



# UniVerse on jBASE Cheat Sheet

## jBASE Getting Started Guide

### Download

Visit [www.zumasys.com/downloads](http://www.zumasys.com/downloads) and select the appropriate jBASE version for your operating system. Additional installations instructions can be found at [docs.zumasys.com](http://docs.zumasys.com).

### Docker Container

The quickest way to get started with jBASE is to visit Play With Docker, a free public cloud environment utilizing Docker Containers.

```
docker run -it -d --name=jbase zumasys/jbase:latest
docker exec -it jbase bash
```

### Entering jBASE

You can enter the jBASE jShell from the o/s command prompt by typing "jb". You will be prompted for an account. The default Admin account for jBASE is JBASEADM.

```
# jb
Account name or path: JBASEADM
Jsh JBASEADM ~ -->
```

### Configuration

jBASE uses environment variables to configure most items. Most items are set by the profile at JBCGLOBALDIR/config/jbase\_config.json. Account specific items are modified by LOGTO and what is found in the System File.

| Environment Variable    | Description                        | Set By  |
|-------------------------|------------------------------------|---------|
| JBCRELEASEDIR           | jBASE installation location        | jb      |
| JBCGLOBALDIR            | Location for configuration items   | P*      |
| JBCDATADIR              | Default location for Accounts      | P       |
| JEDIFILENAME_SYSTEM     | Location of the System file.       | P       |
| JBCSPoolERDIR           | Spooler location                   | P       |
| JBC_OLD_SP_EDIT         | Set to 1 for D3 style SP-EDIT      | P/S     |
| JEDIENABLEQ2Q           | Set to 1 to allow Q -> Q pointers  | P/S(36) |
| JEDI_ERRMSG_TRACE       | Set to 1 for RUNTIME-ERRORS        | P       |
| JEDI_ERRMSG_ZERO_USED   | Set to 18 for uv Behavior          | P/S(36) |
| JEDI_ERRMSG_NON_NUMERIC | Set to 18 for uv behavior          | P/S(36) |
| JEDI_ERRMSG_DIVIDE_ZERO | Set to 18 for uv behavior          | P/S(36) |
| Z_DISABLE_QUEUEING      | Set to 1 for uv style phantoms     | P/S(36) |
| JBCEMULATE              | Emulation to use (set to uv)       | P/S(21) |
| PATH                    | Location to find jBASE programs    | P/S(27) |
| JEDIFILENAME_MD         | Location of the MD/VOC file to use | P/S(28) |
| JEDIFILEPATH            | Location(s) for jBASE files        | P/S(27) |
| JBCOBJECTLIST           | Location(s) for jBASE Subroutines  | S(26)   |
| JBCDEV_BIN              | Where to catalog programs          | P/S(23) |
| JBCDEV_LIB              | Where to catalog Subroutines       | P/S(24) |

P=JBCGLOBALDIR/profile P\*=JBCRELEASEDIR/profile S=System entry for account

### Accounts

An account in jBASE is a directory (same as uv). All files created for that account will be in that directory. The file holding all accounts is defined by \$JEDIFILENAME\_SYSTEM and is optional if you wish to use LOGTO or JB. You can manually cd to a directory and run jsh. This file is comparable to UV.ACCOUNT.

```
jsh JBASEADM ~ -->CREATE-ACCOUNT -e uv MYAPP
```

### Files

|                            |   |
|----------------------------|---|
| CREATE-FILE MYFILE TYPE=JD | Creates dynamic hash file (dynamically grows)                               |
| CREATE-FILE MYDIR TYPE=UD  | Creates directory file (System 19)  |
| CREATE-FILE BP TYPE=JD     | Creates hash dictionary, directory data, and a BP,OBJECT directory sub file |
| jstat -v MYFILE            | Information on file (istat)   |
| jrf                        | Resize/Change file  |
| jchmod                     | Change Attributes (Att 1 in D3)   |
| jstat                      | See file distribution (istat)   |
| Jshow -f MYFILE            | Locate MYFILE   |

### Editors

jBASE offers a classic ED editor and a full screen editor jED. The jED editor is a mix of ED and a full screen editor. jED Quick Help:

|                       |   |
|-----------------------|---|
| Full Screen           | Arrow Keys to move. Ctrl DD to delete a line. Escape to return to command prompt.   |
| Command Prompt at Top | Most ED commands work. Enter or a line # from the command prompt puts you back in full screen. FI has additions such as FIBC to compile and catalog the item. |

### Lists

jBASE by default stores lists in JBCGLOBALDIR/tmp/JBASEWORK. The lists name will have SEL\*<ACCOUNT> prepended to make the lists unique per account. You can create a POINTER-FILE in an account, and it will emulate &SAVEDLISTS&.

### VOC

jBASE supports an MD/VOC and is defined by JBCFILENAME\_MD. Add a Q entry to the MD called VOC with att=Q. This will allow LIST VOC.

|        |  |
|--------|--|
| Q      | Classic Q pointer                                |
| PA     | A paragraph (script of commands)                 |
| PQ/PQN | A Proc   |
| F      | Universe style F pointer (Q pointer alternative) |

### Dictionaries

jBASE supports the classic A and S style D3 dictionaries and the Universe style I and D types.

```
SUBROUTINE CALLXPROG(VALUE)
INCLUDE qbasiccommonpick
ID=ACCESS(10)
FILEVAR=ACCESS(1)
REC=ACCESS(3)
RETURN
```

### Emulation Options

Emulation is jBASE is controlled by environment variables set within the profile and \$JBCGLOBALDIR/config/Config\_EMULATE. You can see your current settings with

```
jsh-> config-strings -a
```

### Indexes

jBASE Indexes are created by default off dictionary items vs A items.

|                                |                                       |
|--------------------------------|---------------------------------------|
| CREATE-INDEX MYFILE DICTIONARY | Create index from dictionary          |
| CREATE-INDEX FN A1 BY 1        | Create index called a1 on attribute 1 |
| REBUILD-INDEX, VERIFY-INDEX    | Rebuild index(s)                      |
| LIST-INDEX -v MYFILE           | List all indexes                      |
| QUERY-INDEX                    | Query a Index                         |
| OPENINDEX                      | BP open index                         |
| SELECT, READNEXT, READPREV     | BP index cruising – Replaces Root/Key |

### Spooler

|                                       |  |
|---------------------------------------|--|
| SP-NEWTAB                             | Creates new Spooler (clears entries)               |
| SP-CREATE F1 PROG lp -Dprinter        | Creates form/printer 1 to lp printer               |
| SP-MODIFY F1 PROG cat > test.txt      | Modifies F1 to print to file                       |
| SP-EDIT                               | Same   |
| SP-STATUS                             | Spooler Menu Maintenance                           |
| LISTPTR                               | List Printers                                      |
| LISTPEQS                              | List jobs  |
| PEQS – does not exist as a jBASE verb | All hold jobs are O/S items in JBCSPoolERDIR/jobs. |

Note: System(20) stores last entry #

### Locks

|                  |                                  |
|------------------|----------------------------------|
| SHOW-ITEM-LOCKS  | List all record locks            |
| LIST-LOCKS       | Shows all locks                  |
| CLEAR-ITEM-LOCKS | Unlock item(s) FILENAME ITEMNAME |

### Development

|                           |   |
|---------------------------|---|
| BASIC BP PROG             | Creates intermediate object. Must Catalog to use. |
| CATALOG BP PROG           | Creates item in JBCDEV_BIN. No MD entry.          |
| jshow -c sub              | Locate subroutine or program                      |
| Jshow -p prog             | Locate program                                    |
| RUN BP PROG               | Has restrictions. See docs.                       |
| EXECUTE "!"               | Supported but not needed                          |
| OPEN "/tmp"               | Open O/S files directly.                          |
| %open,%read,%write,%close | OPENSEQ, READSEQ/BLK, WRITESEQ, CLOSESEQ          |
| OPEN "account,file,"      | Supported   |
| JED FIBC                  | Files, does a basic and catalogues.               |
| Break on/off              | Use EXECUTE "BREAK-ON/OFF"                        |

### Debugger

|             |  |
|-------------|--|
| PROGRAM -Jd | Run program and invoke the debugger          |
| w           | Shows lines of code around break point       |
| s/S         | Single Step (S skips gosubs and subroutines) |
| G           | Continue                                     |
| #           | Jump to line                                 |

|          |                             |
|----------|-----------------------------|
| /var     | Show variable               |
| V -m var | Allow changing value of Var |

Administration

|                             |  |
|-----------------------------|--|
| jlicensinginfo -v           | Show Licensing                                       |
| Jdiag -v                    | Show diagnostics                                     |
| where (v                    | Detail information on a port                         |
| SP-EDIT                     | Same   |
| SP-STATUS                   | Spooler Menu Maintenance                             |
| LISTPTR                     | List Printers  |
| LISTPEQS                    | List jobs  |
| PEQS                        | All hold jobs are O/S items in JBCSPoolerDir/jobs.   |
| jsh→!<command>              | Optional. Affects jsh parsing.                       |
| LIST /tmp                   | List local O/S files. NL conversion is per Platform. |
| Z,ZH,PH-START,PH-STATUS     | Phantom commands                                     |
| GLOBALDIR/config/PH-HISTORY | Phantom History File                                 |
| Hot-Backup                  | Transaction Journaling/Replication                   |
| OSFI                        | jRFS   |
| openDB                      | ODBC Jedi  |
| ODBC Server                 | jAgent/ODBC  |
| MVS.NET/FlashConnect        | jAgent/jRemote/MVConnect                             |
| SETPTR                      | Limited edition of the UniVerse version              |

BASIC

|                   |   |
|-------------------|---|
| SYSTEM functions: | <a href="https://docs.zumasys.com/jbase/jbc/system-functions/">https://docs.zumasys.com/jbase/jbc/system-functions/</a> |
| @ Variables       | <a href="https://docs.zumasys.com/jbase/jbc/the-@-function/">https://docs.zumasys.com/jbase/jbc/the-@-function/</a>     |
| SYSTEM(1008)      | Returns SYSTEM file path  |
| SYSTEM(1009)      | Returns MD/VOC file path  |
| ENCODE            | Use ENCRYPT/DECRYPT with a null key   |

Command Shells

|     |  |
|-----|--|
| jsh | Jshell, equivalent to TCL (F1, <Esc>OP, jshelltype jsh)<br>Pre-processes meta characters like the asterisk (*), as expected by legacy multi-value systems. Note that only in jsh mode is <b>JEDIFILENAME_MD</b> examined for Q-pointers, Procs and Paragraphs. |
| sh  | Native platform shell (F2, <Esc>OQ, jshelltype sh)<br>Pre-processing of meta-characters depends on operating system.   |
| msh | Mixed shell (F3, <Esc>OR, jshelltype msh)<br>Pre-processes meta characters as a combination of jsh and sh.   |

Dot stacker

In jBASE, Up and Down arrows can be used, as well as Left and Right arrows.

```
jsh SandBox ~ -->?

User-based command stack.
Maximum number of stack entries: 500
Current number of stack entries: 98

.? | .h Display help
.a{#}text Append 'text' to entry '#'
           [if '#' omitted then appends to entry 1]
.c#/s1/s2/* Change 's1' to 's2' in entry '#',
           * = change all stack entries
.d# Delete entry number '#'
.f text Find first occurrence of 'text', move to top of stack
.l List first page
.ln List first 'n' lines
.lm-n List entries 'm' through 'n' inclusive
.m# Move entry number '#' to top of stack
.p# text Prepend 'text' to entry '#'
.r#/s1/s2/* Replace 's1' with 's2' in entry '#', * = replace all
.s text Search and display all entries with 'text'
.{x}# Execute entry '#'
           [if 'x' is omitted then '#' is required]
.z Zap [clear] the command stack

If '#' is '0' or omitted, this implies entry 1.
```