

NAME

bbnews, bbr, bbpost, rbbpost – bulletin board services

SYNOPSIS

```
bbnews [newsgroup(s)...] [-subject | -newsgroups | -count |
    -catchup | -mailbox | -showlines -query[=text_string] | -subscribe | -unsubscribe | -description ]
    -new | -old | all | -every ]
    [-a ] [-e ] [-r ] [-o options ] [-u bbnewsrsrc ] [-sort mode ] [-interactive ] [-V? ] [-L term-
    lines ] [-N newsspooldir ]
bbr [newsgroup(s) ...] [-a ] [-e ]
bbpost [newsgroup] [-edit ] [-s subject ] [-a attachment ]
rbbpost newsgroup
```

DESCRIPTION

These programs provide enhancements over the standard UNIX *news* mechanism that include simplified preparation, the categorization of articles by interest group, and the concurrent posting of bulletins on multiple machines. This system also provides advantages over the old UNIX *msgs* system. These programs are part of a software tool package called *Personal Communication Services* or **PCS** in abbreviated form. The PCS software tools are a set of cooperating and integrated programs that perform personal communication and management type functions for users. Some services available with the PCS package include: mail, bulletin board, message display, calendar, and event reminder type services. Only the bulletin board related programs are primarily discussed further here.

Basically, the bulletin board facility consists of a newsgroup spool area (someplace in the UNIX file systems) which contains *articles* which have been posted to various *newsgroups* within the news spool area. Articles are similar to email messages and are placed on various newsgroups or "bulletin boards". A newsgroup is a subarea within the entire news spool area that contains articles which are usually related by similar subject matter. The notion of what articles belong to which newsgroup is purely a user one and the system doesn't try to enforce any policy of where user articles should be posted. Hierarchical newsgroups are supported. When newsgroups are nested within each other, the name of the newsgroup is a composite type of name similar to a UNIX path name but with periods used to separate parent newsgroup names from the subnewsgroups within them. Newsgroups can be nested to any level. Some example newsgroup names might look like:

```
general
general.newuser
tools
tools.i286
tools.mc68
tools.latk
tools.ogs
news.ho
news.lz
news.dr
msgs.ho
msgs.lz
misc
```

Associated with each newsgroup and user is the concept of currency. Currency refers to the last time a user has read the articles on any particular newsgroup. All articles which have been created or modified since the last time the newsgroup was read are considered current.

A user can individually subscribe to the newsgroups of their choice. The normal means to subscribe or unsubscribe to newsgroups, if selected subscription is even wanted, is usually performed by either using the *bb* program's command line options `-subscribe` and `-unsubscribe` or interactively while reading newsgroups by using the interactive commands `subscribe` and `unsubscribe`. Once at least one newsgroup is subscribed to, only that newsgroup and any others specified in the environment variable

BBBDS will be selected for processing (interactively or not) by default. Any newsgroups which are subscribed using the *bb* subscription mechanisms are added to the set of default newsgroups presented to the user. Any newsgroups subscribed to by using the *bb* program's subscription mechanisms can usually **only** be unsubscribed also by using the *bb* program's unsubscription mechanism. This is because the *bb* program stores subscription information in the user's newsgroup list file (usually `.bbnewsrc` in the user's HOME directory), rather than user's login program environment (as older subscription mechanisms did). Default newsgroups to be selected for reading (or other processing) can also be specified by the environment variable `BBBDS`. This can be set by either manual editing of the user's login profile related information (usually in the user's file `.pcprofile`) or by means of one or more utility type programs designed to aid in bulletin board newsgroup selection and subscription. Finally, (and highly not recommended) newsgroups can also be subscribed to by manual editing of the user's newsgroup list file. Within the user newsgroup list file, those newsgroups followed by an exclamation character are considered unsubscribed while those followed by a colon character are considered subscribed. A union of the list of newsgroups in the environment variable `BBBDS` and the subscription information from the user's newsgroup list file is used as the default set of newsgroups to scan for new articles. Other newsgroups can be scanned for articles when one or more newsgroups are given on the command line at the invocation of the *bb* program.

The *bb* Program

When invoked without arguments, the *bb* program prints all unread articles on the set of newsgroups selected for reading and updates the user's currency time with respect to these newsgroups. When invoked with a newsgroup name, the program prints the unread articles and updates the currency time on that newsgroup.

The default behavior of the program in the absence of any of the options:

```
-subject
-newsgroups
-count
-catchup
-query
-mailbox
-subscribe
-unsubscribe
```

is to read unread articles from the newsgroups that are selected for reading by the user. By default, selected newsgroups are those that the user is subscribed to. If the user has listed one or more newsgroups on the command line, then these are used instead of the user's subscribed newsgroups. The program displays each unread article from the selected newsgroups and then pauses to prompt the user for one of the following commands:

<i>Command</i>	<i>Action</i>
next	This command displays the next unread article. This is default action and can also be entered with a plain carriage return.
previous	This command can be used to possibly display the previous (already read) article in the current newsgroup. Currently, there are limitations to this command. Since newsgroups can actually be realized by multiple directories in the UNIX file systems, not all previous articles are currently available for retrieval due to limitations in the software. Only previous articles that are stored in the same UNIX directory can be retrieved. Also, previous articles that the user read in previous bulletin board reading sessions are currently not available either. One or both of these restrictions may be removed in the future.
review	Display this article again.
follow	This command is used to follow- up on the current article by posting a new article to the same newsgroup. The <i>bbpost</i> program is invoked so that the user can enter a follow- up article.

- reply** invoke *pcsmail* (or *sendmail*) with the recipient and subject defaulted. This is analogous to the reply in *readmail* and facilitates responses to the author of an article.
- save** This command saves the previously read article (the current one) in the user's "new" mailbox.
- print** Print out the previously read article to the user's default printer as specified with the `PRINTER` environment variable. The article is printed in a specially prepared format for news articles. Essentially, about two pages worth of article are printed per paper page in landscape orientation. The underlying print mechanism that is invoked is the PCS print program *prt-pcsmail*. This command can take additional options. Any options specified are passed down to the *prt-pcsmail* program. This is most commonly used to change the printer destination or the number of copies with a command like:
- ```
print -d di2 -c 2 -s 2
```
- subscribe** This command marks the current newsgroup as being subscribed to the user. This newsgroup will now be presented (or processed) by default for the user. Note that newsgroups can also be essentially subscribed to if they are named in the `BBBDS` environment variable on all program invocations (even if otherwise unsubscribed to using this command or by other means).
- unsubscribe** This command marks the current newsgroup as being unsubscribed by the user. This newsgroup (the current one) will no longer be presented to the user by default unless the user uses the *-e* option on the program invocation (or some other means of getting the newsgroup presented). Note that newsgroups will still be presented to the user if they happen to be named in the `BBBDS` environment variable.
- Next** This command is used to skip reading the rest of articles in the newsgroups that is currently being read and start displaying unread articles from the next newsgroup that has any unread articles (if there is one). Articles that are skipped are marked as being read.  
**This command is not implemented yet.**
- Previous** This command is used to go back to a previous newsgroup and start reading the last article in that newsgroup.  
**This command is not implemented yet and may not be for quite a while.**
- Skip** This command is used to skip reading the rest of articles in the newsgroup that is currently being read and start displaying unread articles from the next newsgroup that has any unread articles (if there is one). Articles that are skipped are not marked as being read.
- Catchup** This command is used to skip reading the rest of articles in the newsgroup that is currently being read and start displaying unread articles from the next newsgroup that has any unread articles (if there is one). Articles that are skipped are marked as being read.  
**This command is not implemented yet.**
- quit** Terminate bulletin board reading (and update currency).
- ?** This prints out some brief help consisting of some of the commands and their function.
- Save** This is a sneaky (previously undocumented) command which appears to suspend the current bulletin board reading session but the exact consequences of

this is not known by the author and the user is advised to play with this at her own risk.

| (*pipe character*)

This is a previously undocumented command which pipes the current article out to a program specified after the pipe character. This is an experimental command.

> (*redirect output character*)

This is a previously undocumented command which writes the current article out to a file name which follows after the output redirect character. This is an experimental command.

The *bb* program may also be invoked with the following options preceded by a "-" character (or "+" in the case of the *old* option -- deprecated). These options can usually be specified in as few letters as necessary to distinguish them uniquely. Only one option of:

- subject
- newsgroups
- count
- catchup
- query
- mailbox
- subscribe
- unsubscribe

(or *+old* if still supported by the system), may be specified at one time. In the absence of one of these preceding options, the program **reads** unread articles on the newsgroups selected. Along with the modes of the program specified with the options listed above, these are basically the main functions (not including that provided by *+old*) that the program performs. Unless the "-e" option is specified, only the newsgroups to which the user has subscribed will be accessed.

The execution mode of the program can be changed with the following command line options:

- subject**      Display the subjects of articles.
- newsgroups**      List the names of the newsgroups. An old option (**- boards**) performs the same function as this option.
- count**      This option causes the number of articles on each newsgroup (specified or subscribed to by the user) which are newer than the user's corresponding currency time for each specified newsgroup to be counted and the resulting counts outputted.
- query**      This option simply determines if there are any unread articles in the user's subscribed newsgroups which have not been read yet. The usual purpose for this option is to quickly determine if new articles have been posted to the system since the last time the user read any of them. Similar to the *-subject* and the *-count* options, this option is useful to put into one's login profile so that the user can be notified of new articles when logging into the system. If the option is given in the form with the optional text string, as in:

```
bb -query="New articles."
```

then the text string is printed out if there are new unread articles available.

- catchup**      This option causes the user's currency file to be brought up-to-date as if the user just read all of the unread articles in the newsgroups that the user is subscribed to. This is very useful for new users that do not yet have a currency file and need to catchup with reading the articles without having to actually read all of the outstanding ones. New users can also copy a currency file from another user as a way

to "catchup" also.

- subscribe** This option causes any named newsgroups on the command line to be marked as subscribed. Reference the interactive "subscribe" command above for more information. This option cannot be used when the default set of the user's newsgroups are selected. This default set of newsgroups is selected when no newsgroups are named on the program invocation.
- unsubscribe** This option causes any named newsgroups on the command line to be marked as unsubscribed. Reference the interactive "unsubscribe" command above for more information. This option cannot be used when the default set of the user's newsgroups are selected. This default set of newsgroups is selected when no newsgroups are named on the program invocation.
- +old** Print the subjects of all articles regardless of currency. This option is depreciated in favor of:  

```
bb -subject -a
```

which provides the same function.

The following options display information about the program:

- V** The program's version is printed to standard error and then the program exits.
- ?** This option causes the program to print a brief description of command line options and then the program exists.
- D** This option causes internal program debugging information to be written to standard error as the program executes.

The behavior of the *bb* program can be modified with the following options:

- L *term*lines** This option sets the number of terminal lines that will be used by the program to *term*lines. This will override the `LINES` environment variable if it is specified.
- showlines** This argument set the number of article content lines that are displayed in interactive reading mode. The number of lines shown by default are determined by the number of lines supported (or specified) for the terminal being used. The actual number of article content lines shown will always be less than or equal to the value determined from the number of terminal lines present regardless of the setting of this argument value.
- o** This option modifies the program behavior to act only on "old" articles rather than the default behavior which is to act only on "new" articles. The definitions of "old" and "new" are relative with respect to the user's newsgroup currency time. If the `-a` option is also supplied, it takes precedence over this option.
- a** Display all articles for whatever newsgroups are selected, regardless of currency, both "old" and "new". This option takes precedence over the `-o` option if it is also present.
- r** This option is used to reverse the order in which articles are visited. Normally when this option is omitted, articles are visited oldest first and latest last. If this option is given, then articles are visited latest first and oldest last.
- e** Modify the behavior of the *bb* program to make reference to every newsgroup that exists in the bulletin board spool directory area (`BBDIR`). When combined with other options, this permits newsgroups that are not subscribed to by the user to be accessed.
- interactive** This option selects whether *bb* behaves interactively or not. The presence of this option means that the program will **not** run interactively. Actually the program

runs non-interactively for all program modes except for the regular reading of news articles. This option is used to make the regular reading of news articles non-interactive also! The most common use of this is to catch up on unread articles non-interactively. Some clever users may use the non-interactive mode of the program to simply get the articles written out for postprocessing of some sort. The "mailbox" option is usually better for this sort of use but non-interactive mode is retained for backward compatibility for some old time users. This option is only used during "read" mode operation.

**- mailbox** This option is used by the *bbr* program (described later) to have the news articles (selected by currency time) formatted for use by a mail reading program like **vmail** or **readmail**. This option can also be used by those users who want to write various article filtering programs or the like for article sorting or alternate presentations. This option only has meaning while **reading** articles. This option is only used during "read" mode operation.

**- description** This option can only appear alone (like most other program mode options) or in conjunction with the `-count` option. When used with the `-count` option, the unread newsgroup article counts are printed (only for newsgroups with unread articles unless the `-a` or `-o` options are also specified. The newsgroups description, if there are any, are printed after the newsgroup names and article counts. If the `-description` option is specified alone, then all subscribed newsgroups are listed whether or not there are unread articles on them. The information printed looks the same as the use with the `-count` option except that no article counts are given.

**- sort mode** This options allows for changing which date associated the articles in the newsgroups to sort on. The following sorting modes are available:

|         |                                                                                                                                                                                             |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| modify  | This is specified to use the modification date of the article. This is usually the same or similar to the date that the article was spooled on the local system but can sometimes be later. |
| arrive  | This is the date that the article arrived at the local system.                                                                                                                              |
| post    | This is the date that the article was posted by the originating user.                                                                                                                       |
| compose | This is the date that the article was composed by the originating user.                                                                                                                     |

The default sorting mode is `modify` unless another is explicitly set. The `-r` option can still be used with any of these sorting modes.

**- envdate date** This option can be used to assign a date to the article envelope. The envelope of the article is not of general usefulness but can sometimes be used in conjunction with other software that can manage or otherwise manipulate articles in some way. Normally, this option is only useful in conjunction with the `-mailbox` option.

Any previous envelope on each article (if it had one) is pushed down the envelope stack and a new envelope is formed with the new date specified. The new date can be any one of the following literals:

|        |                                                               |
|--------|---------------------------------------------------------------|
| modify | Use the article's modification date as the envelope date.     |
| arrive | Use the arrival date of the article as the new envelope date. |
| post   | Use the posting date of the article as the new envelope date. |

|                        |                                                                                                                        |
|------------------------|------------------------------------------------------------------------------------------------------------------------|
| compose                | Use the composition date of the article as the new envelope date.                                                      |
| now                    | Use the current date (and current time) of the article as the new envelope date.                                       |
| <i>yymmddHHMMSSZZZ</i> | Use a date created from the string of digits (and followed by an optional time name) as the new date for the envelope. |

All articles that are processed during the current run will receive a new envelope with the requested date.

**- envfrom** *from\_address*

This option allows for setting a new email address in the envelope of articles that are processed. Normally, this option is only useful in conjunction with the `- mailbox` option. The *from\_address* component should be for a standard email address.

The following program invocation options to the `bb` program provide for testing:

**- ROOT** *programroot*

This argument provides for the program root for this execution of the `bb` program to be changed to the *programroot* directory path. Without the use of this argument, the program will use the value of the `PCS` environment variable to get its root directory. In the absence of the `PCS` environment variable, some default is tried (usually `/usr/add-on/pcs`).

**- TMPDIR** *tmpdir*

This argument can be used to change the directory used to hold temporary files. In the absence of this argument, the environment variable `TMPDIR` is tried to get a directory to use for temporary files. In the absence of even the environment variable, the directory `/tmp` is usually used.

### The *bbr* Program

The *bbr* program collects all the "current" articles from the user's selected newsgroups and puts them into the user's mailbox *bbtemp* (user's file `${HOME}/mail/bbtemp`) suitable for viewing with a mail reader program like *rdmail* or *vmail*. These articles extracted by the *bbr* program are no longer considered "current" and will not show up in a command like `when bb -subject` is run.

### The *bbpost* Program

The *bbpost* program is used for preparing and posting articles to newsgroups. The user is prompted for the newsgroups (sometimes referred to as a *board*) to post to (prompt is `NEWSGROUP` or `NEWSGROUPS`), the subject of the article (prompt is `SUBJECT`), and the text of the article. The *bbpost* program adds *FROM* and *DATE* information to the article before submission into the bulletin board system.

After the article is entered by the user, *bbpost* prompts for one of the following commands:

*Command Action*

|               |                                                                                                    |
|---------------|----------------------------------------------------------------------------------------------------|
| <b>post</b>   | Post the article to the specified newsgroup.                                                       |
| <b>review</b> | Print out the article for review by the user.                                                      |
| <b>edit</b>   | Edit the article (the <code>NEWSGROUPS</code> and <code>SUBJECT</code> fields may also be edited). |
| <b>quit</b>   | Terminate session without posting the article.                                                     |

The *bbpost* program then posts the article to the bulletin board system. Note that posted articles are usually transported throughout the bulletin board system which may contain many machines with several different newsgroup spool areas. Up to an hour or more of time may be needed for an article to appear in other

machine spool areas, depending on how articles are transported.

If the `edit` option is used, `bbpost` will enter the editor for the typing of the message. The "`-s subject`" command line option will bypass asking the user for a subject and will use the supplied subject (specified by `subject`) instead. If `subject` has spaces or other shell offending characters in it, it should be quoted appropriately so that the shell will leave it alone. The "`-a attachment`" command line option will append a file specified as `attachment` to the composed article. The program will still ask the user to enter some text and after the user types the period character to end the text, the program appends the specified file. If the user now "edit"s or "review"s the article, the attachment will be seen and can be further edited if desired.

### The `rbbpost` Program

The `rbbpost` program is similar to the `bbpost` program in that it is used to post an article into the bulletin board system. This command differs significantly from the `bbpost` program in that it is completely non-interactive. This command reads an article file on its standard input only and posts it to the newsgroup specified as the program's invocation argument. The input file is assumed to be in an article format already. An article formatted file is similar to a file formatted as a mail message and in fact this is the most common use for this command ; namely, to post mail message files from a user's mail reading program. Actually, any input file that minimally begins with a blank line is acceptable and the `rbbpost` program will add some additional article headers as appropriate if necessary.

A typical example of using this program is to post an article from a user's mail reading program such as PCS `vmail` or PCS `readmail`. In these mail readers, the user would "pipe" the current message to the `rbbpost` program with a command sequence similar to:

```
| rbbpost newsgroup
```

where `newsgroup` is the name of a valid newsgroup for the system such as:

```
misc
general
```

and so forth.

Similarly as the `bb` program is the heart of the newsgroup reading subsystem, the `rbbpost` is really the heart of the posting subsystem. Most `bbpost` like programs actually call `rbbpost` to actually insert the article into the bulletin board system's news flow. This program is the responsible entity for queuing articles up for transmission to administered neighboring sites. See the `rbbpost` program for information on how articles are transferred around the network.

### EXAMPLES

- ☞ Most people put the following command line in their login startup profiles to list out the subjects of new articles posted in the newsgroups for which the user is subscribed:

```
bb -subject -count
```

- ☞ Another old time command line for login startup profiles is to just give notice of whether there are new unread articles.

```
bb -query
```

Again, this only prints the message if there are new unread articles for which the user is subscribed. This is similar to the use of:

```
msgs -q
```

in the old days when there was only the `msgs` facility. This just prints a line saying that there are new articles. If there are no new articles, nothing is printed.

- ☞ To just read unread articles from the user's subscribed newsgroups, execute:

```
bb
```



- ☞ To catch up on unread articles, without seeing them, execute:  
`bb -catchup`
- ☞ To read unread articles in the order from the latest one posted to the earliest one posted (reversed order):  
`bb -r`
- ☞ To get the names of all of the user's subscribed newsgroups:  
`bb -newsgroups`
- ☞ To get the names of all of the newsgroups in the system:  
`bb -newsgroups -e`
- ☞ To search for a newsgroup ( *SWAPEX\_Classes* in this example) when you only remember a few characters from the name of the newsgroup, execute:  
`bb -newsgroups -e | fgrep APEX`
- ☞ To get the subject header values of unread articles on the user's subscribed newsgroups:  
`bb -subject`
- ☞ To get the subject header values of all (old and new) articles on the user's subscribed newsgroups:  
`bb -subject -a`
- ☞ To get the subject header values of all articles on all newsgroups in the system:  
`bb -subject -a -e`
- ☞ To get the count of unread articles on the user's subscribed newsgroups:  
`bb -count`
- ☞ To get the count of all old articles still in a specific newsgroup (the newsgroup *general* in this case), the following could be executed:  
`bb -count -o general`
- ☞ To subscribe to a newsgroup (like the newsgroup *general* for example), the following could be executed:  
`bb -subscribe general`
- ☞ To subscribe to the newsgroup named *general* and all of the newsgroups which start with the string *msgs*,  
`bb -subscribe general 'msgs '`  

Note that when ever a " " character is used, care must be observed to not have it mistakenly expanded by the SHELL.
- ☞ To get a description of the newsgroups *general* and *tools.pcs*, the following could be executed:  
`bb general tool.pcs -desc`
- ☞ To get the descriptions for all newsgroups that the user is subscribed to, the following could be executed:  
`bb -desc`

- ☞ To get newsgroup descriptions for only those newsgroups which have unread articles which are also subscribed (or set to otherwise be processed by default) by the user, the following could be executed:

```
bb -count -desc
```

- ☞ To get the newsgroup descriptions for all newsgroups currently in the system, the following could be executed:

```
bb -desc -e
```

- ☞ To unsubscribe to a newsgroup (like the newsgroup *general* for example), the following could be executed:

```
bb -unsubscribe general
```

## POPULAR NEWSGROUPS

Some of the more popular newsgroups are listed below. Some of these newsgroups are read- only to normal users. Those newsgroups that are read- only or that may have other restrictions are identified as such below. Some newsgroups are also accessible (can be posted to) from outside of GBCS via email. Your PCS bulletin board administrator (listed at the end of this manual page) will have information on which newsgroups can be posted to via email.

The descriptions of the more popular newsgroups are:

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>general</b>         | This newsgroup is meant to exchange articles on general items related to work. Do not use this newsgroup for non- work related topics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>general.newuser</b> | This newsgroup carries information useful to new members of the GBCS R&D or other basic information useful for using the R&D computing environment for the first time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>misc</b>            | Use this newsgroup for all non- work related items.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>events</b>          | This newsgroup is used for work related events coming up like organizational wide meetings or other corporate AT&T activities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>events.courses</b>  | This newsgroup is used to provide information on general courses available that may not normally be carried on any other newsgroup.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>workplace</b>       | This newsgroup is used for the exchange of workplace, or quality of workplace, related issues.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>tools</b>           | This newsgroup is used for the exchange of tool related information. Watch this newsgroup for new R&D- wide computer tools and tool updates including PCS related tools.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>luncheons</b>       | This is used for the posting of all luncheon announcements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>jobposts</b>        | This newsgroup is read- only (to normal users) and is used to provide information on job openings within GBCS (usually the R&D community).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>ATT_today</b>       | This newsgroup (also read- only) carries the <i>AT&amp;T Today</i> electronic newsletter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>test</b>            | This newsgroup can be used by new users to test out posting an article to the system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>news</b>            | This newsgroup and related subnewsgroups are usually used by the computer center to post computing environment related information (usually of a transient nature). This newsgroup is special in that it is really cross posted from the UNIX News facility. Posts may or may not be possible to this newsgroup depending on how the computing administrators set it up. Sometimes, posts can be made to this newsgroup but will not be readable using the UNIX <i>news</i> program. Ask your PCS bulletin board administrator (listed at the end of this manual page) for information about how posting (if any) can be made to this newsgroup. |

**msgs** This newsgroup, or its subnewsgroups, are used to hold all articles that were mailed into the system through the UNIX MSGS facility. Although articles can be posted to this newsgroup like any other using a PCS program like *bbpost*, these posted articles will normally **not** be available to the UNIX **MSGS** system reader program *msgs*. Generally, it is advised that the *msgs* program be used for posting to this newsgroup for articles to be available to both systems (MSGS and PCS) simultaneously (as generally intended).

Many projects usually have project specific newsgroups for various purposes. Contact your project's process or methodology people for information on newsgroups specific to your project. A full list of all of the newsgroups on the system at any time can be made by executing:

```
bb -newsgroups -e
```

Requests for the creation of new newsgroups should be made to the PCS bulletin board administrator.

## ADMINISTRATION

### Site- wide Configuration

The PCS Bulletin Board system is currently composed of primarily two subsystems. These are the "reading" subsystem and the "posting" subsystem. The reading subsystem is primarily made up from various modes of executing the *bb* program. Similarly, the posting subsystem usually ends up executing, in one way or another, the *rbpost* program. Both of these programs, and aspects of other ancillary utility programs, take site- wide PCS configuration information from the `PCS${PCS}/etc/conf` like file. Specifically, the "fromhost", "mailhost", and "uucphost" entries should be properly specified as appropriate for a given site configuration. Additionally, the files under `${PCS}/etc/bb` should also be modified to properly reflect alias hosts for the current site (specified through the `${PCS}/etc/bb/bbnames` file), and to specify neighboring sites to receive article postings (through the `${PCS}/etc/bb/bbhosts` file).

### Newsgroup Spool Area

Each newsgroup is actually one or more directories in a news spool area someplace in the UNIX file systems. A newsgroup is really a logical concept and is realized by one or more UNIX directories which all have the same "newsgroup" name from the start of the newsgroup spool area directory. The appearance of a directory any place in the hierarchy of the spool area is automatically considered to make a newsgroup (if it is a new one) and is scanned for new articles. Symbolic links are followed when traversing the newsgroup spool area. Symbolic links allow for several possibilities including expanding the apparent newsgroup spool area to a size larger than a physical UNIX file system. Other possibilities can include linking more than one newsgroup together to provide a physical newsgroup by two or more apparent names. The hierarchy of newsgroups follows the UNIX directory hierarchy of the newsgroup spool area. Specifically, subdirectories are taken to be subnewsgroups. Both parent newsgroups and subnewsgroups can contain articles. Newsgroup nesting can occur to any level desired. Hierarchical newsgroups are also realized when a UNIX directory name has one or more period characters in it. The period in these sorts of directory names separates the parent newsgroup name (which can never contain any articles since there is no actual physical directory associated with it) from the subnewsgroup name. The directory itself would hold articles for the subnewsgroup in this case. Full newsgroup names made up by both of the above mechanisms can exist simultaneously in the spool area and they are taken to reference the same apparent newsgroup to the user. All articles in any newsgroups found with the same apparent name are scanned and taken to be in that single apparent newsgroup. This mechanism, along with symbolic links, can make for some involved newsgroup structures which may or may not serve particular administrators. Finally, there is no limit to the number of newsgroups that can exist.

### Newsgroup Descriptions

The PCS or Bulletin Board administrator can create descriptions of the various newsgroups by creating a file named `.desc` in any directory which forms all or part of the newsgroup for which a description is desired. Usually this file contains a simple one- line description of the newsgroup but there is no restriction on the number of lines of text that the tool will process. These files (the `.desc` files) are processed by the *bb* program when the user invokes the program with the `-description` option. If a newsgroup is made

up of more than a single directory, all of the `.desc` file contents will be presented to the user if that newsgroup is selected for processing according to the user's newsgroup subscriptions or the other options given to the *bb* program. Therefore, it is only necessary, generally, to place one of these `.desc` files in one of the directories which makes up a multi-directory newsgroup.

### Articles

Each article is actually realized as an individual file in a newsgroup directory. The UNIX modification times of the article files are taken to be the posted date of the articles. Although the UNIX modification time of an article file is used to determine if that article has been read by a user, the UNIX modification time of the newsgroup directory that the article file is located in is also important. When scanning for new articles, no newsgroup directories are entered that have a modification time older than the currency time stored for that newsgroup in the user's newsgroup list file. Old articles can only be made to be freshly current by also updating the modification time of the newsgroup directory that the article is in. This is rather automatic for new articles placed into a directory since the modification time of the directory is updated automatically when new directory entries are made.

Articles should be formatted as RFC 822 like mail messages (UNIX mail messages) in order to be properly processed by the PCS article reading programs. The PCS requirement for properly formatted mail messages is a rather lenient one in that any file with at least a leading blank line (a null header section followed by a mail message body) is allowed. Finally, there is currently a limit of 1000 articles allowed per newsgroup. This is a compile time variable which would require a recompile of the program *bb* in order for this to be changed.

### Expiring Articles

The easiest way for an administrator to expire articles is to simply have their corresponding files removed from the newsgroup spool area. This can be accomplished with various UNIX utilities for selecting files based on modification times. Administrators can also search for files ignoring symbolic links or UNIX mount points. These sorts of techniques can be used to not expire articles that are in symbolically linked directories or in other file systems. A simple example of expiring articles could be a *cron* program which executes:

```
find $BBDIR -type f -mtime +22 -exec rm -f {} ;
```

Other strategies are possible and are left to the industrious system administrators out there.

### Other

Secretly, the program *bbr* simply calls the *bb* program with the `mailbox` option to do most of its work. Under some circumstances, the PCS mail reader program *vmail* also calls the *bb* program with the `mailbox` option when a user of *vmail* uses it to "change" into their *bbtemp* mailbox. In this later case, the *bb* program ensures that the user's *bbtemp* mailbox is "up-to-date" so that the *vmail* program shows the current state of the updated mailbox.

The *rbbpost* program is suitably capable of being executed by the UUCP system as a result of a remotely executed *uux* command. This provides one means of posting articles to a system from outside of the system. A remote user would execute something like:

```
uux -p mtgbcslrbbpost misc < mail_msg_formatted_file
```

to get the message in the *mail\_msg\_formatted\_file* posted to newsgroup *misc* within the PCS bulletin board system on machine *mtgbcsl*. Of course, this capability requires the UUCP system administrator to setup the *rbbpost* program in the UUCP system *Permissions* file.

If the administrator has the MSGS system spool area directory coincide with a PCS bulletin board newsgroup (reference the discussion in the next section), then users can also effectively post messages to the coincident newsgroup by emailing to the local email alias *msgs*. This requires that the *msgs* email alias has been setup on the local mail system. Users could then post messages to the *msgs* spool directory and the PCS newsgroup spool area newsgroup by executing something like:

```
msgs -s < mail_msg_formatted_file
```

similarly to the previous example with the *rbbpost* program. The *msgs* program can also be executed by the

UUCP system due to a remote execution of *uux* if the command is properly setup by the UUCP administrator in the UUCP system *Permissions* file.

## COMPATIBILITY WITH OTHER NEWS SYSTEMS

The protocol used for the storage of articles in the PCS bulletin board system is similar to both the standard *Netnews* system and the old *msgs* facility for UNIX systems. Since articles are stored in the PCS bulletin board system as mail messages (of a sort), a high degree of compatibility is achieved with both standard RFC 822 mail systems (including UNIX mail) and the old UNIX *msgs* system (which was popular on older BSD systems).

### UNIX MSGS System

Compatibility is almost automatic with the UNIX *msgs* system. With the exception of a file usually named *bounds* in the *msgs* spool area, all message articles can be cross posted to the PCS news spool area. One or more newsgroups by the name **msgs** or **msgs.location** can be created under the PCS news spool area to hold the message files which are created under the *msgs* (proper) spool area. If the spool areas (the *msgs* system spool directory and a PCS newsgroup directory) are in fact one and the same, then the *msgs bounds* file will almost always be found to be unread (or current) by the PCS system. This can be overcome by selectively cross posting the other files in the *msgs* area to the designated newsgroups under the PCS spool area. An enhanced version of the older UNIX *msgs* facility is provided with the PCS package and can be installed to solve this problem with the *msgs bounds* file. The PCS version uses a file named *.msgs\_bounds* as its bounds control file instead and also, by default, locates the *msgs* spool area directory at `${PCS}/spool/msgs` or something similar. This default spool directory can be a symbolic link to a regular PCS newsgroup directory which is normally desired. Making the *msgs bounds* type file start with a dot (period character) makes the file invisible to the PCS newsgroup reading programs.

### UNIX News System

Files (or news items) placed under the UNIX news spool area (usually `/var/news`) are not automatically compatible with the PCS news system since the UNIX *news* system's articles are not, necessarily, in mail message file format. If all articles posted to the UNIX *news* system are minimally formatted as mail messages, then complete cross posting is supported as well as simply making the two corresponding news spool areas one and the same. A minimally conforming mail message file (for purposes of the PCS news system) consists of a file with a blank line as the first line. This leading blank line is interpreted as the end of the header section of the mail message and therefor meets the minimal requirements for a mail message formatted file. If UNIX *news* files are not known to conform to mail messages, then allowing the PCS system to read them will result in totally unpredictable behavior.

### Netnews

Full compatibility with the standard Netnews system should be automatic. Care should be taken to ensure that PCS posted articles conform to the requirements for Netnews articles. Restrictions on the article's FROM header is required for Netnews posting that is not present in the PCS system. This is the only known potential problem.

## ENVIRONMENT VARIABLES

The following environment variables tailor the bulletin board services to the user's personal preferences. These variables used to be set and updated by the PCS profiler program but should now be changed manually by the user editing her *.pcspfile* file in her HOME directory.

**ED** The default program to use for the editor.

**EDITOR** This environment variable is used to specify an editor program when *ED* is not set.

**LINES** This environment variable sets the number of terminal lines to be used by the program. If the number of terminal lines is given on the command line, then that value is used instead of this environment variable.

### BBNEWSRC

This environment variable, if specified, gives the name of the user's newsgroup list file. If this variable is not specified, then the default file `${HOME}/.bbnewsr` is used. The user's newsgroup list file can also be specified on the command line with the `-u`

*user\_news\_file* option.

- BBOPTS** This environment variable contains user preference options for use in one or more of the bulletin board system commands. Currently only the `-edit` option for the program *bbpost* is supported.
- BBBDS** This environment variable contains a list of the newsgroups subscribed to, separated by a colon (':') character. As mentioned previously, the list of newsgroups that the *bb* program uses is a union of the list of newsgroups in this environment variable along with the list of newsgroups in the user's newsgroup list file (usually `${HOME}/.bbnewsrsc`) which are followed by colon characters rather than exclamation point characters.
- PRINTER** This variable should contain the printer destination for the user's default printer. This environment variable is used by the *prt-pcsmail* program. If this variable is not set, then some sort of default is used but this is almost guaranteed to not be what the user wants.
- BBDIR** This environment variable is used primarily for system testing or for a user to have some sort of private newsgroup spool area. Otherwise, this variable should be unset or left alone. When used, this variable should hold the directory path to the top of the newsgroup spool area (usually determined by the system administrator). A typical location for this is `${PCS}/spool/boards`. The path to the newsgroup spool area can also be set with the command line option `-N news_spool_dir`.
- BBPRTCMD** This environment variable can hold the name of an alternative print spool up command for use by the `print` command within the *bb* program while reading news articles.
- PCS** This environment variable is used to point to the PCS package directory. This is usually at `/usr/add-on/pcs` but may not be on some systems. Not all programs in the PCS tool set may be safely relocated by changing this environment variable. Many PCS programs call other PCS utility programs and not all programs in a set which performs a certain requested function may be relocatable. For proper user operation, it is recommended that this environment variable always point to the location of the properly installed system-wide PCS package distribution directory. This environment variable can be overridden at program invocation with the invocation argument `-ROOT programroot_directory` where *programroot\_directory* is the directory to override what may be in the PCS environment variable.

## FILES

|                                   |                                                                                                                                                                                                                                                      |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>\${HOME}/.pcspfile</code>   | default user's profile type file containing PCS related environment variables                                                                                                                                                                        |
| <code>\${HOME}/.bbnewsrsc</code>  | this is the user's default newsgroup list file when one is not specified on the command line or in the environment variable <code>BBNEWSRC</code>                                                                                                    |
| <code>\${HOME}/.user_bds</code>   | this is the user's default newsgroup list file when it is not specified on the command line, in the environment variable <code>BBNEWSRC</code> , and when the user does <b>not</b> already have a file named <i>.bbnewsrsc</i> in her home directory |
| <code>\${HOME}/mail/bbtemp</code> | user's default mailbox to receive articles scanned by the <i>bbr</i> program                                                                                                                                                                         |
| <code>\${HOME}/mail/new</code>    | user's default mailbox to receive articles "saved" by the user while executing the <i>bb</i> program                                                                                                                                                 |
| <code>\${PCS}/bin/bb</code>       | executable program                                                                                                                                                                                                                                   |
| <code>\${PCS}/bin/bbr</code>      | executable program                                                                                                                                                                                                                                   |
| <code>\${PCS}/bin/bbpost</code>   | executable program                                                                                                                                                                                                                                   |

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>\${PCS}/bin/rbbpost</code>    | executable program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <code>\${PCS}/bin/datepost</code>   | executable program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <code>\${PCS}/bin/pcsngdir</code>   | utility program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <code>\${PCS}/bin/pcsc1</code>      | utility program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <code>\${PCS}/src/bb</code>         | directory of source files                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <code>\${PCS}/spool/boards</code>   | default newsgroup spool area directory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <code>\${PCS}/etc/bb/bbnames</code> | This file should contain any names of popular hosts that are visible to the entire organization that share the same newsgroup spool area. Sometimes, when names are translated and dynamically mapped to find connectivity, a host different than one specified as your main site host could be contacted. This file provides a means to properly identify hosts that articles should NOT be forwarded to.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <code>\${PCS}/etc/bb/bbhosts</code> | This is the file which specifies hosts that the current system should forward articles to. These hosts are usually neighboring sites. It is not necessary to specify every site in your company here since articles are flooded throughout the network similar to the way in which Net-News articles are distributed. Host names should usually be flat names which usually represent the UUCP name of the target site. If special additional dialing information needs to be provided for properly contacting a host specified in the <code>\${PCS}/etc/bb/bbhosts</code> file, the the UUCP flat machine node name should be put in this file and any additional dialing information should be put into the <code>RSLOW dialtab</code> file which is part of the RSLOW transport subsystem. Currently, all article distribution uses the RSLOW transport subsystem. |

**SEE ALSO**

`pcsmail(1)`, `vmail(1)`, `prr- pcsmail(1)`, `msgs(1)`, `news(1)`

**ADMINISTRATION SEE ALSO**

`rslow(1)`, `rshe(1)`, `rex(1)`, `pcsc1(1)`

**PCS BULLETIN BOARD ADMINISTRATOR**

David Morano and Mark Leeper

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