Using JOD Backup Get

December 14, 2021

1 Using JOD Backup Get `bget`

1.0.1 Introduction

In addition to restoring entire dictionary backups with `restd` JOD also supports fetching individual objects from particular backups with `bget` and `bnl`.

If you screw up part of a larger system restoring *all the code* may create more problems than it solves. Usually you only want *the good bits* of a backup.

`bget` **is your good bits huckleberry.**

```
[1]: NB. display J version
     9!:14''
```

```
j903/j64avx2/windows/beta-w/commercial/www.jsoftware.com/2021-12-05T18:25:00/cla
ng-13-0-0/SLEEF=1
```

The following examples assume you have installed the JOD development dictionaries (`joddev`), (`jod`), and (`utils`).

Use Pacman to install the JODSOURCE addon and follow the instructions to load (`joddev`), (`jod`), and (`utils`).

```
[2]:  NB. load JOD in a clear base locale
      load 'general/jod' [ clear ''

      NB. Converting Jupyter notebooks to LaTeX is
      NB. simplified by ASCII box characters.
      portchars ''

      NB. show JOD version
      smoutput JODVMD_ajod_
```

```
+-----------+--+-------------------+
|1.0.22 - dev|35|14 Dec 2021 08:32:08|
+-----------+--+-------------------+
```

```
[3]:  NB. The distributed JOD profile automatically RESETME's.
      NB. To safely use dictionaries with many J tasks they must
      NB. be READONLY. To prevent opening the same put dictionary
      NB. READWRITE comment out (dpset) and restart this notebook.
      dpset 'RESETME'

      NB. Verb to show large boxed displays in
      NB. the notebook without ugly wrapping.
      sbx=: ' ... ' ,"1~ 73&{."1@":

      NB. open some JOD dictionaries to search
      od ;:'joddev jod utils' [ 3 od ''
      did ~ 0
```

```
+-+-------------------------------------------------------------------+
|1|+------+--+-----+-----+-------+-------+------+----------------+|
| ||        |--|Words|Tests|Groups*|Suites*|Macros|Path*           ||
| |+------+--+-----+-----+-------+-------+------+----------------+|
```

```
| ||joddev|rw|31    |4     |6       |2       |21     |/joddev/jod/utils||
| |+------+--+-----+-----+-------+-------+------+----------------+|
| ||jod   |ro|841   |76    |23      |13      |74     |/jod/utils       ||
| |+------+--+-----+-----+-------+-------+------+----------------+|
| ||utils |ro|419   |8     |23      |0       |19     |/utils           ||
| |+------+--+-----+-----+-------+-------+------+----------------+|
+-+------------------------------------------------------------+
```

1.0.2 `bnl` lists available backups

JOD binary backups are created with `packd`. When `packd` is run it copies current dictionary files to the backup folder and renames them with an ever increasing backup number prefix.

```
[4]: NB. list all available put dictionary backups
     sbx bnl '.'
```

```
+-+---+---+---+---+---+---+---+---+---+                                    . . .
|1|.38|.37|.36|.35|.34|.33|.32|.31|.30|                                    . . .
+-+---+---+---+---+---+---+---+---+---+                                    . . .
```

```
[5]: NB. dates of backups
     14 bnl '.'
```

```
+-+------------------------+
|1|+--+--------------------+|
| ||38|11 Dec 2021 14:38:19||
| |+--+--------------------+|
| ||37|10 Dec 2021 11:53:14||
| |+--+--------------------+|
| ||36|03 Dec 2021 09:02:39||
| |+--+--------------------+|
| ||35|12 Sep 2021 11:27:55||
| |+--+--------------------+|
| ||34|05 Aug 2021 10:37:17||
| |+--+--------------------+|
| ||33|05 Dec 2020 09:12:45||
```

```
|  |+--+-------------------+|
|  ||32|02 Dec 2020 11:03:12||
|  |+--+-------------------+|
|  ||31|01 Dec 2020 10:46:44||
|  |+--+-------------------+|
|  ||30|30 Nov 2020 13:55:56||
|  |+--+-------------------+|
+-+------------------------+
```

1.0.3 `bnl` **lists objects in backups**

bnl lists objects in backups. See jod.pdf for more details.

```
[6]:  NB. list all words in last backup
      smoutout sbx bnl ''

      NB. list all test cases in last backup
      smoutput sbx 1 bnl ''

      NB. oldest backup
      smoutput OldestBnum=: ; {: bnl '.'

      NB. list all macros in oldest backup
      smoutput sbx 4 bnl OldestBnum

      NB. list all macros with names starting with "JOD" in the oldest backup
      4 bnl 'JOD',OldestBnum
```

```
+-+----------+---------------+---------------+-------------+        ...
|1|abvSmoke00|buildjodliterate|globsBasicDDef00|globsSmokeDD00|       ...
+-+----------+---------------+---------------+-------------+        ...
.30
+-+--------------+-------------------+----------+------------------+- ...
|1|JODBUILDHISTORY|JODTOOLSBUILDHISTORY|TODO_JOD_md|TODO_jodliterate_md|b ...
+-+--------------+-------------------+----------+------------------+- ...
```

```
+-+--------------+--------------------+
|1|JODBUILDHISTORY|JODTOOLSBUILDHISTORY|
+-+--------------+--------------------+
```

1.0.4 `abv` **a backup name list helper verb**

To streamline the search for backup objects recent JOD versions (1.0.22+) provides `abv` (all backup versions). `abv` returns backup names from the most recent to oldest. The order derives from backup file numbers.

```
[7]: NB. show first ten rows of all backup versions of all words in all backups
     sbx 10 {. de }. abv ''
```

```
uwlatexfrwords.37          uwlatexfrwords.36          uwlatexfrwords.35     ...
uwlatexfrwords.32          uwlatexfrwords.31          usedby.38             ...
usedby.35                  ppcodelatex2.38            ppcodelatex2.37       ...
ppcodelatex2.34            ppcodelatex2.33            ppcodelatex2.32       ...
ppcodelatex.38             ppcodelatex.37             ppcodelatex.36        ...
ppcodelatex.33             ppcodelatex.32             ppcodelatex.31        ...
parsecode.37               markgassign.38             markgassign.37        ...
markgassign.34             markgassign.33             markgassign.32        ...
markdfrwords.37            markdfrwords.36            markdfrwords.35       ...
markdfrwords.32            markdfrwords.31            jodon.38              ...
```

```
[8]: NB. all words in all backups beginning with "m"
     sbx abv 'm'
```

```
+-+--------------+--------------+--------------+--------------+---------- ...
|1|markgassign.38|markgassign.37|markgassign.36|markgassign.35|markgassig ...
+-+--------------+--------------+--------------+--------------+---------- ...
```

```
[9]: NB. all groups in all backups starting with "jod" - note the backup suffix numbers
     80 list }. 2 abv 'jod'
```

```
jodutil.38                 jodutil.37
jodutil.36                 jodutil.35
jodutil.34                 jodutil.33
```

```
jodutil.32                      jodutil.31
jodutil.30                      jodtools.38
jodtools.37                     jodtools.36
jodtools.35                     jodtools.34
jodtools.33                     jodtools.32
jodtools.31                     jodtools.30
jodmake.38                      jodmake.37
jodliterateTroubleMakers.38 jodliterateTroubleMakers.37
jodliterateTroubleMakers.36 jodliterateTroubleMakers.35
jodliterateTroubleMakers.34 jodliterateTroubleMakers.33
jodliterateTroubleMakers.32 jodliterateTroubleMakers.31
jodliterateTroubleMakers.30 jodliterate.38
jodliterate.37                  jodliterate.36
jodliterate.35                  jodliterate.34
jodliterate.33                  jodliterate.32
jodliterate.31                  jodliterate.30
jod.38                          jod.37
jod.36                          jod.35
jod.34                          jod.33
jod.32                          jod.31
jod.30
```

1.0.5 `bget` **fetches objects from backups**

bget fetches objects from backups. See jod.pdf for more details.

Unlike `get` the verb `bget` does not define fetched objects in locales. The reason for this is simple, `bget` may return many versions of the same object. Which one should you restore? JOD lets the user decide.

```
[10]:  NB. select a random word from the last backup
       AllWords=: }. bnl''
       smoutput RandWord=: ;(?#AllWords) { AllWords

       NB. fetch the word
       sbx bget RandWord
```

```
jodhelp
+-+----------------------------------------------------------------------- ...
|1|+---------+-+----------------------------------------------------------- ...
| ||jodhelp_38|3|3 : 0  NB.*jodhelp v-- display PDF JOD help. NB. NB. mon ...
| |+---------+-+----------------------------------------------------------- ...
+-+----------------------------------------------------------------------- ...
```

1.0.6 `bget` **can fetch many objects**

`bget` can fetch many objects. The objects are returned in boxed name, class and value tables. For words and macros these tables have three columns for other objects there are two columns.

```
[11]: NB. fetch the last five versions of words starting with "jodo"
      NB. NOTE: the backup number suffixes of the names in the first column of (ncv)
      'rc ncv'=: bget 5 {. }. abv 'jodo'
      sbx ncv
```

```
+--------+-+----------------------------------------------------------------- ...
|jodon_38|3|3 : 0  NB.*jodon v--  turn  JOD on  result  is 1  if  success ...
+--------+-+----------------------------------------------------------------- ...
|jodon_37|3|3 : 0  NB.*jodon v--  turn  JOD on  result  is 1  if  success ...
+--------+-+----------------------------------------------------------------- ...
|jodon_36|3|3 : 0  NB.*jodon v--  turn  JOD on  result  is 1  if  success ...
+--------+-+----------------------------------------------------------------- ...
|jodon_35|3|3 : 0  NB.*jodon v--  turn  JOD on  result  is 1  if  success ...
+--------+-+----------------------------------------------------------------- ...
|jodon_34|3|3 : 0  NB.*jodon v--  turn  JOD on  result  is 1  if  success ...
+--------+-+----------------------------------------------------------------- ...
```

```
[12]: NB. fetch the last ten versions of the short explanations of all words starting with "bc"
      NB. smoutput }. abv 'jo'
      'rc ncv'=: 0 8 bget 10 {. }. abv 'jo'
      sbx ncv
```

```
+-------------------+----------------------------------------------------- ...
|jodon_38           |turn JOD on result is 1 if successful and 0 otherwis ...
```

```
+------------------+------------------------------------------------------- ...
|jodon_37          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodon_36          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodon_35          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodon_34          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodon_33          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodon_32          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodon_31          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodon_30          |turn JOD on result is 1 if successful and 0 otherwis ...
+------------------+------------------------------------------------------- ...
|jodliterate_root_38|                                                      ...
+------------------+------------------------------------------------------- ...
```

1.0.7 `bget` **results can be edited with** `ed`

`bget` name, class and value tables can be edited with the JOD `ed` verb. JOD `ed` works differently depending on what J IDE you are using but the basic approach is to generate script text from object data, write the script to a file, and then open a J editor. The following examples illustrate typical uses.

```
[13]:  NB. edit the most recent version of a word
       'rc ncv'=: bget 'bchecknames'

       NB. requires browser/file permissions and pop ups enabled
       NB. (ed) is typically used in JQT and JHS environments and
       NB. may or may not work in Jupyter notebooks.
       NB. ed ncv
```

```
[14]:  NB. edit all group header text
       'rc ncv'=: 2 bget }. 2 bnl ''
       smoutput sbx ncv

       NB. ed ncv
```

```
+--------------------------+--------------------------------------------- ...
|jod_38                    |NB. *jod c-- main JOD dictionary class.  NB. ...
+--------------------------+--------------------------------------------- ...
|jodliterate_38            |NB.*jodliterate s-- generates literate sourc ...
+--------------------------+--------------------------------------------- ...
|jodliterateTroubleMakers_38|   NB. WARNING: long line breaking GROUP HE ...
+--------------------------+--------------------------------------------- ...
|jodmake_38                |NB. *jodmake c-- script making & code manipu ...
+--------------------------+--------------------------------------------- ...
|jodtools_38               |NB.*jodtools c-- derived tools class: extens ...
+--------------------------+--------------------------------------------- ...
|jodutil_38                |NB. *jodutil c-- a collection of JOD utility ...
+--------------------------+--------------------------------------------- ...
```

```
[15]:  NB. edit all versions of all macros that begin with "manifestjoddoc"
       'rc ncv'=: 4 bget }. 4 abv 'manifestjoddoc'
       smoutput 80 list 0 {"1 ncv

       NB. ed ncv
```

```
manifestjoddocument_38 manifestjoddocument_37 manifestjoddocument_36
manifestjoddocument_35 manifestjoddocument_34 manifestjoddocument_33
manifestjoddocument_32 manifestjoddocument_31 manifestjoddocument_30
```

1.0.8   Final remarks

bget and bnl make it easy to recover objects in JOD binary backups. The objects are not defined in locales. You must edit them with ed
and select what you need. Object names are suffixed with backup numbers. This is done to distinquish object versions. Typically these
backup numbers will be removed when editing recovered objects.

John Baker
December 2021
bakerjd99@gmail.com