

## **Top Level Highlights of Fixes Changes and Improvements from the original DW2 Release up to the Aurora Update**

### **CRASH FIXES**

- Many common, uncommon and rare crash issues of all types fixed.

### **ENGINE/TECHNICAL IMPROVEMENTS**

- Upgraded to a much more recent version of the Stride Engine
- Upgraded to .NET 7, now built into the game executable
- Added support for Vulkan DXVK 1 and 2 for improved compatibility and performance.
- Fixed various high resolution/DPI scaling issues
- Added startup and session logging to new data/SessionLog.txt file
- Added new GameSettingsOverride.txt with various options to allow manually setting graphics adapter, resolution, windowed mode, memory budget, fps cap, etc. Comments in the file explain the options.
- Added automatic completely anonymous crash logging and submission in game settings to facilitate our ability to be aware of and quickly fix crash issues.
- Now allow toggling on-screen FPS and other rendering data using shift-Tilde (top-left corner of most keyboards), which also allows seeing which display adapter is being used

### **PERFORMANCE IMPROVEMENTS**

- Very major performance improvements across all game areas, especially large battles and mid to late game situations with large empires.
- Improved system and video memory use and management in many areas
- Added extra game settings to allow disabling some rendering effects
- Extended multi-threading to better utilize CPU cores and provide better performance

## MODDING

- Added Steam Workshop Support
- Added an in-game Modifications manager to enable/disable and prioritize mods
- Eliminated the requirement to regenerate and redistribute shmd files for ship and model changes. The game now regenerates them very quickly and automatically.
- Expanded modding possibilities in data and the game events system, including overrides

## AI IMPROVEMENTS

- Many improvements to AI management of empires, advisors, ship mission logic, diplomacy, research and many other areas both to address bugs and improve AI behavior.

## SHIP DESIGNS

- Ship and Station Designs can now have explicitly specified upgrade paths with a variety of new general upgrade path settings as well as the ability to specify a particular design
- Ship and Station Designs are now generally recognized at the per-hull level rather than the per-role level across the game.
- Ship designs are now the authoritative place for all ship upgrade paths. That means that if you specify a precise ship design in your fleet template and it has a newer design to retrofit to, the fleet template will update to that newer design as well. If you don't want this to happen, you need to specifically tell it not to do so by disabling the Auto-Upgrade setting in the fleet template.

## FLEET TEMPLATES

- Fleet Templates have been expanded and improved to allow the player much more flexibility in deciding exactly which ship designs to include in each fleet and how flexible or strict that fleet should be in following its template.

## SHIP BEHAVIOR

- Improvements to Ship Tactics to make managing your ships more logical and intuitive.

## FLEET BEHAVIOR

- Improvements to Fleet Tactics to make managing your fleets more logical and intuitive.
- Improvements to fleet home base determination
- Fixed and improved many issues with Fleet behaviors regarding threats and dangerous locations
- Many improvements relating to fighters and carriers
- Improved ship formation keeping and collision avoidance
- Improved fuel tanker behavior

#### RESOURCES AND FREIGHTER LOGISTICS

- Many improvements to resource stock level management and private sector freighter logistics

#### GOVERNMENTS AND LEADERS

- All Government types now have more differentiation in their bonuses and starting techs, ships, troops and facilities
- All Governments now have a defined leadership change cycle, with possibly positive or negative effects ranging from an increase in happiness all the way to coup d'état and civil war.

#### FACTION DIFFERENTIATION

- All playable races now have additional variation in their starting situations and game events
- Minor races in your empire now add their empire bonuses proportionally to the share of your population they represent, reaching their complete bonuses at 50% of your total empire population.
- Doubled the number of possible empire flag and color choices

#### EXPLORATION

- Improved many areas of exploration logic to ensure automated exploration is better prioritized

## MINING AND RESOURCES

- Rebalanced mining rates to make resources more meaningful

## COLONIZATION

- Many improvements to the colonization AI to ensure that the most suitable colonists for a particular world are correctly chosen and loaded. As a result, colony ships will no longer be pre-loaded before a planet is chosen for colonization.
- Fixed issues relating to maximum colonization range
- Added much more information on which colonies will incur additional support costs upon colonization

## MIGRATION

- Many improvements to migration logic to ensure migration works better in all cases and that races which are unsuitable to certain worlds do not migrate to them, resulting in increased support costs.
- Rebalanced to encourage more migration

## POPULATION POLICIES

- Additional options for easier copying of population policies to other inhabited worlds in your empire
- Rebalance of the various population policies and their effects
- Fixed issues which could cause too many rebellions

## INTELLIGENCE MISSIONS

- The entire system of Intelligence missions has been rebalanced and also provides more information to the player when choosing a mission regarding that mission's success chance

## GALACTOPEDIA

- Additional entries and added explanation in the Galactopedia for areas where gameplay has changed or been expanded

## CHARACTERS

- Improvements to the systems dealing with captured/imprisoned characters, allowing them to possibly be recruited or used as bargaining chips in diplomatic negotiations
- Character skills are now correctly applied with diminishing returns for multiple characters in the same location affecting the same skill
- Slowed growth of character skills

## DIPLOMACY AND REPUTATION

- Added Vassalization and Subjugation as possible diplomatic relationships and as outcomes for wars
- Added Ambassador requirements for some treaty types
- Many improvements to Diplomacy including an improved Diplomatic AI that better considers all nearby empires in deciding its diplomatic strategy and better automation of diplomatic strategy choices
- Rebalancing of treaty thresholds, relationship modifiers and long-term trust
- Rebalancing of distrust modifiers due to empire power
- Redesign of the Reputation system to make sure it fully supports both the most warlike and most peaceful playstyles in the effect of Reputation on population happiness and your relationship with other empires.
- Many fixes and improvements relating to how wars end
- Diplomatic research is now less expensive and also improves assimilation

## RESEARCH

- Many fixes and tweaks to research paths, especial for Random research which was calculating various paths incorrectly
- Rebalanced research output from colony populations
- Many fixes and adjustments to various research projects

## PIRATES

- Rebalanced to reduce instances where too many pirates appear
- Ensure that story-line pirate tech levels are reduced when you lower pirate strength in Start New Game screen
- Extended minimum time before pirate raids begin against a faction

## INDEPENDENT COLONIES

- Lowered overall number of independent colonies when start a new game

## GAME EDITOR

- You may now choose to switch which empire you are playing in the middle of a game

## ABANDONED SHIPS AND BASES

- Ensured construction ship repairing abandoned ships or bases now take ownership of ship when complete, even when other ships are nearby

## UI IMPROVEMENTS

- Many improvements in specific areas, but also generally to make sure multi-selection and action are possible in all list views
- List updates are now paused while the player is interacting with a list
- Ensured lists are now immediately updated after a player action
- More player feedback and guidance provided on many screens and views
- Added formatting and coloring to text for in-game messages and notifications
- Added additional filters and sorts, for example to exclude asteroids from the New Mining Locations list
- Additional options for right click actions to help with manual play

## DANGEROUS LOCATIONS and THREATS

- Improved logic to review and remove Dangerous Locations where threats are no longer present
- Now indicate dangerous locations in additional lists, e.g. Abandoned Ships and Bases, thus helping player to avoid queuing construction/repair at locations with threats present

## SOUND and MUSIC

- Thanks to the generous work of composer / sound designer Jeff Dodson of rainfall.tv, we have added new significantly improved and rebalanced sound effects for most components and weapons, explosions, etc. Jeff's trailer sound design work is heard in small projects like "Star Wars" and should help spice up combat among other things.
- Improved the underlying code for the music and sound system to reduce interruptions and stutters and smooth out transitions between tracks

## ECONOMICS

- Fixed various issues with colony corruption and support cost scaling

## EMPIRE BONUSES

- Many fixes to how bonus types were applied
- Diminishing returns now correctly apply to most bonuses