DSS-10610-00
August 2001

Spawning Task Manager
Overview and Upgrade Information

The traditional AMOS Task Manager handled spooling and batch processes in a round robin fashion. It would spending a chunk of time transfer some characters to a printer driver, then, perhaps, get output and doing input to a batch job, and so on. Servicing a large number of printers and/or batch processes in one job's time slice is too slow in some installations. And when a log of disk IO was involved in spooling, the Task Manager may seem to dominate the Job Scheduler queue.

The Spawning Task Manager (TASKIT) is offered as an alternative to address these issues. The installation instructions below cover how to transition FROM an existing Task Manager installation TO the Spawning Task Manager. Only by referencing the original *Task Manager Installation and User's Guid*e, DSS-10010-00 does it cover all of the steps required for a successful NEW installation.

SPAWNING TASK MANAGER OVERVIEW

The Spawning Task Manager spawns a controlling job for each task, both spooling and batch jobs. For the spooling tasks, the spawned job does the actual transfer of the data. For each batch job, there is a unique (BATCHA, BATCHB, …) spawned job that does the terminal input and output processing. The TASK MANAGR job handles ITC spool and submit requests. The new MANAGR TASK job JRUNs the controlling jobs as needed.

JOB & TERMINAL RELATIONSHIPS

When using the Spawning Task Manager (TASKIT), you might find something like the following variety of related jobs and terminal definitions on the system:

Job Name	Terminal	Description
TASK	MANAGR	Job used to handle all (only) ITC messages.
MANAGR	TASK	Job used to check Batch/Spool queue flags for a change in the status of the queue. If a change is found, the spawned control job is JRUN.
-none-	LPT1	Normal terminal definition for a port physically connected to a printer. (The printer .INI, or .PIN, file includes the following statements: *DEVICE=TRM0:LPT1* and *NAME=LPT1*. This entry reflects the *DEVICE=TRM0:LPT1* entry.)
LPT1	LPT1Z	**Spawned** job that prints all files for *LPT1* spooler queue. (This is from the *NAME=LPT1* statement in the INI files.) The *Z* will be appended if the *Z* switch is used to avoid conflicting with the TRMDEF name above, which was used in the *DEVICE=TRM0:LPT1* statement.

-none-	PRT001	Normal terminal definition for a port physically connected to a printer. (The printer .INI, or .PIN, file includes the following statements: *DEVICE=TRM0:PRT001* and *NAME=TI810*. This entry reflects the *DEVICE=TRM0:PRT001* entry.)
TI810	TI810	**Spawned** job that prints all files for the *TI810* spooler queue. (This reflects the printer name in the *NAME=TI810* statement in the INI files.)
SLAVE1	SLAVE1	Normally defined job for batch processing, just as with the older Task Manager.
BATCHA	BATCHA	**Spawned** job that controls SLAVE1's batch execution. The actual programs are run by SLAVE1 in SLAVE1's memory.
SLAVE1	SLAVE1	Normally defined job for batch processing, just as with the older Task Manager
BATCHB	BATCHB	This **spawned** job controls SLAVE2's batch execution. The actual programs are run by SLAVE2 in SLAVE2's memory.

Information Sheet
Spawning Task Manager Spooler and Batch Job Processor

The new spawning task manager spooler has been developed and is being supplied with the AMOS 2.3A(487)-7 and later monitor. The software is contained on the October 1999 AlphaCD and later AlphaCDs. This document provides an overview of this software, as well as installation instructions and usage restrictions.

For additional details on the general use of the task manager, consult the original *Task Manager Installation and User's Guide*, DSS-10010-00.

CONTENTS

The Spawning Task Manager Spooler is made up of the following programs:

AMOS.MON	2.3A(487)-7	Spawning Monitor Calls
PRNT.LIT	4.0(109)-4	Modified to work with TASKIT.LIT
SUBMII.LIT	1.1(113)-5	Modified to work with TASKIT.LIT
TASKIT.LIT	1.0(100)	The Spawning Task Manager Spooler & Batch Job Processor Software

UPGRADING FROM AN EXISTING SPOOLER

To install the Spawn Task Manager you must first remove any JOBALC or TRMDEF statements for *TASK* and *MANAGR*, and comment out the associated references to *TASK* and *MANAGR* in the INI file. The references would look something like:

```
JOBALC TASK

TRMDEF MANAGR,PSEUDO,NULL,100,100,100

ATTACH MANAGR, TASK
KILL TASK
FORCE TASK
MEMORY 100K
TSKINI
S SYS:PRINTR.PIN
S SYS:TASK1.TIN
G

SETJOB TASK,MANAGR,100K,TASK.JIN
```

If you are using the memory based spooler (starts with the LPTINI command), be sure to remove the JOBALC, *dummy* TRMDEF, and start up commands for each spooler queue.

Set up TASKIT.LIT as follows:

TASKIT.LIT can be set up in the AMOS32.INI file in one of two ways:

1. `SYSTEM TASKIT.LIT/N{/T}{/Z} {/E} @TASK.JIN`

   where TASK.JIN is a file that contains the Task Manager commands

2.
```
SYSTEM TASKIT.LIT/N{/T}{/Z}{/E}
S SYS:PRINTR.PIN
S SYS:PRINTS.PIN
B SYS:TASK1.TIN
B SYS:TASK2.TIN
G
```

The *T* switch will allow TASKIT.LIT to display diagnostic messages on the terminal of the spawned jobs attached to a serial port. This is detailed in **TESTING & DEBUGGING**, below.

The *Z* switch will append the letter *Z* to the end of the print job's spawned TRMDEF name. Use it if your printer port (TRMDEF) name is the same as your spooler queue name (NAME=). See below.

If the Z switch is not used and your spooler queue name is the same as your printer port name, you'll see additional lines printed in the output, which you probably will not want.

The *E* switch will force all spawned jobs by TASKIT to be stored in the high end of the Job Table.

ADDITIONAL STEPS

The previous SUBMIT command must be replaced with the new SUBMII program. Either change your processes which use SUBMIT, or backup the old SUBMIT and replace it by copying SUBMIT=SUBMII.LIT.

The various QUEUE files, such as BATQUE.SYS and SPLQUE.SYS, should be erased and rebuilt using MAKQUE command. Before doing so, make a note of the entries in each queue using the SUBMIT command. You will then need to reboot the system with a test.INI that does NOT start up the Task Manager and erase the queue files and rebuild them. Finally, after rebooting with the regular .INI file, put the previous entries into the new queues using the new SUBMII.

PROGRAMS SPAWNED

The TASKIT.LIT program spawns the following programs:

Job Name	**Terminal**	**Description**
TASK	MANAGR	Job used to handle all (only) ITC messages.
MANAGR	TASK	Job scanning queue files for something (printer jobs and/or batch jobs) run.
LPT1	LPT1 or LPT1Z	Job that prints all files for *LPT1* printer. (This is the printer name in the *NAME=LPT1* statement in the INI files.) The *Z* will be appended if the *Z* switch is used.
BATCHA	BATCHA	Job that executes batch jobs.
BATCHB	BATCHB	Another job that executes batch jobs.

RESTRICTIONS

As discussed above, TASKIT spawns many new job and terminal entries in the system tables. **You** must take care that these do not conflict with others already on the system. For example, if you already have a job called BATCHA, you will now need to change its name.

Spool queue names can be a frustrating issue when switching to this spooler. All of a given spooler queue's names will depend upon the *NAME=* entry in that spooler queue's initialization file (often called the .PIN).

Frequently the TRMDEF name for a serial printer and the spooler queue *NAME=* are set up the same for ease of maintenance. For example, an HP4 printer might be TRMDEF HP4 and also NAME=HP4, and if using the memory based spooler, JOBALC HP4. To maintain the same naming conventions with this spooler:

1. If using the memory based spooler, remove the JOBALC (for example JOBALC HP4). (TASKIT will spawn a job with that name.)

2. If using the memory based spooler and a dummy TRMDEF for each spooler, remove those TRMDEFs. (TASKIT will spawn a TRMDEF with a name based upon the spooler *NAME=* entry.)

3. Remove the old spooler startup commands in the SYSTEM.INI file.

4. Use the *Z* flag option on the SYSTEM TASKIT line.

5. Make sure the *NAME=* entry is less than 6 characters

The *Z* flag will force the spawned TRMDEF to append a *Z* to the NAME+ entry so that the spawned TRMDEF name will be different than the hardware port TRMDEF name (HP4Z and HP4).

The number of BATCHA jobs is limited to 26 (BATCHA through BATCHZ).

Make sure the Job Table, allocated with the JOBS command, is large enough to support all of the additional spawned jobs.

Use MAKQUE to create the file SYS:SPLQUE.SYS if it does not exist.

TESTING & DEBUGGING

If you use the *T* switch on the SYSTEM TASKIT line, each job will send diagnostic information to its attached terminal spawned by the SYSTEM TASKIT line.

If the TRMDEF name is defined by a TRMDEF line in the SYSTEM.INI file, then that TRMDEF will be used instead of spawning a new TRMDEF. The diagnostic output will appear on that hardware port (which could be a terminal or printer).

Alternately, as the output is created by the attached job, you can usually get the diagnostic output by ATTACHing your terminal to that job, such as ATTACH HP4.

You may not be able to get your terminal back without rebooting the system and doing the ATTACH may also cause other problems.

When done trouble-shooting, you can, from a third job, use the ATTACH command to re-attach all of the jobs and terminals as before.

Using the *T* flag has an unknown, but probably very small effect on system performance. You may wish to always use the *T* flag

Various problems in accessing the queues via SUBMIT are often the result of not replacing SUBMIT with SUBMII. Double check the hash and versions - you MUST use SUBMII.LIT (the actual name does not matter.)