

Advanced Rivals

Mod for Beyond the Sword 3.19

version 0.4

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User Manual (draft version 0.4)

This mod

- handicaps the (single) human player by giving the AI civs Advanced Starts;
- turns off most of the other player handicaps through a custom difficulty setting;
- assigns start points unequally to the AI civs to encourage dog-eat-dog dynamics.

For questions, comments and current activities, please visit the associated forum thread on Civfanatics: <http://forums.civfanatics.com/showthread.php?t=526703>

Starting a game

- The new “no handicap” difficulty setting is recommended but not required.
- By default, the human player starts with the usual free units, e.g. one Settler and one Warrior (the equivalent of 115 Advanced Start points), whereas the strongest AI civ receives 1200 start points, the weakest 360, and the others values in between. This setting might be comparable to Monarch difficulty for original BtS as a rough point of reference.
- You can adjust the AI start points in the Custom Game screen by checking the Advanced Start option and entering a point value into the “Advanced Start Base Points” box. That value is assigned to the strongest AI civ; the weakest AI civ gets 30% of the strongest, and the other AI civs are in between those two bounds.
- The AI civ with the topmost slot receives the fewest points; further down the list, points increase – in case you want a specific leader as your most dangerous rival.
- To assign start points freely to the AI civs, you'd have to edit `Assets/XML/StartPointsManualConfig.xml` before starting Civ IV; see the instructions there. In `GlobalDefines_advri.xml`, you can also configure an Advanced Start for the human player (parameter `ADVRI_PLAYER-POINTS`).
- When playing on a game speed other than Normal, the mod adjusts all start points to the corresponding growth rate. On Epic speed, for example, the strongest AI civ will receive 1800 start points by default. If you enter a value yourself, don't scale it to the speed setting!
- While any map script should work, I've slightly adapted the following popular scripts for the mod: *Fractal, Continents, Terra, Pangaea, Archipelago, Lakes, Inland Sea, Big and Small, Medium and Small, Hemispheres*.
I've mostly worsened the starting locations for all civs. See the Map scripts section on page 6 for details, and on how to (easily) restore the original scripts.
- The map size and number of AI civs shouldn't drastically affect the challenge. In any case, you get some tough and some not so tough rivals.
- “Aggressive AI”: Recommended option if the strong AI civs are intended to grow at the expense of the weak (eventually). The player is usually not an early target because the mod tries to place the strong AI civs far away.
- “Raging Barbarians”: I've mostly tested the mod with this option on, and tried to adjust and improve the spawning mechanism a bit. See the section on barbarians for details. In short, you can look up on which turn the first barbarians arrive in the Settings tab of the Victory Conditions screen, and it should take a few dozen more turns until they spawn at the maximal rate.
- When starting in an era later than Ancient, the mod assigns more start points by default. The start points of the strongest AI civ will show up in the “Base Points” box. If you enter a point value, that value will only be adjusted to the game speed setting, not to the start era. The default values may be far off the mark; I've only tested this once for Classical start and once for Medieval.
- To get a feeling for the effect of AI start points, you could start a few games and use the WorldBuilder to reveal what the AI civs spent their points on.

At the beginning of a game, you may want to consult the Settings tab of the Victory Conditions screen in order to verify that all start points have been assigned as intended. The mod applies a layer of randomness to the AI start points, the effect of which is not shown in the Settings tab. That way, it should be harder to gauge early on how dangerous a specific civ is.

You'll notice that the game doesn't start on turn 0. This is to reinforce the notion that your civ is a late arrival. The start turn is computed based on the assigned start points.

Start point randomization and start turn are configurable in `GlobalDefines_advri.xml`.

The sections below detail the modifications; it shouldn't be necessary to read them in order to enjoy the mod.

“No handicap” difficulty

Civ IV difficulty parameters fall in two categories: a) preferential treatment for the AI civs or human civ; b) hostility of the environment towards all civs.

As to a), treating AI and human alike is just the point of “No handicap”. Exceptions: The AI civs still receive a 33% discount on unit upgrade costs, and a 25% discount on unit supply (paid for units abroad). In original BtS, that's 50% on all difficulty settings. It's a compromise, and I doubt that eliminating those discounts would make a huge difference. I only hesitate because even Settler difficulty has them.

As to b), “No handicap” has the greatest resemblance to Monarch – challenging, but not dystopian/ punishing. For example, upkeep costs and inflation are adopted from Monarch. The mod ensures that these settings apply to human and AI civs alike – in original BtS, the AI always plays under Noble difficulty.

See `Assets/XML/GameInfo/CIV4Handicap.xml` for full details and some more comments. About barbarians (also reigned by the difficulty setting), see below.

Barbarians

Most of the changes apply only to the Raging Barbarians option.

Land units

Advanced Starts allow the AI civs to expand quickly. Since barbarian units are created based on the number of unclaimed tiles per continent, barbarian activity would soon diminish without further modifications, and simply decreasing the number of tiles per unit would make the initial onslaught difficult to survive.

Instead, the mod increases the creation rate over time so that the maximum is reached when 60% of a continent is claimed by cultural borders. That is, barbarians start slower than before, but are more enduring. The Settings tab (Victory Conditions screen) shows on which turn the barbarians can first appear.

I've increased the barbarian research rate a little, but they still won't have Archers right away. Also, Spearmen should appear later because they require Bronze Working now; previously, Hunting and Mining sufficed.

Sea units

Civ IV creates sea units based on the number of unclaimed sea tiles. This number remains almost constant because cultural borders can only cover a small part of the oceans. To apply the same procedure as for land units, I've based the creation rate on continental *shelves*, that is, the rings of coastal waters surrounding a landmass (or enclosed by land in the case of inland seas). The change may not be very noticeable. For one thing, barbarian ships should no longer pile up near remote islands.

Cities

I didn't change the creation mechanism for cities, and merely turned up the existing parameters. Unlike units, cities don't kill the player if many of them appear early. Moreover, early barbarian cities should help in curbing the expansion of the AI civs a little (more on this under "AI changes - Expansion").

For the modified parameters and further comments, see `Assets/XML/GameInfo/CIV4Handicap.xml`. Barbarian research (`BARBARIAN_FREE_TECH_PERCENT`) is overwritten in `Assets/XML/GlobalDefines_advri.xml`. To that file, I've also added a parameter `ADVRI_RAGE-SPAWNING-PEAK_PERCENT` that determines when barbarian activity peaks.

AI changes

Unit building

The AI now ...

- builds fewer defensive units, in favor of more city development. More specifically, I've reduced city garrisons in the first two eras by 1, and the number of "floating defenders" to 55% for the entire game. Coastal cities only receive extra garrisons once naval attacks are a realistic possibility; previously, coastal cities were reinforced indiscriminately halfway into the game.
- is more vigilant about its budget. Formerly, the AI would conclude that it is in "financial trouble" when its research rate was down to 40%. I've increased this threshold for the early eras of the game; for example, to 70% in the Classical era. While in financial trouble, the AI stops building units altogether except during wars and war preparations.
- builds only one spy for every five cities (previously: one for every three cities).

The overall idea is to make the AI better at keeping its initial lead. Even with few defenders, the player is no threat to the strong AI civs early on, and wars among AI civs are more likely to produce a clear winner when defenders are spread thin; inconclusive AI wars only help the player.

If the AI changes do help the player attack one of the weaker AI civs early on, that's fine too. Early war should be viable, and Advanced Starts naturally hamper that strategy.

Expansion

The financial trouble routine from the previous section also prevents the AI from building Settlers. Before adjusting the thresholds, AI civs that started with 4 or 5 cities would build Settlers right away. This fast expansion could randomly choke the player in the early game, or, if it didn't, those AI civs would soon fall behind with research on account of city

maintenance.

Isolated AI civs

That is, civs that have a continent all to themselves, and are separated from their rivals by an ocean; such civs are often doomed. I hope the mod can occasionally make them dangerous, especially when one of the strongest AI civs takes that spot. AI changes:

- Isolated AI civs build military units only for city happiness, and a few extra against barbarians. They build up their military once naval invasions become feasible. Spies receive a similar treatment.
- AI civs only commit to culture-based strategies once they've met a sufficient number of rivals.
- The original AI already targets Optics if it is alone. The mod prioritizes this further and intensifies exploration by caravels.

When all AI civs sharing a continent are on friendly terms with each other, they too demobilize until a threat arises.

Wonder building

AI civs now only start building wonders once they reach the Classical era. (Exception: There is an “opportunistic wonder building” clause that allows an AI city to build a wonder when it only takes a small number of turns. This rarely applies during the Ancient era.) Note that the strongest AI civs tend to get to Iron Working quickly, which advances them to the Classical era; so completing an Ancient wonder still requires a concerted effort from the player. Without this restriction, player strategies reliant on a specific early wonder wouldn't work at all.

Abstaining from early wonders might be better for the AI civs too. At least Stonehenge, the Great Wall and Pyramids aren't very useful to an (advanced) AI civ.

You can use the `ADVRI_AI_ANCIENT-WONDER-BUILD_PERCENT` parameter in `GlobalDefines_advri.xml` to undo this change.

Voluntary vassal agreements

The unequal assignment of start points by the mod facilitates (voluntary) vassal agreements. The threshold for the power ratio between the involved civs (3 to 2) is easily met. Vassal agreements are not unintended, but the player should have a chance to attack the weak AI civs before they turn into vassals.

Besides the power threshold (which I left unchanged), there's also an *attitude* threshold specific to each AI leader: Most leaders only submit to civs they are friendly towards. However, this threshold used to be lowered depending on how the would-be vassal ranked in terms of military power, and, often, a pleased or even cautious attitude was enough.

The mod lowers the attitude threshold only if the would-be vassal feels acutely threatened, for example, when there is a powerful disgruntled rival on the same continent. You can change the `ADVRI_AI_VASSAL-ATTITUDE-MODIFIER` parameter in `GlobalDefines_advri.xml` to fine-tune the calculation.

Map scripts

Most map scripts call normalization routines which ensure that each civ's starting location is (very) well suited for a capital. These normalizers lead to repetitive starts next to a river with a cluster of food resources that rarely reward moving the initial Settler.

The normalizers may be needed for equal starting conditions, however, equality is not a goal of this mod; rather the contrary. Moreover, AI civs receiving several hundred start points will place several initial cities, which mitigates the impact of starting locations. I've, therefore, disabled map normalizers for some popular map scripts. It would be possible to disable them globally, but I wanted to make it easy for players to restore the scripts, that is, without writing program code. If you delete or rename the `AdvRivals/PublicMaps` folder, Civ IV will load the original map scripts at startup.

I've left two of the seven normalizers enabled: One transforms low-food terrain (tundra, snow, ocean, peak, desert) into fertile ground, the other removes jungle and shelf ice terrain features. Disabling these two can lead to unplayable starts in the middle of non-arable land (jungle, tundra). The mod tones down the removal of bad features a bit, so that not *all* jungle and ice is removed (but most of it is). To undo this change as well, set `ADVRI_THRESH-BAD-FEAT-PER-CITY` in `GlobalDefines_advri.xml` to 0.

Pyrrhic Victories

This is a smaller, separate mod that I've packed along with Advanced Rivals. It takes no effect unless you change the value of `PYRRH_THRESH-NO-KILL` in `GlobalDefines_pyrrh.xml`. The mod attempts to lower the stakes in combat. See `manual_pyrrh.pdf` for details.

For developers

The modified source code files can be found in `AdvRivals/CvGameCoreDLL`. The bulk of the new code is in `AdvRivals.cpp`. In all modified C++ and Python files, changes and additions are labeled in-line with "advri", "pyrrh" (Pyrrhic Victories) or "advri.map" (map scripts), or enclosed in XML-style: `<advri> ... </advri>`.

If you've enabled logging (`LoggingEnabled = 1` in `My Files/My Games/Beyond The Sword/CivilizationIV.ini`), the mod logs the assignment of start points and starting locations to `My Files/.../Logs/debug.log`.

Changelog

version 0.4 (Feb 7, 2015)

- Fixed (introduced) errors in the placement of barbarian units:
 - Ships are no longer placed on impassable ice plots, and ice plots aren't counted anymore when computing how many ships to place.
 - Previously placed units are now correctly counted. In 0.3, unobserved areas (especially waters) kept getting more units every turn.
- Barbarian units no longer appear on (or in the case of ships: around) unsettled continents. Should mostly affect polar regions that lack sites for barbarian cities.

version 0.3 (Aug 2, 2014)

- Reduced colony maintenance to 75% to encourage (human) colonies. They're a peaceful alternative when the AI civs cut the player's expansion off early. (Makes granting independence even more useless though.)
- Showing the reminder about forced peace during the first 10 turns if starting in the Medieval era or later, or if human starts Advanced (version 0.2 never showed the reminder).
- Fixed a sort of AI bug where an Apostolic Palace leader would declare war, and, before any fighting could occur, propose to “stop the war” against himself. (Not a bug introduced by the mod, however, the situation may occur more commonly with the mod, so it's not entirely a “random bugfix”.)
- Victory/Settings shows the assignment of start points.
- Saving initially assigned start points to disk; savegames no longer compatible with version 0.2 and original BtS.
- Now always placing a weak AI (25% rank) civ closest to the player. Previously: a middling AI (50% rank).
- Start turn and a small tech cost modifier are now computed from the Advanced Start points to better match actual history.
- Team play enabled. However, since multiplayer still doesn't work, there isn't much of a point. The mod also doesn't respect assignments of starting locations based on teams (e.g. Team Battleground map) – starting locations are reassigned solely based on Advanced Start points.
- Support for starting at a later era (almost worked in version 0.2). Removed the XML parameter for the points of the strongest AI. Instead, the defaults per era are:
Ancient 1200; Classical 2400; Medieval 3900; Renaissance 5800; Industrialism 8200; Modern 11000; Future 5500 (rationale: only 100 turns to catch up).
Calculated as the sum of the original default of the previous era (if there is one) plus the original default of the next era (if there is one). Pretty much blind guesses at this point.
- Can give the human player an Advanced Start by means of `ADVRI_PLAYER-POINTS` XML parameter.
- Can now assign arbitrary start point values via XML: `StartPointsManualConfig.xml`.

- Added an XML option `ADVRI_PREFER-SECLUDED-START` that lets the mod place the player on the second most populous continent initially. First most populous is still the standard setting.
- Default points for the strongest AI back up at 1200 now that the AI settles less aggressively.
- First (only?) batch of AI changes.
- Victory/Settings screen shows the earliest possible turn that barbarians can appear. It had become difficult to tell with the flexible start turn number.
- Barbarian units that require resources now require the tech that reveals those resources. Since no barbarians appear past Renaissance, this only affects Spearmen.
- Changed creation mechanism for barbarian units. Now peaks when a certain amount of land is settled. Sea units are created per continental shelf.
- Slightly more flexible placement of barbarians. Can now appear on tiles already visible to the Barbarian Team, but not within barbarian borders or on top of another barbarian unit. That should make placement less predictable without leading to barbarian stacks.
- AI unit upgrade costs increased to 66% of the human now that the AI builds fewer defenders.
- Disabled the AI's initial overflow production (10 hammers) in `GlobalDefines.xml`. A small, hidden AI advantage that isn't needed with Advanced Starts.
- Lowered the AI 'tech trade modifier' for games with more than 8 teams. More teams should make the AI (slightly) less willing to trade technologies, otherwise, tech trading becomes even more prominent.
- Modified more map scripts: Terra, Pangaea, Archipelago, Lakes, Inland Sea, Big and Small, Medium and Small, Hemispheres. Also, for version 0.2 I had mistakenly modified the vanilla Civ IV versions of Fractal and Continents; now using the most recent versions, i.e. from Warlords. Turned off the special balancing of starting locations for Duel-size maps – no real need for that with Advanced Starts.

version 0.2 (May 28, 2014)

- Adjusted the default assignment of start points. Previously, the standard setting was [264, 301, 414, 601, 863, 1200] points for six AI civs, based on a quadratic function. The resulting difficulty depended strongly on the starting continent of the 1200-point civ: On a small, Australia-like continent, that civ was practically neutralized, on a Pangaea-like continent, it made the game very difficult. I also observed that the 264-point civ was routinely conquered by the 1200-civ, which is a bit boring. The new standard setting could be, for example, [300, 391, 623, 677, 909, 1000]. “For example”, because it's now (slightly) randomized. Another example: [300, 334, 478, 822, 966, 1000]. That is, the weakest civs get a bit tougher, and there tend to be pairs of similarly tough civs – the mod tries to place one of each pair on the player's continent. I've lowered the maximum to 1000 because, now, the player's continent is very likely home to one of the 1000-ish civs.
- Made “no handicap” the standard difficulty for AI, barbarians and Quick Start. Just setting “no handicap” in the Custom Game screen doesn't suffice. So, in version 0.1, the AI erroneously played under Noble difficulty.

version 0.1 was released on May 23, 2014