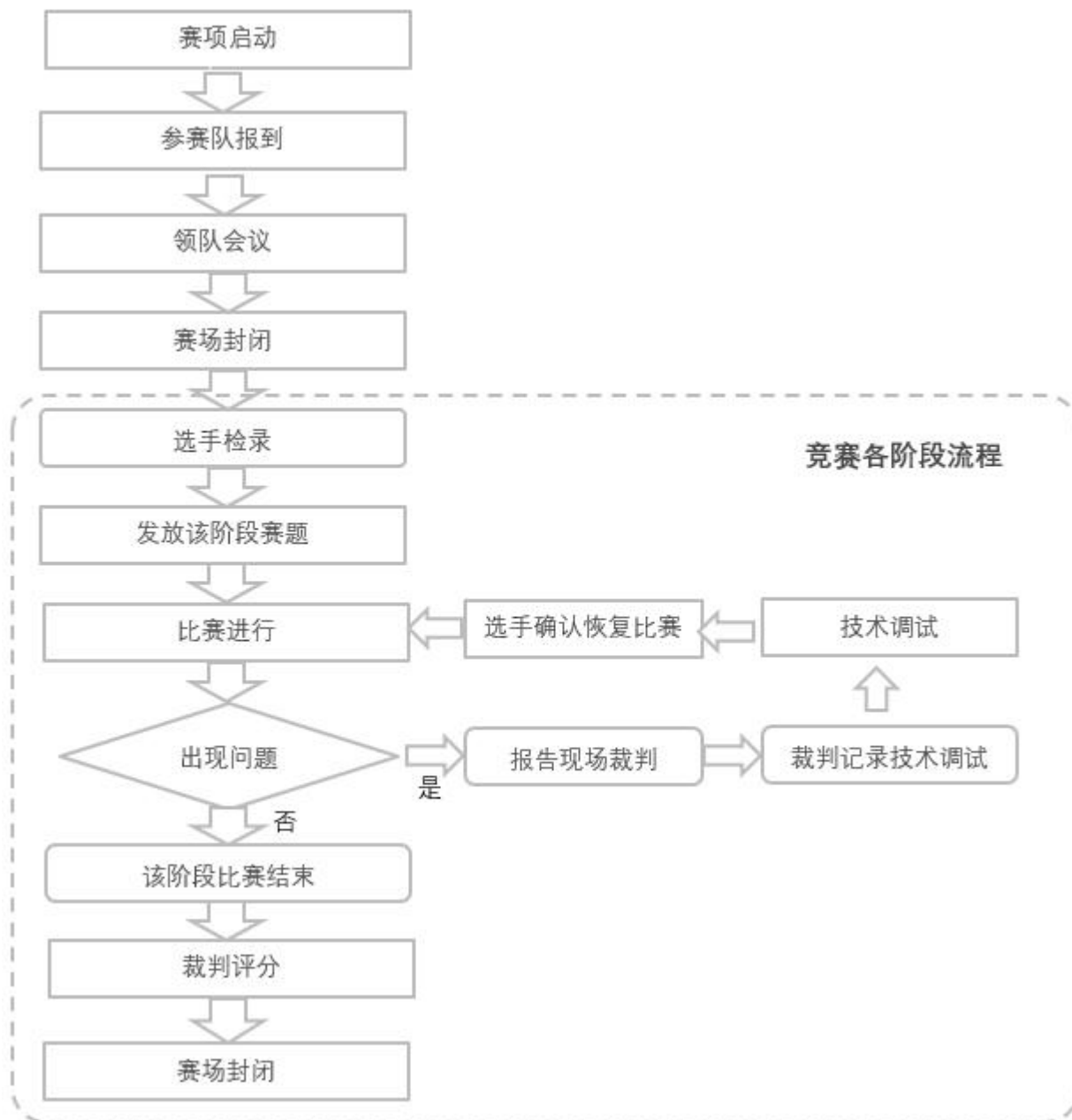


Figure 1 Flow Chart of the Competition

赛项启动	Competition launch
参赛队报到	Registration of participating team
领队会议	Team leader meeting
赛场封闭	Venue enclosure
选手检录	Competitor check-in
发放该阶段赛题	The Questions for this phase are distributed
比赛进行	During the Competition

出现问题	Problems arise
是	Yes
报告现场裁判	Report to the on-site judges
裁判记录技术调试	Judges record the technical debugging
技术调试	Technical debugging
选手确认恢复比赛	Competitors confirm the resumption of the competition
否	No
该阶段比赛结束	End of the Competition for this phase
裁判评分	Marking by judges
赛场封闭	Venue enclosure

ii. Competition timeline

The Competition is held within two days and consists of three stages. The first phase of the competition is held on the first day, and the second and third phases of the competition are held on the second day. The total competition duration is ten hours, and the details are listed as follows:

Date	Time	Milestone	Participants	Place
C-2	Before 20:00	Judges and supervisory arbitrators report for duty. Registration of participating team. Accommodation is arranged and materials are collected	Staff, participating teams	Accommodation hotel
C-1	09:00-12:00	Work meeting for judges	Jury presidents, judges, supervision and arbitration team	Conference room
	13:00-14:30	Team leader meeting	Team leaders, jury president	Conference room
	15:00-16:00	Tour of the workshop	Teams	Workshop
	16:00	Inspection on the enclosed workshop	Jury presidents, supervision and arbitration team	Workshop
	16:00	Return to hotel	Teams	Workshop

C1 Phase I	08:30	Judges enter the judge's room	Jury president, on-site judges	Workshop
	08:30-09:30	Competitor check-in. First draw for competitors	Competitors, on-site judges	Workshop
	09:30-09:50	Second draw for competitors	Competitors, on-site judges	Workshop
	09:50-10:00	The teams take their places. The exam discipline is announced. The parameter sheet of the assignments is drawn. Phase I Test Projects are distributed	Competitors, on-site judges	Workshop
	10:00-14:00	Competition Phase I	Competitors, on-site judges	Workshop
	14:00-17:00	The Competition Phase I is over and judges award marks	On-site judges	Workshop
C2 Phase II	08:30	Judges enter the judge's room	Jury president, on-site judges	Workshop
	08:30-08:45	Competitor check-in. First draw for competitors	Competitors, on-site judges	Workshop
	08:45-09:00	Second draw for competitors	Competitors, on-site judges	Workshop
	09:00-09:10	The teams take their places. The workshop discipline is announced. The parameter sheet of the Test Projects is drawn. Phase II Test Projects are distributed	Competitors, on-site judges	Workshop
	09:10-12:10	Competition Phase II. Competitors leave the venue	Competitors, on-site judges	Workshop
	12:10-13:30	The Competition Phase II is over and judges award marks	On-site judges	Workshop
C2 Phase III	14:30	Judges enter the judge's room	Jury president, on-site judges	Workshop
	14:30-14:45	Competitor check-in. First draw for competitors	Competitors, on-site judges	Workshop
	14:45-15:00	Second draw for competitors	Competitors, on-site judges	Workshop
	15:00-15:10	The teams take their places. The exam discipline is announced. The parameter	Competitors, on-site judges	Workshop

		sheet of the Test Projects is drawn. Phase II Test Projects are distributed		
	15:10-18:10	Competition Phase III	Competitors, on-site judges	Workshop
	18:10-19:30	The Competition Phase III is over. Judges award marks and aggregate results	On-site judges	Workshop

VI. Competition Task Paper

Based on the relevant documents of the First World Vocational College Skills Competition, and with reference to the requirements of the relevant technical documents of the WorldSkills Competition, the published Test Projects of the Competition are prepared by the expert panel organized by the Executive Committee of the First World Vocational College Skills Competition. Test Projects are made public through the Competition information release platform one month before the start of the Competition.

Regarding the design of Test Project, the head of the expert panel, together with the members of the expert panel, will design one set of Test Projects based on the corresponding curriculum standards of vocational schools promulgated by the Ministry of Education and the industry standards issued by relevant industry organizations, combined with the standards for training professionals with skills related to information security and the needs of vocational posts, with reference to industry specifications.

After the Competition is finished, no one, including the competitors, is allowed to take the test papers away from the workshop, and the on-site judges will take back the test papers and hand them over to the organizer together with the supervisors. These will be sealed in accordance with the relevant requirements and norms. The answers, and marking criteria for the Test Projects are not released to the public, and will be disclosed to the marking judges by the jury president when awarding marks.

VII. Competition Rules

- i. The competition workstation is decided by drawing lots, and the competitors are not allowed to leave the competition workstation during the Competition.
- ii. The hardware equipment, system software and auxiliary tools required for the Competition are arranged by the Executive Committee of the Competition (“Executive Committee”). Competitors are not allowed to bring their own hardware equipment, software, mobile storage, auxiliary tools, mobile

communication devices to the Workshop.

iii. Teams determine their respective work allocation, work procedures and time schedules.

iv. Teams enter the competition workstations and receive the Test Project ten minutes before the start of the Competition, and can only carry out the related work after the Competition officially begins.

v. During the Competition, competitors must strictly abide by the operating procedures to ensure personal and equipment safety, and are subject to the supervision and warning of the judges. If the Competition cannot be continued due to equipment failure or damage caused by competitors, the jury president has the right to terminate the team's competition; if the equipment failure is not resulted from the fault of competitors, the jury president will decide on a case-by-case basis.

vi. After the Competition is finished (or completed earlier), teams should confirm that they have successfully submitted all the competition documents, and judges and team leaders should sign together and confirm. The teams should not perform any further operations after the confirmation.

vii. The final competition results will be published in paper form to all teams at the designated place and announced at the closing ceremony after the final competition results are reviewed, confirmed and signed by the jury president and the chief arbitrator.

viii. The final results of the teams are entered into the competition administration system by the organizer's information officer. After reviewing the result data, the organizer's information officer will export and print the results recorded in the competition administration system, and the jury president of the Competition will sign after reviewing and approving the results. The organizer's information officer will upload the electronic version of the Competition results information confirmed by the jury president into the competition administration system, and also submit the paper printed report card signed by the jury president to the Executive Committee of the First World Vocational College Skills Competition.

ix. After the end of the Competition, the expert panel will analyze the competitors' mastery of various knowledge points and techniques during the Competition according to the judge's marking, and submit the analysis report to the Office of the Executive Committee of the First World Vocational College Skills Competition, which will publish it in due course according to the actual situation.

x. The original marking documents and final results of each session will be signed by the staff of supervision and arbitration team and the jury president and then sealed in a bag and archived by the organizer of the Competition. These materials will be kept in a safe place by designated personnel.

xi. Competition requirements

1. Competitors and instructors must comply with the competition rules and related requirements.
2. Team leaders are responsible for managing the competitors and instructors on behalf of the participating countries, and should strictly abide by the relevant provisions of the competition policy. They should effectively manage the competitors and comply with the appeal and supervisory arbitration procedures.
3. Experts, judges, supervisors and arbitrators must abide by the competition policy, perform their duties according to the policy, strictly enforce the confidentiality policy, abide by the competition rules, and perform their duties fairly and impartially.
4. Staff must abide by the rules and policies and conscientiously perform their responsibilities during the Competition.

xii. Overseas venue requirements

1. The competitors shall go through registration procedure at the designated site before the start of the Competition. The camera will be turned on throughout the competition and the identity, qualification and IDs of the competitors will be checked by the staff remotely. Competitors who do not arrive within 15 minutes after the competition timer starts are considered a waiver of eligibility.
2. Competitors are not allowed to leave the workshop without permission during the Competition. If there are special circumstances, consent must be obtained from the judges. If competitors take a break, drink water, and use the restroom, these are included in the competition time, and no extra time will be allocated. The competition timing tool is based on the clock placed at the Chinese venue.
3. During the Competition, competitors are not allowed to bring communication and storage tools such as mobile phones and hard disks to the workshop, and no information can be transmitted in any way between competitors who are not from the same team.
4. During the Competition, instructors are not allowed to be present at the workshop, nor can they provide guidance and assistance through other means.

VIII. Competition Environment

i. Domestic venue environment:

Competition workstations are furnished with operating platforms. Each workstation is equipped with 220 V power supply, and the cable lines in the workstations should conform to the safety standards. The area of each competition workstation is $\geq 8 \text{ m}^2$ to ensure that the teams do not disturb each other.

The competition workstations are marked with the workstation number and fitted with the competition platform and the software and hardware required for the technical work. Environmental standards require that the workshop be well lit (greater than 500 lux), illuminated and ventilated; each team is provided with a litter box.

ii. Overseas venue environment:

1. The Competition will be held indoors in each team's school, and the workshop should be well ventilated and well lit, with workstations marked with numbers and equipped with computers and operating tables and chairs for the competitors.

2. The workshop should be equipped with power and network to meet the power and network requirements of computers and live recording devices.

3. The competition workstations should be configured with live streaming and display equipment for real-time broadcasting between the overseas workshop and the judging site in China for the foreign participating schools. Meanwhile, a corresponding technical service team should be assigned at the workshop to maintain and promptly resolve faults of on-site network and live streaming so as to ensure the Competition runs smoothly. Live cameras should record all the competitors and computer screens, and the whole process should be recorded and broadcasted.

4. Teleconferencing software: The computers of foreign teams are connected to the Internet, and the video conferencing software is installed for data exchange between Chinese judges and the competition site.

5. Device debugging requirements: Clear camera, normal voice system, bandwidth that meets the video requirements (debugging is carried out one week before the Competition, and deficiencies are adjusted in a timely manner).

iii. In addition to the competition workstations, the results display area, experience area, observation area and service area are also designated. The results display area mainly shows supporting teaching materials and resource packages; the experience area mainly exhibits competition equipment and related new technologies and products; the observation area mainly showcases the real-time progress of information security attack penetration; the service area provides medical and other support services.

IX. Technical Specifications

i. The information network security engineering involved in the Competition mainly has the following standards in the design and formation process, and the teams shall comply with the

following specifications in the implementation of the competition project:

No.	Standard No.	Name of standards
1	WSC2022_WSO554_Cyber_Security	<i>Professional Standards for Cybersecurity Projects at the WorldSkills Competition</i>
2	BS7799-1	<i>Implementation Rules for Information Security Management</i>
3	BS7799-2	<i>Information Security Management System Specification</i>
4	GBT 22239-2019	<i>Information Security Technology - Baseline for Cybersecurity Classified Protection</i>
5	GBT 28448-2019	<i>Information Security Technology - Testing and Evaluation Requirements for Cybersecurity Classified Protection</i>
6	GBT 36627-2018	<i>Information Security Technology - Technical Guide for Testing and Evaluation of Cybersecurity Classified Protection</i>
7	GB/T 31509-2015	<i>Information Security Technology - Implementation Guide for Information Security Risk Assessment</i>
8	ISO17799	<i>Implementing Rules for Information Security Management</i>
9	ISO/IEC 27001	<i>Requirements for Information Security Management System</i>
10	ISO/IEC 27002	<i>Practical Rules for Information Security Management System</i>
11	ISO/IEC 27003	<i>Implementation Guide for Information Security Management System</i>
12	ISO/IEC 27005	<i>Information Security Risk Management</i>
13	ISO/IEC 27007	<i>Review Guide for Information Security Management System</i>

ii. The knowledge and technical points involved in the Competition are as follows:

No.	Module content	Details	Notes
Phase I	Network system integration	Installation and debugging of network equipment	Able to complete the installation and debugging of routers, switches, firewalls and other network equipment according to the requirements of the topology diagram
		Installation and deployment of operating systems	Configuration of Windows, Linux related server operating systems
		Application installation and deployment	Domain controller installation and deployment Web server installation and deployment DNS server installation and deployment DHCP server installation and deployment FTP server installation and deployment

	Network system security reinforcement	Security reinforcement of network equipment	Security reinforcement of routers, switches, firewalls and other network equipment should be completed according to the requirements of the Test Projects.
		Security reinforcement of the operating system	Security reinforcement of Linux server system and Windows server system should be completed according to the requirements of the Test Projects.
		Security reinforcement of application systems	The security protection of domain controller should be completed according to the requirements of the Test Projects Security protection for web servers Security protection for DNS servers Security protection for DHCP servers Security protection for FTP servers
Phase II	Response to network security incidents, digital forensics and investigations, application security	Response to network security incidents	Operating system log Application system/middleware log System process analysis System security vulnerabilities and reinforcement
		Digital forensic investigation	Memory mirroring analysis Encoding conversion, encryption and decryption, data steganography Document analysis and forensics Network traffic packet analysis
		Application security	Program reverse analysis Code analysis for mobile applications Malicious script code analysis
Phase III	Network security penetration (Capture the Flag Challenge CTF)	Teams conduct penetration tests against a pre-defined environment	SQL injection File upload Command execution Buffer overflow Information collection Reverse file analysis PWN Binary vulnerability exploitation Application service vulnerability exploitation Operating system vulnerability exploitation Cryptographic analysis

X. Technology Platform

i. Competition software

The Executive Committee provides 3 operating computers (with Windows operating system installed) for each team to build the competition operating environment, provides the competitors with tools and software for the problem solving process, and installs Office and other common application software. Foreign competitors who cannot come on site must access the domestic network through VPN at the overseas venue, and remotely log on to the competitor's operating computers to attend the competition.

No.	Software	Version
1	Windows 10	professional
2	Microsoft Office	Above Version 2010
4	VMwareWorkstation	Above Version 15
5	Windows Server 2016	Datacenter
6	Wireshark	3.4.9
7	bind	9.11.4
8	Kali	Version 2021.3
9	IDA free	7.0
10	OllyDbg	Above Version 1.10
11	PDFreader	
12	Volatility	Above Version 2.6
13	Autopsy	Above Version 4.0
14	windbg	Above Version 4.0
15	Jadx-gui	1.2.0
16	apktool	2.6.1
17	Android Studio	2021.3.1
18	HxD Hex Editor	Above Version 2.X
19	Android Emulator	API27
20	StegSolve	1.4
21	audacity	3.1.0
22	Parrot-security	4.11.2
23	gdb-pwndbg	2021.06.22
24	sagemath	9.2
25	pwntools	4.5.0
26	pycryptodome	3.14.1
27	frida-server	15.1.10

28	frida-tools	10.4.1
29	vscode	X64-1.6.1
30	Frp	0.38.0
31	Neo-reGeorg	v3.7.0
32	EmEditor Free	V21.5.2
33	Putty	Above 0.68
34	VNC viewer	1.2.1.2
35	VirtualBox	6.1.28
36	CaptfEncoder	2.1.0
37	BeautifulSoup4	4.9.3
38	one_gadget	1.7.4

The Executive Committee provides the environment of penetration test machine, target machine and virtual machine.

No.	Software	Version
1	Windows Server 2016	Datacenter
2	Windows 10	professional
3	ubuntu	20.04
4	Virtual platform	

ii. List of competition equipment

No.	Equipment name	Quantity	Technical specifications	Notes
1	PC	3 sets/group	Processor: Intel I5 and above Memory: 16G and above Solid state drive (SSD): 500GB and above	Provided by the organizer
2	Server	1 set/group	Processor \geq 24 cores, memory \geq 128GB, solid state drive (SSD) : more than 1TB, gigabit network ports: at least two	Provided by the organizer
3	Switch	1 set/group	Gigabit 5-port switch	Provided by the organizer

XI. Result Evaluation

i. Work principles for judges

A pool of judges for the First World Vocational College Skills Competition shall be established, and the judges are recommended by each participating entity. The jury president will be recommended by the Executive Committee of the Skill Competition to the Executive Committee of the First World Vocational College Skills Competition and will be appointed by the latter. A sound jury is established before the Competition. The jury follows the jury president responsibility system. The jury president is in charge of organizing and coordinating the competition activities and allocating work tasks. The judges are selected from the pool of judges, and are classified into encryption judges, on-site judges and marking judges. The encryption judges are responsible for drawing lots, encrypting and decrypting test projects and answers. The on-site judges are responsible for supervising the competitors, maintaining order and handling on-site work. The marking judges are responsible for marking and aggregating the results.

Judges should comply with the following requirements:

No.	Professional and technical specialties	Requirements for knowledge and competence	Judging experience	Professional and technical titles (level of professional qualification)	Headcount
1	Network and information security related specialties	The judges should possess at least eight years of technical work experience in their fields, and be familiar with the policies, working rules and judging methods of vocational skills competitions.	They should also have judging experience in the provincial (industry) or national class I and class II vocational skills competitions in network and information security related specialties, or have won third prize or better in the above vocational skills competitions.	They should satisfy at least one of the following conditions: 1)Holding CISP certificate, or NISP (Level 2), Graded Protection Evaluator (Intermediate) or equivalent level professional qualification certificate; 2)Having the technician professional qualification in related specialties; 3)Having the associate senior title or above in related specialties.	18

Total number of judges	3 encryption judges + 6 on-site judges + 9 marking judges
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ii. Judge marking method

The jury is responsible for marking the computer-based tests and results, and the jury president is responsible for the entire process of the Competition; supervisors, judges, technical support and other personnel are present at the workshop, with clearly defined roles. The supervisors are responsible for communicating with the participating teams and receiving and distributing test papers and other materials; the judges are responsible for marking and officiating on site; and the technical support is responsible for the emergency handling of equipment after the judges' confirmation.

iii. Result generating method

After each phase of the competition is completed, the marking judges jointly award marks, and are organized into sub-teams by the jury president in the marking process. The results confirmed by marking team leaders will be submitted to the result statistics team, which will double-check the marks for each task and aggregates the corresponding marks for each set of competition file numbers.

After the jury president receives formally submitted marking results corresponding to the competition file number and reviews them for accuracy, the encryption judges decrypt the encrypted results level by level under the supervision of the supervisory staff to form a list of results, which are signed and confirmed by the jury president and supervisory arbitrator.

Each team's overall result is final result. When there is a tie in the overall result of competitors, this Competition will be ranked in order of marks according to Phase III, Phase II and Phase I. First, the Phase III marks are ranked, and if the Phase III marks are the same, then the Phase II marks are ranked, and so on. If the marks of the three phases are exactly the same, then the submission time in Phase III and Phase II will be sequentially ranked.

The marking of the Competition is strictly in accordance with the principles of fairness, impartiality and openness, and the marking criteria focus on the capabilities of the competitors in the following areas:

Competition phase	Specific content marks	Marking scheme and assessment methods
Phase I Weight 40%	Network system integration 20%	Be able to complete the installation and debugging of routers, switches, firewalls and other network equipment according to the requirements of the topology diagram; configuration of Windows and Linux related server

		operating systems; installation and deployment of domain controller, installation and deployment of web servers, installation and deployment of DNS servers, installation and deployment of DHCP servers, installation and deployment of FTP servers.
	Network security device configuration and protection Weight 20%	The security reinforcement of routers, switches, firewalls and other network equipment should be completed as required. Security reinforcement of Linux server system and Windows server system should be completed. Security protection of domain controller, web server, DNS server, DHCP server, FTP server should be completed.
Phase II Weight 30%	Response to network security incidents, digital forensics and investigations and application security Weight 30%	Log analysis of operating systems and applications, vulnerability analysis, system process analysis, memory analysis, system security reinforcement, program reverse analysis, coding conversion, encryption and decryption techniques, data steganography, file analysis and forensics, network traffic packet analysis, mobile application analysis, code auditing.
Phase III Weight 30%	Network security penetration (Capture the Flag Challenge CTF) Weight 30%	Penetration tests are performed on target machines to exploit vulnerabilities such as SQL injection, file uploads, command execution, stack overflows, buffer overflows. Information security techniques such as information collection, reverse file analysis, binary vulnerability exploitation, application service vulnerability exploitation, operating system vulnerability exploitation, cryptographic analysis and miscellaneous information analysis are used to obtain the key elements within the target machines.

During the Competition, it is forbidden to attack the judge's server and network connection equipment. According to the on-site WAF (or network equipment) alarm record, once the attack is discovered, the competitor will be penalized for the disruption of the order of the workshop in accordance with the reward and penalty measures specified in the *Compilation of Policies of National Skills Competition among Vocational Schools*. The competitor will be disqualified immediately and given a penalty of cancellation of his/her results.

iv. Results review and announcement

To ensure the accuracy of the evaluation results, the supervision and arbitration team will review the results of all teams (competitors) ranked in the top 30% of the overall results of the Competition; the rest of the results will be reviewed on a sampling basis, with a coverage rate of no less than 15%. Any mark errors will be promptly notified in writing to the jury president, and he/she will correct the

results and sign for confirmation. If the error rate of review and sampling exceeds 5%, the jury will review all results.

After the competition results are reviewed for accuracy, the jury president, supervisors and arbitrators of the event will review and sign the results and post them on paper for announcement both within and outside the workshop. The final results will be submitted simultaneously to the competition management system.

XII. Awards and Prizes

One gold medal, one silver medal and one bronze medal will be awarded by the Competition to three teams respectively, and the teams in the top 50% of the overall results (other than the top three) will be awarded the winning prize.

XIII. Preliminary Plans for the Competition Venue

1. In the event of equipment power failure, faults, and other accidents during the Competition, on-site judges need to promptly confirm the situation and arrange technical support personnel to handle the problem. Moreover, they should record the details and fill in the registration form for the make-up time. After reporting to the jury president for approval, they can arrange to give additional time to the corresponding competitors to make up for the delay.
2. Adequate spare PC and equipment should be reserved and can be used by technical support staff to timely replace those with power failure and faults, upon recognition by on-site judges.
3. If there are major emergencies and major security problems in the Competition, the competition will be suspended with the consent of the Executive Committee and the expert panel. The leaders of the personnel involved, such as the jury president, team leaders, head of technical support company, leaders of the Executive Committee and the head of the organizer will coordinate and solve the problem; if it cannot be resolved, the Competition will be suspended and the decision on whether to cancel the competition will be made by the executive committee of the division. After the event, the executive committee of the division should report the details to the Executive Committee of the First World Vocational College Skills Competition.
4. If accidental injury, unexpected illness and other major incidents occur during the Competition, the jury president should immediately suspend the relevant personnel from the Competition. The school doctor at the medical station of the host school is the first aid to rescue the patient, and if it is a serious case, the patient must be sent to the hospital by calling 120.

XIV. Safety

Event safety is a prerequisite for the smooth running of the First World Vocational College Skills Competition. It is the core issue that must be taken into consideration in the preparation and operation of the Competition.

i. Organizational structure

The Executive Committee organizes specialized agencies responsible for the competition safety within the division, and establishes coordination mechanisms for public security, fire prevention, judicial administration, traffic, sanitation, food, quality assurance and other relevant departments to ensure the safety of the competition. It also formulates contingency plans to deal with emergencies in a timely manner. The corresponding safety management norms, procedures and contingency plans for emergencies are formulated to ensure the safety in the preparation and implementation of the competition for the whole process.

ii. Competition design

1. The equipment and devices involved in the Competition are in compliance with the relevant national safety regulations. Fully taking into consideration the Competition content and the possible dangerous factors of the equipment and consumables used, the expert panel of the Competition takes effective precautions to ensure the safety of the competitors in their preparation and competition by improving the design and avoiding risks. Hazard tips and precautions will be specified in the technical documentation of the Competition.

2. The technical documents of the Competition contain national (or industry) norms, regulations and qualification requirements related to occupational job safety.

3. The Executive Committee will conduct judge training and safety training for all judges of this Competition and safety training for service personnel before the event. The Competition originates from the production process of actual security network formation and operation and maintenance. According to the Labor Law of the People's Republic of China and other laws and regulations, a comprehensive accident prevention policy has been established, and the competitors are trained before the start of the Competition to avoid personal injury accidents.

4. The Executive Committee will develop a special plan to ensure the security of the Test Projects, their storage and judging process.

iii. Competition environment

1. Environmental safety guarantee

The organizing and management personnel of the Competition formulate security guidelines, hazard avoidance methods and contingency plans, set up emergency evacuation routes and channels, and ensure that all vehicles and personnel entering the workshop during the Competition must present their permits. It is strictly forbidden to carry flammable and explosive materials, controlled knives and other dangerous goods and other items strictly prohibited by the competition into the workshop. Crowding, stampede, earthquake, and fire should be handled effectively according to contingency plans.

2. Information security guarantee

Installation of UPS: UPS is used to prevent the loss of system data due to sudden power failure at the site, rated power: 3 KVA, backup time: two hours, battery type: output voltage: $230\text{ V} \pm 5\% \text{ V}$; mains power is provided using dual power supply.

3. Operational safety guarantee

Before the Competition, the competitors should be trained on the safety of computer, network equipment, tools and other operation, and educated on safe operation to ensure that each team member can safely operate the equipment during the Competition. Before the Competition, the judge reads out safety precautions with emphasis on safety rules for fire and electricity.

Local public security, health departments and insurance companies are invited to help support the whole process.

The safety of the competitors travelling from the participating school to the workshop is the responsibility of each country, and the safety of the competitors during the Competition is the responsibility of the Executive Committee of the World Vocational College Skills Competition.

4. The Executive Committee shall organize a special inspection on the workshop, accommodation places and transport before the Competition, and make explicit safety requirements. The arrangement of the workshop, the equipment and facilities within the workshop, should comply with the relevant national safety regulations. The organizer must exclude hazards in accordance with the requirements of the Executive Committee before the Competition.

5. According to the requirements of the Executive Committee of the World Vocational College Skills Competition and the local department of education, the pandemic prevention and control work should be carried out properly.

6. A cordon should be set up around the workshop to prevent the entry of unauthorized persons in case of accidents. The necessary labor protection should be provided for the competitors with

reference to the requirements of the relevant occupational positions within the competition site. In the section with dangerous operation, the judges should take strict precautions against the wrong operation of the competitors.

7. The organizer should provide conditions to ensure the implementation of the contingency plan. For competitions involving work at height, possible falling objects, large electricity consumption, fire prone and other circumstances, policies and plans must be specified, and first aid personnel and facilities must be equipped.

8. The Executive Committee shall formulate the staff evacuation plan for the open workshop and experience area in conjunction with the organizer. In addition to complete indication signs, additional guidance personnel shall be assigned and alternate lanes shall be opened in areas where there are crowded and intersecting traffic and pedestrian flow in the workshop environment.

9. During the Competition, the organizer of the Competition shall take key positions in the management of the workshop, increase efforts and establish a security management log.

10. It is strictly forbidden for competitors and judges to bring communication and photographic recording equipment or recorders into the workstations and workplaces. If necessary, it will be allocated and managed by the workshop. Security check equipment will be deployed as needed to check the people entering the important parts of the workshop.

iv. Living conditions

1. During the Competition, in principle, the event organizer will arrange the food and accommodation for the competitors and instructors. The organizer shall respect the culture and beliefs of other countries and arrange the food and accommodation for the competitors and instructors of other countries in accordance with the relevant international policies.

2. The place of accommodation arranged during the Competition should have the business permit for hotel/accommodation.

3. Transport safety of organized visits and observation activities during the Competition is under the responsibility of the Executive Committee. The Executive Committee and the organizer shall ensure the transport safety for competitors, instructors and judges, and staff during the Competition.

4. The security management, in addition to the necessary security quarantine measures that can be taken, should strictly comply with the relevant national laws and regulations to protect personal privacy and personal freedom.

v. Team responsibility

1. Each country shall purchase personal accident insurance for the competitors during the Competition when organizing the teams.
2. After the teams of each country are formed, the relevant management policy shall be formulated and safety education shall be provided to all competitors and instructors.
3. The team leaders shall strengthen the safety management of the competitors and achieve the alignment with the safety management of the workshop.

vi. Emergency response

If an accident occurs during the Competition, whoever finds it should report to the Executive Committee immediately, and also take measures to prevent it from further deterioration. The Executive Committee should immediately activate the contingency plan to address the problem and report to the Executive Committee of the division. Categories with major safety problems can be suspended, and the decision on whether to cancel the events will be made by the Executive Committee of the division. After the event, the executive committee of the division should report the details to the Executive Committee of the Competition.

vii. Penalties

1. Where a major safety issue is found, the organizer will be disqualified from hosting the Competition.
2. If a major safety problem is caused by a participating team, the team will be disqualified from participating in the competition.
3. Participating teams involved in major safety problems may be disqualified from continuing with the competition if they are alerted and warned by the staff but of no avail.
4. Event staff who violate the rules will be held accountable according to the corresponding policies. Where the circumstances are serious and cause major security incidents, the relevant parties will be held legally accountable by the judicial authorities.

XV. Competition Notice

i. Notice for teams

1. Teams should attend the closing ceremony and other events organized by the organizers.
2. During the event, team leaders and other team members are not allowed to contact the judges personally, and anyone found to have cheated will be disqualified and their results will be invalid.

3. All competitors must complete the evaluation of the Competition in accordance with the requirements of the competition rules.
4. For the teams that hamper the fairness of the competition and hinder the normal progress of the competition, depending on the severity of the circumstances, they will be subject to warnings and cancellation of the competition results in accordance with the awards and penalties of the competition.
5. During the pandemic, competitors should comply with China's requirements for pandemic prevention and control and take precautions against the pandemic.

ii. Notice for instructors

1. Instructors should reasonably formulate training programs according to the competition rules, carefully guide the training of competitors, develop their comprehensive professional competence and sound professionalism, overcome utilitarian thinking, and avoid learning for the sake of competition and substituting learning with competition.
2. Instructors should check the notice and Competition content on the special webpage of the Competition in time, study and master the rules, technical specifications and requirements of the workshop, and guide the competitors to make all technical preparations and competition preparations before the Competition.
3. Instructors should have the competitors properly insured according to the requirements of the competition rules and make active efforts to educate the competitors about safety.
4. Instructors should not violate the competition rules by entering the workshop and interfering with the normal conduct of the competition when attending the activities such as observation of the Competition.

iii. Notice for competitors

1. Competitors should fill in personal information truthfully according to the relevant requirements, otherwise the eligibility for the competition will be cancelled.
2. Competitors need to hold a unified printed entry card and valid IDs to participate in the Competition.
3. Competitors should study and understand the relevant documents of the Competition, consciously abide by the discipline of the Competition, follow the instructions, heed the arrangements, and compete in a civilized manner.

4. Competitors should not bring any electronic devices and other materials and supplies to the workshop.
5. Competitors should arrive at the workshop in accordance with the specified time, register against their entry cards and IDs, enter as required, and are not allowed to arrive late or leave early.
6. Competitors should raise role awareness, allocate tasks and cooperate in a scientific and reasonable manner.
7. Competitors should be seated in the designated position according to the relevant requirements.
8. Competitors shall start the competition after confirming the competition content and on-site equipment are error-free. In the course of the Competition, if the operation cannot continue due to computer software or hardware failure, a backup computer will be activated upon confirmation by the jury president.
9. Each competitor must operate the competition equipment according to the specification requirements. In the event of a serious safety incident, the competitor will be disqualified immediately upon approval by the jury president.
10. Competitors should read the requirements for naming the competition documents in the Test Projects carefully, and should not indicate any information about the competitor's country name, place name, school name, full name, participation number, in the submitted competition documents, otherwise the competition results will be cancelled.
11. At the end of the Competition, all competitors should stand up and terminate the operation. The materials and tools should be placed neatly on the work surface, and counted by the staff before competitors can leave the workshop, and no materials are allowed to be taken away when they leave the workshop.
12. During the Competition, without the approval of the Executive Committee, the competitors shall not accept interviews related to the Competition content conducted by other organizations and individuals. Competitors are not allowed to publish information about the Competition without permission.

iv. Notice for staff

1. The concept of service should be established, and all work should be done for the benefit of the competitors. With a high degree of responsibility, a serious attitude and a rigorous and meticulous style, under the leadership of the Executive Committee, they should conscientiously perform their duties in accordance with their respective responsibilities and requirements.

2. All staff must wear badges, be faithful to their duties, handle the matter impartially and preserve confidentiality.
3. They should pay attention to their good manners, maintain a good image and be familiar with the Competition Notice.
4. They should abide by the discipline and rules of the Competition, obey the arrangement and allocation of work, and ensure the smooth running of the Competition.
5. They should arrive at the workshop 30 minutes in advance, and strictly adhere to their work posts. They should not arrive late or leave early, nor leave their posts without reason. For special circumstances, they should ask for leave from the head of the working group.
6. They should be familiar with the competition rules, strictly follow the work procedures and relevant regulations, and in case of emergencies, organize and direct the evacuation of personnel in accordance with the contingency plan to ensure the safety of personnel.
7. If the staff commits fraud in the competition, they will be immediately disqualified from the work and given a serious penalty.
8. They should keep the communication smooth, obey the unified leadership, strictly abide by the competition discipline, strengthen the coordination and cooperation, and improve the efficiency.

XVI. Appeal and Arbitration

Each team can submit an appeal to the supervision and arbitration team of the Competition about the instruments, equipment, fixtures, materials, objects, computer software and hardware, tools and supplies used in the competition, competition officiating, workshop management, and non-standard behavior of the staff that do not conform to the competition rules. The subject of the appeal is the team leader. Team leaders may submit written appeal to the supervision and arbitration team within two hours after the end of the Competition (when the competitors have completed the competition).

A written appeal should give a full and factual account of the incident, time, personnel involved and the basis for the appeal, and should be signed by the team leader. Non-written appeals will not be accepted.

The supervision and arbitration team will organize a review within two hours after receiving the appeal report and inform the complaining party in writing of the review result in a timely manner. If the complaining party still disagrees with the review result, the team leader may submit an appeal to the Supervisory Arbitration Committee of the division. The arbitration award of the Supervisory Arbitration Committee of the division shall be final.

Arbitration award will be signed for by the complainant and cannot be received on his/her behalf. If the complainant leaves at the agreed time and place, he/she is considered to have waived the appeal.

The complainant may file a waiver of appeal at any time and may not take excessive action to disrupt the workshop for any reason.

XVII. Competition Observation

An observation area will be designated for this Competition, and a large screen will be used to display the progress of information security attack and defense battles in real time.

The competition environment is designed according to the needs of the competition and the characteristics of the profession, and part of the workshop is opened safely under the premise that the competition is not disturbed. Observers need to wear observer's badge and be led by the staff to the site along the designated route and in the designated area.

XVIII. Live Competition

Before the Competition, key aspects such as the confidentiality of the Test Projects, equipment installation and debugging, and software installation are live recorded. The entire competition process is videotaped. The opening and closing ceremonies, and competition process are live broadcast, and the manual marking process is videotaped.

After the Competition, video materials of interviews with outstanding competitors, outstanding instructors and entrepreneurs, and those of expert comments by judges will be produced for this Competition.

XIX. Resource Conversion

In accordance with the relevant requirements of the Measures for the Skill Resource Conversion of the National Vocational Students Skills Competition, a plan for resource conversion of the competition results (in the following table) should be submitted to the office of the Executive Committee after the competition. Resource conversion should be completed within half a year. Converted resources should be uploaded to an online information release platform designated by the Competition.

Name of resources			Form of expression	Number of resources	Resource requirements	Completion time
Basic resources	Charm show	Competition promotional video	Video	1	15 minutes Above	30 days after the competition

		Charm show video	Video	1	10 minutes Above	30 days after the competition
	Skill summary	Skill introduction Skill points Assessment indicators	Text information	3	Electronic information	60 days after the competition
	Teaching resources	Professional textbooks	Text information	1	Additional improvements Periodic reprint	90 days after the competition
Extended resources	Case library		Text information	1	Electronic information	60 days after the competition
	Test bank		Text information	1	Electronic information	60 days after the competition

After the competition, it is also necessary to improve the team-building of the teaching staff, and facilitate the effective application of resource conversions in teaching. After the competition is completed in 2022, two seminars are planned to be held, in addition to two teacher training sessions. The training covers the application of information security in work and life, practical system information security, practical network information security, data security and forensic technology, and technologies for data center disaster recovery and backup

No.	Event name	Planned time	Notes
1	Seminar session 1	August 2022	
2	Teacher training session 1	August 2022	
3	Teacher training session 2	October 2022	
4	Seminar session 2	December 2022	