SCIENCE AND ENGINEERING RESEARCH COUNCIL
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SUN/35.1
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Starlink Project
Starlink User Note 35.1

Issued by

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15.09.82

Changes in the Starlink and VAX software environments

1. INTRODUCTION

Starlink computers are about to undergo a major enhancement to their operating system with the release of version 3.0 of VMS. At the same time, a number of changes will be made to the Starlink Software Collection. The fact that these changes are occuring at the same time is largely coincidental.

This note explains the changes that may have a direct impact on users, and the actions that will be required to deal with them. Please read this note carefully and contact your Site Manager if you are unsure of what to do.

The changes to VMS will affect every user of the Starlink VAX computers. The changes to the Starlink Software Collection will only affect those people who use items in it. The Starlink computers will no longer assume that you intend to use the Collection and you will have to take appropriate action if you intend to do so (see below).

The system will tell you what version of VMS it is running under when you login. You will be told when your site plans to implement the changes described in this paper.

2. CHANGES TO THE STARLINK SOFTWARE COLLECTION

There are a number of reasons for the changes to the Starlink Software Collection. They are all attempts to solve some problems that have become evident during the past years. Essentially, the objective is to make the Collection look like any other package of

applications software and to get away from the concept of a dedicated "Starlink" computer. The aim is to make the Collection easily portable to other VAX's. This implies that the Collection be self-contained and have a high degree of flexibility in its installation requirements, while at the same time maintaining a stable user interface.

2.1 Starlink Logical Names

One way of obtaining flexibility is by requiring that the user refer to Starlink directories and devices by logical names. The system manager can then install the software in an operationally convenient way and, if necessary, can move the directories to different devices without affecting the user. You should, therefore, always refer to Starlink directories and devices by their logical names. You should review all your programs and command procedures and change all references to specific directories or devices to the appropriate logical names.

In order to make the Collection as self-contained as possible, a new directory, [STARLINK.SYSTEM], has been introduced to store copies of systems software that is needed by the Collection and which is not part of the standard VMS release.

If a directory you wish to refer to has been given a logical name, use it. If not, preface the full directory name by the logical name of the device which holds it. Thus, refer to [STARLINK.LIB] by the logical name LIBDIR. But refer to [STARLINK.PACK.VLBI.BIB] as STARDISK:[STARLINK.PACK.VLBI.BIB].

The logical names given to the Starlink directories are shown below.

[STARLINK]	ESC
[STARLINK.ADMIN]	ADMINDIR
[STARLINK.DOCS]	DOCSDIR
[STARLINK.LIB]	LIBDIR
[STARLINK.LIB.ADC]	ADCDIR
[STARLINK.PACK]	PACKDIR
[STARLINK.PACK.ASPIC]	ASPDIR
[STARLINK.PACK.ASPIC.ARGSDB]	SYS_ARGS
[STARLINK.PACK.ASPIC.DSCL]	DSCLDIR
[STARLINK.PACK.ASPIC.LIB]	not defined
[STARLINK.PACK.IUE]	IUEDIR
[STARLINK.PACK.IUE.DATA]	IUEDATA

[STARLINK.PACK.SPICA]	DRUGDIR
[STARLINK.PACK.VLBI]	VLBIDIR
[STARLINK.PACK.VLBI.BIB]	not defined
[STARLINK.PACK.VLBI.DEV]	not defined
[STARLINK.PACK.VLBI.USR]	not defined
[STARLINK.STAR]	STARDIR
[STARLINK.STAR.ARGS]	not defined
[STARLINK.SYSTEM]	SYSTEMDIR
[STARLINK.UNCLASS]	UNCLASSDIR
[STARLINK.UTILITY]	UTILITYDIR
[STARLINK.UTILITY.CHART]	CHARTDIR
[STARLINK.UTILITY.PXGRAF]	not defined
[STARHOLD]	HSSC
[STARHOLD.GKS]	GKSDIR
[STARHOLD.IDL]	IDLDIR
[STARHOLD.NAG]	NAGDIR
[STARHOLD.VERSAPLOT]	VERSADIR

Logical names have been defined for the following devices:

Device holding [STARLINK...]	STARDISK
Device holding [STARHOLD...]	STARDISK
Default ARGS device	ARGS_DEVICE

Logical names have been defined for the following files:

NAGDIR:NAG.OLB	NAG_LIB
GKSDIR:GKSLINK.COM	GKSLINK
GKSDIR:GKSWDT.DAT	GKSWDT
GKSDIR:GKSOPT.OPT	GKSOPT
STARDIR:INTERIM.OLB	INTERIM_LIB
LIBDIR:HIGRLINK.OPT	HIGRLINK
LIBDIR:CNTOPT.CMN	HIGRCNTOPT
LIBDIR:ARGS.COM	ARGSLIB
LIBDIR:ACTBC.OBJ	ARGS_CODE_TBC
LIBDIR:SGSLINK.COM	SGSLINK
UTILITYDIR:STE.HLP	STEHLP

Some packages also define logical names when they are activated (eg the IUE package). Normally you should not need to be aware of them. Each Starlink site will usually have a set of local Starlink directories organised with the same structure as the main set. These directories should have logical names defined for them which are the same as those for the associated main directories preceded by the letter "L". Thus the following logical names should be defined:

Device containing [STARLOCAL...]	LSTARDISK
[STARLOCAL]	LSSC
[STARLOCAL.ADMIN]	LADMINDIR
[STARLOCAL.DOCS]	LDOCSDIR
[STARLOCAL.LIB]	LLIBDIR
[STARLOCAL.PACK]	LPACKDIR
[STARLOCAL.STAR]	LSTARDIR
[STARLOCAL.SYSTEM]	LSYSTEMDIR
[STARLOCAL.UNCLASS]	LUNCLASSDIR
[STARLOCAL.UTILITY]	LUTILITYDIR

There may well be others.

The above logical names are "system" logical names. You can find out what logical names have been defined by typing the command:

```
$ SHOW LOGICAL
```

You can also examine the logical name definitions by printing out the files SYS$MANAGER:SYSTARTUP.COM, SSC:STARTUP.COM, and LSSC:STARTUP.COM.

2.2 Startup and Login Files

Because the Starlink Software Collection is to lose its special status which makes it automatically activated, you will need to set up its environment before attempting to use it. To do this, you must put the following command into your LOGIN.COM file:

```
$ @SSC:LOGIN.COM
```

If you do not do this, you will find that much of the Starlink software will no longer work for you.

*** YOU MUST TAKE ACTION ON THIS ***.

You must only do this AFTER VMS 3.0 has been installed – but make it the first thing you do.

It may be helpful for you know what command procedures are executed at startup and login time. The sequence of events will change when VMS 3.0 is installed and the description below refers to the new sequence.

When the system is first started up ("system boot") the following command procedures will be executed in a nested sequence:

1. SYS$SYSTEM:STARTUP.COM
2. SYS$MANAGER:SYSTARTUP.COM
3. SSC:STARTUP.COM
4. LSSC:STARTUP.COM

Procedure 3 is called at an early stage in the execution of 2 and is mainly concerned with the definition of the standard Starlink logical names. Procedure 4 (if it exists) is called at the end of 3 and defines local Starlink logical names. A number of other command procedures are called at various levels of nesting, but the simple outline described above gives the general idea. The important point is that when you login, all the general Starlink logical names have already been defined for you and are ready to use.

When you login ("login time") another series of command procedures are executed in the following sequence:

1. SYS$MANAGER:SYSLOGIN.COM
2. SYS$DISK:[user's initial default directory]LOGIN.COM

As stated above, you must call the Starlink LOGIN.COM file from your own LOGIN.COM file if you wish to use items in the Starlink Software Collection. In this case, the following further command procedures will be executed:

3. SSC:LOGIN.COM
4. LSSC.LOGIN.COM

Procedure 4 will only be executed if it exists. Procedures 3 and 4 are mainly concerned with the definition of global symbols that are use in the Collection.

3. CHANGES TO VMS

Version 3.0 is a major revision of VMS. A new set of manuals has been released in conjunction with the software. Users who wish to find out the full details of the changes should consult these; in particular

the installation notes for VMS 3.0. The changes which are likely to affect users most directly are described below.

1. The logical name SYS$SYSDISK has been dropped; its role has been taken by the logical name SYS$SYSDEVICE. You should change all references to SYS$SYSDISK to SYS$SYSDEVICE except for the cases in which you can use a Starlink logical name instead. Thus, change SYS$SYSDISK:[STARLINK.STAR] to STARDIR, instead of SYS$SYSDEVICE:[STARLINK.STAR]. Don't just do a global edit to rename SYS$SYSDISK but examine each case separately.

2. The default editor on Starlink machines is to remain SOS although DEC manuals (eg. the new Primer) state that the default editor is EDT. If you use a non-Starlink VAX you may need to invoke the SOS editor by the command

```
$ EDIT/SOS <file name>
```

3. There are a lot of changes in DCL so if you use command procedures you should examine them carefully. In particular, if a procedure exits with non-normal status, execution of the nested set of procedures stops, whereas in VMS 2.5 execution continued. This feature made a lot of changes necessary to Starlink command procedures.

4. The handling of symbols is so completely different that you should look at the VMS 3.0 Command Language User's Guide. Most of the multiple ' and " characters are no longer required. Most of the old forms of symbol usage still work, although some do not. There are no simple guide-lines for this problem.

5. The default protection for files has changed to allow no access to WORLD. If your files are regularly accessed by other users, you should consider putting a

```
$ SET PROTECTION=W:RE/DEFAULT
```

in your LOGIN.COM file.