

# Active4D v5.0r19

## IMPORTANT!

The minimum version of 4D for use with Active4D is v11.5 (including betas and master candidates). I have been working closely with 4D to fix many bugs and eliminate many memory leaks in v11.5. There are too many bugs and leaks in previous versions to certify them for use with Active4D.

## Documentation

In addition to a complete documentation set specific to v5, there is also an Addendum that covers changes to v5 relative to v4.x. If you are upgrading from v4.x, please read it carefully so you will know what has changed and what issues you may run into.

## Requirements

### Software:

Active4D v5 requires **4D v11.5** or later. Currently there are no plans to support earlier versions of 4D.

### Hardware:

Mac OS X 10.4+, Intel processor  
Windows XP SP2+

## Upgrading

Please see the documentation.

## Known issues

- **SET QUERY LIMIT** is not obeyed when used with **QUERY BY FORMULA**. This is a bug in 4D.
- As of 11.4hf5, when you use one of the record selection commands (such as **goto selected record**) along with the auto relate many option, *and* the one to many relation you are interested in is manual, the related many records will **not** be selected. Currently the workaround is to explicitly use **relate many**.
- With 4D's web server and Safari 4, uploads are not working. This is not a problem with other browsers or with NTK as the host web server. 4D is working on a fix.
- Active4D defines all of the 4D 2004 and 4D v11 named constants, but no longer has

access to custom constants that came from 4DK# resources. However, you can easily convert your custom constants to an Active4D library that will give you access to them. Please see “convert\_constants.pdf” for information.

- Do **not** attempt to save a collection or session in v5 to a blob or document and then load it in v4.5. Saved collections are **not** backwards compatible.

- Active4D cannot be used out of the box as a component because limitations in the plugin API prevent Active4D from accessing variables and methods in components.

## Changes

### v5.0r19

Changed components:

- Plugin

- Documentation

- [1089] Hopefully fixed the default directory to be in the documented place under Windows.
- Fixed a bug where the Active4D library could not be found when running under Client.
- Fixed the documentation to correctly reference the section on the default directory wherever the default directory is mentioned.

### v5.0r18

Changed components:

- Plugin

- Documentation

- [1086] Fixed an edge case where **replace string** would not correctly replace a series of two or more LF with CR.
- Fixed a bug in image.a4d that prevented images from being retrieved from the database if the id field was alpha.
- Documented the difference in string matching behavior between Active4D and 4D at the beginning of the “Strings” section of the Command Reference.

- Documented the need to declare all callback methods in the host database.

v5.0r17

Changed components:

- Plugin
  - Documentation
  - a4d.utils.a4l
- Converting a boolean value to a string (either automatically or via the **STRING** command) will respect the language version of 4D. For example, in the French version of 4D, **STRING(True)** returns “Vrai”.
  - **QUERY/QUERY SELECTION** now works correctly with boolean values in non-English versions of 4D.
  - The session id variable (*\$sid* by default) is now properly created.
  - [1082] Added missing **end case** in a4d.utils.truncateText.
  - Small documentation tweaks.

v5.0r16

Changed components:

- Plugin
- [1080] Fixed problems with commands (such as **SELECTION TO ARRAY**) that required the creation of temporary process variables internally.
  - The default web root under Client was set to the 4D application instead of the documented default directory. This has been fixed.
  - **GET/SET DATABASE PARAMETER** was to working reliably. This has been fixed.
  - Unicode/compatibility mode is now logged with the 4D environment.

## v5.0r15

### Changed components:

#### - Plugin

- [1079] Date subtraction was off by one in some cases, this has been fixed.

## v5.0r14

### Changed components:

#### - Plugin

- [1070] Log files are now rotated properly on Windows.
- [1072] ICU data is now found successfully on Windows and under Client.
- [1075] Boolean values (such as 'auto create vars') now work correctly in Active4D.ini.
- [1076] Using **continue** in the last iteration of a loop now works correctly.
- [1077] The Mac version works (again) on Mac OS X 10.4.

## v5.0r13

### Changed components:

#### - Plugin

- Key files located in the <shared 4D licenses>/com.aparajita/Active4D folder will be found as documented. Previously I was mistakenly looking in <shared 4D folder>/com.aparajita/Active4D.
- Active4D will startup correctly when running on Client. Previously it would fail to find the ICU resources and would be deactivated.

## v5.0r12

### Changed components:

#### - Plugin

- NTK shell (method A4D\_HTTPD\_ThreadPoolStart)

## - Documentation

- On Windows XP (and perhaps Vista/7), the Microsoft VC++ runtime support libraries are required to be installed separately. This is not a change, I thought I could get away without this but it seems I cannot. If you are getting a -1 error because Active4D cannot be loaded when launching your database, you must install the runtime libraries. The runtime library installer can be downloaded here:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=9b2da534-3e03-4391-8a4d-074b9f2bc1bf>

- [1068] **regex replace** with a subject array and replace array no longer crashes.
- The thread worker stack size was being set in bytes instead of kilobytes, which resulted in the minimum stack size, which was not enough. The stack size is now correctly set to the configured size in kilobytes.

## v5.0r11

### Changed components:

#### - Plugin

- [1063] 4D **Num** command now works correctly on non-US systems.

## v5.0r10

### Changed components:

#### - Plugin

#### - Documentation

- [1061] To improve compatibility, the v4.5 behavior of **QUERY BY FORMULA/ QUERY SELECTION BY FORMULA** has been restored and is now the default. To execute the command on the server within 4D's context, the first argument should be \*. Please see the documentation for more details.

## v5.0r9

### Changed components:

#### - Plugin

#### - Documentation

#### - Active4D.ini

- [1057] Attempting to run or include an empty file would cause memory corruption on Windows. This has been fixed.
- [1060] Response cookies are now converted to UTF-8 and url encoded as documented.
- The documentation (in both Active4D.ini and in the reference) has been updated to indicate that you *may* prefix boot volume paths with “/Volumes/<volume name>/” on Mac OS X.

v5.0r8

Changed components:

- Plugin
  - a4d.debug.a4l
  - a4d.json.a4l
  - a4d.utils.a4l
  - Documentation
- Added support for **LONGINT TO BLOB** and **BLOB to longint** commands.
  - Added the named constants **Intel byte ordering** and **PPC byte ordering** as aliases for **PC byte ordering** and **Macintosh byte ordering** respectively. The latter names are misleading, since all Macs now natively use “PC” byte ordering.
  - **collection to blob** and **session to blob** have been enhanced to allow you to pass an existing blob, to which the serialized data is appended. Please see the documentation for more info.
  - **blob to collection** and **blob to session** have been enhanced to allow you to pass an offset at which the serialized data is retrieved. Please see the documentation for more info.
  - New library methods **a4d.utils.collectionToBlob**, **a4d.utils.sessionToBlob**, **a4d.utils.blobToCollection** and **a4d.utils.blobToSession** allow you to save and restore a collection or session with all embedded collections. Please see the documentation for more info.
  - **a4d.debug.dump array** has a new parameter which controls whether numeric array elements which are collection handles are displayed as collections or not. Please see the documentation for more info.
  - **a4d.debug.dump collection** has a new parameter which controls whether

arrays are displayed inline or not. If they are not displayed inline, then numeric array elements that are collection handles are displayed as collections. Please see the documentation for more info.

- [1048] The *inCharset* parameter to **write blob** is now functional and the command does not crash when the type is binary.

#### v5.or7

- [1043] Previously the http server was parsing cookie values according to the relevant specification (RFC 2965 and RFC 2616). But it turns out that in real life cookie values often break the rules (e.g. google analytics!). So now the server will accept anything as the cookie value.

At the same time the cookie parser allows for cookies with a name but no value, as that is allowed in the spec.

#### v5.or6

- [1040] Fixed **a4d.json.addSelection** and **a4d.debug.dump selection** to work correctly if there are deleted fields.
- [1041] Fixed documentation for **a4d.lists.findNoCase**.
- [1042] Character references now work with process variables.
- Updated the TextMate bundle: tweaked some snippets, added some new v11 commands to the syntax highlighting.

#### v5.or5

- Fixed an assignment in **a4d.json.endArray**.
- [1033] All identifiers may begin with a digit to be consistent with 4D (although not with 4D's documentation).
- [1034] Keyword queries (using the % comparator) are now supported.
- [1035] Time values may now be assigned to longint arrays.

- [1037] A boolean expression on the left side of the + operator, when the right side is text, will auto-convert the boolean expression to text.
- [1038] The server does a better job of matching RFC 3986 when parsing URLs, and if an illegal character is encountered it logs the character along with the error message.

#### v5.0r4

- Increased the minimum version of 4D to v11.5.
- [1028] Fixed a number of issues relating to process/interprocess arrays.
- [1032] **goto selected record** no longer restricts the index to >0.
- **regex replace** will accept the same variable/field for the subject and result.
- Changes to the web root are only logged when Active4D.ini is loaded or if the path is invalid.

#### v5.0r3

- [1028] **sort array** would crash under certain circumstances. This has been fixed.
- [1029] Passing an empty blob to **regex replace** no longer crashes, and the regex replace commands now check to make sure the subject and result are not the same variable/field.

#### v5.0r2

- [1026] **A4D Blowfish decrypt** now correctly removes padding.

#### v5.0

- [1019] A typo was fixed in **a4d.utils.deleteSelection**.
- [1020] Whitespace at the end of a path in Active4D.ini is now trimmed before the

path's validity is checked.

- [1021] The output charset configured in Active4D.ini is now properly returned by the **get output charset** command.
- [1022] Assignment to different but type-compatible process variables works correctly in compiled mode.
- [1023] Crashes when using empty pointers have been eliminated.
- [1024] Using **append to array** with a variable for the value no longer kills the variable.
- The OEM variable linked to the key file is correctly recognized now.
- Removed some stray lists that were left in the NTK shell.
- Removed references to *A4D\_ResponseHeaderNames* and *A4D\_ResponseHeader\_Values* in compiler methods.
- Replaced some process arrays with local arrays in the NTK shell.
- **base64 encode** and **base64 decode** have been enhanced with a parameter that creates URL-safe encoding. Please see the documentation for more information.

#### v5.0MC2

- In compiled/compatibility mode, under circumstances text arrays would not be updated correctly. This has been fixed.
- Applied a fix to the 4D plugin SDK that was causing a memory leak.
- Added missing installation step in the documentation to setup the *On Web Connection* method.
- [1018] Table names starting with more than one digit are allowed.

#### v5.0MC1

- [949] **for each** now works correctly with process/interprocess variables.

- [977] Fixed a typo in **a4d.web.getEmptyFields**.
- [1007] Cleaned up some variables in the shell.
- [1008] Event handlers are not purged when using **A4D FLUSH LIBRARY("@")**.
- Fixed a number of typos in the documentation.
- The default image format for images loaded from the picture library and from methods by image.a4d is PNG instead of GIF.
- **get license info** and **A4D GET LICENSE INFO** always return a Posix key file path.

v5.0b4

- [998] **delete collection item** now works with the **\_request** collection.
- [1001] Modifying a library while 4D was running will no longer crash.
- [1004] **write to console** will now work with text that contains embedded tabs.
- [1006] Table names may now begin with a digit.
- **request info**{`*ajax`} is now a boolean. If the request is an Ajax request, it will be True, otherwise False, instead of "1" and "0".
- All known leaks in Active4D have been eliminated. As of v11.5 MC1, 4D leaks when using the following commands: **scan index**, **relate many selection**, and **picture properties** when used with a gif image read from disk. If you use these commands a lot, you should probably plan on restarting 4D once per day until these leaks are fixed.

Previous versions of 4D leak a lot more.

- Adding to a date would be off by the time zone difference between GMT and the local time zone. This could result in a wrong day.
- The variable `<>A4D_DialogTable` is no longer used and has been removed from the shell, since dialogs don't need to belong to a table any more.
- **A4D\_HTTPD\_RequestHandler** in the NTK shell now properly checks for a valid table number when looping through the tables.

## v5.ob3

- [991] Calls to **A4D FLUSH LIBRARY**("\*") will no longer crash.
- You may now pass "@" to **A4D FLUSH LIBRARY** to flush all libraries except the Active4D library.
- Calls to **A4D FLUSH LIBRARY** are no longer synchronous. Please see the v5 Addendum for more information.
- Saving or loading a collection with an empty string item will no longer crash.
- The default web root is now <default>/web instead of <default>.
- All references to **ARRAY STRING** and **C\_STRING** have been converted to **ARRAY TEXT** and **C\_TEXT** in the shells and demo.
- General cleanup of the NTK shell, there was junk left there from testing.
- **type descriptor** now returns the type name for real arrays.

## v5.ob2

- The **Date** command has been enhanced. An additional syntax is now:

**Date**(year; month; day)

This allows you to construct a date programmatically without playing tricks like constructing a date string or using the idiom:

**Add to date**(!00/00/00!; year; month; day).

- The log files are now kept in <database structure directory>/Logs/Active4D. The "Logs" directory is what would be returned by **Get 4D folder**(Logs Folder).