Licensed Program Specifications

IBM Parallel System Support Programs for AIX
Version 2 Release 3
Program Number 5765-529

The IBM Parallel System Support Programs for AIX (PSSP) software provides the functions required to manage the IBM RS/6000 SP computer as a full-function parallel system. The PSSP supports up to 128 nodes. It provides a single point of control for administrative tasks and helps increase productivity by letting administrators view, monitor, and control system operation. The IBM Virtual Shared Disk device driver, which makes disks globally accessible, is also available with the PSSP software.

Highlights

The PSSP software provides a comprehensive suite of applications for the installation, operation, management, and administration of the IBM RS/6000 SP:

Installation: Installation of AIX on nodes is provided for by the Network Installation Manager (NIM).

Configuration Management: Node configuration data can be entered into the System Data Repository (SDR) using SMIT or line commands. The SDR provides storage and retrieval of system data across the control workstation and nodes.

Operation

- The Centralized Management Interface provides a SMIT-based interface for system management commands, as well as command line equivalents.
- The SP Perspectives application GUIs provide for monitoring and controlling hardware, creating and monitoring system events, managing IBM Virtual Shared Disks, generating and saving system partition configurations, and setting up performance monitoring hierarchies and archiving. (A command line interface is also provided for monitoring and controlling frame and node hardware.)
- Tools are provided for orderly shutdown and restart of the system.

File Management: Groups of files can be defined as a file collection and changes to any files in that collection will be propagated to the appropriate nodes.

User Management

- Commands are supplied to add, change, and delete users and passwords.
- Users have the same account, home directory, and environment across all nodes in the system.
- The **user.admin** file collection is provided for propagating user administration files to the nodes on the system.

Job Management: The Resource Manager server runs on one of the nodes and manages the execution of parallel jobs.

Accounting: Accounting support provides accounting record consolidation and parallel job accounting.

Change Management

- System partitions can be used to apply and test new levels of software.
- Parallel management commands can be used to apply maintenance directly to nodes.
- File collections can be used to propagate changed files to nodes that have the file collection installed.
- For extensive service a new **mksysb** can be defined and the nodes reinstalled.

AIX, IBM, RS/6000, IBM RS/6000 SP are trademarks of International Business Machines Corporation.

Other company, product, and service names, which may be denoted by a double asterisk (**), may be trademarks or service marks of others.

Security: Authentication services, based on Kerberos IV, are provided for:

- The Sysctl remote command execution facility
- The SP System Monitor
- Versions of the **rsh** and **rcp** commands

Communication Subsystem Support: The Communication Subsystem supports the reliability and performance of the SP Switch and the High Performance Switch.

Availability and Problem Management

- High Availability Control Workstation (HACWS) function provides for a backup control workstation for your SP system. **Note:** HACWS is a separately priced feature.
- A single point of control for configuring, archiving, and maintaining various system logs on individual nodes is provided.
- Additional logs may be specified for use by applications.

Performance Monitoring: The Performance Toolbox Parallel Extensions (PTPE) for AIX is a performance monitor that provides access to performance information about RS/6000 SP hardware and software. **Note:** PTPE is a separately priced feature.

Version 2 Release 3 Enhancements

Version 2 Release 3 of the IBM Parallel System Support Programs for AIX provides support for AIX 4.2.1 (or later), significant expansion in programming models, new RS/6000 SP node enablement, exploitation of a high availability infrastructure, and enhanced quality. Functional enhancements made in this release include:

Automatic Installation of Initial Set of Network Tuning Parameters: The automatic installation on the nodes of an initial set of network tuning parameters is now provided.

In addition, three sets of network tuning parameters are provided that are designed to improve initial performance for the commercial, development/interactive, and engineering/scientific environments.

Automounter Support: The Amd automounter is removed from PSSP 2.3 and is replaced with support for the AIX Automounter that is part of the AIX Network Support Facilities of the Base Operating System Runtime. In addition, customization scripts are provided so that you can replace some of the AIX automounter function with your own options or you can use another automounter altogether.

The Communications Low-Level Application Programming Interface (LAPI): The Communications Low-level Application Programming Interface (LAPI) is a non-standard application programming interface designed to provide an efficient and flexible interface to the SP Switch.

Migration and Coexistence Support: Support is provided for migrating to PSSP 2.3 running on AIX 4.2.1 from the previous PSSP releases.

Support is provided for the coexistence of earlier releases of PSSP in a system partition with PSSP 2.3.

IBM Virtual Shared Disk Enhancements: Enhancements to the IBM Virtual Shared Disk include:

- The ability to determine the size of an underlying Logical Volume on a server and to provide that information to applications
- The capability to change which node acts as the server node for a single volume group, rather than for all the volume groups.

Improvements to Management of Kerberos Database and Services: New commands are provided to make it easier for security administrators to manage the Kerberos authentication database and servers. In addition, the Kerberos daemons **kerberos**, **kadmind**, and **kpropd** are now under the System Resource Controller and can be queried, stopped, and started with SRC commands.

SP Perspectives Performance and Usability Enhancements: The following improvements have been made to SP Perspectives:

- Performance for start up and execution of functions
- Scalability with small/large icon sizes and vertical panes
- Indexing of online help for improved retrievability

Switch Clock API: The new Switch Clock API provides a device-independent interface to the High Performance Switch and the SP Switch. It supports the switch clock in providing a highly synchronous and precise measurement of relative time across nodes.

Removal of SP Print Management System: The SP Print Management System is removed from PSSP 2.3. We suggest that you use the Printing Systems Manager (PSM) for AIX.

New Adapter Support for the SP LAN: The hardware adapters 2992 and 2993 are now supported for SP LAN use.

Support for GPFS and HACMP ES: PSSP 2.3 supports the new IBM Licensed Program Products General Parallel File System (GPFS) and High Availability Cluster Multi-Processor Enhanced Scalability (HACMP ES).

Specified Operating Environment

Machine Requirements

- IBM RS/6000 SP computer
- RS/6000 control workstation

See *IBM RS/6000 SP: Planning, Volume 1, Hardware and Physical Environment* (available from your IBM representative), for more information about hardware requirements.

Programming Requirements

The AIX PSSP software runs on the IBM AIX operating system, version 4.2.1, or later. The PSSP software is licensed to run on RS/6000 SP systems. The system software includes both proprietary and publicly available code. The publicly available software included is:

expect	Programmed Dialogue with Interactive Programs
Kerberos IV**	Authentication Service for Open Network Systems
NTP**	Network Time Protocol
Perl**	Practical Extraction and Report Language
SUP**	Software Update Protocol
Tcl**	Tool Command Language
TclX**	Extended Tool Command Language
Tk	Tcl-based Toolkit

Original distribution of the full public code is included with no modifications by IBM. Support is provided only to insure proper operation within our environment. IBM provides no warranties for this public code.

All copyright notices in the documentation must be respected.

Licensed Program Materials Availability

Restricted Materials – None. This licensed program is available without source licensed program materials. It is available in object code.

Supplemental Terms

Testing period

- Basic License: None.
- Satisfaction Guarantee: Yes.
- DSLO License: Not applicable.

Installation/Location License

- Not applicable. A separate license is required for each SP machine on which the licensed program materials will be used.

  Note: The code is licensed to the SP only, and may not be installed on workstations (or other nodes) outside of the SP complex, with the following exceptions:
  - The ssp.public module
  - The ssp.docs module
  - The ssp.clients module
  - The ssp.authent module
  - The ssp.top module
  - The ssp.top.gui module
  - The ssp.gui module
  - The ssp.sysctl module, client executable only (**sysctl**)
  - The ssp.perlpkg module
  - The ptpe.docs module

Usage License

- Not applicable.

Type/Duration of Program Services

- IBM will provide Central Service, including an IBM Support Center, only through the customer location designated for the basic license until discontinued by IBM upon six months written notice.
- AIX Support Line applies. For more information, refer to Service Announcement 694-018.

Warranty

This program is warranted as specified in the IBM license. Licensed Program Specifications may be updated from time to time and such updates may constitute a change in specifications. For Distributed Systems License Option (DSLO) Licenses, warranty service, if any, will be provided only through the Basic License location. Following the discontinuance of all program services, this program will be provided “As Is” as specified in the IBM license.

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program, or service.

Any other documentation with respect to this licensed program, including any documentation referenced herein, is provided for reference purposes only and does not extend or modify these specifications.

August 1997

Printed in U.S.A.

GC23-3901-02