

Networking in Higher Education Survey Questionnaire

Thank you for participating in this study being conducted by the EDUCAUSE Center for Applied Research (ECAR). This survey is a critical part of the study and seeks to understand the components, management, and support of data networking, as well as what future plans exist. Our testing suggests that it will require 30–40 minutes to complete. If you wish to print a copy of the survey before completing it online, a .pdf version is available at <http://www.educause.edu/ir/library/pdf/ecar_so/ers/si/esi05a.pdf>.

Please complete this survey by Tuesday, July 6, 2004. We appreciate your time and candor. The survey does not need to be completed at a single setting. You can save your responses and return to it at times that are convenient to you. If at any point you wish to exit the survey before submitting your final answers, click the Save button and follow the directions.

As thanks for your time and valuable input, each participant is entitled to receive a summary of key findings from the study. In addition, three survey respondents will be selected at random to receive a complimentary copy of the final report or, for ECAR participating subscribers, one additional complimentary admission to an annual ECAR Research Symposium, November 15–17, 2004, at San Diego's landmark Hotel Del Coronado.

We appreciate your time and participation. If you have any questions or concerns, please e-mail <ecar@educause.edu>.

Click the Next button to begin the survey. Once again, thank you for your input!

Section 1: About You and Your Institution

Please enter the survey ID number that you received by electronic mail to begin this survey. If you do not have this ID number, you may find it using the EDUCAUSE institution Survey ID Lookup link.

Please submit your survey before the Tuesday, July 6, 2004, expiration date.

1.1 Survey ID [Required]

1.2 Your name [Required]

1.3 For how many years have you been professionally involved in data networking?

- Pull down 0–25 (discrete years)
- Over 25

1.4 Do you focus on data networking full time?

- No
- Yes

©2003 EDUCAUSE. Reproduction by permission only.

EDUCAUSE CENTER FOR APPLIED RESEARCH

All data and information collected by the EDUCAUSE Center for Applied Research is used strictly for the purposes of research and analysis for the benefit of ECAR subscribers and EDUCAUSE members. EDUCAUSE does not make personally or institutionally identifiable information or data available to its members, sponsors, contractors, or others.

1.5 Approximately how many devices are connected to your institution's networks?

- Under 1,000
- 1,001 to 5,000
- 5,001 to 10,000
- 10,001 to 20,000
- 20,001 to 40,000
- 40,001 to 60,000
- 60,001 to 80,000
- 80,001 to 100,000
- Over 100,000

1.6 For approximately how many institutional users (e.g. faculty, students, staff, etc.) does your institution provide networking capabilities?

- Under 1,000
- 1,001 to 5,000
- 5,001 to 20,000
- 20,001 to 40,000
- 40,001 to 60,000
- 60,001 to 80,000
- 80,001 to 100,000
- Over 100,000

1.7 Does your institution offer high speed [>10 Mbps] network connections to students in residence halls?

- No
- Yes
- There are no student resident halls

1.8 Does your institution own a private branch exchange (PBX)?

- No
- Yes

Help: The concept of private branch exchange (PBX) includes private automatic branch exchange (PABX).

1.9 Approximately how many phones are supported operationally by your institution?

- None
- 1 to 1,000
- 1,001 to 5,000
- 5,001 to 10,000
- 10,001 to 20,000
- 20,001 to 40,000
- 40,001 to 60,000
- 60,001 to 80,000
- 80,001 to 100,000
- Over 100,000

1.10 Does your institution have an on-campus television service?

- No
- Yes



Section 2: Organization and Staffing

2.1_2.15 The central networking organization is responsible for which of the following areas? (Select all that apply)

- 2.1 Data networking cable plant
- 2.2 Data networking hardware (routers, switches, etc.)
- 2.3 Networked file services
- 2.4 Networked print services
- 2.5 Networked applications such as e-mail or calendaring
- 2.6 Data network security
- 2.7 Overall IT security
- 2.8 Voice communications
- 2.9 Video services
- 2.10 Data center operations
- 2.11 User account management
- 2.12 Help desk
- 2.13 Desktop support
- 2.14 Enterprise directory services
- 2.15 Other

2.16 Which of the following best describes the organizational relationship between your institution's data networking and voice communications groups?

- Voice and data networking report to same department/organization
- Voice and data networking are distinct department/organization but report to the same executive
- Voice and data networking report to different executives

Help: By executive, we mean senior institutional leader, such as a vice president or equivalent.

2.17. Approximately how many full time equivalent (FTEs) are employed by your central networking organization? Please include student FTE.

- Pull down 1–25 (discrete)
- Over 25

2.18 How likely is it that your institution will outsource any networking activities in the next two years?

- Very unlikely
- Somewhat unlikely
- Equally likely or unlikely
- Somewhat likely
- Very likely

2.19 To what extent does the central networking organization provide local area network support to departments and schools?

- None are supported
- A few are supported
- Some are supported
- Many are supported
- All are supported

Section 3: Enterprise Backbone

3.1_3.9 To what extent is each transmission media used in your institution's network BACKBONE?

For each of questions 3.1 to 3.9, select one of the following choices:

- None
- A Little
- Some
- Considerable
- Almost All
- Don't Know

3.1 Single mode fiber optic cable

3.2 Multimode fiber optic cable

3.3 Composite fiber cable

3.4 Category 3 twisted pair

3.5 Category 5 twisted pair

3.6 Category 5e twisted pair

3.7 Category 6 twisted pair

3.8 Wireless

3.9 Coaxial cable

3.10_3.18 To what extent is each transmission media used to connect your institution network BACKBONE to END DEVICES?

For each of questions 3.10 to 3.18, select one of the following choices:

- None
- A Little
- Some
- Considerable
- Almost All
- Don't Know

3.10 Single mode fiber optic cable

3.11 Multimode fiber optic cable

3.12 Composite fiber cable

3.13 Category 3 twisted pair

3.14 Category 5 twisted pair

3.15 Category 5e twisted pair

3.16 Category 6 twisted pair

3.17 Wireless

3.18 Coaxial cable

3.19_3.25 What standards are being used for transmission of data across your institution's backbone? (Select all that apply)

- 3.19 Asynchronous Transfer Mode (ATM)
- 3.20 Ethernet (10BaseT)
- 3.21 Fast Ethernet (100BaseT)
- 3.22 Gigabit Ethernet (1000BaseT)
- 3.23 10 Gigabit Ethernet
- 3.24 Fiber Distributed Data Interface (FDDI)
- 3.25 Other

3.26_3.32 Why has your institution implemented multiple backbone networks? (Select all that apply)

- 3.26 Do not have multiple backbone networks
- 3.27 To separate networks that have evolved over time
- 3.28 To segment core data traffic from other services such as VoIP, video transmissions, etc.
- 3.29 To segment various user populations from one another (e.g. students and researchers)
- 3.30 To experiment with emerging technologies without impacting core services
- 3.31 To isolate and protect information of a confidential, sensitive, or private nature
- 3.32 Other

3.33 What is the total bandwidth available on your institution's backbone(s)?

- Less than 10 Mbps
- 11 Mbps to 100 Mbps
- 101 Mbps to 155 Mbps
- 156 Mbps to 499 Mbps
- 500 Mbps to 999 Mbps
- 1 Gbps to 4.99 Gbps
- 5 Gbps to 10 Gbps
- More than 10 Gbps

3.34_3.41 What degree of redundancy is provided for your institution's central network?

(Select all that apply)

- 3.34 None
- 3.35 Redundancy for some single points of failure (e.g. routers, switches, etc.)
- 3.36 Redundancy for all points of failure (e.g. routers, switches, etc.)
- 3.37 UPS
- 3.38 Multiple physical routes off campus
- 3.39 Multiple physical routes on campus
- 3.40 Multiple service providers
- 3.41 Other

3.42 Which strategy best describes your institution's network hardware purchases?

- We pursue a predominately single vendor strategy
- We pursue a best-of-breed supply strategy among several major vendors
- We select hardware primarily on a case by case basis
- Other

3.43_3.54 What are the primary factors in your institution's choice of network components? (Select up to three)

- 3.43 Features/Ability of the product to meet user needs
- 3.44 Performance
- 3.45 Cost
- 3.46 Support for standards
- 3.47 Support for emerging technologies (e.g. VoIP, IPv6)
- 3.48 Scalability
- 3.49 Vendor's reputation and commercial viability
- 3.50 Advice from our peers
- 3.51 Advice from a consultant or research organization
- 3.52 Vendor's ability to provide a complete solution for our needs
- 3.53 Part of a larger purchasing group (e.g. state university system) that selected the product
- 3.54 Other

Section 4: Virtual LANs and Network Directory Services

4.1 To what extent are VLANs deployed?

- VLANs are not used
- VLANs are being piloted, but are not yet extensively deployed
- VLANs are utilized in special cases
- VLANs are utilized extensively
- VLANs are used by nearly all institutional users

4.2_4.8 If you use VLANs, how has your institution implemented them? (Select all that apply)

- 4.2 To control user access to network resources by role (e.g. human resource vs. other administrators)
- 4.3 To segment various user populations from one another (e.g. students and researchers)
- 4.4 To segment various organizations from one another (e.g. schools, departments, labs)
- 4.5 To connect geographically dispersed users to the same local resources
- 4.6 To allow mobile users (wired or wireless) to connect to their own set of local resources, wherever they are on campus
- 4.7 To separate various types of traffic from one another (e.g. data from VoIP traffic)
- 4.8 Other

4.9_4.16 What are the technologies utilized at your institution for network directory services? (Select all that apply)

- 4.9 No network directory services used
- 4.10 LDAP
- 4.11 X.500
- 4.12 Microsoft Active Directory
- 4.13 NDS (Novell Directory Services)
- 4.14 Other vendor supplied directory
- 4.15 Other homegrown directory
- 4.16 Other

4.17_4.22 What functions do network directory technology serve at your institution? (Select all that apply)

- 4.17 No network directory services used
- 4.18 Managing user accounts and passwords
- 4.19 Serving as a master source for user information (enterprise directory)
- 4.20 Enabling simplified/single sign on services
- 4.21 Managing access to networked devices
- 4.22 Other

Section 5: Desktop Connectivity

5.1_5.8 To what extent do the devices connected to your institution's backbone use the following data transmission standards?

For each of questions 5.1 to 5.8, select one of the following choices:

- None
- A Little
- Some
- Considerable

- Almost All
- Don't Know

- 5.1 Token Ring (4 or 16 Mbps)
- 5.2 802.11b (11Mbps)
- 5.3 802.11a (54 Mbps)
- 5.4 802.11g (54 Mbps)
- 5.5 Shared Ethernet (10BaseT)
- 5.6 Switched Ethernet (10BaseT)
- 5.7 Fast Ethernet (100BaseT)
- 5.8 Gigabit Ethernet (1000BaseT)

5.9 Are end users/departments permitted to attach their own network hardware (hubs, wireless access points, etc.) to wall jacks?

- Yes, without restriction
- Only in certain circumstances (e.g. must be registered or approved by the central networking group)
- No

5.10_5.17 To what extent do the following campus locations have WIRED network access?

For each of questions 5.10 to 5.17, select one of the following choices:

- None
- A Little
- Some
- Considerable
- Almost All
- Don't Know
- Not Applicable

- 5.10 Administrative offices
- 5.11 Faculty offices
- 5.12 Residence halls
- 5.13 Classrooms: Single connection
- 5.14 Classrooms: One connection per seat
- 5.15 Labs/research facilities
- 5.16 Libraries
- 5.17 Indoor public spaces (e.g. dining halls, lounges, lobbies, etc.)

5.18_5.25 To your knowledge, to what extent do the following campus locations have WIRELESS network access?

For each of questions 5.18 to 5.25, select one of the following choices:

- None
- A Little
- Some
- Considerable
- Almost All
- Don't Know
- Not Applicable

- 5.18 Administrative offices
- 5.19 Faculty offices
- 5.20 Residence halls

- 5.21 Classrooms
- 5.22 Labs/research facilities
- 5.23 Libraries
- 5.24 Indoor public spaces (e.g. dining halls, lounges, lobbies, etc.)
- 5.25 Outdoor spaces

Section 6: External and Remote Connectivity

6.1 What is the total bandwidth available to your institution from the commodity Internet?

- Between 0 and 4.5 Mbps
- 4.6 to 12 Mbps
- 12.1 to 44 Mbps
- 45 to 89 Mbps
- 90 to 154 Mbps
- 155 to 299 Mbps
- 300 to 999 Mbps
- 1,000 Mbps or more

6.2_6.5 How does your institution physically connect to providers of Internet (commodity and advanced) services? (Select all that apply)

- 6.2 Leased circuits directly to ISP location
- 6.3 Co-location of network facilities (carrier hotel) of ISP
- 6.4 Private fiber connection
- 6.5 Other

6.6_6.13 To which of the following does your institution connect? (Select all that apply)

- 6.6 University system wide network
- 6.7 Other multi-institutional network
- 6.8 Regional research and education network
- 6.9 State research and education network
- 6.10 National research network
- 6.11 Regional gigapop
- 6.12 Internet2/Abilene
- 6.13 Other

6.14 Does your institution shape or ration its Internet bandwidth to different areas (e.g. dorms, classrooms, administrative offices, labs)?

- No
- Yes

6.15_6.20 Indicate the ways in which your institution provides remote access. (Select all that apply)

- 6.15 No remote access provided by the institution
- 6.16 Internally managed modem pool
- 6.17 Outsourced modem pool
- 6.18 Institutionally arranged discount with ISP
- 6.19 Subsidized ISP accounts
- 6.20 Other

6.21_6.23 Does your institution provide VPN capabilities for network access for the following users?

(Single selection of status that best applies for each of questions 6.21–6.23)

- No
- Yes

6.21 Students

6.22 Faculty

6.23 Staff

Section 7: Futures

7.1 Which statement best describes your view of the future of networking at your institution?

- Networking will become a commodity that can be outsourced to external providers.
- Networking will become a routine function, but the costs of providing this function within the institution will remain lower than if outsourced.
- The diversity and complexity of the institution are sufficient to make networking best managed by the institution.
- Networking involves perpetual innovation at the institution and is a strategic differentiator.

7.2_7.17 To what extent does your institution use (or plan to use) the following advanced/emerging technologies?

(Single selection of status that best applies for questions 7.2–7.17)

- Not Considering
- Currently Evaluating
- Plan to Implement in Next 12 Months
- Currently Implementing
- In Limited Use
- In Wide Use

7.2 10 Gigabit Ethernet

7.3 802.11g Wireless Ethernet

7.4 Multimode fiber

7.5 Quality of Service (QoS)

7.6 IPv6

7.7 Voice over Internet Protocol (VoIP)

7.8 IP Video Streaming

7.9 Desktop Videoconferencing

7.10 IP Multicast

7.11 Unified messaging (combined e-mail and voice mail)

7.12 Storage Area Network (SAN)

7.13 IP Competitive Local Exchange Carrier (CLEC)

7.14 Wireless CLEC

7.15 IP PBX

7.16 Biometrics

7.17 Smart cards

7.18 Is your institution planning to replace the use of wired networking with wireless anywhere on campus? [Required]

- No
- Yes
- Don't Know

If Yes go to 7.19. Otherwise go to 7.26

7.19_7.25 Please indicate where your institution plans to use wireless networking technologies as the primary media (replacing wired network jacks).

(Single selection of status for questions 7.19–7.25)

- No
- Yes

7.19 Administrative offices

7.20 Faculty offices

7.21 Residence halls

7.22 Classrooms

7.23 Labs/research facilities

7.24 Libraries

7.25 Indoor public spaces (e.g. dining halls, lounges, lobbies, etc.)

Go to 7.34

7.26_7.33 What are the primary reasons you are not replacing wired networking with wireless? (Select up to three)

- 7.26 Wired network provides adequate coverage to these areas
- 7.27 Interference (e.g. from building or nearby equipment)
- 7.28 Too costly
- 7.29 Insufficient performance
- 7.30 Security concerns
- 7.31 Have higher IT priorities
- 7.32 Unproven technology
- 7.33 Other

7.34 Has your institution implemented or is your institution considering implementing converged services [data, voice, and/or video using the same network infrastructure] in the next two years? [Required]

- No
- Yes
- Don't Know

If Yes go to 7.35. Otherwise go to 7.59

7.35_7.40 Why has your institution implemented or why is your institution considering implementing converged services? (Select all that apply)

- 7.35 To combine infrastructure and support staff
- 7.36 To reduce long distance calling costs
- 7.37 To reduce fees and reliance on external voice or video service providers
- 7.38 To provide enhanced services (e.g, VoIP, video streaming)
- 7.39 Other
- 7.40 Describe "Other" (optional)



7.41_7.49 To what extent are the following services provided over your converged network?

(Single selection of status that best applies for questions 7.41–7.49)

- Not Considering
- Currently Evaluating
- Plan to Implement in Next 12 Months
- Currently Implementing
- In Limited Use
- In Wide Use

7.41 Integrated messaging (combined e-mail and voice mail)

7.42 Basic VoIP

7.43 Advanced telephony capabilities (e.g. user location independence)

7.44 Advanced teaching capabilities (e.g. distance learning applications, streaming digital content)

7.45 Videoconferencing (e.g. ad hoc desktop videoconferencing)

7.46 Video streaming

7.47 Cable TV over the campus network

7.48 Other

7.49 Describe Other (optional)

7.50 Has your institution experienced cost savings from your converged network?

- Not implemented yet
- We have not achieved cost savings and do not expect to
- We have not achieved cost savings and expect to
- We have achieved cost savings

7.51 Does your institution have a documented strategy for implementing converged network services?

- We have no documented strategy
- We have plans for converged services included in our documented strategy for network services
- We have a separate documented converged network service strategy

7.52_7.58 My institution has made changes to the following areas to reflect the nature of converged services. (Select all that apply)

- 7.52 Organizational structure
- 7.53 Central operations
- 7.54 User support
- 7.55 Financial model (e.g. chargeback, etc.)
- 7.56 Policies
- 7.57 Other
- 7.58 Describe “Other” (optional)

[Go to 7.73](#)

7.59_7.72 What are the primary reasons your institution is not considering implementing converged services in the next two years? (Select up to three)

- 7.59 Don't require capabilities of converged services at this time
- 7.60 Don't see an acceptable ROI
- 7.61 Higher IT priorities

- 7.62 Unwilling to discard investment in legacy technologies at this time
- 7.63 Network infrastructure cannot support converged services
- 7.64 Financial model unclear
- 7.65 Would like to move forward, but funding not available
- 7.66 Waiting for technology/standards to mature
- 7.67 Can obtain the functionality we need using tools included with OS or applications we already own
- 7.68 Lack of real, understood applications
- 7.69 Security concerns
- 7.70 Fragmented management structure (different executives responsible for voice, data, and video services)
- 7.71 Other
- 7.72 Describe "Other" (optional)

7.73 Has your institution considered or implemented VoIP on its network? [Required]

- No
- Yes
- Don't Know

If Yes go to 7.74 Otherwise go to 7.76.

Help: VoIP is voice over Internet Protocol, hardware and software that enables people to use the Internet as the transmission medium for telephone calls by sending voice data in packets using Internet Protocol rather than by traditional circuit transmissions of the Public Switched Telephone Network.

7.74 What best describes your institution's approach to VoIP implementation?

- All legacy phones at the institution are being replaced with VoIP phones
- Some legacy phones are being replaced with VoIP phones, while others are being connected to the VoIP network via a gateway
- Both the legacy and VoIP systems are utilized, at least for some transitional period

7.75 Is your institution considering using wireless phones or multifunctional products on VoIP?

- Yes
- No
- Don't know

7.76 Does your institution have plans to acquire dark fiber?

- We have acquired dark fiber.
- We have acquired dark fiber and plan to acquire more.
- We plan to acquire dark fiber in the future.
- No
- Don't know

7.77 Does your institution operate an advanced high speed network (>100 Mbps)? [Required]

- No
- Yes
- Don't Know

If Yes go to 7.78. Otherwise go to 7.85.



7.78_7.84 What applications does your institution use, or hope to use in the future, on its advanced high speed network?

(Single selection of status for questions 7.78–7.84)

- Not Considering
- Currently Evaluating
- Plan to Implement in Next 12 Months
- Currently Implementing
- In Limited Use
- In Wide Use

- 7.78 New or enhanced educational applications
- 7.79 New or enhanced collaboration tools among institutions
- 7.80 Research applications (e.g. use of remote instruments)
- 7.81 Sharing of high bandwidth content across institutions
- 7.82 Medical applications
- 7.83 Grid computing
- 7.84 Legitimate peer to peer applications

7.85_7.93 Why has your institution implemented or why is it considering implementing Quality of Service [QoS]? (Select up to three)

- 7.85 Not considering implementing QoS
- 7.86 Not sure yet—just experimenting with QoS
- 7.87 To provide enough bandwidth for important applications
- 7.88 To prevent non-critical applications from consuming excessive bandwidth
- 7.89 To lay the foundation for VoIP
- 7.90 To lay the foundation for IP video
- 7.91 Needed for another specific application
- 7.92 Capability came with our networking equipment
- 7.93 Other

Section 8: Network Access

8.1_8.3 Are any of the following types of authentication required for access to network resources and services via your WIRED network? (Select all that apply)

- 8.1 Registration of MAC [Machine Access Control] address
- 8.2 Login to an authentication server
- 8.3 Digital certificate

8.4_8.6 Are any of the following types of authentication required for access to network resources and services via your WIRELESS network? (Select all that apply)

- 8.4 Registration of MAC [Machine Access Control] address
- 8.5 Login to an authentication server
- 8.6 Digital certificate

8.7 Which of the following best describes network jack activation at your institution?

- All jacks are activated by user request
- Jacks in public places (classrooms, conference rooms, libraries, etc.) are always active, but those in private areas (offices, dorm rooms) must be activated by request

- Jacks are controlled by local authority (department, school, building, etc.)
- All jacks are active by default

8.8_8.12 When does the central networking group remotely deactivate a port? (Select all that apply)

- 8.8 Central networking group cannot deactivate a port
- 8.9 When an unauthenticated device is connected to the port
- 8.10 When a user's activation request times out
- 8.11 When an issue is detected with the device connected to the port (e.g. virus infection)
- 8.12 Other

Section 9: Network Support and Management

9.1 Which of the following best describes the network support responsibilities of the central networking staff?

- Ensure the operations of all network components at the institution, from the backbone to the desktop
- Ensure the operation of core network services, with responsibility ending at the wall plate
- Ensure the operation of core network services, with responsibility ending at the building walls
- Other

9.2_9.10 Does your institution utilize network monitoring (real-time or other) tools for the following?

(Single selection of status that best applies for each of questions 9.2–9.10)

- No
- Yes

- 9.2 Monitoring utilization of network components
- 9.3 Monitoring network traffic levels and patterns
- 9.4 Identification of faulty network components
- 9.5 Monitoring the availability and performance of key servers
- 9.6 Monitoring the availability of services or applications
- 9.7 Identification of devices connected to the network
- 9.8 Identification of security vulnerabilities
- 9.9 Selected events trigger automated notification to support staff
- 9.10 Intrusion detection

9.11_9.14 My institution's network management tools are: (Select all that apply)

- 9.11 Part of a commercial suite of network management products (e.g. HP Openview, CA Unicenter, Tivoli)
- 9.12 Standalone products supplied by a variety of vendors
- 9.13 Open source tools
- 9.14 Homegrown applications

9.15_9.23 Which of the following best describes the level of network support centrally available to users at your institution?

- 9.15 None
- 9.16 Partial business hours
- 9.17 Business hours
- 9.18 Extended business hours
- 9.19 24x5



- 9.20 24x7
- 9.21 Other
- 9.22 Describe "Other" (optional)

9.23 Do network support levels vary by constituent group? (e.g. 24x7 support is available for faculty, but not for students, or for the business school, but not the law school)

- No
- Yes

Section 10: Networking Practices

10.1_10.7 Does your institution restrict or block access to any external network destinations? (Select all that apply)

- 10.1 No outgoing network traffic is blocked
- 10.2 Access to selected TCP/IP ports is blocked
- 10.3 Access to certain Web sites is blocked due to their content being objectionable
- 10.4 Access to certain web sites is blocked due to their content being dangerous (virus, spam, etc.)
- 10.5 Relaying of e-mail is blocked
- 10.6 Some inbound or outbound telephone numbers are blocked (if using VoIP)
- 10.7 Other

10.8_10.16 What actions has your institution taken to minimize the impact of P2P file sharing tools or other bandwidth consuming applications on network performance? (Select all that apply)

- 10.8 No action has been taken
- 10.9 Blocked the use of P2P applications on the network
- 10.10 Selectively blocked, based on content, the use of P2P applications on the network
- 10.11 Installed packet shaping technology to limit the available bandwidth
- 10.12 Separated residence halls from the rest of the network to limit impact on academic and administrative network usage
- 10.13 Monitored or restricted the amount of bandwidth consumed by each user
- 10.14 Created policies about consuming excessive bandwidth
- 10.15 Used network charges to create economic disincentives for bandwidth usage
- 10.16 Other

10.17_10.25 What devices or applications are users restricted from putting on the network? (Select all that apply)

- 10.17 No devices or applications are restricted
- 10.18 Networking equipment (e.g. hubs, wireless access points, workgroup routers, etc.)
- 10.19 Servers accessible from outside the institution
- 10.20 Servers accessible from outside their subnet
- 10.21 E-mail servers
- 10.22 Packet sniffers
- 10.23 Port scanners
- 10.24 Unregistered PCs or other devices
- 10.25 Other

Help: Restricted does not mean forbidden. If a user must obtain permission to install an item, please check that box.

10.26 Does the central data networking organization have formal service level agreements (SLAs) in place with any user organizations? [Required]

- Yes
- No
- Don't Know

If yes, continue to 10.27. Otherwise skip to 11.1

10.27_10.33 Service level agreements are in place for which of the following? (Select all that apply)

- 10.27 The institution as a whole
- 10.28 One or more departments or schools within the institution
- 10.29 Other institutions within a system or consortium
- 10.30 Affiliates such as an academic medical center or research organization
- 10.31 Constituent groups such as students or faculty
- 10.32 External customers
- 10.33 Other

10.34_10.38 What do the service level agreements contain? (Select all that apply)

- 10.34 Specified uptime percentage
- 10.35 Availability of certain services
- 10.36 Specified level of available bandwidth
- 10.37 Specified levels of user support (e.g. 24x7 support, 30 second call response time, etc.)
- 10.38 Other

10.39_10.45 What occurs if the service levels are not met? (Select all that apply)

- 10.39 No penalty provisions exist
- 10.40 No specific penalty, but customer can cancel service
- 10.41 An escalation process within the institution's IT department will be activated
- 10.42 An escalation process within the university administration will be activated
- 10.43 The subscribing user/organization will not be charged all or part of a fee
- 10.44 The subscribing user/organization is owed some financial compensation
- 10.45 Other

Section 11: Planning and Current Issues

11.1 Which of the following best describes your institution's goals for its network?

- Provide reliable performance and services at the lowest possible cost
- Provide appropriate levels of performance and services to different users, based on their needs
- Provide high-speed networking to the entire institution
- Provide leading edge network performance and services to the institution

Help: While all of these might be goals to some extent, please select the one that seems closest to your institution's overall philosophy for providing networking services.

11.2_11.11 What are the top three drivers of your institution's continued investment in networking technologies? (Select up to three)

- 11.2 Adherence to a strategic IT plan/strategic networking plan
- 11.3 Availability of new technology

- 11.4 Need for additional bandwidth
- 11.5 Obsolescence of existing technology
- 11.6 Introduction of new services
- 11.7 Needs identified by academic community
- 11.8 Needs identified by student community
- 11.9 Needs identified of administration
- 11.10 Needs identified by researchers
- 11.11 Other

11.12_11.23 What are the top three consumers of network bandwidth at your institution today? (Select up to three)

- 11.12 Administrative applications
- 11.13 Academic applications (CMS, courseware, etc.)
- 11.14 Research computing (e.g. high performance, scientific visualization, etc.)
- 11.15 File and print services
- 11.16 Communication applications (e-mail, instant messaging, etc.)
- 11.17 Web traffic
- 11.18 Non-academic student usage (P2P file sharing, online gaming, etc.)
- 11.19 Video streaming
- 11.20 IP telephony
- 11.21 Cable TV over campus network
- 11.22 Interactive videoconferencing
- 11.23 Legitimate peer to peer

11.24_11.35 What do you anticipate the top three consumers of network bandwidth will be in three years? (Select up to three)

- 11.24 Administrative applications
- 11.25 Academic applications (CMS, courseware, etc.)
- 11.26 Research computing (e.g. high performance, scientific visualization, etc.)
- 11.27 File and print services
- 11.28 Communication applications (e-mail, instant messaging, etc.)
- 11.29 Web traffic
- 11.30 Non-academic student usage (P2P file sharing, online gaming, etc.)
- 11.31 Video streaming
- 11.32 IP telephony
- 11.33 Cable TV over campus network
- 11.34 Interactive videoconferencing
- 11.35 Legitimate peer to peer

11.36_11.40 Please give your opinion on the following statements.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

11.36 Leadership considers the network to be a strategic resource for the institution.

11.37 Leadership considers the network to be critical infrastructure, similar to dial tone or electricity.

11.38 The network is an essential resource for most members of the institutional community to perform their daily tasks.

11.39 Networking needs are considered when the institution undertakes construction projects (e.g. new building or renovation of existing structure).

11.40 Institutional users/departments work with the data networking group when developing/ deploying new, bandwidth intensive applications.

11.41 Does your institution's disaster recovery plan include the institution's data networking capabilities?

- No disaster recovery plan
- No
- Yes

11.42_11.53 What are the top three barriers you face in the delivery of networking services to your institution? (Select up to three)

- 11.42 Inadequate funding
- 11.43 Technology issues
- 11.44 Growing bandwidth consumption
- 11.45 Unrealistic or unanticipated user demand
- 11.46 Non-academic student usage (e.g. File sharing, online gaming, etc.)
- 11.47 Security issues
- 11.48 Difficulty in attracting and retaining experienced networking professionals
- 11.49 Making the necessary organizational changes to implement converged services (voice, data, and video sharing the same network infrastructure)
- 11.50 Enforcement of policies
- 11.51 Obtaining adequate space for network equipment in buildings
- 11.52 Decentralized culture/organization
- 11.53 Other

Section 12: Policies, Procedures, and Decision Making

12.1 Does your institution has formal policies and procedures that cover networking issues [Required]

(Single Selection)

- Yes.
- No
- Don't know

If Yes, Continue with 12.2 Otherwise skip to 12.8

12.2_12.7 My institution's networking policies are:

(Single selection of status that best applies for each of questions 12.2–12.7)

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

12.2 Clear and easy to read

12.3 Easily accessible

12.4 Enforced consistently



- 12.5 Comprehensive
- 12.6 Regularly updated
- 12.7 Applied consistently across the institution

12.8_12.12 How often are the following constituents at your institution involved in decisions regarding NETWORK ARCHITECTURE AND INFRASTRUCTURE?

(Single selection of status that best applies for each of questions 12.8–2.12)

- Never
- Seldom
- Some of the Time
- Most of the Time
- Always

- 12.8 CIO
- 12.9 Director of networking
- 12.10 Senior administrative leadership
- 12.11 Academic leadership/faculty
- 12.12 Advisory committee(s)

12.13_12.17 How often are the following constituents at your institution involved in decisions regarding NETWORK CAPACITY AND SERVICE LEVELS?

(Single selection of status that best applies for each of questions 12.13–12.17)

- Never
- Seldom
- Some of the Time
- Most of the Time
- Always

- 12.13 CIO
- 12.14 Director of networking
- 12.15 Senior administrative leadership
- 12.16 Academic leadership/faculty
- 12.17 Advisory committee(s)

12.18_12.22 How often are the following constituents at your institution involved in decisions regarding NETWORK FUNDING?

(Single selection of status that best applies for each of questions 12.18–12.22)

- Never
- Seldom
- Some of the Time
- Most of the Time
- Always

- 12.18 CIO
- 12.19 Director of networking
- 12.20 Senior administrative leadership
- 12.21 Academic leadership /faculty
- 12.22 Advisory committee(s)

Section 13: Results

13.1 How would you characterize the overall success of your institution's networking initiatives?

- Highly unsuccessful
- Fairly unsuccessful
- Neither successful or unsuccessful
- Fairly successful
- Highly successful

13.2 I estimate that the following percentage of the institution's STUDENTS utilizes the network at least once per day.

Drop Down Box, Values: 0%–100% stepped by 10%

13.3 I estimate that the following percentage of the institution's FACULTY utilizes the network at least once per day.

Drop Down Box, Values: 0%–100% stepped by 10%

13.4 I estimate that the following percentage of the institution's STAFF utilizes the network at least once per day.

Drop Down Box, Values: 0%–100% stepped by 10%

13.5_13.11 Please give your opinion on the following statements.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Help: Optimally designed refers to being prepared to meet future capacity demands and to integrate emerging technologies.

13.5 My institution's central network backbone is optimally designed to meet our needs for the foreseeable future.

13.6 My institution's desktop connectivity is optimally designed to meet our needs for the foreseeable future.

13.7 My institution's wireless connectivity is optimally designed to meet our needs for the foreseeable future.

13.8 My institution's network monitoring capabilities are optimally configured to meet our needs.

13.9 My institution's data network is secure.

13.10 My institution's network is fault tolerant.

13.11 The institution's data network is much more important to our institution's ability to meet its strategic goals than it was three years ago.

13.12_13.18 Which of the following network-related metrics does your institution track?

(Select all that apply)

- 13.12 Network uptime
- 13.13 Network capacity utilization
- 13.14 Network latency
- 13.15 Packet loss

- 13.16 Actual network speeds
- 13.17 User satisfaction
- 13.18 Other

13.19_13.25 For what purposes does your institution use its network-related metrics?

(Select all that apply)

- 13.19 Reporting to management
- 13.20 Identifying and correcting network problems
- 13.21 Identifying capacity constraints
- 13.22 Improving service to users
- 13.23 Planning for future upgrades
- 13.24 Justifying the need for investment in the network
- 13.25 Other

13.26_13.28 Please give your opinion on the following statements.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

13.26 My institution's FACULTY MEMBERS perceive that the institution's data network supports their needs.

13.27 My institution's STUDENTS perceive that the institution's data network supports their needs.

13.28 My institution's STAFF perceive that the institution's data network supports their needs.

13.29 Has your institution experienced an unplanned network outage of significant length in the past two years?

- We have not experienced a significant outage
- We experienced a single significant outage
- We experienced more than one significant outage

Help: Define significant in the context of your own IT institutional tolerance for down time.

Section 14: Funding

14.0 Please estimate the portion of the total central IT budget that is spent on data networking (excluding voice communications and data center operations).

Drop down menu starting with zero and increasing by 5% to 100%

14.1 Please estimate the portion of the total central IT budget that is spent on voice communications.

Drop down menu starting with zero and increasing by 5% to 100%

14.2 Please estimate how your institution's spending on data networking has changed over the past three years.

Drop down menu starting at -15%, increasing in 5% to +15%, including "other."

14.3 Please estimate how you expect your institution's spending on data networking will change over the next three years.

Drop down menu starting at -15%, increasing in 5% to +15%, including "other."

14.4_14.10 Identify the primary sources of funding for central data networking

OPERATIONS. (Select up to three)

- 14.4 Annual IT budget allocation
- 14.5 Per port usage fees
- 14.6 Per user usage fees
- 14.7 Other chargeback mechanism
- 14.8 Student technology fee
- 14.9 Grants
- 14.10 Other

14.11_14.17 Identify the primary sources of funding for central data networking

UPGRADES/IMPROVEMENTS. (Select up to three)

- 14.11 Annual data networking budget
- 14.12 Annual contributions to a reserve fund
- 14.13 Capital budget allocation
- 14.14 Legislative allocation
- 14.15 Bond issue
- 14.16 Grants
- 14.17 Other

14.18_14.26 Where will your institution make its largest investments in networking during the next three years? (Select the top three)

- 14.18 Cable plant expansion or upgrade
- 14.19 Network components and software
- 14.20 Wireless networking
- 14.21 Network management tools
- 14.22 Additional bandwidth
- 14.23 Additional network staff
- 14.24 User support
- 14.25 Convergence of data, voice, and video onto a single network
- 14.26 Other

Section 15: Conclusion

15.1 May we contact you by phone to obtain further insights or clarifications on your responses?

- Yes
- No

15.2 If yes, what is your phone number?

Fill in comment box

15.3 Do you wish to receive a copy of the key findings from this survey?

- No
- Yes

15.4 If you have any other comments or insights about data networking in higher education, please feel free to share them with us below.

Fill in comment box



15.5 If your institution has a web page with information on data networking that you think would be of value for us to look at, please give us the URL below.

Fill in comment box

You have reached the end of the survey. Thank you! Please submit this survey by clicking the “Finish” button now. Full ECAR studies are available either through subscription or purchase at <<http://www.educause.edu/ecar/>>. If you have any questions or concerns, please e-mail <ecar@educause.edu>.

– END SURVEY –