CHICAGO BOOTH

CRSP®
Center for Research in Security Prices

CRSP UTILITIES AND PROGRAM LIBRARIES GUIDE

CRSP US Stock & US Index Databases

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CHICAGO BOOTH

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CHAPTER 1: INTRODUCTION

CRSPACCESS UTILITIES FOR LINUX AND SUN SOLARIS PLATFORMS

The CRSPAccess software, also known as CUPL, CRSP Utilities and Programming Libraries, includes utilities that may be used to extract CRSP stock and index data from the CRSP proprietary databases on Linux and Solaris platforms. They also include C and Fortran-95 programming libraries.

The CRSPAccess utilities and programming files may be used to access the CRSP US 1925 and 1962 Stock and Stock with Index Databases.

CRSPAccess is made up of a number of tools used to accomplish four major categories of tasks: creating reports, searches and database inquiries, creating subsets, and moving databases and files across machine types. Documentation on these software categories is available individually below, or you can download the entire CRSPAccess Software Guide in one file.

REPORTING TOOLS

The reporting tools can extract time-series output, stock event data, and decile-level index data.

Data are accessed from the reporting tools through identifier keys. The primary identifier key, and the one the CRSP recommends for the CRSP Stock databases, is PERMNO, CRSP permanent security level identifier. Other identifier keys that may be used include PERMCO, CRSP's company level identifier, current and historical CUSIPs, Tickers, and SIC codes. INDNO, CRSP's index identifier, is used to access index data through ts_print and ind_print.

ts_print	To extract time-series data over fixed or relative date ranges.
stk_print	To extract event histories including name and identifier changes, delisting information, and distributions, as well as time series data extractions.
ind_print	To extract index and decile-level returns, levels, counts, and weights data.

SEARCH AND INQUIRY TOOLS

CRSP provides header files for each CRSPAccess database. These name lists are useful for finding identifiers and name histories of securities when only partial information is known. The identifiers can then be used as input to other CRSP reporting utilities or programs. The files are fixed format text files and be accessed with system utilities or other tools. CRSP provides search utilities for header files.

dstksearch	To search the daily data header files
mstksearch	To search the monthly data header files
dindsearch	To search the daily index header files
mindsearch	To search the monthly index header files
crsp_show_db_info	To display parameters associated with a specific database
crsp_set_db_info	To change parameters associated with a specific database

SUBSETTING TOOLS

These utilities can be used to create copies of CRSP databases, restricted for example on the basis of exchange and share codes, or a select group of PERMNOs.

stk_partial	Creates a stock database from an existing one or to append securities from one existing database to another.
ind_partial	Creates an index database from an existing one or to append indexes from one existing database to another.
crsp_stk_subset	Creates a stock database from an existing one by subsetting data.
crsp_ind_subset	Creates an index database from an existing one by subsetting data

MOVING DATABASE AND DATA FILE TOOLS

rewrite_crspdb	Copies a CRSPAccess database to a new directory or converts data from one binary type to another
crsp_stk_scd_load	Creates secondary indexes or keys for a database
crsp_stk_headall	Creates a header file with user-specified options
crsp_ind_headall	Creates a header file for an index database, used primarily for a subset database
crsp_crlf2lf	Removes carriage returns
crsp_lf2crlf	Adds carriage returns
crsp_cutc	Select columns from fixed-width text files can be written to an output file.

I. TS_PRINT: TIME-SERIES REPORT WRITER

ts_print is a command line executable program that can be used to access data from the CRSP Stock and Stock & Index Databases. Users control all of the specifications of reports through the request files. A solid understanding of CRSP data will allow users to maximize the potential of ts_print.

In this document:

- Information about the ts_print request file
- CRSP daily and monthly data items available within ts_print

TS_PRINT REQUEST FILE

It is necessary to create the request file, a text input file, to run ts_print. The request file contains specifications for the data and for the report format. Every request file must contain four components: ENTITY, ITEM, DATE, and OPTIONS.

SECTION	DESCRIPTION
ENTITY	One or more selected securities, a precalculated CRSP supported index, or a user-defined portfolio.
ITEM	One or more ts_print supported CRSP data items.
DATE	Dates can be a set of absolute date ranges or relative dates.
OPTIONS	Controls the format and location of the output file.

Request File Rules

Descriptions in ts_print documentation use the request file rules below.

- Comment lines have a pound (#) sign in the beginning of the line, and are ignored by the application.
- Blank lines are ignored by the application.
- Names in uppercase `COURIER` in the documentation are keywords and must be typed as shown. ts_print is case sensitive.
- # in the documentation (excepting comment lines) represents an integer to be supplied by the user.
- Z represents an alphanumeric character to be supplied by the user.
- Names in lowercase courier are replaced by the user. For example, filename is replaced by the name of a user's file.
- Anything in brackets is optional. If names in brackets are used, the punctuation in the bracket is required. Brackets do not appear in the request file.
- Two or more keywords on a line must be separated with the pipe (|) character. Information specifying a keyword must be on the same line as the keyword. Additional keywords can also be placed on multiple lines; in this case the first line does not end in a pipe character.

While a request file can be run on more than one system, CRSP recommends creating and editing the specifications file on the same system you intend to run it. PC text editors insert carriage return characters at the end of lines which may not be readable on UNIX or OpenVMS systems. If using a request file between systems, the crsp_crlf2lf and crsp_lf2crlf utilities (see the Database Tools chapter) or an ASCII format FTP transfer of the files between systems will eliminate the carriage feed and/or line return differences.

Each component entry, numbered below, consists of three parts:

- A header row which identifies the component: ENTITY, ITEM, DATE, or OPTIONS.
- Center rows describing the desired functions of the component.
- The END row, which closes the component input information.

A basic example follows:

```
# Sample request file for price, volume, total return,
# shares outstanding for a security
```

```
ENTITY

LIST|PERMNO 12490|ENTFORMAT 3

END

ITEM

ITEMID prc

ITEMID vol

ITEMID ret

ITEMID shr

END

DATE

CALNAME weekly|RANGE 19950101-19950201|CALFORMAT
4

END

OPTIONS

X ITEM,YES|Y DATE,YES|Z ENTITY,YES,1|OUTNAME
finsamp.out|REPNAME Sample One

END
```

In ts_print, ENTITY, ITEM, and DATE identify what your report will contain, and OPTIONS determines how your report will appear. Comment lines in a request file begin with "#" and can be anywhere within a request file. They may be used for notes or for disabling an input line. Comment lines and blank lines are ignored by ts_print.

Explanation of Example Request File

1. Comment lines identifying the request file, and its functionality.

2. In the sample layout above, the ENTITY contains one issue, PERMNO 12490, with ticker selected as the optional output header (ENTFORMAT 3).

3. Under ITEM, price (prc), volume (vol), return (ret), and shares outstanding (shr) information from the daily stock file for the ENTITY (PERMNO 12490) will be included in the output report. Since no SUBNO is specified, each ITEMID uses the default, SUBNO 0.

4. In this sample, DATE specifies that for each ENTITY and ITEM the report will contain one value each week (CALNAME). The source of the ITEMs selected above is the daily stock file. Thus, the weekly value for daily ITEMs is a weekly summary of the selected daily data items. In this case, prc and shr are prices and shares at the end of period, vol is the sum of volumes during the week, and ret is the compounded daily return during the week (dividends reinvested on the ex-date), reported between January 1, 1995 and February 1, 1995. Each date in the output will be in a MM|DD|YYYY calendar format (CALFORMAT 4).

5. The OPTIONS selected assign data to X, Y, and Z axes. ITEM options will be displayed on the X-axis, the DATE options on the Y-axis, and the entities will append themselves to the date or Y-axis. (This is indicated by the number 1 at the end of the Z options.) The YES in each of the axis groups indicates that the report will contain headers on each axis. finsamp.out is the name of the output file (OUTNAME) and Sample One is the report title in the output file (REPNAME).

A. ENTITY SPECIFICATION

There are three ways to describe entities in the ts_print request file:

LIST	Selects one or more issues. These can be specified by individual PERMNOs, PERMCOs, Header CUSIP, Historical CUSIP, Header Ticker, and Historical SIC Code, on one or more rows, with a predefined input file, or by ALL, which selects all issues available in the CRSP database.
INDEX	Selects precalculated index series supported by CRSP, identified by INDNO.
PORT	Describes a user-defined portfolio specified in a predefined input file assigned one of the following keys: PERMNO, PERMCO, Header CUSIP, Historical CUSIP, Header Ticker, or Historical SIC Codes. PORT can also be used with the ALL option, to include all issues in the portfolio. Each user-defined Portfolio may contain an unlimited number of issues.

The ENTITY component entry consists of three parts:

- The ENTITY heading row which identifies the component,
- The center row(s) which details the desired entities and options related to the entities, and
- The END row, which closes the ENTITY information.

Heading Row:

ENTITY

Center Row(s):

Primary identification options contain additional and possible ENTITY qualifiers:

```
LIST|PERMNO # or |PERMCO # or|CUSIP # or
|HCUSIP # or |TICKER # or |SICCD #|EVDATE
#|USERHEAD text|ENTFORMAT #|ISSUERANGE #-#
```

or

```
LIST|FILE filename, format F1**(#,#)
[D1(#,#),D2(#,#)SD (text)] or
F2DLZ**[D1D2SD]|EVDATE #|ISSUERANGE
#-#|USERHEAD text|ENTFORMAT # |EXCHANGE
#[,#]
```

or

```
|SHARETYPE #,#[,#]or |NMSIND #[,#] or |SIC
#[-#][,#[-#]
```

```
(** is the two character code for the key
used in the input file. PE=PERMNO, PC=PERMCO,
CU=CUSIP, HC=Historical CUSIP, TI=Header
Ticker, and SI=Historical SIC Code.)
```

or

```
LIST|ALL|ENTFORMAT #|EXCHANGE #[,#] and/or
|SHARETYPE #,#[,#] and/or |NMSIND #[,#]and/
or |SIC #[-#][,#[-#]
```

or

```
INDEX|INDNO #|ISSUERANGE #-#|ENTFORMAT
#|USERHEAD text |EXCHANGE #[,#] and/or
|SHARETYPE #,#[#] and/or |NMSIND #[,#]
```

or

```
PORT|FILE filename F1**(#,#)
[D1(#,#),D2(#,#),WT#,ID#] or
F2DLZ**[D1D2WTID]|WEIGHT weighttype|EXCHANGE
#[,#] and/or |SHARETYPE #,#[,#] and/or
```
|SIC #[-#][,#[-#]

```
(** is the two character code for the key
used in the portfolio input file. PE=PERMNO,
PC=PERMCO, CU=CUSIP, HC=Historical CUSIP,
TI=Header Ticker, and SI=Historical SIC
Code.)
```

or

```
PORT|ALL|WEIGHT weighttype|EXCHANGE #[,#]
and/or |SHARETYPE #,#[,#]and/or |NMSIND
#[,#] and/or |SIC #[-#][,#[-#]
```

End Row:

```
END
```

Following are examples which demonstrate the two primary ways to set up the ENTITY component of your request file. The first pulls data for each of the supported keys. The second uses a semicolon-delimited input file which is keyed on CUSIPs and specifies event dates.

e.g.

```
ENTITY
LIST|PERMNO 43916
LIST|PERMCO 20583
LIST|CUSIP 25384910
LIST|HCUSIP 25384910
LIST|TICKER DEC
LIST|SICCD 3573
INDEX|INDNO 1000080
END
```

e.g.

```
ENTITY
LIST|FILE ts_list.txt,F2DL;CUD1
END
```

input file ts_list.txt contains:

```
59491810;19900101
45920010;19700101
03783310;19850101
25384910;19800101
```

1. ENTITY KEYWORDS AND USAGE

The capitalized words in courier font need to be used as is. Lowercase words and symbols in courier font indicate user-specified information.

A. Primary Identification Options:

1. LIST identifier #

Indicator that for each use, a single key or file containing one supported key will be used to identify an ENTITY.

To access CRSP stock data, the stk_print utility program and search functions dstksearch and mstksearch can be used to identify PERMNO, PERMCO, company name, CUSIP, and ticker by searching the header file.

Possible keys include:

PERMNO

One CRSP PERMNO, (permanent and unique 5-digit issue identification number assigned by CRSP) of an issue where # is the PERMNO. For example, the PERMNO for International Business Machines Corp. (IBM) is 12490. Syntax is:

```
LIST|PERMNO 12490
```

PERMCO

One CRSP PERMCO, (permanent and unique 5-digit company identification number assigned by CRSP) of an issue where # is the PERMCO. For example, the PERMCO for International Business Machines Corp. (IBM) is 20990. Syntax is:

```
LIST|PERMCO 20990
```

CUSIP

One current header CUSIP where # is the desired CUSIP. For example, the CUSIP for International Business Machines Corp. (IBM) is 45920010. CRSP stores CUSIPs as 8-characters. This means that the electronic check-digit in the 9th position is not included and will not be recognized by the program. Syntax is:

```
LIST|CUSIP 45920010
```

HCUSIP

One historical CUSIP where # is the desired historical CUSIP. For example, the HCUSIP for International Business Machines Corp. (IBM) is 45920010. If a security's CUSIP has never changed, HCUSIP will always match CUSIP. Syntax is:

```
LIST|HCUSIP 45920010
```

TICKER

One ticker where # is the desired header ticker symbol. For example, the ticker for International Business Machines Corp. (IBM) is IBM. Syntax is:

```
LIST|TICKER ibm
```

SICCD

One SIC Code where # is the desired historical SIC Code. A user can enter a SIC Code to extract all securities with that particular code. Syntax is:

```
LIST|SICCD 3571
```

ALL

All PERMNOs in relevant databases are used. Relevant databases are determined by the data items (daily or monthly) selected. When this option is used, issues with no data inside the selected date range are ignored.

FILE filename, format

Indicator that an input file containing a supported key (required), date(s) (optional), and headers (optional) will be used. For example a PERMNO input file for use with relative dates containing a user-defined header would look like the following:

```
10107 19900101 Microsoft
12490 19700101 IBM
14593 19850101 Apple
43916 19800101 Digital
```

Format specification of the input file is required. Two types of formats are supported, F1 and F2. F1 is used when the input file is fixed-width. F2 is used when the content of the input file is delimited with a one character delimiter. Each supported key is identified by a two-character code as follows:

PE	PERMNO
PC	PERMCO
CU	Header CUSIP
HC	Historical CUSIP
TI	Header Ticker
SI	Historical SIC Code

Notes:

- Header data are current or the most recent identifying data on the file.
- Historical data search the name history file for any occurrence of that identifier over time.
- Tickers are only included in the header file if the company is active at the time the file was created. Additionally, if a security has a share class, it will be appended to the header ticker; for example, WPO.B is the Washington Post Company, Class B.
- The date range will restrict your selected output values.
- The fields in a fixed-width input file can be positioned in any order with the LIST entity option.
- CRSP stores the 8-character CUSIP. The electronic check digit, or 9th character, is not included and will not be recognized by the program.

If you are using a list of 9-character CUSIPs, you will need to use the F1 formatting option to specify the character positions 1-8 that ts_print should consider.

B. FILE FILENAME, FORMAT OPTIONS:

F1 - Fixed Width

Input file data are in fixed positions. Each code is followed by character positions in the form (begpos, endpos). begpos is the first character position in the input file that contains the data for that specification, endpos the last.

PE	PERMNO of the input security
PC	PERMCO
CU	Header CUSIP
HC	Historical CUSIP
TI	Header Ticker
SI	Historical SIC Code
D1	Beginning date of a date range or a single event date, in YYYYMMDD format. If a relative calendar is used, D1 is the event date for the security. If an absolute calendar range is used, and D1 and D2 are specified, valid data output is the cross-section of the security's trading history, the DATE component date range, and the range set by D1 and D2.
D2	Ending date of a date range, in YYYYMMDD format.
SD	Short Description to supply header text for the security, up to 20 characters long.

For example, if your input file named permin.txt contains PERMNOs in the first 5 character spaces, followed by the beginning date (D1) starting in the 7th character position and end date (D2) starting in the 16th character position of data desired for each PERMNO, where permin.txt contains:

```
10107 19900101 19901231 Microsoft
12490 19700101 19701231 IBM
14593 19850101 19851231 Apple
43916 19800101 19801231 DEC
```

your ENTITY portion of the request file would look like this:

e.g.

```
ENTITY
LIST|FILE permin.txt,F1PE(1,5)D1(7,14)
D2(16,23)SD(25,35)
```

```
END
```

F2 - Delimited Files

Input file data fields are delimited by a single defined character. The delimiting character is set with the DL code.

e.g. The same request file used in the F1 example, with fields delimited by spaces, would look like the following:

```
ENTITY
LIST|FILE permin.txt,F2DLSPED1D2SD
END
```

DL	A delimiter character is used with F2. ts_print supports special delimiters: P for pipe, S for space, C for comma (DLP, DLS, DLC) and any other character can be used by adding a character on after DL (DL; for semicolon delimited input).
PE	PERMNO of the input security
PC	PERMCO
CU	Header CUSIP
HC	Historical CUSIP
TI	Header Ticker
SI	Historical SIC Code
D1	Beginning date of a date range or a single event date, in YYYYMMDD format. If a relative calendar is used, D1 is the event date for the security. If an absolute calendar range is used, and D1 and D2 are specified, valid data output is the cross-section of the security's trading history, the DATE component date range, and the range set by D1 and D2.
D2	Ending date of a date range, in YYYYMMDD format.
SD	Short Description to supply header text for the security, up to 20 characters long.

2. INDEX - INDNO

Indicates that one of CRSP's precalculated indexes will be used to identify an ENTITY.

Each CRSPAccess index is assigned a unique 7-digit identifier, or an INDNO. There are several standard indexes included with the Stock databases: the CRSP equal- and value-weighted indexes, with and without dividends on the NYSE/NYSE MKT/NASDAQ universe, the S&P 500 Composite, and the NASDAQ Composite. Additional indexes are available to subscribers of the CRSP US Stock and Index Database, the Index stand-alone files, and the Cap-based Portfolio reports. Note that only the indexes in the CRSP US Stock or the CRSP US Stock and Index Databases have ts_print access. The INDEX entity option is used as follows:

```
ENTITY
INDEX|1000080
END
```

There are a couple of ways to identify desired INDNOs:

- The complete list of all indexes and their INDNOs, which includes a column identifying product availability, in the Data Descriptions Guide, Index Methodologies chapter.
- The index search programs, dindsearch and mindsearch (see the Search chapter), may be used to find available daily or monthly indexes and their INDNOs.

Only a subset of CRSP data items may be used with an index ENTITY type. Please refer to the entity type columns in the ts_print Daily and Monthly Data Item Tables at the end of this document to identify available data items.

3. PORT

Indicates that the entity is a portfolio. This option allows for user-created portfolios. There are two methods of selecting issues for your portfolio, and four weight type options. Securities may be selected either by choosing all securities in the database (with or without filters), or individual issues may be included in a user-created portfolio input file. Weight type options include: equal-weight, value-weight, user-specified constant weights and user-specified constant shares. The portfolio id field is optional for all types of portfolios. Only select CRSP data items may be used with an PORT ENTITY type.

ALL

Includes all eligible issues in the stock file for the date range specified. (The date range is specified in the DATE section of the request file.) The equal-weighting and value-weighting options are available when ALL is used. PERMNO is the identifier that must be used with the ALL option.

FILE filename, format

Name and specifications of a user-defined input file used to define one or more portfolios. Filename is replaced with the actual name of your input file. The layout of the input file is specified with one of the format options, F1 fixed-width file, or F2 delimited file.

If you are using an input file with a key that does not have a constant number of spaces, such as Ticker Symbol, PERMCO, or SIC Code, we recommend that you use the F2 delimited formatting option.

Guidelines for creating portfolio input files follow:

- Multiple portfolios of the same type can be defined within one input file.
- One type of key identifier is used within a file. Key options include PERMNO, PERMCO, CUSIP, Historical CUSIP, Header Ticker, and Historical SIC Code.
- Portfolio id numbers are needed only if there is more than one portfolio defined within the input file.
- Up to 30 portfolio ids—numbered 0-29—can be defined and assigned within an input file for equal- and value-weighted options.
- Up to 200 portfolio ids—numbered 0-199—can be defined and assigned within an input file for user-defined-share or weight options.
- User-defined-share and weight portfolios require a beginning and ending date range for each security in the input file. Conversely, a single event date and a relative date range will not run with user-defined portfolios.

The following is a sample of an input file for an equal-weight or value-weight portfolio. PERMCO is the assigned key, and there are 3 portfolios, 0, 1, and 2.

```
20990   0
20583   0
8048    2
22426   1
22426   2
25707   2
22506   2
22506   0
```

Each input line for user-weight or user-share portfolios must contain the key, the beginning and ending date ranges or event date for each security, the assigned weight or number of shares, and portfolio id (optional). Following is a sample of an input file for a user-weight or user-share portfolio input file, in the default file format with PERMNO as the assigned key.

```
12490 19970101 19971231 100 0
43916 19961002 19971126 150 0
10107 19950204 19970910 200 2
13311 19970301 19971225 200 1
14218 19930101 19971231 260 2
14593 19960611 19970610 170 1
63255 19970201 19971121 130 2
76597 19950101 19971110 190 2
81191 19970201 19970517 500 1
```

Format codes are assigned to each portfolio input file. The first two characters of the format specification determine whether input fields are in fixed positions (F1) or are separated by a one-character delimiter (F2). Additional characters are used to identify the position of the information in the portfolio input file.

F1

Input file data are in fixed positions. Each code is followed by character positions in the form (begpos, endpos). begpos is the first character position in the input file that contains the data for that specification, endpos the last.

PE PERMNO of the input security

PC PERMCO of the input security

CU CUSIP of the input security

HC Historical CUSIP of the input security

TI Header Ticker

SI Historical SIC Code

D1 Beginning date or event date in YYYYMMDD format. If a relative calendar is used, D1 is the event date for the security. If an absolute calendar range is used, and D1 and D2 are specified, valid data output is the cross-section of the security's trading history, the DATE component date range and the range set by D1 and D2. The range set by D1 and D2 must fall within the absolute range set in the DATE component, or it is ignored.

D2 Ending date in YYYYMMDD format.

WT Security weight: the number of shares held of the security, or the weight of the security.

ID Portfolio Identification Number, one input file can be used to define up to 200 portfolios. Portfolios are identified with an integer between 0 and 199.

For example, if your input file was a user-weight file named permin.txt containing PERMNOs in the first 5 character spaces, followed by the beginning date (D1) starting in the 7th character position and end date (D2) starting in the 16th character position of data desired for each PERMNO, three-digit weight (WT) starting in the 25th character position, followed by a one-digit portfolio id field (ID) starting in the 29th position, your ENTITY entry would be as follows:

e.g.

```
ENTITY
PORT
|FILE permin.txt,F1PE(1,5)D1(7,14)D2(16,23)
WT(25-27)ID(29,29)
|WEIGHT user_weight
END
```

F2

Input data fields are delimited by a single defined character. The delimiting character is set with the DL code.

DL delimiter character used with F2. ts_print supports delimiters: P for pipe, S for space, C for comma, (DLP, DLS, and DLC respectively), and any other character can be used by adding a character on after DL.

PE PERMNO of the input security

D1 Beginning date or event date in YYYYMMDD format. If a relative calendar is used, D1is the event date for the security. If an absolute calendar range is used, and D1and D2are specified, valid data output is the cross-section of the security's trading history, the DATE component date range and the

range set by D1 and D2. The range set by D1 and D2 must fall within the absolute range set in the DATE component, or it is ignored.

D2 Ending date

WT Security weight

ID Portfolio Identification Number, one input file can be used to define up to thirty portfolios. Portfolios are identified with an integer between 1 and 30.

For example, using the same portfolio request file in the above example, with fields delimited by spaces would have an ENTITY entry as follows:

e.g.

```
ENTITY

LIST|FILE permin.txt,F2DLSPED1D2WTID|WEIGHT
user_weight

END
```

WEIGHT weighttype

Weighting for use with portfolios. Four weights are available: equal_weight, value_weight, user_share, and user_weight.

WEIGHT equal_weight

Specifies equal-weighted results for the selected portfolio. The same value is invested in each eligible security each holding period. The portfolio is reweighted each input period.

WEIGHT value_weight

Specifies valued-weighted results for the selected portfolio. Eligible securities in the portfolio are weighted each input period by their market capitalization at the end of the previous period.

WEIGHT user_share

The user defines the portfolio by weighting issues based on the number of shares specified in the portfolio file. The number of shares specified remains constant throughout the date range unless they are adjusted by stock splits, stock dividends, or other events with price factors. The weights remain constant for each security once established at the beginning of the range. The weights are set each period to the value of shares held at the end of the previous period. To indicate that a portfolio component is sold short, a negative symbol precedes the shares value.

WEIGHT user_weight

The user defines the portfolio by defining the weight for each security specified in the portfolio input file. The portfolio is reweighted each input calendar period to maintain the weighting of eligible securities. User weights are normalized. The weights are based on the sum of the values given and do not need to equal 1. For example, if a two-security portfolio held 40% of one Security A and 60% of Security B, the weights could be expressed as 2 and 3, 4 and 6, .40 and .60, and so on. To indicate that a portfolio component is sold short, you should put a negative symbol before the weight value.

B. ADDITIONAL ENTITY QUALIFIERS

1. DATA FILTERS

A. EXCHANGE #[,#]

EXCHANGE allows the user to filter the trading history of issues on the basis of stock exchange. This option is available when using variations of LIST or PORT as the ENTITY type. Exchange code restriction options are specified in the first #, using the codes below:

1 NYSE

2 NYSE MKT

3 NYSE/NYSE MKT

4 NASDAQ

5 NYSE/NASDAQ

6 NYSE MKT/NASDAQ

7 NYSE/NYSE MKT/NASDAQ

The second # symbol further refines the selection using 3 flags. These are:

0 keep only during time period when valid

1 keep none if ever invalid

2 keep all if ever valid

For example,

```
PORT|ALL|WEIGHT equal_weight|EXCHANGE 1,0
```

Will result in output for an equal-weighted portfolio with all stocks that traded on the NYSE during the time period specified in the DATE option.

B. SHARETYPE #,#[,#]

SHARETYPE allows the user to restrict the output on the basis of share type for individual securities. This option is available when using variations of LIST and PORT as the ENTITY type. The selection is based on the two-digit CRSP Share Type Code variable. The first two comma-separated number symbols above contain 10 digits each. If the value of a digit is 1, that type of issue is valid and if the value of a digit is 0, that type of issue is ineligible.

Columns for the first two codes can be added to the ts_print format to get the desired share code combination. For example, the share type restriction where only ordinary common shares and ADRs representing closed-end funds and closed-end funds incorporated outside the US are included is represented in ts_print format is 0101000000,0000110000.

The first # contains 10 digits relating to the security. These options are:

CODE	DEFINITION	TS_PRINT FORMAT
1	Ordinary common shares	0100000000
2	Certificates	0010000000
3	ADRs (American Depository Receipts)	0001000000
4	SBIs (Shares of Beneficial Interest)	0000100000
7	Units (Depository Units, Units of Beneficial Interest, Depository Receipts, etc.)	0000000100

The second # contains 10 digits relating to the security type. These options are:

CODE	DEFINITION	TS_PRINT FORMAT
0	Securities which have not been further defined	1000000000
1	Securities which need not be further defined	0100000000
2	Companies incorporated outside the US	0010000000
3	Americus Trust Components (Primes and Scores), HOLDR Trusts, and Index Fund Trusts	0001000000
4	Closed-end funds	0000100000
5	Closed-end fund companies incorporated outside the US	0000010000
8	REITs (Real Estate Investment Trusts)	0000000010

The third # symbol further refines the selection criteria using 3 flags. These are:

0 keep only during time period when valid

1 keep none if ever invalid

2 keep all if ever valid

For example,

```
LIST|ALL|SHARETYPE 0001000000,0010000000,0
```

will restrict the output to securities that have share codes identifying them as American Depository Receipts (ADRs) and companies incorporated outside the US.

C. NMSIND #[,#]

NASDAQ National Market Indicator. NASDAQ issue range restriction is applicable to variations of LIST and PORT as the ENTITY type. Each # represents a single integer. When the NMSIND option is used, only NASDAQ issue ranges are restricted. It has no effect on ranges that match NYSE and NYSE MKT name structures. The first # symbol ranges from 1 to 7. Each number has the following meaning:

1 keep NASDAQ National Market and Global Markets

2 keep NASDAQ SmallCap and Capital Market

3 keep all NASDAQ markets with price reporting

4 keep NASDAQ SmallCap before June 15, 1992

5 keep National Market and Global Select Market only

6 keep National Market and Global Market only

7 keep Global Select Market only

The second # symbol further refines the selection using 3 flags. These are:

0 keep only during time period when valid

1 keep none if ever invalid

2 keep all if ever valid

For example, LIST|ALL|NMSIND 2,0 will restrict the output to NASDAQ SmallCap and Capital Market securities.

D. SICCD#-#[,#-#...],#

SIC issue range restriction is applicable to LIST and PORT as the ENTITY type. Each # represents a single SIC Code. You can filter the data to output a range of SIC values or individual SIC values with the following syntax: SIC #[-#][,#[-#].

For example, LIST|ALL|SIC 1000-2000,3725 would extract all securities with SIC Codes between 1000 and 2000, and all with and SIC code of 3725.

2. ENTITY SUBSETTING

CRSP provides functionality supporting the subsetting of a larger universe based on a pre-defined constituency. Two supported options require CRSP Stock and Index databases: Grouping by the S&P 500 constituency, and subsetting a portfolio based on portfolio assignment.

A. Pre-Defined Group Membership

```
|GROUP group_subflag;grouptype;grouplist
```

Where `group_subflag` is one of:

0 Restrict time periods based on selected list

1 Erase if not always valid based on selected list

2 Keep if ever valid based on selected list

`grouptype` is the group type used as the basis for restrictions. Note: 16 is currently the only valid grouptype value, representing S&P 500 constituency.

`grouplist` provides the group list to keep in the subset.

B. Portfolio Assignment

```
|PORTASSIGN port_subflag;porttype;portlist
```

Where `port_flag` is one of:

0 Restrict time periods based on selected list

1 Erase if not always valid based on selected list

2 Keep if ever valid based on selected list

`porttype` is the portfolio type used as the basis for restrictions.

`portlist` provides the portfolio assignments to keep in the subset.

3. ENTITY LEVEL DATE OPTIONS

A. EVDATE

The event date in YYYYMMDD format for a PERMNO. EVDATE is required for all securities

identified with LIST|PERMNO if the calendar type in the DATE component is RELATIVE, and is ignored otherwise. EVDATE does not work with indexes or portfolios.

For example, LIST|PERMNO 12490|EVDATE 19991231 used in the body of the ENTITY section would apply relative dates, such as two days before 19991231 and 3 days after, as selected in the DATE component.

If you use a relative date option, each ENTITY must be assigned a single EVDATE.

B. ISSUERANGE #-#

Issue date range is optional and must be followed by beginning and ending dates, connected with a dash when included. Dates may be in YYYYMMDD, YYYYMM, or YYYY format. For formats that do not specify months or days, the beginning date in the range will start with the first period within the specified range. The ending date will be the last period in the range.

When ISSUERANGE is included for an issue, the valid data output is the cross-section of the security's trading history, the DATE component date range, and the ISSUERANGE date range. ISSUERANGE must fall within the date range set in the DATE component of the request file. Note that ISSUERANGE must also exceed the duration of the calendar. For example, if your calendar is set to report annually, ISSUERANGE must be greater than 12 months.

For example, LIST|PERMNO 77702 | ISSUERANGE 200605 - 200703 will cover daily data from May 1, 2006 through March 31, 2007 or monthly data from May 31, 2006 through March 31, 2007.

4. ENTITY HEADER OPTIONS

A. USERHEAD TEXT

Used to specify alternate output headers (short descriptions) for the ENTITY. The default headers, are PERMNO in LIST, INDNO in INDEX, or the portfolio identification number prefixed with the word "PORT", in PORT. The USERHEAD string can be up to 20 characters including spaces and must be specified manually.

For example, LIST|PERMNO 12490|USERHEAD IBM - 45920010 used in the body of the ENTITY section would use the Ticker and CUSIP as the header for security in the output file.

B. ENTFORMAT

Provides standard issue identification options for the output report file's header for security entities. Options include:

1 PERMNO, the default

2 CUSIP

3 Ticker symbol, header

4 Company Name, header. These may be up to 20 characters long.

ENTFORMAT is superseded by SD option with a formatted, predefined input file. This option is only available for securities. A user-defined header option is also available. See the description for USERHEAD text above.

For example, LIST|PERMNO 12490|ENTFORMAT 1 used in the body of the ENTITY section would print 12490 (the PERMNO) as the header in the output report.

Note that USERHEAD overrides short description (SD) from an input file for supplying headers and will label all entities identically.

C. ITEM SPECIFICATION

Data items are selected using a mnemonic name called ITEMID. Optional qualifiers, SUBNOs, can be used to further define the data item. A complete list of supported ts_print daily and monthly data items is at the end of this document. Items are organized alphabetically by item name, and contain the following information for CRSP Stock and Index data:

- Item identifier (ITEMID)
- SUBNOs, to further define a data item, where SUBNO 0 is the default.
- Default header for each ITEM as it appears in the output file
- Default data item formatting
- Compatible ENTITY types

There are daily and monthly sets of CRSP data items. Monthly CRSP ITEMIDs are the same as daily, but are prefixed with an "m". CRSP Stock and Index items can be included in the same report. A given stock report generally should contain either daily or monthly data items.

Each ITEMID selected will generate one output for each ENTITY per DATE. The ITEM specification consists of three parts:

1. The ITEM header row which identifies the component
2. The center row(s) which detail(s) the desired data items
3. The END row, which closes the item input information

A summary of the ITEM component specifications follows:

Heading Row:

```
ITEM
```

Center Row:

```
ITEMID mnemonic | SUBNO # | ITEMLAG # |
SDESC text | FORMAT m.n | DATALEN #
```

End Row:

```
END
```

Each data item is assigned an ITEMID with an associated SUBNO. For CRSP Stock and Index data, the ITEMID identifies a data item and the SUBNO can indicate a variation of an item. Not all ITEMIDs have more than one SUBNO. Following is an example of a sample ITEM section.

SUBNO 0 is the default for all data items and may be omitted in the request file.

Your product mix determines which of these are available. Additional indexes and portfolio types are available when using the CRSPAccess stock data in conjunction with the CRSP US Index Database and Security Portfolio Assignment Module. In this case it is chosen to select the NYSE/NYSE MKT/NASDAQ Capitalization Portfolio assignment.

An item section may appear as follows:

```
ITEM
ITEMID caldt
ITEMID prc
ITEMID prc | SUBNO 1
ITEMID indtret | SUBNO 1000081
ITEMID indtret | SUBNO 1000080
ITEMID porttret | keyset 101
ITEMID saleq | keyset 1
ITEMID sales
END
```

1. DATA ITEM KEYWORDS AND USAGE

The keywords used to identify items are described below. Details for each of the data items can be found in the ts_print Daily and Monthly Data Item Tables. Please refer to these tables when creating your input file.

A. ITEM IDENTIFIERS

CRSP ITEMIDs are mapped to all raw and derived data items and serve as the primary item identification code for the specific data item requested. CRSP item definitions can be found found in the Data Definitions section.

ITEMIDs may be defined by secondary identifiers:

1. SUBNO

Represents a variation of the item. For example, the data item Price (ITEMID prc) has 2 SUBNOs.

SUBNO 0 = last price and SUBNO 1 = last non-missing price. For all data items, SUBNO 0 is the default and may be left off of the item specification row in a request file.

```
ITEMID prc
ITEMID prc | SUBNO 1
```

2. INDNO

Represents an associated index series used with the specified item. Items associated with an index are identified in the ts_print Daily and Monthly Data Item Tables with "indno" in the column labeled "Subno". A full list of indexes is provided here.

```
ITEMID indtret | SUBNO 1000081
```

Keyset Usage for Stock

The portype and grouptype values for Portfolios and Groups may be accessed as either porttype and grouptype values or keyset offsets.

- Daily porttype values 1-9 equate to keyset values 101- 109
- Monthly porttype values 1-8 equate to keyset values 201-208
- Grouptype values 1-50 equate to keyset value 301-350. Note that S&P 500 Constituents is the only valid group, represented by grouptype 16 or keyset 316.

The advantage to using keyset offsets is that they provide unique values across all frequencies of databases.

3. PORTTYPE

Represents an associated portfolio type used with the specified item. Each portfolio type represents a portfolio based on market capitalization within a market segment index. Items associated with a portfolio are identified in the ts_print Daily and Monthly Data Item Tables with "porttype" in the column labeled "Subno".

Data may be accessed with either SUBNO or with keyset offsets as described above.

```
ITEMID porttret|SUBNO 1
```

is equivalent to the following (for daily data):

```
ITEMID portret|keyset 101
```

B. ITEM Qualifiers

1. SDESC

Short text description allows you to override the default header text. The default item headers are listed in the Daily and Monthly data item tables.

For example, to use the default header for the PERMNO data item ("PERMNO"), there is no need to include the SDESC qualifier.

```
ITEM
ITEMID permno|SUBNO 0
END
```

This produces output like the following:

```
                    PERMNO
90319 20080501       90319
90319 20080502       90319
90319 20080505       90319
90319 20080506       90319
90319 20080507       90319
```

To change PERMNO's header from "PERMNO" to "Unique Security ID", use the following SDESC qualifier:

```
ITEM
ITEMID permno|SUBNO 0 |SDESC Unique Security ID
END
```

The change produces the following output:

```
                Unique Security ID
90319 20080501               90319
90319 20080502               90319
90319 20080505               90319
90319 20080506               90319
90319 20080507               90319
```

The short description may contain up to 20 characters.

2. FORMAT

Allows you to modify the output formatting assigned to a data item. There are two ways to specify the format. The first is in the form m.n, where m is the number of digits allocated to the left of the decimal point in the output, and n is the number of digits to the right of the decimal. The n is optional. It is ignored for integer fields. If n is not specified in the floating point fields, no decimal is printed. The second method of data item formatting uses output specifiers from the C programming language. The default C format for each ITEMID is listed in the Format column of the Daily and Monthly data item tables.

3. DATALEN

The number of characters needed to store the output data to override the default. This should be at least as large as any field width specified in the format. This field should be modified when you wish to assign the field a header which does not fit within the default FORMAT for the ITEMID.

The data length has been set to produce an output file that is easily readable. If you are importing the data into another program for additional data manipulation, you may need to change the DATALEN (data length) field. This is particularly true with the character fields. The non-character fields may add spaces to the total allocated. If this occurs, use the FORMAT field to correct the total spaces for importing. When manipulating the format this way, you are not able to justify the fields. Character fields default to left justification.

D. DATE SPECIFICATION

The DATE component sets the calendar used in your output. It is the periodicity with which an output value will be included for each data item. This is independent of the reporting frequency of the data. Either a date range or a relative date may be selected. The calendar may be one of six calendars in the database: daily, weekly, monthly, quarterly, semi-annual, or annual. The ranges can be either the same for all input entities, or based on an event date for each entity.

Data may be presented in using date ranges or relative dates. Date ranges have fixed beginning and end dates and apply globally. Relative dates require and return data around a specified event date. Event dates are provided when Entities are added or included in Entity input files.

The DATE component consists of three parts:

1. The DATE heading row which identifies the component
2. The DATE center row(s) which detail(s) the desired calendar information
3. The END row, which closes the DATE input information

A summary of the DATE component specifications follows.

Heading Row:

```
DATE
```

Center Row:

```
CALNAME text or CALFILE filename | RANGE
(or ABSOLUTE) or
RELATIVE dates | CALFORMAT # | DISPLAY #
[-#] [,# [-#]…
```

End Row:

```
END
```

The calendar name or a user-specified calendar file and either an absolute date, relative range must be chosen. The default calendar format is YYYYMMDD, but other calendar output formats are available, including YYMMDD, MM/DD/YY, MM/DD/YYYY, and DD-MMM-YYYY.

Following are examples. The first example will produce quarterly output for each of the data items in the date range between January 1, 1980 and December 31, 2007. The calendar indicates the frequency of the data items selected for the report. The second example will report on a daily basis a total of 5 days, from 5 days before the event date, the event date (EVDATE), and 5 days after the event date. The event date for each entity

is specified in the ENTITY specification section of your input file.

e.g.

```
DATE
CALNAME quarterly|RANGE 198001-200712
END
```

e.g.

```
DATE
CALNAME daily|RELATIVE -5,5
END
```

1. DATE KEYWORDS AND USAGE

The keywords used to identify the report date are described below.

A. CALNAME

The name of an existing calendar to set the frequency of reporting in the output file. ts_print supports reporting for Daily, Weekly, Monthly, Quarterly, and Annual Calendars. Data items can be used with any of the supported calendars. Input data frequency is determined by the data item specified in the ITEM section. The supported calendars must be chosen from the following table:

CALNAME	CALENDAR DESCRIPTION
Daily	CRSP Daily Stock Calendar
Weekly	CRSP Weekly Stock Calendar
Monthly	CRSP Monthly Stock Calendar
Quarterly	CRSP Quarterly Stock Calendar
Annual	CRSP Annual Stock Calendar

B. CALFILE FILENAME

The calendar used in ts_print to a user-specified input calendar file. CALFILE allows user to supply an output calendar from a file in place of standard CRSP calendars selected with the CALNAME option. file.path must refer to a file containing calendar dates, one per row, in date order, in YYYYMMDD format. Data items are converted to the user's calendar for output. Fiscal year conversions of stock data are not supported with user calendars.

C. RANGE DATERANGE

The fixed date range from which ts_print reports data. Ranges can be expressed as YYYY, YYYY-YYYY, YYYYMM, YYYYMM-YYYYMM, YYYYMMDD, or YYYYMMDD-YYYYMMDD. If only a month or year is specified, all dates in the calendar belonging to that month or year are included. If the chosen dates are not in the selected calendar, the beginning range uses the next following date in the calendar and the ending range uses the last previous date in the calendar. Output will be produced for all entities for all items for each period in the range. If the entity does not have data during the range or is restricted by the date range selected in the ENTITY description section, missing values will be included in the output report.

D. RELATIVE DATERANGE

The event time range of a report used to select data for entities based on an entity-specific event date. Ranges are expressed as the first period relative to the event date followed by a comma and the last period relative to the event date. A range before the event date is indicated as a negative number. For example, -5,10 would report 5 periods before the event date set in the ENTITY component and 10 period after. The period is the CALNAMEyou choose. A range on the event date is indicated as 0.

The RELATIVE date is dependent on the EVDATE or the D1 value in an input ENTITY component. This option is typically used for event studies, when the data range sought for each security is different. Using this option, RELATIVE -5,6, for example, would return results for the five reporting dates before the event date, the event date period, and the six reporting periods after the event date. Only an event date can be specified with entities if using this option. An entity date range cannot be used because the output data

header for a RELATIVE calendar is in terms of event time, not calendar time. Therefore, this option does not work with both beginning and ending dates.

It is useful to include the ITEMID caldt(mcaldt), or altdt(maltdt) for partial period data in the output file, to see the actual dates for each entity when using relative dates.

E. CALFORMAT

A numeric code for the formatting of the dates appearing in the output when date headers are chosen. Options include:

CODE	FORMAT	EXAMPLE
1	YYYYMMDD (default)	20071231
2	YYMMDD	071231
3	MM/DD/YY	12/31/07
4	MM/DD/YYYY	12/31/2007
5	DD-mmm-YYYY	31-Dec-2007
6	Cal-Based	2007.4

F. DISPLAY #[-#][,#[-#]]...

Enables the user to control exactly which output periods appear in the output.

This does not affect calculations, just which dates are displayed. It can be used with RANGE or RELATIVE dates. The display range must be a subset of the full selected range. For example, if RELATIVE -100,100|DISPLAY -100,-1-1,100 is used, data will be calculated for the range 100 days before event date to 100 days after event date, but only days -100, -1, 0, 1, and 100 will appear in the output. If RANGE 20030102-20030630|DISPLAY 20030102,20030415-20030418,20030615 is used, data will be calculated for the first half of 2003, but only days 20030102, 20030415, 20030415, 20030416, 20030417, and 20030615 will appear in the output.

E. OPTIONS AND OUTPUT SPECIFICATION

Each data point represents the data ITEM value for one ENTITY on a given DATE. These three points are plotted in a table to produce the report or output file. The OPTIONS component specifies the appearance of the output file.

1. A heading row which identifies the component.
2. Center rows describing the desired output options.
3. The END row, which closes the OPTIONS component input information.

Full syntax for an OPTIONS component is:

```
OPTIONS

X type[,headers]|Y type[,headers]|Z
type[,headers],zflag#

|OUTNAME filename|REPNAME text|FIELDDELIM
text|BUFSIZE #|NOFILL

|CHARDELIM text|ROWDELIM #,#|DEFAULT
#|COMPACT|PARTIAL 1|DLRET DEFAULT

|DLRET [filename]|PRIMARY|CURRENCY USD

END
```

The following example contains the required X, Y, and Z axes specifications. Output will include columns with data for each ENTITY and rows with ITEMs and DATEs, sorted by ITEM, then DATE. ts_print will generate an output file named ts_samp3.dat (OUTNAME) into the working directory. The report will have a heading called Sample 6.

e.g.

```
OPTIONS

X ENTITY|Y DATE|Z ITEM,3|OUTNAME ts_samp3.
dat|REPNAME Sample6

END
```

1. REPORT OPTIONS KEYWORDS AND USAGE

Row and Column Assignment

X-axis, Y-axis, and Z-axis assignments are mandatory, and must allocate ENTITY, ITEM, and DATE to the graphical axes.

A. TYPE

Used to assign the data components to the axes with one of the keywords ENTITY, DATE, or

ITEM. Each component must be assigned to exactly one axis.

B. HEADERS

Determines whether headers are written to the output file for the axis. If included they must be set to YES, to show column and row header, or NO, to hide them. Header specification is included with each axis specification. The default is YES. The default header for an ENTITY is the PERMNO for a security and INDNO for an index. The default header for a data ITEM is the item header listed in the stock and index Data Item Tables. The default header for DATE is the YYYYMMDD date for absolute calendar ranges and relative period numbers for relative dates.

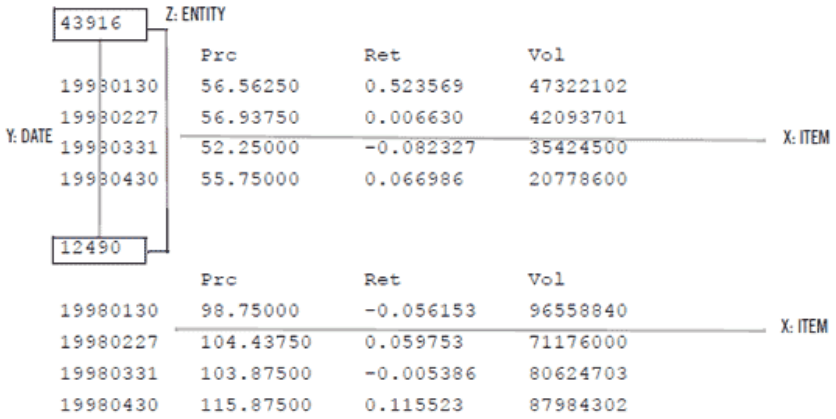
C. Z FLAG

Z flag # controls how three-dimensional data is printed as two-dimensional output. It is a number, 1, 2, or 3, as described below.

Each dimension, ITEM, ENTITY, and DATE, is user-assigned to an X-, Y-, and Z-axis. Other options control the output file's data spacing and delimiters. For the same axis-data allocation, the Z-axis can be printed in two dimensional output in three ways (below). The X-axis represents ITEMs (for example, Prices, Returns, and Volume). The Y-axis represents the date (January - April, 1998). The Z-axis represents the ENTITY (PERMNOs/securities 12490 (IBM) and 43916 (DEC)).

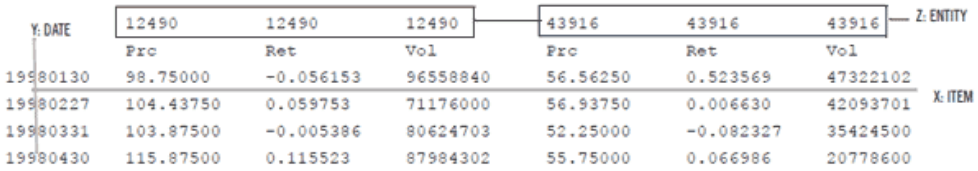
Z Flag 1:

X and Y table is repeated for each Z item, where Z is placed on the Y-axis effectively as a header for the DATE and ITEM information.



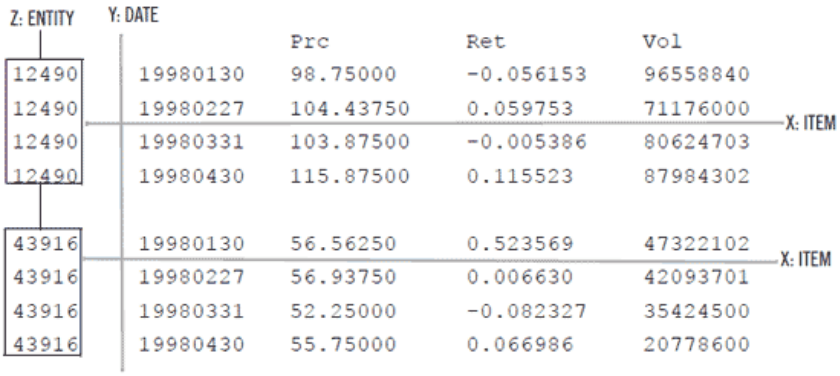
Z Flag 2:

Z (ENTITY) data is placed on the X-axis and repeated for each X item, where Z functions as an ENTITY header for each ITEM, with one ENTITY following the next.



Z Flag 3:

Z (ENTITY) data is placed on the Y-Axis and repeated for each Y item as the first column in the table for each DATE and ITEM.



		Prc	Ret	Vol
12490	19980130	98.75000	-0.056153	96558840
12490	19980227	104.43750	0.059753	71176000
12490	19980331	103.87500	-0.005386	80624703
12490	19980430	115.87500	0.115523	87984302
43916	19980130	56.56250	0.523569	47322102
43916	19980227	56.93750	0.006630	42093701
43916	19980331	52.25000	-0.082327	35424500
43916	19980430	55.75000	0.066986	20778600

2. OPTIONS OUTPUT

A. OUTNAME

The name of the file where the output will be stored. If OUTNAME is not specified, the data will dump to the screen.

B. REPNAME

A text description that will be placed at the top of the report.

C. DLRET DEFAULT

Outputs the default value, -88.0 for missing delisting returns for ENTITIES that have delisted during the selected dates. You must have return selected as an ITEM option to include Delisting Returns in your output.

D. DLRET FILENAME

Outputs user-specified missing delisting return codes. The user may assign missing values for a range of delisting codes for select beginning and ending exchanges. To do this, a text input file must be created containing the following fields in the following order: begin delist code, end delist code, begin exchange code, end exchange code, alternate delisting return value, alternate delisting return without dividends value.

For example:

```
200     299 1 3 -0.50 -0.55
500     570 3 3 -0.40 -0.45
571     600 3 3 -0.30 -0.35
```

Note that in this example, the first row would assign a -0.50 value to missing delisting returns for securities with delisting codes 200-299 that initially traded on NYSE and ended up trading on NASDAQ, and -0.55 for missing delisting returns without dividends. If your request file included a security with a missing delisting return that was not included in your input file, the default missing delisting return, -55.0, would be used instead.

E. PARTIAL 1

Includes partial-period data in the output. If Partial 1 is not used, ts_print will not include the last month of data for a company that stopped trading mid-month, because only months with end-of-month data are normally included. This option applies to monthly data.

F. NOFILL

Using the NOFILL default, rows outside an issue's date range or the user's date specification will not print to the output file. NOFILL is only applicable if ITEM is chosen for the X-axis, DATE for the Y-axis, ENTITY for the Z-axis, zflag # is 1 or 3, and the DATE specification is RANGE. NOFILL does not work with RELATIVE dates.

G. FIELDDELIM STRING

A specified character string that will be placed as a delimiter between fields in output file rows. The default is a space delimiter. Special predefined characters P (|) pipe, S ( ) space, and C(,) comma, can be used. P, S, and C can only be used as predefined characters. For example, using the default space delimiter, output appears like this:

```
                        Company Name            Askhi        Ret        Shr
12060 20080602 GENERAL ELECTRIC CO              30.89000   -0.010091   9967400
12060 20080603 GENERAL ELECTRIC CO              30.80000    0.001644   9967400
12060 20080604 GENERAL ELECTRIC CO              30.73000   -0.000328   9967400
12060 20080605 GENERAL ELECTRIC CO              31.14000    0.020033   9967400
12060 20080606 GENERAL ELECTRIC CO              30.86000   -0.033484   9967400
```

While FIELDDELIM p changes the field delimiter to the pipe (|) character:

```
     |        |           Company Name      |    Askhi   |    Ret    |   Shr
12060|20080602|GENERAL ELECTRIC CO          |    30.89000|  -0.010091|  9967400
12060|20080603|GENERAL ELECTRIC CO          |    30.80000|   0.001644|  9967400
12060|20080604|GENERAL ELECTRIC CO          |    30.73000|  -0.000328|  9967400
12060|20080605|GENERAL ELECTRIC CO          |    31.14000|   0.020033|  9967400
12060|20080606|GENERAL ELECTRIC CO          |    30.86000|  -0.033484|  9967400
12060|20080609|GENERAL ELECTRIC CO          |    30.35000|   0.001332|  9967400
```

H. BUFSIZE

The size of memory that will be allocated by the program. In a large study, the program will save intermediate data in a temporary file. This can degrade performance . If memory is available on your system, you can use the BUFSIZE option to increase the size of the internal buffer. The program will report the necessary buffer size needed if the BUFSIZE option can improve performance. Switching axes can also be used to improve performance for large datasets. Performance for large datasets is greatly improved if ITEM is chosen for the X-axis, DATE is chosen for the Y-axis, ENTITY for the Z-axis, and zflag#is set to 1or 3.

I. CHARDELIM STRING

A character string placed before and after all character string fields in output file rows. The default is no character string delimiter. For example, CHARDELIM * causes the character string field Company Name below to be surrounded by asterisks.

```
                          Company Name          Askhi        Ret        Shr
12060 20080602 *GENERAL ELECTRIC CO       *     30.89000   -0.010091   9967400
12060 20080603 *GENERAL ELECTRIC CO       *     30.80000    0.001644   9967400
12060 20080604 *GENERAL ELECTRIC CO       *     30.73000   -0.000328   9967400
12060 20080605 *GENERAL ELECTRIC CO       *     31.14000    0.020033   9967400
12060 20080606 *GENERAL ELECTRIC CO       *     30.86000   -0.033484   9967400
12060 20080609 *GENERAL ELECTRIC CO       *     30.35000    0.001332   9967400
```

J. ROWDELIM #,#

Controls the number of rows between output lines. The first integer is the number of blank lines between rows when the Z-axis value changes when the Z-axis data is printed in rows. The second integer is the number of blank lines between all data rows. The default is 0,0.

K. DEFAULT

A value of 1 sets output header options to YES and FIELDDELIM to a space.

L. COMPACT

Compresses output by removing all spaces and trailing decimal zeros in numbers. The field delimiter is automatically set to 1 if not set with FIELDDELIM, and the row delimiters are set to produce no blank lines if not already set with ROWDELIM. COMPACT is ideal for producing output to be loaded into another program.

1. The row detailing the functionality of a single option must wrap. Different keywords can be on separate lines, but the last keyword on a line cannot end with a pipe character, and the beginning of a line must be a keyword.

2. Extra spaces are allowed between options, but not within the description of an option.

DAILY DATA ITEMS

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
ASK ADJUSTED, END OF PERIOD				
Adjask	adjask	0	11.5	list
ASK ADJUSTED, LAST AVAILABLE NONMISSING				
Adjaskprev	adjask	1	11.5	list
ASK, END OF PERIOD				
Askprev	ask	0	11.5	list
ASK, LAST AVAILABLE NONMISSING				
Ask	ask	1	11.5	list
ASKHI ADJUSTED, MAXIMUM IN PERIOD				
Adjaskhi	adjaskhi	0	11.5	list
ASKHI, MAXIMUM IN PERIOD				
Askhi	askhi	0	11.5	list
ASSOCIATED INDEX RETURNS				
Indtret	indtret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS WITHOUT DIVIDENDS				
Indaret	indaret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS WITHOUT DIVIDENDS, CUMULATIVE				
Cumindaret	cumindaret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS ON INCOME				
Indiret	indiret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS ON INCOME, CUMULATIVE				
Cumindiret	cumindiret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS, CUMULATIVE				
Cumindtret	cumindtret	INDNO	11.6	list
ASSOCIATED PORTFOLIOS RETURNS				
Porttret	porttret	PORTID	11.6	list
ASSOCIATED PORTFOLIOS RETURNS WITHOUT DIVIDENDS				
Portaret	portaret	PORTID	11.6	list
ASSOCIATED PORTFOLIOS RETURNS ON INCOME				
Portiret	portiret	PORTID	11.6	list
BID ADJUSTED, END OF PERIOD				
Adjbidprev	adjbid	0	11.5	list
BID ADJUSTED, LAST AVAILABLE NONMISSING				
Adjbid	adjbid	1	11.5	list
BID, END OF PERIOD				
Bid	bid	0	11.5	list
BID, LAST AVAILABLE NONMISSING				
Bidprev	bid	1	11.5	list
BIDLO ADJUSTED, MINIMUM IN PERIOD				
Adjbidlo	adjbidlo	0	11.5	list
BIDLO, MINIMUM IN PERIOD				
Bidlo	bidlo	0	11.5	list
CUSIP, END OF PERIOD				
NCUSIP	ncusip	0	8.8	list
CUSIP, END OF PREVIOUS PERIOD				
NCUSIPE	ncusip	1	8.8	list
CUSIP, HEADER				
CUSIP	cusip	0	8.8	list
CUSIP, MOST RECENT				
NCUSIPL	ncusip	2	8.8	list
CAPITALIZATION, END OF PERIOD				
TCap	tcap	0	15.2I	list, index
CAPITALIZATION, END OF PREVIOUS PERIOD				
Cape	cap	1	15.2I	list, index
COMPANY NAME, END OF PERIOD				
Company Name	comnam	0	32.32	list
COMPANY NAME, END OF PREVIOUS PERIOD				
Effective Name	comnam	1	32.32	list
COMPANY NAME, MOST RECENT				
Last Company Name	comnam	2	32.32	list
CUMULATIVE FACTOR TO ADJUST PRICES OVER A DATE RANGE				
Cumfacpr	cumfacpr	0	11.6	list
CUMULATIVE FACTOR TO ADJUST SHARES/VOLUME OVER A DATE RANGE				
Cumfacshr	cumfacshr	0	11.6	list
DATE				
Caldt	caldt	0	9	list, index
DATE - YYYYMMDD TRADING DATE (PARTIAL PERIOD DATA)				
Altdt	altdt	0	9	list
DIVIDEND AMOUNT IN PERIOD, ADJUSTED				
Adjdiv	adjdiv	0	11.5	list
DIVIDEND AMOUNT IN PERIOD, BEGINNING BASIS				
Divamt	divamt	0	11.5	list
DIVIDEND AMOUNT IN PERIOD, ORDINARY, ADJUSTED				
Adjodiv	adjodiv	0	11.5	list
DIVIDEND AMOUNT IN PERIOD, ORDINARY, BEGINNING BASIS				
Odivamt	odivamt	0	11.5	list
ENTITY BEGIN DATE RANGE OR EVENT DATE				
Date1	date1	0	9	list
ENTITY END DATE RANGE				
Date2	date2	0	9	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. ASSOCIATED PORTFOLIOS				
Portxsaret	portxsaret	PORTID	11.6	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. ASSOCIATED PORTFOLIOS, CUMULATIVE				
Cumxsparet	cumxsparet	PORTID	11.6	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. INDEX SERIES				
Xsaret	xsaret	INDNO	11.6	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. INDEX SERIES, CUMULATIVE				
Cumxsaret	cumxsaret	INDNO	11.6	list

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
EXCESS RETURNS ON INCOME VS. ASSOCIATED PORTFOLIOS				
Portxsiret	portxsiret	PORTID	11.6	list
EXCESS RETURNS ON INCOME VS. ASSOCIATED PORTFOLIOS, CUMULATIVE				
Cumxspiret	cumxspiret	PORTID	11.6	list
EXCESS RETURNS ON INCOME VS. INDEX SERIES				
Xsiret	xsiret	INDNO	11.6	list
EXCESS RETURNS ON INCOME VS. INDEX SERIES, CUMULATIVE				
Cumxsiret	cumxsiret	INDNO	11.6	list
EXCESS RETURNS ON TRADE-ONLY PRICES VS. ASSOCIATED PORTFOLIOS				
Portxstoret	portxstoret	PORTID	11.6	list
EXCESS RETURNS ON TRADE-ONLY PRICES VS. INDEX SERIES				
Xstoret	xstoret	INDNO	11.6	list
EXCESS RETURNS ON TRADE-ONLY PRICES VS. INDEX SERIES, CUMULATIVE				
Cumxstoret	cumxstoret	INDNO	11.6	list
EXCESS RETURNS VS. ASSOCIATED PORTFOLIOS				
Portxstret	portxstret	PORTID	11.6	list
EXCESS RETURNS VS. ASSOCIATED PORTFOLIOS, CUMULATIVE				
Cumxsptret	cumxsptret	PORTID	11.6	list
EXCESS RETURNS VS. INDEX SERIES				
Xstret	xstret	INDNO	11.6	list
EXCESS RETURNS VS. INDEX SERIES, CUMULATIVE				
Cumxstret	cumxstret	INDNO	11.6	list
EXCHANGE CODE, END OF PERIOD				
EX	exchcd	0	2	list
EXCHANGE CODE, END OF PREVIOUS PERIOD				
EXE	exchcd	1	2	list
EXCHANGE CODE, MOST RECENT				
EXL	exchcd	2	2	list
FACTOR TO ADJUST PRICE IN PERIOD				
Facpr	facpr	0	11.6	list
GROUP FLAG OF ASSOCIATED INDEX, END OF PERIOD				
SPInd	grpflg	16	8	list
GROUP FLAG OF ASSOCIATED INDEX, END OF PREVIOUS PERIOD				
ESPInd	egrpflg	16	8	list
GROUP FLAG OF ASSOCIATED INDEX, LAST FLAG, ALL PERIODS				
LSPInd	lgrpflg	16	8	list
HIGHEST CLOSE				
High	high	0	11.5	list
INDEX COUNT TOTAL				
Totcnt	cnt	0	6	list, index, port
INDEX COUNT USED				
Usdcnt	cnt	1	6	list, index, port
INDEX LEVEL OF RETURNS				
Tind	tind	0	11.2	list, index

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
INDEX LEVEL OF RETURNS WITHOUT DIVIDENDS				
Aind	aind	0	11.2	list, index
INDEX LEVEL OF RETURNS ON INCOME				
Iind	iind	0	11.2	list, index
LOWEST CLOSE				
Low	low	0	11.5	list
MEMBER PORTFOLIO RETURNS WITHOUT DIVIDENDS, CUMULATIVE				
Cumparet	cumparet	PORTID	11.6	list
MEMBER PORTFOLIO RETURNS ON INCOME, CUMULATIVE				
Cumpiret	cumpiret	PORTID	11.6	list
MEMBER PORTFOLIO RETURNS, CUMULATIVE				
Cumptret	cumptret	PORTID	11.6	list
NAICS, END OF PERIOD				
Naics	snaics	0	7.7	list
NAICS, END OF PREVIOUS PERIOD				
Naicse	snaics	1	7.7	list
NAICS, MOST RECENT				
Naicsl	snaics	2	7.7	list
NASDAQ COMPANY NUMBER				
Compno	compno	0	8	list
NASDAQ INDEX CODE, END OF PERIOD				
Nsdinx	nsdinx	0	2	list
NASDAQ INDEX CODE, END OF PREVIOUS PERIOD				
Nsdinxe	nsdinx	1	2	list
NASDAQ INDEX CODE, MOST RECENT				
Nsdinxl	nsdinx	2	2	list
NASDAQ MARKET MAKERS, END OF PERIOD				
Mmcnt	mmcnt	0	4	list
NASDAQ MARKET MAKERS, END OF PREVIOUS PERIOD				
Mmcnte	mmcnt	1	4	list
NASDAQ MARKET MAKERS, MOST RECENT				
Mmcntl	mmcnt	2	4	list
NASDAQ NATIONAL MARKET INDICATOR, END OF PERIOD				
Nmsind	nmsind	0	2	list
NASDAQ NATIONAL MARKET INDICATOR, END OF PREVIOUS PERIOD				
Nmsinde	nmsind	1	2	list
NASDAQ NATIONAL MARKET INDICATOR, MOST RECENT				
Nmsindl	nmsind	2	2	list
NASDAQ STATUS CODE, END OF PERIOD				
Trtscd	trtscd	0	2	list
NASDAQ STATUS CODE, END OF PREVIOUS PERIOD				
Trtscde	trtscd	1	2	list
NASDAQ STATUS CODE, MOST RECENT				
Trtscdl	trtscd	2	2	list
NUMBER OF TRADES				
Numtrd	numtrd	0	9	list

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
PERMCO/INDCO				
PERMCO	permco	0	8	list, index
PERMNO/INDNO				
PERMNO	permno	0	8	list, index
PORTFOLIO ASSIGNMENT				
Port	port	PORTID	4	list
PORTFOLIO STATISTIC				
Portstat	portstat	PORTID	15.2I	list
PRICE ADJUSTED, END OF PERIOD				
Adjprcprev	adjprc	0	11.5	list
PRICE ADJUSTED, LAST AVAILABLE NONMISSING				
Adjprc	adjprc	1	11.5	list
PRICE, END OF PERIOD				
Prc	prc	0	11.5	list
PRICE, LAST AVAILABLE NONMISSING				
Prcprev	prc	1	11.5	list
PRICE, OPEN				
OpenPrc	openprc	0	11.5	list
PRICE, OPEN, ADJUSTED				
AdjOpenPrc	adjopenprc	0	11.5	list
PRIMARY EXCHANGE, END OF PERIOD				
Primexch	primexch	0		list
PRIMARY EXCHANGE, END OF PREVIOUS PERIOD				
Primexche	primexch	1		list
PRIMARY EXCHANGE, MOST RECENT				
Primexchl	primexch	2		list
RETURNS				
Ret	ret	0	11.6	list, index, port
RETURNS WITHOUT DIVIDENDS				
Retx	retx	0	11.6	list, index
RETURNS WITHOUT DIVIDENDS, CUMULATIVE				
Cumaret	cumaret	0	11.6	list, index
RETURNS WITHOUT DIVIDENDS, TRADE-ONLY PRICES				
Toretx	toretx	0	11.6	list
RETURNS ON INCOME				
Reti	reti	0	11.6	list, index
RETURNS ON INCOME, CUMULATIVE				
Cumiret	cumiret	0	11.6	list, index
RETURNS ON TRADE-ONLY PRICES				
Toret	toret	0	11.6	list
RETURNS, CUMULATIVE				
Cumtret	cumtret	0	11.6	list, index
SIC CODE, END OF PERIOD				
SIC	siccd	0	4	list
SIC CODE, END OF PREVIOUS PERIOD				
SICE	siccd	1	4	list
SIC CODE, MOST RECENT				
SICL	siccd	2	4	list
SECURITY STATUS, END OF PERIOD				
Secstat	secstat	0		list
SECURITY STATUS, END OF PREVIOUS PERIOD				
Secstate	secstat	1		list
SECURITY STATUS, MOST RECENT				
Secstatl	secstat	2		list
SHARE CLASS, END OF PERIOD				
CL	shrcls	0	1.1	list
SHARE CLASS, END OF PREVIOUS PERIOD				
CLE	shrcls	1	1.1	list
SHARE CLASS, MOST RECENT				
CLL	shrcls	2	1.1	list
SHARE TYPE CODE, END OF PERIOD				
SC	shrcd	0	3	list
SHARE TYPE CODE, END OF PREVIOUS PERIOD				
SCE	shrcd	1	3	list
SHARE TYPE CODE, MOST RECENT				
SCL	shrcd	2	3	list
SHARES OUTSTANDING				
Shr	shr	0	9	list
SHARES OUTSTANDING, ADJUSTED				
Adjshr	adjshr	0	9	list
SHARES OUTSTANDING, ADJUSTED FOR RIGHTS				
Adjshrxr	adjshr	1	9	list
SHARES OUTSTANDING, UNADJUSTED FOR RIGHTS				
Shrxr	shr	1	9	list
TICKER, END OF PERIOD				
Ticker	ticker	0	5.5	list
TICKER, END OF PREVIOUS PERIOD				
Tickere	ticker	1	5.5	list
TICKER, MOST RECENT				
Tickerl	ticker	2	5.5	list
TRADE-ONLY PRICE, ADJUSTED, END OF PERIOD				
Adjtprcprev	adjtprc	0	11.5	list
TRADE-ONLY PRICE, ADJUSTED, LAST AVAILABLE NONMISSING				
Adjtprc	adjtprc	1	11.5	list
TRADE-ONLY PRICE, END OF PERIOD				
Trpc	tprc	0	11.5	list
TRADE-ONLY PRICE, LAST AVAILABLE NONMISSING				
Tprcprev	tprc	1	11.5	list
TRADING STATUS, END OF PERIOD				
Trdstat	trdstat	0		list
TRADING STATUS, END OF PREVIOUS PERIOD				

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
Trdstate	trdstat	1		list
TRADING STATUS, MOST RECENT				
Trdstatl	trdstat	2		list
TRADING TICKER SYMBOL, END OF PERIOD				
Symbol	tsymbol	0	10.1	list
TRADING TICKER SYMBOL, END OF PREVIOUS PERIOD				
Symbole	tsymbol	1	10.1	list
TRADING TICKER SYMBOL, MOST RECENT				
Symboll	tsymbol	2	10.1	list
VOLUME, AVERAGE				
Volavg	volavg	0	9	list
VOLUME, MED1IAN				
Volmed	volmed	0	9	list
VOLUME, TOTAL				
Vol	vol	0	13	list
VOLUME, TOTAL ADJUSTED				
Adjvol	adjvol	0	11	list
WEIGHT SUMMATION FOR THE MEMBERS OF A PORTFOLIO				
Weight	weight	0	14.2l	list, port

MONTHLY DATA ITEMS

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
ASK ADJUSTED, END OF PERIOD				
Adjask	madjask	0	11.5	list
ASK ADJUSTED, LAST AVAILABLE NONMISSING				
Adjaskprev	madjask	1	11.5	list
ASK, END OF PERIOD				
Ask	mask	0	11.5	list
ASK, LAST AVAILABLE NONMISSING				
Askprev	mask	1	11.5	list
ASKHI ADJUSTED, MAXIMUM IN PERIOD				
Adjaskhi	madjaskhi	0	11.5	list
ASKHI, MAXIMUM IN PERIOD				
Askhi	maskhi	0	11.5	list
ASSOCIATED INDEX RETURNS				
Indtret	mindtret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS WITHOUT DIVIDENDS				
Indaret	mindaret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS WITHOUT DIVIDENDS, CUMULATIVE				
Cumindaret	mcumindaret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS ON INCOME				
Indiret	mindiret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS ON INCOME, CUMULATIVE				
Cumindiret	mcumindiret	INDNO	11.6	list
ASSOCIATED INDEX RETURNS, CUMULATIVE				
Cumindtret	mcumindtret	INDNO	11.6	list
ASSOCIATED PORTFOLIOS RETURNS				
Porttret	mporttret	PORTID	11.6	list
ASSOCIATED PORTFOLIOS RETURNS WITHOUT DIVIDENDS				
Portaret	mportaret	PORTID	11.6	list
ASSOCIATED PORTFOLIOS RETURNS ON INCOME				
Portiret	mportiret	PORTID	11.6	list
BID ADJUSTED, END OF PERIOD				
Adjbidprev	madjbid	0	11.5	list
BID ADJUSTED, LAST AVAILABLE NONMISSING				
Adjbid	madjbid	1	11.5	list
BID, END OF PERIOD				
Bid	mbid	0	11.5	list
BID, LAST AVAILABLE NONMISSING				
Bidprev	mbid	1	11.5	list
BIDLO ADJUSTED, MINIMUM IN PERIOD				
Adjbidlo	madjbidlo	0	11.5	list
BIDLO, MINIMUM IN PERIOD				
Bidlo	mbidlo	0	11.5	list
CUSIP, END OF PERIOD				
NCUSIP	mncusip	0	8.8	list
CUSIP, END OF PREVIOUS PERIOD				

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
NCUSIPE	mncusip	1	8.8	list
CUSIP, HEADER				
CUSIP	mcusip	0	8.8	list
CUSIP, MOST RECENT				
NCUSIPL	mncusip	2	8.8	list
CAPITALIZATION, END OF PERIOD				
Cap	mcap	0	15.2I	list, index
CAPITALIZATION, END OF PREVIOUS PERIOD				
Cape	mcap	1	15.2I	list, index
COMPANY NAME, END OF PERIOD				
Company Name	mcomnam	0	32.32	list
COMPANY NAME, END OF PREVIOUS PERIOD				
Effective Name	mcomnam	1	32.32	list
COMPANY NAME, MOST RECENT				
Last Company Name	mcomnam	2	32.32	list
CUMULATIVE FACTOR TO ADJUST PRICES OVER A DATE RANGE				
Mcumfacpr	mcumfacpr	0	11.6	list
CUMULATIVE FACTOR TO ADJUST SHARES/VOLUME OVER A DATE RANGE				
Mcumfacshr	mcumfacshr	0	11.6	list
DATE				
Caldt	mcaldt	0	9	list, index
DATE - YYYYMMDD TRADING DATE (PARTIAL PERIOD DATA)				
Altdt	maltdt	0	9	list
DIVIDEND AMOUNT IN PERIOD, ADJUSTED				
Adjdiv	madjdiv	0	11.5	list
DIVIDEND AMOUNT IN PERIOD, BEGINNING BASIS				
Divamt	mdivamt	0	11.5	list
DIVIDEND AMOUNT IN PERIOD, ORDINARY, ADJUSTED				
Adjodiv	madjodiv	0	11.5	list
DIVIDEND AMOUNT IN PERIOD, ORDINARY, BEGINNING BASIS				
Odivamt	modivamt	0	11.5	list
ENTITY BEGIN DATE RANGE OR EVENT DATE				
Date1	mdate1	0	9	list
ENTITY END DATE RANGE				
Date2	mdate2	0	9	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. ASSOCIATED PORTFOLIOS				
Portxsaret	mportxsaret	PORTID	11.6	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. ASSOCIATED PORTFOLIOS, CUMULATIVE				
Cumxsparet	mcumxsparet	PORTID	11.6	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. INDEX SERIES				
Xsaret	mxsaret	INDNO	11.6	list
EXCESS RETURNS WITHOUT DIVIDENDS VS. INDEX SERIES, CUMULATIVE				
Cumxsaret	mcumxsaret	INDNO	11.6	list
EXCESS RETURNS ON INCOME VS. ASSOCIATED PORTFOLIOS				
Portxsiret	mportxsiret	PORTID	11.6	list
EXCESS RETURNS ON INCOME VS. ASSOCIATED PORTFOLIOS, CUMULATIVE				
Cumxspiret	mcumxspiret	PORTID	11.6	list
EXCESS RETURNS ON INCOME VS. INDEX SERIES				
Xsiret	mxsiret	INDNO	11.6	list
EXCESS RETURNS ON INCOME VS. INDEX SERIES, CUMULATIVE				
Cumxsiret	mcumxsiret	INDNO	11.6	list
EXCESS RETURNS VS. ASSOCIATED PORTFOLIOS				
Portxstret	mportxstret	PORTID	11.6	list
EXCESS RETURNS VS. ASSOCIATED PORTFOLIOS, CUMULATIVE				
Cumxsptret	mcumxsptret	PORTID	11.6	list
EXCESS RETURNS VS. INDEX SERIES				
Xstret	mxstret	INDNO	11.6	list
EXCESS RETURNS VS. INDEX SERIES, CUMULATIVE				
Cumxstret	mcumxstret	INDNO	11.6	list
EXCHANGE CODE, END OF PERIOD				
EX	mexchcd	0	2	list
EXCHANGE CODE, END OF PREVIOUS PERIOD				
EXE	mexchcd	1	2	list
EXCHANGE CODE, MOST RECENT				
EXL	mexchcd	2	2	list
FACTOR TO ADJUST PRICE IN PERIOD				
Facpr	mfacpr	0	11.6	list
GROUP FLAG OF ASSOCIATED INDEX, END OF PERIOD				
SPInd	mgrpflg	16	8	list
GROUP FLAG OF ASSOCIATED INDEX, END OF PREVIOUS PERIOD				
ESPInd	megrpflg	16	8	list
GROUP FLAG OF ASSOCIATED INDEX, LAST FLAG, ALL PERIODS				
LSPInd	mlgrpflg	16	8	list
HIGHEST CLOSE				
High	mhigh	0	11.5	list
INDEX COUNT TOTAL				
Totcnt	mcnt	0	6	list, index, port
INDEX COUNT USED				
Usdcnt	mcnt	1	6	list, index, port
INDEX LEVEL OF RETURNS				
Tind	mtind	0	11.2	list, index
INDEX LEVEL OF RETURNS WITHOUT DIVIDENDS				
Aind	maind	0	11.2	list, index
INDEX LEVEL OF RETURNS ON INCOME				
Iind	miind	0	11.2	list, index
LOWEST CLOSE				
Low	mlow	0	11.5	list
MEMBER PORTFOLIO RETURNS WITHOUT DIVIDENDS, CUMULATIVE				
Cumparet	mcumparet	PORTID	11.6	list

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
MEMBER PORTFOLIO RETURNS ON INCOME, CUMULATIVE				
Cumpiret	mcumpiret	PORTID	11.6	list
MEMBER PORTFOLIO RETURNS, CUMULATIVE				
Cumptret	mcumptret	PORTID	11.6	list
NAICS, END OF PERIOD				
Naics	msnaics	0	7.7	list
NAICS, END OF PREVIOUS PERIOD				
Naicsl	msnaics	2	7.7	list
NAICS, MOST RECENT				
Naicse	msnaics	1	7.7	list
NASDAQ COMPANY NUMBER				
COMPNO	mcompno	0	8	list
NASDAQ INDEX CODE, END OF PERIOD				
Nsdinx	mnsdinx	0	2	list
NASDAQ INDEX CODE, END OF PREVIOUS PERIOD				
Nsdinxe	mnsdinx	1	2	list
NASDAQ INDEX CODE, MOST RECENT				
Nsdinxl	mnsdinx	2	2	list
NASDAQ MARKET MAKERS, END OF PERIOD				
Mmcnt	mmmcnt	0	4	list
NASDAQ MARKET MAKERS, END OF PREVIOUS PERIOD				
Mmcnte	mmmcnt	1	4	list
NASDAQ MARKET MAKERS, MOST RECENT				
Mmcntl	mmmcnt	2	4	list
NASDAQ NATIONAL MARKET INDICATOR, END OF PERIOD				
Nmsind	mnmsind	0	2	list
NASDAQ NATIONAL MARKET INDICATOR, END OF PREVIOUS PERIOD				
Nmsinde	mnmsind	1	2	list
NASDAQ NATIONAL MARKET INDICATOR, MOST RECENT				
Nmsindl	mnmsind	2	2	list
NASDAQ STATUS CODE, END OF PERIOD				
Trtscd	mtrtscd	0	2	list
NASDAQ STATUS CODE, END OF PREVIOUS PERIOD				
Trtscde	mtrtscd	1	2	list
NASDAQ STATUS CODE, MOST RECENT				
Trtscdl	mtrtscd	2	2	list
PERMCO/INDCO				
PERMCO	mpermco	0	8	list, index
PERMNO/INDNO				
PERMNO	mpermno	0	8	list, index
PORTFOLIO ASSIGNMENT				
Port	mport	PORTID	4	list
PORTFOLIO STATISTIC				
Portstat	mportstat	PORTID	15.2l	list
PRICE ADJUSTED, END OF PERIOD				
Adjprc	madjprc	0	11.5	list

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
PRICE ADJUSTED, LAST AVAILABLE NONMISSING				
Adjprcprev	madjprc	1	11.5	list
PRICE, END OF PERIOD				
Prc	mprc	0	11.5	list
PRICE, LAST AVAILABLE NONMISSING				
Prcprev	mprc	1	11.5	list
PRIMARY EXCHANGE, END OF PERIOD				
Primexch	mprimexch	0		list
PRIMARY EXCHANGE, END OF PREVIOUS PERIOD				
Primexche	mprimexch	1		list
PRIMARY EXCHANGE, MOST RECENT				
Primexchl	mprimexch	2		list
RETURNS				
Ret	mret	0	11.6	list, index, port
RETURNS WITHOUT DIVIDENDS				
Retx	mretx	0	11.6	list, index
RETURNS WITHOUT DIVIDENDS, CUMULATIVE				
Cumaret	mcumaret	0	11.6	list, index
RETURNS ON INCOME				
Reti	mreti	0	11.6	list, index
RETURNS ON INCOME, CUMULATIVE				
Cumiret	mcumiret	0	11.6	list, index
RETURNS, CUMULATIVE				
Cumtret	mcumtret	0	11.6	list, index
SIC CODE, END OF PERIOD				
SIC	msiccd	0	4	list
SIC CODE, END OF PREVIOUS PERIOD				
SICE	msiccd	1	4	list
SIC CODE, MOST RECENT				
SICL	msiccd	2	4	list
SECURITY STATUS, END OF PERIOD				
Secstat	msecstat	0		list
SECURITY STATUS, END OF PREVIOUS PERIOD				
Secstate	msecstat	1		list
SECURITY STATUS, MOST RECENT				
Secstatl	msecstat	2		list
SHARE CLASS, END OF PERIOD				
CL	mshrcls	0	1.1	list
SHARE CLASS, END OF PREVIOUS PERIOD				
CLE	mshrcls	1	1.1	list
SHARE CLASS, MOST RECENT				
CLL	mshrcls	2	1.1	list
SHARE TYPE CODE, END OF PERIOD				
SC	mshrcd	0	3	list
SHARE TYPE CODE, END OF PREVIOUS PERIOD				

HEADER	ITEM ID	SUBNO	FORMAT	ENTITY TYPES
SCE	mshrcd	1	3	list
SHARE TYPE CODE, MOST RECENT				
SCL	mshrcd	2	3	list
SHARES OUTSTANDING				
Shr	mshr	0	9	list
SHARES OUTSTANDING, ADJUSTED				
Adjshr	madjshr	0	9	list
SHARES OUTSTANDING, ADJUSTED FOR RIGHTS				
Adjshrxr	madjshr	1	9	list
SHARES OUTSTANDING, UNADJUSTED FOR RIGHTS				
Shrxr	mshr	1	9	list
TICKER, END OF PERIOD				
Ticker	mticker	0	5.5	list
TICKER, END OF PREVIOUS PERIOD				
Tickere	mticker	1	5.5	list
TICKER, MOST RECENT				
Tickerl	mticker	2	5.5	list
TRADING STATUS, END OF PERIOD				
Trdstat	mtrdstat	0		list
TRADING STATUS, END OF PREVIOUS PERIOD				
Trdstate	mtrdstat	1		list
TRADING STATUS, MOST RECENT				
Trdstatl	mtrdstat	2		list
TRADING TICKER SYMBOL, END OF PERIOD				
Symbol	mtsymbol	0	10.10	list
TRADING TICKER SYMBOL, END OF PREVIOUS PERIOD				
Symbole	mtsymbol	1	10.10	list
TRADING TICKER SYMBOL, MOST RECENT				
Symboll	mtsymbol	2	10.10	list
VOLUME, AVERAGE				
Volavg	mvolavg	0	9	list
VOLUME, MEDIAN				
Volmed	mvolmed	0	9	list
VOLUME, TOTAL				
Vol	mvol	0	10.13	list
VOLUME, TOTAL ADJUSTED				
Adjvol	madjvol	0	11.0	list
WEIGHT SUMMATION FOR THE MEMBERS OF A PORTFOLIO				
Mweight	mweight	0	14.2l	list, port

II. STK_PRINT: STOCK DATABASE REPORT WRITER

stk_print is a command-line utility that can be used to access CRSPAccess stock data on all supported platforms. It is useful for browsing data formatted for a terminal or extracting data formatted for program input. It supports CRSP stock header, event, and time-series data items and supports individual securities typed at a terminal, securities in an input file, or all securities in the database. The user selects input and output options on the command line. If security identifiers are typed at the terminal, options can be switched between each entry. Output can be printed to a terminal or saved in a file.

Use one of the following commands to run stk_print:

- stkprint or dstkprint - to read the daily CRSP database
- mstkprint - to read the monthly CRSP database
- stk_print /d1 database.name [options] - to access an alternative (non-default) daily database
- stk_print /d1 database.name /fm [options] - to access an alternative (non-default) monthly database

A. STK_PRINT OPTIONS

1. STK_PRINT DATA ITEMS

The following table contains the daily and monthly data items available in stk_print and the output headers. Some items offer adjustment parameters. A table of parameter information and definitions follows, on page 35.

ADJUSTED DELISTINGS				
DAILY ITEMID	**MONTHLY ITEMID**	**NAME**	**OUTPUT HEADER**	**PARAMETERS**
adjnextdt	madjnextdt	Date of Next Quote After Delisting, Adjusted	Nextdt	adjdate,adjtype,gaprule
adjdlstcd	madjdlstcd	Delisting Code, Adjusted	Dlstcd	adjdate,adjtype,gaprule
adjdlstdt	madjdlstdt	Delisting Date, Adjusted	Dlstdt	adjdate,adjtype,gaprule
adjdlret	madjdlret	Delisting Return, Adjusted	Dlret	adjdate,adjtype,gaprule
adjdlpdt	madjdlpdt	Effective Date of Delisting Payment, Adjusted	Dlpdt	adjdate,adjtype,gaprule
adjnwcomp	madjnwcomp	Linked PERMCO After Delisting, Adjusted	Nwcomp	adjdate,adjtype,gaprule
adjnwperm	madjnwperm	Linked PERMNO After Delisting, Adjusted	Nwperm	adjdate,adjtype,gaprule
adjdlprc	madjdlprc	Next Price After Delisting, Adjusted	Dlprc	adjdate,adjtype,gaprule
adjdlretx	madjdlretx	Return Without Dividends, Adjusted	Dlretx	adjdate,adjtype,gaprule
adjdlamt	madjdlamt	Total Amount Used in Delisting return, Adjusted	Dlamt	adjdate,adjtype,gaprule
ADJUSTED DISTRIBUTIONS				
DAILY ITEMID	**MONTHLY ITEMID**	**NAME**	**OUTPUT HEADER**	**PARAMETERS**
adjaccomp	madjaccomp	Acquiring PERMCO, Adjusted	Acomp	adjdate,adjtype,gaprule
adjacperm	madjacperm	Acquiring PERMNO, Adjusted	Aperm	adjdate,adjtype,gaprule
adjdclrdt	madjdclrdt	Declare Date, Adjusted	Dclrdt	adjdate,adjtype,gaprule

adjdistcd	madjdistcd	Distribution Code, Adjusted	Code	adjdate,adjtype,gaprule
adjdivamt	madjdivamt	Dividend Amount, Adjusted	Divamt	adjdate,adjtype,gaprule
adjexdt	madjexdt	Ex-Distribution Date, Adjusted	Exdt	adjdate,adjtype,gaprule
adjfacpr	madjfacpr	Factor to Adjust Price, Adjusted	Facpr	adjdate,adjtype,gaprule
adjfacshr	madjfacshr	Factor to Adjust Shares Outstanding, Adjusted	Facshr	adjdate,adjtype,gaprule
adjpaydt	madjpaydt	Payment Date, Adjusted	Paydt	adjdate,adjtype,gaprule
adjrcrddt	madjrcrddt	Record Date, Adjusted	Rcrddt	adjdate,adjtype,gaprule

ADJUSTED SHARES

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
adjshrsdt	madjshrsdt	Effective Date of Shares Outstanding, Adjusted	Shrsdt	adjdate,adjtypes,gaprule
adjshrflg	madjshrflg	Flag of Shares Source, Adjusted	Shrflg	adjdate,adjtypes,gaprule
adjshrsenddt	madjshrsenddt	Last Effective Date of Shares Outstanding, Adjusted	Shrsenddt	adjdate,adjtypes,gaprule
adjshrout	madjshrout	Shares Outstanding, Adjusted	Shrout	adjdate,adjtypes,gaprule

DELISTING HISTORY

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
nextdt	mnextdt	Date of Next Available Information	Nextdt	n/a
dlstcd	mdlstcd	Delisting Code	Dlstcd	n/a
dlstdt	mdlstdt	Delisting Date	Dlstdt	n/a
dlpdt	mdlpdt	Delisting Payment Date	Dlpdt	n/a
dlprc	mdlprc	Delisting Price	Dlprc	n/a
dlret	mdlret	Delisting Return	Dlret	n/a
dlretx	mdlretx	Delisting Return without Dividends	Dlretx	n/a
nwcomp	mnwcomp	Linked PERMCO After Delisting	Nwcomp	n/a
nwperm	mnwperm	Linked PERMNO After Delisting	Nwperm	n/a
dlamt	mdlamt	Total Amount Used in Delisting Return	Dlamt	n/a

DISTRIBUTION HISTORY

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
accomp	maccomp	Acquiring PERMCO	Acomp	n/a
acperm	macperm	Acquiring PERMNO	Aperm	n/a
distcd	mdistcd	Distribution Code	Code	n/a
dclrdt	mdclrdt	Distribution Declaration Date	Dclrdt	n/a
exdt	mexdt	Ex-Distribution Date	Exdt	n/a
facshr	mfacshr	Factor to Adjust Shares Outstanding	Facshr	n/a
paydt	mpaydt	Payment Date	Paydt	n/a
rcrddt	mrcrddt	Record Date	Rcrddt	n/a

GROUP INCLUSION

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
grpdt	mgrpdt	Group Beginning Date	Grpdt	n/a
grpenddt	mgrpenddt	Group Ending Date	Grpenddt	n/a
grpflag	mgrpflag	Group Flag	Grpflag	n/a
grpsubflag	mgrpsubflag	Group Subflag	Subflag	n/a

NASDAQ HISTORY

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
trtsdt	mtrtsdt	Beginning Effective Date of Traits	Trtsdt	n/a
trtsenddt	mtrtsenddt	Last Effective Date of Traits	Trtsenddt	n/a
nsdinx	mnsdinx	NASDAQ Index Code	Nsdinx	n/a
mmcnt	mmmcnt	NASDAQ Market Makers Count	Mmcnt	n/a
nmsind	mnmsind	NASDAQ National Market Indicator	Nmsind	n/a
trtscd	mtrtscd	NASDAQ Status Code, End of Period	Trtscd	n/a

NAME HISTORY

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
ncusip	mncusip	CUSIP	NCUSIP	n/a
comnam	mcomnam	Company Name	Company Name	n/a
exchcd	mexchcd	Exchange Code	EX	n/a
namedt	mnamedt	Names Information Begin Date	Namedt	n/a
nameenddt	mnameenddt	Names Information End Date	Enddt	n/a
snaics	msnaics	North American Industry Classification System (NAICS)	Naics	n/a
primexch	mprimexch	Primary Exchange	Ex1	n/a
secstat	msecstat	Security Status	Sst	n/a
shrcls	mshrcls	Share Class	CL	n/a
shrcd	mshrcd	Share Code	SH	n/a
siccd	msiccd	Standard Industrial Classification (SIC) Code	SIC	n/a
subexch	msubexch	Sub-Exchange	Ex2	n/a
ticker	mticker	Ticker Symbol	Ticker	n/a
trdstat	mtrdstat	Trading Status	Tst	n/a
tsymbol	mtsymbol	Trading Ticker Symbol	Symbol	n/a

PORTFOLIO HISTORY

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
port	mport	Portfolio Assignment	Port	n/a
stat	mstat	Portfolio Statistic Value	Stat	n/a

RAW SHARES HISTORY

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
rshrsdt	mrshrsdt	Effective Date of Shares Outstanding, without Imputed Observations	Shrsdt	n/a
rshrflg	mrshrflg	Flag of Shares Source, without Imputed Observations	Shrflg	n/a
rshrsenddt	mrshrsenddt	Last Day Shares Outstanding Effective, without Imputed Observations	Shrsenddt	n/a
rshrout	mrshrout	Raw Shares Outstanding, without Imputed Observations	Shrout	n/a

SHARES HISTORY

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS
shrout	mshrout	Shares Outstanding	Shrout	n/a
shrsdt	mshrsdt	Shares Outstanding Observation Date	Shrsdt	n/a
shrsenddt	mshrsenddt	Shares Outstanding Observation End Date	Shrsenddt	n/a
shrflg	mshrflg	Shares Outstanding Observation Flag	Shrflg	n/a

STOCK HEADER RANGES

DAILY ITEMID	MONTHLY ITEMID	NAME	OUTPUT HEADER	PARAMETERS

n/a	maltprc_beg	Alternate Price Begin Date	BegAltDt	n/a
n/a	maltprc_end	Alternate Price End Date	EndAltDt	n/a
ask_beg	mask_beg	Ask Begin Date	BegAsk	n/a
ask_end	mask_end	Ask End Date	EndAsk	n/a
askhi_beg	maskhi_beg	Ask or High Price Begin Date	BegHi	n/a
askhi_end	maskhi_end	Ask or High Price End Date	EndHi	n/a
bid_beg	mbid_beg	Bid Begin Date	BegBid	n/a
bid_end	mbid_end	Bid End Date	EndBid	n/a
bidlo_beg	mbidlo_beg	Bid or Low Price Begin Date	BegLo	n/a
bidlo_end	mbidlo_end	Bid or Low Price End Date	EndLo	n/a
hr_hcusip	mhr_hcusip	CUSIP, Historical	CUSIP	n/a
n/a	mspread_beg	Closing Bid/Ask Spread Begin Date	BegSpr	n/a
n/a	mspread_end	Closing Bid/Ask Spread End Date	EndSpr	n/a
n/a	maltprcdt_beg	Date of Alternate Price Begin Date	BegAlt	n/a
n/a	maltprcdt_end	Date of Alternate Price End Date	EndAlt	n/a
hr_hexcd	mhr_hexcd	Exchange Code, Historical	EX	n/a
avail_grouptypes	mavail_grouptypes	Group Types Available	Group Types Available	n/a
hr_begdt	mhr_begdt	Header Begin Date	Begdt	n/a
hr_enddt	mhr_enddt	Header End Date	Enddt	n/a
hr_compno	mhr_compno	NASDAQ Company Number, Historical	Compno	n/a
hr_issuno	mhr_issuno	NASDAQ Issue Number, Historical	Issuno	n/a
numtrd_beg	n/a	NASDAQ Number of Trades Begin Date	BegTrd	n/a
numtrd_end	n/a	NASDAQ Number of Trades End Date	EndTrd	n/a
total_dlsts	mtotal_dlsts	Number of Delisting Events	Dlst	n/a
total_dists	mtotal_dists	Number of Distribution Events	Dists	n/a
total_nasdins	mtotal_nasdins	Number of NASDAQ Information Events	Nasdin	n/a
total_names	mtotal_names	Number of Name Rows	Names	n/a
total_shares	mtotal_shares	Number of Shares Events	Shares	n/a
openprc_beg	n/a	Open Price Begin Date	BegOpn	n/a
openprc_end	n/a	Open Price End Date	EndOpn	n/a
hr_permco	mhr_permco	PERMCO, Historical	PERMCO	n/a
hr_permno	mhr_permno	PERMNO, Historical	PERMNO	n/a
avail_porttypes	mavail_porttypes	Portfolio Types Available	Portfolio Types Avail	n/a
prc_beg	mprc_beg	Price or Bid/Ask Average Begin Date	BegPrc	n/a
prc_end	mprc_end	Price or Bid/Ask Average End Date	EndPrc	n/a
ret_beg	mret_beg	Returns Begin Date	BegRet	n/a
ret_end	mret_end	Returns End Date	EndRet	n/a
retx_beg	mretx_beg	Returns without Dividends Begin Date	BegRtx	n/a
retx_end	mretx_end	Returns without Dividends End Date	EndRtx	n/a
hr_hsiccd	mhr_hsiccd	SIC Code, Historical	SIC	n/a
vol_beg	mvol_beg	Volume Traded Begin Date	BegVol	n/a
vol_end	mvol_end	Volume Traded End Date	EndVol	n/a

STOCK IDENTIFICATION				
DAILY ITEMID	**MONTHLY ITEMID**	**NAME**	**OUTPUT HEADER**	**PARAMETERS**
cusip	mcusip	CUSIP, Header	CUSIP	n/a
hcomnam	mhcomnam	Company Name, Header	Latest Company Name	n/a

issuno	missuno	Current NASDAQ Issue Identifier	Issuno	n/a
hdlstcd	mhdlstcd	Delisting Code, Header	DEL	n/a
hexcd	mhexcd	Exchange Code, Header	EX	n/a
compno	mcompno	NASDAQ Company Number	COMPNO	n/a
hsnaics	mhsnaics	North American Industry Classification System (NAICS), Header	Naics	n/a
permco	mpermco	PERMCO	PERMCO	n/a
permno	mpermno	PERMNO	PERMNO	n/a
hprimexch	mhprimexch	Primary Exchange, Header	Ex1	n/a
hsecstat	mhsecstat	Security Status, Header	Sst	n/a
hshrcd	mhshrcd	Share Code, Header	SH	n/a
hsiccd	mhsiccd	Standard Industrial Classification (SIC) Code, Header	SIC	n/a
begdt	mbegdt	Stock Data Begin Date	Begdt	n/a
enddt	menddt	Stock Data End Date	Enddt	n/a
hsubexch	mhsubexch	Sub-Exchange, Header	Ex2	n/a
htick	mhtick	Ticker Symbol, Header	Htick	n/a
htrdstat	mhtrdstat	Trading Status, Header	Tst	n/a
htsymbol	mhtsymbol	Trading Ticker Symbol, Header	Symbol	n/a

TIME SERIES				
DAILY ITEMID	**MONTHLY ITEMID**	**NAME**	**OUTPUT HEADER**	**PARAMETERS**
n/a	maltprc	Alternate Price	AltPrc	n/a
n/a	madjaltprc	Alternate Price, Adjusted	Adjaltprc	adjdate,adjtype,gaprule
ask	mask	Ask	Ask	n/a
askhi	maskhi	Ask or High Price	Askhi	n/a
adjask	madjask	Ask, Adjusted	Adjask	adjdate,adjtype,gaprule
adjaskhi	madjaskhi	Askhi, Adjusted	Adjaskhi	adjdate,adjtype,gaprule
bid	mbid	Bid	Bid	n/a
bidlo	mbidlo	Bid or Low Price	Bidlo	n/a
adjbid	madjbid	Bid, Adjusted	Adjbid	adjdate,adjtype,gaprule
adjbidlo	madjbidlo	Bidlo, Adjusted	Adjbidlo	adjdate,adjtype,gaprule
cretx	mcretx	Calculated Return without Dividends	Retx	validexch, gapwindow
cret	mcret	Calculated Total Return	Ret	validexch, gapwindow
n/a	mspread	Closing Bid/Ask Spread	Spread	n/a
n/a	madjspread	Closing Bid/Ask Spread, Adjusted	Adjspread	adjdate,adjtype,gaprule
n/a	maltprcdt	Date of Alternate Price	AltPrcDt	n/a
numtrd	n/a	NASDAQ Number of Trades	Numtrd	n/a
openprc	n/a	Open Price	OpenPrc	n/a
adjopenprc	n/a	Open Price, Adjusted	AdjOpenPrc	adjdate,adjtype,gaprule
alvl	malvl	Price Index Level	ALvl	basedate,baseamt
prc	mprc	Price or Bid/Ask Average	Prc	n/a
adjprc	madjprc	Price, Adjusted	Adjprc	adjdate,adjtype,gaprule
ret	mret	Returns	Ret	n/a
retx	mretx	Returns Without Dividends	Retx	n/a
shr	mshr	Shares Outstanding Mapped to Time Series	Shr	rightsrule
adjshr	madjshr	Shares Outstanding Mapped to Time Series, Adjusted	Adjshr	adjdate,adjtype,gaprule, rightsrule
tlvl	mtlvl	Total Return Index Level	TLvl	basedate,baseamt

adjvol	madjvol	Volume, Adjusted	Adjvol	adjdate,adjtypes,gaprule

2. PARAMETERS

`Param_list` describes a set of parameters that are applied to derive applicable items in the list element. Parameters must be specified in the expected order for the item. If a parameter is not specified the derivation will use the default value for that parameter. If earlier parameter are not specified a period is used as a placeholder in a list. If a parameter list is applied to a group it will be applied to all items in the group that require parameters. Groups never contain items with conflicting parameters. Examples are:

- `tlvl(20071231,100.0)`- first parameter basedate is 20071231 and second parameter baseamt is 100.0.
- `tlvl(.,1.0)` – first parameter `basedate` will use the default (date of earliest price) and the second parameter baseamt will be 1.
- `tlvl` – since no parameters are given `basedate` and `baseamt` will use default values, the date of earliest price for `basedate` and 100 for `baseamt`.
- `adjprc(20071231,1)` – first parameter `adjdate` is 20071231 and second parameter `adjtype` is 1. The third parameter gaprule is not specified so the default value will be used.

PARAMETER TYPES

PARAMETER NAME	DATA TYPE	PARAMETER TYPE	PARAMETER VALUES	FORMAT	DEFAULT	RANGE OF VALUES
basedate	integer	ex_caldt	Date set to base amount. If before first date of prices will be set to that date. If after last date of prices will be set to that date.	%8d	0	0 – 99999999
baseamt	Double precision	posnum	Amount to be reported on base date. If 0 then it will use the actual price on the base date.	%1d	100.0	0 – 10000
adjdate	integer	ex_caldt	Anchor date where all data reported as is. If before first date of prices will be set to that date. If after last date of prices will be set to that day.	%8d	99999999	0 – 99999999
gaprule	integer	flag01	Rule used to handle holes in the data. 0 = continue date on the other side of a gap at user risk due to incomplete adjustment data during gap. 1 = all values on the other side of a gap will be set to missing	%1d	1	0 – 1
rightsrule	integer	Flag01	Rule used to apply share factors from rights distributions 0 = use shares outstanding as in CRSP shares history. 1 = recreate shares history by ignoring shares factors associated with rights distributions.	%1d	0	0 – 1

PARAMETER NAME	DATA TYPE	PARAMETER TYPE	PARAMETER VALUES	FORMAT	DEFAULT	RANGE OF VALUES
adjtype	integer	flag04	Types of distribution events used to make price adjustments 0 = apply only stock splits and dividends 1 = apply all factors	%1d	1	0 - 1
adjtypes	integer	flag01	Types of distribution events used to make shares and volumes adjustments 0 = apply only stock splits and dividends 1 = apply all factors	%1d	0	0 - 1
validexch	integer	wholenum	Binary flag for exchanges of interest, 1 = NYSE, 2 = NYSE MKT, 4 = Nasdaq, 8 = ARCA, plus sums to get multiple exchanges.	%2d	15	0 - 15
gapwindow	integer	wholenum	Maximum number of periods allowed between current date and previous price for that price to be valid in a return calculation.	%45	10	0 - 99999

3. STK_PRINT OPTIONS

Options are preceded with a forward slash. Multiple options can be placed on a single line. A full request string of options can hold up to 2047 characters.

Following is a list of current stk_print options, grouped by option category. 0, -88.0, and 99.0 indicate missing values.

A. HEADER INFORMATION

/hh

Header file issue identification information

```
   Begdt   COMPNO    CUSIP    Enddt Latest Company Name                  DEL EX
19251231        0 45920010 20070531 INTERNATIONAL BUSINESS MACHS COR     100  1

 SIC Htick    Issuno PERMCO PERMNO
3571 IBM           0  20990  12490
```

Note that header ticker only contains values for active securities.

/hr

Header file issue identifiers with available data date ranges in YYYYMMDD format

```
    BegHi    EndHi    BegAsk   EndAsk
 19251231 20070531  19251231 20070531

Group Types Available
16 - S&P 500 Universe                                    19570301 - 20070531
```

```
Portfolio Types Avail
1 - NYSE/NYSE MKT/NASDAQ Cap Assignments                              1925 - 2008
2 - NYSE/NYSE MKT Cap Assignment                                      1925 - 2008
4 - NYSE Cap Assignment                                             1925 - 2008
6 - NYSE/NYSE MKT Betas                                               1926 - 2008
7 - NYSE/NYSE MKT Standard Deviations                                 1926 - 2008



    BegLo    EndLo    BegBid   EndBid    BegExc   EndExc     Begdt   Compno
 19251231 20070531  19251231 20070531         0        0  19251231        0

   Enddt    CUSIP EX  SIC   Issuno PERMCO PERMNO    BegTrd   EndTrd    BegOpn
20070531 45920010  1 3571        0  20990  12490         0        0  19251231

  EndOpn    BegPrc   EndPrc    BegRtx   EndRtx    BegRet   EndRet Dists Dlst
20070531  19251231 20070531  19251231 20070531  19251231 20070531   369    1

Names Nasdin Shares    BegVol   EndVol
    6      0    303  19251231 20070531
```

/hl

Header identifiers with ranges in terms of calendar day numbers, starting with Dec 31, 1925 as day 1. The /hl option includes all of the options /hr does, with the corresponding CRSP file calendar indexed in Calendar Trading Date, instead of dates in YYYYMMDD format. With the exception of the date presentation, /hl provides the same data as /hr.

```
    BegHi    EndHi    BegAsk   EndAsk
        1    21623         1    21623

Group Types Available
16 - S&P 500 Universe                                       19570301 - 20070531



Portfolio Types Avail
1 - NYSE/NYSE MKT/NASDAQ Cap Assignments                              1925 - 2008
2 - NYSE/NYSE MKT Cap Assignment                                      1925 - 2008
4 - NYSE Cap Assignment                                             1925 - 2008
6 - NYSE/NYSE MKT Betas                                               1926 - 2008
7 - NYSE/NYSE MKT Standard Deviations                                 1926 - 2008



    BegLo    EndLo    BegBid   EndBid    BegExc   EndExc     Begdt   Compno
        1    21623         1    21623         0        0  19251231        0

   Enddt    CUSIP EX  SIC   Issuno PERMCO PERMNO    BegTrd   EndTrd    BegOpn
20070531 45920010  1 3571        0  20990  12490         0        0         1

  EndOpn    BegPrc   EndPrc    BegRtx   EndRtx    BegRet   EndRet Dists Dlst
   21623         1    21623         1    21623         1    21623   369    1
```

```
Names Nasdin Shares    BegVol   EndVol
    6       0    303         1    21623
```

/hn

Supplemental header identification information

```
   Begdt   COMPNO    CUSIP    Enddt Hcntrycd
19251231        0 45920010 20070531

Latest Company Name                   CvC Den DEL ElC EX    Expdt InC IsC Its
INTERNATIONAL BUSINESS MACHS COR             100      1        0

NameCd NameDesc        NmF Ex1    Rating Sst SH ShT  SIC Naics   Ex2 Htick  Tst
     0                     N    0.0000   R 11     3571 334111      IBM      A

Symbol          Issuno PERMCO PERMNO
IBM                  0  20990  12490
```

B. EVENT INFORMATION

/ns

Short name event history information. Every time such activities occur that cause a change to one of the fields included in the names array, a new row is added.

```
Name History - Short
--------------------
  Namedt    Enddt NCUSIP   Ticker Company Name                     CL SH EX  SIC
19251231 19620701                 INTERNATIONAL BUSINESS MACHS COR    11  1 3570
19620702 19680101          IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3573
19680102 19990103 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3573
19990104 20010823 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571
20010824 20020101 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571
20020102 20090331 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571
```

/nm

Names History – includes all items that are populated by any securities. Reserved items available in the Names-All category are removed.

```
Name History
------------
  Namedt    Enddt NCUSIP   Ticker Company Name                     CL SH EX  SIC
19251231 19620701                 INTERNATIONAL BUSINESS MACHS COR    11  1 3570
19620702 19680101          IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3573
19680102 19990103 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3573
19990104 20010823 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571
20010824 20020101 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571
20020102 20090331 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571

  Namedt    Enddt Symbol     Naics   Ex1 Ex2 Tst Sst
19251231 19620701                      N       A   R
19620702 19680101                      N       A   R
```

```
19680102 19990103                    N       A   R
19990104 20010823                    N       A   R
20010824 20020101            334111  N       A   R
20020102 20090331 IBM        334111  N       A   R
```

All of the name fields combined constitute a Name History Record. Therefore, a change to any name field adds a row to the Name History Array. For example, the /nm option does not appear to have any changes between 20010824 and 20021231, but there are two name history rows. Notice that under the /nm option, the NAICS code was added on 20010824 and the Trading Ticker Symbol was added on 20020102.

/an

All – complete names history, all fields available.

```
Name History - All
------------------
  Namedt    Enddt NCUSIP   Ticker Company Name                     CL SH EX  SIC
19251231 19620701                 INTERNATIONAL BUSINESS MACHS COR    11  1 3570
19620702 19680101          IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3573
19680102 19990103 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3573
19990104 20010823 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571
20010824 20020101 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571
20020102 20090331 45920010 IBM    INTERNATIONAL BUSINESS MACHS COR    11  1 3571

  Namedt    Enddt Symbol     Naics   Ex1 Ex2 Tst Sst ShT IsC InC Its Den ElC CvC
19251231 19620701                      N       A   R
19620702 19680101                      N       A   R
19680102 19990103                      N       A   R
19990104 20010823                      N       A   R
20010824 20020101            334111    N       A   R
20020102 20090331 IBM        334111    N       A   R

  Namedt    Enddt NmF Cntrycd    Uot NameCd    Expdt    Rating NameDesc
19251231 19620701                   0      0        0    0.0000
19620702 19680101                   0      0        0    0.0000
19680102 19990103                   0      0        0    0.0000
19990104 20010823                   0      0        0    0.0000
20010824 20020101                   0      0        0    0.0000
20020102 20090331                   0      0        0    0.0000
```

/da

Adjusted distribution events. Returns distribution codes, adjusted dividend amounts, adjustment factors for prices and shares, declaration-, ex- , record-, and pay-dates. Parameters may be set for adjustment dates, types and gaprules.

If no parameters are set, defaults are used.

```
/da /dt19900101-20080630

Date range: 19900101 - 20080630

Adjusted Distributions
----------------------
Code    Divamt    Facpr   Facshr   Dclrdt     Exdt   Rcrddt    Paydt Aperm Acomp

1232   0.30250   0.0000   0.0000 19891031 19891102 19891108 19891209     0     0

1232   0.30250   0.0000   0.0000 19900130 19900205 19900209 19900310     0     0

…

1232   0.40000   0.0000   0.0000 20070731 20070808 20070810 20070910     0     0

1232   0.40000   0.0000   0.0000 20071030 20071107 20071109 20071210     0     0

1232   0.40000   0.0000   0.0000 20080129 20080206 20080208 20080310     0     0

1232   0.50000   0.0000   0.0000 20080429 20080507 20080509 20080610     0     0
```

/sh

Raw shares observation event histories

```
  Shrout   Shrsdt Shrsenddt Shrflg
   2858 20071109  20071230       0
   2875 20071231  20080210       0
   4345 20080211  20080304       0
   4345 20080305  20080330       2
   4347 20080331  20080511       0
   4347 20080512  20080630       0
```

/sa

Shares event histories adjusted for distributions

```
Shrout   Shrsdt Shrsenddt Shrflg
   2858 20071109  20071230       0
   2875 20071231  20080204       0
   4313 20080205  20080210       1
   4345 20080211  20080304       0
   4345 20080305  20080330       2
   4347 20080331  20080511       0
   4347 20080512  20080630       0
```

/sj

Adjusted shares events. Returns adjusted shares, dates, and shares flag. Parameters may be set for adjustment dates, types and gaprules. If no parameters are set, defaults are used.

```
Adjusted Shares
---------------
    Shrout   Shrsdt Shrsenddt Shrflg
     37791 19890929  19891228      0
     37791 19891229  19900329      0
     37791 19900330  19900628      0
     …
     26169 20060831  20060928      0
     26169 20060929  20061030      0
     26169 20061031  20061123      0
     26169 20061124  20061129      2
     26256 20061130  20061228      0
```

/de

Delisting event histories

```
  Dlstdt Dlstcd   Nwperm   Nwcomp   Nextdt         Dlprc    Dlpdt         Dlamt
19951215    231    10569     8477        0       0.00000 19951218       5.44880

  Dlstdt       Dlret      Dlretx
19951215   -0.003648   -0.003648
```

/ej

Adjusted delisting events. Returns delisting amounts, dates, codes, prices, returns with and without dividends. Parameters may be set for adjustment dates, types and gaprules. If no parameters are set, defaults are used.

```
Adjusted Delistings
-------------------
  Dlstdt Dlstcd   Nwperm   Nwcomp   Nextdt         Dlprc    Dlpdt         Dlamt
20020228    231    11293     9147        0       0.00000 20020301       0.00000

  Dlstdt       Dlret      Dlretx
20020228   -0.019565   -0.019565
```

/qi

```
NASDAQ event information histories
  Trtsdt Trtsenddt Trtscd Nmsind Mmcnt Nsdinx
20080424  20080424       1       6    83     55
20080425  20080427       1       6    82     55
20080428  20080527       1       6    83     55
20080528  20080529       1       6    82     55
20080530  20080603       1       6    81     55
20080604  20080616       1       6    82     55
20080617  99999999       1       6    83     55
```

C. TIME-SERIES GROUPS

Only one of `/dd, /ds, /dr, /dx` can be used at a time.

/dd

Trading data including close, ask/high, bid/low, volume, and total return

```
    Date          Prc        Askhi        Bidlo         Vol         Ret
20080620    122.74000    125.02000    122.50000     9624800   -0.018237
20080623    123.46000    124.50000    122.40000     5862900    0.005866
20080624    123.46000    124.25000    121.90000     7553100    0.000000
20080625    124.58000    125.83000    123.20000     7135000    0.009072
20080626    121.13000    123.82000    120.76000     9710500   -0.027693
20080627    120.05000    122.05000    118.26000    11660400   -0.008916
20080630    118.53000    120.22000    118.15000     8444000   -0.012661
```

/dj

Adjusted time series. Returns adjusted time series for prices, ask hi, bid low, volumes and include returns. Adjustment date, type, and gaprules are available parameters. If no parameters are set, defaults defined in the Parameter Types table are used.

```
/dj 19980101,1,0
Adjusted Market Summary
-----------------------
   Caldt       Adjprc     Adjaskhi     Adjbidlo        Adjvol         Ret
20080530    258.85999    259.98001    257.60001       4326450   -0.002159
20080602    254.72000    258.73999    253.39999       3799650   -0.015993
20080603    255.67999    258.00000    254.92000       3619300    0.003769
20080604    255.10001    257.00000    252.89999       3216200   -0.002268
20080605    256.94000    258.07999    254.39999       3076900    0.007213
20080606    249.88000    256.28000    249.48000       3943100   -0.027477
```

/dr

Calculated returns. Returns price, calculated returns with and without dividends. Calculated returns items allow users control for returns based on specified exchange closing prices as well as control over the size of gap windows. If no parameters are set, defaults of a 10-day gap window and the aggregate of all CRSP-followed exchanges are used. Returns calculated with defaults will match CRSP standard return items.

```
/dt20080530-20080630 /dr 4,15


Price and Returns
-----------------
   Caldt          Prc         Ret        Retx
20080530     28.32000    0.000353    0.000353
20080602     27.80000   -0.018362   -0.018362
20080603     27.31000   -0.017626   -0.017626
20080604     27.54000    0.008422    0.008422
20080605     28.30000    0.027596    0.027596
20080606     27.49000   -0.028622   -0.028622
```

```
20080609     27.71000    0.008003    0.008003
20080610     27.89000    0.006496    0.006496
20080611     27.12000   -0.027608   -0.027608
20080612     28.24000    0.041298    0.041298
```

/dx

Weights. Returns security prices, shares, and returns. A parameter for Rights used to apply share factors from rights distributions may be set. The default uses shares outstanding in the CRSP shares history that includes rights distributions.

```
Price and Shares
----------------
   Caldt          Prc       Shr         Ret
20080530    129.42999   1373479   -0.002159
20080602    127.36000   1373479   -0.015993
20080603    127.84000   1373479    0.003769
20080604    127.55000   1373479   -0.002268
20080605    128.47000   1373479    0.007213
20080606    124.94000   1373479   -0.027477
20080609    125.86000   1373479    0.007364
20080610    125.94000   1373479    0.000636
20080611    123.25000   1373479   -0.021359
```

/dw

Adjusted weights. Returns security adjusted prices, adjusted shares, and returns. Parameters may be set for the adjustment date and type, gaprule, and rights for Rights. If no parameters are set, defaults are used.

```
/dw 19981215

Adjusted Price, Shares
----------------------
   Caldt       Adjprc    Adjshr         Ret
20080530    258.85999    686740   -0.002159
20080602    254.72000    686740   -0.015993
20080603    255.67999    686740    0.003769
20080604    255.10001    686740   -0.002268
20080605    256.94000    686740    0.007213
20080606    249.88000    686740   -0.027477
20080609    251.72000    686740    0.007364
```

/ds

Levels. Returns security prices and associated index levels of returns with and without dividends. Basedate and base amounts can be set for index level items. Setting no parameters will utilize defaults. Example: /dt20061220-20070131 /ds 20080103,100.000

```
/ds 20080605,100

Price and Index Levels
----------------------
   Caldt          Prc        TLvl        ALvl
20080530    129.42999      100.75      100.75
20080602    127.36000       99.14       99.14
20080603    127.84000       99.51       99.51
20080604    127.55000       99.28       99.28
20080605    128.47000      100.00      100.00
20080606    124.94000       97.25       97.25
20080609    125.86000       97.97       97.97
20080610    125.94000       98.03       98.03
20080611    123.25000       95.94       95.94
20080612    123.85000       96.40       96.40
20080613    126.15000       98.19       98.19
```

D. PORTFOLIO INFORMATION FOR ONE OR MORE PORTFOLIO TYPES

/dy.#-#

Portfolio assignments and statistics for portfolio type #. Porttype numbers or keysets are used. Notations can be a single number, a range separated by dashes, or a list separated by commas. Porttypes for a security can be identified by using the /hr option.

```
Example: /dy.101,106,107 or /dy.1,6,7
PERMNO    CUSIP Htick  PERMCO   COMPNO   Issuno EX  SIC    Begdt    Enddt DEL
 12490 45920010 IBM     20990        0        0  1 3571 19251231 20080630 100

Latest Company Name
INTERNATIONAL BUSINESS MACHS COR

Keyset 101 - Portfolio Type 1 - NYSE/NYSE MKT/NASDAQ Capitalization Deciles, Daily
    Date Port             Stat
    2008   10  162798464.19339
Keyset 106 - Portfolio Type 6 - NYSE/NYSE MKT Beta Deciles, Daily
    Date Port             Stat
    2008    7          0.74707
Keyset 107 - Portfolio Type 7 - NYSE/NYSE MKT Standard Deviation Deciles, Daily
    Date Port             Stat
    2008    8          0.01559
```

E. GROUP DATA

/gp.#

Note: 16 - S&P 500 is the only group currently available.

```
PERMNO    CUSIP Htick  PERMCO   COMPNO   Issuno EX  SIC    Begdt    Enddt DEL
 12490 45920010 IBM     20990        0        0  1 3571 19251231 20080630 100

Latest Company Name
INTERNATIONAL BUSINESS MACHS COR

Keyset 316 - S&P 500 Universe

   Grpdt Grpenddt Grpflag Subflag
19570301 20080630       1       0
```

F. SINGLE TIME-SERIES

Time series items can be accessed in stk_print by two methods:

1.

```
/ml "<mnemonic1>[;<mnemonic2>...]"
```

For example:

```
/ml "prc;ret;retx"
```

Individual items are specified. If only a single item is called by /ml, no quotes are needed. /ml prc or /ml "prc" will both work. Command line length limits restrict the number of items that can be specified using this method.

2.

```
/mf itemfile
```

An input text file is supplied which contains one row per selection, each in <mnemonic>.<keyset> format.

Keyset is optional and is used with portfolios and groups. If not given, an item's default keyset is assumed. It can take the form of a list (#[,#[-#]]...) or an asterisk.

Both /ml and /mf methods can be used at the same time. The order in which they appear in a request determines the order in the output.

Item names are case-insensitive.

(m)prc - PRICES

```
e.g. Date Prices
19980130 149.18750
19980227 84.75000
19980331 89.50000
19980430 90.12500
```

(m)ret - Returns

```
e.g. Date Returns
19980930 0.140954
19981030 0.155642
19981130 0.113434
19981231 0.116578
```

(m)retx - Returns without dividends

```
e.g. Date Ret w/o Div
19980930 0.140954
19981030 0.155642
19981130 0.111953
19981231 0.116578
```

(m)vol - Volumes

```
e.g. Date Volumes
19980930 95656205
19981030 124145208
19981130 68837401
19981231 71013201
```

(m)bidlo - Bidlo

```
e.g. Date Bidlow
19981001 123.37500
19981002 118.93750
19981005 117.31250
19981006 118.75000
```

(m)askhi - Askhi

```
e.g. Date Askhigh
19981001 126.43750
19981002 125.25000
19981005 123.75000
19981006 124.00000
```

(m)bid - Bid

```
e.g. Date Bids
19981001 104.062500
19981002 104.062500
19981005 101.187500
19981006 97.562500
```

(m)ask - Ask

```
e.g. Date Asks
19981001 104.125000
19981002 104.125000
19981005 101.125000
19981006 97.625000
```

Numtrd - Number of Trades (daily data only)

For NASDAQ only, or for all securities.

```
e.g. Date Trades
19981001 19861
19981002 20087
19981005 30079
19981006 21620
```

/po - Alternate Price Data (monthly data only)

```
e.g. Date ALTPRC
20020328 60.31000
20020430 52.26000
20020531 50.91000
20020628 54.70000
```

(m)shr - Shares

(Shares outstanding are mapped to the calendar of prices)

```
e.g. Date Shares
19981001 933063
19981002 933063
19981005 933063
19981006 933063
```

Spread - Spread (monthly only)

Note that spread data are only available when the security has no market trades. If you compare the spread output with prices (/pp), you can see the relationship between them.

```
e.g. Date SPREAD
20020328 2.18000
20020430 0.00000
20020531 2.47000
20020628 2.07000
```

G. DATE RANGE SELECTION

/dt range1[-range2]

Date Ranges can be YYYY, YYYYMM, or YYYYMMDD, in any combination. If only one range is given, and year only or month only is used, the first period of the year or month is used for the beginning of the range and the last period of the year of month is used for the end of the range. Date ranges will be applied to all data selections except header, names, and delistings. If an issue does not trade the entire range, only the intersection of the issue range and the date range will be printed. Date range1 must precede date range2 if both are supplied. Date ranges relate to the event and timeseries data and do not alter the header

information.

The output format options /fr and /fs alter the interpretation of date range:

- If the default /fr format option is used, names and delists are not restricted by date range, and the first shares observation or distribution event before and after the range, if any, are displayed.
- If the /fs format option is used, only names, delists, and distributions events in the range are displayed.

```
e.g. /dt 199609-199612 = all data from the beginning of September through December of
1996

/dt 1990 = all data in the year 1990

/dt 1994-19940615 = all data from the
beginning of 1994 until June 15, 1994

/dt 19961231 = data only on the date December
31, 1996
```

H. INPUT METHOD

/sq

Reads all issues in database sequentially. Note that the /sq option will extract data from the last PERMNO you referenced. Therefore, if you have an stk_print window open that you have been using, you will want to either go to the first index in the database with the /f option, or exit and restart the application prior to using the /sq option.

e.g. For example, to display name history for all the issues in the monthly database:

```
/mn /sq
```

/if filename.inp

Selects data for all identifiers in filename.inp. Any of the options may be selected to run with the input file. This input file should be a text file containing one column of identifiers, beginning in the first character space.

e.g. For example, to display name history for all PERMNOs in an input file in the default directory named perms.inp:

```
mstkprint /nm /if perms.inp
```

I. OUTPUT METHOD

/of filename.out

Write data to filename.out instead of to the terminal.

e.g. For example, to save name history of selected securities to the file filename.out in the current working directory:

```
dstkprint /mn /of filename.out
```

J. OUTPUT FORMAT

/fr

Toggle for 80-character formatted output with headers. This is the most readable when browsing data and supports multiple data items.

```
e.g. /hh /fr

PERMNO CUSIP PERMCO Compno Issuno EXCH SIC
Name Dist Share Delist Nasd

12490 45920010 20990 0 0 1 3573 3 154 146 1 0

BegDate/EndDate HTick DEL Latest Company Name

19620702-19981231 IBM 100 INTERNATIONAL
BUSINESS MACHS COR
```

/fs

Toggle for pipe-delimited output, intended for input to another program. The permno is output on each line with this option. The /fs option is most useful when one data item (or multiple /p* data items) is used with sequential or file input, and file output.

```
e.g. /fs /hh

12490|45920010| 20990| 0| 0| 1|3573|
3|154|146| 1| 0|19620702|199812

31|IBM |100|INTERNATIONAL BUSINESS MACHS COR
```

K. DATABASE SELECTION

The default is the CRSP_DSTK database and daily data. These options are supported only on the command line at the initial program call, and cannot be switched. These commands can be used only with the stk_print command, since databases are automatically set with the dstkprint or mstkprint commands.

/d1 dbdirectory

(Note: 1 = one) Selects an alternate database with a path of dbdirectory. Note that when you use this option if you are using a monthly database, you must also use the /fm option on the command line, when you specify the database location. (See the /fm option below for usage.)

```
e.g. stk_print /d1 mydirectory
```

/fm

Indicates that the alternate database is monthly

```
e.g. stk_print /fm /d1 mymonthdir
```

L. KEY SELECTION

The default is PERMNO. All input in the input file or at the terminal will be interpreted as this identifier. Sequential access will be in the order of this key. If a key is not unique such as PERMCO, direct access will always find the first security with the identifier. Other securities can be found with the next id (n) option.

The following codes can be used instead of a specified identifier at the command line or in an input file. These access securities by position relative to the current key set with the /ky option. These are input and not options and therefore do not require the forward slash line.

s - same identifier

n - next identifier

p - previous identifier

f - first identifier

l - last identifier

/ky permno

This option may be used to set input key to PERMNO. This is the default if no /ky option is used.

```
e.g. dstkprint /ky permno (10107)

PERMNO CUSIP PERMCO Compno Issuno EXCH SIC
Name Dist Share Delist Nasd

10107 59491810 8048 8048 9942 3 7370 1 7 60
1 637

BegDate/EndDate HTick DEL Latest Company Name

19860313-19981231 MSFT 100 MICROSOFT CORP
```

/ky permco

This option can be used to set the input key to PERMCO.

```
e.g. /ky permco (8048)

PERMNO CUSIP PERMCO Compno Issuno EXCH SIC

Name Dist Share Delist Nasd

10107 59491810 8048 8048 9942 3 7370 1 7 60

1 637

BegDate/EndDate HTick DEL Latest Company Name

19860313-19981231 MSFT 100 MICROSOFT CORP
```

/ky cusip

This option can be used to set the input key to the CRSP header CUSIP. Header CUSIPs are unique for each security

```
e.g. /ky cusip (59491810)

PERMNO CUSIP PERMCO Compno Issuno EXCH SIC
Name Dist Share Delist Nasd

10107 59491810 8048 8048 9942 3 7370 1 7 60
1 637

BegDate/EndDate HTick DEL Latest Company Name

19860313-19981231 MSFT 100 MICROSOFT CORP
```

/ky hcusip

This option can be used to set the input key to CRSP historical CUSIP. Historical CUSIPs are the list of any CUSIPs in the name history plus the header CUSIP if no names exist in the name history. Each security will have one or more historical CUSIPs, and no historical CUSIP will appear in more than one security.

```
e.g. /ky hcusip (59491810)

PERMNO CUSIP PERMCO Compno Issuno EXCH SIC
Name Dist Share Delist Nasd

10107 59491810 8048 8048 9942 3 7370 1 7 60
1 637

BegDate/EndDate HTick DEL Latest Company Name

19860313-19981231 MSFT 100 MICROSOFT CORP
```

/ky ticker

This option can be used to set the input key to header ticker. This is the latest ticker and is only set for securities active on the last date covered in the database. NYSE/NYSE MKT securities with non blank share class have a period and the share class appended to the ticker (TICKER.A). Header ticker is unique, but not all securities can be accessed by it.

```
e.g. /ky ticker (MSFT) - Cap Specific

PERMNO CUSIP PERMCO Compno Issuno EXCH SIC
Name Dist Share Delist Nasd

10107 59491810 8048 8048 9942 3 7370 1 7 60
1 637

BegDate/EndDate HTick DEL Latest Company Name

19860313-19981231 MSFT 100 MICROSOFT CORP
```

/ky siccd

This option can be used to set the input key to CRSP historical SIC code. A security can be accessed by any SIC classification in its history. More than one siccd can be used to access a security, and multiple securities can share the same siccd.

```
e.g. /ky siccd (7370)

...n (until issue of interest is located)

PERMNO CUSIP PERMCO Compno Issuno EXCH SIC
Name Dist Share Delist Nasd

10107 59491810 8048 8048 9942 3 7370 1 7 60
1 637

BegDate/EndDate HTick DEL Latest Company Name

19860313-19981231 MSFT 100 MICROSOFT CORP
```

`y.1` or `/dy.101` all will get portfolio type 1 (daily keyset 101) and `/dy.*` will get all portfolios.

B. STK_PRINT USAGE AND EXAMPLES

Normally, identifiers are typed at the command line once the program is started. A full database, or a subset specified in an input file, can also be processed sequentially with stk_print.

You can locate PERMNOs or other supported identifiers for the security that you wish to enter by using the stk_search utility. See the Search and Inquiry Tools chapter for usage details.

Options to select different identifiers, data, date ranges, or output options can be added either at the command line or after the program is started. To browse the data, type selected data items within the program for the desired company data. The following example would extract name history, and daily prices and returns for Microsoft from April June, 2002.

```
CRSP3>stkprint


CRSP NYSE/NYSE MKT/NASDAQ Daily History + Indexes, data ending 20020628
Using default dates 20020328 - 20020628



Enter identifier or new option beginning with slash.
Type ? for help.
/hn /ml "prc;ret"
Keep previous data options? (y/n)
n
options have been reset.


Enter identifier or new option beginning with slash.
Type ? for help.
10107
```

To export data for additional processing, enter all desired parameters on the command line. This example would extract the name history data and daily prices and returns for the securities in the companies.inp file from April June, 2002. The output is then written to a file, sample.out.

CRSP3>stk_print /hn /ml "prc;ret" /if companies.inp /of sample.out

C. STK_PRINT OPTIONS

Time series items are accessed in stk_print by two methods:

1. `/ml "<.keyset1> [; <.keyset 2>…]"`

Individual items are specified. The maximum length of the command line limits the number of items that can be specified with this option.

2. `/mf item.file`

An input text file is supplied which contains one row per selection, each with <.keyset>.

Keyset is optional and is used with portfolios and groups. If not given, the item's default is assumed. It can take the form of a list `(#[,#[-#]]...)` or an asterisk.

Both /ml and /mf methods can be used at the same time. The order they appear in the request determines the order in the output. In both cases, item names are not case sensitive.

D. KEYSET USAGE FOR STOCK

The porttype and grouptype values for Portfolios (using /dy) and Groups (using /gp) can be accessed as either porttype and grouptype values or as keyset offsets. See here for a list of CRSP Portfolio Types.

- Daily porttype values 1-9 equate to keyset values 101-109.
- Monthly porttype values 1-8 equate to keyset values 201-208.
- grouptype values 1-50 equate to keyset values 301-350. Note that S&P 500 Constituents is currently the only valid group, represented by grouptype 16 or keyset 316.

The advantage to using keyset offsets is that they provide unique values across all frequencies of databases. stk_print maintains an offset for each group, so the user can specify the porttype or grouptype or the actual keyset. Both the porttype values and keyset offsets will access the same data. stk_print will appropriately translate porttype into keyset offsets if they are unknown.

Keysets are supplied as a period followed by * for all, or a list for specific selections. If no keyset is supplied, an item's default keyset is assumed.

For example, the following three notations all get portfolio type 1:

```
/dy
/dy.1
/dy.101
```

The following notation gets all portfolios:

```
/dy.*
```

In the CRSP subscriber Stock and Index Databases, only portfolios have multiple keysets. The command:

`/ml port.1,6;stat.1,6` returns portfolio assignments and statistics for keysets 1 and 6.

For example:

```
Portfolio History
-----------------
KEYSET =  1 (NYSE/NYSE MKT/NASDAQ Cap Assignments)
Year Port             Stat
2005   10  129836292.57970
2006   10  146342099.09851
2007   10  148956933.39741
```

```
KEYSET =  6 (NYSE/NYSE MKT Betas)
Year Port             Stat
2005    6          0.78004
2006    7          0.72267
2007    7          0.77042
```

Available Keysets

Daily

PORTTYPE	KEYSET	NAME
1	101	NYSE/NYSE MKT/NASDAQ Cap Assignments
2	102	Nyse/NYSE MKT Cap Assignments
3	103	NASDAQ Cap Assignments
4	104	NYSE Cap Assignments
5	105	NYSE MKT Cap Assingments
6	106	NYSE/NYSE MKT Betas
7	107	NYSE/NYSE MKT Standard Deviations
8	108	NASDAQ Betas
9	109	NASDAQ Standard Deviations

Monthly

PORTTYPE	KEYSET	NAME
1	101	NYSE/NYSE MKT/NASDAQ Cap Assignments
2	102	Nyse/NYSE MKT Cap Assignments
3	103	NASDAQ Cap Assignments
4	104	NYSE Cap Assignments
5	105	NYSE MKT Cap Assingments
6	106	Cap-Based NYSE/NYSE MKT.NASDAQ National Market
7	107	Cap-Based NYSE
8	108	Cap-Based NYSE/NYSE MKT

E. OUTPUT FORMAT CHANGES

- Formats are fixed and set based on reference data instead of predefined fixed formats.
- For some types of data (names) the same items may not fit the same way on 80-character windows, and the headers could have different text and width.
- Pipe-delimited output can have format changes to more standardized precision.
- Floating point numbers are now printed with scientific notation in pipe-delimited output formats.

III. IND_PRINT: STOCK DATABASE REPORT WRITER

A. INTRODUCTION

ind_print is a command-line utility used to browse and extract CRSPAccess index data. For individual indexes or groups of indexes, it supports index header, event, and time-series data items. INDNO, CRSP's permanent and unique identifier, is used to access index data. Functionality of ind_print mirrors that of stk_print.

B. IND_PRINT DATA AND OPTIONS

1. IND_PRINT OUTPUT HEADERS

Data item mnemonics are listed in the following table. Mnemonics are listed for single series data. If group data are requested, the mnemonics are followed by a "G".

For example, use TRETG for daily Total Return data for a group.

ITEM NAME	OLD TWO-CHARACTER CODE	NEW DAILY MNEMONIC	NEW MONTHLY MNEMONIC
Total Return on Index	/tr	TRET	MTRET
Total Return Index level with Dividends	/ti	TIND	MTIND
Portfolio Return without Dividends	/ar	ARET	MARET
Portfolio Index Level without Dividends	/ai	AIND	MAIND
Income Return on Index	/ir	IRET	MIRET
Income Return Index Level	/ii	IIND	MIIND
Used Count	/uc	USDCNT	MUSDCNT
Used Value	/uv	USDVAL	MUSDVAL
Total Count	/tc	TOTCNT	MTOTCNT
Total Value	/tv	TOTVAL	MTOTVAL

The following table contains the variable item name, the ind_print header and the ind_print options that can be used to extract a given data item. Data items are linked to their definitions, and options are linked to usage information.

ITEM NAME	ITEM HEADER	IND_PRINT OPTIONS	
Calendar Identification Number of Assignment Calendar	Assigncal	/hr	
Calendar Identification Number of Calculations Calendar	Calccal	/hr	
Calendar Identification Number of Rebalancing Calendar	Rebalcal	/hr	
Count Available as of Rebalancing	totcnt	/rs#	
Count at End of Rebalancing Period	endcnt	/rs#	
Count Used as of Rebalancing	usdcnt	/rb#	
Index Basic Assignment Types Code	Assigncode	/hr	
Index Basic Exception Types Code	Flagcode	/hr	
Index Basic Rule Types Code	Rulecode	/hr	

ITEM NAME	ITEM HEADER	IND_PRINT OPTIONS	
Index Capital Appreciation Index Level	ALEVELS	/ml (m)aind	
Index Capital Appreciation Return	ARETURNS	/ml (m)aret	
Index Exception Handling Flags	*Exception Flags*	/hr	
Index Function Code for Buy Rules	Buyfunct	/hr	
Index Function Code for Generating Statistics	Statfnct	/hr	
Index Function Code for Sell Rules	Sellfnct	/hr	
Index Group Name	Groupname:	/hh	/hr
Index Income Index Level	ILEVELS	/ml (m)iind	
Index Income Return	IRETURNS	/ml (m)iret	
Index Ineligible Issues Flag	Delflag	/hr	
Index Method Type Code	Methcode	/hr	
Index Methodology Description Structure	*Methodology*	/hr	
Index Missing Data Flag	Missflag	/hr	
Index Name	Name:	/hh	/hr
Index New Issues Flag	Addflag	/hr	
Index Primary Link	Primflag	/hh	/hr
Index Primary Methodology Type	Primtype	/hr	
Index Rebalancing Begin Date	begdt	/rb#	
Index Rebalancing End Date	enddt	/rb#	
Index Reweighting Timing Flag	Wgtflag	/hr	
Index Reweighting Type Flag	Wgttype	/hr	
Index Secondary Methodology Group	Subtype	/hr	
Index Statistic Grouping Code	Groupflag	/hr	
Index Subset Screening Structure	*Partition Universe*	/hr	
Index Total Count	TOTCNT	/ml (m)totcnt	
Index Total Return Index Level	TLEVELS	/ml (m)tind	
Index Total Return	TRETURNS	/ml (m)tret	
Index Total Value	TOTVAL	/ml (m)totval	
Index Used Count	USDCNT	/ml (m)usdcnt	
Index Used Value	USDVAL	/ml (m)usdval	
INDCO	Indco	/hh	/hr
INDNO	Indno	/hh	/hr
INDNO of Associated Index	Asperm	/hr	
Maximum Count During Period	maxcnt	/rs#	
Partition Subset Screening Structure	*Index Universe*	/hr	
Portfolio Building Rules Structure	*Building Rules*	/hr	
Portfolio Number in Associated Index	Asport	/hr	
Portfolio Number if Subset Series	Portnum	/hh	/hr
Related Assignment Information	*Assignment Info*	/hr	
Restriction Begin Date	Begdt	/hr	
Restriction End Date	Enddt	/hr	
Return of Delisted Issues Flag	Delretflag	/hr	
Share Code Groupings for Subsets in an Index Restriction	Sccode	/hr	
Share Code Groupings for Subsets in a Partition Restriction	Sccode	/hr	
Statistic Average in Period	avgstat	/rs#	
Statistic Maximum Identifier	maxid	/rb#	

ITEM NAME	ITEM HEADER	IND_PRINT OPTIONS
Statistic Maximum in Period	maxstat	/rb#
Statistic Median in Period	medstat	/rs#
Statistic Minimum Identifier	minid	/rb#
Statistic Minimum in Period	minstat	/rb#
Universe Subset Types Code in an Index Restriction	Univcode	/hr
Universe Subset Types Code in a Partition Restriction	Univcode	/hr
Valid Exchange Codes in the Universe in an Index Restriction	Wantexch	/hr
Valid Exchange Codes in the Universe in a Partition Restriction	Wantexch	/hr
Valid First Digit of Share Code in an Index Restriction	Fstdig	/hr
Valid First Digit of Share Code in a Partition Restriction	Fstdig	/hr
Valid Incorporation of Securities in the Universe in an Index Restriction	Wantinc	/hr
Valid Incorporation of Securities in the Universe in a Partition Restriction	Wantinc	/hr
Valid NASDAQ Market Groups in the Universe in an Index Restriction	Wantnms	/hr
Valid NASDAQ Market Groups in the Universe in a Partition Restriction	Wantnms	/hr
Valid Second Digit of Share Code in an Index Restriction	Secdig	/hr
Valid Second Digit of Share Code in a Partition Restriction	Secdig	/hr
Valid When-Issued Securities in the Universe in an Index Restriction	Wantwi	/hr

2. IND_PRINT OPTIONS

Following is a list of current ind_print options, grouped by option category, listing the options and the variables included in each option, followed by an output sample for each option. Samples for individual indexes are run from the daily index data using INDNO 1000080 (The CRSP value-weighted NYSE/NYSE MKT/NASDAQ Market Index) using the dindprint command to start the application. Samples for select group indexes (deciles) are run from the daily group index data using INDNO 1000012 (The CRSP NYSE Market Capitalization Deciles) using the dindprintg command to start the application. INDNO usage is indicated in parenthesis at the end of the item description. If alternate data is used, it is noted within the parenthesis, after the INDNO. If the output contains 0, -88.0, or 99.0 values, there are no data in the file for the selected issue.

A. DATABASE SELECTION

The set database options are supported only on the command line at the initial program call, and cannot be switched. These commands can be used only with the ind_print command. Daily data is the default. If you wish to use monthly data, you must include the /fm option described below.

/d1 dbdirectory

(1=one) Selects an alternate database with a path of dbdirectory

```
e.g. ind_print /d1 mydirectory
```

/fm

Monthly Database used with the /d1 option (the command, ind_print defaults to a daily index database, setids 460/440. Adding the /fm option will select the monthly setids, 420/400, as the command mindprint and mindprintg. When using /fm, you must set the appropriate monthly database with the /d1 option.

```
e.g. ind_print /fm /d1 mymonthdir
```

B. PORTFOLIO SELECTION (FOR USE WITH INDEX GROUPS)

/pf #[-#][,#[-#]]

The /pf option can be used to extract data for select portfolios from the index group databases. To identify available portfolios, you will need to reference the index groups table against the index series table to in section 3.3 of the Data Description Guide, starting on Page 31. Note that the portfolios associated with a group correspond to individual INDNOs within the series table. For example, portfolio 2 associated with group INDNO 1000012 (CRSP NYSE Market Capitalization Deciles) corresponds to series INDNO 1000003 (CRSP NYSE Market Capitalization Decile 2) in the series table.

The /pf option does not work with setids 460 and 420. To use the /pf option, you will need to run dindprintg, mindprintg, or an alternate database with setids of 400 or 440.

The /pf option does nothing by itself. It needs to be used in conjunction with other data items to output data for the selected portfolios.

For the purpose of this example, we will look at header information for:

```
e.g. /pf2 /trtihh (total returns, index level and header data for portfolio 2 of
group INDNO 1000012)
Indno Indco Primflag Portnum
1000012 1000000 0 0
Name: CRSP NYSE Market Capitalization Deciles
Groupname: CRSP Decile Indexes
1000012 PortfType 2
Date TRETURNS TLEVELS
20020328 0.002689 4447.203
20020401 0.002539 4458.495
20020402 -0.004206 4439.744
... ... ...
20020626 -0.003363 4556.938
20020627 0.012353 4613.230
20020628 0.008970 4654.613
```

C. DATE RANGE SELECTION

If date range is not set, the default is the last three months before the end of the calendar.

/dt range1[-range2]

Date Ranges can be YYYY, YYYYMM, or YYYYMMDD, in any combination. If only one range is given, and year only or month only is used, the first period of the year or month is used for the beginning of the range and the last period of the year of month is used for the end of the range. Date ranges will be applied to all data selections except header, names, and delistings. If an issue does not trade the entire range, only the intersection of the issue range and the date range will be printed. Date range1 must precede date range2 if both are supplied. Date ranges relate to the event and timeseries data and do not alter the header information.

The output format options /fr and /fs alter the interpretation of date range:

- If the default /fr format option is used, names and delists are not restricted by date range, and the first shares observation or distribution event before and after the range, if any, are displayed.
- If the /fs format option is used, only names, delists, and distributions events in the range are displayed.

e.g. /dt 199609-199612 = all data from the beginning of September through December of 1996

```
/dt 1990 = all data in the year 1990
/dt 1994-19940615 = all data from the beginning of 1994 until June 15, 1994
/dt 19961231 = data only on the date December 31, 1996
```

D. HEADER INFORMATION

/hh

Header File, Issue Identification Information. This is the default output of the ind_print applications

```
e.g. /hh
Indno Indco Primflag Portnum
1000080 1000004 0 0
Name: CRSP NYSE/NYSE MKT/NASDAQ Value-Weighted Market Index
Groupname: CRSP Market Indexes
```

/hr

Header File Issue Identifiers with Available Data Date Ranges in YYYYMMDD Format

```
e.g. /hr
Indno Indco Primflag Portnum
1000080 1000004 0 0
Name: CRSP NYSE/NYSE MKT/NASDAQ Value-Weighted Market Index
Groupname: CRSP Market Indexes
*Methodology* Methcode Primtype Subtype Wgttype Wgtflag
4 3 0 2 11
*Exception Flags* Flagcode Addflag Delflag Delretflag Missflag
1 1 1 2 3
*Partition Universe*
Univcode Begdt Enddt Wantexch Wantnms Wantwi Wantinc Sccode Fstdig Secdig
0 0 0 0 0 0 0 0 0 0
*Index Universe*
Univcode Begdt Enddt Wantexch Wantnms Wantwi Wantinc Sccode Fstdig Secdig
24 0 0 7 0 110 0 1 418 1012
*Building Rules* Rulecode Buyfnct Sellfnct Statfnct Groupflag
0 0 0 0 0
*Assignment Info* Assigncode Asperm Asport Rebalcal Assigncal Calccal
0 0 0 0 0 0
ind_print Data Items and Options
```

E. DATA AVAILABLE FOR INDIVIDUAL INDEXES OR DECILE GROUPS

(m) aind

Portfolio Index Levels without Dividends

```
e.g. /ml aind

1000080 PortfType 1
Date ALEVELS
20020328 915.5552
20020401 914.6123
20020402 906.6703
... ...
20020626 783.9015
20020627 796.6004
20020628 798.1587
```

(m) aret

Portfolio Returns without Dividends

```
e.g. /ml aret

1000012 PortfType 1 PortfType 2 PortfType 3
Date ARETURNS ARETURNS ARETURNS
20020328 0.001674 0.002689 0.002820
20020401 0.009959 0.002462 -0.001832
20020402 0.005643 -0.004206 -0.001346
... ... ... ...
20020626 -0.010752 -0.004091 -0.002407
20020627 -0.005641 0.012226 0.009430
20020628 0.015115 0.008970 0.015380
```

(m) iind

Income Return Index Levels

```
e.g. /ml iind

1000012 PortfType 5 PortfType 7
Date ILEVELS ILEVELS
20020328 295.1121 287.4897
20020401 295.1121 287.5076
20020402 295.1739 287.5076
... ... ...
20020626 296.6375 288.8582
20020627 296.6645 288.9041
20020628 296.6645 288.9041
```

(m) iret

Income Return on Index

```
e.g. /ml iret

0 PortfType 1
Date IRETURNS
20020328 0.000002
20020401 0.000011
20020402 0.000008
... ...
20020626 0.000479
20020627 0.000028
20020628 0.000010
```

(m) totcnt

Total Count of Securities Used in the Index

```
e.g. /ml totcnt

1000012 PortfType 1
Date TOTCNT
20020328 212
20020401 211
20020402 208
... ...
20020626 201
20020627 200
20020628 200
```

(m) tind

Total Return Index Level

```
e.g. /ml tind

1000080 PortfType 1
Date TLEVELS
20020328 2421.2195
20020401 2418.7520
20020402 2397.7678
... ...
20020626 2080.7725
20020627 2114.5381
20020628 2118.6958
```

(m)tret

Total Return on Index

```
e.g. /ml tret

1000080 PortfType 1
Date TRETURNS
20020328 0.002930
20020401 -0.001019
20020402 -0.008676
... ...
20020626 -0.003190
20020627 0.016227
20020628 0.001966
```

(m)totval

Total Value on Index

```
e.g. /ml totval

1000012 PortfType 6 PortfType 7
Date TOTVAL TOTVAL
20020328 206103178.334 330838233.116
20020401 207049524.450 332646615.107
20020402 206980410.886 331658898.824
... ... ...
20020626 222814313.861 316518553.037
20020627 224503630.006 314826549.988
20020628 226241583.842 316881175.383
```

(m)usdcnt

Used Count, Number of Securities Used in the Index

```
e.g. /ml usdcnt

1000080 PortfType 1
Date USDCNT
20020328 7055
20020401 7043
20020402 7038
... ...
20020626 6966
20020627 6965
20020628 6964
```

(m)usdval

Used Value

```
e.g. /ml usdval

1000080 PortfType 1
Date USDVAL
20020328 13704289594.600
20020401 13771283433.135
20020402 13757335981.308
... ...
20020626 12007404101.776
20020627 11965494430.175
20020628 12159579715.413
```

/ig

Index Group is used to select decile data within a group. The alternative to using /ig is to invoke ind_print with the batch files dindprintg for daily data or mindprintg for monthly data. When accessing group data, use standard daily or monthly data item names followed with a "G". TRET will return the daily total returns for a single index series. TRETG will return the daily total returns for a decile or range of deciles within an index group.

/rb#[-#][,#[-#]]

Rebalancing information. The # represents which associated portfolio you wish to use with the data. To identify available portfolios, you will need to reference the index groups table against the index series table to in section 3.3 of the Data Description Guide, starting on Page 31. Note that the portfolios associated with a group correspond to individual INDNOs within the series table. For example, portfolio 2 associated with group INDNO 1000012 (CRSP NYSE Market Capitalization Deciles) corresponds to series INDNO 1000003 (CRSP NYSE Market Capitalization Decile 2) in the series table. (1000002, the CRSP NYSE Market Capitalization Decile)

```
e.g. /rb1
Indno: 1000002 RebalancingType: 1
begdt enddt usdcnt minid maxid minstat
maxstat
20011231 20021231 234 75895 75336 2695.43994
75350.501
```

F. INPUT METHOD

The default is to allow the user to type in identifiers at the terminal.

/sq

Sequentially Reads all Indexes in Database. Note that the /sq option will extract data from the last INDNO you referenced. Therefore, if you have an ind_print window open that you have been using, you will want to either go to the first index in the database with the /f option, or exit and restart the application prior to using the /sq option.

e.g. To output to the screen, total returns for all indexes in the database, you would enter the following command,

```
indprint /tr /sq
```

/if filename.inp

Selects data for all identifiers in filename.inp. Any of the options may be selected to run with the input file. This input file should be a text file containing one column of identifiers, beginning in the first character space.

e.g. To display total returns for all INDNOs in an input file (in the default directory) named indnos.inp,

```
mindprint /ml tret /if indnos.inp
```

G. OUTPUT METHOD

The default is for output to be printed on the terminal.

/of filename.txt

Data is written to an output file instead of to the terminal window.

e.g. To save header data of selected securities to the file, indnos.txt, in your current working directory,

```
dindprint /hh /of indnos.txt
```

H. OUTPUT FORMAT

Default is for 80-character width output with headers.

/fr

Toggle for 80-Character Formatted Output with Headers. This default format is the most readable when browsing data on the screen.

```
e.g. /hh /fr

Indno Indco Primflag Portnum

1000080 1000004 0 0

Name: CRSP NYSE/NYSE MKT/NASDAQ Value-
Weighted Market Index

Groupname: CRSP Market Indexes
```

/fs

Toggle for Pipe-Delimited Output Format, outputs data in a pipe (|) delimited format. The INDNO is output on each line with this option. It is particularly useful when you wish to import data extracted through ind_print to another program for further manipulation.

```
e.g. /fs /hh

1000080|1000004| 0| 0|CRSP NYSE/NYSE MKT/
NASDAQ Value-Weighted Market Inde

x |CRSP Market Indexes
```

Exit the Program

To exit the program, enter a blank row at any time.

Help

Access the on-screen help menu at any time.

e.g. ?

C. CRSP INDEX SERIES AND GROUPS

For INDNOs for individual indexes, see CRSP Index Series in the Index Methodologies chapter of the Data Descriptions Guide.

For information on group INDNOs, see CRSP Index Groups in the Index Methodologies chapter of the Data Descriptions Guide.

D. BASIC USAGE

The following commands to run `ind_print`:

`indprint` or `dindprint` - to access the individual daily indexes

`mindprint` - to access the individual monthly indexes

`dindprintg` - to access deciles within the daily index groups

`mindprintg` - to access deciles within the monthly index groups

`ind_print /d1 database_name` - to access an alternate daily database

`ind_print /d1fm database_name` - to access an alternate monthly database

E. IND_PRINT OPTIONS

ind_print is invoked at the command line and is controlled through the use of various options strings.

For daily data, the default, use the following command ("CRSP>" below indicates the command prompt and is not entered):

```
CRSP> ind_print
```

or

```
CRSP> dindprint
```

For monthly data, type:

```
CRSP> mindprint
```

or

```
CRSP> ind_print /d1 /fm (path to monthly database directory)
```

where `/d1` points to a database other than the daily default and `/fm` indicates that it is a monthly database.

Sample of usage:

```
C:\CMGS310> ind_print /fm /d1 c:\crspdata\mix200712\

CRSP 1925 Monthly US Stock & Indexes, data ending
20071231
Default date range 20071031 - 20071231


Setid: 420

Available -> portfolio(s):1, rebaltype(s):1, listtype(s):1


Enter identifier or new option beginning with a slash.
Type ? for help.

/ml "mtret;mtind;maret;maind"


Keep previous data options? (y/n)

y



Enter identifier or new option beginning with a slash.
Type ? for help.

1000080


Indno Indco Primflag Portnum

1000080 1000004 0 0


Indname

CRSP NYSE/NYSE MKT/Nasdaq Value-Weighted Market Index


Groupname

NYSE/NYSE MKT/Nasdaq Market Capitalization


Date Tret Tind Aret Aind

20071031 0.025852 4018.33 0.024710 1379.56

20071130 -0.049292 3820.26 -0.051242 1308.87

20071231 -0.004328 3803.72 -0.006266 1300.67
```

Options begin with a forward slash. Multiple options are placed on a single line.

```
/hh /dt 2000-2007
```

Monthly data items precede daily items with an "m". For example, Daily Total Returns are accessed with item name tret. Monthly Total Returns are accessed with item name mtret.

F. USING KEYSETS WITH INDEX GROUPS

When viewing index series, no keysets are needed since only one time series is available. Keysets are used to identify the portfolio numbers within the index groups. Keyset numbers are assigned to make keysets unique across all products. Rebaltypes are listed beginning at 401, indtypes at 501, and listtypes at 601. ind_print maintains an offset for each group so that users can specify the porttype, grouptype, or actual keyset.

ind_print software is backwards compatible to accept either keyset values or portfolio numbers. If a keyset value is nonzero and less than 200, the offset is applied, so that the old type notation or new keyset notation selects the same series. Selecting portfolios 1-10 is translated for index groups to keysets 501-510 internally, and returns tags 1-10.

A user can select specific or sets of portfolios using keyset qualifiers.

For example, `TRETG.1-5;IRETG.10` will translate internally to keysets 501-505 for TRETG and 510 for IRETG. These will return Total Return group data for portfolios 1-5 and Return on Income group data for portfolio 10.

If no keyset or portfolio number is defined, the default is portfolio 1.

G. DEFINED INDEX TYPES

ind_print supports preset defined index types. Logical groups of data are accessed using the following commands:

/lv includes the equivalent of TIND;AIND;USDCNT;USDVAL

/re includes the equivalent of TRET:ARET:IRET:USDCNT:USDVAL

/cv includes the equivalent of USDCNT;USDVAL;TOTCNT;TOTVAL

When using with index groups, all three index types can be followed by .* or .#-#,# to extract all portfolios or to specify a list of portfolios.

CRSP provides header files for each CRSPAccess database. These name lists are useful for finding identifiers and name histories of securities when only partial information is known. The identifiers can then be used as input to other CRSP reporting utilities or programs. The files are fixed format text files and be accessed with system utilities or other tools.

Every stock database contains four files:

CHEADFILE.DAT

Header list, one line per issue, sorted by PERMNO, with the fields PERMNO, PERMCO, CUSIP - Header, Company Name - Header, Ticker Symbol - Header, CRSP Exchange Code - Header, and price data range. (Note: SIC Code - Header may be included in a user-created header file using the crsp_stk_headall utility.

HEADFILE.DAT

Historical header list, one line per historical name, sorted by PERMNO and effective name date, with the fields PERMNO, PERMCO, CUSIP, Company Name, Ticker, CRSP Exchange Code, and effective range of name information. (Note: SIC Code - Header may be included in a user-created header file using the crsp_stk_headall utility.

PSORTBYP.DAT

A PERMNO list of issues in the database; one PERMNO per line sorted by PERMNO.

HEADIND.DAT

An index description, setid, and INDNO of all index series and groups in the database.

CRSP provides the following search utilities for header files.

A. dstksearch	To search the daily data header files
B. mstksearch	To search the monthly data header files
C. dindsearch	To search the daily index header files
D. mindsearch	To search the monthly index header files
E. crsp_show_db_info	To display parameters associated with a specific database
F. crsp_set_db_info	To change parameters associated with a specific database

A. DSTKSEARCH

Searches historical daily data header list

USAGE

Usage varies by operating system. See examples.

EXAMPLES

1. WINDOWS

The command and the string to find, enclosed in double quotes, are entered at the command line at a command prompt window. For example:

```
CRSP1> dstksearch "ibm"

Daily Stock Headers

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA

Perm#    Permco  CUSIP      Company Name                    Tick  EX   date range

---------------V:\IEEELIT\DA199912\HEADFILE.DAT

12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629
```

2. UNIX

Type the name of the search function. You will be prompted for the search string. No quotes are needed and case is ignored. For example:

```
Enter search string: ibm

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA


PERMNO   PERMCO   CUSIP      Company Name                    Tick  EX   date range


12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629

Try another string [y] ? n
```

B. MSTKSEARCH

Searches historical monthly data header list.

USAGE

Usage varies by operating system. See examples.

EXAMPLES

1. WINDOWS

The command and the string to find, enclosed in double quotes, are entered at the command line at a command prompt window. For example:

```
CRSP1> mstksearch "ibm"

Monthly Stock Headers

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA

Perm#    Permco  CUSIP      Company Name                    Tick  EX   date range

---------------V:\IEEELIT\DA199912\HEADFILE.DAT

12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629
```

2. UNIX

Type the name of the search function. You will be prompted for the search string. No quotes are needed and case is ignored. For example:

```
Enter search string: ibm

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA


PERMNO   PERMCO   CUSIP      Company Name                    Tick  EX   date range


12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629

Try another string [y] ? n
```

C. DINDSEARCH

Searches daily data index header list.

USAGE

Usage varies by operating system. See examples.

EXAMPLES

1. WINDOWS

The command and the string to find, enclosed in double quotes, are entered at the command line at a command prompt window. For example:

```
CRSP1> dstksearch "ibm"

Daily Stock Headers

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA

Perm#    Permco  CUSIP       CompanyName                    Tick  EX   date range

---------------V:\IEEELIT\DA199912\HEADFILE.DAT

12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629
```

2. UNIX

Type the name of the search function. You will be prompted for the search string. No quotes are needed and case is ignored. For example:

```
Enter search string: ibm

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA


PERMNO   PERMCO   CUSIP       Company Name                   Tick  EX   date range


12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629

Try another string [y] ? n
```

D. MINDSEARCH

Searches monthly data index header list

USAGE

Usage varies by operating system. See examples.

EXAMPLES

1. WINDOWS

The command and the string to find, enclosed in double quotes, are entered at the command line at a command prompt window. For example:

```
CRSP1> dstksearch "ibm"

Daily Stock Headers

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA

Perm#    Permco  CUSIP       CompanyName                    Tick  EX   date range

---------------V:\IEEELIT\DA199912\HEADFILE.DAT

12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629
```

2. UNIX

Type the name of the search function. You will be prompted for the search string. No quotes are needed and case is ignored. For example:

```
Enter search string: ibm

Exchange Codes 1=NYSE, 2=NYSE MKT, 3=NASDAQ, 4=ARCA


PERMNO   PERMCO   CUSIP       Company Name                   Tick  EX   date range


12490    20990             INTERNATIONAL BUSINESS MACHS CO IBM   1    19620702-19680101

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19680102-19990103

12490    20990    45920010  INTERNATIONAL BUSINESS MACHS CO IBM   1    19990104-19991231

75139    22064    03093810  AMERICUS TR FOR IBM SHS         BZP   2    19870720-19920630

75140    22064    03093820  AMERICUS TR FOR IBM SHS         BZS   2    19870720-19920610

75141    22064    03093830  AMERICUS TR FOR IBM SHS         BZU   2    19870720-19920629

Try another string [y] ? n
```

E. CRSP_SHOW_DB_INFO

This program generates a listing of information about a CRSPAccess database. Information generated includes creation date, last modification date, data cut date, binary type, CRSPAccess version, product code, product name, data version, a list of data sets available, and a list of calendars available. It takes a parameter of the database location and an optional parameter for an output file. If no output file is given the information is printed to the terminal. To run the program, type the name of the program followed by parameter options at a command prompt. The parameters follow.

USAGE

```
crsp_show_db_info inpath [outfile]
```

PARAMETER VALUES

Inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

Outfile (optional) Output CRSPDB directory path. The file where the output will be written. If this option is not included, the output will be printed to the terminal.

EXAMPLES:

WINDOWS

```
crsp_show_db_info %crsp_mstk%
Create date  : Sat Nov 14 17:48:30 1998
Mod date     : Sat Nov 14 18:07:36 1998
Cut date     : 19981030
Binary type  : L (IEEE little endian)
Code Version : CA97_2.1
Product code : MAZ
Product name : CRSP NYSE/NYSE MKT/NASDAQ Monthly History
Data Version : 1
Settypes     Setids
 1(STK)       20(monthly stocks)
 3(IND)      400(monthly index groups)
 3(IND)      420(monthly index series)
Calid(Types)
  101( 3)    Monthly Calendar
  300( 3)    Annual Calendar
  310( 3)    Quarterly Calend
  100( 3)    Daily Calendar
  500( 3)    Weekly Calendar
```

UNIX

This command will summarize the monthly database

```
crsp_show_db_info $CRSP_MSTK
```

F. CRSP_SET_DB_INFO

This program allows a user with write permission to a CRSPAccess database to change database information fields. The fields that can be modified are data cut date, binary type, CRSPAccess version, product code, product name, and data version. It takes a parameter of the database location and a list of parameters for the other information fields.

USAGE

```
crsp_set_db_info inpath cutdate bintype version prodcode prodname data_version
```

PARAMETER VALUES

Inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

Cutdate 25-character string used to store the last date of updated data in the database. Can be KEEP to leave the current value.

Bintype 1-character string indicating type. Only the first character of the parameter is loaded. It is set to B for IEEE Big-endian and L for IEEE little-endian numeric fields. KEEP can be used to leave the current value.

Version 19-character string initially loaded with the version of the CRSPAccess library used to create the database. KEEP can be used to leave the current value.

Prodcode 11-character string with a short name of the database. KEEP can be used to leave the current value.

Prodname 47-character string with a description of the database. KEEP can be used to leave the current value.

data_version Integer number containing the version of the data in the database. KEEP can be used to leave the current value intact. +1 can be used to increment the current value.

EXAMPLE

This command will change the database name and description for a personal database created with the stk_ partial utility in the C:\mydata\ directory.

```
crsp_set_db_info c:\mydata\ KEEP KEEP KEEP SAMP1 "Subset database" KEEP
```

These utilities can be used to create copies of CRSP databases, restricted for example on the basis of exchange and share codes, or a select group of PERMNOs.

stk_partial	Creates a stock database from an existing one or to append securities from one existing database to another.
ind_partial	Creates an index database from an existing one or to append indexes from one existing database to another.
crsp_stk_subset	Creates a stock database from an existing one by subsetting data.
crsp_ind_subset	Creates an index database from an existing one by subsetting data

A. STK_PARTIAL

This program creates a new CRSPAccess CRSPDB stock database from an existing database or appends securities from one database to another. It can use a permlist or a data type restriction to subset the original database. It takes parameters on input and output databases, input and output set types, data wanted in the new database, and optionally a file containing PERMNOs to copy to the new database.

USAGE

```
stk_partial inpath outpath insetid outsetid
setwanted datawanted [permfile]
```

PARAMETER VALUES

inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

outpath Output CRSPDB directory path. The directory where the new database will be stored. This can be an empty directory or an existing directory. If it is an empty directory, a new database will be created. If there is already a CRSPDB in that directory, the selected PERMNOs will be added to that database.

insetid Input Setid. The input database set type. Use one of:

10 if a daily stock database

20 if a monthly stock database

outsetid Output Setid. The output database set type. Input and output index setids should be the same.

setwanted Set wanted. A binary flag to determine the modules that will be supported in the new database. Use 32767 to support all current modules. A module that is not loaded at this time cannot be added later to that database.

datawanted Data wanted. A binary flag to determine which modules will be copied to the new database. Use 32767 to copy all data to the new database. Data wanted must be a subset of set wanted. Individual wanted codes can be summed to load multiple modules. Individual modules codes are:

1 headers

2 events (names, distributions, shares, delists, NASDAQ info)

4 lows

8 highs

16 prices

32 total returns

64 volumes

128 portfolios

256 NASDAQ bids

512 NASDAQ asks

1024 Returns without dividends

2048 spread

4096 NASDAQ number of trades or alternate price dates

8192 alternate prices or open prices

16384 groups

permfile (optional) The name of a file with a list of PERMNOs, one to a line. This parameter is optional. If it is used, only the PERMNOs in the input file will have data copied to the new database. If the parameter is not used, all PERMNOs in the input database will be copied.

EXAMPLES

1. WINDOWS

If a file with PERMNOs of interest is available in the file, perm.inp, stk_partial can be run at the command prompt to create a subset monthly database in the folder c:\masub\ with the command:

```
stk_partial %crsp_mstk% c:\masub\ 20 20 32767
32767 perms.inp
```

If you change the CRSP_MSTK environment variable to point to C:\masub\, ts_print and mstkprint can be used to access this new database.

B. IND_PARTIAL

This program creates a new CRSPAccess CRSPDB index database from an existing database or appends indexes from one existing database to another. It can use an INDNO list or a data type restriction to subset the original database. It takes parameters on input and output databases, input and output set identifiers, data wanted in the new database, and optionally a file containing INDNOs to copy to the new database. Standard stock databases contain stock and index sets.

USAGE

```
ind_partial inpath outpath insetid outsetid
setwanted datawanted [indnofile]
```

PARAMETER VALUES

inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

outpath Output CRSPDB directory path. The directory where the new database will be stored. This can be an empty directory or an existing directory. If it is an empty directory, a new database will be created. If there is already a CRSPDB in that directory, the selected PERMNOs will be added to that database.

insetid Input Setid. The input database set type. Use one of:

400 if monthly series

420 if monthly groups

440 if daily series

460 if daily groups

outsetid Output Setid. The output database set type. Input and output index setids should be the same.

setwanted Set wanted. A binary flag to determine the modules that will be supported in the new database. Use 8191 to support all current modules. A module that is not loaded at this time cannot be added later to that database.

datawanted Data wanted. A binary flag to determine which modules will be copied to the new database. Use 8191 to copy all data to the new database. Data wanted must be a subset of set wanted. Individual wanted codes can be summed to load multiple modules. Individual modules codes are:

1 headers

2 rebalancing information for index groups

4	issue lists
8	portfolio used counts
16	portfolio total eligible counts
32	portfolio used weights
64	portfolio eligible weights
128	total returns
256	capital appreciation returns
512	income returns
1024	total return index levels
2048	capital appreciation index
4096	income return index levels

indnofile (optional) The name of a file with a list of INDNOs, one to a line. This parameter is optional. If it is used, only the INDNOs in the input file will have data copied to the new database. If the parameter is not used, all INDNOs in the input database will be copied.

EXAMPLE

WINDOWS

To add the S&P 500 Composite index series to a new database to another sample created by stk_partial, create an input file, indnos.txt with the INDNO 1000502 and run the command:

```
ind_partial %crsp_mstk% c:\masub\ 400 400 8191
8191 indnos.txt
```

C. CRSP_STK_SUBSET

crsp_stk_subset creates a new CRSPAccess database from an existing database by subsetting data using date range, frequency, and identifier screens. The program allows screening by date range, exchange, share type, NASDAQ National Market inclusion, and when-issued status, and can convert the frequency of time-series data.

USAGE

```
crsp_stk_subset inpath outpath insetid
outsetid paramfile logfile [permfile]
```

PARAMETERS

inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

outpath Output CRSPDB directory path. The directory where the new output CRSPAccess will be created. The directory must not include existing CRSPAccess data and the user must have permission and enough disk space to create the resultant database.

insetid Input Setid. The input database set type. Use:

10	for daily stock data
20	for monthly stock data

outsetid Output Setid. The output database set type. Input and output index setids should be the same unless the frequency of the standard time-series is changing from daily to monthly or less frequent calendar.

paramfile Parameter file. The name of a text file containing specifications of the subsetting to be done in converting the input database to the output database. See the Parameter Options Specifications table on the next page, for the subsetting options and the specifications of this file.

logfile Log file. The name of an output file to be created with logging information about the input securities. Each line in the log file will contain a PERMNO and a two-letter code on the status of the input PERMNO in the output database. The codes are:

OK if the security is kept in the output database with no changes to header information.

O# if the security is kept, but header information is changed because the most recent information changed after removing some part of the history.

1 if the header CUSIP changed

2 if header exchange code changed, and

4 if header SIC code changed.

DT if the security is excluded due to date range

EX if the security is excluded due to exchange

SH if the security is excluded due to share type

WI if the security is excluded due to when-issued screening

NM if the security is excluded due to NASDAQ National Market screening

permfile (optional) An optional file containing a list of PERMNOs, one to a line, of the securities in the input database to be subsetted. If this option is not given, all the securities in the database will be used.

PARAMETER FILE OPTIONS

The crsp_stk_subset program uses an input text file to select subsetting options. The input file consists of one or more lines, each with a keyword and a value. The keywords, definitions, and rules for use are as follows:

begdate Beginning date. The first date of valid data, in YYYYMMDD format, if a date restriction is made. If begdate is used it must be a trading date in the price calendar of the input database. enddate must also be used and must be after begdate. If begdate is not used, there is no restriction by date.

enddate Ending date. The last date of valid data, in YYYYMMDD format, if a date restriction is made. If enddate is used it must be a trading date in the price calendar of the input database. begdate must also be used and must precede enddate. If enddate is not used, there is no restriction by date.

want_exch A binary flag indicating which exchanges are kept in the output database. The following codes are used to indicate the exchanges to keep:

1 NYSE

2 NYSE MKT

4 NASDAQ

8 ARCA

If want_exch is not specified, no exchange restriction is made.

ex_subflag Modifies want_exch. Use:

0 (default) all data while trading on unwanted exchanges is not included in the new database.

1 the entire issue is removed if it ever traded on an unwanted exchange.

2 no restrictions are made if ever trading on a wanted exchange.

shrcode A code that determines which share types are kept in the result database. The possible values are:

1 restrict based on CRSP NYSE and NYSE MKT file

restrictions, including share codes with a first digit of 1,2,3, 4, and 7, and any second digit.

3 restrict based on CRSP Cap-Based Portfolios, including the same restrictions are 1, but also excluding ADRs, foreign-incorporated issues, REITs, and closed end investment funds.

4 restrict based on CRSP Total Return Indexes, including the same restrictions as 1, but also including share codes with a first digit of 9, including units including non-common components.

5 restrict based on specific digits of the CRSP share code. If this option is chosen, shrcodel and shrcoder must be specified.

shrcodel A string indicating which first digits of share codes are valid. The string is a 10-character string, with each character a 0 or 1. If the nth character in the string is a 0, securities where the first digit of the share code is n are excluded. If the nth character in the string is 1, securities where the first digit of the share code is n are kept.

For example, the line shrcodel 0101000000 would be used to keep only ordinary common shares and ADRs, with CRSP share codes with a first digit of 1 or 3. Shrcodel can only be used if shrcode and shrcoder are specified.

shrcoder A string indicating which second digit CRSP of share codes are valid. The string is a 10-character string, with each character a 0 or 1. If the nth character in the string is a 0, securities where the second digit of the share code is n are excluded. If the nth character in the string is 1, securities where the second digit of the share code is n are kept.

For example, the line shrcoder 1101101111 would be used to keep all secondary share types except foreign incorporated securities and closed-end funds incorporated outside the U.S. (share codes ending in 2 or 5) shrcoder can only be used if shrcode and shrcodel are specified.

sc_subflag modifies shrcode. Use:

0 (default) All data while classified as an unwanted share code is erased.

1 The entire issue is removed if ever classified as an unwanted share code.

2 No restrictions are made if ever classified as a wanted share code.

nmscode A numeric code that can further restrict issues trading on NASDAQ. The codes are:

1 Keep all Global Markets (Global Market and Global Select Market, and National Market before July 1, 2006. (NMSIND = 2, 5, or 6)

2 keep all Capital Markets (named Small-Cap before July 1, 2006) (NMSIND = 1, 3, or 4)

3 keep all All Trade Reported Tiers, excluding only Small-Cap before June 15, 1992 (NMSIND = 2, 3, 4, 5, or 6)

4 keep all Non-Trade-Reported Tiers, including only Small-Cap before June 15, 1992 (NMSIND = 1)

5 keep all Global Select Market and National Market (NMSIND = 2 or 6)

6 keep all Global Market Only(named National Market before July 1, 2006) (NMSIND = 2 or 5)

7 Global Select Market Only (NMSIND = 6)

nms_subflag modifies nmscode. Use:

0 (default) all data while trading on unwanted NASDAQ market is erased.

1 the entire issue is removed if ever trading on an unwanted NASDAQ market.

2 no restrictions are made if ever trading on a wanted NASDAQ market.

wicode A three character code used to restrict types of when-issued trading. When-issued trading is trading supported by an exchange of an issue that does not officially exist but is expected to exist in the future. The program supports three types of when-issued trading:

1 initial - an anticipated new issue is traded before its trading status becomes official.

2 ex-distributed - a post-split or post-reorganization version of a security is traded before the ex-date, simultaneously with the regular issue, with prices independent of the regular issue.

3 reorganization - a security undergoing a reorganization, such as a Chapter 11, trades with the expectation of returning under a plan of reorganization.

CRSP subscriber databases currently include only reorganization when-issued trading. The default is to make no further restrictions. Each of the three characters in wicode refers to the restrictions made for that type of when-issued trading.

1st digit
0 to make no restrictions, 1 to erase when-issued price range and erase name information, 2 to erase when-issued price range but keep name information.

2nd digit
0 to make no restrictions, 1 to delete ex-distributed issues

3rd digit
0 to make no restrictions, 1 to erase reorganization when-issued price ranges but keep name information, 2 to keep reorganization when-issued price ranges but delete name information, and 3 to erase price ranges and name information

nameflag A numeric code determining how name structures are restricted when restrictions are made using begdate and enddate. The values are:

0 keep entire name history

1 delete names no longer valid before range starts

2 delete names beginning after range ends

3 delete names before and after ranges

shareflag A numeric code determining how shares observations are restricted when price ranges are restricted. The values are:

- 0 erase raw shares observations out of range
- 1 keep raw shares observations outside of valid price range if they are used to derive shares outstanding for any time within the kept price range
- 2 keep the last raw shares observation that predates the first trading on NYSE, NYSE MKT, NASDAQ, or ARCA if there are no valid raw shares observations once trading starts and the first exchange is valid according to exchange restrictions

pct Can be used to summarize NASDAQ information structures by number of market makers. If 0 or unspecified, then all NASDAQ information structures are kept. Otherwise pct is treated as a percentage change. If the only change in a NASDAQ information event is a market maker change from the last kept NASDAQ information structure less than pct, that structure is not copied to the new database.

adjdt Base date if price, volume, or share values are adjusted. Values will be as is on this date, and adjusted in the source data using splits or other events before or after the adjustment date. The date must be in YYYYMMDD format. adjdt can be 0 to adjust each period so the last date in the period is used for the base date. This can be used to adjust data to the same basis before summarizing when changing the base frequency of the database.

factype Type of adjustments made for prices. Possible values are:

- -1 no adjustments will be made, cancels adjdt
- 0 prices are adjusted for all distributions with nonzero price factors
- 1 prices are adjusted only for stock splits and stock dividends

sum_code Set to 0 if no frequency conversion will be done to create the new database and set to 1 if frequency conversion will be done. Currently only conversion from daily to monthly is supported.

sum_prc Sets rules for loading the closing price time-series when changing the base frequency of the database. Possible values are:

- 0 the source price on the last day of the target period
- 1 the average of the absolute values of source prices during the target period
- 2 the median of the source prices during the target period. Absolute values of prices are used for ranking. Finding medians has a high cost in time and resources.
- 3 no prices are loaded to the target database
- 4 the nonmissing price from the source prices closest to the end of the period. The program will look in the previous and next target periods up to one hundred source periods in either direction if the last price is missing. If there is a price equally distant forward and

backward, the earlier price is used. If a price is used that is not the last day of the period it is adjusted for all price factors between the last day of the period and the actual date of that price.

sum_sp Sets rules for loading the Bid or Low Price and Ask or High Price time-series when changing the base frequency of the database. Possible values are:

- 0 the last source Bid or Low Price and Ask or High Price are loaded to the target Bid or Low Price and Ask or High Price time-series.
- 1 the highest askhi in the source time-series within the target range is loaded to askhi, and the lowest bidlo in the source time-series within the target range is loaded to bidlo
- 2 the highest price in the source time-series within the target range is loaded to askhi, and the lowest bidlo in the source time-series within the target range is loaded to bidlo. If bid/ask averages marked as negative prices are present, the absolute value of them are used for ranking, but if chosen the negative sign is kept.
- 3 no Bid or Low Price or Ask or High Price data is loaded to the target database

sum_vol Sets rules for loading the volume time-series when changing the base frequency of the database. Possible values are:

- 0 The sum of all volumes in the target period are loaded to the target volume time-series
- 1 The average of source nonmissing volumes in the target range is loaded to the target volume time-series
- 2 Median of source nonmissing volumes in the target range is loaded to the target volume time-series
- 3 No volume data is loaded to the target database

sum_ret Sets rules for loading the returns time-series when changing the frequency of the database. Possible values are:

- 0 No returns data is loaded to the target database
- 1 Source returns in the target range are compounded and loaded to the target returns time-series
- 2 Source returns and returns without dividends are compounded and loaded to the target returns timeseries
- 3 Holding Period Total Returns and returns without dividends are recalculated from the price time-series (sum_prc cannot be 3)

sum_spread Sets rules for loading auxiliary time-series, including Bid, Ask, Number of Trades, Price Alternate, and Spread between Bid and Ask, when changing the frequency of the database. Possible values are:

- 0 Load the last spread in each source price range to the target database. Only the Bids and Asks stored in the Bid or Low Price and Ask or High Price time-series are used.
- 1 Bid, Ask, Number of Trades,

Price Alternate, and Spread between Bid and Ask time-series are not loaded in the target database

2 Bid, Ask, Number of Trades, Price Alternate, and Spread between Bid and Ask time-series are loaded with the following rules:

The last nonmissing Price or Bid/Ask Average from the source within the target range is loaded to the Price Alternate time-series. The Number of Trades time-series is loaded with the corresponding dates within the source where the last nonmissing Price or Bid/Ask Average was found. Bid and Ask are loaded with the corresponding value in the last target period of the source bid and ask time-series. Spread between Bid and Ask is loaded as in option 0.

EXAMPLE

WINDOWS

The parameter file is an ASCII file where users can specify the various parameters. Here is an example of a parameter file, param.txt:

```
begdate 19940103
enddate 19950131
want_exch 2
shrcode 5
shrcodel 0100000000
shrcoder 0100000000
nmscode 0
wicode 0
nameflag 0
shareflag 1
pct 25
adjdt 0
factype -1
sum_code 0
sum_prc 0
sum_sp 2
sum_vol 1
sum_ret 0
sum_spread 2
```

This file will result in a database with NYSE MKT data for securities with a share code of 11 with data from January 3, 1994 until January 31, 1995.

To create the new database in c:\dasub\ using the daily stock database as input, using these parameters loaded to a file called param.txt and using all PERMNOs,

```
crsp_stk_subset %crsp_dstk% c:\dasub\ 10 10
param.txt subset.log
```

D. CRSP_IND_SUBSET

crsp_ind_subset creates a new CRSPAccess database from an existing database by subsetting index data using date range. The program can also be used to add index data to an existing CRSPAccess database.

USAGE

```
crsp_ind_subset inpath outpath insetid
outsetid setwanted datawanted begdate
enddate [indnofile]
```

PARAMETERS

inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

outpath Output CRSPDB directory path. The directory where the new database will be stored. This can be an empty directory or an existing directory. If it is an empty directory, a new database will be created. If there is already a CRSPDB in that directory, the selected INDNOs will be added to that database.

insetid Input Setid. The input database set type. Use one of:

- 400 monthly series
- 420 monthly groups
- 440 daily series
- 460 daily groups

outsetid Output Setid. The output database set type. Input and output index setids should be the same.

setwanted Set wanted. A binary flag to determine the index modules that will be supported in the new database. Use 8191 to support all current modules. A module that is not loaded at this time cannot be added later to that database.

datawanted Data wanted. A binary flag to determine which modules will be copied to the new database. Use 8191 to copy all data to the new database. Data wanted must be a subset of set wanted. Individual wanted codes can be summed to load multiple modules. Individual modules codes are:

- 1 headers
- 2 rebalancing information for index groups
- 4 issue lists
- 8 portfolio used counts
- 16 portfolio total eligible counts
- 32 portfolio used weights
- 64 portfolio eligible weights
- 128 total returns
- 256 capital appreciation returns
- 512 income returns
- 1024 total return index levels
- 2048 capital appreciation index levels
- 4096 income return index levels

begdate The beginning date, in YYYYMMDD format, of index data to load to the new database.

enddate The ending date, in YYYYMMDD format, of index data to load to the new database.

indnofile (optional) The name of a file with a list of INDNOs, one to a line. This parameter is optional. If it is used, only the INDNOs in the input file will have data copied to the new database. If the parameter is not used, all INDNOs in the input database will be copied.

rewrite_crspdb	Copies a CRSPAccess database to a new directory or converts data from one binary type to another
crsp_stk_scd_load	Creates secondary indexes or keys for a database
crsp_stk_headall	Creates a header file with user-specified options
rsp_ind_headall	Creates a header file for an index database, used primarily for a subset database
crsp_crlf2lf	Removes carriage returns
crsp_lf2crlf	Adds carriage returns

A. REWRITE_CRSPDB

rewrite_crspdb copies a CRSPAccess database to a new directory. It can be used to convert the database between IEEE little-endian and IEEE Big-endian data formats and compress or expand storage space needed for data modules.

USAGE

```
rewrite_crspdb inpath outpath mode fillpadwhen
[fillpadfile]
```

PARAMETERS

inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

outpath Output CRSPDB directory path. The directory where the new output CRSPAccess will be created. The directory must not include existing CRSPAccess data and the user must have permission and enough disk space to create the resultant database.

mode Two letter database conversion code. Values are:

rw copy the data as is

wx convert data to opposite binary type, between IEEE little-endian and IEEE big-endian

fillpadwhen Numeric code that determines whether data modules are padded to allow padding for updated data. Codes are:

0 Use module defaults

1 Never fill, always store as efficiently as possible

2 Always use module fill factors

3 Only fill when creating new records

4 Only fill when editing existing records

fillpadfile (optional)

Name of a text file containing fill pad factors to override defaults for individual data modules in the database. An example file that allows for approximately one year of growth can be found in a file named crspdb_modfill.dat in the CRSP_LIB directory.

Each line in the fillpadfile contains a module ID number, a fillpadwhen code, and a fillpad amount code. The fillpadwhen overrides the fillpadwhen default for the module when the fourth parameter is 0, and the fillpad amount overrides the default for the module. A positive fillpad amount is the number of bytes extra to store for each record in the module. A negative fillpad amount is interpreted as a percentage increase abovespace needed to store for each record in the module.

EXAMPLES

Windows

To convert a subset database created on Windows in little-endian and stored in c:\mysubset\ so it can be used on Sun Solaris which requires Big-endian, use the command:

```
rewrite_crspdb c:\mysubset\ c:\mysubsun\ wx 1
```

The new Big-endian subset database will be stored in c:\mysubsun\, and uses the never fill option for the `fillpadwhen` parameter.

B. CRSP_STK_SCD_LOAD

This program creates secondary indexes or keys for a database. It should be used any time a new subset database is created or edits are made to an existing database. CRSP supplied databases always have all secondary indexes loaded. The program can create indexes on multiple keys. The program automatically erases any keys previously stored in the database.

USAGE

```
crsp_stk_scd_load inpath insetid inputwanted
indexwanted [permfile]
```

PARAMETERS

inpath

Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

insetid Input Setid. The input database set type. Use one of: 10 if a daily stock database. 20 if a monthly stock database.

inputwanted The data required to build the index.

- 1 if only header data are needed to build index
- 3 if header data and events data are needed to build index.

indexwanted A binary flag to select the indexes to build.

- 1 PERMCO (only header needed).
- 2 header CUSIP (only header needed).
- 4 historical CUSIP (header and names needed).
- 8 historical SIC (header and names needed).
- 16 header ticker; active securities at the cut date of the file (only header needed).

Add numbers in this parameter to select the indexes, such that the parameter value for PERMCO and Historical SIC would be 9. Use 31 to build all secondary indexes or add the flags for one or more types.

permfile (optional)

If this parameter is supplied, it must be the name of a text file containing PERMNOs, one per line. If the parameter is not used, all securities in the database will be used to create the secondary indexes. If the parameter is supplied, the indexes will only be based on the securities in the permlist and other securities will be unavailable using a secondary index read.

EXAMPLES

Windows

To create secondary indexes PERMCO and historical CUSIP in a subset monthly database previously created and stored in c:\masub\, use the command:

```
crsp_stk_scd_load c:\masub\ 20 3 5
```

C. CRSP_STK_HEADALL

DESCRIPTION

crsp_stk_headall allows the user to create a header file with user specified options. It is useful primarily for a sub set database, or to compact a name history list. If the files are created in the same directory as the database, and the CRSP_MSTK or CRSP_DSTK environment points to the database, the search utilities will function with that database.

File options include:

- Recreation of standard header file for use with subset databases.
- SIC Codes included in output with YY dates formatted for an 80-character row.
- SIC Codes included in output with YYYY dates exceeding an 80-character row.
- A historical security list containing identification information available in the stk_print /n option. (pipe-delimited fields include: PERMNO, PERMCO, CUSIP, Company Name, Ticker Symbol, Exchange Code, Share Code, SIC Code, Begin Date of Name Record, End Date of Name Record. This option exceeds 80-characters.
- A historical security list containing identification information in a fixed-width file format as follows: PERMNO, PERMCO CUSIP, Company Name, Ticker Symbol, Share Class, Trading Ticker Symbol, Exchange Code, Primary Exchange, Security Status, Trading Status, Share Code, SIC Code, NAICS, Begin-End Date Range for record. This option exceeds 80-characters.

Parameters are an input database and setid, and four output files. The output files include header information, name history information, header PERMNO/CUSIP cross-reference, and historical PERMNO/CUSIP cross-reference.

USAGE

```
crsp_stk_headall inpath insetid histfile
headerfile permcusiphistfile permcusipfile
[date/sic or namelist/new_namelist]
```

PARAMETERS

inpath Input CRSPDB directory path. The directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

insetid Input Setid. The input database set type. Use one of:

10 if a daily stock database

20 if a monthly stock database

histfile A file name for the name history header file. A file with this name will be created with one line per name history event for each PERMNO. Each line contains PERMNO, PERMCO, name CUSIP, company name, ticker, exchange code, SIC code, and effective range of that name information. Options include:

- filename.ext
- none*

If the file is named headfile.dat in the database directory, the dstksearch or mstksearch utility can be used to search this file to find identifiers. Additional output specifications for histfile may be selected with the optional namelist*/ new_namelist* options described below.

headerfile A file name for the name header file. A file with this name will be created with one line per PERMNO. Each line contains PERMNO, PERMCO, CUSIP - Header, latest company name, latest ticker, latest exchange code, latest SIC code, and date range. Options include:

- filename.ext
- none*

permcusiphistfile A file name for a PERMNO/CUSIP historical cross-reference file. A file with this name will be created containing a row with CUSIP and PERMNO for every unique historical CUSIP assignment in the CRSP name history in the database. Options include:

- filename.ext
- none*

permcusipfile A file name for a PERMNO/CUSIP header file. A file with this name will be created containing a row with

header CUSIP and PERMNO for every security in the database. Options include:

- filename.ext
- none*

date or sic (optional)

The date option enables you to output the dates with years in YY format rather than YYYY.YY results in an 80-character row with two-digit years. The SIC code is not included in the default histfile option. To include the SIC Code in the output, the windows will exceed 80 characers. 132 results in a row wider than 80-characters, retaining both SIC code and four-digit years in the output.If crsp_stk_headall is run without the 132 optional parameter, it will not contain SIC Codes. These options do not work with the namelist/new_namelist options described below.

namelist or new_namelist (optional)

namelist* and new_namelist* options are parameters that further specify the output of the histfile option described above. Only one of these options can be run at one time. Note that these options don't work with the optional date/sic output specification described above.

namelist can be used to create a compacted security list containing PERMNO, PERMCO, CUSIP, Company Name, Ticker Symbol, Exchange Code, Share Code, SIC Code, Begin Date of Name Record, End Date of Name Record.) This option exceeds a 80-characters.

When the namelist file is included in the parameters, and the command string is followed by an n, the compacted file will be produced.

namelist_new can be used to create an historical security list containing identification information containing PERMNO, PERMCO CUSIP, Company Name, Ticker Symbol, Share Class, Trading Ticker Symbol, Exchange Code, Primary Exchange, Security Status, Trading Status, Share Code, SIC Code, NAICS. This option exceeds a 80-characters.

When the namelist file is included in the parameters, and the command string is followed by an 132n, the compacted file will be produced.

EXAMPLES

Windows

To create name history header file, headfile.dat and header file, cheadfile.dat with cross-reference files permcusip.dat and cpermcusip.dat with both the SIC code and dates in four-digit years using a daily subset database in c:\mydir\, use the command (all on one line):

```
crsp_stk_headall c:\mydir\ 10 c:\mydir\headfile.
dat
```

```
c:\mydir\cheadfile.dat c:\mydir\permcusip.dat c:\
mydir\cpermcusip.dat 132
```

D. CRSP_IND_HEADALL

DESCRIPTION

crsp_ind_headall creates header files for an index database. It is useful primarily for a subset database. If the files are created in the same directory as the database, and the CRSP_MSTK or CRSP_DSTK environment points to the database, the index search utilities will function with that database.

Parameters are an input database and setid and one output file. The output file includes indno, setid, and index description.

USAGE

```
crsp_ind_headall inpath insetid headfile
```

PARAMETERS

inpath Input CRSPDB directory path. The

directory where the database is stored. Standard environment names can be used such as $CRSP_DSTK or $CRSP_MSTK on UNIX, %crsp_dstk% or %crsp_mstk% on Windows.

insetid Input Setid. The input database set type. Use one of:

400	if monthly series
420	if monthly groups
440	if daily series
460	if daily groups

headfile A file name for the index header file. A file with this name will be created with one line per index, with INDNO, SETID, and index description.

If the file is named headind.dat in the database directory, the dindsearch or mindsearch utility can be used to search the file to find identifiers.

EXAMPLES

Windows

To create a monthly header file, headind.dat, for indexes for a new subset database in c:\masub\, use the command:

```
crsp_ind_headall c:\masub\ 400 c:\masub\headind.
dat
```

E. CRSP_CRLF2LF

crsp_crlf2lf removes carriage returns from files created in Windows so the files can be used on Unix systems.

It is a command line utility, which take two parameters, an input file name, and the desired output file name. A new file is created. For example, at the command line you would type the following,

```
crsp_crlf2lf filename1 filename2
```

where filename1 is the name of the file you are converting, and filename2 is the file that you are creating with the change.

F. CRSP_LF2CRLF

crsp_lf2crlf adds carriage returns at the end of lines so files created on our system can be used on Windows.

It is a command line utility, which take two parameters, an input file name, and the desired output file name. A new file is created. For example, at the command line you would type the following,

```
crsp_lf2crlf filename1 filename2
```

where filename1 is the name of the file you are converting, and filename2 is the file that you are creating with the change.