America's Broadband Resource

SBC has invested heavily to build powerful communications networks. In fact, we build and continue to grow one of the most sophisticated and advanced telecommunications networks in the country that today includes:

- Three million miles of fiber strands
- More than 7,500 SONET rings
- 800 Frame Relay nodes
- 150 ATM switches
- Hundreds of routers and remote access servers

In October 1999, SBC announced "Project Pronto" a $6 billion initiative, that will transform the company into the largest single provider of advanced broadband services in America, making super-fast, always-on Internet access available to nearly all its customers and creating a platform to deliver next-generation, broadband-powered services. Specifically, SBC will:

- Provide an estimated 77 million Americans—about 80 percent of its customers—voice, data and video services via faster Digital Subscriber Line (DSL) services by the end of 2002. DSL is about 200 times faster than conventional analog modems.
- Restructure its network to push fiber deeper into the neighborhoods it serves and install or upgrade "neighborhood broadband gateways" to eliminate distance constraints that have always been a barrier to service reach.
- Together with the advanced, long-haul network of Williams Communications, Inc., with which SBC has a strategic alliance, SBC will provide end-to-end advanced voice, data and video services on one of the most sophisticated, efficient, flexible and scalable networks in the industry.

Project Pronto is an important step in the company's migration to a network that will be predominantly packet-switched, and use an Asynchronous Transfer Mode (ATM) distribution network system (ADNS) architecture. As part of ADNS, the company plans to deploy the most advanced voice switching technology today—voice switching over ATM (VTOA)—which will allow the company to transport voice as well as data via packets without degradation in call quality or reliability. SBC plans to complete its VTOA deployment in its largest markets by 2004.

SBC's goal is to quadruple its DSL deployment, equipping about 1,400 central offices with DSL technology, laying more than 12,000 miles of fiber sheath, installing or upgrading 25,000 neighborhood broadband gateways, and reach an estimated 77 million Americans in nearly 35 million customer locations in 13 states.

A Leader in Applied Research

Southwestern Bell Technology Resources (TRI) is the applied research subsidiary of SBC. With headquarters in Austin, Texas, and locations in San Ramon and Pleasanton, California, TRI's mission is to identify and assess emerging technology in strategic technology areas:

- Broadband delivery systems
- Information technology
- Video/multimedia systems
- Voice technology
- Wireless Systems

TRI offers all the support tools and modern facilities needed for ongoing innovation and creative research. With more than 300 employees, TRI has the advantage of being a small company, as well as being part of one of the world's largest communications companies. TRI's technical staff of engineers, computer scientists, applied psychologists, and communications experts, forms one of the finest teams in the industry.

Located in two of the leading high technology centers of the country, Austin, Texas and the Silicon Valley in California, gives TRI the added advantage of being in close proximity to other high tech industry leaders. This proximity stimulates collaboration on the advancement of technology issues. TRI also collaborates with some of the leading universities around the country to further broaden its research initiatives.

Giving Back to the Community

The SBC family of companies has a heritage of service to our communities and the needy that spans more than a century. We are committed to continuing that commitment through an independent, legally separate SBC foundation.

The 14-year-old SBC foundation was established to make a long-term difference by improving the welfare of society. SBC Foundation embodies a desire to be a leader in exploring new approaches to major public agenda issues. As such, it indicates the willingness of one of the most successful companies in the telecommunications industry to address tough community concerns proactively and with an innovative spirit.

Since the Foundation's inception, and combined with Ameritech, we have distributed more than $670 million dollars to a variety of non-profit organizations. The total includes all grants, United Way commitments, and employee programs such as Cultural and Educational Matching Gifts.

We see our efforts as investments in progress, particularly in towns and cities served by SBC and its subsidiaries. Our continuing goal is to be a partnership builder, a catalyst for strategic change that can improve the greatest number of lives and help communities search for lasting solutions to critical and complex problems. We take pride in the coalitions we've stimulated around priority community needs at the local, regional and national level, especially when those collaborations keep change moving forward after our financial support ends. Thanks to a unique combination of extensive local presence, leadership expertise, employee volunteers, and financial resources, we are well positioned to understand local needs and make a difference where it counts.

Providing the impetus for strategic change requires action on several fronts:

- Stimulating business retention and expansion, especially in distressed or disadvantaged neighborhoods.
- Support for small business development to increase employment and economic diversity; broadening adult literacy and workforce training for skilled, higher wage jobs.
- Support for innovative uses of technology to meet community needs and expand community access to the information highway.
- Programs that benefit and develop the entire community.

Since the scope of most social problems is enormous, one foundation can't solve every challenge. To maximize the effect of our limited dollars, we take a disciplined approach. We try to do a few things very well and pursue every avenue we can to leverage each grant.

Since the Foundation began, we have concentrated on needs within the education, community economic development, health and human services (primarily United Way) and cultural and arts arenas. Each year, more of our major efforts are tied to critical education and economic development issues facing communities in an information-based economy. We are convinced that strategic change that can facilitate lasting improvement in the quality of education and in the economic strength and vitality of our communities is crucial to the people we serve and to the future of our business.

As with any large corporation, SBC Communications is in business to increase shareholder value. We believe that strong communities, strong economic development plans, and strong educational infrastructure support our fiscal goals. It's not just the right thing to do—it makes good business sense.

Cisco Gold Partner

Ameritech has both the experience and the ability to design, configure, install and maintain all proposed Cisco equipment at all of the District's locations. Ameritech is part of the SBC Communications family of companies – together we are the largest Cisco reseller in the United States. Through a significant investment in personnel, resources and a commitment to excellence, we have obtained Cisco Gold Partner status, the highest level of partner status available. In addition, we are the first reseller to have earned Cisco specializations in both Network Security and Voice Solutions.

Our Integrated Service Center (ISC) is a state of the art facility staffed by Cisco certified technicians. Cisco Certified personnel are on duty every hour of the day, every day of the year. Certification levels of ISC technicians include the highest obtainable – Cisco Certified Internetworking Expert (CCIE).

Our goal is to provide a superior level of customer satisfaction. As proof this ability, 94% of customer calls are answered within 30 seconds. Cisco certified personnel provide all levels of support. With this model, the first person you contact will be a highly skilled technician. Many service organizations place the lowest skill level at the front line to screen minor problems and qualify more difficult problems before escalating to more experienced technical staff.

As a Gold Partner, Ameritech has a demonstrated ability to support the East St. Louis School District in all phases of this project including design, implementation and ongoing maintenance and troubleshooting. Our state of the art Support Lab is available to assist you in designing and configuring your network. This Lab gives East St. Louis Public Schools the ability to integrate and test all models of Cisco equipment prior to placing this equipment on the network. The equipment supported in our Lab is the Cisco Router models 25xx, 36xx, 4000, and 7xxx and the Catalyst Switch models 3xxx, 5xxx, and 6xxx.

Ameritech has direct access to Cisco's local stock of replacement parts. For the East St. Louis School District this means that not only are your replacement parts from the most current supply, but the needed part is on site within four hours.

Gold Certified Partners must complete comprehensive training that ensures a consistently high level of product knowledge, technical expertise, and service capabilities. Ameritech has invested heavily in Cisco training and certification for our entire team. Our staff is continually trained on Cisco's entire product line, ensuring that support for emerging technologies is always available. Below are the current numbers of our Cisco certified personnel.

- 13 Cisco Certified Internetwork Experts (CCIE)
- 8 Cisco Certified Network Professionals (CCNP)
- 55 Cisco Certified Network Associates (CCNA)
- 5 Cisco Certified Design Professionals (CCDP)
- 99 Cisco Certified Design Associates (CCDA)

No other Cisco reseller or partner in the St. Louis metropolitan area can match our number of Cisco certified personnel. Many vendors can supply Cisco equipment, but Ameritech has the talent, resources and credentials to ensure a successful implementation, including design and ongoing support services.

SMARTnet and SMARTnet Onsite

Executive Summary

SMARTnet and SMARTnet Onsite provide enhancement and maintenance support resources during the operational lifetime of your Cisco networking device.

SMARTnet augments the resources of your operations staff; it provides them with access to a wealth of expertise, both on line and via telephone, the ability to refresh their system software at will, and a range of hardware advance replacement options. SMARTnet Onsite provides all SMARTnet services and complements the hardware advance replacement feature by adding the services of a field engineer (critical for those locations where staffing is insufficient or unavailable to perform parts replacement activities).

The value of any networking device can be reduced to two simple criteria: availability and performance. As networks have become the backbone of business, the importance of these two factors has increased dramatically. And you are now responsible not only for keeping that network up and running at a reasonable and predictable cost but also increasing productivity throughout the company, increasing the quality of services delivered to your customers.

SMARTnet and SMARTnet Onsite provide both remote support and onsite parts service, augmenting your staff's ability to maintain and operate your device, and ensuring that your device performs at its highest possible levels of performance and longevity. SMARTnet features include:

- Operating system software refresh on demand
- 24 x 7 x 365 access to Cisco Connection Online (CCO), the highest rated online support in the industry
- 24 x 7 x 365 access to highly skilled networking technology personnel; successful support of over 3 million devices worldwide
- Advance parts replacement in as little as four hours (depending upon the delivery option selected)
- Onsite field engineer in as little as four hours (SMARTnet Onsite only; depending upon the delivery option selected)

Devices covered by these programs:

- Operate at highest levels of availability and performance
- Grow in capabilities and performance at no extra software charge
- Experience extended device lifespans

"This probably sounds somewhat contrived, but I mean it in the most sincere terms. Cisco Technical Support is simply the BEST. I was impressed by the technical expertise of Cisco's technical support staff and the timeliness with which I received the correct answer to solve the issue I was having. But mostly I was impressed with the very nice support engineer, who: was very friendly and courteous

a) knew the product I was speaking of as if she had designed it,
b) laughed at my lame, one o'clock-in-the-morning joke,
c) resolved my problem,
d) all without making me feel like a complete idiot."

-Senior Network Design Engineer

Cisco's Support Philosophy

Cisco is your strategic partner. It offers its customers networking solutions, not just products. That means ensuring that products are up and running quickly, that they are available when you need them, and that they don't become obsolete as technology changes. As your strategic partner, Cisco strives to move beyond traditional business barriers to:

- Empower our customers by making all of the company's knowledge, information, services, and resources available to its customers on demand
- Prevent problems through aggressive initiatives to deploy networking best practices at customer sites and internally
- Create an environment where support is an integral part of the solution, not a remedy
- Significantly lower the cost of ownership while increasing the return on investment

Working closely with customers to support of more than three million networking devices, Cisco continually grows and refines the industry's top support organization to ensure that your network satisfies your business goals.

SMARTnet Components

SMARTnet and SMARTnet Onsite provide four key services, with three levels of hardware replacement entitlement depending upon the delivery option selected.

What's the difference between SMARTnet and SMARTnet Onsite? SMARTnet addresses the

maintenance requirements of customers with strong internal maintenance support staff. On the other hand, Customers whose staff has insufficient availability, proximity, or skill to perform hardware maintenance should consider SMARTnet Onsite, which provides the services of a Field Engineer to perform installation of replacement parts.

Cisco IOS® Software Updates

Cisco responds quickly to changes in networking environments and provides immediate Cisco system software updates (such as IOS), thus enhancing and extending device life. In fact, Cisco spends more development dollars enhancing its system software than most of its competitors spend in total R and D. The upgrades consistently deliver enhanced:

- Security
- Performance
- Bandwidth management
- New protocol support
- Interoperability

SMARTnet provides automatic updates, on request, of all major releases, with sophisticated upgrade planning processes, as well as maintenance fixes. Through CCO, these updates are available 24 hours a day, seven days a week.

Cisco Connection Online

Cisco Connection Online (CCO) is the industry-leading online support and information service from Cisco, available 24 hours a day, seven days a week. CCO provides users with a wealth of up-to-date information with hundreds of new documents being added or updated each month. And your SMARTnet contract adds the most comprehensive collection of online technical tools in the industry.

Those tools include:

- Bug Toolkit for anticipating and addressing bugs
- Troubleshooting engine for diagnosing hardware problems using the same database used by our technical assistance center

- IP Calculator for assigning IP addresses

- Cisco IOS® Planner to ensure you use the right version for the job

Technical Assistance Center (TAC)

The Cisco TAC is available 24 hours a day, seven days a week and can be contacted via the telephone, electronic mail, or the CCO case submission tool. The TAC is staffed by more than 900 customer support engineers with over 5000 combined years of experience with the Cisco product line and all aspects of data communications networking technology. Support is available in more than 144 languages.

Advance Replacement of Hardware Parts

In the event of hardware failure, the SMARTnet Advance Replacement feature provides a hardware replacement unit delivered within 24 hours of receiving the request (please see the following section, SMARTnet and SMARTnet Onsite Entitlements, for details on additional response times).

Field Engineers

For SMARTnet Onsite customers, Cisco provides field engineers onsite to install Advance Replacement hardware parts. Over 11,000 field engineers are located throughout 110 countries to supply these services. Response times are based on the delivery option selected.

SMARTnet and SMARTnet Onsite Entitlements

- Major and maintenance releases of Cisco IOS software via CCO or media (upon request)
- Registered access to CCO 24 x 7 x 365
- 24 x 7 x 365 access to Cisco TAC for priority 1 and 2 telephone support with critical problem escalation (telephone callback within one hour by the TAC for all hardware, configuration, and software problems, from 9 a.m. to 5 p.m. local time, Monday through Friday, excluding Cisco-observed holidays)
- Advance replacement of hardware (three delivery options are available, depending on response time requirements---see below for details)

SMARTnet 8x5xNext Business
: Guaranteed delivery of hardware replacement parts the next business day, provided that the request is received before 3 p.m. local time

SMARTnet 8x5x4
: Guaranteed delivery of hardware replacement parts, from 9 a.m. to 5 p.m., Monday through Friday, within four-hour response time.[1]

SMARTnet 24x7x4
: Guaranteed delivery of hardware replacement parts, 24 hours a day, seven days per week, within four-hour response time.[2]

- Onsite field engineer (SMARTnet Onsite only), depending upon delivery options listed above.

SMARTnet and SMARTnet Onsite Increase Your Return on Investment

By providing ongoing, no-charge software upgrades, SMARTnet and SMARTnet Onsite ensure that the capabilities, security, and performance of your device will increase throughout its prolonged lifespan. The support tools and knowledge provide your staff with the ability to avoid problems, maximize utility, and expedite problem resolution. When they're stumped, our technical support team provides 24-hour-a-day global support, with an aggressive escalation policy to ensure that your problem gets the appropriate attention from those best suited to solve it. And in those rare cases when a part needs to be replaced, SMARTnet and SMARTnet Onsite can deliver parts to you within four hours, accompanied by a service technician in the case of SMARTnet Onsite.

Cisco SMARTnet and SMARTnet Onsite are the company's core maintenance support programs. Devices covered by these programs:

- Operate at the highest levels of availability and performance
- Grow in capabilities and performance at no extra charge
- Experience extended device lifespans

If it's worth buying the device, it's worth buying SMARTnet or SMARTnet Onsite.

[1]Available in the U.S., Canada, European Union countries, Norway, Switzerland, and Australia.
[2]Service is available only if your distance from a parts depot or Cisco-authorized service location is within the following limits: in the U.S., within 75 driving miles; in Europe and Canada, within 120 driving kilometers; in Australia, within 75 driving kilometers. To determine if this service is available for your location, please see the Cisco Service Availability matrix at http://www.cisco.com/smbiz/service/smartnet/index.html.

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Posted: Sun Mar 7 00:53:07 PST 1999

Education Technology Services: Plymouth-Canton Community Schools

Plymouth-Canton Community Schools believe that communications technology can play a big role in the school's objective to change to outcome-based education which is based on the belief that all students can learn and succeed, but not necessarily in the same way or at the same time. With the commitment to outcome-based education, the teacher is viewed as a facilitator rather than just a lecturer, and encouraged to bring involving and motivational multimedia into the curriculum that can enhance traditional teaching methods.

In order to accomplish its goal of integrating multimedia technology into the curriculum, Plymouth-Canton Community Schools needed a technology plan for its voice, data and video technology for its 21 school buildings that serve over 15,000 students.

The Plymouth Canton Community Schools called on Ameritech to be their technical architect and project manager to help them build and implement their technology plan. Ameritech recommended an integrated technology plan that included several components. First, Ameritech designed and implemented a new building infrastructure that called for fiber running to each classroom in the district, which would serve as the platform to transmit the various technologies at high speeds. Ameritech also recommended local area networks (LANs) in each school that would allow for file sharing of student records and other administrative computing needs. Once implemented, these LANs will connect to a metropolitan area network that is based on a digital Centrex ISDN platform to connect all administrative and classroom locations in the school district for effective communications between buildings. The network also consists of voice mail, homework announcements and an automated attendant for callers to reach a live voice should they not choose to leave a message on voice mail.

Ameritech also implemented an interactive distance learning network, along with a Dynacom integrated information system, that connects all school sites in the district with fiber optic links, allowing them to share resources and specialized instruction. The integrated information system allows teachers to access and share course software and audio visual aids from other school buildings within the district. Software and other multimedia tools such as CD ROMs, videos and laser discs are centralized into one media center. A teacher is then able to pre-schedule the use of any software or audio visual aid with the media center. At the touch of a button from a control panel in their classroom, the teacher calls up the multimedia tool to be used, and it is then transmitted over fiber links and displayed on the classroom monitor.

With this distance learning network and integrated information system, teachers from other school sites on the network can be guest speakers within a given classroom by the push of a button on the classroom control panel.

To round out the technology plan and implementation, Ameritech also provided Plymouth-Canton Schools with consulting services on the implementation of this project, along with staff development of the faculty, to train them on how to integrate this technology into the curriculum.

When speaking about their integrated information system from Ameritech, Dr. John Hoben, superintendent of the Plymouth-Canton Community Schools said, "We feel that this technology provides the instrument through which we can enhance instruction through the outcome based education used in our district."

With access to such a wide array of multimedia information, the expectation is that students will become more active participants in their own learning, which will ultimately increase their ability to solve problems and make decisions, and develop the skills they need to succeed in our information-intensive society.

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Distance Learning

As today's learning and educational requirements are expanding, resources seem to be shrinking. The rapid progress of technology and the availability of advanced information tools are presenting unique challenges for today's educators. Striving to keep up with progress and yet still provide the highest quality education, schools are integrating advanced technology into the classroom to provide hands-on opportunities and instruction. The need to prepare students for the global marketplace, however, is paired with a push to provide equal education to all students and pressures to cut costs and trim budgets.

In the face of these demands, educational institutions are discovering that communications technology is the answer, enhancing the effectiveness of education both practically and affordably. Ameritech's distance learning solutions put students in touch with the resources you have—and connect them with resources that were previously out of reach.

Distance Learning— A Definition

Distance learning is the process of utilizing the latest technologies to bridge the separation between educator and student, freeing both from the constraints of location and time. Closing this gap with technology is opening access to a world of educational resources for both teachers and their students.

By linking schools through today's technology, students and instructors can interact as if they were all in the same classroom. Urban and rural schools, training facilities, community or technical colleges, and universities can be connected via an interactive video network to share specialized courses, continuing education curricula, or faculty in-service and professional development programs.

The Advantage of Ameritech Distance Learning

Ameritech has a team of specialists dedicated to transitioning cutting-edge technology into practical educational applications. Their innovative solutions integrate voice, video and data that will benefit your educational institution by:

- Expanding your curriculum through a range of multimedia resources
- Equalizing learning opportunities by allowing students to access resources and classrooms regardless of their geographic location
- Increasing the sharing of resources and specialty instruction, which helps overcome the constraints of low incidence enrollment and limited budgets
- Building professional knowledge and staff member skills through faculty networking, in-service and advanced training programs
- Offering community outreach through continuing education programs
- Positioning your school as a leader in educational technology and preparing you for new opportunities in the next century

Ameritech Brings Distance Learning Within Reach

Ameritech's video team customizes distance learning solutions to meet the unique needs of your educational institution. From a selection of unlimited possibilities, we can implement a plan that maximizes your current resources and fits within your budget. Following are a few distance learning applications that demonstrate the distinct benefits of Ameritech's video, voice and data technology.

Interactive Video. Ameritech's two-way interactive video technology can create an electronic classroom virtually anywhere. Each location is equipped with television monitors, microphones and cameras, while options such as computer terminals, electronic tablets, fax machines, and printers provide additional means of exchange during an educational session.

Ameritech

Through video technology, instructor and students communicate from remote locations as if they were in the same room. Interactive video promotes high-quality education by allowing your school to offer a wider range of curriculum, including specialty courses previously not feasible due to low-incidence enrollment. And, interective video gives remote and smaller districts equal access to educators and special subjects.

Desktop Conferencing. Desktop conferencing is a cost-effective way for instructors to reach students at multiple locations. Teachers and students share text and graphics over computers as they teleconference to discuss lessons via standard and digital phone lines. Desktop conferencing maximize cost efficiency by utilizing phones and basic equipment already in place. Desktop conferencing allows you to extend your reach to include remote and non-traditional students, as well as expand your pool of teachers and their knowledge through remote training opportunities.

Networked Instruction. Using either remote or school-based databases, networking links students and teachers to advanced information resources around the clock. With computers connected from school to the home, students learn independent research techniques, gain familiarity with technology, and build collaboration skills by working with other students over the network. Conducting research, completing and sending assignments, and accessing classroom instruction can all be done through the computer. And as an added benefit, parents and teachers can stay in touch via the computer network to monitor student progress.

Networked instruction combines existing components such as computers, electronic mail systems, databases and networks into a single, efficient educational tool. Keeping costs down, networked instruction creates a flexible learning environment, brings education into the home, and involves students and parents in the educational process.

Distance Learning—A New School of Thought

Currently administered across the country, distance learning is becoming an affordable alternative for many school districts. Allowing optimal use of educational resources, faculty, equipment and information, distance learning is opening the doors to a world of information never before available in the traditional classroom.

Ameritech—Setting a New Standard in Education

For more than 100 years, Ameritech has led the industry in communications technology, delivering legendary customer service to millions of satisfied customers. Regardless of the size of your school or district, our highly skilled and experienced team of specialists will help you design a distance learning system that best meets your objectives. Plus, once the system is up and running, you can count on Ameritech to provide you with the quality customer service you've grown to expect over the years.

Let us guide you through the wealth of cost-effective educational options available today. Call Ameritech at (800) 719-5822 ext. 120 to start integrating the latest technology into your classroom.

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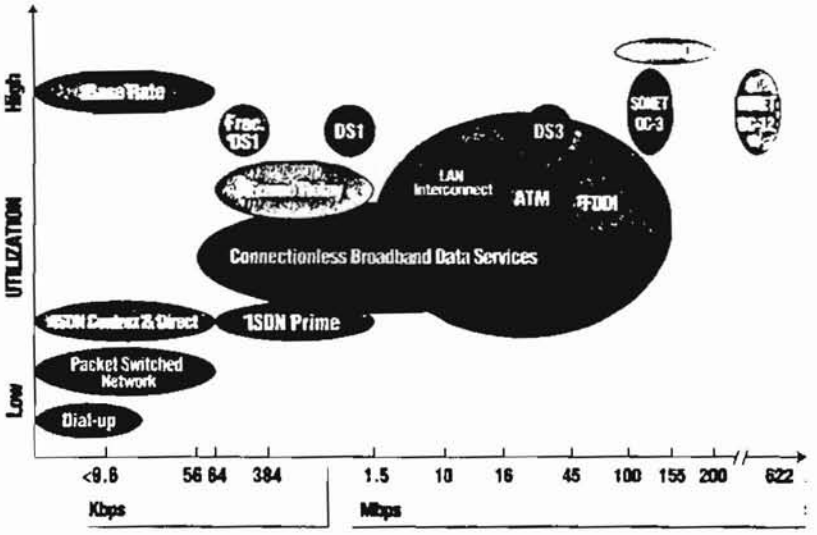
Ameritech Data Products Portfolio



Ameritech integrated data solutions cover the entire spectrum of communications needs, ranging from the simple process of moving information from one branch office to another, to the sophisticated integration of voice, data and imaging technologies.

Turn to Team Data for Answers

Ameritech Team Data™ consults with businesses like yours to answer data communications questions. Our consultants can tell you about available products and services – whether offered by Ameritech or another vendor – and help you decide on the right ones.

To learn more about Ameritech's data solutions, call your Ameritech representative or call us at 1 800-719-5822 and ask for Team Data!

CALL AMERITECH 1-800-719-5822 for more information

Ameritech Base Rate Service

2.4 Kbps to 64 Kbps

If you have a wide range of data transmission needs, Ameritech Base Rate Service gives you an affordable yet reliable form of digital transport.

Applications

- LAN interconnection
- Remote database access
- CAD/CAM file transfer
- High-speed fax

Ameritech Fractional DS1 Service

128, 256, 384 Kbps

If you have enough data traffic for high-capacity lines but not enough to justify the expense of Ameritech DS1 lines, Ameritech Fractional DS1 Service may be for you.

Applications

- LAN interconnection
- Videoconferencing
- Medical imaging
- Publishing and document imaging

Ameritech DS1 Service

1.544 Mbps

Ameritech DS1 Service provides cost-effective dedicated digital connections for businesses with heavy data traffic volume. DS1 Service gives you the capability to combine both voice and data traffic.

Applications

- LAN interconnection
- Concurrent CAD/CAM
- Videoconferencing
- Publishing and document imaging

Ameritech DS3 Service

44.736 Mbps

When your applications call for high-speed data transmission either locally or for long distances, call for Ameritech DS3 Service. DS3 Service is your digital connection for bandwidth heavy applications.

Applications

- LAN interconnection
- Videoconferencing
- Publishing and document imaging
- Medical imaging

Ameritech Network Reconfiguration Service

Ameritech Network Reconfiguration Service gives you complete, real-time control over your Ameritech Base Rate, Fractional DS1, DS1 and DS3 facilities. It allows you to reroute traffic as quickly and as often as you need to.

Applications

- Videoconferencing
- Disaster recovery
- Dynamic bandwidth management
- Least cost routing

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Ameritech ISDN Direct Service
Up to 64 Kbps per B Channel,
16 Kbps per D Channel

Ameritech ISDN Direct Service gives you a low-cost way to transmit high-speed voice, data and video simultaneously over a single telephone line.

Applications
- LAN interconnection
- Private line back-up for disaster recovery
- Telecommuting
- Desktop videoconferencing
- Radio broadcast

Ameritech ISDN Prime Service
56 Kbps to 1.544 Mbps

Ameritech ISDN Prime Service lets you consolidate multiple voice and data services onto a single line terminating in you PBX or host computer.

Applications
- LAN interconnection
- Consolidation of network facilities
- Videoconferencing
- Private line back-up for disaster recovery

Ameritech ISDN Centrex Service
Up to 64 Kbps per B Channel,
16 Kbps per D Channel

When your Centrex needs to expand to include high-speed data transmission and electronic keyset features, Ameritech ISDN Centrex is the answer.

Applications
- LAN interconnection
- Videoconferencing
- Telecommuting
- Simultaneous fax and voice

Ameritech Packet Switched Data Service
9.6 to 56 Kbps

Ameritech Packet Switched Data Service can connect you host computer to an unlimited number of users via a single, switched line.

Applications
- Automated teller machine (ATM) networks
- Credit card authorization
- Telecommuting
- Claims processing

Ameritech LAN Interconnect Service
4 or 16 Mbps for Token Ring,
10 Mbps for Ethernet

Ameritech LAN Interconnect Service lets you link Ethernet or Token Ring LANs at the same site or at different sites. Connecting LANs gives you a single, powerful resource.

Applications
- File sharing
- Electronic mail
- Facsimile mail
- Image processing

Ameritech Host Interconnect Service
200 Mbps

Ameritech Host Interconnect Service lets you connect data center-based IBM mainframe computers to remote disks, tape drives, terminals, printers and mainframes.

Applications
- Remote tape or DASD storage
- Data center sharing or consolidation
- Remote printing
- Satellite offices

Ameritech Connectionless Broadband Data Service
56/64 Kbps to 34 Mbps

Ameritech Connectionless Broadband Data Service is high-performance, switched service that lets you set up communications between multiple sites.

Applications
- LAN interconnection
- Manufacturing and inventory management
- Electronic publishing/printing
- Videoconferencing

Ameritech Frame Relay Service
56 Kbps to 1.544 Mbps

Ameritech Frame Relay Service is a cost-effective data networking solution that allows for interconnection of multiple LANs at separate locations, with just one line per site.

Applications
- LAN interconnection
- Sales data collection from branch offices
- Consolidation of SNA and LAN traffic

Ameritech Fiber Distributed Data Interface Service
100 Mbps

Ameritech Fiber Distributed Data interface (FDDI) Service provides dedicated private lines between LANs or other devices needing high-speed connections.

Applications
- Concurrent CAD/CAM
- Publishing and document imaging
- Medical imaging
- Electronic mail

Ameritech Synchronous Optical Network Service
155 Mbps/622 Mbps

Ameritech Synchronous Optical Network (SONET) Service provides dedicated, point-to-point or multipoint transmission of voice, data and video at very high speeds.

Applications
- LAN-to-LAN and host-to-host interconnection
- Videoconferencing
- Distributed processing
- Team engineering and design

Ameritech Asynchronous Transfer Mode
1.544, 45 and 155 Mbps

Ameritech Asynchronous Transfer Mode (ATM) can accommodate voice, video, data and images allowing you to consolidate all your communications applications on a single line.

Applications
- LAN interconnection
- Collaborative computing
- Medical imaging
- Interactive distance learning
- Computer-simulated design testing

Ameritech
Ameritech Corporation
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Chicago, IL 60606
1-800-719-5822

Ameritech DS1 Service

Ameritech® DS1 Service provides cost-effective digital connections for businesses with heavy data traffic volume. Operating at 1.544 megabits per second (Mbps), DS1 Service lets you combine voice and data traffic, link remote hosts, and make your business more productive with data-intensive applications like videoconferencing.

Ameritech DS1 Service provides the equivalent of 24 voice-grade 64 Kbps channels, with 64 Kbps clear-channel end-to-end transmission. This means your interstate or international data transmissions can be carried by the long-distance carrier of your choice, ensuring smooth hand-offs. Our digital network guarantees a performance objective of 99.995% error-free seconds. And with remote testing we can pinpoint the location of line trouble easily and fix it quickly.

Since DS1 Service carries your data traffic on dedicated circuits—not switched with the traffic of others—you'll enjoy unmatched data security. Dedicated service simplifies network management, too, since you won't have to keep track of different levels of switched network links.

As your data transmission needs grow, DS1 Service lets you migrate seamlessly to Ameritech's higher-speed services such as DS3. What about options? Superframe and Extended Superframe formats are available. And Ameritech Network Reconfiguration Service™ gives you complete control over your network by letting you reroute traffic as needed.

Benefits To You

Volume—Ameritech DS1 Service has the capacity for complex, high-bandwidth applications like printing and publishing, CAD/CAM, and videoconferencing.

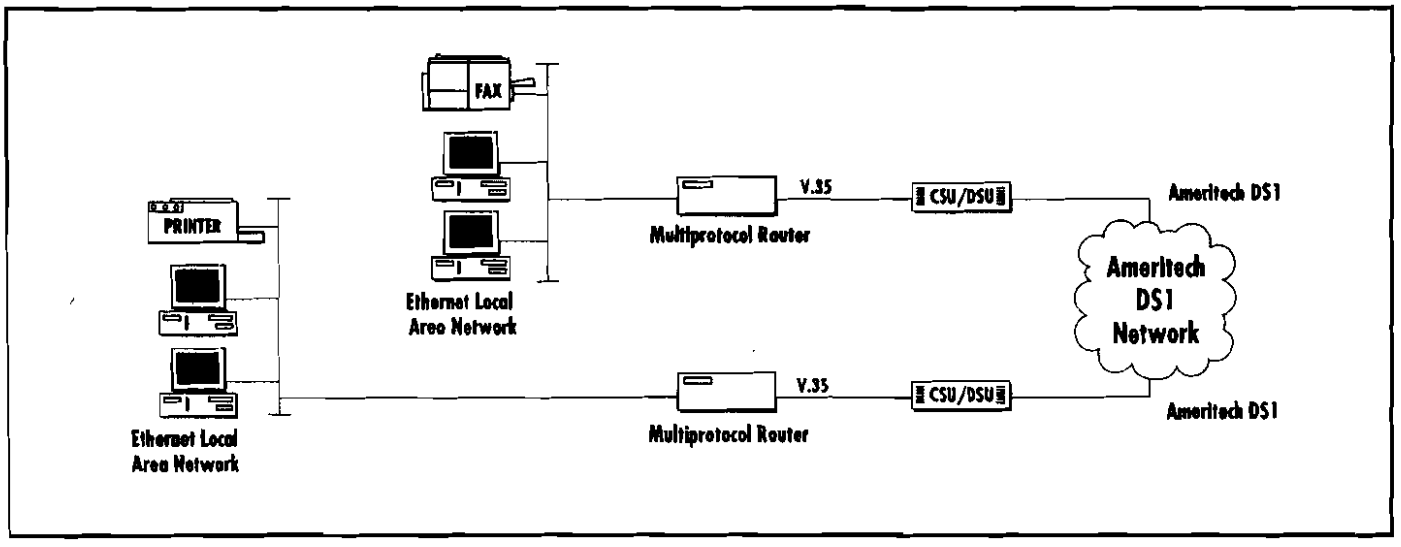
Security—DS1 Service maximizes security by containing your data traffic on your organization's own dedicated private lines.

Performance—DS1 Service keeps your data flowing without costly disruptions, thanks to the Ameritech performance objective of 99.995% error-free seconds.

Monitoring—In most areas, DS1 Service comes with a Performance Monitoring feature that lets you monitor your circuits for trouble, at no additional cost.

Productivity—DS1 Service lets you take advantage of high-technology applications, like videoconferencing, that increase productivity and cut expenses.

Migration Path—DS1 Service lets you upgrade easily to Ameritech's higher-speed digital services such as DS3 Service.



Applications

- LAN interconnection
- Secure data transmission
- Team engineering and design
- Concurrent computer-aided design and manufacturing
- Videoconferencing
- Publishing and document imaging
- Medical imaging

DS1 Service Technical Specifications

Transmission speed	2.4 Kbps to 1.544 Mbps
Transmission path	4-wire
Configuration	Point-to-point
Network interface	CSU/DSU

How It Works

In Ameritech's Network

Ameritech DS1 Service uses dedicated private lines between sites that you designate. The service uses end-to-end digital facilities, which are inherently more reliable than analog. Why? An analog system converts your data, which is digital, to analog format, then amplifies the signal for transmission—also amplifying noise the signal encounters, increasing the chance for error. A digital system accepts your digital data without conversion, simply regenerating the original signal as it moves through the network. Ameritech's digital network uses timing controls to ensure that signals conform to international standards, so your data can flow seamlessly to other carriers worldwide.

At Your Premises

Any piece of equipment linked to a DS1 Service facility must connect using a standard channel/digital service unit (CSU/DSU) or CSU/DSU-capable device.

Tap the Power of DS1 Service from Ameritech Team Data

Ameritech DS1 Service is backed by Ameritech Team Data™—a team of data professionals who know networking inside and out. Their goal: help you find the products that best fit your data requirements. Ameritech Team Data has the experience and expertise you need—before, during, and after installation.

To learn more about Ameritech DS1 Service or other Ameritech data solutions, contact your Ameritech representative—or call us at 1-800-719-5822 and ask for Team Data!

Ameritech Corporation
225 W. Randolph, 22A
Chicago, IL 60606
1-800-719-5822

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BR-B5

Network Backbone Design Service Checklist of Activities

Extensive investigation of current network environment

- Review data link and network layer structure of the network
- Review power, cabling infrastructure, floor plans, and carrier access points
- Identify server requirements by user community, resource criticality, fail-over, and back-up procedures
- Survey communication closets for size, existing equipment, power, rack space, and temperature control
- Run network traces to discover and validate protocols
- Baseline network in advance of new application requirements

Thorough analysis of current performance, operational parameters, and design requirements

- Investigate any existing routing loops or error conditions
- Compare protocols in use and their effect on new technologies
- Specify proper use of those protocols in new design
- Identify changes to bridging, routing, and any translational protocols in use
- Modify traffic flow patterns to take advantage of new technology
- Set realistic Quality-of-Service (QoS) expectations
- Evaluate required configuration parameters for interfaces on specified equipment
- Investigate known software, hardware, and firmware problems of networking devices

Recommendations and supporting documentation

- Graphic layout of new network backbone design
- Labeling of layered links and speeds, depicting multiple approaches to physical and logical connections
- Validation of design against Ameritech design library
- Overlay of device addressing scheme
- Hardware detail including commentary on working parameters of vendor products
- Software, hardware, and firmware product problem and anomaly reporting
- Individually detailed interface configuration parameters

Detailed plan for testing, transition, and support

- Validation testing on pilot configuration
- Design revision and modifications based on pilot test results
- Performance analysis and application testing
- Verification of element manager configuration parameters and operating system release notes
- Detail and document parallel build-out of new backbone in step-by-step fashion
- Define fail-over procedures and testing criteria for critical cutover events
- Recommendations for hardware and software maintenance, and version update plan

Network Backbone Design Service

The Business Case

Today's networking technologies provide dramatically improved performance for consistently lower costs. While a host of new bandwidth-hungry applications promise to deliver immediate competitive advantages, backbone designs that neglected to anticipate these developments are beginning to fail the business. It's a foregone conclusion that, in order to prosper, companies must periodically redesign their network backbones, but the best method to achieve this may be far less obvious.

Ameritech has extensive experience across a wide spectrum of businesses, technologies, and networking manufacturers. This means we can provide an unbiased perspective on the latest technical advances and how they perform in a variety of different environments without placing an additional burden on your internal staff. Ameritech can complement your own technical organization to insure that you receive a comprehensive design that's optimized for today's requirements and scalable for tomorrow's challenges.

The Features and Benefits

- **Extensive investigation of current network environment**

—Provides an accurate perspective of your current network

- **Thorough analysis of current performance, operational parameters, and design requirements**

—Insures new design meets all existing network requirements

- **Recommendations and supporting documentation**

—Provides blueprint for network optimization, scalability, and operational support

- **Detailed plan for testing, transition, and support**

—Insures predictable migration with minimal problems or delays

The Ameritech Advantage

With an Ameritech backbone design, you receive a baseline of your existing network, a multilayer network map, detailed configuration parameters, and a transition plan. Your design is supported by and benefits from a powerful combination of highly skilled engineers with extensive design and integration experience, as well as the collective knowledge gained from the many successful Ameritech implementations that preceded it. No other integrator has this level of experience or as large an installed base of complex multivendor network backbones.

Ameritech provides ***Full Network Life Cycle Solutions*** including Assessment & Planning, Design, Sourcing, Deployment & Implementation, and Support. Our Network Backbone Design service is the most comprehensive in the networking industry and can be further enhanced by taking advantage of our full complement of products and services.

Ameritech®

Network Addressing Design Service Checklist of Activities

Extensive investigation of current network

- Study logical and physical layout of network
- Review data link, network, and application layer structure
- Survey communication closets to identify devices requiring address changes
- Run network traces to discover and validate protocol usage

Thorough analysis of current performance, operational parameters, and addressing requirements

- Explore any routing loops or error conditions
- Evaluate existing systems' ability to support new addressing and potential routing requirements
- Investigate known software, hardware, and firmware problems or anomalies of addressed devices
- Determine effects of discovered problems or anomalies on new network addressing scheme

Recommendations and supporting documentation

- Layout of new standards-based network addressing design
- Guidelines for current and future segmentation of network
- Verification of new addressing design
- Overlay of new addressing scheme on network map
- Detailed configuration parameters for each interface requiring address modification
- Proposed routing parameters and DNS configuration modification
- Logical layout of address ranges available per routed segment

Detailed plans for testing, transition, and management

- Validation testing on pilot configuration
- Design of revision and modifications based on pilot test results
- Step-by-step migration plan to the new addressing scheme
- Parallel network address-change guidelines
- Fallback procedures defined for critical cutover events
- Management procedure recommendations to keep address scheme current

Network Addressing Design Service

The Business Case

Mergers and acquisitions, ERP initiatives, network operating system migrations, electronic commerce, and virtual private networking are all driving organizations to re-evaluate the way their networks are designed, engineered, and addressed. With networks being relied upon to essentially "run the business," the days of patching the network together to keep up with the organization are over. Working towards an enterprise network addressing scheme is critical, but designing one that can improve network performance and provide for expansion is ideal.

Ameritech's engineers are skilled in complex network addressing design. We utilize conventional addressing methods combined with innovative approaches such as private IP addressing, IP un-numbered WAN circuits, and dynamic address allocation. This means we bring our broad base of experience and knowledge to provide the most advanced addressing ideas, delivering a comprehensive design optimized for today's requirements and scalable for tomorrow's challenges.

The Features and Benefits

- **Extensive investigation of current network**

—Provides an accurate perspective of your current network

- **Thorough analysis of current performance, operational parameters, and addressing requirements**

—Insures new addressing scheme meets all networking requirements

- **Recommendations and supporting documentation**

—Provides standardized addressing plan easing network expansion, administration, and support

- **Detailed plans for testing, transition, and management**

—Insures predic able migration to new scheme with minimal disruptions or delays

The Ameritech Advantage

With the Ameritech Network Addressing Design service, you receive a standards-based scalable addressing scheme, detailed configuration parameters, and a transition plan. Your design is supported by and benefits from a powerful combination of highly skilled engineers with extensive design and integration experience, as well as the collective knowledge gained from the many successful Ameritech implementations that preceded it. No other integrator has this level of experience or as large an installed base of complex, public, and privately-addressed networks.

Ameritech provides ***Full Network Life Cycle Solutions*** including Assessment & Planning, Design, Sourcing, Deployment & Implementation, and Support. Our Network Addressing Design service is the most comprehensive in the networking industry and can be further enhanced by taking advantage of our full complement of products and services.

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Ameritech Base Rate and DS1 Services

High-powered networking—use DS1 Service for Electronic publishing as well as Concurrent CAD/CAM and Engineering

Clear, crisp imaging—for documents and medical applications

Optional Pricing Plans to fit your budget

Choose competitive month-to-month rates, or further increase your savings with Ameritech Optional Pricing Plans. With terms ranging from one to five years, these plans enable you to save an additional 5% to 20% over month-to-month pricing in most areas!*

Our commitment to serve your business is backed by Ameritech's Guaranteed On-Time Installation Plan. If the installation delay of your circuits is caused by our failure to perform, we will refund the one-time charges associated with any circuits installed after the specified date.

At Ameritech, we strive to deliver superior customer service and proactively assist you in designing the best communications solutions for your business.

For more information on Ameritech Base Rate and DS1 Services and other Ameritech business solutions, please call Ameritech today!

* Contact Ameritech for terms available in your area.

Ameritech

YOUR LINK TO A BETTER LIFE.

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Create a private, reliable digital transport network with Ameritech Base Rate and DS1 Services

If your business relies on the accurate communication of information—create a private, reliable digital transport network with affordable Ameritech* Base Rate and Ameritech* DS1 Services.

Information is the currency of business today. Moving that information quickly, securely and affordably can be a key to business success.

Put the reliability of Ameritech's dedicated, digital Base Rate and DS1 Services to work for the transport of your business communications. Use individual Base Rate and DS1 lines, or combine a variety of transport speeds, to optimize the cost-effective transfer of data, voice, imaging or video within your business.

You can custom design the network that's just right for the entire range of your business communications—from the simplest to the most complex!

And, by linking these services with the long-distance carrier of your choice, you can expand your communications across the country or around the globe.

Built-in security and reliability

Ameritech's remote testing capability allows us to determine the location of any line trouble and correct it quickly. And reliability—a critical factor in smooth business communications—is built in. Each service operates with a minimum performance objective of 99.995% error-free seconds!

Ameritech Base Rate Service

Ameritech Base Rate Service is designed to carry data between and among your locations. It is a point to point or multipoint service that gives you flexibility when setting up your network. Choose the speeds that are just right for your business needs—2.4, 4.8, 9.6, 19.2, 56 and 64 Kilobits per second (Kbps). *(Quick translation—the equivalent of sending 1/6th of a page to 4.5 pages per second.)*

Ameritech's Secondary Channel Capability also can be ordered to monitor your Base Rate circuit(s).

Put Ameritech Base Rate Services to work for your business:

Transmission of sensitive data—between and among locations, or consolidate data from branch offices to a central computer.

LAN-to-LAN connections—connect physically separated LANs into a single, powerful resource.

CAD/CAM file transfers—easily move information where it's needed.

High-speed faxing—send and receive information quickly!

Remote data base access—share information without the expense of duplicating a data base.

Overseas communications—64 Kbps is the international communications standard. Connect a 64 Kbps Base Rate line to the long distance carrier of your choice, for reliable, crisp digital transmissions—end-to-end.

Ameritech DS1 Service

Ameritech DS1 Service is designed for the transport of your data, voice, video and imaging communications. At 1.544 Megabits per second (Mbps)—the equivalent of sending 96 pages per second—it's a highly affordable choice for sending massive amounts of information between locations.

Each DS1 line can carry 24 discrete 64 Kbps voice or data channels. You can reduce line and equipment expenses by aggregating Base Rate Services onto a high-capacity DS1 line by using a central office multiplexer or Ameritech® Reconfiguration Service. This creates a cost-effective backbone network for the transfer of information between your business locations.

Ameritech continues to expand the deployment of Performance Monitoring on DS1 circuits. And, you can order Ameritech Reconfiguration Service to reroute DS1 traffic and manage line costs from a terminal at your location.

Ameritech DS1 Service is ideal for:

Secure transmission—of data, voice and video between locations.

Host-to-host computer connections—share information without the expense of duplicating a data base, or update common files between computers as a contingency planning solution, should one computer fail.

LAN-to-LAN connections—tie networks together, enabling users to share files or access E-mail as if in the same location.

Video conferencing—let DS1 lines bring the meeting to you, and save the time and money spent on traveling.

Ameritech

NETWORK INTEGRATION SERVICES

EMBRACING CHANGE:
OPTIMIZING THE ENTERPRISE NETWORK

Is your ENTERPRISE *ready for the* NEXT WAVE OF CHANGE?

In today's unpredictable global marketplace, one fundamental truth remains: The only constant your business will face is change.

Indeed, the pace of change is accelerating as organizations embrace new information technologies not simply to enhance operations but for competitive advantage and profit. As new, networked applications such as sales force automation, e-commerce, and Enterprise Resource Planning (ERP) are revolutionizing business processes, executives are demanding an ever-greater return on their IT investments.

This new breed of applications tends to generate high user demand and overstress the network by challenging LAN/WAN resources. As a result, IS groups are forced to improve network performance and expand their capabilities to prevent the traffic bottlenecks and system "brownouts" that prevent smooth information flow.

Unfortunately, this impending network congestion problem is often overlooked or unrecognized. What's the result? Delayed deployment. Frustrated users. Underestimated budgets. Lost ROI.

At Ameritech, we've found that empowering your organization with advanced applications is only half the battle. They simply won't perform as promised without an optimized, high-speed network.