



MEMBER HANDBOOK

Effective March 18, 2020

**TECHNICAL PROBLEM? STOP NOW AND CALL:
KanREN Network Operations 785-856-9820**

PURPOSE

KanREN provides a comprehensive set of custom, world-class Internet services, collaborative opportunities, innovations, advocacy, and support for research, education and other community anchor institutions in Kansas.

VISION

KanREN will be the consortium, trusted resource, and highly valued partner through which Kansas-based community anchor institutions connect, collaborate, and share resources to achieve the fullest potential of a robust statewide research and education network.

MISSION

KanREN brought the Internet to Kansas and will continue to provide critical, world-class infrastructure, innovation, and support tailored to suit the needs of the Kansas research and education community; empowering its members to collaborate and advance their own missions through guaranteed superior service, technical know-how, and a community of members exemplifying excellence in research and education networking.

VALUES



KanREN pioneers the advancement of statewide networking technology and infrastructure through ongoing, efficient strategic and tactical execution on behalf of the consortium.



KanREN initiates groundbreaking networking technologies and solutions in the state of Kansas and applies its expertise to enhance the technical capabilities of its member institutions.



KanREN works diligently to ensure the network-related, technological goals, missions and needs of its members are met with the utmost level of forethought, participation, and efficacy in its solutions.



KanREN remains committed to leading the nation in cutting-edge technology deployments with the intent of advancing research while remaining focused on stable, scalable, production ready services and features at the lowest available costs and maintaining the highest standard in customer service and technical support.



The KanREN staff and board of directors conduct all services, interactions and business dealings with indubitable fairness, morality, and honesty at all times.

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INTRODUCTION

This handbook is an official document, mandated by the KanREN, Inc. corporate bylaws, and contains important information about KanREN membership, including how to contact us, certain policies, procedures and escalation. Permission to reproduce this document for internal use is granted to all KanREN members, provided it is not altered and is reproduced in full. We welcome your corrections or suggestions for improvements to the handbook, and we will make updated versions available periodically via the KanREN website.

KanREN is *your* consortium; participation is what makes KanREN the distinctive organization that it is. In addition to the direct value of KanREN services, through KanREN, members have a unique opportunity to assist one another, trade experiences, and collaborate. The value of involvement in the consortium has been demonstrated time and time again as one member has come to the aid of another. With your continued participation in the consortium and community, we will continue to make a difference to the community anchor institutions of Kansas.

UPDATES TO THIS HANDBOOK

This handbook will be updated periodically and posted to the KanREN Web site in PDF format.

Permission to copy this handbook for distribution within the membership is granted to current KanREN members, provided that it is reproduced/distributed/copied in full and not altered in any way. This handbook may not be distributed outside of the membership without prior consent of KanREN, Inc.

A BRIEF HISTORY

CONCEPT

The Kansas Research and Education Network (KanREN) was originally founded in 1992 to deliver Internet and inter-institutional access to all Kansas higher education institutions. Although the largest universities in the state had Internet connectivity as early as 1986 through MIDnet (a Federally funded regional network), most Kansas colleges and universities did not. In response, the Regents Computer Advisory Committee (RCAC, now known as RITC - the Regents Information Technology Council) began planning for a statewide network, involving a team largely drawn from the networking and computing staff at the University of Kansas.

CREATION

In 1992 a consortium of 35 Kansas higher education institutions led by the University of Kansas and the other Regents Universities established an organization to facilitate the design, assembly, and management of the planned network. This organization became known as KanREN. In 1993, KanREN was awarded a \$700,000 grant through the National Science Foundation (NSF) "Connections" program to begin building the network, and to provide connectivity for KanREN's charter members. The first institutions were connected by the fall of 1993, and within a year all of the original KanREN charter members were a part of the network, and many remain members today.

GROWTH

KanREN grew in capability and membership. A second grant proposal was funded by the NSF in 1994, allowing for an upgrade to the backbone network and the connection of several additional institutions. The NSF grants also allowed KanREN's member institutions to be connected for 18-24 months at no cost, after which each member paid a membership fee along with fees for connectivity and services. This transition occurred in 1995, and KanREN became a self-funded organization with the sole focus of serving its members' research and education networking needs. KanREN continues operation using a similar cost-recovery model.

In 1995, KanREN widened membership eligibility to include K-12 school districts, libraries, and other organizations with an education or research mission. The need for bandwidth exploded and KanREN's Internet bandwidth consumption grew by an order of magnitude from 1994 to 2000, and has increased at a comparable rate since.

As the Internet became commoditized, research universities found their particular needs were not being adequately met. An organization, Internet2, and a nationwide R&E network "Abilene" was created to pick up where the commercial Internet left off. Eventually, the

Internet2 network would become available, through KanREN, to all Community Anchor Institutions in Kansas.

INTERNET2

KanREN has been on the forefront of Internet2 development, implementation and integration. The Great Plains Network was established in 1997 through NSF grants to be a research-specific regional network. KanREN worked with the Great Plains Network to become the first I2 connector in the US. As a result, Kansas was the first to have this technology available statewide, and KU the first university to have a production-ready connection to Internet2's Abilene network. KanREN continues to contribute to I2 development, through active participation in working groups, steering committees, and as an early adopter of emerging technologies and services. Today, through the US UCAN program, access to Internet2's network and services are available, through KanREN, to all Kansas Community Anchor Institutions.

ENGINEERING FOR TOMORROW

KanREN has a singular goal for the future – to remain at the forefront of network technologies for the benefit of the Community Anchor Institutions of Kansas. By implementing advanced technology in its earliest stages, KanREN continues to provide leading edge expertise, capacity, and network sophistication. Just as KanREN offered QoS, VPN, Multicast, IPv6, MPLS L2 VPN, volumetric DDoS mitigation, active performance measurement infrastructure and Internet2 access years ahead of widespread adoption, its singular focus will remain on putting technology into production that opens opportunities and removes limitations.

THE KANREN CONSORTIUM

KANREN, INC.

On August 22, 2002, KanREN, Inc. was born. Until this date, KanREN had been organized as a nonprofit organization operating under the auspices of the University of Kansas Center for Research, Inc.; a nonprofit corporation created to administer grants related to the University of Kansas. As such, KUCR administered the original NSF grants awarded to create KanREN.

After the end of NSF funding, KanREN continued as a “service unit” of KUCR for several years. But as KanREN grew it became clear that KUCR would not be a good long-term fit. Thus began the transition away from KUCR, and the beginning of KanREN, Inc., an independent 501(c)(3) non-profit corporation.

GOVERNANCE

KANREN IS GOVERNED BY ITS MEMBERS.

Items such as operating and capital budgets, service offerings, fees, directors, etc. are voted on by the KanREN membership. All members are encouraged to actively participate in KanREN governance. In accordance with state law for non-profit, corporations, KanREN is led by a governing board of directors. The board of directors is broken into two different groups:

- Appointed by the the CIOs (or equivalent position) of KanREN Backbone Class members (8 seats)
- Member elected directors from constituent groups of the membership (9 seats)
 - Private colleges and universities (1 seat)
 - Community colleges (2 seats)
 - K12 schools (2 seats)
 - Libraries (1 seat)
 - Local and County governments (1 seat)
 - At-large (2 seats; only one may be held by a backbone member)

The board of directors, as representatives of the membership, provide the over-all direction and vision for KanREN. While directors are appointed and elected from specific member organization types, all directors represent the entire membership. A current list of board members is available on the KanREN website. Day-to-day operation of KanREN is delegated to an executive director, serving as the corporate president and CEO. The executive director, in turn, provides leadership and direction to the KanREN staff.

MEMBER CONTACTS

Each KanREN member institution is asked to name several representatives or contacts. These people (or “roles” - for example an “operations center” might be listed as a 24-hour emergency contact) function as the approved points of communication between KanREN and its members. These contacts are updated each year via membership and service documents.

Multiple people, or role accounts may be designated for each contact type. In fact, it is recommended to have at least two individual technical and administrative contacts to ensure continuity is preserved in the event of staff vacations or turn-over. KanREN cannot take action upon requests from individuals not listed as an official contact, or not clearly associated with organizational/IT leadership within the member organization.

Primary contact types for member institutions are listed below. Some members may have additional contacts depending on services or programs (e.g. E-Rate) they participate in.

Administrative – An institutional leader with decision authority regarding Information Technology finance and policy; usually the voting representative for the institution. Administrative contacts will be notified of major network events, meetings and activities, etc.

Billing - This person will be contacted by our business office as needs arise, usually involving billing/invoicing.

Technical – Networking/IT operational contacts. Technical contacts are contacted regarding maintenance, network outages and events, or significant operating changes.

Security - This contact will be sent all security related information from KanREN, including copyright violation (DMCA), etc.

24-hour Emergency – Required for members with 24-hour proactive service. Problem resolution may be delayed if KanREN cannot make contact.

MEMBERSHIP

ABOUT MEMBERSHIP

KanREN is a consortium of research, education, and other community anchor institutions. At the direction of the membership, KanREN maintains and operates a statewide network and suite of technical services that members may subscribe to for additional fees.

KanREN membership is divided into two classes: Backbone and Standard. Backbone members co-locate KanREN backbone nodes in their facilities. Standard members are connected to the KanREN backbone at one or more backbone nodes. All service costs are assessed separately, based on service and volume selected. Services may not be provided to organizations who are not members.

BECOMING A MEMBER

Any accredited educational institution, or non-profit or public organization serving the public interest, is eligible for immediate membership. The membership committee will assess whether or not the applicant's mission is a fit for KanREN's, as well as evaluate potential for collaboration with the KanREN community, which brings value for both existing members as well as the applicant. Organizations matching the NTIA definition of "community anchor institution" will usually be granted membership.

EXPECTATIONS OF MEMBERS

KanREN is a consortium of members, not a commercial service provider. KanREN cannot function without the volunteer efforts of its members. Member institutions are expected to participate in governance and provide guidance for the organization.

TERMINATION OF MEMBERSHIP

KanREN believes in a simple, no-nonsense agreement. Termination of membership is outlined in the membership agreement itself, and summarized here:

- Members must notify KanREN in writing. E-mail is considered "in-writing." If sent to info@kanren.net, the executive director or the director of operations.
- Membership is an annual commitment ending June 30. Members who join after July 1 will be pro-rated. Multi-year service commitments require multi-year membership commitments.
- Some services may be added or removed during the year, however:
- Termination of services are subject to the policies regarding the service(s) in question – some services may carry multi-year commitments

- Services and support are only provided during membership.

SERVICES

KanREN is here to support its members' missions. KanREN offers solutions customized on a per-member basis. Services listed here are considered an overview. Please contact KanREN for consultation regarding unique needs.

CONNECTIVITY

KanREN operates a state-wide backbone network. The backbone is a multi-100Gbps and 10Gbps ring-redundant optical network. The following base-level access is available on all KanREN connections, and are included in base network connectivity fees:

- Internet Access via multiple, geographically diverse upstream connections
- Direct access to many other statewide networks/institutions in the region
- Internet2/US UCAN national and International R&E network access
- Direct connections between KanREN members
- Direct Access to many local Kansas telecommunications carrier customers
- Direct access to certain application service providers
- Private networks between locations (L2 & L3 VPN)
- Multi-level QoS for efficient traffic handling
- DDoS attack mitigation
- Heavily instrumented, member accessible performance measurement/monitoring
- Large public IPv4 and IPv6 address block assignments

KanREN operates a network environment that allows members to access all network services through a single access connection to the KanREN backbone. If needed, KanREN can “break out” services to different logical or physical ports at the member location. Multiple connections are available for redundancy.

As a matter of policy, KanREN maintains backbone and upstream bandwidth to ensure that member traffic is not delayed or discarded because of congestion during normal operation. Additionally, we ensure that we can meet the needs of our members during partial backbone and upstream connection outages. This is a value proposition unique to KanREN that is not duplicated by commercial providers.

PRAIRIE LINE EXPRESS/CONSORTIUM-BASED CAPACITY PLANNING

In 2017, KanREN initiated a pilot program called “Prairie Line Express” that sought to provide much faster connectivity at much lower prices at standardized bandwidth increments (i.e. 1Gbps, 2Gbps, etc.). Savings were achieved by working with last mile providers to reduce their costs, and a change in KanREN’s network use fee calculation; both enabled by standardizing bandwidth levels. These efforts have resulted in the “PLE”

(Prairie Line Express) model being elected as KanREN's standard service model for non-backbone members for FY2019 onwards.

USAGE-BASED CONNECTIVITY

Members who connect to KanREN's backbone at speeds of 1Gbps or faster may pay based on their average maximum use, and are forgiven peaks and transient traffic spikes. Network use fees under this program are higher than our standard connectivity options, but are cost effective for some members with very fast connections and highly transient use. Program policies and procedures are:

- KanREN measures quarterly use at the end of each fiscal quarter
- Use is measured as the 95th percentile peak, based on 5 minute averages
- All measurement data is available to members online, all of the time
- Members operating in excess of committed amounts for a quarter will be notified
- Members are expected to increase their commitments, or limit use once notified
- If use still exceeds committed amount for a 2nd consecutive quarter, burst rates are applied
- Burst rates only apply to the amount of bandwidth exceeding the committed rate
- KanREN will work actively to help minimize the billing for burst use

SECURITY

KanREN offers a comprehensive set of highly-customized security services for our members. For a complete list, please see the KanREN website. Examples include:

- Multi-zone, stateful firewall
- Intrusion Prevention Service (IPS)
- Black hole DNS
- Network-based Anti-Virus
- Web content filtering
- Remote penetration vulnerability scanning
- SSL VPN
- Distributed Denial of Service (DDoS) Mitigation



CLOUD HOSTED SERVICES

KanREN offers specifically selected cloud services that benefit from connectivity to our network. Please see the KanREN website or contact KanREN for more information. Existing services include:

- The StormCellar (Cloud Storage) – Secure off-site storage, right here in Kansas
- Videoconferencing Service – Any device, anytime, anywhere

- KanREN Compute (Cloud Compute) – Trusted Cloud from a trusted partner
- Virtualized Networking – Your border in the cloud

CONVENIENCE SERVICES

KanREN offers other convenience cloud-services as well, including e-mail scrubbing, web hosting, DNS hosting etc. Some of these services are available at no charge. If you have a basic, convenience service need, please contact us.

SUPPORT SERVICES

AS A MEMBERSHIP CONSORTIUM, SUPPORTING OUR MEMBERS IS OUR HIGHEST PRIORITY

KanREN is completely responsible for all connectivity up to and including our point of demarcation. All KanREN technical staff have the authority and skill to help immediately.

KanREN support also extends to assisting members with local LAN or network service configuration issues on an “as-available” basis. Larger projects or guaranteed assistance may require dedicated engineering or consulting.

ENGINEERING/CONSULTING

We believe that KanREN has some of the savviest networking minds in the business, and we are here to assist members with network engineering and architecture. For larger projects, on-site work, or guaranteed availability, we provide assistance for an hourly fee.

TRAINING AND EDUCATION

KanREN provides training and educational opportunities to our membership as often as possible. Usually surrounding emerging or often misunderstood networking technologies; workshops, seminars and classes are open to all members. On-site, custom opportunities can also be arranged.

COMMUNITY

The most important attribute that differentiates KanREN from commercial service providers is our sense of community. We are owned and governed by our members. We operate with financial and technical transparency. The KanREN staff are really “part-time employees” at each of our member institutions. This sense of community has long served as the cornerstone of KanREN.

ADVOCACY

KanREN is an advocate for our members. Whether it is speaking with the state legislature, promoting the consortium's needs at the regional and national level, or advocating on behalf of a member with the telecommunications industry, KanREN is here to promote the cause of its members and R&E networking. KanREN takes this role very seriously and takes any opportunity to promote our collective cause.

USAC ADMINISTERED PROGRAMS

KanREN is a registered "service provider" for the FCC e-Rate and Healthcare Connect Fund programs under SPIN/498 ID #143005645.

Public institution members participating in Healthcare Connect Fund may use Kansas Department of Administration, Division of Purchases contract: #06807 to sole-source certain telecommunication services from KanREN to satisfy USAC competitive bidding requirements.

EARLY SERVICE TERMINATION AND EXCEPTION

KanREN Membership Agreements and Services Addenda have no provisions for release of financial obligation for early service termination. Members may pay the remainder of the agreement as a single lump sum, or on the previously arranged payment schedule. KanREN will continue to supply the service, used or not, for the duration of the agreement.

The member or KanREN itself may seek an exception to the terms of the Membership Agreement or Services Addendum. Such requests must be submitted, in writing, to the KanREN Executive Director. Due to the nature of KanREN, if an exception is granted, the KanREN membership must effectively absorb the remainder of the contract being terminated. Exceptions will only be made that are in the best interest of KanREN and its membership.

Exceptions totaling \$15,000 or less may be made at the discretion of the Executive Director. Other exceptions will be forwarded to the KanREN Executive Committee for consideration. The member will be informed as soon as practicable, but in some rare circumstances could require waiting for the next quarterly Board of Directors meeting.

All early terminations and exceptions will be documented as any other service change/ modification of the member's services. Exceptions will be reported to the KanREN Board of Directors at the next regular board meeting.

OBTAINING SUPPORT

There will be times when problems arise and you need to contact KanREN. This section will address some of the most common problems and how to handle them.

NETWORK CONNECTIVITY PROBLEMS

Network problems occur, and usually at the least opportune times. There are a few things that you should determine before calling KanREN for assistance.

KanREN will never block ICMP from your network to ours. You should always be able to ping the “nearest” KanREN device to your network. Be sure that if you are using a firewall or other similar security device that you test from a DMZ network between this device and your KanREN connection. In order to establish a baseline, all testing should be done outside of member firewalls, routers, packet shapers, etc. Next to telco last mile problems (our responsibility to resolve if we provided the service) member border infrastructure is the largest source of performance and connectivity problems we encounter. This is why we ask member sites to make a quick check to see that the problem exists when “directly” connected to their KanREN connections first – and **if it is a problem with your network, we’ll still try to help!**

DNS related failures are also quite common. They often appear to be network connectivity problems. Such a problem might be that a user finds they cannot “get to” (for example) www.google.com, when in fact, network connectivity is available, but a DNS problem prevents the user from resolving the name (for example) www.google.com into an IP address.

When calling for support it is important to gather as many facts as possible and call us immediately. A team member will take your information and begin the process to resolution. Network support hours and availability vary based on the level your institution selected. It is critical that you call our Network Operations Center (NOC) number (785-856-9820), not the office/business number (785-856-9800) or staff member direct lines to report problems. Our ability to meet our service targets is dependent upon this process.

If you become aware of a power outage at your location that causes power loss to KanREN equipment, please contact us as soon as practicable. To us, this type of outage looks exactly like an access circuit failure. Contacting us as soon as possible saves everyone time and helps keep costs down by avoiding unnecessary troubleshooting.

Please do not remove power from any KanREN equipment without prior communication with us. An abrupt power failure could require manual intervention by KanREN staff to correct, resulting in a multi-hour outage for your institution. All KanREN equipment should be connected to emergency power to minimize potential power-related problems.

MEMBERSHIP QUESTIONS OR CONCERNS

We love communication and involvement with our members. If you have a question, comment or concern, please do not hesitate to contact KanREN's executive director or our directors directly.

GOVERNANCE AND LEADERSHIP CONCERNS

KanREN is governed by a board of directors, who set the vision and direction for the consortium. Our Board of Directors is charged with representing the needs and desires of the membership. Day-to-day management and operation of the consortium is delegated, by the board, to an executive director.

Any concerns regarding the consortium of governance may be directed to any KanREN board member, the executive director or directors. Issues regarding the executive director must be directed to the board of directors.

BILLING/FINANCIAL INQUIRIES

Issues regarding billing and financial matters should be directed to the KanREN business office (785-856-9800 or info@kanren.net). In the event that the business office is unavailable, and the issue is critical, the executive director should be contacted.

SERVICE TARGETS

Service targets are set along with applicable fees as part of KanREN's member approved rates.

KanREN does not offer a traditional SLA (Service Level Agreement). The KanREN membership believes that SLAs imply a financial penalty for non-performance, and that as a non-profit membership consortium, financial penalties are not an applicable motivator for meeting performance expectations – the membership sees them as “paying ourselves”.

If KanREN consistently fails to meet a service target, it means we have failed to appropriately plan and resource the service in question, or a vendor partner has failed their SLA obligations to KanREN.

In the event of a service target failure(s), appropriate director(s) and/or the executive director will work with the affected member(s) to determine the reason for the failure and a corrective action, complete with a timeline for correction. Consistent reoccurring and/or seriously impacting service target failures will be reported to the board of directors for consideration and possible further board action.

In the event a KanREN vendor partner fails to meet their SLA obligations to KanREN, we will seek remuneration for the failure. SLA penalties generally do not involve large enough sums to warrant redistribution to the affected member(s), and are generally held by KanREN as a contribution to financial reserves. For larger penalty payments (e.g. a day or more), we will provide those funds as a service credit to our members.

KanREN takes meeting member service expectations very seriously, and has a track record of meeting and exceeding expectations. We work diligently to meet higher expectations that promised, and to achieve exceedingly high performance levels for metrics beyond those outlined in our service targets.

ESCALATIONS

Nobody is perfect; there are times when escalations are necessary. Here are the proper escalation paths for typical issues. The executive director and directors are always available to help

Note: If you are trying to call in a problem to the NOC during primary support hours and are not getting an answer, chances are that there is a large-scale problem underway and all staff are very busy.

Service/Technical Issues:

- Level 1 Escalation - Team Leader (Applications, System or Network)
- Level 2 Escalation - Directors
- Level 3 Escalation - Executive Director

Engineering and Research/Backbone member Issues:

- Level 1 Escalation – Director of Technology
- Level 2 Escalation – Executive Director

Organizational or Chronic, Unresolved Issues:

- Level 1 Escalation - Executive Director
- Level 2 Escalation - Board of Directors

Business/Financial Issues:

- Level 1 Escalation - Director of Operations
- Level 2 Escalation - Executive Director
- Level 3 Escalation - Corporate Treasurer

CONTACT INFORMATION

KANREN, INC. - GENERAL CONTACT INFORMATION:

Shipping Address:

2029 Becker Drive, Suite 282
Lawrence, KS 66047

Mailing Address:

PO Box 442167
Lawrence, KS 66044

Telephone:

Business/General: 785-856-9800
Technical/Support: 785-856-9820

Online:

www.kanren.net
info@kanren.net (general/business)
financial@kanren.net (invoicing/financial)
support@kanren.net (technical/support)

KANREN MANAGEMENT STAFF CONTACTS:

(see our Web site for a full staff listing)

Cortney T. Buffington

Executive Director
Office: 785-856-9802
24 Hour: 785-865-7206
cort@kanren.net

Erica McDiffett

Director of Operations
Office: 785-856-9803
24 Hour: 785-865-7208
erica@kanren.net

Brad Fleming

Director of Technology
Office: 785-856-9805
24 Hour: 785-865-7231
bdfleming@kanren.net