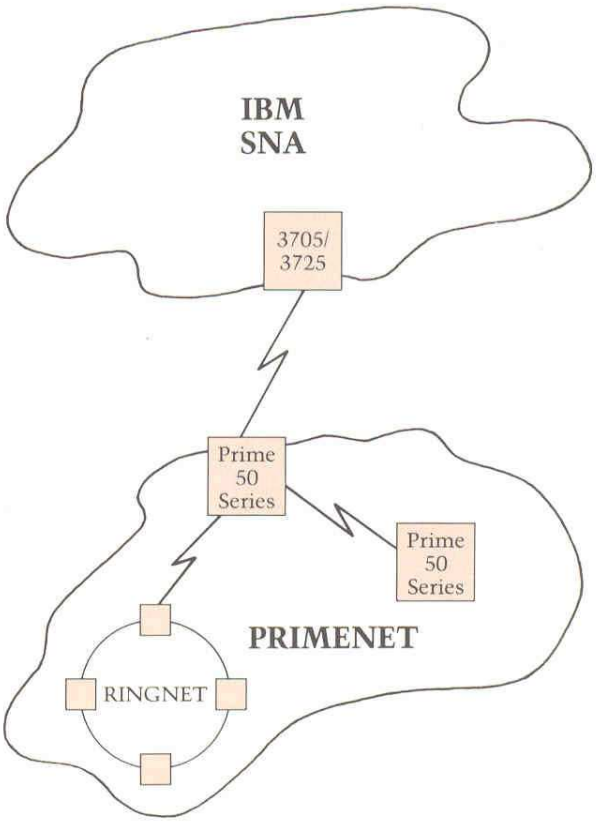
Product Bulletin

PRIME

Prime/SNA™

Features

- Prime/SNA Interactive: 3270 Data Stream Compatibility (LU.T2, LU.T3)
- Prime/SNA RJE: 3770 Remote Job Entry Emulation (LU.T1)
- Operates with PRIMENET™ networking software to extend Prime/SNA capabilities across multiple Prime® systems and networks
- Provides ability to suspend and recover multiple SNA terminal sessions without disconnecting from IBM host
- Operates concurrently with other Prime communication systems (PRIMENET, RJE, DPTX)
- Uses ICS2 Intelligent Communications Controller Subsystem and Prime PERFORMER™ terminal (PT200)™ to offload a Prime host
- Supports both Interactive and RJE subsystems on a single link
- Supports multiple communications lines concurrently
- Interfaces to host Communications Network Management software and conforms to IBM's network diagnostics and control procedures
- Compatible with Prime 50 Series™ systems and PRIMOS,® Prime's virtual memory operating system



Description

Prime/SNA is a family of subsystems which allows Prime computers to coexist within networks based on IBM's System Network Architecture (SNA). The *Prime/SNA Interactive subsystem* enables Prime systems to emulate 3274/3276 control units, 3278 display stations and 3287/3289 printers, while the *Prime/SNA RJE subsystem* allows Prime systems to support the features of 3770 RJE stations operating in SNA networks. The *Prime/SNA Server subsystem* supports both interactive and RJE emulation by providing the services of multiple Physical Unit Type 2 secondary SDLC stations.

Figure 1 shows how Prime/SNA relates to an IBM host. Because Prime/SNA is compatible with the operating system, access method and telecommunication monitor running on the IBM host, Prime users benefit from easy connection to SNA networks.

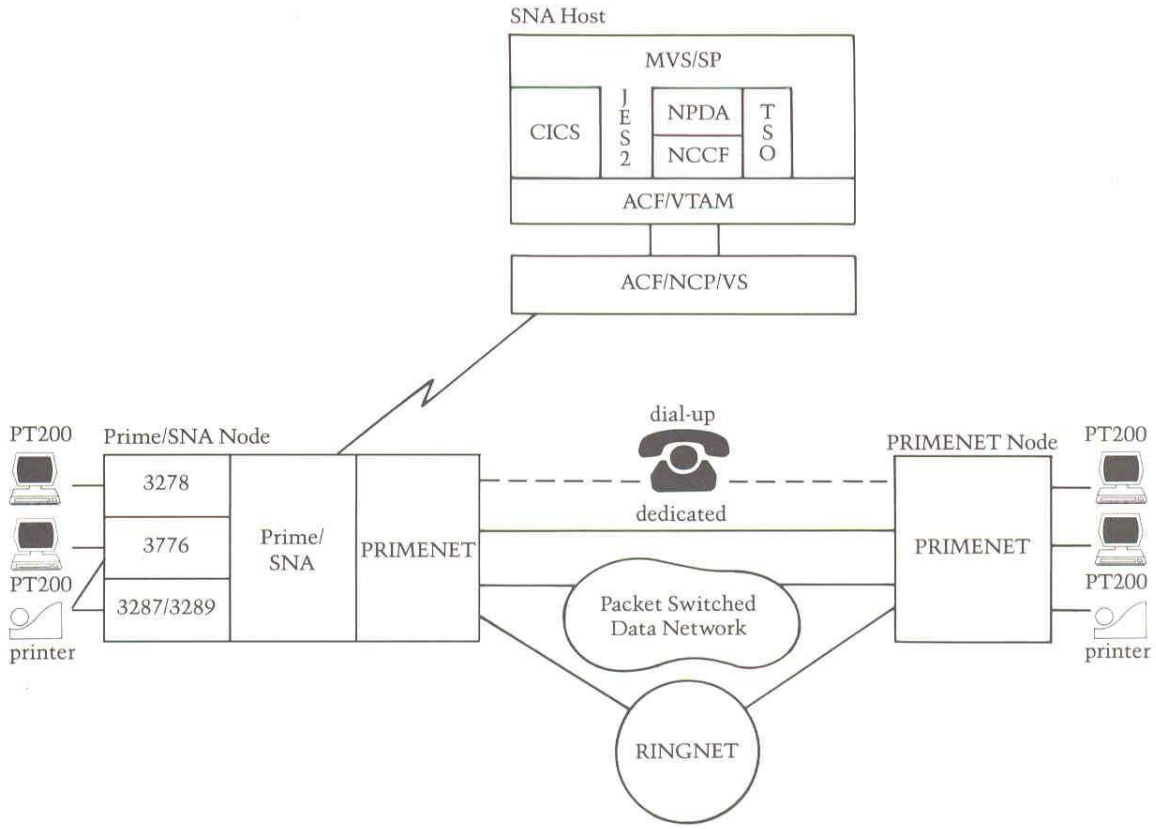
Prime/SNA supports 3270 terminal emulation, 3770 RJE, and 3287/3289 printer emulation using Prime terminals and a printer attached to the Prime/SNA node, as shown in Figure 1. In keeping with Prime's commitment to a compatible product line, any Prime/SNA node can simultaneously execute other Prime program products and user application programs.

Prime/SNA can operate concurrently with other Prime communications products including DPTX (3270 BSC Data Stream Compatibility), RJE, and PRIMENET. In fact, Prime users can configure cost-effective, flexible SNA networks in a distributed environment by using PRIMENET to extend Prime/SNA capabilities across multiple Prime systems. Combined, PRIMENET and Prime/SNA provide users with the services of both SNA and CCITT X.25-compliant networks.

Prime/SNA Interactive Subsystem

The Prime/SNA Interactive subsystem provides a subset of services of IBM 3274 remote control units, 3278 terminals, and 3287/3289 printers operating in a SNA environment. Prime/SNA Interactive users with PT200 terminals can access IBM host systems and applications on the network as if they were using IBM 3278 terminals. Users can easily switch back and forth between applications on the Prime system and the IBM host. In fact, the session suspension and recovery feature of Prime/SNA Interactive enables a user to interrupt work on an IBM application temporarily, return to PRIMOS to run a Prime application, and then resume work on the same IBM application at the point where the user left off. The ability to maintain up to three suspended sessions without disconnecting from the IBM host gives Prime customers added flexibility when working with applications in SNA networks.

Figure 1 – Relation of Prime/SNA to IBM SNA host



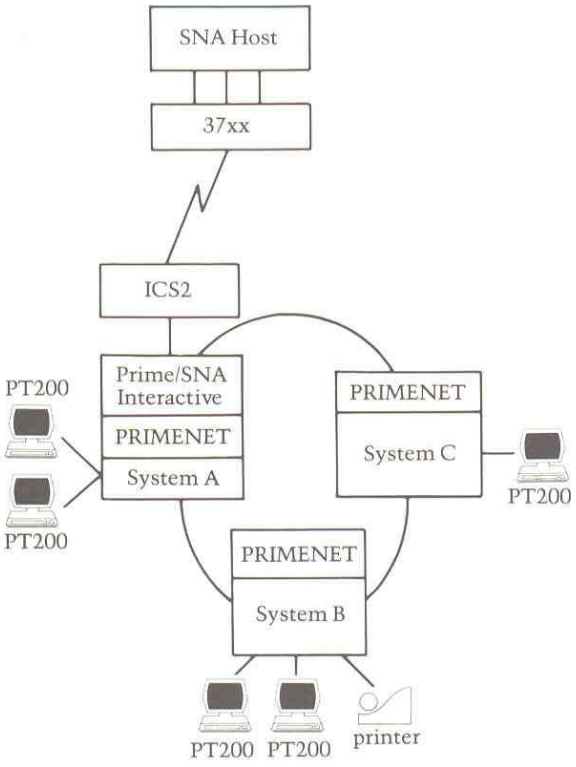
The Interactive subsystem's emulation of the 3287 and 3289 classes of printers allows 3270 screen (LU.T3) and character string (LU.T1) host data streams to be output on Prime printers, using the PRIMOS print spooler utility. A variety of "Local Copy" commands also allows terminal users to print copies of screen images. With the "Local Copy to a File" option, users gain the advantage of copying screen images into an assigned file which can be printed at a later time.

Distributed SNA Interactive Processing with PRIMENET

PRIMENET networking software provides complete local and remote network communication services for all Prime systems. The network transparency that PRIMENET provides can be used very effectively in conjunction with Prime/SNA to distribute SNA functions throughout a network.

In the example in Figure 2, PT200 terminals are attached to Prime System B which is networked to System A through PRIMENET. System A is in turn connected to a SNA network via Prime/SNA Interactive. The PT200 Prime/SNA interactive terminals locally attached to System B can start a session, for example, with interactive applications on the IBM host.

Figure 2 – Prime/SNA Interactive Subsystem



The Interactive subsystem's print facility uses PRIMENET and the PRIMOS print spooler to allow both local and remote system printers to queue and print data streams. The networking capabilities of PRIMENET give users great flexibility in configuring interconnections with IBM hosts. Users may be local (physically connected to a node running Prime/SNA) or remote (physically connected to another Prime host within the PRIMENET network). The Prime system running Prime/SNA provides the interconnection to the IBM host while PRIMENET provides the transparent interconnection between the Prime systems.

3270 Terminal Emulation with the Prime PERFORMER Terminal (PT200)

The Prime PERFORMER terminal provides a higher level of performance and compatibility with the IBM 3270 data stream than many other ASCII terminals can. The 3270 microcode support contained in the PT200 reduces the system overhead that would otherwise be used for 3270 data stream processing. Unlike a standard ASCII terminal, the Prime PERFORMER is designed to interpret a portion of the 3270 data stream format. A Prime-supplied application program acts as a format driver for the terminal microcode to accomplish fast, efficient 3270 display station emulation. Mapping of Prime PERFORMER terminal keys to various IBM 3270 function, attention, and session control keys provides a highly compatible 3278-2 or 3278-5 display station emulation. The 3278-5 emulation feature gives full 27 x 132 screen capability in addition to an IBM-compatible status line.
The PT200, in its non-SNA modes of operation, supports Prime software such as the Prime Office Automation System, EMACS, DPTX, PRIMEWAY™ transaction development and management system, Prime INFORMATION™ and other user-written application programs.

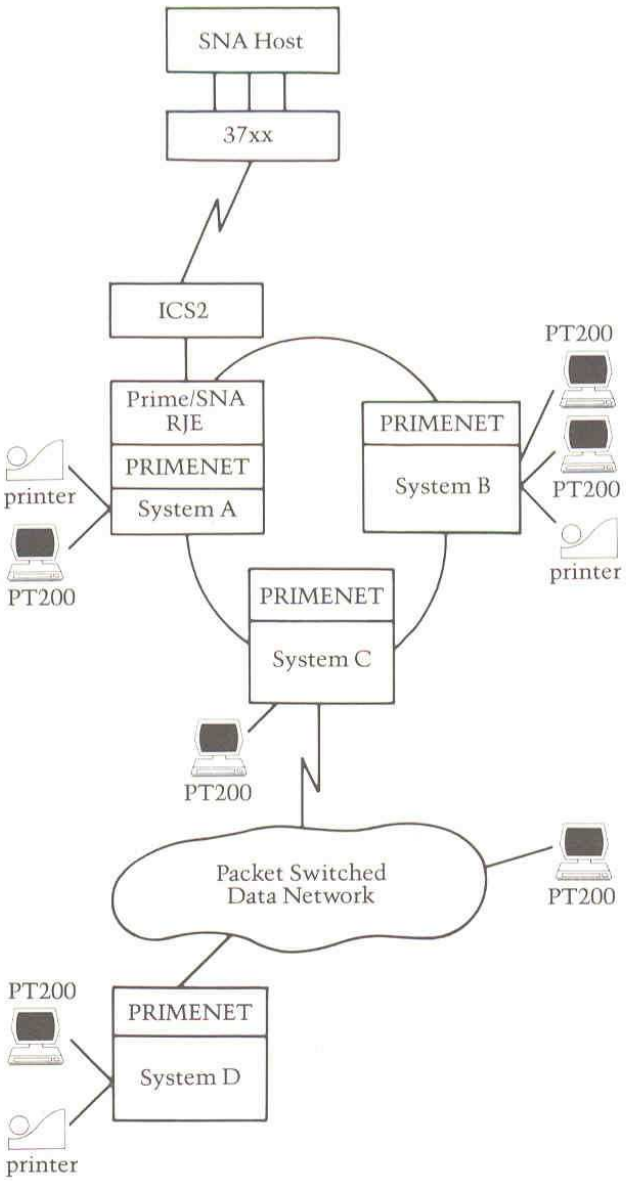
Prime/SNA RJE Subsystem

The RJE subsystem allows a Prime system to emulate the IBM 3776-3 Multiple Logical Unit (MLU) RJE workstation in a SNA network. The MLU feature allows multiple data streams (as independent SNA sessions) to flow, simultaneously and bi-directionally, between a Prime system and the SNA host. The RJE subsystem can transfer data efficiently between a Prime system and a SNA host using a dedicated or shared link. The user interface to the RJE subsystem is consistent with that of the current Prime family of RJE products.

Job Distribution with PRIMENET

Figure 3 shows how Prime/SNA RJE and PRIMENET work together to distribute received data files throughout a network. In this example, the RJE subsystem manages the job queue on Prime system A, which is connected to the SNA host. Since systems B, C, and D are connected to system A via PRIMENET, users on these remote systems may submit jobs and data files to the RJE queue of system A for transmission to the SNA host. Likewise, data files received from a SNA host can be printed via the PRIMOS print spooler at remote printers located anywhere within the PRIMENET network. Files transferred by the RJE subsystem may also be distributed throughout a PRIMENET network using Prime's Remote File Access (RFA) or File Transfer Service (FTS) product.

Figure 3 – Prime/SNA RJE Subsystem



Prime/SNA SDLC Communications Hardware: ICS2

Prime's Intelligent Communications Subsystem Model 2 (ICS2) supports the data link level or SDLC portion of the Server subsystem. The ICS2 is based on a powerful 16-bit microprocessor with on-board diagnostics, ROM, and 256KB RAM, and supports multiple synchronous and asynchronous lines, high-speed full-duplex or half-duplex lines, NRZI or NRZ encoding, RS-232 or V.35 electrical signalling, and auto-answer. The ICS2 can communicate via multiple SDLC and asynchronous data links simultaneously.

Server Subsystem as Physical Unit Type 2

The Server subsystem provides the services of a SNA Physical Unit Type 2 (PU.T2) necessary to support the Prime/SNA Interactive and RJE subsystems. The Server subsystem software executes both within the Prime ICS2 and the Prime host. The Prime CPU-based portion of the Server provides the common SNA interface for the Prime/SNA Interactive and RJE subsystems. The ICS2-based portion is the hardware-software component of Prime/SNA that supplies the Synchronous Data Link Control (SDLC) interface to the SNA network environment. The Server subsystem is capable of supporting multiple simultaneous sessions over multiple SDLC links.

Efficient Use of Prime Host Resources

The SDLC portion of the Server subsystem is software that is downline loaded from the Prime system into the ICS2. Implementing the SDLC component of the Server in a microprocessor-based communications controller greatly reduces overhead in the Prime host. Since the ICS2 responds to polls independently of the Prime host, CPU resources are not required to respond to non-productive polling activities which occur when no data is being transferred. Because communications tasks are offloaded from the Prime host, more processing power can be devoted to user applications.

Concurrent Support for Interactive and RJE Subsystems

The Server subsystem supports the simultaneous operation of the Interactive and RJE subsystems. Both subsystems can operate using the same SDLC link, thereby reducing line costs. The Server subsystem also operates concurrently with other Prime-supplied and user-developed applications.

Integration with IBM's Communication Network Management Products

Prime/SNA supports and works with IBM's Communications Network Management (CNM) products. Prime/SNA provides error statistics and information to the IBM CNM products via NCCF (Network Communications Control Facility) and NPDA (Network Problem and Determination Application). A NCCF operator, using NPDA, can query and display information from the Prime/SNA node in the same manner as any other node in the network. A Prime/SNA terminal user may also monitor and control portions of the SNA network while acting as a remote NCCF terminal operator. This feature gives greater flexibility in selectively distributing control of the SNA network. Prime/SNA also includes a logging facility to assist in installing, tuning, and monitoring of each Prime/SNA product.

Network File Security and Access Provisions

Access Control Lists (ACL) provide security for Prime/SNA operations by specifying users' rights to files and directories. A rich set of rights is available, including the right to read or write a file and the right to attach, list, add, or delete from a directory. ACLs can be implemented so that only specifically designated users are allowed access to Prime/SNA facilities. In addition, access to SNA network applications by users within the PRIMENET network can be controlled using ACL security features.

A Family of IBM Interconnect Communication Products

In addition to Prime/SNA, Prime offers a variety of remote job entry emulation packages and the Distributed Processing Terminal Executive (DPTX) which can connect Prime systems to IBM hosts in binary synchronous (BSC) networks. The IBM compatible RJE products include 2780, 3780, and HASP, while DPTX conforms to protocols used by IBM 3271/3277/3286 devices. These products, along with Prime/SNA, let mainframe users offload many interactive processing functions to powerful and more cost-effective Prime systems.

Support and Training

Prime offers comprehensive education covering all aspects of application development, training, operation and administration of Prime products. With the purchase of Prime/SNA, customers also receive a complete set of documentation and manuals.

Customer Service

Prime's worldwide Customer Service organization, including field support specialists and Customer Support Center specialists, provides high quality, competitively-priced service. The Customer Support Center acts as a clearing house for all reported problems. In addition, Software Support Specialists work with customers to provide direct, timely, and accurate problem diagnosis and resolution. They ensure Prime's commitment to high product availability.

Software support is available to all customers who sign a standard software maintenance contract. A telephone hotline (toll-free in the United States) is available for customer assistance. In addition, software support provides on-site assistance, software update services, and problem reporting and escalation.

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PRIME®

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