

# AoE3 UnHardcode Patch

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## Summary

The AoE3 UnHardcode is a project started by AoE3 Modders to investigate, research and eliminate the hardcoded issues, also known as "no-nos", which are faced by many modders, like the AI amount limit, in example.

This patcher will change your AoE3:TAD .exe to apply the code needed to eliminate those limitations.

## How to use

To use it, just extract all files to any folder and either drop your *age3y.exe* to the *UHC Patcher* executable, or open the Patcher executable and find the *age3y.exe* of your AoE3 installation manually. You'll be able to choose which patch options you would like to enable from the interface of the patcher, before applying the patch.

Even though the Patcher will work regardless of the directory in which it is located, we recommend extracting the patcher and its required files to the main AoE3 installation (usually *C:\Program Files\Microsoft Games\Age of Empires III* for CD installations and *C:\Program Files\Steam\SteamApps\common\Age of Empires III\bin* for Steam-based installations), since, this way, the patcher will detect the main executable used by your AoE3 installation automatically

The settings of the UHC Patch are defined in a configuration file, which should be located, by default, at *<AoE3 Path>\Startup\uhc.cfg*. For more details and information, please refer to the "UHC Configuration File" document.

## Available Patches

- **AI Limit:** Removes the hardcoded 14 AI/Civilization limit by making the game read all .personality files in the from the AI directory defined in the .exe (which should be *AI/3*, by default).
- **Revolution Banners:** Allows new revolutions to have banners above the revolutionary's portrait in the Revolution UI.
- **Ignore Registry Path:** Makes the game read the AoE3 files from the folder in which the AoE3 .exe is located, instead of looking for a working path in the registry.
- **Team Limit:** Enables team options 3 and 4 for Single Player and Multiplayer games.

- **Resource Restriction:** Allows the usage of the Fame Resource in ProtoActions, like AutoGather and ModifyGather and enables proper displaying of Shipment, Experience and Fame costs in the politician screen and HC cards.

Besides of those features, the UHC Patch also allows the unhardcoding of additional properties through the use of the UHC Configuration file. For more details and information, please refer to the “UHC Configuration File” document.

## Notes

After applying the “Revolution Banners” patch, the game will load the banner for a Revolution from the path *Art\ui\ingame\politicians\REV\_banner\_<techname>*, in which *<techname>* would be the name of the technology used by a Revolution, without the “XPRevolution” prefix, but, unlike previous versions of the patch, the original revolutions will retain their original banner paths.

After applying the “Resource Restriction” patch, in order to ensure that Fame and Experience costs will be displayed in HC Cards, Fame and Experience icons for HC Cards need to be placed at *Art\ui\home\_city\fame\_hc\_icon.ddt* and *Art\ui\home\_city\xp\_hc\_icon.ddt*, respectively.

If the “Team Limit” patch is applied, in order to make the new teams options show up in Multiplayer lobbies, you’ll have to add the following xml entries:

```
<dropdown>$$36143$$Team 3</dropdown>
<dropdown>$$36144$$Team 4</dropdown>
```

**After** the following entry:

```
<dropdown>$$36145$$Team ?</dropdown>
```

In every `<gadget name="mpsetup-playerX-team" ... >` entry in both of the *data\uiMPGameSetupPage.xml* and *data\uiimpesogamesetuppage2.xml* files, where “X” refers to all player numbers from 1 to 8. You can find versions of those files with the necessary edits in the *Documentation\Examples\Team Limit* folder in the files included with this release.

While the new teams work flawlessly in Single Player, in multiplayer, if any player selects any of the new teams, only this player will see what he or she selected correctly, but the game will detect the new team(s) correctly once the game starts. Original teams aren't affected by this bug, and it isn't present in Single Player.

## Credits

Special thanks to Tilanus Commodor for providing us with feedback and with the icon that has been used for the patcher; to Adam, for providing us his feedback and input; to JustTesting1234, for providing the code for the original memory codecave patching functions and to the ESOC team, for providing us with feedback and for testing the “Team Limit” Patch.

## Changelog

### 1.7

- The addition of new Native and Asian civilizations no longer causes crashes. Thanks to Takatmo Yereoc and Hoop Thrower, from AoE3H, for reporting!
- The “Fame Restriction” patch option ( “Resource Restriction”, as of UHC 1.7) now enables the proper displaying of Fame, Experience and Shipment costs in the politician screen and in HC cards
- Some changes have been made to the UHC Plugin System API. Make sure to use the latest *UHCPlugin.h* header file in your plugin projects and refer to the “UHC Plugin System” document for more information
- *customCheats* and *customSyscalls* settings are no longer removed from the Configuration File by the Patcher after patching an executable.

### 1.6

- The bug that caused the “Team ?” and “Team 4” team options to not work properly in Multiplayer, after applying the Team Limit patch, has been fixed.
- A new patch option to allow the usage of the Fame resource in ProtoActions, like AutoGather and ModifyGather, has been added!
- Two new properties have been added for the UHC configuration file: *tacticSwitching* and *farmingRadius*. More information about them can be found at the “UHC Configuration File” document.
- The documentation has been updated to reflect the fact that, in order to the new team options to show up in ESO, the file *data\ui\mpesogamesetuppage2.xml* has to be changed. Thanks to Mandos, from AoE3H, for reporting!
- The Patcher will now create the parent directory for a custom UHC Configuration File relative path, in case it doesn’t exist. Thanks to Mandos, from AoE3H, for reporting!
- The Patcher has been changed to remove the digital signature from an executable, after patching it, in order to prevent it from being detected as a potential threat by some AVs.
- The include files related to the UHC Plugin System have been updated, with some bugfixes and improved commentaries.

### 1.5

- A brand-new plugin system, which allows the implementation of custom patches, syscalls and cheat codes has been implemented. Refer to the “UHC Plugin System” for more information.

- The patcher now has a proper graphical user interface
- The code of both DLLs has been merged into one single UHC.dll.
- All patch options are now defined in the configuration file of the UHC Patch
- The patch configuration file format has been changed. Refer to the “UHC Configuration File” document for more information.
- The bug that prevented the basePop configuration file property from working properly has been fixed
- The option to add more native civilizations no longer removes the native properties of XPSPC civilization

#### 1.4

- Support to new civilizations with the same features of the Native civilizations (Fire Pit UI and Council/Five Politician Aging Up) has been added through the *NativeCivs* property of the UHC Configuration File. More information about it can be found at the “UHC Configuration File” document.
- Game won't start if the UHC Configuration File patch was applied, but no configuration file exists or if it could not be loaded.

#### 1.3

- Three new properties have been added for the UHC configuration file: *AsianCivs*, *BigButtonCivs* and *NotBigButtonBlDs*. More information about them can be found at the “UHC Configuration File” document.
- Fixed the bug that would allow all buildings to have proper Market behaviour, if there were no valid cfg files or no valid entries in the *MarketUnits* property.

#### 1.2

- The bug that would cause the game to fail to load UHC.dll in some systems has been fixed

#### 1.1

- The patches Unlimited Population, Ignore Registry Path and Deck Card Limit have been added.
- A bug was fixed in the AI Limit patch
- Support for the UHC configuration file has been added

#### 1.0

- Initial release