2024-25 Competitive Events Guidelines

Network Design

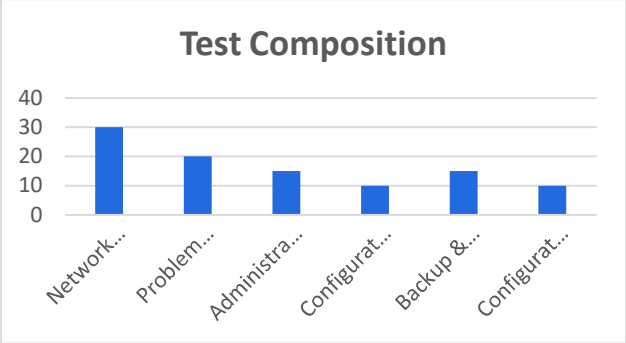
Network Design provides members with the opportunity to gain knowledge around networking in technology. This competitive event consists of an objective test and a role play scenario.

Event Overview

Event Type: Team of 1, 2 or 3 members
Event Category: Role Play Event
Event Elements: Objective Test and Role Play
Objective Test Time: *50 minutes*
Role Play Time: *20-minute preparation time, 7-minute presentation time*
NACE Connections: Career & Self-Development, Communication, Leadership, Professionalism, Teamwork

Objective Test & Role Play Competencies

- Network Installation – Planning and Configuration
- Problem Solving/Troubleshooting
- Network Administrator Function
- Configuration of Internet Resources
- Backup and Disaster Recovery
- Configuration Network Resources & Services



Region

Each chapter may enter two teams in this event. Testing is school-site and proctored with careful monitoring to ensure the integrity of the test. This event is classified as a Performance Event even though it is test only at the regional level.

State

Top three (3) qualifiers of each region are eligible to compete at the State Leadership Conference. Competitors will take the objective test to determine top ten (10) finalists. Finalists will be announced at the opening session and will present to judges on Saturday of the SLC.

National

Required Competition Items

	Items Competitor Must Provide	Items FBLA Provides
Objective Test	• Sharpened pencil • Fully powered device for online testing • Conference-provided nametag • Photo identification • Attire that meets the FBLA Dress Code	• One piece of scratch paper per competitor • Internet access • Test login information (link & password)

	Items Competitor Must Provide	Items FBLA Provides
Role Play	• Conference-provided nametag • Photo identification • Attire that meets the FBLA Dress Code	• Two notecards per competitor • Pencil • Secret role play problem/scenario • Flip chart paper/markers

Important FBLA Documents

- Competitors should be familiar with the Competitive Events Policy & Procedures Manual, Honor Code, Code of Conduct, and Dress Code.

Eligibility

- FBLA membership dues are paid by 11:59 pm Eastern Time on March 1 of the current school year or prior to regional competition, whichever comes first.
- Members may compete in an event at the National Leadership Conference (NLC) more than once if they have not previously placed in the top 10 of that event at the NLC. If a member places in the top 10 of an event at the NLC, they are no longer eligible to compete in that event.
- Members must be registered for the RLC/SLC/NLC and pay the conference registration fee to participate in competitive events.
- Members must stay in an official FBLA hotel block to compete.
- Each chapter may submit two entries; each region may submit three entries; each state may submit four entries.
- Each competitor can only compete in one individual/team event and one chapter event (American Enterprise Project, Community Service Project, Local Chapter Annual Business Report, Partnership with Business Project) at the national level. RLC/SLC competitors may compete in one objective test/one performance event/ and one chapter event.
- Each competitor must compete in all parts of an event for award eligibility.
- All members of a team must consist of individuals from the same chapter.
- Competitors cannot be replaced or substituted in between the objective test and role play time. Only those competitors that test and score in the top 15 teams will be allowed to participate in the role play round.
- Picture identification (physical or digital: driver's license, passport, state-issued identification, or school-issued identification) matching the conference nametag is required when checking in for competitive events.
- If competitors are late for their assigned objective test and/or role play time, they will be allowed to compete with a five-point penalty until such time that results are finalized, or the accommodation would impact the fairness and integrity of the event.
- Some competitive events start before the Opening Session of SLC/NLC. The schedules for competitive events are displayed in the local time of the NLC location. Competitive event schedules cannot be changed.

Network Design

Recognition

- The number of competitors will determine the number of winners. The maximum number of winners for each competitive event is 10/NLC; 5/SLC; 3/RLC.

Event Administration

- This event is two rounds: objective test and role play
- Objective Test
    - **Objective Test Time:** 50 minutes
    - **Objective Test Questions:** 100 questions
    - This event is an objective test administered online at the RLC/SLC/NLC.
    - No reference or study materials may be brought to the testing site.
    - All electronic devices such as cell phones and smart watches must be turned off before competition begins.
    - Competitors on a team must test individually, starting within minutes of each other. Individual test scores will be averaged for a team score.
- Interactive Role Play Presentation (SLC/NLC only)
    - **Preparation Time:** 20 minutes (one-minute warning)
    - **Presentation Time:** 7 minutes (one-minute warning)
    - **Question & Answer:** None
    - The top 10 (SLC) 15 (NLC) scoring teams will advance to the role play final round.
    - The role play will be a problem or scenario that includes an analysis of a computing environment situation and recommendation for a network solution. The role play will be given to the competitors at the beginning of their assigned preparation time.
    - Two notecards will be provided to each competitor. If the entry is a team, each competitor on the team will receive two notecards. These notecards may be used during event preparation and role play presentation. Information may be written on both sides of the notecards. Notecards will be collected following the role play.
    - No additional reference materials or props or visuals are allowed.
    - Teamwork: If participating as a team, all team members are expected to actively participate in the role play.
    - Role plays are interactive presentations; the judges may ask questions throughout the presentation.
    - Role play presentations are not open to conference attendees.
    - Competition ethics demand that competitors do not discuss or reveal the role play until the event has ended.

Scoring

- The team-averaged objective test score determines the top 10 (SLC) top 15 (NLC) teams advancing to role play round.
- The role play round scores only will be used to determine winners.
- Objective test scores will be used to break a tie.
- All announced results are final upon the conclusion of the RLC/SLC/NLC.

Recording of Presentations

- No unauthorized audio or video recording devices will be allowed in any competitive event.
- Competitors in the event should be aware FBLA reserves the right to record any presentation for use in study or training materials.

Americans with Disabilities Act (ADA)

- FBLA meets the criteria specified in the Americans with Disabilities Act for all competitors with accommodations submitted through the conference registration system by the registration deadline.

Penalty Points

- Competitors may be disqualified if they violate the Code of Conduct or the Honor Code.
- Five points are deducted if competitors do not follow the Dress Code or are late to the assigned testing or presentation/role play time.

Electronic Devices

- Unless a pre-approved accommodation is in place, all cell phones, smart watches, and headphones must be turned off and put away before competition begins. Any visibility of these devices will be considered a violation of the Honor Code.

Study Guide: Test Competencies and Tasks

A. Network Installation—Planning and Configuration

1. Demonstrate knowledge of the key functions and subsystems of the network.
2. Define the types of network architecture: work group (e.g., peer to peer) and server based (e.g., domain controlled) and explain how to determine what to use.
3. Identify services delivered by a server, such as application server, communication server, domain/directory server, fax server, file and print server, mail server, and Web server.
4. Gather data to identify customer requirements.
5. Identify and analyze system and network requirements.
6. Identify time, technology, and resource constraints.
7. Identify physical requirements for system implementation.
8. Research product and vendor architecture and equipment specifications/limitations.
9. Prepare cost/benefit/risk analysis.
10. Develop testing strategy.
11. Prepare overall plan for integrating new processes, protocols, and equipment.
12. Analyze facilities' bandwidth requirements and capacity planning (e.g., power cable/wire conduit).
13. Revise processes/structure based on testing and certification.
14. Identify hardware/software selection criteria.
15. Select and install a LAN/WAN technology that meets defined set of requirements.
16. Assess user needs to determine which network operating systems (OS) to use.
17. Set up/configure workstation-network connections and test network connectivity using a network analyzer.
18. Set up/configure network components (e.g., interface cards, routers, switches).

19. Plan, configure, and optimize a TCP/IP physical and logical network.
20. Install network cabling with proper termination according to appropriate standards.
21. Set up a network-wide printing strategy to meet the needs of users.
22. Identify major considerations faced when installing a network operating system (OS).
23. Install a server operating system.
24. Identify and upgrade desktop and server computer hardware and peripherals.
25. Determine methods for segmenting and balancing the network load including number of servers needed.
26. Describe and give examples of application-specific servers.
27. Identify software licensing requirements and categories.
28. Configure and manage file systems and desktop settings and customize.
29. Evaluate the correctness and effectiveness of implementing the network system.
30. Design security for computers, accounts, and authentication.
31. Determine threats and analyze risks to network perimeters.
32. Design an audit policy and incident response procedures.
33. Basic network topologies.
34. IEEE/Network standards.

B. Problem Solving/Troubleshooting

1. Identify and analyze potential hardware compatibility problems.
2. Identify and analyze precautions included in programs used on networks (e.g., self-metering, security keys, and required configuration settings).
3. Identify network areas in which application problems could exist (e.g., memory allocation, file lock settings, and resource availability).
4. Perform preventative maintenance on computers and peripherals using available diagnostic tools.
5. Perform software license audits.
6. Coordinate security procedures.
7. Restore LAN operating systems and replace LAN hardware components.
8. Execute testing in accordance with established plans and schedule and interpret test results.
9. Document errors reported/tracked and develop central log strategy.
10. Use the appropriate network utility to troubleshoot various connectivity issues.
11. Demonstrate the use of visual indicators and diagnostic utilities to interpret problems.
12. Identify and resolve a network configuration with incorrect protocols, client software misconfiguration, authentication misconfiguration, and insufficient rights/permissions.
13. Describe the sequential steps needed to identify and resolve a wiring or infrastructure problem.
14. Identify TCP/IP routing trouble shooting tools and troubleshoot TCP/IP routing.
15. Optimize and troubleshoot DNS.
16. Minimize impact of problems on productivity (e.g., minimize downtime).
17. Demonstrate knowledge of basic troubleshooting steps.
18. Evaluate problem-solving outcomes to determine whether the problem was solved as intended and to determine needed follow-up actions.
19. Select the most appropriate solution and fix recoverable problems.
20. Assess the impact of changes that affect interfaces.
21. Identify new or replacement networking components needed.

C. Network Administrator Functions

1. Determine file organization (e.g., by owners, users, and privileges).
2. Establish naming conventions for the network, files, accounts, and services.
3. Determine methods for increasing presentation (e.g., segmenting and balancing the network load, resolving channel, and cable bottlenecks).
4. Describe and analyze the role of the network manager and the basic principles of network management.
5. Determine procedures for network optimization and tuning.
6. Determine procedures for managing network assets (e.g., users, groups, and printers).
7. Perform administration functions using network management software.
8. Install and monitor server software applications.
9. Perform system analysis and bandwidth optimization.
10. Perform resource management (e.g., apply standards, address protocols, monitor network activity, perform trend analyses, functional verifications, audits, and monitoring).
11. Respond to system messages.
12. Document actions taken (e.g., backups, virus prevention, and software distribution).
13. Evaluate software activities and execute network diagnostic program for software and hardware.
14. Manage disk resources by planning how resources are shared and by setting up and administering rights (e.g., permissions and quotas).
15. Identify uses and features of e-mail and calendaring and appropriate policies and procedures for implementation.
16. Provide technical support and orientation to network system.
17. Manage and distribute critical software updates that resolve known security vulnerabilities and other stability issues.

D. Configuration of Internet Resources—Web Service, DMZ, FTP, etc.

1. Configure Internet access for a network.
2. Configure IP addresses and name resolution (DHLP, static, etc.).
3. Describe and implement IPP (Internet Printing Protocol) services.
4. Explain and implement Secure Sockets Layer (SSL) authentication.
5. Describe the structure and architecture that make up the domain name system (DNS).
6. Plan, manage, and monitor DNS servers to ensure that they are functioning properly and to optimize network presentation.
7. Explain the characteristics, uses, and benefits of software firewalls and hardware firewalls.
8. Describe the key features of Web servers.
9. Install and configure Web-based services using utilities and HTML-based administration tools.
10. Establish WWW service, FTP service, SNMP service, and NNTP service.
11. Illustrate Virtual Private Networks (VPN) and the purpose of remote access protocols, including Point-to-Point Tunneling Protocol (PPTP), and Layer 2 Tunneling Protocol (L2TP).
12. Distinguish among the following security methods: DMX (including dual-homed and triple-homed firewalls), VLAN, intranet, extranet, PKI.
13. Demonstrate knowledge of the principles and operation of wire (e.g., coaxial and fiber optics) and wireless systems.
14. Demonstrate knowledge of the principles and operation of fiber optics, analog, and digital circuits.

15. Distinguish between different port numbers.
16. Identify classes of IP addresses.
17. Identify classes of subnets.
18. Identify classes of TCP and UDP.

E. Backup and Disaster Recovery

1. Describe the purpose of a disaster recovery plan for a network.
2. Differentiate between disaster recovery and business continuity.
3. Compare different options of backing up and securing data and restoring a system and perform system backup.
4. Identify common backup devices.
5. Identify the criteria for selecting a backup system.
6. Establish process for archiving files.
7. Select and test a disaster recovery plan.
8. Identify methods for avoiding common computer system disasters (e.g., UPS and RAID).
9. Use the features of a server operating system to prevent a disaster or recover when one occurs.
10. Develop backup process and backup and restore data.
11. Implement backup procedures in accordance with a regular schedule.
12. Configure a shadow copy.
13. Identify and maintain battery backup equipment.
14. Install surge suppression protection.
15. Implement recovery procedures as needed.

F. Configuration Network Resources and Services

1. Identify the purpose of network services and protocols.
2. Identify and monitor your network perimeter including rogue devices, VPN servers and wireless access points.
3. Determine the impact of modifying, adding, or removing network services for network resources and users.
4. Design remote connectivity.
5. Configure network cards and network settings.
6. Describe the purpose and benefits of using a proxy service.
7. Describe the functions of remote access protocols and services, such as telnet, SSH, and remote desktop.
8. Identify and investigate emerging networks and technologies.
9. Configure VLAN to map an IP network.
10. Provide accurate tracking and monitoring of VLAN.
11. Implement security controls such as MAC or DAC to ensure user policies are enabled.
12. Identify common routing protocols.

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FBLA Future Business Leaders of America

Network Design Role Play Presentation Rating Sheet

Expectation Item	Not Demonstrated	Below Expectations	Meets Expectations	Exceeds Expectations	Points Earned
Demonstrates understanding of the role play and defines problem(s) to be solved	*No description or role play synopsis provided; no problems defined*	*Describes and provides role play synopsis OR defines the problem(s)*	*Describes and provides role play synopsis AND defines the problem(s)*	*Demonstrates expertise of role play synopsis AND definition of the problem(s)*	
	0 points	1-8 points	9-12 points	13-15 points	
Identifies alternatives and the pro(s) and con(s) of each	*No alternatives identified*	*Alternative(s) given but pro(s) and/or con(s) are not analyzed*	*At least two alternatives given, and pro(s) and con(s) are analyzed*	*Multiple alternatives given and multiple pros and cons analyzed for each*	
	0 points	1-9 points	10-16 points	17-20 points	
Identifies logical solution and aspects of implementation	*No solution identified*	*Solution provided, but implementation plan not developed*	*Logical solution and implementation plan provided and developed*	*Feasible solution and implementation plan developed, and necessary resources identified*	
	0 points	1-9 points	10-16 points	17-20 points	
Demonstrates knowledge and understanding of the event competencies: Network installation / network function / configuration of internet resources / backup and recovery / configuring networks / services	*No competencies demonstrated*	*One or two competencies are demonstrated*	*Three competencies are demonstrated*	*Four or more competencies are demonstrated*	
	0 points	1-9 points	10-16 points	17-20 points	
Delivery Skills					
Statements are well-organized and clearly stated	*Competitor(s) did not appear prepared*	*Competitor(s) were prepared, but flow was not logical*	*Presentation flowed in logical sequence*	*Presentation flowed in a logical sequence; statements were well organized*	
	0 points	1-6 points	7-8 points	9-10 points	
Demonstrates self-confidence, poise, assertiveness, and good voice projection	*Competitor(s) did not demonstrate self-confidence*	*Competitor(s) demonstrated self-confidence and poise*	*Competitor(s) demonstrated self-confidence, poise, and good voice projection*	*Competitor(s) demonstrated self-confidence, poise, good voice projection, and assertiveness*	
	0 points	1-2 points	3-4 points	5 points	
Demonstrates the ability to effectively answer questions	*Unable to answer questions*	*Does not completely answer questions*	*Completely answers questions*	*Interacted with the judges in the process of completely answering questions*	
	0 points	1-6 points	7-8 points	9-10 points	
Staff Only: Penalty Points (5 points for dress code penalty and/or 5 points for late arrival penalty)					
Presentation Total (100 points)					

Name(s):		
School:		
Judge Signature:		Date:

Comments: