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- **Genre:** Scripting
- **Created on:** 2007.06.29
- **Last Change:** 2007-07-29

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Introduction

IMPORTANT: This tutorial is neither supported by the creator(s) nor by the publisher(s) of the respective game(s). Use this at your own risk.

The HazardModding Co-Op scriptMod is a one of the most advanced Fan made Scripts relased for EF2. For that reason it requires a lot of background knowledge which is given in this document. *(This document is still in development)*

Even when we try to make the script as stable and secure as possible there always can a bug flee and stay alive... ..also this Manual won't be perfect or contain all informations about the Mod nor the knowhow we have gathered by developing this Mod.

We try to provide you with all data of which we are aware of that you will require thise. Even when you are an advanced Scripter you should read our Manual with great attention, it can still contain informations of which you where not aware of.

This document is not meant as Explanation for the Co-Op Matrix, nor how it is working. We will explain for sure some of the functions but this is not our target. Our target is to allow you(a developer), to include the Co-Op Mod and translate on your own Single Player Mission Scripts for Multi Player use. You should see the Co-Op Mod as a Matrix at which you can plug in Single Player Mission Scripts to make them Multi Player usable.

What is a cVar?

A cVar is a variable wich is stored in a config-file. Each server requires such a *.cfg file and there you can store those variables.

Tools

It is highly logical that you can only deliver good work with good Tools. That better your tools are that easier it will be for you to reach a high quality level and keep it. We are not perfect and our work is not perfect but we try to make it as good as it is possible without spending a whole live on it...

This list of tools below is an advice for you, but no must have.

Purpose	Name	Website
Scripting, text editing...	Notepad++	http://notepad-plus.sourceforge.net
Scripting, text editing...	Jext	http://www.jext.org
Viewing Textures and Mapshots.	IrfanView	www.irfanview.com

Translation Items

A Elite Force II Multi Player Server was originally not created to play Single Player Missions on it, but it is capable of. A Multi Player Server does work different as when you start a Single Player Game.

Some commands do not work with the Multi Player Servers, they have been commented out in the Game Code or are just not Classified for Multi Player Mode. Using such commands will end in a Game Server crash.

There is also a difference between Windows and Linux Servers, Linux Servers do not support some Commands because they are totally dressed for Multi Player which makes them faster more stable and secure. So since the Co-Op Matrix has become stable and rich on features most Levelsripts do not need much changes to work with the Co-Op Mod, but there are still a few Commands wich have to be removed or Translated. Not only for that reason it is necessary to edit every Levelsript.

Legend: e = entity, s=string, f=float, i=integer, b=boolean

Command	Description	Risk If you don't translate	Alternative Command
killent(0);	Kills the world, the whole level is meant.	Crash Both SV Types	None
removeent(0);	Kills the world, the whole level is meant.	Crash Both SV Types	None
.setobjectiveshow();	Not Supported on Linux Servers	Linux SV Crash	Chek for Server Version, and call not on a Linux SV.
.loadobjectives();	Not Supported on Linux Servers	Linux SV Crash	Chek for Server Version, and call not on a Linux SV.
waitforDialog();	Not supported in Multi Player.	Crash Both SV Types	globalCoop_playDialog(...); or waitDialogLength(...);
While(...) { ... }	Can chrash in some situations and on a Map restart, if the wait command is missing.	Crash/ Compile Faild	Ensure there is a wait(...); command within the while...
.watch(e/s);	Type mismatch, Linux and Windows Servers are awaiting different types as Argument.	Compile Faild	.follow(e,e);
\$player.immobilize(1);	Use Inbuild Function.	Null Entity	globalCoop_immoPlayers(1);
\$player.immobilize(0);	Use Inbuild Function.	Null Entity	globalCoop_immoPlayers(0);
\$player.take(...);	Use Inbuild Function.	Null Entity	globalCoop_take(...);
\$player.use(...);	Use Inbuild Function.	Null Entity	globalCoop_use(...);
\$player.give(...);	Use Inbuild Function.	Null Entity	globalCoop_give(...);
//level end //mission complete	Next Level/Level End Rutine.	Crash Both SV Types	globalCoop_levelComplete(string coop_nextmap);

```
waitfordialog(e); //Wrong!!
```

```
globalCoop_playDialog(entity,string,float,float,dialogLegth,float). //correct
```

Including the Co-Op Matrix in a Mission Script

Each EF2 Level script called after Map load by the game and Compiled by the Script Master starts at the main thread. From within this thread the Co-Op Mod needs to be called. But before the Co-Op Mod can be called it needs to be included, and this have to be before the main thread is defined.

EXAMPLE:

```
//Co-Op
////////////////////////////////////
////////////////////////////////////Includes the Co-Op Script Mod Matrix Script
#include "maps/global_scripts/global_co-op.scr"
////////////////////////////////////
////////////////////////////////////

void main()
{
//Co-Op
////////////////////////////////////
////////////////////////////////////
//RegenerationAmmounts
coop_regenHealthAmmount = 1;//regenerate Health
coop_regenArmoryAmmount = 1;//regenerate Armory
coop_regenAmmoAmmount = 2;//regenerate Ammo
coop_regenHealthMax = 100;//Regeneration stops at
//MaxAmmount
coop_healthMax = 125;//Maximum Health Points allowed
//StartAmmount
coop_startHealth = 125;//Start Health ammount
coop_startArmory = 25;//Start Armory amount
//Set spawnangles for this level
coop_spawnangle0 = 180;//Player Angle
coop_spawnangle1 = 180;//Player1 Angle
coop_spawnangle2 = 180;//Player2 Angle
coop_spawnangle3 = 90;//Player3 Angle
coop_spawnangle4 = 90;//Player4 Angle
coop_spawnangle5 = -90;//SpawnOrigin5 Angle
coop_spawnangle6 = -90;//SpawnOrigin6 Angle
coop_spawnangle7 = 180;//SpawnOrigin7 Angle
coop_spawnangle8 = 180;//SpawnOrigin8 Angle
//Definie Objective
coop_objectiveItem1 = "secretObjectiveS1";//Objective Item1 Name
//Give each player a Item/weapon, the integer stands for the player-ID
coop_weapon0a = "models/weapons/worldmodel-fieldassaultrifle.tik";//player
coop_weapon0b = "models/weapons/worldmodel-compressionrifle.tik";//player
coop_weapon0c = "models/weapons/worldmodel-phaser-STX.tik";//player
coop_weapon0d = "models/weapons/worldmodel-burstrifle.tik";//player
coop_weapon0e = "models/weapons/worldmodel-tricorder-STX.tik";//player
//Spawnorigins, Spawn Players on those locations, at map start
coop_spawnorigin0 = '628 128 271';
coop_spawnorigin1 = '1559 188 -70';
coop_spawnorigin2 = '1559 62 -60';
coop_spawnorigin3 = '1234 -95 -70';
coop_spawnorigin4 = '1129 -95 -66';
coop_spawnorigin5 = '1129 366 -66';
coop_spawnorigin6 = '1230 366 -66';
coop_spawnorigin7 = '1454 197 -60';
coop_spawnorigin8 = '1454 40 -50';
//Start the Co-Op Script
thread globalCoop_main();
////////////////////////////////////
////////////////////////////////////
//other main thread code, below here...
}
```

Co-Op Variable Explanation

There are a few Variables wich can be costumized for each Map/Level, the Table below contains them. Some of them are required, those are marked. They are already delared in the global_co-op.scr they only need to be set to an value.

EXAMPLES

<code>coop_spawnangle0 = 180;</code>	Float
<code>coop_weapon0a = "models/weapons/worldmodel-fieldassaultrifle.tik";</code>	String
<code>coop_spawnorigin0 = '0 44 -111';</code>	Vector

Variable Name	Type	Description
<code>coop_regenHealthAmmount</code>	Float	Ammount of Health regerating per cycle.
<code>coop_regenArmoryAmmount</code>	Float	Ammount of Armory regerating per cycle.
<code>coop_regenAmmoAmmount</code>	Float	Ammount of Ammo regerating per cycle.
<code>coop_regenHealthMax</code>	Float	Maximum Health allowed, will automaticly apply the highest Health value set somewhere else in the vars.
<code>coop_startHealth</code>	Float	Start Health the Players get Equipt with on Re/Spawn
<code>coop_startArmory</code>	Float	Start Armory the Players get Equipt with on Re/Spawn
<code>coop_weapon0a</code> <code>coop_weapon0b</code> <code>coop_weapon0c</code> <code>coop_weapon0d</code> <code>coop_weapon0e</code> <code>coop_weapon0f</code> <code>coop_weapon0g</code> <code>coop_weapon0h</code> <code>coop_weapon0i</code> <code>coop_weapon0j</code>	String	Equipment for each Player, the Integer stands for the Player-ID and the Letter after the it stands for the Weapon Group. The Co-Op Matrix supports 10 Weapon Groups: a,b,c,d,e,f,g,h,i,j At last the ID 0 have to be customized no matter wich Group Example: <code>coop_weapon0a="models/weapons/worldmodel-fieldassaultrifle.tik";</code>
<code>coop_spawnangle0</code> <code>coop_spawnangle1</code> <code>coop_spawnangle2</code> etc...	Float	Start Angle of the Players, each integer indicates the Player id. 1=Player1, 2=Player2, 3=Player3, 4=Player4, 5=Player5, 6=Player6, 7=Player7, 8=Player8 (0=Player No Id) At last the ID 0 have to be customized.
<code>coop_spawnorigin0</code> <code>coop_spawnorigin1</code> <code>coop_spawnorigin2</code> etc...	Vector	Start Vector of the Players, each integer stands for a Player id. 1=Player1, 2=Player2, 3=Player3, 4=Player4, 5=Player5, 6=Player6, 7=Player7, 8=Player8 (0=Player)
<code>coop_respawnorigin0</code> <code>coop_respawnorigin1</code> <code>coop_respawnorigin2</code> etc...	Vector	Respaw Vector of the Players, each integer stands for a Player id. 1=Player1, 2=Player2, 3=Player3, 4=Player4, 5=Player5, 6=Player6, 7=Player7, 8=Player8 (0=Player)
<code>coop_objectiveItem1</code> <code>coop_objectiveItem2</code> <code>coop_objectiveItem3</code> etc...	String	Objective Items, there are eight Items possible.

Some actions are used on all or the most Levelscreens over and over again, and some of them where in need of becoming compatible to the Co-Op script Mod. For that reason there are some functions wich can be used as features once the Co-Op script Mod has been included in a Levelscreens. But remember that the Mod is still in development and maybe some of the Features below will be altered of the time.

Legend: e = entity, s=string, f=float, i=integer, b=boolean

Purpose + Description	Code	Return Type
Tells the Co-Op Mod that the current Map comes to it's end. The Mod Script will do now all things wich needs to be done and then load the next map, wich is given as string with in the function on call.	<code>globalCoop_levelComplete(s maptoload);</code>	Void
Does Mission Failure for all Players. And displays the reason for failure. Fades out the camera to red. And restarts the Level.	<code>globalCoop_missionFaild(s reason);</code>	Void
Returns the number of Players currently on the Server. This can be used to set special events, like spawn a monster for each player, etc...	<code>globalCoop_returnNumOfPlayers();</code>	Int
Returns the number of Living Players currently on the Server.	<code>globalCoop_returnNumOfLivingPlayers();</code>	Int
Returns the Integer 1 for TRUE if the given entity exists and is still alive, else it returns 0 for FALSE...	<code>globalCoop_checkForExistenceAndLive(e e);</code>	Bool
Returns a float wich is the result of a Multiplication of the given value on call. Can be used to set a monsters health to a higher value, so if there are 3 Players on the Server you can set the monster its health to be 3 times higher.	<code>globalCoop_returnNewFloatMultiplierPlayerNum (f fMultipliedNew);</code> <code>\$lurker1.health(globalCoop_returnNewFloatMultiplierPlayerNum(\$lurker1.gethealth()));</code>	Float
Immobilize or mobilize all Players. If the Integer 0 is given all Players will be mobilized, if 1 is given all Players will be immobilized.	<code>globalCoop_immoPlayers(b true);</code>	Void
Item or Weapon wich will given to all Players. If the second parameter is a float or integer grather then 0 the players will use the given weapon after the given ammount of secounds, else the given Weapon or iteam will not be used instantly.	<code>globalCoop_give(s itemtoGive,f useNow);</code>	Void
Item or Weapon wich will be taken away from all Players. Remember that you don't get in competition with the Items wich have be defined as equipment, or u wipe them out before...	<code>globalCoop_take(s toTake);</code>	Void
Forces all Players to instantly use the given Item or Weapon, if they have it. With that command you can switch the Weapon of all Players, etc...	<code>globalCoop_use(s UseThis);</code>	Void
Applays new given Weapons wich have not been definied for each ID individualy, cuz ur to lazy for that then u'll love that one here. It does your job!!!! By applying the	<code>globalCoop_applayToAll();</code>	Void

Purpose + Description	Code	Return Type
new Weapons/Groups to all Player ID's. You need to define then just for the ID 0 the Groups you are using. coop_weapon0a, coop_weapon0b, etc...		
Applies the value of each Spawn Origin for each Respawn Origin with the same ID... Again something to make your live easier, yes. You will now give us your soul for such a wonderful gift...	globalCoop_applaySpawnOrigins();	Void
Sends a Message to all Players and notifies the Players that there is something happening with a sound...	globalCoop_globalMessage(s msg);	Void
Plays a dialog attached to a player. Remember that we are dealing with at last tow languages, german and english, so we need both dialogs played at the same time. Using the normal Dialog feature plays only in the language the SV uses...	globalCoop_playerPlayDialog(e player, s playerDumy, s dialogToPlay, f dialogVolume, f dialogMinRange, float dialogLegth);	Void
Returns the entity wich is playing the dialog... Almost then the same as the Function above... <i>Can be useful if the dialog is some thing like „today is a god day to die...“ and u gona kill the entity after the dialog...</i>	globalCoop_returnPlayerPlayDialog (s playerDumy, s dialogToPlay, f dialogVol, f dialogMinRange, f dialogLegth);	Entity
drop or droptofloor kill immobilize or mobilize freeze or unfreeze hide show immortal or nodamage mortal or takedamage healthy or healt ammo give all or giveall or all armor or armory or shild or give armor or give armory or give shild	globalCoop_globalCommand(s coopGlobalCmd);	Float

Configuration

The Mod does also have a great flexibility, it can be massively configured. The Table below does contain the names of the Vars wich can be costumized and what each Var accutly does. Some Features are currently are not or not fully supported.

Var Nam	Description	Range	Type
coop_missionObjectiveShowTime	Show Time of the Objectives Hud. Value -1 does disable the Mission Objectives Hud.	2.5 - 10 sec	cVar
coop_intermissionTime	Time after Mission completion to wait before the next map gets loadad.	5 - 60 sec	cVar
coop_regenHealthMax	Maximum of Health wich will be regenerated by the Mod.	N/A	var
coop_regenAmmoAmmount	Amount of ammo regeneration per cycle.	N/A	var
coop_regenHealthAmmount	Amount of Health regeneration per cycle.	N/A	var
coop_equiplInterval	Equip Interval periode.	N/A	var
coop_startArmor	Amount of Armor Players beeing Equipt on Spawn.	N/A	var
coop_startHealth	Amount of Health Players beeing Equipt on Spawn.	101 - 500	var
coop_disForceOneTeam	Disables that Players get forced all into one team only. <u>Ensure you have not enabled that the Server evens the Teams, or it will come to an havy fight between the script and the Server and maybe to an Server chras.</u> 0=force all in one team, 1=do not force in one team only	0 or 1	cVar
coop_forceOneTeamColor	Select the Color of the Team all Players will be forced in.	blue or red	cVar
coop_allowGodCheat	Allow Players to use the God cheat. Of course if cheats are activated.	0 or 1	cVar
coop_disNonCampainWeapons	Disable all other weapons wich are not used in the Mission.	0 or 1	cVar
coop_disAutokick	Disable auto kick by script...	0 or 1	cVar
coop_disCamFade	Disable camera fadings Managed by the Co-Op Mod.	0 or 1	cVar
coop_disShowID	Disable the ID beeing Printed to the Players Hud.	0 or 1	cVar
coop_disCampaigns	Disallows playing Campaign Maps.	0 or 1	cVar
coop_disTraining	Disallows playing Training Maps.	0 or 1	cVar
coop_disSecretLevels	Disallows playing Secret Maps.	0 or 1	cVar
coop_disForcedMapLoad	Disallows the script to select the Next Map loadad on Mission completion.	0 or 1	cVar
coop_disCinematic	Disable Cinematic Sequences.	0 or 1	cVar
coop_disRandomRespawn	Disables Random Respawn locations for the players, so they allways respawn at thair ID location	0 or 1	cVar

Credits

Special thanks to:

(KO)Gilligan

[-GF-]Adm.Myers

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