Event System

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Overview

The Event System allows you to program customizable events to randomly occur while playing. Note that this system is only available in fortress mode. Anything that is do-able with DFHack scripts is able to be triggered by this systems. Events are triggered randomly depending on specified requirements and checked at various intervals. The main features of this system are;

- Periodic time checks - Check every year, season, month, week, or day to see if an event should trigger
- Contingent effects - Multiple contingent effects can be linked together to create complex events
- Requirement Checks - Dozens of different requirement checks can be placed, not only on each event, but each subevent as well.
- Selections - Select buildings, units, items, and locations that get passed to any scripts included in the event

Subsystems

There are currently no SubSystems for the Event System.

Synergies

While the Event System can be used on its own, it synergizes well with the other scripts and systems that are included in this collection.

Civilization System

The Civilization System can be used as a requirement for events by including the Diplomacy SubSystem.

Class System

The Class System adds an additional requirement check possibility for each event

Start Here

The only file you will need to modify to make the system work is events.txt. It can be placed in raw/objects or raw/systems/Events and can be called events.txt or events_something.txt

events.txt

This text file will contain all of your defined events, each following a specific format. The structure of the events can be broken down into four separate parts, the base, requirements, effects, and script. Here is an example event with all currently supported tokens.

```
[EVENT:SAMPLE_EVENT]
        [NAME:this is a sample event]
        [CHECK:MONTHLY]
        [CHANCE:10]
        [DELAY:RANDOM:12000]
        [REQUIREMENT:BUILDING:SAMPLE_WORKSHOP:1]
        [REQUIREMENT:COUNTER_MAX::SAMPLE_COUNTER:10]
        [REQUIREMENT:COUNTER_MIN::SAMPLE_COUNTER:10]
        [REQUIREMENT:TIME:10000]
        [REQUIREMENT:POPULATION:50]
        [REQUIREMENT:SEASON:SPRING]
        [REQUIREMENT:TREES_CUT:50]
        [REQUIREMENT:FORTRESS_RANK:3]
        [REQUIREMENT:PROGRESS_RANK:POPULATION:2]
        [REQUIREMENT:PROGRESS_RANK:TRADE:1]
        [REQUIREMENT:PROGRESS_RANK:PRODUCTION:1]
        [REQUIREMENT:ARTIFACTS:2]
        [REQUIREMENT:TOTAL_DEATHS:50]
        [REQUIREMENT:TOTAL_INSANITIES:10]
        [REQUIREMENT:TOTAL_EXECUTIONS:5]
        [REQUIREMENT:MIGRANT_WAVES:5]
        [REQUIREMENT:WEALTH:TOTAL:10000]
        [REQUIREMENT:CLASS:SAMPLE_CLASS:3]
        [REQUIREMENT:SKILL:MINER:15]
        [REQUIREMENT:ENTITY_KILLS:FOREST:25]
        [REQUIREMENT:CREATURE_KILLS:GOBLIN:MALE:10]
        [REQUIREMENT:ENTITY_DEATHS:PLAINS:25]
        [REQUIREMENT:CREATURE_DEATHS:DWARF:ANY:50]
        [REQUIREMENT:TRADES:PLAINS:5]
        [REQUIREMENT:SIEGES:EVIL:5]
        [REQUIREMENT:DIPLOMACY:MOUNTAIN:PLAINS:GREATER:50]
        [EFFECT:1]
                [EFFECT_NAME:first sample effect of the event]
                [EFFECT_CHANCE:100]
                [EFFECT_DELAY:STATIC:100]
                [EFFECT_CONTINGENT:0]
                *EFFECT_REQUIREMENT:* <- same as for just normal REQUIREMENT
                [EFFECT_UNIT:RANDOM:ALL]
                [EFFECT_ITEM:RANDOM:ALL]
                [EFFECT_LOCATION:RANDOM:ALL]
                [EFFECT_BUILDING:RANDOM:ALL]
                [EFFECT_ARGUMENT:1]
                        [ARGUMENT_WEIGHTING:100,100,100]
                        [ARGUMENT_VARIABLE:HUMAN_MERCHANT,ELF_MERCHANT,DWARF_MERCHANT]
                [EFFECT_SCRIPT:"building/subtype-change -from EMPTY_MERCHANTS_STALL -to !ARG_1 -dur
                25200"]
```

<u>Base tokens - Mandatory tokens for each event</u>

Each event must have these four tokens
- NAME - name of event that will be displayed in-game as an announcement
- CHECK - how often to check for the event
  - DAILY, WEEKLY, MONTHLY, SEASON, YEARLY
- CHANCE - percent chance that the event will be triggered at each check
- DELAY - delay in in-game ticks from when the check occurred and the event actually occurs
  - RANDOM - event will trigger randomly between the check and specified value of ticks
  - STATIC - event will trigger at specified value of ticks

<u>Requirement tokens - Tokens to limit if an event will trigger or not</u>

Event can have as many or as few of these as desired.
- REQUIREMENT
  - BUILDING - specify a number of a specific building needed to trigger event
  - COUNTER_MAX - specify a counter value that must have been reached to trigger event
  - COUNTER_MIN - specify a counter value that must not have been reached to trigger event
  - TIME - specify the age of the fort required to trigger event
  - POPULATION - specify the population number required to trigger the event
  - WEALTH - specify a certain wealth required to trigger the event
    - TOTAL
    - IMPORTED
    - EXPORTED
    - WEAPONS
    - ARMOR
    - FURNITURE
    - ARCHITECTURE
    - DISPLAYED
    - HELD
    - OTHER
  - MIGRANT_WAVES - total number of migrant waves that have occurred
  - TOTAL_DEATHS - total civilian deaths as tracked by the game
  - TOTAL_INSANITIES - total civilian insanities as tracked by the game
  - TOTAL_EXECUTIONS - total civilian executions as tracked by the game
  - ARTIFACTS - total number of artifacts created
  - PROGRESS_RANK - the specific progress rank of your current fort
    - POPULATION
    - TRADE
    - PRODUCTION
  - FORTRESS_RANK - the current rank of your fortress
  - TREES_CUT - the number of trees cut down as tracked by the game
  - SEASON - the current season (SPRING, WINTER, SUMMER, FALL)
  - ENTITY_KILLS - specify a certain number of entity kills required to trigger the event
  - CREATURE_KILLS - specify a certain number of creature kills required to trigger the event
  - ENTITY_DEATHS - specify a certain number of entity deaths required to trigger the event
  - CREATURE_DEATHS - specify a certain number of creature deaths required to trigger the event
  - TRADES - specify a certain number of entity trades required to trigger the event
  - SIEGES - specify a certain number of entity sieges required to trigger the event
  - DIPLOMACY - specify the diplomatic relation between two entities required to trigger the event (Only if using the Civilization System and Diplomacy SubSystem)

Each effect must have the following tokens

- EFFECT - each effect declaration begins with this token, the corresponding number is just for ordering purposes
- EFFECT_NAME - the name of the effect that appears in an in-game announcement
- EFFECT_CHANCE - the chance of the particular effect to occur

These tokens are optional for each event

- EFFECT_DELAY - the delay between when the event was triggered and when the effect occurs
  - RANDOM
  - STATIC
- EFFECT_CONTINGENT - if multiple effects are included, this requires the previous event to have occurred
- EFFECT_REQUIREMENT - same as the event REQUIREMENT tokens

Script tokens - Tokens which actually do the work

- EFFECT_UNIT - used to pick a unit on the map for scripts
  - RANDOM - choose randomly between all units **or** ALL - copies the effect script for each one found
    - ALL - choose between all units on the map
    - POPULATION - choose between all units that belong to the fort
    - CIVILIZATION - choose between all units that belong to the forts civilization
    - INVADER - choose between any invading units
    - MALE - choose between any males
    - FEMALE - choose between any females
    - PROFESSION - choose between any members of a certain profession
    - SKILL - choose between any units with the desired skill
    - CLASS - choose between any units of the desired class
    - creature:caste - choose between any of the specific creature
- EFFECT_LOCATION - used to pick a location on the map for scripts
  - RANDOM - choose randomly **or** ALL - copies the effect script for each one found
    - ALL - choose between any tile on the map
    - SURFACE - select only tiles on the surface
      - ALL - choose between any tile
      - EDGE - choose between any tile on the edge of the map
      - CENTER - choose between any tile within a radius of the center
    - UNDERGROUND - select only tiles which are under the surface
      - ALL - choose between any tile
      - CAVERN - choose any tile on a specified cavern level
      - EDGE - choose any edge tile
    - SKY - select only tiles that are 1 or more z levels above ground
      - ALL - choose between any tile
      - EDGE - choose any edge tile
      - CENTER - choose between any tile within a radius of the center
- EFFECT_ITEM - used to pick an item on the map for scripts
  - RANDOM - choose randomly **or** ALL - copies the effect script for each one found
    - ALL - choose between all items on the map
    - WEAPON, ARMOR, HELM, SHIELD, GLOVE, SHOE, PANTS, AMMO - choose a specific type:subtype
    - MATERIAL - choose any item made of the specified material
    - VALUE
      - GREATER_THAN - choose an item whose value is greater than the specified amount
      - LESS_THAN - choose an item whose value is less than the specified amount
- EFFECT_BUILDING - used to pick a building on the map for scripts

- ○ RANDOM - choose randomly **or** ALL - copies the effect script for each one found
  - ■ ALL - choose between all buildings
  - ■ WORKSHOP - choose between only workshops
  - ■ FURNACE - choose between only furnaces
  - ■ TRADE_DEPOT - choose between any trade depots
  - ■ STOCKPILE - choose between any stock piles
  - ■ ZONE - choose between any civ zones
  - ■ CUSTOM - choose between any specified custom building
- EFFECT_ARGUMENT - each effect can have any number of arguments, and each argument can have any number of options. If the argument is used in a script it will choose its option randomly based on the provided weighting.
- ARGUMENT_WEIGHTING - weight each option of the argument, weightings are seperated by commas
- ARGUMENT_VALUE - provide different options from which to pick from
- EFFECT_SCRIPT - the actual script to be run, any number of scripts can be included in each effect. The input is the same as if running on the command line with the following special options
  - ○ EFFECT_UNIT - is replaced by the unit id found with EFFECT_UNIT
  - ○ EFFECT_ITEM - is replaced by the item id found with EFFECT_ITEM
  - ○ EFFECT_LOCATION - is replaced by the location found with EFFECT_LOCATION
  - ○ EFFECT_BUILDING - is replaced by the building found with EFFECT_BUILDING
  - ○ ARG_X - is replaced by the corresponding EFFECT_ARGUMENT:X

Set Up

With events.txt set up the only thing left to do is enable the system. To do this, simply copy

    base/roses-init -eventSystem

and paste it in onLoad.init.

Examples

Example 1 - Monthly Changing Building

This allows for a simulation of merchants arriving randomly each month, chosen between 7 different options with different weightings.

    [EVENT:MERCHANT_ARRIVAL]
     [NAME:a new merchant arrives]
     [REQUIREMENT:BUILDING:EMPTY_MERCHANTS_STALL]
     [CHECK:MONTHLY]
     [CHANCE:100]
     [DELAY:STATIC:0]
     [EFFECT:1]
      [EFFECT_NAME:merchants arrive for a short time]
     [EFFECT_CHANCE:100]
     [EFFECT_DELAY:0]
     [EFFECT_ARGUMENT:1]
     [EFFECT_BUILDING:RANDOM:CUSTOM:EMPTY_MERCHANT_STALL]
      [ARGUMENT_WEIGHTING:100,100,100,10,10,10,1]

    [ARGUMENT_VARIABLE:HUMAN_MERCHANT,ELF_MERCHANT,DWARF_MERCHANT,TRAVELING_MERCHANT.GO
    BLIN_MERCHANT,KOBOLD_MERCHANT,EXOTIC_MERCHANT]
      [EFFECT_SCRIPT:building/subtype-change -building EFFECT_BUILDING -type ARG_1 -dur 25000"]

Additional Information

Addendum 1: Custom Triggering

Events can be triggered manually (by reaction, interaction or command line) by using this command

    events/trigger -event EVENT_ID

If you wish to bypass any listed requirement checks for the event add -force

If you want to bypass requirement checks for both the event and any associated effects add -forceAll