

Users' Guide to
PHASE 2 TRANSITION

For the next few months, the operating system will be switching between the older, phase 1, and the phase 2 systems. During this transitory period APL editing, translating and execution will be supported under both phases. Later, phase 1 will disappear.

Most phase 1 APL programs must be modified before they will run correctly under phase 2. Infrequent users and users who wish to postpone converting their programs to phase 2 should use the AOLDRUN runtime and the AOLDTRAN translator. As of February 17, phase 1 ARUN and ATRAN will provide most--but not all--phase 1 features, and all phase 2 features. Phase 2 features have preference in cases of mutual exclusion. Users who wish to convert to phase 2 should use phase 1 ARUN and ATRAN to ease the pains of conversion. However, these subsystems will be updated by the Systems Group much more frequently than AOLDRUN and AOLDTRAN. Phase 1 ARS supports many of the new phase 2 features.

These are some of the phase 2 changes:

When the bracketed operand is omitted from a call to `[FORMAT]`, as in

`RESULT ← [FORMAT SOURCE]`

"free" format is used.

`[SEND]` 's and `[RECEIVE]` 's may no longer be directed at terminals. Instead of

`OUT_BOX [SEND MSG]`

use

`+ [OUT_BOX] ← MSG` for quote-quad output, or
`[ [OUT_BOX] ← MSG` for quad output.

And, instead of

$$MSG \leftarrow \square RECEIVE IN_BOX, OTHER_BOXES$$

use

$$MSG \leftarrow \dagger [IN_BOX, OTHER_BOXES] \quad \text{for unconverted input, or}$$

$$MSG \leftarrow \square INMIX [IN_BOX, OTHER_BOXES] \quad \text{for mixed input.}$$

The $\dagger$, $\square INMIX$ and $\square INNUM$ now have three optional operands, unlike
phase 1.

START WITH ACTIVATION

$$\nabla MSG \leftarrow \dagger \text{ or } \square INMIX \text{ or } \square INNUM [\overset{\uparrow}{\circ} TIME; \circ PROMPT; \circ BOX]$$

where *TIME* is the maximum number of seconds allowed for input. *PROMPT*, if present, is sent to the default terminal. *BOX* is a scalar or vector of one or more mailboxes. The first must be an input terminal mailbox. Upon return, *MSG* is the value transmitted in one of the mailboxes in *BOX*. And the global variable $\square RECEIVED_BOX$ will be set to its mailbox number. Here is an example:

$$VAL \leftarrow \square INNUM [3.5; '' ; TERM, B2] \text{ \# NO PROMPT}$$

$$\rightarrow (\square RECEIVED_BOX = B2, \square ALARM) / GOT_B2, TIME_UP$$

\# IF CONTROL DROPS HERE, VAL CONTAINS TERMINAL INPUT

Phase 2 output will be more aware of the values of $\square WIDTH$ and $\square DIGITS$, which are initially 85 and 6, respectively. Programs may change $\square WIDTH$ and $\square DIGITS$ any time, as long as they are single-element integers, $30 \leq \square WIDTH$, and $1 \leq \square DIGITS \leq 7$.