

Teleporterscript

GarageGames.com



DocVersion 1.0.x

Author: beffy(c++-programmer)

NEW! [Download/view this tutorial as PDF!](#)

Ah well, after reading a post in the GG forum on Saturday, I decided to give it a try and script a little teleport... and here it is...;-)

The basic idea was to combine 2 (or more) triggers, animated dt shapes for the basic effect, particle effects, a little script swapping the player location/transform and finally some "buzz" sound.

Okay, so let's start with the function doing the actual teleport... I've put it into "server/scripts/commands.cs" and it looks like this:

```
function serverCmdTeleportPlayer(%client, %clientId, %targetObj)
{
    %player = %clientId.player;
    %currPlayerPos = %player.getPosition();
    %targetPos = %targetObj.getPosition();
    %x = getWord(%targetPos, 0);
    %y = getWord(%targetPos, 1);
    %z = getWord(%targetPos, 2);
    // adjust z value to prevent player from falling through the terrain... :-P
    %z += 3.0;
    %finalPos = %x SPC %y SPC %z;
    echo("Transforming from" SPC %currPlayerPos SPC "to" SPC %finalPos);
    %player.setTransform(%finalPos);
}
```

Well, pretty basic, all it does is get the player's position and the position of the target object indicated by %targetObj, adjust the z value to prevent the player from falling through the terrain and send him to the %finalPos position.

Now let's look at the trigger, I've made a new file "fps/server/teleportTrigger.cs" which I execute in "fps/server/game.cs" (as always), and it looks like this:

```
datablock TriggerData(TeleportTrigger)
{
    tickPeriodMS = 500;
};
datablock AudioProfile(TeleportBuzz)
{
    fileName = "~/data/sound/fx/electricity.wav";
```

```
description = AudioClose3d;
preload = true;
};

function TeleportTrigger::onEnterTrigger(%data, %obj, %colObj)
{
    %checkname = %obj.getName();
    %client = %colObj.client;
    if(!%client)
    {
        echo("not a client!");
        return;
    }
    echo("Teleport client:" SPC %client);

    if(%checkname $= "TeleportTrigger1")
    {
        // if the player didn't recently beam over here... otherwise
        // he would be looping around between the two, I guess...
        if(!$from2to1)
        {
            %target = "TeleportTrigger2";
            CommandToClient(%client,'bottomprint',"Teleporter initializing... good luck... buahahaha!",2,10);
            $teleSched = schedule(2000,0,"goScotty",%client,%target);
            $teleSound = serverPlay3D(TeleportBuzz,%client.player.getTransform());
            %client.player.setCloaked(true);
            $fromito2 = true;
            $from2to1 = false;
        }
    }
    else
    {
        if(!$from1to2)
        {
            %target = "TeleportTrigger1";
            CommandToClient(%client,'bottomprint',"Teleporter initializing... good luck... buahahaha!",2,10);
            $teleSched = schedule(2000,0,"goScotty",%client,%target);
            $teleSound = serverPlay3D(TeleportBuzz,%client.player.getTransform());
            %client.player.setCloaked(true);
            $from2to1 = true;
            $from1to2 = false;
        }
    }
}

function TeleportTrigger::onLeaveTrigger(%data, %obj, %colObj)
{

```

```

%client = %colObj.client;
if(!%client)
{
    echo("not a client!");
    return;
}
%checkname = %obj.getName();
echo("TeleportTrigger::onLeaveTrigger called!");
cancel($teleSched);
alxStop($teleSound);
%client.player.setCloaked(false);
// if the player leaves the target trigger,
// he can use it, too...
if(%checkname $= "TeleportTrigger1")
{
    $from2to1 = false;
}
else if(%checkname $= "TeleportTrigger2")
{
    $from1to2 = false;
}
}

function goScotty(%client, %target)
{
    // beam me up!
    commandToServer('TeleportPlayer', %client, %target);
}
function TeleportTrigger::onTickTrigger(%data, %obj)
{
}
}

I've gottwo trigger objects in my mission file named "TeleportTrigger1" and "TeleportTrigger2", furthermore there are the two shape files, which have their own datablock (btw., I took
these shape files and their datablock file "fxShapes.cs" from the latest RWT build).
Here is the datablock:

datablock StaticShapeData (MeshEffect)
{
    category = "Effects";
    shapeFile = "~/data/shapes/markers/flame.dts";
};

I use two vars "$from1to2" and "$from2to1" to keep track if the player is ready to be teleported to the recent teleport, and if he was, he has to step out of fit (onLeaveTrigger), before he
can use it again... otherwise he would be trapped, I guess... :- )
To make it more realistic and to not just move the player, I put a little time out of two seconds in, and, what adds quite a lot to it, I set

```



```

dataBlock = "TeleportTrigger";
polyhedron = "0.000000 0.000000 0.000000 1.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000
-1.000000 0.000000 0.000000 0.000000 0.000000 1.000000 0.000000 0.000000 0.000000";
};

```

TheParticleEmitterlookslikethis,Ikeepallofmyparticlestuffinfilename"customParticles.cs",whichisalsoexecutedin...well,youguesst!

```

datablock ParticleData(TeleportParticle)
{
    dragCoefficient = 1.11437;
    gravityCoefficient = -0.735043;
    windCoefficient = 0;
    inheritedVelFactor = 0.483366;
    constantAcceleration = 0;
    lifetimeMS = 1056;
    lifetimeVarianceMS = 256;
    useInvAlpha = 0;
    spinRandomMin = -159;
    spinRandomMax = 172;
    textureName = "fps/data/shapes/rifle/smokeParticle";
    times[0] = 0;
    times[1] = 1;
    colors[0] = "0.102362 0.070866 0.000000 0.370079";
    colors[1] = "0.000000 0.102362 0.000000 0.740157";
    sizes[0] = 6.08863;
    sizes[1] = 0;
};

datablock ParticleEmitterData(TeleportEmitter)
{
    ejectionPeriodMS = 10;
    periodVarianceMS = 2;
    ejectionVelocity = 2.75;
    velocityVariance = 1.62;
    ejectionOffset = 0;
    thetaMin = 47;
    thetaMax = 90;
    phiReferenceVel = 144;
    phiVariance = 360;
    overrideAdvances = 0;
    orientParticles = 0;
    orientOnVelocity = 1;
    particles = "TeleportParticle";
};

```


And the best thing is, *you don't have to change anything in the script*, you simply execute it at startup (as always), and you add your trigger, shape and particle objects in the editor (press F11, if you've already added the objects it will be described above, you can simply select a group of them [trigger, particle effect and shape] in the top right editor pane by holding SHIFT, then CTRL -C, CTRL -V, rename them from "TeleportTrigger2" ... to "TeleportTriggerX", ...), and that's it! The only important thing is that **the triggers have to be named "TeleportTrigger1" ... "TeleportTriggerN"**, cause the script is iterating over the MissionGroup to find them through a string compare function!

Of course, you have to change your trigger data block from

```
dataBlock = "TeleportTrigger";

to

dataBlock = "MultiTeleportTrigger";
```

So here is the new script, but it's also included in the updated zip file (multiTeleportTrigger.os)!

```
$numTeleports = 0;

dataBlock TriggerData(MultiTeleportTrigger)
{
    tickPeriodMS = 500;
};

function MultiTeleportTrigger::onEnterTrigger(%data, %obj, %colObj)
{
    if($numTeleports == 0)
    {
        // search for Triggers by their name once, so every trigger
        // which has "TeleportTrigger" in its name is counted
        $numTeleports = getMultiTriggerCount("TeleportTrigger");
        echo("$numTeleports: " SPC $numTeleports);
    }

    %client = %colObj.client;
    if(!%client)
    {
        echo("not a client!");
        return;
    }
    %checkname = %obj.getName();
    // if the player didn't recently beam over here... otherwise
    // he would be looping around between the two, I guess...
    if(%checkname != $currMultiTeleTrigger)
    {
```

```

// pick random number, the teleport names start from 1,
// so if the random number is zero, simply take the last teleport:
%rand = getRandom($numTeleports) == 0 ? 1 : $numTeleports;
%target = "TeleportTrigger" @ %rand;
// we don't want to stay where we are...
if(%target $= %checkName)
{
    // ... so increase or decrease the random number by 1
    %rand = %rand+1 > $numTeleports ? %rand-1 : %rand+1;
    %target = "TeleportTrigger" @ %rand;
}
echo("*** TELEPORT TARGET:" SPC %target);
CommandToClient(%client,'bottomprint',"Teleporter initializing... good luck... buahahaha!!",2,10);
$teleSched = schedule(2000,0,"goScotty",%client,%target);
$teleSound = serverPlay3D(TeleportBuzz,%client.player.getTransform());
%client.player.setCloaked(true);
// save the target - until the teleported client leaves it, then reset
$scurrMultiTeleTrigger = %target;
}
}

function MultiTeleportTrigger::onLeaveTrigger(%data, %obj, %colObj)
{
    %client = %colObj.client;
    if(!%client)
    {
        echo("not a client!");
        return;
    }
    %checkName = %obj.getName();
    cancel($teleSched);
    alxStop($teleSound);
    %client.player.setCloaked(false);
    // if the player leaves the target trigger,
    // he can use it again, too... so reset the global var
    if(%checkName $= $scurrMultiTeleTrigger)
    {
        $scurrMultiTeleTrigger = "";
    }
}

function MultiTeleportTrigger::onTickTrigger(%data, %obj)
{
}
}
// *****
// Helper functions
// *****

```

```
// do the teleport
function goScotty(%client, %target)
{
    echo("goScotty called!");
    // beam me up!
    commandToServer('TeleportPlayer', %client, %target);
}

// find the number of teleport triggers by name comparison
function getMultiTriggerCount(%name)
{
    %dataGroup = "MissionGroup";
    %triggerCount = 0;
    for(%i = 0; %i < %dataGroup.getCount(); %i++)
    {
        %obj = %dataGroup.getObject(%i);
        if(%obj.getClassName() != "Trigger")
        {
            // no trigger!
            continue;
        }
        if((strstr(%obj.getDataBlock().getName(), %name) != -1) && isObject(%obj))
        {
            echo(%i SPC "Found Trigger:" SPC %obj.getName());
            %triggerCount++;
        }
    }
    return %triggerCount;
}
```

[<<Previous](#)[TableofContents](#)

Author:beffy

[Next>>](#)