



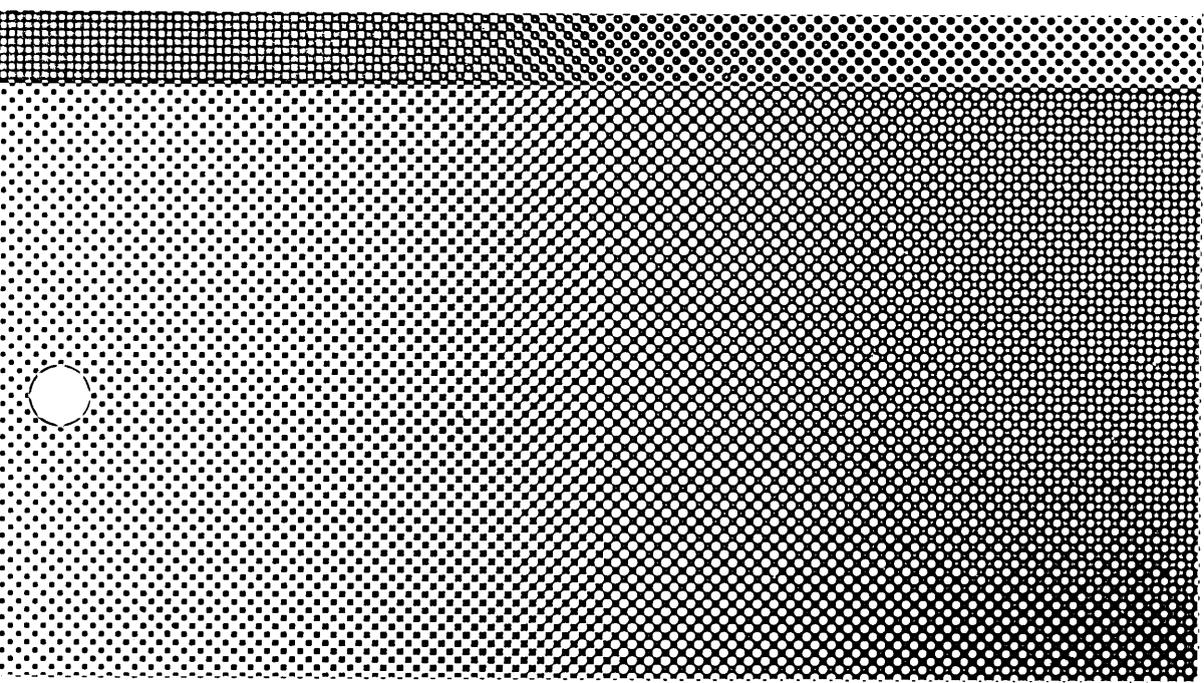
AT&T

AT&T BSC/RJE Emulator+
Product Overview



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AT&T BSC/RJE Emulator+ Product Overview



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Introduction

The AT&T BSC/RJE Emulator+ is a networking software product that allows you to use your 3B Computer to communicate with an IBM or IBM-compatible host system. Written in the C programming language, and running under the UNIX System V operating system, the AT&T BSC/RJE Emulator+ emulates an IBM Binary Synchronous Communication (BSC) Remote Job Entry (RJE) workstation.

RJE workstations are designed to send and receive large volumes of data over a communication line. Transmission can take place between a workstation and a host computer or between two workstations. All RJE workstations operate on point-to-point lines.

There are three types of BSC/RJE workstations: 2780, 3780, and HASP. Although they all perform similar functions, the three types of BSC/RJE workstation differ in detail. For example, BSC 2780 and BSC 3780 workstations are quite similar; they both support one card reader, one printer, and one card punch. However, the 3780 has several additional features, such as space compression/expansion, which increase throughput. BSC HASP workstations support up to seven card readers, seven printers, and seven card punches, with the restriction that the total number of printers and punches must not exceed eight. HASP allows records from several components to be multi-leaved, that is, records from several components can be combined into a single block for transmission. The AT&T BSC/RJE Emulator+ can emulate all three types of BSC/RJE workstation.

IBM RJE workstations support three categories of input device (card reader, console keyboard, and diskette), and three categories of output device (card punch, printer, and diskette). Each category obeys its own formatting rules. An IBM RJE workstation reads data from an input device, does the appropriate formatting and blocking for that device, and sends the data over the communication line. Conversely, it accepts data from the communication line, does the appropriate formatting and blocking, and routes the data to the output device specified by the user.

The AT&T BSC/RJE Emulator+ uses the same categories of input and output device as the IBM RJE workstation. But instead of using input and output devices, the AT&T BSC/RJE Emulator+ reads data from and writes data to disk files, which act as virtual input and output devices. The AT&T BSC/RJE Emulator+ also formats and blocks input and output data in the same way as an IBM RJE workstation. This provides the user with a convenient means of transferring files from one computer system to another.

Features

The AT&T BSC/RJE Emulator+ allows the 3B Computer to emulate the following devices:

- IBM 2780 Data Transmission Terminal
- IBM 3780 Data Communications Terminal
- IBM HASP Workstation

RJE emulation is performed by the 3B Computer without additional hardware or software at the host. All important features of these devices are emulated, including:

- **Multi-user capability.** Several users can submit jobs to the host concurrently.
- **Queued job entry.** The user's command to send a file is executed immediately if no other jobs are on the queue to be transmitted. If there are other jobs waiting to be transmitted, the send command is queued locally and awaits its turn for execution.
- **Automatic Routing.** This feature allows the user to route the output of a job to the directory or file of his or her choice.
- **System Console Support.** This feature allows the user to submit console commands to the remote host. Responses from the host are displayed at the terminal designated as the system console and are written to the log file specified at system start-up time. The system console can be dynamically changed to be any user's terminal.
- **Error recovery.** The AT&T BSC/RJE Emulator+ system is capable of recovering itself if a line goes down or the system crashes. Once the System Administrator has restarted the BSC/RJE Emulator+ and connection has been re-established with the remote host, the emulator will attempt to send all the files that were previously queued for transmission.

In addition, this new release of the BSC/RJE Emulator+ offers the following enhancements:

- **New configuration options.** It is now possible to configure the Emulator+ to operate in transparent mode, to ignore Block Sequence Numbers, to accommodate DOS/POWER 2.2.0, and to terminate itself automatically after an idle period specified by the user.

- **New installation scripts.** The new scripts allow the user to run the Emulator+ concurrently with other AT&T products using additional ISC or IOA/SDLI communication boards under UNIX System V Release 2.0.5 and later releases.
- **New clone script.** A new script allows users to run multiple AT&T BSC/RJE Emulators simultaneously on additional communication boards.
- **New documentation.** The documentation has been completely rewritten to be consistent in format and structure with the latest documentation available for all other AT&T Emulator+ products.

For further details on these new features see the *Release Notes* that describe your product.

User-Host Communication

The AT&T BSC/RJE Emulator+ consists of the following four major processes:

- **rje** – the user interface process; runs on the main processor.
- **bscrje** – the RJE controller process; runs on the main processor.
- **disptch** – the post-processing process, started by the **bscrje** process; runs on the main processor.
- **lmrje** – the line interface process, started by the **bscrje** process; runs on the communications board.

The user interface process, **rje**, and the **bscrje** process communicate via a pipe (referred to as the "rje pipe") that is named when the **bscrje** process is started. The **bscrje** process communicates with the **lmrje** process (running on the communications board), which in turn communicates with the host via a Bisync link.

Figure 1 illustrates the communication path from the user to the host.

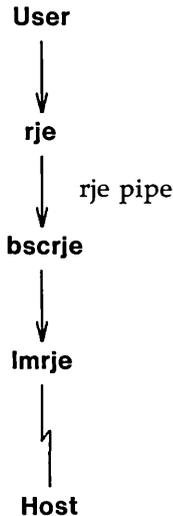


Figure 1: User-to-Host Communication Path

Conversely, data from the host follows the same path in reverse to the **bscrje** process. When the **bscrje** process receives the data, it gives the data a name and places them in its output directory. If the automatic routing feature is in effect, the output is then routed to the proper user destination by the **disptch** process. Figure 2 illustrates the communication path from the host to the user.

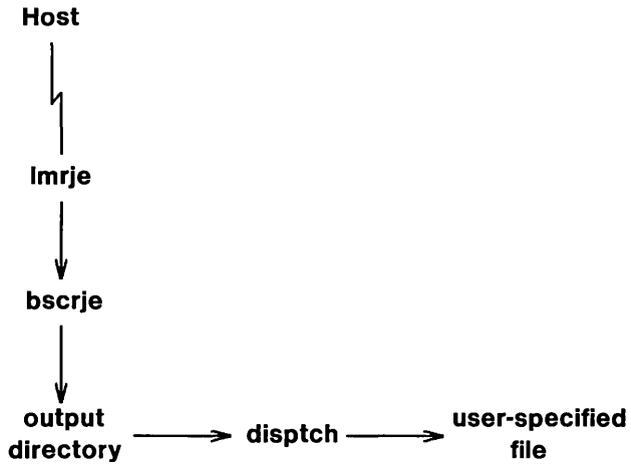


Figure 2: Host-to-User Communication Path

Operating Requirements

AT&T 3B Computer

The AT&T BSC/RJE Emulator+ is intended for use on an AT&T 3B Computer. It is recommended that the 3B Computer have at least two megabytes of RAM when running the Emulator+.

- The 3B2 Computer must be equipped with an Intelligent Serial Controller (ISC) board. The ISC board should be installed following the procedures in the *AT&T 3B2 Computer Intelligent Serial Controller Manual*. (A separate ISC board is required for each active communication line to a host.)
- The 3B5 and 3B15 Computers must be equipped with an Input/Output Accelerator (IOA) processor and a Synchronous Data Link Interface (SDLI) board.

The 3B Computer connects to the host using the switched telephone network or a non-switched (leased or private) line and a synchronous modem. All RJE workstations operate on point-to-point lines. The host connects to the communication line through a communications controller, data adapter unit, or transmission control unit that is attached to the line using a modem that is compatible with the modem used by the 3B Computer. The AT&T BSC/RJE Emulator+ operates at line speeds up to 4800 baud.

Terminal Requirements

The AT&T BSC/RJE Emulator+ works with any ASCII terminal supported by the AT&T 3B Computer.

Software Requirements

The AT&T BSC/RJE Emulator+ is designed to run under UNIX System V Release 2.0 and all subsequent releases. In addition, the Inter-process Communications Utilities and the Terminal Information Utilities packages are required.

Operating Requirements

- The 3B2 Computer must be running UNIX System V Release 2.0 or later, and the ISC board must be installed before the AT&T BSC/RJE Emulator+ software package is installed.
- The 3B5 Computer must be running UNIX System V Release 2.0 or later as well as Release 1.2 or 1.3 of the VPM firmware.
- The 3B15 Computer must be running UNIX System V Release 2.1 or later as well as Release 1.2 or 1.3 of the VPM firmware.

Documentation

AT&T BSC/RJE Emulator+

- *AT&T BSC/RJE Emulator+ User's and System Administrator's Guide* (select code 308-099)
- *AT&T BSC/RJE Emulator+ Product Overview* (select code 308-098)
This Product Overview is generic (for the 2/5/15), but there are 2 Release Notes.
- *AT&T 3B2 Computer AT&T BSC/RJE Emulator+ Release Notes* (select code 308-100)
- *AT&T 3B5/15 Computer AT&T BSC/RJE Emulator+ Release Notes* (select code 308-104)

Intelligent Serial Controller

- *AT&T 3B2 Computer Intelligent Serial Controller Manual* (select code 305-531)

UNIX System V

- Documents describing UNIX System V are available from the Customer Information Center (see below).

IBM 2780/3780 RJE Documentation

- *IBM 2780 Data Transmission Terminal -- Component Description* (GA27-3005-3)
- *Component Information for the IBM 3780 Data Communications Terminal* (GA27-3063-3)

Ordering AT&T Documentation

AT&T documentation may be ordered by calling the AT&T Customer Information Center at:

1-800-432-6600 (toll free within the continental United States)

or by writing to:

AT&T Customer Information Center
Customer Service Representative
P.O. Box 19901
Indianapolis, Indiana 46219

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