

2026-2027 Competitive Events Guidelines

Network Design

Network Design challenges members to demonstrate their understanding of networking concepts and infrastructure through an objective test and a role play scenario. Members apply their knowledge to design, implement, and troubleshoot network solutions that meet the needs of a business or organization.



Educational
Alignments

Event Overview

Division	High School
Event Type	Team of 1, 2 or 3 members
Event Category	Role Play
Event Elements	Objective Test and Interactive Role Play

Event Information:

National Leadership Conference:

Timing Structure:

Test Duration: 50 minutes

*TOP 15 (combined and average team scores)
advance to the finals*

Final Round Role Play:

- **Preparation Time:** 20 minutes
 - a one-minute warning will be provided
- **Presentation:** 7 minutes
 - a one-minute warning will be provided
- **Question & Answer (Q&A):** None

Important Notes:

- **Internet Access:** Provided during testing period
- **Event Schedule Notes:**
 - Some events may begin before the Opening Session.
 - All schedules are posted in local time for the NLC host city.
 - Schedule changes are not permitted.

State/Region:

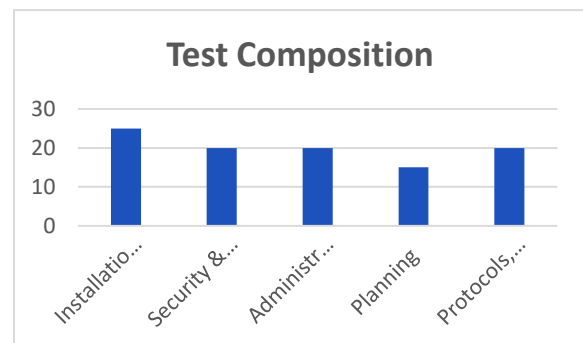
Review Region and State Sections further on in this document.

*** Event specifics are continued below. Review the document in its entirety.

Knowledge Areas

- Network Installation and Configuration
- Network Security and Recovery
- Network Administration
- Network Planning
- Network Protocols, Services, and Access

Test questions and role plays are based on the knowledge statements and objectives outlined for this event. Detailed objectives can be found in the study guide included in these guidelines.



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Region

Region Eligibility

Each chapter may enter three (3) teams of 1, 2, or 3 members of active local chapters in FBLA Connect, the FBLA membership system. An active chapter is defined as having members “pending or paid” at the time of the RLC registration deadline submitted by the region adviser to the Executive Director and published on the PA FBLA website.

In order to be registered for this event, student data is imported into Blue Panda, the event registration and competitive events management system, from FBLA Connect. Students are imported and able to be registered only if identified as having “pending or paid” membership. “Paid” membership is defined as a dues payment for the student received by National FBLA; “pending” membership is defined as membership for which payment is due to National FBLA 60 days from the date the student appears on the membership invoice.

Members may compete in an event more than once if they have not previously placed in the top ten of that event at NLC. If a member places in the top ten of an event at NLC, they are no longer eligible to compete in that event at RLC, SLC, or NLC.

It is the responsibility of the local chapter adviser

- to pay membership dues for all competitors by the published region deadline and to register students through Blue Panda by the published deadline.

Region Procedure

1. A 50-minute objective test will be administered individually based on the previously listed competencies. All participants in this event must complete the test in the assigned timeframe. Individual scores will be averaged to obtain the team score.
2. **The participant must comply with the PA FBLA Dress Code which can be found at <https://www.pafbla.org/about-pafbla/dress-code/>. Points will be deducted for not complying with the dress code UNLESS it is an egregious violation.**
3. There is no case study at the region level.
4. Participants must furnish their own writing utensil if desired.
5. At the Region Leadership Conference, the participant will be provided with a non-graphing calculator in the online testing program. Participants may not use their own calculators. No scientific calculators, graphing calculators, PDAs (Palm Pilots, etc.), phones, or other memory storage devices are allowed to be used in this event.

Region Judging

All objective tests will be graded through the online test service. If there is a tie between competitors, the last ten (10) test questions will be compared and the individual/team with the highest number of correct answers will be ranked higher. The process will continue in groups of ten (10) questions until the tie is broken. If, after reviewing the entire test, the tie cannot be broken, the individual/team submitting the test in the least amount of time will be ranked higher.

Region Awards

Each region at a **minimum** must distribute a certificate to the top five place finishers in each event.

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State

State Eligibility

The minimum number of competitors each region may enter is the first-, second-, and third-place winners who are members of active local chapters on record in FBLA Connect as having dues listed as “pending or paid.” Since a participant’s “pending or paid” membership was required at the time of region conference registration, only students who are “pending or paid” appear in Blue Panda to be registered for and assigned competitive events at the State Leadership Conference.

If any of the eligible winners cannot attend the SLC, it is the responsibility of the:

local chapter adviser

- to contact the region adviser about the student who will not be attending.

region adviser

- to contact the adviser of the next eligible competitor about participating at the State Leadership Conference.
- to notify the PA FBLA Executive Director/State Chairman of the change before the deadline date published at <https://www.pafbla.org/about-pafbla/important-dates/>, which is posted on the PA FBLA web site.

State Procedure

1. For the final round, the event requires three rooms—a holding/sequestering room, a preparation room, and a delivery room.
2. For the final round, the event consists of two parts: (1) objective test and (2) performance.
3. Participants are required to complete both parts to be eligible to win an award.

Objective Test

1. A 50-minute objective test will be administered individually based on the previously listed competencies. All participants in this event must complete the test in the assigned timeframe. Individual scores will be averaged to obtain the team score.
2. **The participant must comply with the PA FBLA Dress Code which can be found at <https://www.pafbla.org/about-pafbla/dress-code/>. Points will be deducted for not complying with the dress code UNLESS it is an egregious violation.**
3. Participants must furnish their own writing utensils if desired.
4. At the State Leadership Conference, the participant will be provided with a non-graphing calculator in the online testing program. Participants may not use their own calculators. No scientific calculators, graphing calculators, PDAs (Palm Pilots, etc.), phones, or other memory storage devices are allowed to be used in this event.
5. Up to fifteen (15) teams with the highest scores will advance to the final performance round. Up to fifteen (15) highest scoring teams will be posted. The order of performance will be drawn at random by members of the state committee.

Case Study Problem

1. All members of the up to fifteen (15) participating finalist teams in this event must report at the event time listed in the program for instructions and to be sequestered. All team members will be

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sequestered before the first performance to receive instructions. **Because the students in this event are sequestered, a participant arriving late may enter the holding room as long as the first performance has not begun. If the first performance has begun, the participant will not be permitted to enter the holding room. If the team no longer has the required number of members, the team will not be allowed to substitute other participants, and the team will be disqualified. The team will not receive any instructions if the participants arrive after instructions have been given by the event administrator. This disqualification is necessary due to a potential unfair advantage which might occur from learning the event topic.**

2. **The participant must comply with the PA FBLA Dress Code which can be found at <https://www.pafbla.org/about-pafbla/dress-code/>. Points will be deducted for not complying with the dress code UNLESS it is an egregious violation.**
3. A case study will be given consisting of a problem or scenario based on the competencies.
4. Twenty (20) minutes before the performance, each participant will receive the case study.
5. Two (2) 4" x 6" note cards will be provided for each participant and may be used during the preparation and presentation. Information may be written on both sides of the index cards. Note cards will be collected following the presentation.
6. Teams will be provided with a flip chart on an easel with markers during the prep session on which to present their proposed solution for a visual effect. Competitors will then take the flip chart to the presentation room. Used chart paper is to be collected following the presentation.
7. No reference materials, visual aids, or electronic devices may be brought to or used during the preparation or performance; if found, any such items will be given to the event administrators to hold until the members complete their performance. Magazines, books, playing cards, and other printed items not related to the event's content are allowed in the holding room.
8. The team has seven (7) minutes to interact with a panel of judges and present the solution to the case. The judges will play the role of the second party in the presentation and refer to the case for specifics. This is a role-play event.
9. Team members should introduce themselves, describe the situation, make recommendations, and summarize the case.
10. All team members are expected to actively participate in the performance.
11. At the end of six (6) minutes, a timekeeper will stand until noticed and hold up a colored timecard indicating one minute is left, and at seven (7) minutes the timekeeper will stand and hold up a colored timecard indicating time is up.
12. Final presentations are open to conference attendees, except performing participants who are finalists of this event. If participants of the event view other presentations before or after their scheduled presentation time, they (or their team if they are part of one) will be disqualified.

State Judging

All objective tests will be graded through the online test service. If there is a tie between competitors, the last ten (10) test questions will be compared and the individual/team with the highest number of correct answers will be ranked higher. The process will continue in groups of ten (10) questions until the tie is broken. If, after reviewing the entire test, the tie cannot be broken, the individual/team submitting the test in the least amount of time will be ranked higher.

Judges must make a definitive decision on ranking. Ties are not permitted. The decision of the judges is final.

State Awards

The state chapter will present a maximum of ten (10) awards at the State Leadership Conference.

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National Conference Eligibility

The first-, second-, third-, and fourth-place award winners at the State Leadership Conference are eligible to attend the National Leadership Conference.

If the first-, second-, third-, or fourth-place winner cannot attend, it is the responsibility of the:

local chapter adviser

- to contact the PA FBLA Executive Director/State Chairman about the student who will not be attending.

PA FBLA Executive Director/State Chairman

- to contact the next eligible award winner about participating at the National Leadership Conference.

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 provided at test check-in)
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 • Easel for placement of flipchart during presentation

Eligibility Requirements

To participate in FBLA competitive events at the National Leadership Conference (NLC), the following criteria must be met:

- **Membership Deadline:** FBLA national membership dues must be paid to the specific division by 11:59 p.m. Eastern Time on March 1 of the current school year.
- **Repeat Competitors:** Members may only compete in an event at the 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 at future NLCs, unless the event has been modified beyond a name change. Chapter events are exempt from this procedure.
- **Conference Registration:** Members must be officially registered for the NLC and must pay the national conference registration fee to participate.

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- **Official Hotel Requirement:** To be eligible to compete, competitors must stay within the official FBLA housing block.
- **State Entry Limits:** Each state may submit up to four entries per event.
- **Event Participation Limits:** Each member may participate in:
 - o One individual or team event, and
 - o One chapter event (e.g., *Community Service Project* or *Local Chapter Annual Business Report*).
- **Participation Requirement:** To be eligible for an award, each competitor must complete all components of the event at the National Leadership Conference.
- **Team Composition:** All members of a team must be from the same local chapter.
- **Identification at Check-in:** Competitors must present valid photo identification (physical or digital) that matches the name on their conference name badge. Acceptable forms include a driver's license, passport, state-issued ID, or school ID.
- **Late Arrivals:** Competitors will be allowed to compete until such time that the results are finalized, or participation would impact the fairness and integrity of the event, as determined by Competitive Events staff. If judges have left the competitive event area, it is no longer possible to compete. Five penalty points will be assessed for late arrivals in any competitive event.

Event Administration

This event consists of two phases: an objective test and an interactive role play.

Objective Test

Each competitor will complete a 100-question multiple-choice objective test.

Test Duration

- **Test Duration:** 50 minutes

Format

- This event consists of an online objective test that is proctored and completed on-site at the National Leadership Conference (NLC).

Materials

- Reference or study materials are not permitted at the testing site.

Electronic Devices

- All electronic devices, including cell phones, smart watches, and similar technology, must be powered off prior to the start of the competition.

Team Tests

- If competing as a team, competitors must begin testing individually within a few minutes of one another. Each competitor's score will be averaged to determine the team's overall test score.

Calculators

- Personal calculators are not allowed; an online calculator will be available within the testing platform.

Question Review

- Competitors may flag questions within the testing platform for review prior to the finalization of results at the NLC.

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Interactive Role Play Details

The team-averaged objective test score determines the top 15 teams advancing to role play round.

Timing Structure

- **Preparation Time:** 20 minutes (a one-minute warning will be provided)
- **Presentation:** 7 minutes (a one-minute warning will be provided)
- **Question & Answer (Q&A):** None

Role Play Prompt

- Competitors will be provided with a single copy of a network design–related scenario or problem at the beginning of their assigned preparation time. This copy must be shared among team members and may only be accessed within the designated preparation area.

Notecard Use

- Each competitor will receive two notecards for use during preparation and the presentation. Information may be written on both sides. Notecards will be collected after the role play.

Materials

- No technology, reference materials, visuals, or props may be used.

Interaction with Judges

- Judges may ask questions during the presentation as part of the interactive role play format.

Audience

- Role play presentations are closed to all conference attendees.

Confidentiality

- To maintain fairness, competitors must not discuss or share the role play prompt until the event concludes.

Scoring

- The team-averaged objective test score determines the top 15 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 judging decisions are final. Results announced at the National Leadership Conference are considered official and will not be changed after the conclusion of the National Leadership Conference.

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 their assigned presentation time.

Electronic Devices

- Unless approved as part of a documented accommodation, all cell phones, smartwatches, electronic devices, and headphones must be turned off and stored away before the competition begins. Visible devices during the event will be considered a violation of the FBLA Honor Code.

Recognition

- A maximum of 10 entries (individuals or teams) may be recognized per event.

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Americans with Disabilities Act (ADA)

- FBLA complies with the Americans with Disabilities Act (ADA) by providing reasonable accommodations for competitors. Accommodation requests must be submitted through the conference registration system by the official registration deadline. All requests will be reviewed, and additional documentation may be required to determine eligibility and appropriate support.

Recording of Presentations

- Unauthorized audio or video recording is strictly prohibited in all competitive events.
- FBLA reserves the right to record presentations for educational, training, or archival purposes. Competitors should be aware that their presentations may be recorded by FBLA-authorized personnel.

Sample Preparation Resources

- Official sample test items and role plays can be found in [CONNECT](#). These sample items showcase the types of questions that may be asked on the test and familiarize competitors with the multiple-choice item options.

Important FBLA Documents

- Competitors should be familiar with the [Competitive Events Operations Manual](#), [Honor Code](#), [Code of Conduct](#), and [Dress Code](#).

Study Guide: Knowledge Areas and Objectives

Network Installation and Configuration (25 test items)

1. Discuss the functions of routers and modems in home and office networks
2. Describe the features of a SOHO router
3. Discuss configuration of software and hardware firewalls (e.g., rules, ACLs)
4. Describe the range, speed, and requirements for fiber optic cable
5. Describe the characteristics of copper cable
6. Explain IEEE 802 wireless standards
7. Describe the purpose of subnetting, subnet masks, and loopback addresses
8. Describe wireless network configuration (e.g., modem, router, network password)
9. Discuss server installation and configuration in rack and blade infrastructures
10. Discuss the impact of power and temperature on physical network infrastructures (e.g., cooling, uninterruptible power supply)
11. Describe configuration options for printing over a network (e.g., printer share, printer connectivity, print servers)
12. Describe the functions of access points and gateways

Network Security and Recovery (20 test items)

1. Describe the purpose of disaster recovery plans
2. Select plans for disaster recovery and prevention
3. Describe network backup solutions (e.g., cloud storage, NAS, external hard drives)
4. Describe defensive measures against DoS, phishing, and internal threats (e.g., least privilege, third-party service, security policy)
5. Describe methods for mitigating network vulnerabilities (e.g., closing ports, updating OS, maintaining antivirus)
6. Discuss best practices for network security (e.g., least privilege, authentication, encryption)
7. Describe the benefits of Zero Trust principles
8. Explain methods of network access control
9. Describe security features of Windows and Linux-based operating systems (e.g., BitLocker, domains, SELinux)
10. Describe the use of Intrusion Detection/Prevention Systems (IDS/IPS)
11. Discuss wireless security standards (e.g., WPA, access control lists)

Network Administration (20 test items)

1. Discuss the need for network maintenance (e.g., audits, updates, backups, restores)
2. Describe user account and permission management
3. Explain the purpose and use of Simple Network Management Protocol (SNMP)
4. Discuss common network issues (e.g. slow performance, connection issues, IP conflicts)
5. Use common network command-line tools (e.g., ping, tracert, ipconfig)
6. Discuss the importance of updates and patch management
7. Discuss the role of documentation in network maintenance and troubleshooting
8. Describe tools for monitoring network traffic and performance
9. Describe the use and benefits of load balancing
10. Describe procedures for managing network assets (e.g., users, groups, and printers)

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Network Planning (15 test items)

1. Match business requirements to appropriate network design decisions (e.g., topology, physical size, users)
2. Discuss hardware and performance differences between network types (e.g., LAN, WAN)
3. Describe the physical layouts of network topologies (e.g., star, mesh, bus)
4. Discuss the use cases of network topologies (e.g., star, mesh, bus)
5. Select an appropriate network operating system (Windows Server, Linux-based, etc.)
6. Describe the benefits and risks of a peer-to-peer network
7. Discuss the benefits of cloud services for network infrastructure
8. Describe how business needs can restrict and drive network design decisions (e.g., cost, throughput, availability)
9. Explain how network topology decisions impact performance, cost, and availability

Network Protocols, Services, and Access (20 test items)

1. Describe different types of networks (e.g., LAN, WAN)
2. Describe basic network security practices (e.g., encryption, VPN, packet sniffing, authentication)
3. Describe common network attacks (e.g., phishing, spoofing, poisoning)
4. Describe different connectivity technologies (e.g., Ethernet, Wi-Fi, Bluetooth)
5. Discuss the functions of common network devices (e.g., modems, routers, switches)
6. Discuss types of network environments (e.g., peer-to-peer, client-server, thin client)
7. Explain relationships between major network components (e.g., servers, clients, switches)
8. Describe each layer of the Open System Interconnection (OSI) model
9. Explain basic networking protocols (e.g., TCP/IP, UDP, DHCP, SMP)
10. Discuss the characteristics of network topologies (e.g., star, bus, ring)
11. Describe tools and procedures for troubleshooting networks (e.g., ping, tracert, checking cable connections)

References for Knowledge Areas & Objectives

Cisco. *Designing Cisco Enterprise Networks (ENSLD) v1.1*.

<https://learningcontent.cisco.com/documents/marketing/exam-topics/300-420-ENSLD-v1.1.pdf>

CompTIA. *CompTIA A+ Certification Exam Core 1 Objectives*. [https://partners.comptia.org/docs/default-](https://partners.comptia.org/docs/default-source/resources/comptia-a-220-1101-exam-objectives-(3-0))

[source/resources/comptia-a-220-1101-exam-objectives-\(3-0\)](https://partners.comptia.org/docs/default-source/resources/comptia-a-220-1101-exam-objectives-(3-0))

CompTIA. *CompTIA Network+ Certification Exam Objectives*. [https://partners.comptia.org/docs/default-](https://partners.comptia.org/docs/default-source/resources/comptia-network-n10-009-exam-objectives-(4-0))

[source/resources/comptia-network-n10-009-exam-objectives-\(4-0\)](https://partners.comptia.org/docs/default-source/resources/comptia-network-n10-009-exam-objectives-(4-0))

Cisco. *What is network design?* <https://www.cisco.com/site/us/en/learn/topics/networking/what-is-network-design.html>

IBM. *What is network infrastructure?* <https://www.ibm.com/think/topics/network-infrastructure>

Microsoft. *Fundamentals of computer networking*. <https://learn.microsoft.com/en-us/training/modules/network-fundamentals/>

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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	<i>No description or role play synopsis provided; no problems defined</i>	<i>Describes and provides role play synopsis OR defines the problem(s)</i>	<i>Describes and provides role play synopsis AND defines the problem(s)</i>	<i>Demonstrates expertise of role play synopsis AND definition of the problem(s)</i>	
	0 points	1-6 points	7-8 points	9-10 points	
Identifies alternatives and the pro(s) and con(s) of each	<i>No alternatives identified</i>	<i>Alternative(s) given but pro(s) and/or con(s) are not analyzed</i>	<i>At least two alternatives given, and pro(s) and con(s) are analyzed</i>	<i>Multiple alternatives given and multiple pros and cons analyzed for each</i>	
	0 points	1-9 points	10-16 points	17-20 points	
Identifies logical solution and aspects of implementation	<i>No solution identified</i>	<i>Solution provided, but implementation plan not developed</i>	<i>Logical solution and implementation plan provided and developed</i>	<i>Feasible solution and implementation plan developed, and necessary resources identified</i>	
	0 points	1-9 points	10-16 points	17-20 points	
Demonstrates knowledge and understanding of the event knowledge areas: <i>Network Installation and Configuration / Network Security and Recovery / Network Administration / Network Planning / Network Protocols, Services, and Access</i>	<i>No knowledge areas demonstrated</i>	<i>One or two knowledge areas are demonstrated</i>	<i>Three knowledge areas are demonstrated</i>	<i>Four or more knowledge areas are demonstrated</i>	
	0 points	1-9 points	10-16 points	17-20 points	
Delivery Skills					
Statements are well-organized and clearly stated	<i>Competitor(s) did not appear prepared</i>	<i>Competitor(s) were prepared, but flow was not logical</i>	<i>Presentation flowed in logical sequence</i>	<i>Presentation flowed in a logical sequence; statements were well organized</i>	
	0 points	1-6 points	7-8 points	9-10 points	
Consistently displays confidence, poised body language, engaging eye contact, and effective voice projection.	<i>Did not demonstrate any of the listed skills</i>	<i>Demonstrated 1-2 of the listed skills (confidence, body language, eye contact, or voice projection)</i>	<i>Demonstrated 3 of the listed skills (confidence, body language, eye contact, or voice projection)</i>	<i>Demonstrated all skills, enhancing the overall presentation</i>	
	0 points	1-6 points	7-8 points	9-10 points	
Demonstrates the ability to effectively answer questions	<i>Unable to answer questions</i>	<i>Does not completely answer questions</i>	<i>Completely answers questions</i>	<i>Interacted with the judges in the process of completely answering questions</i>	
	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:					Section:
Judge Signature:					Date:
Comments:					