

# AccuRev 4.6.0cc For ClearCase Installation and Release Notes

February 12, 2008

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# AccuRev Installation Notes

Installation of AccuRev Configuration Management software on a machine involves running an installation “Wizard” program, after downloading it from the AccuRev web site. One machine at your site should be installed as the “Server” machine — the one that runs the AccuRev Server process and hosts the AccuRev data repository. Any number of other machines can be installed as “Client” machines.

Each machine must be installed separately. There is no batch-installation capability, but you can perform a non-interactive installation, driven by a simple configuration file. (See *Non-Interactive Installation (Unix/Linux only)* below.)

We present an overview of the installation process here. The wizard aims to be self-explanatory, but if you’d like a detailed, step-by-step description of the installation process, see the “Quick Evaluation” chapters in *AccuRev Technical Notes*.

## Platform Support

The following sections contain important notes on installing AccuRev software on specific hardware/software platforms:

### Microsoft Windows Vista

AccuRev 4.6.0cc is fully supported on Microsoft Windows Vista. Previous AccuRev versions did not install successfully on this platform.

### AIX

To install and run AccuRev Version 4.6.0cc on an AIX machine, library file **libstdc++.a** must be present in a directory listed in environment variable LIBPATH. This environment variable must be set both in the environment of the AccuRev Installation Wizard and in the environment of AccuRev client and server programs.

Note: The maximum file size on AIX is 2GB.

### HP-UX

The value of the tunable system parameter **maxssiz** (maximum stack size) for the HP-UX kernel must be at least 0x2000000, rather than the default of 0x800000.

Use this command to determine the current setting:

```
grep maxssiz /stand/system
```

If you must increase the value, use the SAM utility, as described on the “Reconfiguring the Kernel” page at:

```
http://docs.hp.com/en/5185-6559/ch01s01.html#cihehjcc
```

## PowerPC (64-bit) Running Linux

Use this procedure to ensure that the AccuRev installation Wizard picks up the correct Java runtime libraries:

1. Set environment variable `JAVA_HOME` to the full pathname of the machine's Java installation directory. This must be the Java implementation provided by IBM for the PowerPC 64-bit Linux environment.
2. Start the AccuRev installation Wizard with this command line:

```
sh ./AccuRevInstall.bin LAX_VM <path_to_java_interpreter>
```

*<path\_to\_java\_interpreter>* is the full pathname of the Java interpreter under `JAVA_HOME`.

## Notes on Upgrading from an Earlier Version

Upgrading a machine from an earlier AccuRev release is easy. You are not required to uninstall any existing software. You can install the new release “right on top of” the existing release — the installation Wizard lets you preserve your development data and configuration files. On the server machine — the one that runs the AccuRev Server process — installation of the new release automatically upgrades the data repository to the new release level. (There is no way to “downgrade” the data repository, for use with an earlier version of the AccuRev Server.)

Before proceeding to upgrade your AccuRev product installation, read the following notes.

### License Key Format Change

The AccuRev license key format changed at Version 4.0. If you are upgrading from a release prior to Version 4.0, you need a new license key to upgrade successfully. Please contact [support@accurev.com](mailto:support@accurev.com) to obtain a new license key.

### Uninstalling First on Windows Machines

If you are upgrading the AccuRev client software on a Windows machine, we recommend that you uninstall the earlier version of AccuRev before installing AccuRev 4.6.0cc. Failing to first uninstall the earlier version has bothersome side-effects:

- The entry for the previous release is not removed from the **Add or Remove Programs** applet in the Windows control panel.
- The documentation entries under “AccuRev” in the Windows Start menu continue to point to the earlier version’s documentation; the AccuRev GUI’s **Help > Manuals** entries point to the new version’s documentation.

### Upgrading AccuBridge Integrations

As you upgrade your AccuRev installation, be sure check the AccuRev, Inc. Web site for upgrades to your AccuBridge integrations with issue-tracking systems and/or integrated development environments. Go to <http://www.accurev.com/download.htm> and look for the AccuBridge Installation Packages link under “Other Downloads”.

## Downloading the AccuRev Installation Package

On the Downloads page of the AccuRev, Inc. Web site (<http://www.accurev.com/download.htm>), download the appropriate AccuRev installation package to your **Desktop** directory. The installation package contains the AccuRev Installation Wizard, possibly in compressed format.

- If the file you downloaded is the Wizard itself (Windows: **.exe** file, Unix/Linux: **.bin** file), then you're all ready to run the Wizard.
- If you downloaded a compressed package (**.zip** or **.gz** file), you must first extract the Wizard from the package. Many extraction tools are freely available. There are handy links to such tools on the Downloads page; and the **unzip** and **gunzip** programs are standard on many Unix systems.

Proceed to the appropriate section below:

- *Windows: First-Time Installation*
- *Unix/Linux: First-Time Installation*
- *Upgrading a Client Machine*
- *Upgrading a Server Machine*

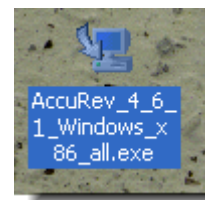
## Windows: First-Time Installation

Start the Wizard in either of these ways:

- Double-click the Wizard's desktop icon to launch it.
- If you're using a command shell, go to the **Desktop** directory and enter this command (substituting the appropriate digits for the *N*'s):

```
AccuRev_N_N_N_Windows_x86_all.exe
```

You'll be up and running in just a few minutes!



## Unix/Linux: First-Time Installation

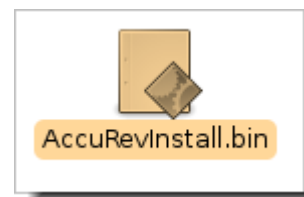
The installation procedure depends on whether you're installing the AccuRev client software only, or both the client software and the AccuRev Server. Go to the appropriate section below.

### 'Client' Installation

Start the AccuRev Installation Wizard in either of these ways:

- Double-click the Wizard's desktop icon.
- If you're using a command shell, go to the **Desktop** directory and enter this command (substituting the appropriate digits for the *N*'s):

```
sh AccuRevInstall.bin
```



For a non-interactive alternative to the Wizard, see *Non-Interactive Installation (Unix/Linux only)* on page 8.

Here are some notes for proceeding through the Wizard:

- Under **Choose Install Type**, select **Custom**.
- Under **Choose Product Features**, select **Client**.
- Under **Choose Install Directory**, specify a location where you have “write” permission.
- Under **Choose Link Location**, if you choose to create symbolic links to the AccuRev client programs, specify a location where you have “write” permission.

## ‘Full’ Installation — both Client and Server Software

It’s a Unix/Linux “best practice” to minimize the number of programs that run under the **root** user identity. The following procedure installs the AccuRev client and server software, adhering to this best practice.

Note: some steps of this procedure *do* require **root** privileges. But when the procedure has been completed, the AccuRev Server will be configured to run without requiring **root** privileges.

1. Become the **root** user.
2. Create a new identity for the AccuRev Server to run under. For this procedure, we’ll assume that you create this identity:

```
username: acserver  
groupname: acservergrp  
home directory: /home/acserver
```

3. Create a directory in which the AccuRev client and server software will be installed. (And make sure to leave this directory empty.) For this procedure, we’ll assume that you create this directory:

```
installation directory: /apps/accurev
```

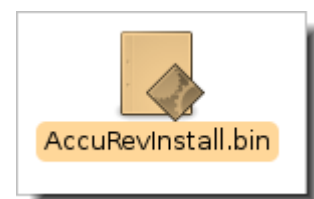
4. Change the ownership of the installation directory:

```
chown acserver:acservergrp /apps/accurev
```

5. Switch to the newly created user identity, **acserver**.
6. Start the AccuRev Installation Wizard in either of these ways:

- Double-click the Wizard’s desktop icon.
- If you’re using a command shell, go to the **Desktop** directory and enter this command:

```
sh AccuRevInstall.bin
```



For a non-interactive alternative to the Wizard, see *Non-Interactive Installation (Unix/Linux only)* on page 8.

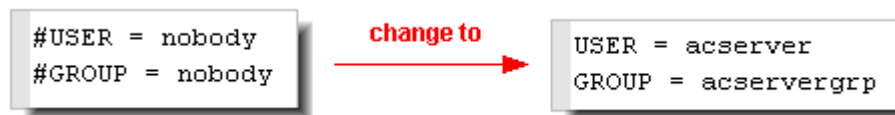
- Use these notes to proceed through the Wizard:
  - Under **Choose Install Type**, select **Typical**.
  - Under **Choose Install Directory**, specify the directory you created in Step 3 (**/apps/accurev**).

When the Wizard completes, AccuRev is fully installed on your machine, and is ready to use. By default, the AccuRev Server process can be started and stopped manually by user **acserver**, with these commands:

```
/apps/accurev/bin/acserverctl start
/apps/accurev/bin/acserverctl stop
```

If you would like the AccuRev Server to be started automatically at system boot-time, follow these additional steps:

- Edit the server configuration file (**/apps/accurev/bin/acserver.cnf**) as follows:



```
#USER = nobody
#GROUP = nobody
```

change to →

```
USER = acserver
GROUP = acservergrp
```

This will configure the boot-time script that starts the AccuRev Server (see Step 11) to set the Server's user identity, using **setuid**.

- Stop the newly installed AccuRev Server:

```
/apps/accurev/bin/acserverctl stop
```

- Become the **root** user.
- Using the files in directory **/apps/accurev/extras/unix**, set up the boot-time scripts to start the AccuRev Server.
- Reboot the machine.

## Upgrading a Client Machine

Use this procedure if you're upgrading an existing AccuRev installation on a machine where only the client software (not the server software) is installed:

- Start the AccuRev Installation Wizard in either of these ways:
  - Double-click the Wizard's desktop icon.
  - If you're using a command shell, go to the **Desktop** directory and execute the Wizard:
    - Windows (substitute the appropriate digits for the *N*'s):

```
AccuRev_N_N_N_Windows_x86_all.exe
```
    - Unix/Linux:

```
sh AccuRevInstall.bin
```

2. Use these notes to proceed through the Wizard:
  - If you choose a **Custom** installation, be sure to select **No** when the Wizard asks, “Do you want to install new configuration files?”.

## Upgrading a Server Machine

Use this procedure if you’re upgrading an existing AccuRev installation on a machine where the server software is installed:

1. Stop the AccuRev Server process. On Unix/Linux systems, use the command **acservctl stop**. The **acservctl** program is located in the AccuRev **bin** directory. On Windows systems, you can use the Services applet to stop the AccuRev Server process, or the command **net stop accurev**.
2. Perform a full backup of the AccuRev data repository. For detailed instructions, see section *Backing Up the Repository* on page 3 of the *AccuRev Administrator’s Guide*.
3. Start the AccuRev Installation Wizard in either of these ways:
  - Double-click the Wizard’s desktop icon.
  - If you’re using a command shell, go to the **Desktop** directory and execute the Wizard:
    - Windows (substitute the appropriate digits for the *N*’s):  

```
AccuRev_N_N_N_Windows_x86_all.exe
```
    - Unix/Linux:  

```
sh AccuRevInstall.bin
```
4. Use these notes to proceed through the Wizard:
  - If you choose a Custom installation, be sure to select **No** when the Wizard asks, “Do you want to install new configuration files?”.
  - Select **No** when the Wizard asks, “Do you want to install a new license key file?”.
5. Verify that the new AccuRev Server process has been started, by running this command:  

```
accurev info
```
6. If you need to start the AccuRev Server process manually, use the command **acservctl start** on Unix/Linux systems. On Windows systems, use the Services applet or the command **net start accurev**.

## Non-Interactive Installation (Unix/Linux only)

On a Unix or Linux system, you can run the AccuRev installation program **AccuRevInstall.bin** as a non-interactive “console program” instead of as a wizard. Follow these steps:

1. Create an installation configuration file by copying the sample text below.
2. Revise the settings in the configuration file, as appropriate for the target machine.

3. Invoke the installation program as follows:

```
sh AccuRevInstall.bin -i SILENT -f <full-pathname-of-config-file>
```

You must use a full pathname to specify the installation configuration file.

Use the following text as a template for the configuration file:

```
###
### AccuRev InstallAnywhere SILENT installation config file
###
#
# Unix/Linux usage:  sh AccuRevInstall.bin -i SILENT -f <config-file>
#

# this setting enables use of this config file; do not change.
INST_ROOT=true

# location of AccuRev installation directory (OK to already exist)
# installer creates subdirectories bin, doc, jre, etc.
USER_INSTALL_DIR=/opt/accurev

# un-comment exactly one of the following lines.
#CHOSEN_INSTALL_SET=Client
CHOSEN_INSTALL_SET=Full

# Client install: hostname of machine to run AccuRev Server process.
# Full install: this setting ignored, hostname of local machine used.
SERVER_HOSTNAME=myhost

# The traditional port for the AccuRev Server is 5050. But you can
# change it to any number. We recommend the range 5000 - 6000.
SERVER_PORT=5050

# Full install: full pathname of a valid license key file.
# installer copies this file into site_slice dir, as "keys.txt".

LICENSE_KEY_FILE=/path/to/license-key-file
```

Note: the SERVER\_PORT setting does not work in this release. The installation program places port number **5050** in the **acclient.cnf** and **acserver.cnf** files (if it creates them), no matter what value you specify in the configuration file. After installation, you can edit these files manually to configure another port number.

# AccuRev Release Notes

Please read these notes to familiarize yourself with the changes in AccuRev for Version 4.6.0cc.

## NOT Compatible with Other AccuRev 4.6x Versions

AccuRev Version 4.6.0cc incorporates all the updates and bugfixes of AccuRev 4.6b and preceding versions. Due to modifications made for ClearCase compatibility, please note that it is *not* compatible with other versions of AccuRev. Consequently,

- when you install Version 4.6.0cc AccuRev Server(s), you must install the matching Version 4.6.0cc AccuRev Clients on all client machines.
- No explicit conversion is required to bring the AccuRev data repository from any prior level to the Version 4.6.0cc level. When you install Version 4.6.0cc on the machine that runs the AccuRev Server software (this machine also hosts the data repository), the repository will be upgraded automatically, if necessary.

## Support for Microsoft Windows Releases

AccuRev Version 4.6.0cc is fully supported on the Microsoft Windows Vista operating system. It is *not* supported on these versions of Microsoft Windows, which were supported in prior releases:

Windows 98 Windows ME Windows NT

These Windows releases do not support **junction points** in the file system, a feature that is used in AccuRev's implementation of links to directories.

Versions of AccuRev prior to (but not including) Version 4.5.3 continue to be supported on these Windows releases.

## Using the AccuRev GUI on an HP-UX Machine

Depending on the configuration of the X Window System, you might need to set the preference `AC_EDITOR_GUI` to enable execution of the **Open** command in the AccuRev GUI's File Browser (and other places in the GUI). Example:

```
accurev setpref AC_EDITOR_GUI "xterm -e vi"
```

(There is no AccuRev GUI interface for setting this preference.)

## Compatibility with Versions of the Java Runtime Environment

AccuRev Version 4.6 is fully compatible with Versions 1.4.x, 1.5.x, and 1.6.x of the Java 2 Runtime Environment (JRE).

## Technical Note on ‘Promote-by-Issue’

See *AccuRev Technical Notes* for a new tech note, *Notes on Promote-by-Issue*, which presents important new information on how to use AccuRev’s promote-by-issue feature. Reading this note is essential to making proper use of this feature.

The technical note strongly advises you not to **Promote** elements directly from the Change Palette in the situation illustrated here:

The screenshot shows two windows from the AccuRev interface. The top window is a 'Promote-by-Issue' dialog box with the following data:

Issue	Short Description
2	Font defaults are unusable
5	Tabs get stuck
6	RGB to HSV conversion is off

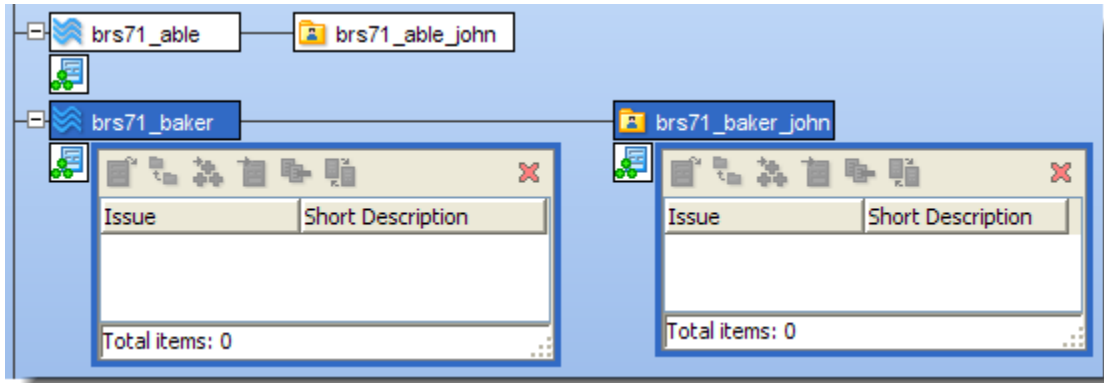
A red arrow points from the dialog to the 'Change Palette' window below. The 'Change Palette' window shows the following table:

Element	Version	Basis Version	Trans.	Status	Count
\\.\src\commands.c	6 17	6 14		(patch)	1
\\.\tools\perl\add_cr.pl	6 8	6 1			1
\\.\tools\tools.readme	6 5	6 1			1

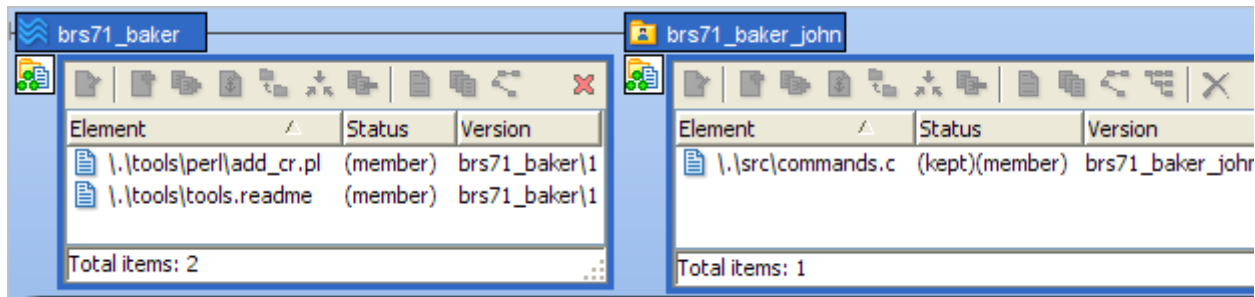
Red annotations include: 'drag-and-drop, to cross-promote issue' pointing to the dialog, 'in the Change Palette, one or more of the elements is listed with (patch) status' pointing to the Status column, and 'don't Promote these elements!' pointing to the bottom two rows of the Change Palette table.

But the technical note doesn’t detail *why* you should avoid this, and it doesn’t advise you on how to proceed if you mistakenly perform such promotions. These topics are discussed below.

The Stream Browser shows the result of **Promote**’ing elements **add\_cr.pl** and **tools.readme** from the Change Palette, and **Patch**’ing element **commands.c** to a workspace below the destination stream:



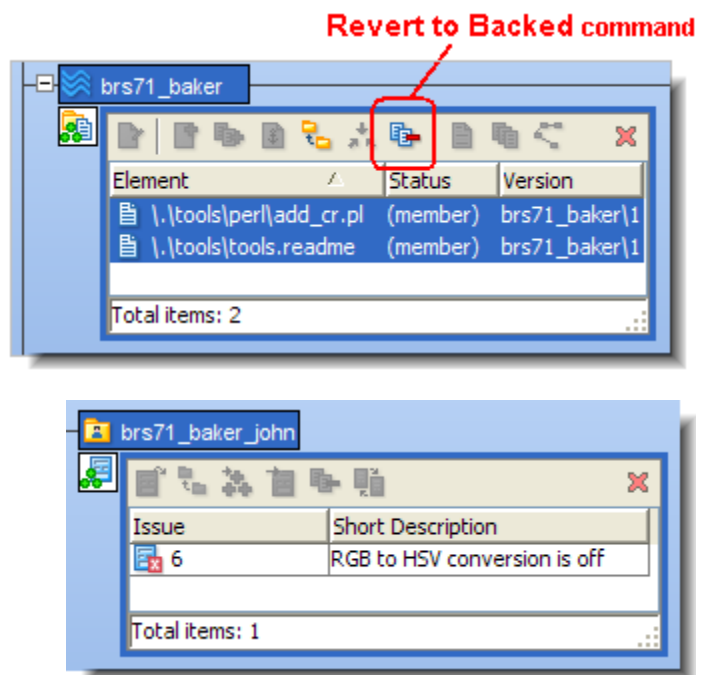
(This is a composite picture — the Stream Browser displays the development activity for only one stream at a time.) Issue #6 has been “taken apart” by the **Promote/Patch** sequence in the Change Palette. The issue is not completely “in” stream **brs71\_baker**, nor is it completely “in” workspace **brs71\_baker\_john**. Switching to file mode confirms that issue #6 has been “taken apart”.



(Again, this is a composite picture.) Two of issue #6’s three elements have been sent to one destination, and the third element has been sent to another destination.

How can you remedy this situation? First, use **Revert to Backed** to “undo” all the **Promote(s)**. Then, switch the Stream Browser back to issue mode, and proceed as described in the technical note: that is, drag-and-drop the original issue(s) to the workspace below the original destination stream. (In this example, drag-and-drop issue #6 to workspace **brs71\_able\_john**.)

You have now “reunited” the changes to all of the issue(s)’ elements at a single destination. The Stream Browser confirms this.



## server\_all\_trig' Trigger Deprecated

The **server\_all\_trig** trigger is now deprecated. Support for this trigger will be removed in a future release. Use the **server\_admin\_trig** trigger instead, as described in chapter *AccuRev Triggers* in the *AccuRev Administrator's Guide*.

## ACL Permissions and Cross-Links

If a version is being accessed from stream A, and that version is cross-linked to stream B, AccuRev checks the ACL permissions on stream A only, not on stream B.

## 'Keep' and Exclusive File Locking

In Version 4.6, the **Keep** command fails if an element itself has been locked, but succeeds if locking is applied at the workspace or depot level. This behavior might change in a future release.

## Internet Explorer 7 and Context-Sensitive Help

The context-sensitive help system uses a Web browser to display help topics (your default browser or the browser configured with the AC\_BROWSER preference). The current release of Microsoft's Internet Explorer 7 browser does not work correctly with the AccuRev GUI's help system: all calls to the help system from the GUI cause the overview "AccuRev Help System" topic to appear.

If you wish to use Internet Explorer 7 as your default Web browser, install another Web browser and configure it to be invoked by the GUI's help system. For example, if you obtain the Opera browser at [www.opera.com](http://www.opera.com), you might configure it for use with AccuRev as follows:

```
accurev setpref AC_BROWSER "c:\Program Files\Opera\Opera.exe"
```

This setting is stored in your personal AccuRev preferences file — for example, at **C:\Documents and Settings\derek\accurev\preferences.xml**.

## Source Code Availability

In accordance with the GNU open-source policy, the source code for the AccuRev program **acdiff** is available at this Web address:

```
http://www.accurev.com/download/open-source/acdiff_source.zip
```

This program implements text-file comparison and merging operations.

## XML-Format Output of CLI Commands

Many of the commands in the AccuRev CLI tool, **accurev**, can produce output in XML format (**-fx** option). The documentation for this release does not describe the structure of the commands' XML-format output.

## Renaming Another User's Workspace in the GUI

In a Workspaces tab, you can enable **Show All Workspaces**, select another user's workspace, and invoke the **Edit** command from its context menu. If you rename the workspace, its username suffix changes to your username.

In this case, use the CLI command **chws -s** to restore the proper username suffix to the workspace.

## Changed Behavior of the AccuRev Merge Tool

In Version 4.6, the AccuRev Merge tool calls the GNU **diff3** program (named **acdiff3** in the AccuRev distribution) to compare file contents. Consequently:

- The Merge tool now combines into a single conflict section what prior versions of the Merge tool presented as multiple separate conflict sections.
- The “ignore” options on the Diff/Merge tab of the AccuRev Preferences window (for whitespace and capitalization) now apply only to the AccuRev Diff tool, not to the AccuRev Merge tool.

## Changed Behavior of the CLI ‘cat’ and GUI ‘View’ Commands

In previous releases, the following commands displayed the contents of the version in the user's workspace stream:

- GUI's File Browser: **View** command on the context menu of a text file.
- CLI: **cat** command, with no **-v** option.

Similarly, commands that referenced the workspace's version of a file (for example, **Diff Against Backed Version**), used the version in the user's workspace stream.

In Version 4.6, these commands display the contents of the file in the user's workspace tree (on the client machine), *not* the contents of the version in the workspace stream (in the repository on the AccuRev Server machine).

To reference the workspace-stream version in the CLI, use this command:

```
accurev cat -v <workspace-name> <filename>
```

## Trailing SPACE Characters in Filenames

File system objects whose names contain trailing SPACE characters are not handled correctly by the Windows operating system. Because of this, you may see strange behavior with such objects when using them with AccuRev.

We recommend that you take care not to allow such objects to be created in AccuRev workspaces — or to rename the objects before placing them under AccuRev version control.

## Principal Enhancements in Version 4.6

The following sections describe the principal enhancements in AccuRev Version 4.6.

### Windows Vista Support

AccuRev Version 4.6 is now fully supported on the Microsoft Windows Vista operating system.

### AccuRev Database Size

On all platforms *except AIX*, AccuRev Version 4.6 supports 64-bit file access to repository (**.ndb** and **.ndx**) files, which can now be larger than 4GB.

Note: on AIX, the file size limit is 2GB.

### Symbolic Link Elements

Previous AccuRev releases provided two kinds of link elements: *file links* and *directory links*. Directory links were implemented in the local file system as symbolic links (Unix/Linux) or junction points (Windows).

In Version 4.6, support for links in the AccuRev repository has been made more flexible and more closely aligned with operating systems' implementations. AccuRev now supports two kinds of link elements:

- **element link** — a link whose target is an AccuRev element: a file element, directory element, or another link element. Element links are listed with the status indicator (**elink**).
- **symbolic link** — a link whose target is a pathname. The link target is not restricted to being an AccuRev element. Element links targeting non-AccuRev elements are converted to symbolic links. Symbolic links are listed with the status indicator (**slink**).

When **Populate** or **Update** is used to bring an AccuRev element link into a workspace, the link object can be instantiated in the local file system as a hard link (Windows/Unix/Linux) or a symbolic link (Unix/Linux only).

Similarly, an AccuRev symbolic link can be instantiated as a symbolic link (Unix/Linux) or a junction point for *directories* (Windows). Symbolic link elements to *files* are not supported for Windows platforms.

### Creating Link Elements

In the AccuRev CLI, the **ln** and **add** commands create link elements. The **-s** option has been added for symbolic links. See the reference pages for these commands in the *AccuRev CLI User's Guide*.

In the AccuRev GUI, the File Browser's **Paste Link** and **Add to Depot** commands create link elements. See the File Browser's context-sensitive help.

## Upgrading Existing Repositories Containing Links

When an existing AccuRev repository is upgraded to the Version 4.6 level during product installation, existing file and directory links, previously reported with the status indicator **(link)**, become element links — status indicator **(elink)**.

Note: this is a change to AccuRev’s file-status routines, not to the AccuRev repository format.

## Updating Link Handling in Scripts and Triggers

As noted in the preceding section, the status of link objects is reported differently by Version 4.6 than by prior AccuRev versions:

- Link elements in existing repositories were reported with status indicator **(link)**. These objects are now are reported with **(elink)**.
- Symbolic link elements, introduced in Version 4.6, are reported with a new status indicator, **(slink)**. Link elements created prior to Version 4.6 will not be reported with this status indicator.

Consequently:

- Existing scripts and triggers must be changed/revalidated to handle **(elink)** in place of **(link)** status indicators.
- New scripts and triggers must be able to distinguish between **(elink)** and **(slink)** elements, and to handle them appropriately.

## Improvements to Archiving of Version Container Files

In previous AccuRev releases, only versions having the **binary** element type could be archived. In Version 4.6, all element types can be archived.

The **archive** command is more flexible, allowing more (even *all*) of an element’s versions to be archived

The **unarchive** command is also more flexible: a single **unarchive** command can restore all the archived versions of one or more elements, even if those versions were archived in multiple **archive** commands.

See the **archive** and **unarchive** reference pages in the *AccuRev CLI User’s Guide*, along with the chapter *Archiving of Version Container Files* in the *AccuRev Administrator’s Guide*.

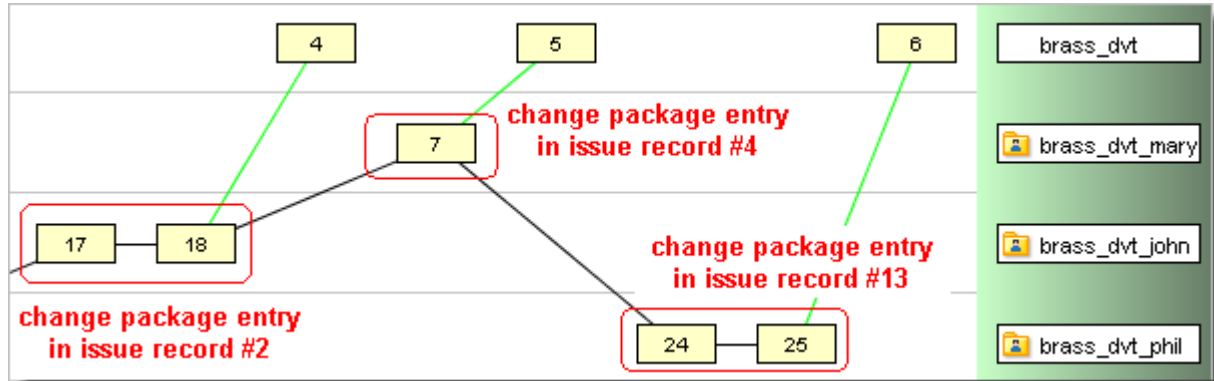
## Enhancement to the ‘Update’ Command

The **Update** command can now succeed in a workspace that includes files whose AccuRev status includes the **(modified)** indicator. If all such files are not due to be updated, they are simply ignored during the update. If one or more such files *are* due to be updated — and thus have **(overlap)** status — you can still have the update attempt to proceed, with a user preference (GUI) or a command-line option (CLI).

See section *Handling of (modified) Files / Merge on Update* on page 231 of the *AccuRev CLI User’s Guide*.

## Change Package Dependencies

AccuRev Version 4.6 introduces the notion that a change package can depend upon one or more other change packages. (Or equivalently, that an issue record can depend upon one or more other issue records.) A simple example illustrates this concept:



At this point, issue record #13 is active in stream **brass\_dvt**. Promoting that issue record (using **promote -Fx -l**) promotes version **brass\_dvt/6** (real version: **brass\_dvt\_phil/25**).

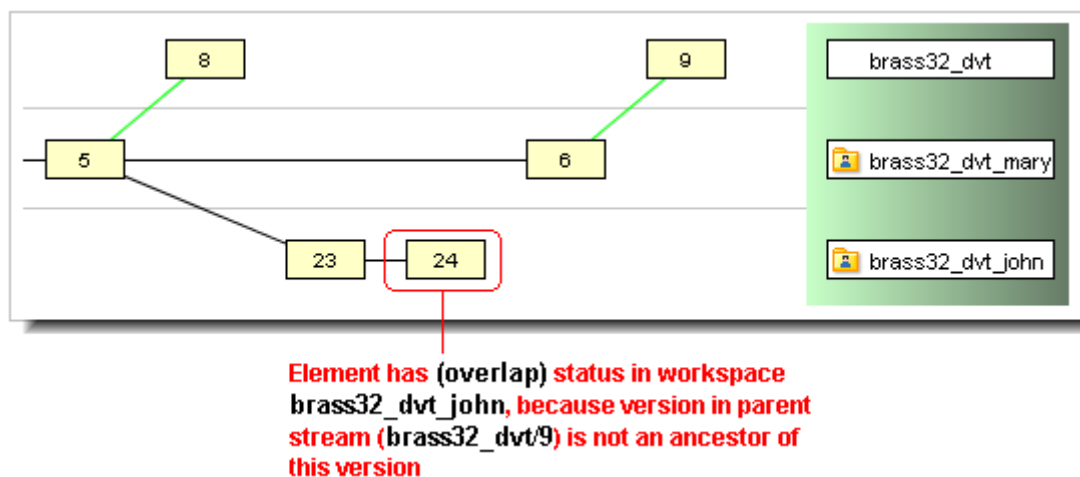
Promoting issue record #13 would give you “more than you asked for”: it would automatically promote issue records #2 and #4, as well. We describe this situation by saying that issue record #13 depends on issue records #2 and #4.

In the AccuRev CLI, the **cpkdepend** command lists change package dependencies. In the AccuRev GUI, the context menu of a stream in the Stream Browser includes the command **Show Dependencies**.

## New Status Indicator for Elements: (underlap)

Prior AccuRev releases used this definition of (**overlap**) status:

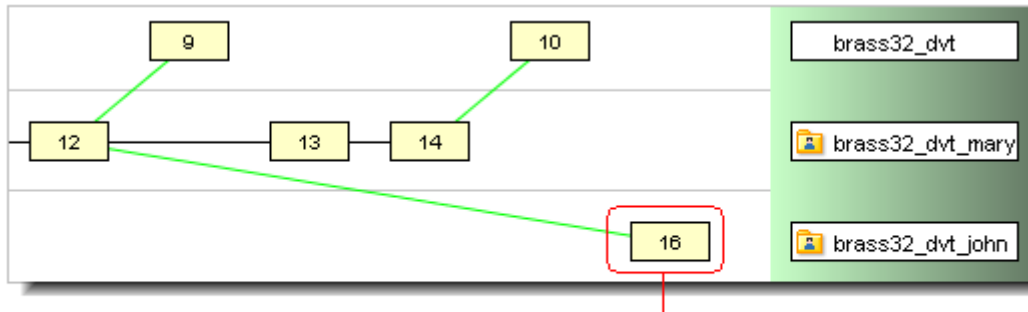
Version W, in a workspace or stream, has (**overlap**) status if version P in the parent stream is not an ancestor of version W.



Version 4.6 distinguishes this special case of (**overlap**):

Version P is not an ancestor of version W, but Version W *is* an ancestor of version P.

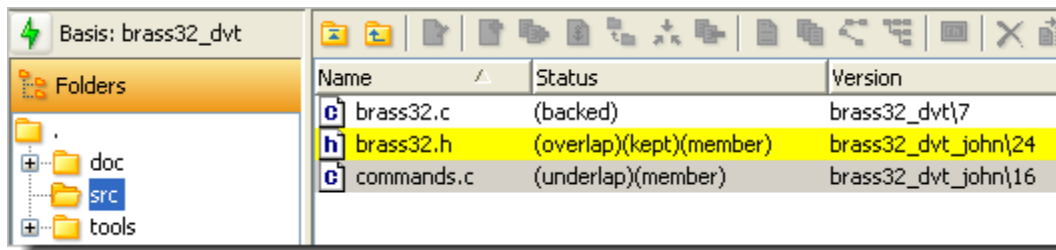
That is, the changes in the workspace or stream's version already appear in the parent stream. In Version 4.6, this is not considered to be an (**overlap**), but a new status, called (**underlap**).



**Element has (underlap) status in workspace brass32\_dvt\_john, because this version is an ancestor of the parent stream's version (brass32\_dvt/10)**

This Version Browser example illustrates a common (**underlap**) scenario: **john** brings an old version, **brass32\_dvt\_mary/12**, of the element into his workspace, using the **Send to Workspace** (CLI: **co**) command; this old version is an ancestor of the version currently in the backing stream of **john**'s workspace.

In the File Browser, elements with (**underlap**) status are highlighted in gray, to distinguish them from files with (**overlap**) status, which are highlighted in yellow:



The File Browser's Searches pane now includes an **Underlap** search. The CLI command **stat** now supports the filter option **-U**, which selects (**underlap**)-status elements.

## New Issue Relationship Types

There are now three kinds of relationships that can be represented in a Relationship-type field in an AccuWork issue record:

- **Duplicate:** You can specify that issue record B duplicates issue record A, so that no work need be done on B. (Perhaps the same bug was reported twice.) Any number of records (B, C, D,...) can duplicate a given record (A). The default AccuWork issue database schema requires that a Duplicate relationship be established when an issue record's State field is set to the value Duplicate.

- **Dependency:** You can specify that issue record B depends on issue record A (for example, from a project management viewpoint). AccuRev imposes no further semantics on such dependencies; this is a good application for user-defined scripts or practices.

Note: this relationship is independent of change package dependency relationships among issue records, which are maintained automatically by AccuRev.

- **Subtask:** You can specify that issue record B defines a subtask of the work to be performed for issue record A. In this case, AccuRev considers issue record A to be “in” a particular stream only if issue record B is “in” that stream, also.

## Annotate Version Timeline

A timeline appears at the top of the AccuRev GUI's Annotate tab, with an entry for each version of the text file element.

Date	#	User	Line	Content
2005/08/02 18:08:55	41460	jjp	180	for fil in dir[Z]:
2005/08/02 18:08:55	41460	jjp	181	pathmap[key] = os.path.join(dir[0],
2005/08/02 18:08:55	41460	jjp	182	key = key+1
2005/08/02 18:08:55	41460	jjp	183	
2005/08/05 15:23:42	41689	jjp	184	elif datatype == GENERATE:
2005/02/25 11:18:59	34544	jjp	185	# each file contains a name-stamp an
2005/02/25 11:18:59	34544	jjp	186	# file (or a default set of "line N
2005/02/25 11:18:59	34544	jjp	187	

You can use the timeline's slider control to switch among the file's versions. (Alternatively, just click a timeline entry to jump to that version.) Whenever you switch to a different version, AccuRev automatically highlights the lines that were added or changed in that version.

## Per-Directory Control of Pathname Optimization — the .acignore File

AccuRev's pathname optimization facility provides for faster performance by allowing certain objects to be ignored during various commands — notably **(external)**-status objects during whole-workspace searches. The value of environment variable ACCUREV\_IGNORE\_ELEMS is a pathname pattern — or several patterns, separated by SPACES; objects whose pathnames match a pattern are ignored by the various commands.

AccuRev now supports specification of objects to be ignored on a per-directory basis, in addition to the global specification in ACCUREV\_IGNORE\_ELEMS. One or more directories in a workspace can contain a text file named **.acignore**. An **.acignore** file works the same way as ACCUREV\_IGNORE\_ELEMS, with these exceptions:

- In an **.acignore** file, multiple patterns must appear on separate lines — not SPACE-separated on a single line.

- An **.acignore** file applies only to its own directory. In particular, it does *not* apply recursively to lower-level directories.

For full details on pathname optimization, see *Pathname Optimization: ACCUREV\_IGNORE\_ELEMS and .acignore* on page 27 of *AccuRev Technical Notes*.

## Additional Enhancements in Version 4.6

### 2672

The GUI's Merge Tool now displays the closest common ancestor version as well as the two contributor versions.

### 3266

If a workspace is exclusive file locking and has items in its default group, you cannot change its backing stream.

### 3421, 7364

A special case of (**overlap**) status — in which the changes in a version are already present in the backing-stream version — has been designated a new status: (**underlap**). See *New Status Indicator for Elements: (underlap)* on page 17.

### 5261, 13234

The **ping** command has been removed from **accurev**, and the **diag** command has been enhanced. **diag** is generally used by AccuRev Customer Support to diagnose performance issues.

### 5393

Patching by change package is now supported:

```
accurev patch -I <issue-number> <element-list>
```

### 5762

Dependency checking for change packages has been implemented. See *Change Package Dependencies* on page 17. See also #14143 with regard to patches and dependencies.

### 5844

You can now import sets of include/exclude rules, in XML-format, using **mkrules -I**.

### 6351

A stream's Development Activity subwindow in the Stream Browser is now resizable.

### 6848

The **patch** command now supports a user-specified basis version:

```
accurev patch -j <basis-ver-spec> -v <ver-spec>
```

## 7152, 12245

**archive/unarchive/reclaim** options have been enhanced. Snapshots and other tip versions can now be archived, and users can specify what element types to archive. Archive operations are triggered, so unauthorized users can't execute them. However, information requests are always executed. See *Improvements to Archiving of Version Container Files* on page 16.

## 7376

You can now **Promote** selected elements from the Change Package Contents pane of the Stream Issues tab.

## 7813

The File Browser's **Stranded** search now lists "Parent EID", the element-ID of the element whose removal caused the stranding. The corresponding CLI command, **stat -i -fx**, identifies this element with the XML attribute **parentEid**.

The stranded element is now listed with a pathname that includes *../* to emphasize the fact that it does not have a valid pathname in this context.

## 8404

Depot names are now passed to a **server\_admin\_trig** trigger for all commands that require them: **chdepot**, **chslic**, **lock**, **lsacl**, **mkdepot**.

## 8774

License upgrades can now be executed without stopping and restarting the AccuRev Server. The **licenses** command rereads the license information and displays product type, along with the number of AccuRev, AccuWork, and AccuWorkflow licenses.

## 9388

The **patchlist** command now supports the **-e** option, allowing an element to be specified by its element-ID.

## 9704

Stream support has been added for AccuWorkFlow projects:

- Projects are identified as such in the Streams database, and the XML output of **show streams (-fx option)** displays that identification.
- Users can set (or clear) a Stream's workflowProject flag with **chstream**.

## 10584

The AccuRev Installation Wizard supports installation on Windows Vista.

## 11022

The New Workspace wizard has been simplified. It is now easier to specify the pathname at which the workspace tree will be created. The less-used options, "pick and choose", exclusive locking, anchor required, and EOL have been moved to the final screen.

## 11539

The Stream Browser's "default group subwindow" functionality has been enhanced. Now, the icon below a workspace or stream opens a resizable Development Activity subwindow for that workspace or stream. Depending on the mode, this subwindow lists active files, active transactions, or active issues.

## 11642

The GUI main menu includes a new command, **Tools > Change Password**.

## 11683

The AccuRev Technical Notes chapter on "Techniques for Sharing Workspaces" has been updated with information on configuring Samba shares to work with AccuRev.

## 11768

An AccuWork issue database can now be configured to have the **Issues > Look Up** command use a lookup field other than the default (field name **issueNum**). In this case, the lookup value must exactly match (except for uppercase/lowercase) some issue record's value of the alternate field.

The alternate field is also used by the AccuRev-AccuWork integrations.

## 11955

The output of a **hist -fx** command now includes some or all of these attributes in each XML `<version>` element:

**ancestorNamedVersion**  
**mergedAgainstNamedVersion**  
**patchedFromNamedVersion**  
**patchBasisNamedStream**  
**revertedFromNamedVersion**  
**revertBasisNamedStream**  
**realNamedVersion** (stream identified by name)  
**virtualNamedVersion** (stream identified by name)  
**real** (stream identified by number)  
**virtual** (stream identified by number)

## 12235

Links can now be created to non-AccuRev locations (that is, not within the workspace). These are implemented as symbolic link elements. See *Symbolic Link Elements* on page 15.

## 13450

Column headers have been added to the output of several forms of the **show** command.  
Example:

Workspace	Storage	Host	Stream #	Target	X-Action	WS Type	EOL
inca_dvt_john	C:/wks/inca/dvt_john	jposner	9	78	78	1	0
inca_mnt_john	C:/wks/inca/mnt_john	jposner	16	95	95	1	0

## 13539

AccuRev recognizes a new preference, implemented through environment variable (or preferences file setting) `USE_IGNORE_ELEMS_OPTIMIZATION`, and also settable in the GUI's AccuRev Preferences window. This preference makes the pathname optimization facility, used in the determination of file statuses, available to the **Update** command, as well.

## Fixes in Version 4.6

The following issues were resolved in AccuRev Version 4.6:

### 2614, 10954, 11690

Following of ACL permissions has been improved:

- The **show streams** and **show depots** commands do not show streams and depots that you cannot access.
- The **stat** command does not show results for streams that you cannot access.

### 3314

Attempting to rename a depot to a previously-used depot name now generates an error message. This operation is not allowed.

### 3428

Rollovers in the GUI History palette now show a stream's *name* and version, not stream *number* and version.

### 3469

**remove wspace** and **reactivate wspace** now work for any user, not just the owner of the workspace.

### 4303

Triggers wouldn't run on a Unix/Linux machine if their location was the last entry in the `PATH` environment variable.

#### 4711

Users with insufficient privileges to run **Synchronize Time** now receive warnings, instead of a series of **out of sync** messages. The corresponding CLI command, **synctime**, now returns a nonzero exit status in this case.

#### 4812

The **diff** command returned an error if the first argument referred to a different workspace than the one in use, and that workspace had never been updated.

#### 4903

The **merge** reference page was updated to include **merge -O**, (use the workspace version) for each file merged. This is equivalent to performing the “over” action (overwrite with workspace version) on each file to be merged.

#### 5122

The **chws** and **mkws** commands now correctly handle the situation in which you attempt to reuse the name of a deactivated (removed) workspace. This operation is not allowed.

#### 5161

The **chstream** command produced a confusing error message if the user’s ACL privileges were insufficient to reparent that stream.

#### 5348

These commands now check ACL permissions correctly, aborting the requested operation if appropriate: **move**, **keep**, **defunct**, and **purge** (GUI: **Revert to Backed**).

#### 5373

When the server is out of space, failed server operations now generate a disk full error message in **acserver.log**.

#### 5439, 10093

When two versions of a file element are compared from the Change Palette, the pane configuration in the Diff Tool now matches that of the Merge Tool: source version on the left, destination version on the right.

#### 5577

The GUI would hang if a custom diff/merge tool was configured but could not be found.

#### 5716

The GUI now allows directories to be specified with UNC paths (\\...).

#### 6452

**issuelist/issuediff** with **-s/-S** options now work correctly when run from a different depot’s workspace.

## 6517

The **Save As** command failed silently if the target directory did not exist. Now it reports an error.

## 7173

The **add -R** command now recursively processes the specified directory(s). You need not specify the **-x** option.

## 7232

The **ismember** command now performs user authentication in all circumstances.

## 7279

The **Promote** command is now enabled correctly in history contexts — in an Active Transactions tab, but not in a History Browser tab.

## 7359

At startup, the GUI now ignores a configured screen size that is too large for the actual display screen.

## 7463

If you **View** a file in the File Browser rather than **Edit**'ing it, then edit it and try to save it, a "Save as ..." dialog box correctly appears.

## 8254

When called incorrectly (e.g. with a count that turns out to be wrong), progress bars now emit messages to the log and continue working.

## 8267, 8557

In the Stream Browser, **Search for Stream** no longer fails when the sub-hierarchy containing that stream is collapsed: it expands the node to display the stream.

## 8841, 11672

[AIX] Non-English characters in **Keep** comments caused data to disappear from the History Browser and Version Browser. Illegal characters could be placed in a stream name via cut-and-paste, causing the stream name to disappear in the GUI.

## 9922

The change-package-level trigger (integration between AccuRev and AccuWork) did not fire when elements were promoted to a pass-through stream.

## 9928

For some server/client platform combinations, adding Unix pipe files to source control (or overwriting regular files as pipe files) would hang AccuRev. Pipe files are not supported by AccuRev.

## 10239

The **stat** command now does not traverse a link element that points to a directory if that is the element whose status you've requested. Example: given this link:

```
./src/test/include->./include/
```

- This command traverses the link and reports the status of file **./include/block.h**:

```
accurev stat ./src/test/include/block.h
```

- This command reports the status of link element **include**:

```
accurev stat ./src/test/include
```

## 10334

The **Diff Against Backed** command failed if the path contained a renamed directory.

## 10377

For each CLI command that accepts the **-s <stream\_name>** option, the command's reference page now describes the requirement that an element be specified with a depot-relative pathname.

## 10431

The **accurev diff -j -v** command no longer hangs when reporting on a version without a corresponding basis version. It no longer reports "Element archived and unavailable" for an element's first version.

## 10961

The **stat** command sometimes performed slowly.

## 11040

Reverting renamed elements caused "Duplicate database transaction rejected" errors.

## 11159

The New Workspace wizard did not support placing the workspace tree on another drive — for example, at **E:\mywks**.

## 11193

On Macintosh platforms, the AccuRev Installation wizard now points to a current JRE.

## 11521

The **server\_admin\_trig** trigger parameters file now includes data to fully support the **ismember**, **addmember**, and **rmmember** commands:

- The **<user>** element identifies the user (or group) being added to a group, removed from a group, or tested for membership in a group.
- The **<group>** element identifies the target group.

## 11588, 11818

In certain cases, cross-linked elements appeared read-only but were actually writable. Now they are really read-only.

## 11702

Users who had the ACL permission **none** for a depot but **all** for a stream within that depot could not access the stream.

## 11715

[Unix/Linux] **accurev stat \*** and **accurev stat -x** now display the same symbolic link path.

## 11739

You can now have multiple concurrent login sessions, from multiple client machines, with all the session files stored in the same **.accurev** directory. Session filenames now incorporate the names of both the client and server machines.

## 11751

Workspace update failures occurred on filenames matching **ACCUREV\_IGNORE\_ELEMS** in workspaces which were cleaned out, then **populated**, then **updated**.

## 11835

The sample **server\_preop\_trigger.pl** script had a coding error in handling element lists.

## 11846

An incorrect error message appeared when the **remove user** command was invoked on a user who was currently logged in.

## 11850

The **promote -Fx -l** command did not work correctly for stranded elements.

## 11860

Command-line **accurev diff** returned empty output.

## 11902

Attempting to **merge** elements not found in the source stream generated misleading error messages.

## 11941

Documentation has been updated to clarify that files in a workspace that have been modified, but never kept, are not members of the default group.

## 11946

The File Browser's **Diff Against Basis Version** command sometimes gave incorrect results.

## 11954

The *AccuRev Administrator's Guide* incorrectly stated that **acwatchdog.log** was updated every ten seconds.

## 11991

Symbolic links are treated as files in File Browser searches and by CLI file-status filters. For example, **accurev stat -x -ff** shows symbolic links, but **accurev stat -x -fd** doesn't.

## 12015

The trigger code for the **reactivate** command in the sample **server\_admin\_trig.pl** script was not being invoked if the command was issued from the AccuRev GUI.

## 12029

The History Browser's **Revert** command occasionally failed to restore defuncted link elements.

## 12060

File status information displayed by the **cpkdescribe** command for missing and defunct elements differed, depending whether the command was invoked directly or through the **xml** command.

## 12061

The documentation for AccuRev environment variables has been updated, including clarification of the variables' values.

## 12075

If the History Browser's **Revert** command involved the initial version of one or more elements, the command would fail. Now, AccuRev displays messages on how to handle such elements.

## 12101

[Linux] An initial right-click in the schema editor moved the header table to the bottom.

## 12133

Documentation on the effects of defuncting files, directories, and subdirectories within defuncted directories has been clarified.

## 12141

Commands to send elements from an inaccessible (*e.g.* another user's) workspace to the current workspace would fail. Such commands are now disabled. (See issue [13707](#).)

## 12145

Source controlled files matching the **ACCUREV\_IGNORE\_ELEMS** environment variable were ignored.

## 12157

Element links to directories did not work correctly if a workspace tree was moved to a different location.

## 12189

Creating symbolic links to directories and pasting them into workspaces produced incorrect results.

## 12228

Closing a File Browser's tab when it was in Include/Exclude mode sometimes hung the GUI.

## 12249

Adding an entry to a change package sometimes failed with the message "Change package invalid".

## 12298

The GUI sometimes hung while defuncting files.

## 12345

The **Populate** command produced a garbled error message when the requested version was archived.

## 12352

The **translist** command crashed the server if it specified another depot's stream.

## 12413

The AccuRev Merge Tool failed to remove a text block from the merged version in certain cases.

## 12498

Defuncting files via a list file (-l option) retains leading and trailing whitespace around visible filenames. Blank or whitespace-only lines are ignored.

## 12530

If a basis time was added to a stream and a workspace under that stream was not updated, some commands in the workspace produced confusing results.

## 12544

Command-line help for **accurev hist** did not show the **.count** option.

## 12545

The **hist** reference page did not mention the fact that an interval specification cannot include the **now** or **highest** keyword.

## 12568

The Diff Tool sometimes truncated text lines.

## 12569

The **diff** command failed to use the file in the workspace tree when the **-v** option was specified.

## 12687

Documentation of the **Promote** command has been updated to note that elements are *not* removed from a stream's default group when the elements are cross-promoted to a stream that is not the immediate parent stream.

## 12704

In certain cases, sorting a table in the GUI by timestamp did not work correctly.

## 12734

A whole-stream comparison (**diff -a -i -v -V**) sometimes produced incorrect results if one of the streams was a workspace stream.

## 12762

Symbols like **%** in AccuWork field names caused data loss. Illegal characters in field names are now filtered out.

## 12802

The File Browser's **Save As** created an empty file if the source stream was ACL-restricted. Now, the target file is not created at all.

## 12812

The Stream Browser display did not autoscroll when the user dragged a stream's Development Activity icon.

## 12814

The Araxis diff/merge tool was invoked erroneously if a pathname contained an apostrophe character.

## 12861

The **login** command allowed logging in with a groupname instead of a username.

## 12925

A confusing error message was displayed when a promotion failed because of a twin element in the parent stream.

## 12929

The *AccuRev Administrator's Guide* did not emphasize that live backup of the AccuRev repository depends on the backup tool's ability to copy files that are in use at the operating-system level.

## 13007

Some **Promote** operations created duplicate transaction records on the server, due to miscommunication between **pre-promote-trig** and **server-post-promote-trig** scripts.

## 13117

The command **File>New>Depot** generated a Java **null** exception.

## 13120

If any empty list-file was specified in a **promote -l** command, the **-l** option was ignored entirely.

## 13145

In the AccuWork Schema Editor, changing a field's type sometimes crashed the AccuRev Server.

## 13147

Users could remove dynamic streams with the **rmws** command.

## 13154, 13176

The AccuRev installation wizard sometimes ignored the user-designated storage directory and recorded the default location or a bogus location in the **acservr.cnf** configuration file.

## 13169

Users couldn't create cross-links from one dynamic stream to another, getting bogus "Element not found ..." error messages.

## 13174

The sample **server\_admin\_trig.pl** script did not properly handle the **chdepot** command, allowing a depot's root stream to be renamed while preventing the depot itself from being renamed.

## 13191

A user could remove another user's workspace (without using **rmws -s**) if one username was a substring of the other.

## 13247

If a field's type was changed in the AccuWork Schema Editor, the GUI could hang when a users visited an issue record's Issue History subtab.

### 13276

The **Update** command ignored some cases in which updating the workspace would cause an element to become stranded.

### 13296

Attempting to assign a pathname to a stranded file with **move -e** *<element\_id>* didn't work.

### 13360

The **promote -t** command sometimes promoted the wrong versions of elements, because it did not check whether the requested versions were created in the "from" stream or workspace.

### 13410

The **files** command reported cross-linked elements as having **(external)** status.

### 13411

The **stat** reference page incorrectly asserted that the **-O** option could cause certain elements to be reported as **(missing)**.

### 13412

When processing an element that was a member of a set of twins, the Change Palette could create a new version of the wrong twin.

### 13435

Problems with temporary directories sometimes caused an **Update** to fail, particularly after a **Revert to Backed** (CLI: **purge**) operation.

### 13451

AccuRev erroneously allowed creation of cross-links from a time-based stream to a stream with a more recent basis time (or no basis time). This produced confusing results.

### 13466

[Unix/Linux] The **Annotate** command failed if the AccuRev **bin** directory was not writable.

### 13526

The **keep** command was ignoring its **-O** option.

### 13574

AccuRev erroneously allowed execution of an **update -t** command that specified a transaction that preceded the workspace's creation. This could cause both **accurev** and the AccuRev Server to hang.

### 13584

The **diff** command produced incorrect results for a stream that had a basis time of **now** and that also used include/exclude rules.

### 13673

Very long comments caused the History Browser and Version Browser to fail.

### 13679

Reparenting a workspace could cause a subsequent **co -v** command in that workspace to fail.

### 13689

In an AccuWork edit form, names of removed users could be used for new work (e.g. setting the value of a User-type field in an issue record).

### 13707

In a Workspaces tab, invoking the **Edit** command on another user's workspace caused the GUI to hang.

### 13768

A directory could not be cross-linked if it was in the default group of the workspace or stream.

### 13773

The **server\_preop\_trig.pl** script applied an exclusive file lock ("serial") to any file containing ".doc". This has been corrected, so that the filename must end with ".doc". Similarly, a warning on filenames containing "bin" has been corrected to apply to filenames ending with ".bin".

### 13793

[Windows] In NTFS partitions, the **ln** command failed to create junction-point links on existing (not newly-created) directories.

### 13803

Setting an "include directory only" (incldo) rule on a workspace's top-level directory (\.), then creating a cross-link to a file in that workspace did not include the cross-link.

### 13926

[Windows] If an AccuRev symbolic link could not be properly instantiated in the file system, an empty directory was created in the workspace during an update. Now, no object is created in the workspace.

### 14063

In the File Browser, the **Promote** command was not enabled for element links in the default group.

### 14094

The **Annotate** command did not use the contents of the file in the workspace tree for an element with **(modified)** status.

## 14097

In the schema validation tab, users could create duplicate workflow stage names (*e.g.* Closed) which appeared in the output. Workflow names are now recorded. Attempts to create duplicates bring up a dialog box.

## 14161

The **Patch** command failed if the version being patched did not have a corresponding basis version.

## Fixes in Version 4.6a

The following issues were resolved in AccuRev Version 4.6a:

### 15048

AccuRev command performance in the presence of many group memberships was improved.

### 15044

**show active transaction** in the GUI returned no result.

## Fixes in Version 4.6b

The following issue was resolved in AccuRev Version 4.6b:

### 15103

**Promote** failed when the target stream and source stream had locks set with different groups

## Known Issue in Version 4.6

### 14962

The *AccuRev Administrator's Guide*'s procedure for reusing a depot name after executing **rmdepot** (on page 116) is incorrect. Use this procedure instead:

1. Run `accurev chdepot -p <depot_name> <deleted_depot_name>`
2. Stop the server.
3. Run `maintain rmdepot <deleted_depot_name>`
4. Remove the depot's storage directory.
5. Start the server up again.
6. Run `accurev mkdepot -p <depot_name>`