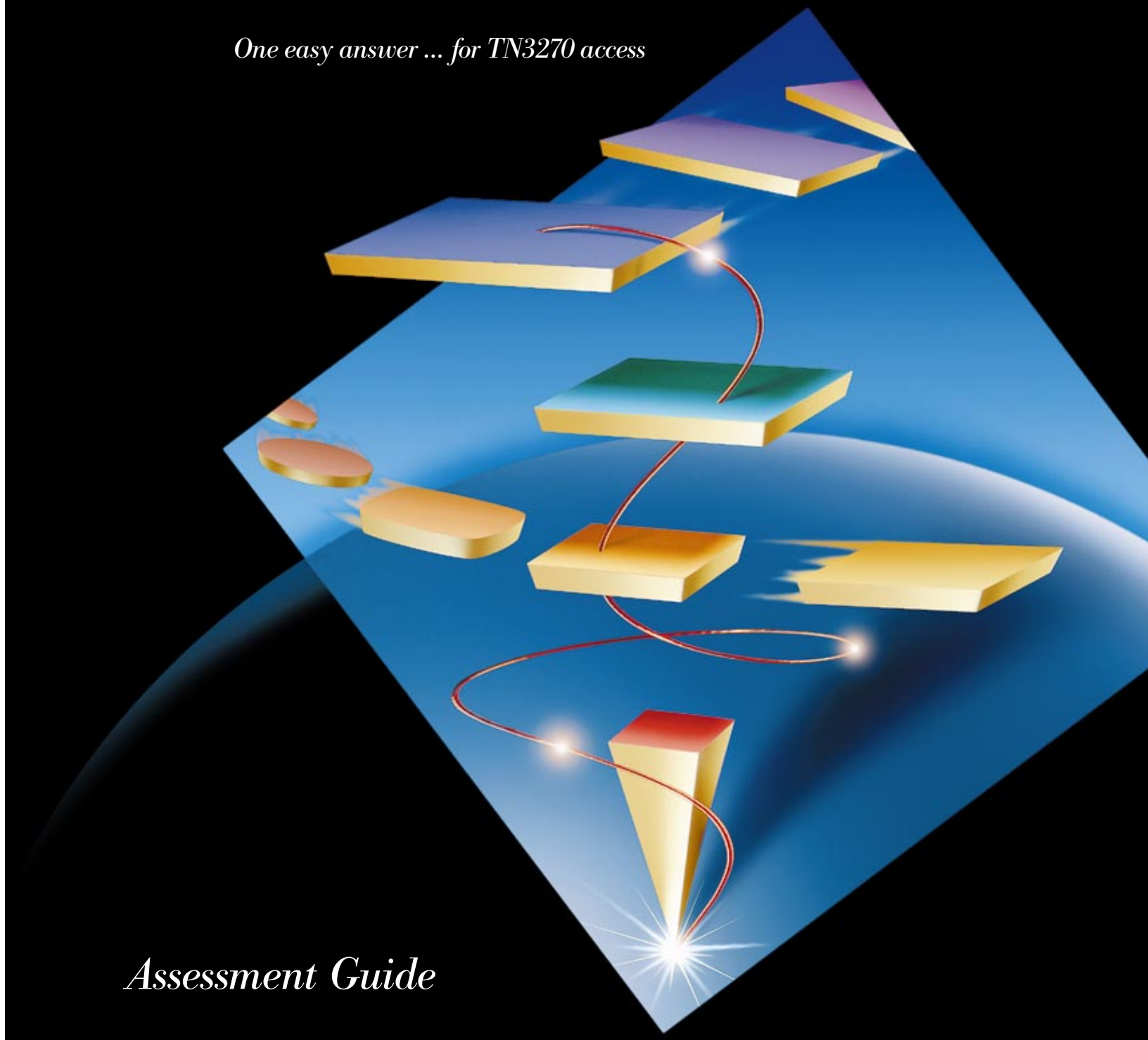
IBM eNetwork Software

Communications Server for AIX with SNA Client Access

One easy answer ... for TN3270 access



Assessment Guide

Introduction

IBM® Communications Server for AIX® with SNA Client Access is part of IBM's strategy to provide comprehensive solutions that reduce your operating costs by:

- Leveraging your current software and hardware investment
- Integrating TCP/IP's growing presence on heterogeneous systems
- Providing users easy access to business-critical applications and data, independent of the underlying networking protocols

This guide provides a conceptual understanding of the cost savings and network configuration changes that are associated with the simple installation of IBM Communications Server for AIX with SNA Client Access. Three industry-specific scenarios are provided to help you better understand the usage and advantages of this system.

This guide also provides information about the general business demands and information technology trends that prompted IBM to develop the Communications Server for AIX with SNA Client Access solution.

This document contains hypothetical estimates of the potential cost savings to a business enterprise resulting from the proper use of certain IBM software. It is not a promise or guarantee on the part of IBM that any associated savings will result. The hypothetical estimates are based on assumed costs and/or business practices for "average" businesses, and assume proper installation, use, and maintenance of IBM software, and do not take into account potential negative interaction with hardware or software provided from non-IBM sources, or different personnel costs and needs.

Customers or potential customers of IBM should perform an independent estimate of the potential costs and savings to their enterprises which might result from implementation of IBM software or an IBM solution and should not rely on anything in these business cases as a guarantee of performance or costs/savings. IBM representatives who deal with customers should not use these charts to make any performance or savings promise or guarantee, and should provide each customer with whom these charts are discussed with the assumptions underlying such IBM estimates.

Contents

THE CONCEPTUAL VIEW 1

CUSTOMER SCENARIOS 1
Manufacturing Industry 2
Cost Analysis 3
Retail Industry 4
Cost Analysis 5
Services Industry 6
Cost Analysis 7

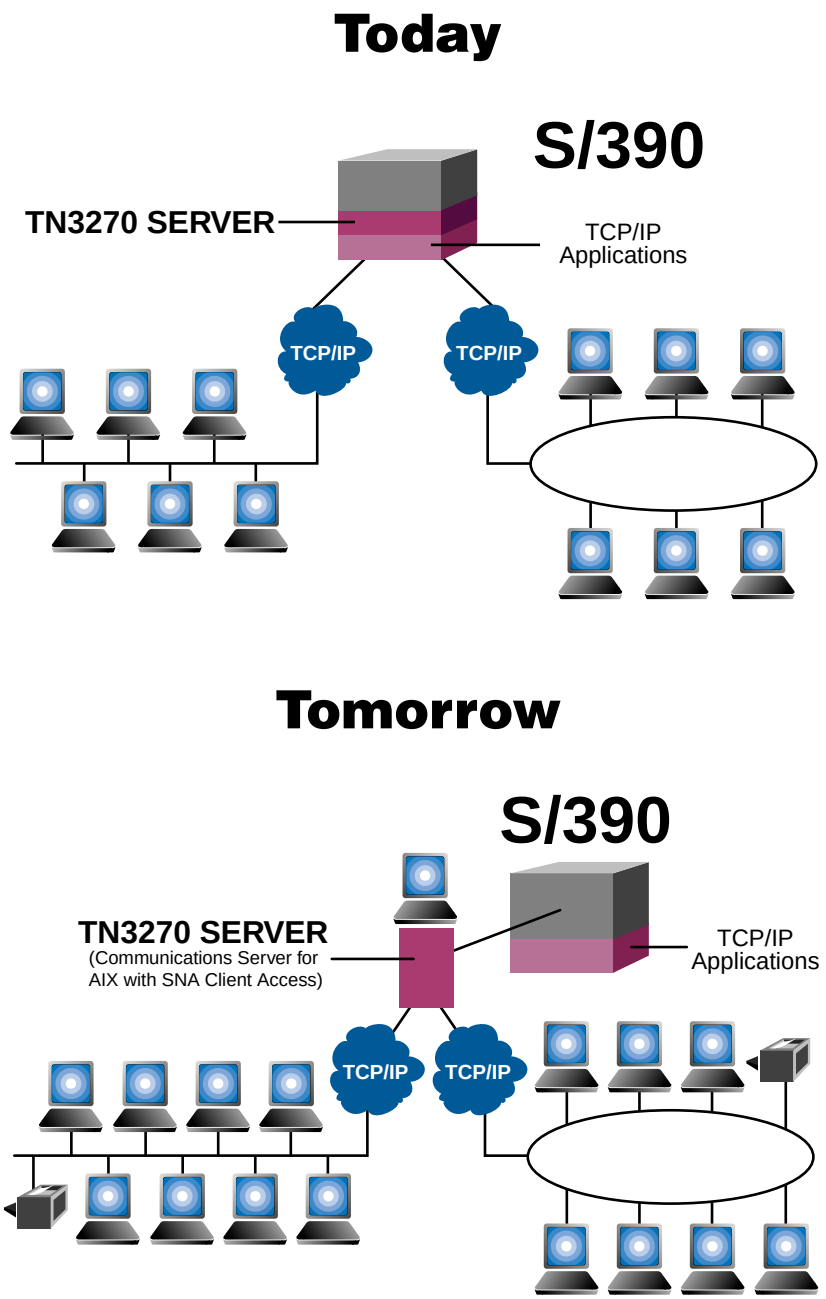
SUMMARY 8

To order this product, to obtain more information, or to request assistance in estimating your cost savings, see the information provided inside the back cover of this guide.

The Conceptual View

Today, many businesses have growing numbers of users who need to access business-critical applications and data that reside on an S/390® or AS/400®. Frequently, those users are located in TCP/IP networks. Placing the TN3270 server function, which provides that much needed access, on the mainframe is a natural thought progression. But providing more users the ability to access the applications and data usually means you will need more mainframe MIPS to handle application and data processing. IBM Communications Server for AIX with SNA Client Access is the solution that will help alleviate the mainframe overload that can occur when you provide access to more users or increase your transaction workload. Most growing businesses can appreciate this alternative – from a performance perspective and from a cost-savings perspective!

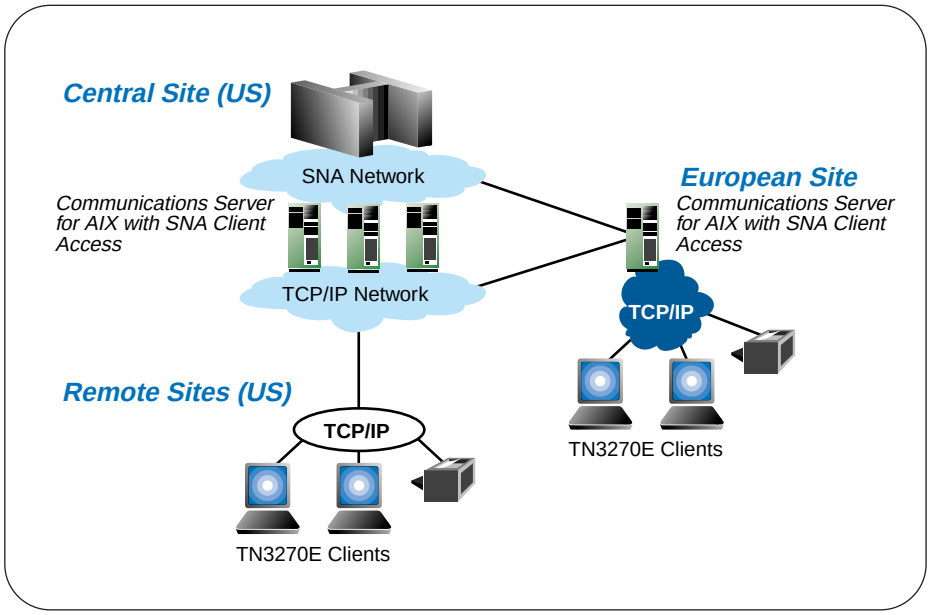
Communications Server for AIX with SNA Client Access lets you move TN3270 processing off the mainframe and onto one or more RS/6000s™. (The RS/6000s can dynamically balance the TN3270 workload among themselves!) This reclaims mainframe MIPS for handling mission-critical applications and data. And more users than ever before can have access to mainframe applications and data across TCP/IP networks.



Customer Scenarios

On the pages that follow, three industry-specific scenarios are provided to help you understand the usage and advantages of Communications Server for AIX with SNA Client Access. Each scenario depicts the resulting network configuration and includes a work-sheet that explains the potential savings with this solution. While the scenarios are based on actual examples from different industries, these particular scenarios were chosen for their broad applicability across industries. Regardless of your business, you should be able to relate the general requirements, configurations, and the calculations of cost savings to your network.

This automobile manufacturer wanted to improve its 'just-in-time' manufacturing processes by providing better ways for more workers at remote auto-parts manufacturing sites to coordinate timely delivery of parts to assembly sites. Mainframe applications at the central site maintain order information, assembly schedules, and bill-of-materials. By providing access to this information for many remote users, production cycle time has been reduced and employees now have the information they need to understand and resolve problems. This scenario shows how TN3270E server processing for 30,000 users was distributed among four RS/6000s that are physically located in the US central site (3) and a European site (1). The distributed Communications Server approach provides high availability, fault resilience, and painless scalability.



Previous Environment

- The central site in the US is an SNA-based network.
- Multiple remote US and European sites are predominantly TCP/IP networks.

Customer Requirements

- Support 30,000 TN3270E users who need to access central site applications and data.
- Provide a scalable solution that will support the goal of future growth (150,000 TN3270E users).
- Provide TN3270E capability on every user workstation.
- Load-balance all user sessions (Europe and US).
- Provide the ability to monitor response time from any user workstation to the host at the central site.

Solution

- Install Communications Server for AIX with SNA Client Access on four new RS/6000s located in the US central site (3) and a European site (1).
- Use these Communications Server features:
  - Load balancing (across four servers)
  - Response time monitoring
- Install IBM Personal Communications AS/400 and 3270 on all user workstations to provide market-leading terminal emulation (TN3270E, TN3270, TN5250).

Features Used in this New Environment

- *Dynamic Load Balancing*
  This feature provides the best possible service to all your users. The load is balanced among the various servers based on *all* the critical factors: host LU availability, link speed, client/host connection load, overall system load, and processor speed.
- *Response Time Monitoring*
  With this feature, network administrators can easily use the NetView Response Time Monitoring function to trouble-shoot performance problems all the way from the host to the TN3270E client – without relying on other applications!
- *LU Pooling*
  The ability to assign groups of resources (LUs) eases systems management and administrative tasks. Pools can span servers, which essentially guarantees access to users even if a system fails.
- *LU Security*
  The security you've grown to appreciate for SNA clients is now available to TCP/IP clients as well. Access can be restricted by host, by specific LU, or by LU pool – with minimal administrative setup.
- *Local Print Support*
  Users can print the results of mainframe application processing on printers attached to their workstations or on printers in the local TCP/IP network.
- *Industry-standard TN3270E*
  TN3270E is the first and only open standard for 3270 connectivity. TN3270E extends SNA printer support, with guaranteed print and end-to-end acknowledgment, to printers that are most convenient for users.

Major Advantages

- *Maximize Mainframe Application Performance*
  More MIPS are available on the mainframe for SNA and TCP/IP applications and data (transaction processing, FTP, etc.).
- *Scalability*
  As more TN3270E users are added, the capacity of this solution can be incrementally increased. When user growth warrants the addition of another RS/6000, the load-balancing feature will automatically balance the workload from all user sessions, maximizing the performance and user satisfaction.
- *Cost Savings*
  See the Cost Analysis on the next page!

Cost Analysis[1]

The figures[2] below compare the costs associated with using Communications Server with SNA Client Access versus the costs associated with performing TN3270 processing on the mainframe. Because *both* methods of satisfying the scenario's requirements call for the installation of Personal Communications AS/400 and 3270 on all 30,000 user workstations, those costs were not included in the analysis below.

Communications Server with SNA Client Access Solution:			**$1,045,316**
Software Costs:			*973,396*
Communications Server for AIX	$849 x 4 servers	=	3,396
SNA Client Access base	$395 x 4 servers	=	1,580
TN3270 sessions across all servers • For *30,000* sessions	$22,700[3] + [(*30,000* - 500) x $32][3]	=	966,700
LoadLeveler[4]	$860 PLC[4] x 2	=	1,720
Hardware and AIX Costs (only required if new RS/6000 is needed):			*71,920*
RS/6000 • AIX 4.x operating system • 7024-E30 • 1 Turboways® 155 PCI ATM adapter • 2 100 Mbps PCI Ethernet adapters • 256 MB memory • 2 GB storage (standard on RS/6000 E30)	$17,980 x 4 machines	=	71,920

Mainframe TN3270 Solution:			**$1,596,000**

Primary costs for this solution are additional mainframe hardware costs. No major network changes are needed. The mainframe TN3270 solution is based on the IBM TCP/IP Performance Tuning Guide. Modeling is based on the 3090-400J. To support 30,000 sessions, the processing power of one and one-half 3090-400Js is needed. Additional costs are for the MIPS provided by one and one-half 3090-400J mainframes.

Mainframe Hardware Costs:			*1,200,000*
CPU requirements to support TN3270 sessions • 3090-400J has capacity of 80 MIPS • $10,000[5] cost per MIP (CMOS) • 1.5 additional mainframes = 120 MIPS • 1 transaction per minute for each user session	$10,000 x 120 MIPS	=	1,200,000
Mainframe Software Costs:			*396,000*
Stack costs (MVS, VTAM®, and TCP/IP) for 1.5 mainframes • $11,000 MLC (over 2 years)	$11,000 x 24 months x 1.5	=	396,000
Major Network Change Costs:			*0*
SAVINGS:	**$1,596,000 – $1,045,316**	**=**	**$550,684[6]**

[1] Each potential customer should perform an independent estimate of the costs and benefits for any particular installation. This is not a promise or guarantee of costs or savings for any particular business and should not be so construed.

[2] All figures provided in this estimate are in U.S. dollars.

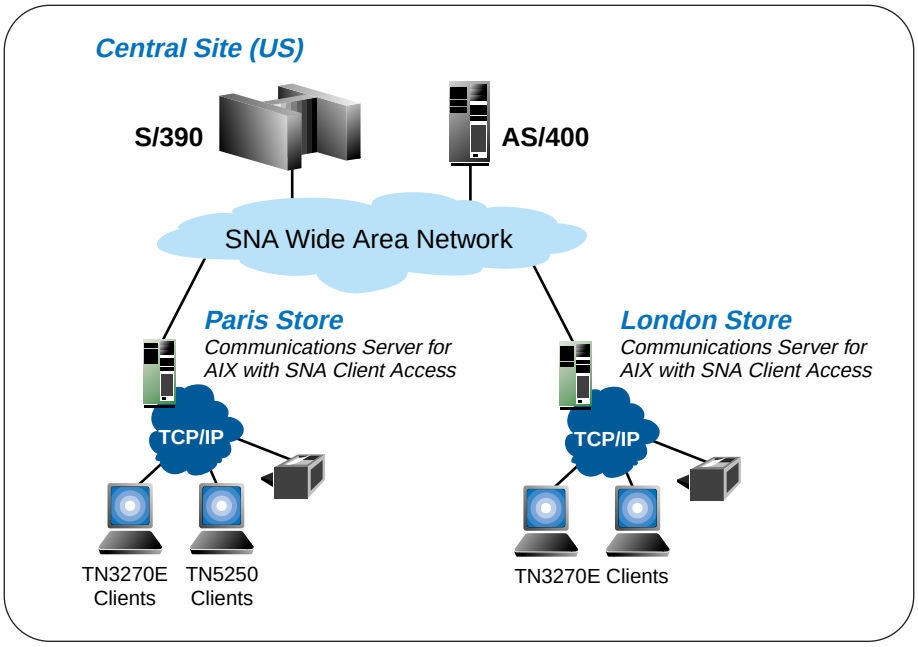
[3] Pricing algorithms include base fees and per-session fees, and vary according to breakpoints. Contact your sales representative or reseller for more information.

[4] Multiply Primary License Charge by 2 if backup LoadLeveler is needed.

[5] MIP cost is specific to the customer's environment. Contact your sales representative or reseller to determine your MIPS savings.

[6] The Communications Server for AIX with SNA Client Access solution cost is calculated using list prices. The cost savings will be greater when hardware and software discounts are applied.

The business units for this European retailer wanted an easy way for sales representatives and purchasing agents to learn about the status of an order — including anticipated date of manufacture, shipment dates, and anticipated arrival dates. The stores relied on a single workstation to obtain this information, but wanted to integrate that capability on the desktop of every sales representative. Now, each sales representative can easily access the S/390 application that tracks orders as well as the AS/400 application that provides information about factory shipments. In the new configuration, each of the 200 stores provides TN3270E server processing for 50 users. Each store already had an RS/6000 connected to the SNA backbone network. This remote solution is ideal for giving users on LANs access to applications and data at a central site, regardless of the user platform. The remote RS/6000 can serve a dual purpose: for TN3270E server processing and as a server for local client/server application needs.



Previous Environment

- SNA backbone network connects the central site to all 200 stores.
- Each remote store has an RS/6000 and about 50 LAN-based TCP/IP workstations.

Customer Requirements

- Provide access to mainframe applications and data residing at the central site to 50 users in each store.
- Provide user access to applications running on both the S/390 and the AS/400.
- Provide instant printouts of results of mainframe application processing (e.g., copies of orders placed by a store) on local printers in each store.
- Provide the ability to print results of mainframe application processing at the central site (e.g., orders to be manufactured and fulfilled by the central site).

Solution

- Install Communications Server for AIX with SNA Client Access on each of the 200 existing RS/6000s at remote sites.

Features Used in this New Environment

- *Comprehensive Client Support*
  With its support of TN3270E, TN3270, and TN5250, TCP/IP users can connect to applications and data residing on S/390s and AS/400s. The TN3270E support (a new industry standard!) enables new print capabilities for users and end-to-end network management.
- *Local and Host Print Support*
  Users can print the results of mainframe application processing on printers attached to their workstations, on printers on the LAN, or on remote mainframe-attached printers.
- *Additional Application Platform and Protocol Support*
  Remote sites can extend their own native application support by taking advantage of several additional features that are part of Communications Server for AIX:
  - *Application Platform*
    New applications can be added to the RS/6000 to further extend the processing power of your network.
  - *APPN® Functions*
    This system provides powerful, advanced APPN capabilities that can be used in the SNA network.
  - *AnyNet® Functions*
    Users can mix and match sockets or SNA-based applications without regard to underlying protocols, without impacting existing users, and without requiring new hardware.

Major Advantages

- *No Major Network Changes*
  The need to build a separate, parallel TCP/IP router network is eliminated.
- *No Additional Hardware Purchases*
  Because only 50 users need to be supported in each store, the Communications Server for AIX with SNA Client Access could be installed on the existing RS/6000s.
- *Integrated Network Management*
  Network administrators use the same familiar applications, regardless of whether they're monitoring the connections from the central site to the Communications Server in the store, or from the central site to the individual user workstations in the store.
- *Maximize Mainframe Applications*
  More MIPS are available for SNA and TCP/IP applications.
- *Cost Savings*
  See the Cost Analysis on the next page!

Cost Analysis[1]

The figures[2] below compare the costs associated with satisfying the scenario's requirements using Communications Server with SNA Client Access versus the costs associated with performing TN3270 processing on the mainframe.

Communications Server with SNA Client Access Solution:			**$575,500**
Software Costs:			*575,500*
Communications Server for AIX	$849 x 200 servers	=	169,800
SNA Client Access base	$395 x 200 servers	=	79,000
TN3270 sessions across all servers • For *10,000* sessions	$22,700[3] + [(*10,000* - 500) x $32][3]	=	326,700
Hardware and AIX Costs (no new RS/6000s needed):			*0*

Mainframe TN3270 Solution:			**$2,532,000+ line costs**

Primary costs for this solution occur in two areas: additional mainframe hardware costs and major network changes. This mainframe TN3270 solution is based on the IBM TCP/IP Performance Tuning Guide, and modeling is based on the 3090-400J. To support the 10,000 sessions identified in this scenario, 50% of the processing power of one 3090-400J is needed. Additional costs are for the MIPS for 50% of one 3090-400J mainframe. The major network changes call for the creation of a parallel TCP/IP network by installing mid-range routers (approximately $10,000 each) at each of the 200 dealerships.

Mainframe Hardware Costs:			*400,000*
CPU requirements to support TN3270 sessions • 3090-400J has capacity of 80 MIPS • $10,000[4] cost per MIP (CMOS) • 0.5 additional mainframe = 40 MIPS • 1 transaction per minute for each user session	$10,000 x 40 MIPS	=	400,000
Mainframe Software Costs:			*132,000*
Stack costs (MVS, VTAM, and TCP/IP) for 0.5 mainframe • $11,000 MLC (over 2 years)	$11,000 x 24 months x 0.5	=	132,000
Major Network Change Costs:			*2,000,000 + line costs*
Install parallel TCP/IP network using routers	$10,000 x 200 routers	=	2,000,000
Additional line costs for parallel TCP/IP network			(varies)

SAVINGS:	**($2,532,000 + line costs) – $575,500**	**=**	**$1,956,500[5] + line costs**

[1] Each potential customer should perform an independent estimate of the costs and benefits for any particular installation. This is not a promise or guarantee of costs or savings for any particular business and should not be so construed.

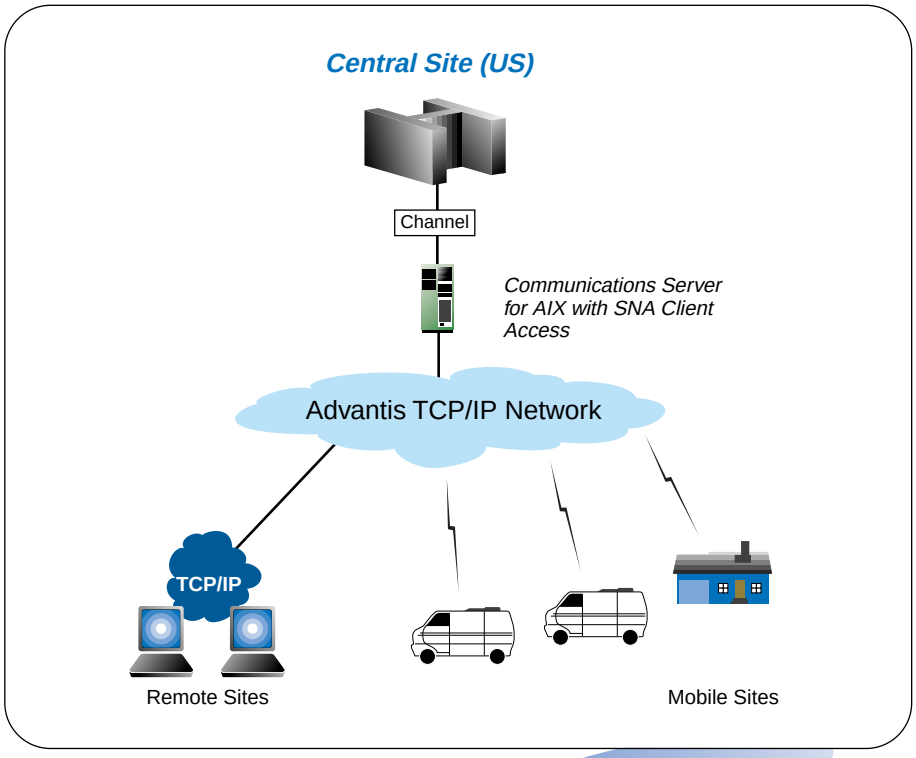
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[3] Pricing algorithms include base fees and per-session fees, and vary according to breakpoints. Contact your sales representative or reseller for more information.

[4] MIP cost is specific to the customer's environment. Contact your sales representative or reseller to determine your MIPS savings.

[5] The Communications Server for AIX with SNA Client Access solution cost is calculated using list prices. The cost savings will be greater when hardware and software discounts are applied.

This company, interested in improving the efficiency of its service fleet, decided to use its mainframe warehouse of customer data to correlate customer addresses with outstanding service calls and the availability of parts in remote parts centers. Mainframe applications decide the most efficient order to handle calls, determine availability of necessary parts for repairs, and create maps showing each service representative how to reach those customers slated for service each day. The TN3270E server processing (for 10,000 users) is handled by two nodes of an existing channel-attached RS/6000 Scalable POWERParallel processor — not by the mainframe that warehouses and correlates the data.



Previous Environment

- The SNA-based central site warehouses and processes vital customer and inventory data.
- The RS/6000 SP has two or more available nodes.
- Mobile units and other remote inventory sites rely on TCP/IP communications.

Customer Requirement

- Support 10,000 TN3270E users who need to access central site applications and data.

Solution

- Install Communications Server for AIX with SNA Client Access on two nodes of existing channel-attached RS/6000 SP.
- Use Advantis TCP/IP network.

Features Used in this New Environment

- *High-Availability Load Balancing*
  This solution provides the best possible service to all your users. The load is balanced between the two nodes of the RS/6000 SP based on *all* the critical factors: host LU availability, link speed, client/host connection load, overall system load, and processor speed. In the event that a node fails, the mobile repair person will not lose touch with the vital information needed.
- *Asynchronous Connectivity*
  The TCP/IP support on the RS/6000 with Communications Server for AIX and SNA Client Access lets mobile users asynchronously attach to mainframe applications. This feature provides ideal support for mobile or home-based users.
- *RS/6000 Performance and Scalability*
  The RISC hardware platform offers unmatched performance and scalability — from cost-effective desktop workstations to the Scalable POWERParallel Systems®.
- *High-Speed Channel Connectivity*
  This solution takes advantage of high-speed channel connectivity to move needed data quickly between the mainframe and the RS/6000, thus expediting the flow of information to mobile and remote users.

Major Advantages

- *Maximize Mainframe Application and Data Warehousing Capacity*
  More MIPS are available on the mainframe for SNA and TCP/IP applications, data warehousing, and data retrieval.
- *Data Access When and Where It's Needed*
  Mobile and home-based users can quickly access critical data through asynchronous connection. Load balancing essentially guarantees these users access to the needed information, even if an RS/6000 node fails.
- *Cost Savings*
  See the Cost Analysis on the next page!

Cost Analysis[1]

The figures[2] below compare the costs associated with using Communications Server with SNA Client Access versus the costs associated with performing TN3270 processing on the mainframe. Because *both* methods of satisfying the scenario's requirements call for using the Advantis TCP/IP network, those costs were not included in the analysis below.

Communications Server with SNA Client Access Solution:			**$461,608**
Software Costs:			*345,908*
Communications Server for AIX	$849 x 2 servers	=	1,698
SNA Client Access base	$395 x 2 servers	=	790
TN3270 sessions across all servers			
• For *10,000* sessions	$22,700[3] + [(*10,000* - 500) x $32][3]	=	326,700
Channel Connectivity			
• CS/AIX Channel Attachment Feature	$5,000 x 2	=	10,000
• ESCON® Channel Connectivity for AIX	$2,500 x 2	=	5,000
LoadLeveler[4]	$860 PLC[4] x 2	=	1,720
Hardware and AIX Costs:			*115,700*
RS/6000 SP (use 2 nodes of existing RS/6000 SP)	$57,850 x 2 machines	=	115,700
• Incremental cost of 2 nodes is roughly equivalent to using 2 7012-39Hs			
• 7012-39H (1 ESCON adapter, 2 100 Mbps MCA Ethernet adapters, 256 MB memory, 2 GB storage (standard on RS/6000 39H))			
• Each 7012-39H would cost approximately $57,850			

Mainframe TN3270 Solution:			**$532,000**

Primary costs for this solution are additional mainframe hardware costs. No major network changes were needed. This mainframe TN3270 solution is based on the IBM TCP/IP Performance Tuning Guide, and modeling is based on the 3090-400J. To support 10,000 sessions, approximately 50% of the processing of one 3090-400J is needed. Additional costs are from the MIPS for 50% of a 3090-400J mainframe.

Mainframe Hardware Costs:			*400,000*
CPU requirements to support TN3270 sessions	$10,000 x 40 MIPS	=	400,000
• 3090-400J has capacity of 80 MIPS			
• $10,000[5] cost per MIP (CMOS)			
• 0.5 additional mainframe = 40 MIPS			
• 1 transaction per minute for each user session			
Mainframe Software Costs:			*132,000*
Stack costs (MVS, VTAM, and TCP/IP) for 0.5 mainframe	$11,000 x 24 months x 0.5	=	132,000
• $11,000 MLC (over 2 years)			
Major Network Change Costs:			*0*
SAVINGS:	**$532,000 – $461,608**	**=**	**$70,392[6]**

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[3] Pricing algorithms include base fees and per-session fees, and vary according to breakpoints. Contact your sales representative or reseller for more information.

[4] Multiply Primary License Charge by 2 if backup LoadLeveler is needed.

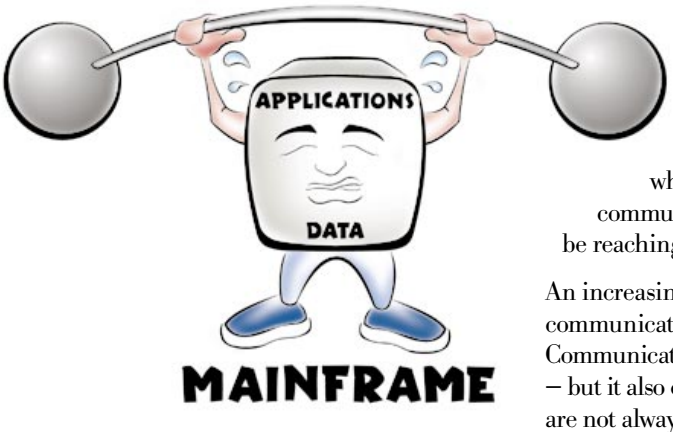
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[6] The Communications Server for AIX with SNA Client Access solution cost is calculated using list prices. The cost savings will be greater when hardware and software discounts are applied.

TCP/IP User Growth in the Corporate Environment

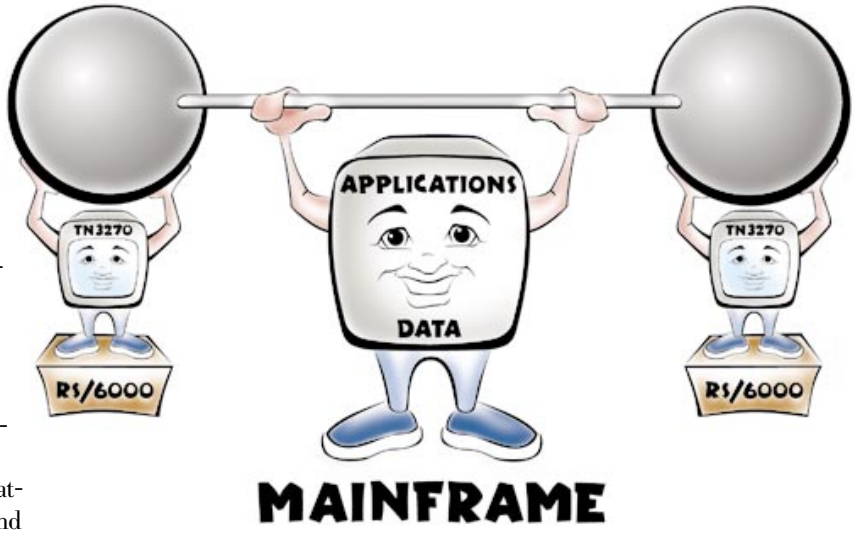
Today's proliferation of TCP/IP-based user workstations is fueled by many factors — most notably the need for Internet access and the development of new corporate intranets. TCP/IP penetration is projected to extend to nearly 80% of LAN environments. In the corporate environment, TCP/IP-based workstations reside in groups that are part of a larger enterprise that already uses SNA for backbone networking connectivity. While most of the downstream traffic is IP-based, many of those downstream users require access to applications on SNA-centralized computers.

Satisfying the Need to Access SNA-based Mainframe Applications and Data



A quick analysis would suggest that either the user workstation or the mainframe must run both SNA and TCP/IP to satisfy the user's needs. For user (client) workstations, this is extremely resource-intensive, not only because multiple protocol stacks are replicated across the enterprise, but also because the stacks require significant additional network support to build and maintain a multiprotocol network. In environments where the mainframe is supporting more users, transactions, file transfers, communications processing, and new data-mining projects, the mainframe may be reaching its peak capacity. And your needs are still growing!

An increasingly popular approach to this challenge is to perform some of the communications processing (e.g., TN3270 processing) on an intermediate node. IBM Communications Server for AIX with SNA Client Access provides this popular capability — but it also offers scalability, fault-resilience, high performance, and load-balancing that are not always provided by other solutions. And as shown by the scenarios on the previous pages, significant cost savings can be achieved. To determine the most cost-effective deployment for your network, you must analyze your users' needs for accessing the mainframe and your existing network configuration. In some cases, greater savings are achieved and additional needs are satisfied by placing a Communications Server for AIX with SNA Client Access in the remote departmental environment. In other cases, it makes sense to place the Communications Server(s) with SNA Client Access at the central site with the mainframe. And with the tremendous flexibility provided by this solution, you should also consider the possibility of mixing the two approaches as appropriate to meet the needs of your users.



Meeting your enterprise communication needs

The IBM eNetwork Software product line is specifically designed to eliminate network incompatibilities in your enterprise. The IBM eNetwork Communications Servers offer a multiplatform solution that works in tandem with its client software and with other pervasive industry clients, to enhance or minimize disruption to employee productivity. The IBM eNetwork Software clients include offerings specifically tailored for cross-platform enterprise needs, wireless needs, Internet and intranet users, and users of traditional, Internet, and intranet systems. This product line can help users — whether in the office, at home, or on the road — access critical business information and stay connected.

The ultimate quest of business technology users today is interoperability. To be successful, users need the flexibility to move data and use critical applications across their organization without being concerned with the underlying networks. Users must have easy access to data from the office, home, or on the road — without sacrificing the familiar look and feel they know and understand.

With this line of servers and clients, interoperability is within the grasp of all technology users. These products allow users to choose applications that fit their business needs and to interconnect despite diverse platform and network configurations. Technology incompatibility is becoming obsolete with the IBM eNetwork Software products.

IBM eNetwork Software Communications Servers

With the introduction of the Communications Servers, IBM has integrated the broadest array of networking functions and connectivity available — based on industry standards and optimized for the platform of choice. Several key and open technologies have been integrated into a simplified set of products.

The Communications Server product line includes solutions for OS/390™, AIX, OS/2®, Windows NT®, and NetWare and is fully interoperable with S/390 and AS/400 networks. Fundamental to today's client/server and network computing environments, the Communications Server builds on the leading peer-to-peer networking protocols of TCP/IP and Advanced Peer-to-Peer Networking ®(APPN).

Communications Server for AIX
As a powerful multiprotocol, multifunction gateway which can have extra-high capacity and performance with direct S/390 channel attachment, this product succeeds IBM SNA Server for AIX, Version 3.1. As a total enterprise networking solution, its UNIX application platform extends the communication capability of the AIX Base Operating System by acting as an enterprise server for AIX and SNA networks, as well as a connectivity platform. This server was designed specifically for AIX and RS/6000 networking environments and takes advantage of the AIX system facilities to integrate applications and protocols seamlessly.

Communications Server for OS/2 Warp
An advanced gateway providing flexible, reliable communication of networks for all sizes, this product enables OS/2, Windows®, and DOS workstations to communicate with S/390 and AS/400 hosts and other workstations. A significant capability of this server is that it allows IPX, NetBIOS, SNA, and TCP/IP applications to run unchanged over both SNA and TCP/IP communication networks. Also, this server's rich 32-bit application programming interfaces are key to the dynamic growth of new business applications required by customers, as well as the client/server and distributed applications supported with the APPN network node and end node.

Communications Server for OS/390
A critical server for the enterprise, providing the highest availability, reliability, and security, this powerful communications server connects diverse applications and network environments, and it builds on the classic strength of S/390. It is a sensible solution to the real business need for integrating ever-increasing sets of new applications into an ever changing network without disrupting access to your mission-critical applications. The overall benefits are unmatched performance, availability, and investment protection for your S/390 applications, whether they are running on VTAM or TCP/IP.

new *Communications Server for Windows NT*
As the newest member of the communications server family, this industrial-strength server provides industry-leading SNA and multiprotocol gateways for TCP/IP and SNA network integration solutions. This powerful multifunction gateway supports diverse applications and network environments with enterprise-class dependability. High-Performance Routing technology integrated in Communications Server for Windows NT provides high availability with maximum throughput and efficiency, preparing your networks for the high-speed applications of the future. And with the integration of Host On-Demand, this server leads the evolution to network computing by providing seamless integration between Web users and 3270 SNA applications.

NetWare for SAA
A secure, reliable, and scalable platform for integrating IBM S/390 and AS/400 connectivity services with NetWare and IntranetWare, this server offers multiple LAN and WAN connectivity options for branch office and department users. This software, part of an IBM/Novell alliance, lets NetWare clients access IBM host applications and data with IPX/SPX, TCP/IP, and AppleTalk, and it provides administrators with access to Novell's industry-leading performance, as well as directory, security, and management services through NetWare Directory Services.

IBM eNetwork Software Clients

IBM eNetwork Software clients can put interoperability within the reach of all technology users. Combined with communications servers, these clients optimize existing networks and platforms, while allowing for the addition of emerging high-performance applications. This line of products provides the broadest range of LAN and WAN and remote connectivity, offering the single communication source needed for home, office, and mobile use.

Communications Suite

The Communications Suite provides all the tools customers need to meet their enterprise communication needs. From Internet and intranet access to corporate communication and terminal emulation, the Communications Suite offers a single source for market-leading communication products.

The Communications Suite includes Netscape Navigator, Version 3.0, for Web browsing and Internet applications, PCOMM 4.1 for terminal emulation, Lotus™ Notes Mail™ 4.5 for corporate communications, and FTP Software TCP/IP protocol stacks and applications. This feature-rich, multifunction solution is easy to install, easy to configure, and easy to use. And, all the applications are fully supported by IBM. With the Communications Suite, you're only one click away from the information you need!

Personal Communications (PCOMM)

With the introduction of the Personal Communications AS/400 and 3270, Version 4.1 (PCOMM 4.1), product line, customers now have one easy answer to the problem of integrating multiple users on varying platforms from multiple locations. The PCOMM 4.1 consistent interface masks the complexity of information management and distribution, regardless of the underlying data source or network.

With a common look and feel across OS/2, DOS/Windows, Windows 95, and Windows NT, PCOMM 4.1 lets users move confidently from one environment to another. This can significantly lower training and application-migration costs while raising productivity.

Another significant benefit is the high-function development platform, which allows users to link application data dynamically with either custom desktop-based analysis applications or with standard decision-support suites — such as Lotus SmartSuite™ or Microsoft® Office. Applications can be deployed across multiple diverse platforms without change and independent of transport.

Host On-Demand

Host On-Demand is an Internet-to-SNA interconnectivity solution that provides 3270 application discovery and access through the WWW. Web users needing host applications, such as public catalogs, software applications, databases, or other resources, can use Host On-Demand from inside their Java-enabled Web browsers to access central computer data. For Web-oriented users with occasional need for central computer access, Host On-Demand provides an alternative to installing a terminal emulation program on the desktop. Host On-Demand brings network computing to the Web by enabling Web browsers to seamlessly access non-Internet-based content and services.

Host On-Demand uses the Java™ environment and native TN3270 and Internet protocols to provide platform-independent host access from within a Web-browser window. Host On-Demand integrates existing central computer data and resources with intranet, Internet, and Web capabilities. The result is dramatically increased availability of host-based information for Web-oriented users.

IBM eNetwork Software Wireless Products

Extending the reach of new and existing business applications to the wireless environment, the Advanced Radio Communications on Tour (ARTour™) product line offers a competitive business advantage. ARTour gateways and servers work in tandem with ARTour clients to minimize data traffic, reduce network costs, enhance performance, and provide affordable and effective mobile solutions.

ARTour Gateway and Servers

The ARTour Gateway for AIX extends internet protocol (IP) connectivity across the leading international wireless packet data, cellular, and wireline networks, integrating them under a single (TCP/IP sockets) interface, enabling immediate and optimized use of existing IP applications. ARTour Web Express Server for Windows NT[1], ARTour Web Express Server for AIX, and ARTour Web Express Server for OS/2 enable wireless access to intranet and Internet applications using the Web browser of your choice — without requiring any application changes. ARTour Emulator Express Server for Windows NT, ARTour Emulator Express Server for AIX[1], and ARTour Emulator Express Server for OS/2[1] enable wireless access to SNA 3270/5250 applications, with no application modifications, thereby enabling enterprises to extend and leverage their legacy applications into the wireless environment.

ARTour Clients

The ARTour Mobile Clients work with the ARTour Gateway for AIX to minimize data traffic, reduce network costs, and enhance performance — providing an affordable and effective mobile solution.

ARTour Web Express clients provide wireless access to intranet and Internet applications using the Web browser of your choice. Working with an ARTour Web Express server, these clients dramatically reduce the amount of data transmissions and performs various optimizations, including file caching, forms differencing, and header reduction, to enable the creation of innovative wireless solutions in the network computing environment. In addition, mobile clients can perform asynchronous and disconnected operations to optimize productivity.

Similarly, the ARTour Emulator Express clients work with an ARTour Emulator Express server to provide mobile users access to SNA 3270/5250 applications. ARTour Emulator Express filters out unnecessary data transmissions to provide an efficient and optimized mobile solution.

[1] Available in fourth quarter 1997

The next step ...

- **To request assistance in estimating your cost savings** if you're considering IBM Communications Server for AIX with SNA Client Access:
  - Contact your local IBM representative
  - Or contact your preferred reseller
- **To order** IBM eNetwork Software products:
  - Contact your local IBM representative, or call

    In Austria 21145 2500
    In Belgium 02 225 2525
    In Denmark 80 311 010
    In Eastern Europe 21-145-6281
    In Finland . . . . . .(90) 459 4224
    In France 36 63 36 43
    In Germany 0180-55090
    In Greece 30 1 6881460
    In Ireland 1850-205-205
    In Israel 03-1770223888
    In Italy 167 017 001
    In Netherlands 06-0220402
    In Norway 66 99 80 00
    In Portugal 791 5935
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