IBM® APL2® Application Environment is a subset of the APL2 Licensed Program (5688-228). It provides the APL2 environment necessary to run APL2 application packages that have been written using the full APL2 product (5688-228).

**New Features**

This release includes the following new features:

- **Cooperative Processing**—The cooperative processing features available on the mainframe have been extended to include communication with workstations running APL2 on AIX®, OS/2®, and Sun® Solaris® using Transmission Control Protocol/Internet Protocol (TCP/IP).
- **Statement Separator**—This extension to the APL2 language allows for multiple APL2 expressions on one line. The diamond character is used for the statement separator. The addition of the diamond provides language compatibility with APL2 on workstations. Diamond is also part of the proposed extended APL standard (ISO 8485).
- **Auxiliary Processors**—Extensions have been made to the APL2 stack processor (AP 101) and the APL2 object processor (AP 211) that increase compatibility with those processors on workstation APL2 implementations. AP 101 now has dynamic LIFO/FIFO switching and stack flush capability on both CMS and TSO. AP 211 has a new RENAME command and the ability to read files created on the AIX, OS/2, and Sun Solaris platforms and unloaded to the mainframe.
- **Performance**—The performance of the cate­nate primitive has been improved for many cases.

**Specified Operating Environment**

**Machine Requirements:** APL2 Application Environment Version 2 Release 2 is designed to run on any IBM System/370® or IBM System/390® that includes the extended floating point feature and meets minimum storage requirements; processors such as the 9000, 9370, 43XX, and 30XX can meet these requirements. APL2 Application Environment Version 2 Release 2 uses the IBM 3090® vector facility as available.

Supported processors must have sufficient storage to meet the combined storage requirements of the host operating system, access methods, database system, interactive subsystem, APL2 Application Environment (including the installed auxiliary processors), and GDDM® when used. The extended floating-point feature is required for both APL2 Application Environment and GDDM.

APL2 Application Environment does not use the APL assist feature that is available on certain models of the System/370.

Table 1 lists virtual and auxiliary storage estimates under CMS.

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** Sun and Solaris are trademarks of Sun Microsystems, Inc.
### Table 1. APL2 Storage Requirements under CMS

<table>
<thead>
<tr>
<th>VM system</th>
<th>Virtual machine type</th>
<th>Saved segment storage</th>
<th>VM storage per user</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP or HPO</td>
<td>1.25M</td>
<td>4M virtual machine (1M is workspace)</td>
<td></td>
</tr>
<tr>
<td>XA or ESA</td>
<td>370 Below 16M, 1.25M</td>
<td>4M virtual machine (1M is workspace)</td>
<td></td>
</tr>
<tr>
<td>XA</td>
<td>Below 16M, 0.25M</td>
<td>4M virtual machine (1M is workspace)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above 16M, 1.00M</td>
<td>4M virtual machine (1M is workspace)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** "M" is one megabyte, or 1048576 bytes.

Approximately 20M of disk storage is required in order to install APL2.

In addition to the space shown, use of the optional global shared variable processor (GSVP) adds a requirement of 0.25M to the saved segment storage.

Estimates for virtual and auxiliary storage under TSO are listed in Table 2. All numbers are approximations with only one significant digit.

### Table 2. APL2 Storage Requirements under TSO

<table>
<thead>
<tr>
<th>MVS/XA* and MVS/ESA*</th>
<th>MVS/370</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private</strong></td>
<td></td>
</tr>
<tr>
<td>Below 16M</td>
<td>0.3M</td>
</tr>
<tr>
<td>Above 16M</td>
<td>0.6M - 1000M</td>
</tr>
<tr>
<td></td>
<td>0.9M - 8M</td>
</tr>
<tr>
<td><strong>LPA</strong></td>
<td></td>
</tr>
<tr>
<td>Below 16M</td>
<td>0.3M</td>
</tr>
<tr>
<td>Above 16M</td>
<td>0.8M - 2M</td>
</tr>
<tr>
<td></td>
<td>1M - 2M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
<tr>
<td>Below 16M</td>
<td>0.6M</td>
</tr>
<tr>
<td>Above 16M</td>
<td>2M - 1000M</td>
</tr>
<tr>
<td></td>
<td>2M - 10M</td>
</tr>
</tbody>
</table>

**Note:** "M" is one megabyte, or 1048576 bytes.

In addition to the space shown, use of the optional global shared variable processor (GSVP) adds a requirement to the MVS common storage area (CSA or extended CSA) for at least 60K, and perhaps considerably more, depending on the SMSIZE specified when starting the GSVP.

**Programming Requirements:** APL2 Application Environment operates under the following operating system environments (minimum release is indicated):

- MVS/Enterprise Systems Architecture (ESA) System Product (SP), Version 4 Release 1, with TSO/E (5695-047 or 5695-048)
- MVS/System Product (SP), Version 3 Release 1, with TSO/E (5685-002 or 5685-001)
- MVS/System Product (SP), Version 2 Release 2, with TSO/E (5665-291 or 5740-XC6)
- MVS/System Product (SP), Version 1 Release 3 or later, with TSO/E (5740-XYN or 5740-XYS)
- VM/Enterprise Systems Architecture (ESA), Version 1 Release 1 (5684-112)
- VM/Extended Architecture (XA), Release 2.1 (5664-308)
- VM/System Product (SP), Release 6 (5664-167).

**Note:** Installation of APL2 under TSO/E requires SMP/E Release 6 or later.

APL2 Application Environment is designed to operate with the following related licensed programs:

- APL2 (5688-228)
- IBM DATABASE 2* (DB2*), Version 2 Release 3 (5740-XYR)
- Structured Query Language/Data System (SQL/DS*), Version 3 Release 3 (5688-004)
- Graphical Data Display Manager (GDDM), Version 2 Release 3 (5684-007 or 5665-356)
- Interactive System Productivity Facility (ISPF) Dialog Manager, Version 2 Release 2 for VM/XA* or VM/SP (5684-018 or 5664-285)
- Interactive System Productivity Facility (ISPF) Dialog Manager, Version 2 Release 3 for MVS (5665-319)
- TCP/IP, Version 2 for VM (5735-FAL)
- TCP/IP, Version 2 for MVS (5735-HAL)
Note: Later versions, releases, and modifications are supported, unless explicitly stated otherwise. Certain configurations (such as use of the IBM 3090 vector facility) may require a release later than the minimum release indicated.

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Testing Period

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Usage License: Not applicable.

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March 1994

Printed in U.S.A. on Recycled Paper