

STOCK & INDEX RELEASE NOTES

NOVEMBER 2017 MONTHLY UPDATE

These release notes pertain to the November 2017 monthly release of the CRSP US Stock and Index databases, available in December 2017.

NOVEMBER 2017 DATA EDITS

| PERMNO | COMNAM | DESC |
|--------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 91234 | MUELLER WATER PRODUCTS INC | Changed distribution code to 1232 from 1222 on ex-date 20170809 |
| 82215 | AMERI HOLDINGS INC | Added zero namelines for the period 19990104 - 20171116 to reflect off exchange trading. |
| 17017 | NUVERRA ENVIRONMENTAL SOLUTS INC | Changed Shares Outstanding to 11696 from 150955 for 20171012 - 20171130 |
| 13267 | CAESARS ENTERTAINMENT CORP | Changed Shares Outstanding to 704131 from 149146 for 20170929 - 20171130 |
| 50606 | TIDEWATER INC NEW | Changed Shares Outstanding to 18389 from 1500 for 20170801 - 20170830, to 20738 from 47121 for 20170929 - 20171030, and to 21915 from 47121 for 20171031 - 20171130 |
| 16614 | MULESOFT INC | Changed Shares Outstanding to 70114 from 24068 for 20170929 - 20171030 and to 74905 from 24068 for 20171031 - 20171130 |
| 14564 | ENABLE MIDSTREAM PARTNERS LP | Changed Shares Outstanding to 432567 from 224702 for 20170929 - 20171130 |
| 15302 | VIRTU FINANCIAL INC | Changed Shares Outstanding to 87082 from 40975 for 20170809 - 20170928 and to 89257 from 40975 for 20170929 - 20171108 |

FILE VERSION SPECIFICS

This table contains version specific information for the CRSP Stock Files with data ending November 2017. It contains the number of securities and information about the maximums of the event arrays.

| FILE CODE | # OF SECURITIES | MAX NAMES | MAX DIST | MAX SHARES | MAX DELISTS | MAX GROUPS | MAX NASDIN | FIRST PERMNO | LAST PERMNO |
|-----------|-----------------|-----------|----------|------------|-------------|------------|------------|--------------|-------------|
| DAZ | 32069 | 39 | 1538 | 2623 | 1 | 4 | 2642 | 10000 | 93436 |
| MAZ | 32040 | 39 | 1538 | 2623 | 1 | 4 | 2642 | 10000 | 93436 |

| CALENDAR | DATE RANGE | DATE INDEX RANGE |
|------------------------------|-------------------|------------------|
| Daily trading calendar | 19251231-20171130 | 1-24270 |
| Month-end trading calendar | 19251231-20171130 | 1-1104 |
| Year-end trading calendar | 19251231-20181231 | 1-94 |
| Quarter-end trading calendar | 19251231-20181231 | 1-373 |
| Weekly trading calendar | 19260102-20171130 | 1-4796 |

CRSPACCESS PRODUCT INFORMATION

To simplify installation for our subscribers, data are bundled into product groups. Information relevant to each product group is listed in the table below.

| PRODUCT NAME | DATABASE | SIZE | INDEXES | PORTFOLIOS | COMPONENTS & DESCRIPTION |
|----------------------------------------|-----------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| CRSP 1925 US Stock and Index Database | FIZyyyyymm SIZyyyyymm (SAS/ASCII) | 4.1 GB | All CRSP indexes and portfolio assignments | All portfolios | DI - 1925 Daily US Stock & Index Database MI - 1925 Monthly US Stock & Index Database IF - CRSP Supplemental US Indexes |
| CRSP 1925 US Stock | FAZyyyyymm SAZyyyyymm (SAS/ASCII) | 3.7 GB | CRSP NYSE/ AMEX/ NASDAQ Value-weighted Market, CRSP NYSE/ AMEX/ NASDAQ Equal-weighted Market, S&P 500 Composite, NASDAQ Composite | | DA - 1925 Daily US Stock MA - 1925 Monthly US Stock IN - CRSP Limited US Indexes |
| CRSP 1962 US Stock | A6Zyyyyymm S6Zyyyyymm (SAS/ASCII) | 3.3 GB | CRSP NYSE/ AMEX/ NASDAQ Value-weighted Market, CRSP NYSE/ AMEX/ NASDAQ Equal-weighted Market, S&P 500 Composite, NASDAQ Composite | | D6 - 1962 Daily US Stock M6 - 1962 Monthly US Stock IN - CRSP Limited US Indexes |
| CRSP 1962 US Stock and Index Database | AXZyyyyymm SXZyyyyymm (SAS/ASCII) | 3.6 GB | See FIZ | All portfolios | DX - 1962 Daily US Stock & Index Database MX - 1962 Monthly US Stock & Index Database IF - CRSP Supplemental US Indexes |
| CRSP 1925 US Indexes | IFZyyyyymm SFZyyyyymm | 122 MB | | | IF - CRSP Supplemental US Indexes |
| CRSP/Compustat Merged Database | CMZyyyyymm | 10.37 GB | | | CM - Compustat Data formatted in CRSPAccess Database |
| Daily & Monthly Treasuries in CRSPSift | TRZyyyyymm | 278 MB | | | TR - Database format for use with CRSPSift |
| Daily & Monthly Treasuries Files | TFZyyyyymm | 1.75 GB | | | TF - Expanded daily and monthly files in EXCEL, SAS, and ASCII formats |
| Mutual Fund Database | MFZyyyyymm | 10 GB | | | MF - Mutual Funds |
| CRSP/Ziman Daily & Monthly REIT | RAZyyyyymm | 251 MB | | | RD - Daily REITs RM - Monthly REITs |

DELIVERY METHOD, INSTALLS, AND DATA FORMATS

DELIVERY

CRSP data delivery for all products is available only through the Cloud, utilizing IPSwitch's MOVEit Cloud product. (<https://crsp.moveitcloud.com>)

If you have not yet accessed your account, or need assistance, contact support@crsp.chicagobooth.edu, or call 312-263-6400, Option 2.

While DVDs are no longer available from CRSP, you are welcome to create your own once you have downloaded the data, and use as long as you have an active license to do so.

ZIP INSTALLS

CRSP uses a zip process for data installation. ZIP utilities that are standard on all platforms should work to unzip the databases. On Windows computers, CRSP recommends using 7-ZIP, which can be downloaded from this site: <http://www.7-zip.org/>

Several important items to note follow:

- All directories are extracted to lower case letters. For example: C:\crspdata\miz201308
- All Windows Users: Extracting a zipped file does not create an installed program in Windows. It will not show in the Windows Control Panel. When uninstalling the data, just delete the directories that contain the detailed files
- Red Hat Linux Users: If your version of Red Hat is earlier than 6.0, you will need to install an updated version of the “File Roller” program in order to install the data

ZIP FILE STRUCTURE AND PROCESS

Windows 7/XP Products:

| PRODUCT LABEL | PRODUCT NAME | FILE NAME |
|-----------------|------------------------------|---------------------|
| A6Z1_yyyymm_SLD | CRSP 1962 US Stock | a6zyyyymm_cadb.zip |
| AXZ1_yyyymm_SLD | CRSP 1962 US Stock and Index | axzyyyymm_cadb.zip |
| FAZ1_yyyymm_SLD | CRSP 1925 US Stock | fazyyyymm_cadb.zip |
| FIZ1_yyyymm_SLD | CRSP 1925 US Stock and Index | fizzyyyymm_cadb.zip |
| IFZ1_yyyymm_SGD | CRSP 1925 Indexes | ifzyyyymm_cadb.zip |

Red Hat Linux Products:

| PRODUCT LABEL | PRODUCT NAME | FILE NAME |
|-----------------|------------------------------|---------------------|
| A6Z1_yyyymm_SLD | CRSP 1962 US Stock | a6zyyyymm_cadb.zip |
| AXZ1_yyyymm_SLD | CRSP 1962 US Stock and Index | axzyyyymm_cadb.zip |
| FAZ1_yyyymm_SLD | CRSP 1925 US Stock | fazyyyymm_cadb.zip |
| FIZ1_yyyymm_SLD | CRSP 1925 US Stock and Index | fizzyyyymm_cadb.zip |
| IFZ1_yyyymm_SGD | CRSP 1925 Indexes | ifzyyyymm_cadb.zip |

Flat File Products:

| PRODUCT NAME | FILE NAME |
|--------------|---------------------|
| SAS Zip | s*zyyyymm_sas.zip |
| ASCII Zip | s*zyyyymm_ascii.zip |

STEPS TO INSTALL:

- From the directory containing your downloaded zip file, right click (in Windows) or run File Roller (in Red Hat)
- Set the extract destination to the current higher level directory where data is normally stored and unzip will add the rest of the path (default is C:\ in Windows or /home in Red Hat)
- For example, in Windows, extracting to C:\ will install the data under C:\crspdata

Contact CRSP Client Services for assistance at: support@crsp.chicagobooth.edu or call 312-263-6400, Option 2.

SETTING ENVIRONMENT VARIABLES

The zip process will not automatically set environment variables for use with command line tools. The following steps will do so.

NOTE: CRSPSift does not use and therefore does not require environment variables.

LINUX

NOTE: The new zip installs are now saving to directories with lower case letters – for example, `~/crspdata/diz201308`

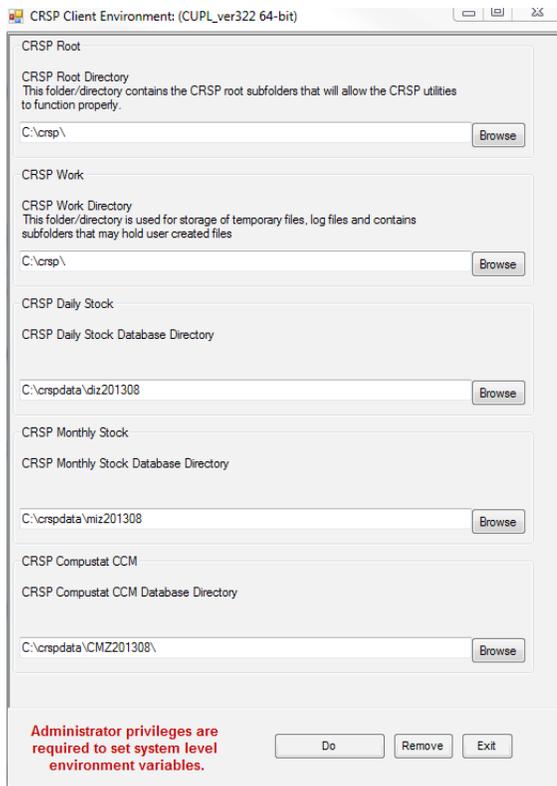
Check the current state of the environment variables by entering this command: `env | grep crsp`

- If you have admin privileges on your machine, open the `.profile` file, and make updates to the following lines to update the paths for the new data installed:
 - `CRSP_DSTK=<full path name>/<daily stock directory>` (example: `CRSP_DSTK=~ /crspdata/diz201308`)
 - `CRSP_MSTK==<full path name>/<monthly stock directory>` (example: `CRSP_DSTK=~ /crspdata/miz201308`)
 - `CRSP_IND=<full path name>/<index directory>` (example: `CRSP_IND=~ /crspdata/ifz201308`)
- If you are using the bash shell (or any Bourne-style shell), enter the same commands above and export each one. This will make changes for your current session only and does not save to the `.profile` file.
- A shell script is available to make changes that can be reused for each update done. Note that this will only make changes to your current session and does not save to the `.profile` file.
 - Navigate to where the CUPL tools are loaded and then enter: `cd accbin`
 - Start the script by entering: `./crsp_setup.sh`
 - The script will prompt for the following:
 - File name (*will be appended with .kshrc*)
 - Top level directory (this should be where CUPL tools are located (example: `~/crsp`))
 - Scratch directory for error messages – name can be anything
 - Enter path for daily stock directory (example: `~/crspdata/diz201308`)
 - Enter path for monthly stock directory (example: `~/crspdata/miz201308`)
 - Enter path for index directory (example: `~/crspdata/ifz201308`)
 - Enter path for CCM directory – enter to leave blank
 - Enter path for CST directory – enter to leave blank
 - Execute script by running: `. ./<file name created above>.kshrc` (*note there is a space between the two dots*)

WINDOWS:

The CRSP Client Environment utility provides users a way to check the location of the software and to set environment variables. The utility can be started by locating it under installed programs CRSPAccess/CRSP Client Environment, or by navigating to the /accbin folder where the CUPL tools are installed and running: `Client_Environment.exe` (screen shot is displayed below). After making any changes, be sure to log off and back into Windows for the settings to be saved.

Note: For subscribers of the CRSP Compustat Merged database, additional CCM database environments will be displayed for the location of the Compustat data.



The screenshot shows the 'CRSP Client Environment: (CUPL_ver322 64-bit)' window. It contains several sections for setting directories:

- CRSP Root:** CRSP Root Directory. This folder/directory contains the CRSP root subfolders that will allow the CRSP utilities to function properly. Path: `C:\crsp\`
- CRSP Work:** CRSP Work Directory. This folder/directory is used for storage of temporary files, log files and contains subfolders that may hold user created files. Path: `C:\crsp\`
- CRSP Daily Stock:** CRSP Daily Stock Database Directory. Path: `C:\crspdata\dliz201308`
- CRSP Monthly Stock:** CRSP Monthly Stock Database Directory. Path: `C:\crspdata\miz201308`
- CRSP Compustat CCM:** CRSP Compustat CCM Database Directory. Path: `C:\crspdata\CMZ201308\`

At the bottom, there is a red warning message: **Administrator privileges are required to set system level environment variables.** Below this message are three buttons: **Do**, **Remove**, and **Exit**.