SHARP APL *for UNIX*

Administrator Library

Upgrade Guide

Version 6.0

SOLITON ASSOCIATES

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Acknowledgments

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Contents

Preface

Introduction

This document describes the steps necessary to properly configure and upgrade SHARP APL on an AIX, Linux, or Solaris operating system. The person responsible for performing this upgrade should read it thoroughly.

SHARP APL for UNIX Platforms

SHARP APL is currently supported on following levels of UNIX operating systems:

- AIX Release 4.2 and 4.3
- SunOS 5.6 and 5.7 (Solaris 2.6 and 2.7)
- Linux - the minimum kernel version supported is 2.0.36

Chapter Outlines

This Upgrade Guide is organized into the chapters described below.

Chapter 1, "Introduction," describes the prerequisites and background information necessary for performing the upgrade.

Chapter 2, "Upgrade Procedure," details the special considerations and systematic instructions necessary for performing this upgrade.

Conventions

The following conventions are used throughout this Guide.

`⎕io←0`	Although the default value `⎕io` in a clear workspace is *on*e, all examples in this manual assume that the index origin is *zer*o.
⍺ and ⍵	Two APL symbols are used in syntax descriptions of monadic and dyadic functions; *alpha* (⍺) identifies the left argument and *omega* (⍵) identifies the right argument.
`constant width`	Examples of non-APL input and output (e.g., system commands) are represented in a `constant width` typeface.
passno	Argument variables appear in *sans-serif italic* type.
[ ]	Optional arguments are shown between square brackets. For example, in the following APL statement, the argument *passno* is optional:

'filename' `⎕stie` *tieno* `[,` *passno* `]`

These default environment variables represent frequently used pathnames in SHARP APL for UNIX documentation and scripts:

`$SAXLIB`	→	`/usr/sax`
`$SAXDIR`	→	`/usr/sax/rel`
`$SAXCNF`	→	`/usr/sax/local`
`$HOME`	→	home directory of the current user
`$CDROM`	→	your CDROM location, or location of source files if not using CDROM install

Documentation Summary

The SHARP APL for UNIX reference documentation is published in several volumes. One or more of the following may be referenced in this document. Please view the `README.`***`ver`*** and `README.history` files on the distribution CDROM or in `$SAXCNF` for the latest information.

The SHARP APL for UNIX documentation set includes the following books:

- Handbook, publication code UW-000-0401
- Auxiliary Processors Manual, publication code UW-033-0501
- File System Manual, publication code UW-037-0501
- Intrinsic Functions Manual, publication code UW-007-0501
- Language Guide, publication code UW-000-0802
- System Guide, publication code UW-000-0902
- SVP Manual, publication code UW-001-0501

Together with this guide and the `README` file included with the distribution, these books provide a complete description of the facilities available with SHARP APL for UNIX version 6.0.

For a complete list of Soliton product publications, please visit the Soliton Associates website at `http://www.soliton.com`.

Contacting Soliton Associates

Problems or questions regarding your SHARP APL system or this guide should be directed to the Soliton Associates Technical Support group:

```
support@soliton.com
```

Requests for additional technical documentation should be directed to the Soliton Associates Sales group:

```
sales@soliton.com
```

1 Introduction

Prerequisites and Background Information

SHARP APL for UNIX is currently supported on the following operating systems and release levels:

- AIX Release 4.2 and 4.3
- SunOS 5.6 and 5.7 (Solaris 2.6 and 2.7)
- Linux - the minimum kernel version supported is 2.0.36

The upgrade must be performed from the superuser account (`root`) with a recommended `umask` setting of `022` on all platforms.

The SHARP APL for UNIX product requires UNIX system configuration options to accommodate an eight Kb shared memory segment and one semaphore for every SAX process using AP124.

Release Library Naming Conventions

The default name of the root directory for SHARP APL distribution files is `/usr/sax/rel`. You may install the files into any directory. You will be prompted for your choice during the upgrade. The root directory will be referenced as `$SAXDIR` throughout this document. Substitute your choice where `$SAXDIR` is found as a path reference.

Version

Throughout this document ***ver*** is used to designate the version number for this release of SHARP APL for UNIX. Use `600` for all occurrences of ***ver***.

Local Customization

The configuration files that are highlighted in **`bold typeface`** contain changes with this version of SHARP APL. All other configuration files are unchanged. Step 4 in this Guide provides instructions for managing the configuration files.

`$SAXDIR/etc/site.svp`	Configuration parameters for the Shared Variable Processor.
`$SAXDIR/etc/site.nsvp`	Configuration parameters for the Network Shared Variable Processor.
`$SAXDIR/etc/site.btask`	Configuration parameters for the Btask Scheduler.
`$SAXDIR/etc/saxfs.cnf`	Configuration parameters for the SHARP APL File Server. (New with release 6.0.0).
`$SAXDIR/etc/.saxif`	This document can be used to build intrinsic functions that are unique to your SHARP APL for UNIX system. Soliton recommends the use of alternative techniques described in the *Intrinsic Functions Manual*.
`$SAXDIR/etc/conf/rc_local.sax`	Control file for automating the start-up of the SVP, NSVP, and the Btask Scheduler.
`$SAXDIR/etc/nsvp.hosts`	The local list of valid hosts for NSVP (hosts not found in the system `/etc/hosts file`).
`$SAXDIR/etc/nsvp.shells`	A list of valid UNIX shells recognized by NSVP.

$SAXDIR/etc/apd.tab	Start-up file for the AP daemon, `apd`.
$SAXDIR/etc/apd_nsvp.tab	Defines which Auxiliary Processors are started when a task logs in via NSVP.
$SAXDIR/etc/apd_t.tab	Start-up file for the AP daemon (Sun asynch variation – `apdt`).
`$SAXDIR/lib/wss6/NsvpX.sf`	Information on remote systems for this application of NsvpX. (Note: NsvpX is a separately licensed product and may not be installed on your system.)
`$SAXDIR/lib/btask/btasks.sf`	Btask Scheduler data file that contains the details of requests submitted.
`$SAXDIR/lib/btask/blog.sf`	Logging file used by the Btask Scheduler facility.

Distribution Materials

SHARP APL for Unix is distributed on CD-ROM which is readable on platforms that support the ISO-9660 standard for CD-ROMs. The directory structure is as follows:

`$CDROM/tools`	Scripts and `README` files.
`SAXupgrade.600`	Script to use for upgrade to SHARP APL for UNIX 6.0.0
`SAXinstall.600`	Script to use for a new installation of SHARP APL for UNIX 6.0.0
`README.600`	Description of the changes in SHARP APL for UNIX 6.0.0.
`README.history`	Description of the changes included in previous releases.

`$CDROM/documentation`	SAX 6.0.0 documentation in portable document format (PDF).
`SAX6_Doc.pdf`	Full set of documentation for SHARP APL for UNIX 6.0.0
`SAX6_Upgrade.pdf`	Upgrade Guide for SHARP APL for UNIX 6.0.0.
`SAX6_Install.pdf`	Installation Guide for SHARP APL for UNIX 6.0.0.
`$CDROM/emulators/`	Instructions, fonts, and software for PCs intending to access SAX with APL characters and keyboards.
`$CDROM/aix_42/`	SAX 6.0.0 for AIX 4.2
`$CDROM/aix_43/`	SAX 6.0.0 for AIX 4.3
`$CDROM/solaris_6/`	SAX 6.0.0 for SunOS 5.6/Solaris 2.6
`$CDROM/solaris_7/`	SAX 6.0.0 for SunOS 5.7/Solaris 2.7
`$CDROM/linux/`	SAX 6.0.0 for Linux

In each of the Operating System directories (`$CDROM/os`), in addition to the directories required for SAX 6.0.0, you will also find the following file:

`packingList`	Contains checksums for all files in this distribution

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Upgrade Procedure

Special Considerations

- No SHARP APL for UNIX users should be active during this procedure.
- Soliton strongly recommends that you preserve a copy of the current release online, if the space is available, until testing of the new version of SHARP APL for UNIX is complete.
- A system reboot may be required on a SunOS system.

Packing List

SHARP APL for UNIX includes the file, `packingList`. This contains checksums for all files in this distribution. Comparison of this file with a similar list, optionally generated during this procedure, identifies modified files.

The configuration files listed previously are preserved in this procedure. If any other SHARP APL related configuration files in `$SAXLIB` have been altered, they should be preserved before upgrading the software.

The Steps

The upgrade procedure is divided into numbered steps, each of which indicates a logical stage in the upgrade process. Each step is comprised of a discussion, and a procedure, as described below.

Discussion Section

This section describes the action to be taken and provides any necessary background information. It should be read before executing the procedure.

Procedure Section

This section provides the sequence of actions that comprise the complete step. These may be UNIX commands, the execution of a UNIX script, or instructions on how to edit a module.

Discrete actions are indicated by a box symbol (❑), and ***action choices*** are indicated by a circle symbol (❍). For reference purposes, please place a check mark in the box or circle beside each action that has been completed successfully.

Some scripts in the procedure prompt for a response. Values in the parenthesis ( ) indicate possible responses. The value in square brackets [ ] is the default value. This default is used if you don't enter a response.

Precautions

We recommend that the instructions in this guide be executed in the order in which they are presented. Contact Soliton Support (`support@soliton.com`) before attempting to execute any step out of sequence.

Step 1. Preparation

Discussion

This step helps you prepare for the upgrade. Reviewing the necessary documentation before you start is the most important preparation you can make. Completing this step also helps ensure that your system is configured appropriately before you start the upgrade.

Procedure

- ❑ Review the SHARP APL for UNIX Documentation Suite distributed with this release. The Suite has been grouped according to potential readers and most documentation has been through a complete review and updated.
- ❑ Review and become familiar with this Upgrade Guide before continuing.

  Questions about any of the instructions in this guide should be directed to the Soliton Technical Support group (`support@soliton.com`).
- ❑ Read the `README.ver` found in `$CDROM/tools` (or in `$SAXDIR` upon completion of the upgrade).
- ❑ Ensure that all prerequisites identified in the Introduction section "Prerequisites and Background Information" are satisfied.
- ❑ If you choose to retain an online backup of the current release, as recommended, ensure the space is available.
- ❑ We recommend you notify users that the SHARP APL system is unavailable during the upgrade.

Step 2. System Configuration

Discussion

The SHARP APL for Unix product requires UNIX system configuration options to accommodate shared memory segments for the Shared Variable Processor, the File Server 3, 1 semaphore for every SAX process using AP124, and the Message Queue facility.

On the AIX and Linux platforms, the default values are usually sufficient. If you have problems on an AIX system, you may have to set EXTSHM=ON. If you have problems on a Linux system, you may have to rebuild your kernel with increased values.

On the SunOS platform, the default values are only sufficient for a very small configuration (for example, SVP users=10). We recommend the following minimum settings for the listed values. These values may need to be increased depending on your projected system load. Note that even though we recommend a minimum setting for the maximum size of the shared memory segment, it should not exceed the virtual memory available on your system.

Procedure *** For SunOS Only ***

- ❑ Log on to the superuser account (`root`)
- ❑ `cd /etc` and using standard procedures, edit the file `/etc/system` as follows.

Continued

Step 2. (Continued)

- Add these statements to the appropriate section. The `forceload` statements should precede the `set` statements.

```
forceload: sys/semsys
forceload: sys/shmsys
forceload: sys/msgsys

set maxusers=96
set npty=128
set pt_cnt=128
set tune:tune_t_flckrec=4000

set semsys:seminfo_semmni=1000
set semsys:seminfo_semmns=6000
set semsys:seminfo_semmnu=6000
set semsys:seminfo_semume=80
set semsys:seminfo_semmsl=6000
set semsys:seminfo_semopm=80

set shmsys:shminfo_shmmax=320000000
set shmsys:shminfo_shmseg=64
set shmsys:shminfo_shmmni=128

set msgsys:msginfo_msgmap=100
set msgsys:msginfo_msgmax=2048
set msgsys:msginfo_msgmnb=4096
set msgsys:msginfo_msgmni=128
set msgsys:msginfo_msgssz=8
set msgsys:msginfo_msgtql=40
set msgsys:msginfo_msgseg=1024
```

- You must schedule a system reboot with reconfiguration (`-r`) before releasing the upgraded SHARP APL for UNIX to your users.

Step 3. Identifying Modifications

OPTIONAL STEP

Discussion

This step provides the opportunity to analyze your SHARP APL system for modified files. If your system has been consistently updated using only the instructions and procedures supplied with Soliton's update releases, it is not necessary to do this analysis.

SHARP APL for UNIX includes the file, `packingList`. This contains checksums for all files in this distribution. Generate a list of CRC checksums for the current release. Compare this to the packing list for the new release. Most of the differences found are for the new code distributed for this release. Carefully check files with customized code and any files that have been modified on your system.

If differences are found, check the list of "Local Customization" configuration files listed earlier in this Guide. If the files are found in this list, they are preserved by this procedure. If not, they must be copied to a different directory to be preserved during the upgrade. The procedure preserves files in `$SAXCNF/`*subdir*, where *subdir* is the current location of your files.

Files, which appear in the generated list and not in the packing list could be SHARP APL obsolete code or code local to your system. Check these files carefully to ensure you understand what they are. Move local files to preserve them.

The file with the generated list contains the following information for each file:

- checksum value
- number of 1024 byte blocks
- file name

Continued

Step 3. (Continued)

Note: Due to the extensive internal changes with SAX 6.0.0 (interpreter, SVP, File Server, etc.), virtually every file in the distribution has changed.

Analyzing your system for modified files may not be a useful process for this release. We will attempt to identify areas where you should be concerned with local customization issues later in this procedure. However, if you changed documents other than those listed in the section "Local Customization", you should take steps at this point to identify what actions might be required during this process.

Contact `support@soliton.com` if you require assistance.

Procedure

- ❑ Generate list for the current release using command similar to:

```
cd $SAXDIR (current sax directory)
find . -type f –exec sum {} \; > $SAXCNF/system_list
```

- ❑ Compare the two lists -
  `$CDROM/os/packingList` and
  `$SAXCNF/system_list`
  using `diff` or a similar command.

- ❑ If required, preserve files by copying to a directory not updated by the upgrade. Recommendation: `$SAXCNF/`***old_rel_no.***

Note: The upgrade procedure provides the option to fully back up the entire release. If the space is available, Soliton strongly recommends this. If you plan to do this, you do not need to preserve these files in a separate directory. The upgrade does not remove an old release.

- ❑ Make note of all files preserved for future reference:

  _____

  _____

  _____

Step 4. Running the Upgrade Script

Discussion

This step describes running the UNIX shell script, `SAXupgrade.ver`. The script uses the Bourne shell and performs release library housekeeping and restoration of SHARP APL distribution files.

There are a number of prompts, which can be issued by this script. Most are self-explanatory, or require only a yes or no answer. If you are unsure of any of the answers, contact Soliton Technical Support. The script prompts you to answer questions regarding the upgrade. Default answers for questions are displayed in square brackets at the end of the prompt. To accept the default value, press ENTER.

During its housekeeping function, `SAXupgrade.ver` prompts to determine if you wish to back up the previous release library. Should your system file space allocation not allow for entire duplication of the complete directory tree, respond "no." The script always saves a copy of each of the files previously listed in the section "Local Customization" to the appropriate subdirectory within `$SAXCNF`. We recommend you have an offline backup if space does not allow for an online backup.

Files containing custom code and not listed in "Local Customization", as well as major SHARP APL applications, should be backed up prior to running this upgrade script.

The Upgrade script uses the two UNIX commands `cp` and `rm`. If you alias these commands on your system to verify each request (`cp -i` or `rm -i`) you may want to `unalias` these before executing the script.

A new directory is required for trace control files (`$SAXDIR/trc`). If this does not already exist on your system, it will be created during this upgrade.

The B-task Scheduler (if running),the Shared Variable Processor, and NSVP are shut down during the Upgrade procedure.

Continued

Step 4. (Continued)

Procedure

- ❑ ******CONDITIONAL****** If you abort the procedure for any reason and are not going to proceed immediately, determine if you should:
  - restart NSVP
  - restart the BTASK scheduler
- ❑ Log on to your superuser account (`root`).
- ❑ Insert the CD-ROM in the CD drive. Depending on how your workstation is configured, your CD drive may be mounted automatically. If the CD drive is not mounted, you must mount it before continuing.
- ❑ To run the SHARP APL for UNIX upgrade script, change to `tools` directory on the CD-ROM and start the script.

  ```
  cd $CDROM/tools
  sh SAXupgrade.ver
  ```

  The product upgrade prepares for the procedure by determining your UNIX operating system and verifying that it is a supported system.

  `This is the upgrade procedure for Version x.0 of SHARP APL for UNIX on` *operating_system_and_release_level*.

  ```
  Do you wish to continue (Y/N) ? [Y]
  ```

  - ❍ Press ENTER if the correct operating system has been detected and go to the next prompt.
  - ❍ Press N if this is not the correct operating system. The upgrade will be cancelled.

  If any problems are detected during this determination, an error message is displayed and, usually, the upgrade is cancelled.

Continued

Step 4. (Continued)

If you accept the operating system, the procedure verifies you are using the `root` user id, have the recommended `umask` setting, and that it can find the required system tools. If a discrepancy is found, an error message prints and the upgrade is cancelled.

Now the procedure needs to determine the location of your source files.

```
Are your source files located on a cdrom (Y/N) ? [Y]
```

- Press ENTER if you are upgrading from CD-ROM. You are asked to enter the name of the mounted CD drive and then go to the next prompt.
- Press N if you have the source code on disk. You are asked to enter the complete directory path containing the source file and go to the next prompt. Note: you must enter the parent directory path of the `bin` and `etc` directories included in the distribution.

At the next prompt, type the full pathname of the previously installed running version of SAX if different from the default value. The path name is verified before proceeding.

Next comes your opportunity to do an on-line back-up of the current production SAX system.

```
Do you wish to backup the entire SAX library
prior to this installation (Y/N) ? [Y]
```

- Press ENTER if you have the disk space available for an on-line back-up. You are asked to enter the entire pathname for your back-up directory. If this path already exists, you are asked to confirm that you want to overwrite the directory. The current system is backed up now.
- Press N if you do not want an on-line back-up.

Continued

Step 4. (Continued)

Your preference for the location of the upgrade is now determined.

```
Would you like to install the new version in the default
(/usr/sax/rel) directory (Y/N) ? [Y]
```

- Press ENTER if you want the upgrade installed in `/usr/sax/rel`.
- Press N if you do not want to use this directory. You are asked to enter the pathname for the release library files. This pathname is validated before going to the next prompt.

Whether or not you back-up your entire system on-line, certain files are always backed up. These files will be saved in the appropriate subdirectories in the selected directory path.

```
The default backup location for the custom code files is
/usr/sax/local.  Would you like to use the default
location (Y/N) ? [Y]
```

- Press ENTER if you want to use the default.
- Press N if you do not want to use this directory. You are asked to enter the path to use for the backup location of the custom code files.

The procedure now uses all information you have provided to perform the upgrade. At the end of the installation procedure, you should see messages similar to the following:

```
file size (blocks)       unlimited
SVP initialization complete
[UNIX Prompt]# detach begins
detach ends (setpgid rc=0)
```

These messages are expected. You may have to press ENTER to get your next UNIX prompt.

Step 5. Managing Configuration Files

Discussion

This step allows you to copy forward local changes to the various configuration files or edit new changes. A list of configuration files is provided earlier in this document in the section “Local Customization”.

NOTE: If you have added user-defined intrinsic functions (created for specific user tasks, by Soliton, or by users) to the configuration file that describes functions distributed as part of the base APL system (`$SAXDIR/etc/.saxif`), you must carry these definitions forward at this time. Soliton recommends that you create the file `$SAXCNF/.saxif` for these definitions. See Chapter 2 of the *Intrinsic Functions Manual* for more details.

Procedure

- Refer to the list of configuration files (see "Local Customization" section). Configuration files that are unchanged by this SHARP APL for UNIX release have already been restored.

  Evaluate the changed configuration files (those highlighted in **`bold typeface`** in the "Local Customization" section) to determine if local customization should be carried forward. The files used in the previous release are located in their appropriate subdirectories in `$SAXCNF` or the library you specified during execution of the upgrade script. These may be used as a reference for customizing production documents in `$SAXDIR`. For example, to evaluate the differences -

  ```
  diff $SAXCNF/etc/nsvp.shells $SAXDIR/etc/nsvp.shells
  ```

- Refer to the list of local documents saved in Step 2. Preserved code, local to your system and not included in the SHARP APL distribution should be copied forward to the appropriate subdirectory.

- Files, which are included in the SHARP APL distribution and have been changed locally, should be reviewed to determine if the local modifications should be copied forward. The files saved in Step 2 may be used as a reference when customizing production documents in the SHARP APL for Unix library`.`

Step 6. Non-Default Library Install

CONDITIONAL STEP

Execute this step only if you have changed the location of your SAX release library

Discussion

If you have **not** changed the location of your release library and this step was executed for a prior upgrade, the settings will remain the same. However, if you have changed the location of your release library you will need to update certain links and library references.

This step identifies areas which should be checked if you have changed this location. In addition, you should review your local SHARP APL Applications to see if this change has any impact.

If you have changed the location of the SHARP APL for UNIX product (i.e., `$SAXDIR` is not `/usr/sax/rel`) you must edit `rc_local.sax` to reflect this change and execute the script `$SAXDIR/etc/tinit.install`. This script updates output table names in the terminal initialization files. It will change the hard-coded pathnames (`/usr/sax/rel`) in these files to `$SAXDIR`. It is very important that you have the environmental variable `$SAXDIR` set to the new location before executing this script.

The provision of the scripts `sax` and `wys` to users can be done in a manner appropriate for your system. Suggested methods include linking frequently used scripts into a standard path such as `/usr/bin/`, advising users to amend their shell login files, or amending a global user profile script.

To automate loading the SVP and starting the NSVP facility during system startup, the SHARP APL startup script should be added to the boot sequence. For Solaris and Linux installations, this is linked into the level 3 script; for AIX installations this must be added to `rc.local`.

Continued

Step 6. (Continued)

Procedure

- Log on to the superuser account (`root`).
- If necessary, edit `SAXDIR` in `$SAXDIR/etc/conf/rc_local.sax` to reflect the directory in use on your system.
- Set the environmental variable `$SAXDIR` to the full path name of your SAX installation. This is the path you used instead of the default `/usr/sax/rel`, for example:

```
SAXDIR=/my_SAX_installation_pathname; export SAXDIR
```

- Execute the following script to ensure all terminal and keyboard features reference the proper library.

```
sh $SAXDIR/etc/tinit.install
```

- Examples for provision of the scripts `sax` and `wys` to users for your environment.

  Link the scripts into a standard path included in all user's profile, for example `/usr/bin`:

```
ln -s $SAXDIR/bin/sax  /usr/bin/sax

ln -s $SAXDIR/bin/wys  /usr/bin/wys
```

  Amend the individual user shell or the global user shell login files to define the following global values.

  Substitute your path for `/usr/sax/rel`.

```
set SAXDIR=/usr/sax/rel

set PATH=$PATH:$SAXDIR/bin
```

Continued

Step 6. (Continued)

Select only the actions that are appropriate for your operating system:

- ***Solaris:***
  - ❑ Link into the level 3 script:

```
cd /etc/rc3.d
ln -s $SAXDIR/etc/conf/rc_local.sax S99sax
```

- ***AIX:***
  - ❑ Place the following commands at the end of a system boot script (e.g. `/etc/rc.local`)

```
SAXDIR=/usr/sax/rel; export SAXDIR
$SAXDIR/etc/conf/rc_local.sax
```

- ***Linux:***
  - ❑ Link into the level 3 script using commands similar to the following which are appropriate for your version of Linux:

```
cd /etc/rc.d/rc3.d
ln -s $SAXDIR/etc/conf/rc_local.sax S99sax
```

Note: These changes are implemented during your next system shutdown.

❑ Check the following documents for references to the path `/usr/sax/rel` and change them where required:

```
$SAXDIR/etc/apd.tab
$SAXDIR/etc/apd_nsvp.tab
$SAXDIR/etc/apd_t.tab
$SAXDIR/etc/nsvp.script
$SAXDIR/etc/samit.script
$SAXDIR/etc/conf/rc_local.sax
```

Note that these won't be a problem when started from a UNIX session where `$SAXDIR` is defined, but there is a problem when started by a detached task or as part of an automated start-up procedure.

Step 7. Login Test

Discussion

This step ensures the SHARP APL interpreter has been correctly installed. It involves logging into your system as an ordinary user, and typing `sax`.

Procedure

- **NOTE:** If this is a SunOS system and you updated the `/etc/system` file as described in Step 2, a system reboot with reconfiguration should have taken place prior to running this test.
- Log on to your UNIX system as an ordinary user (Soliton recommends that you do not run SAX from the `root` account).
- Type:

  ```
  sax
  ```

  The following message should display on your sign-on screen:

  SHARP APL for UNIX Version ***ver***

  If a version number ***ver*** other than the newly released version number appears on your sign-on screen, please contact Soliton support (`support@soliton.com`).

- To ensure the Shared Variable Processor is working properly, type:

  ```
  )load 1 hostap
  pwd
  ```

- `)off`

End of SHARP APL for UNIX Upgrade Procedure