

## ioquake eye candy changes

- include:
  - smoke
  - blood
  - gibs
  - simple python bot basic movements

# Smoke


- firstly note that in `qcommon/q_shared.h` the definition

- ```
#define GORE
```

- all gore related changes should be bound by:

- ```
#if defined(GORE)
/* modified code */
#else
/* original code */
#endif
```

## changes to cgame/cg\_particles.c



```
#if defined(GORE)
#   define PARTICLE_GRAVITY      10
#   define MAX_PARTICLES      1024 * 8 * 128
#else
#   define PARTICLE_GRAVITY      40
#   define MAX_PARTICLES      1024 * 8
#endif
```

## changes to cgame/cg\_weapons.c

- the function rocket trail is altered to yield
  - twice the density of smoke
  - to allow grenades to smoke even if stationary

```
#if defined(GORE)
    step = 25;
#else
    step = 50;
#endif
```

## changes to cgame/cg\_weapons.c

```
#if defined(GORE)
    // grenades smoke even if stationary :-)
#else
    // if object (e.g. grenade) is stationary, don't toss up smoke
    if ( es->pos.trType == TR_STATIONARY ) {
        ent->trailTime = cg.time;
        return;
    }
#endif
```

## changes to cgame/cg\_weapons.c

```
#if defined(GORE)
    if ( es->pos.trType == TR_STATIONARY ) {
        smoke = CG_SmokePuff( lastPos, up,
                               wi->trailRadius,
                               1, 1, 1, 0.33f,
                               wi->wiTrailTime,
                               t,
                               0,
                               0,
                               cgs.media.smokePuffShader );
        // use the optimized local entity add
        smoke->leType = LE_SCALE_FADE;
        return;
    }
#endif
```

## cgame/cg\_marks.c

- handles particles and their dissipation

```
■ #if defined(GORE)
#   define          PARTICLE_GRAVITY          10
#   define          MAX_PARTICLES    1024 * 8 * 128
#else
#   define          PARTICLE_GRAVITY          40
#   define          MAX_PARTICLES    1024
#endif
```

## function CG\_ParticleDust

```
void CG_ParticleDust (centity_t *cent, vec3_t origin, vec3_t dir)
etc

#if defined(GORE)
    if (length)
        p->endtime = cg.time + (4500*10) + (crandom() * 3500);
    else
        p->endtime = cg.time + (750*10) + (crandom() * 500);
#else
    if (length)
        p->endtime = cg.time + 4500 + (crandom() * 3500);
    else
        p->endtime = cg.time + 750 + (crandom() * 500);
#endif
etc
```



## Adding per model gibs

- files altered
  - `q3_ui/ui_local.h`
  - `q3_ui/ui_players.c`

## playerInfo\_t extended in q3\_ui/ui\_local.h

```
#if 1
    qhandle_t      gibSkull;
    qhandle_t      gibBrain;
    qhandle_t      gibAbdomen;
    qhandle_t      gibArm;
    qhandle_t      gibFist;
    qhandle_t      gibFoot;
    qhandle_t      gibForearm;
    qhandle_t      gibChest;
    qhandle_t      gibIntestine;
    qhandle_t
    int             nSkulls;
    int             nBrains;
    int             nAbdomens;
    int             nArms;
    int             nFists;
    int             nFeet;
    int             nForearms;
    int             nChests;
    int             nIntestines;
    int             nLegs;
#endif
```

## playerInfo\_t extended in q3\_ui/ui\_local.h

- notice that this is not switchable on/off at compile time by the GORE definition
- as it would probably mean it would be incompatible with other clients built without GORE
  - in general it is safer **not** to make data structures compile time switchable
    - any mistake could prove very very costly to debug

## q3\_ui/ui\_players.c

```
/*
=====
UI_RegisterClientModelname
=====
*/
qboolean UI_RegisterClientModelname (playerInfo_t *pi,
                                     const char *modelName,
                                     const char *headModelSkinName,
                                     const char *teamName)
{
    char modelName[MAX_QPATH];
    char skinName[MAX_QPATH];
    char headModelName[MAX_QPATH];
    char headSkinName[MAX_QPATH];
    char filename[MAX_QPATH];
    char *slash;

    Com_Printf ("`Inside UI_RegisterClientModelname'");
    pi->torsoModel = 0;
    pi->headModel = 0;
}
```

## q3\_ui/ui\_players.c

```
if (! modelSkinName[0])
    return qfalse;

Q_strncpyz (modelName, modelSkinName, sizeof(modelName));

slash = strchr (modelName, '/');
if (!slash) {
    // modelName did not include a skin name
    Q_strncpyz (skinName, ``default'', sizeof(skinName));
} else {
    Q_strncpyz (skinName, slash+1, sizeof(skinName));
    *slash = '\\0';
}
```

## q3\_ui/ui\_players.c

```
Q_strncpyz (headModelName, headModelSkinName, sizeof (headModelName));
slash = strchr (headModelName, '/');
if (!slash)
    // modelName did not include a skin name
    Q_strncpyz (headSkinName, ``default'', sizeof (skinName));
else {
    Q_strncpyz (headSkinName, slash + 1, sizeof (skinName));
    *slash = '\\0';
}
```

## q3\_ui/ui\_players.c

```
// load cmodels before models so filecache works

pi->legsModel = UI_doModelFile (`models/players/%s/lower.md3'',
                                ``models/players/characters/%s/lower.md3'',
                                modelName);

if (!pi->legsModel) {
    Com_Printf (`Failed to load model file %s\n'', filename);
    return qfalse;
}

pi->torsoModel = UI_doModelFile (`models/players/%s/upper.md3'',
                                 ``models/players/characters/%s/upper.md3'',
                                 modelName);

if (!pi->torsoModel) {
    Com_Printf (`Failed to load model file %s\n'', filename);
    return qfalse;
}
```

## q3\_ui/ui\_players.c

```
if (headModelName[0] == '*' )
    Com_sprintf( filename, sizeof (filename),
                ``models/players/heads/%s/%s.md3'',
                &headModelName[1], &headModelName[1] );
else
    Com_sprintf( filename, sizeof (filename),
                ``models/players/%s/head.md3'', headModelName);

pi->headModel = trap_R_RegisterModel( filename );
if ( !pi->headModel && headModelName[0] != '*' ) {
    Com_sprintf( filename, sizeof( filename ),
                ``models/players/heads/%s/%s.md3'', headModelName, headModelName);
    pi->headModel = trap_R_RegisterModel( filename );
}

if (!pi->headModel) {
    Com_Printf( ``Failed to load model file %s\n'', filename );
    return qfalse;
}
```



## q3\_ui/ui\_players.c

```
#if 1
    // Gaius
    UI_ParseBodyFile (``models/players/%s/%s.body'', modelName, pi);
#endif
```

## new function doModelFile

```
static qhandle_t UI_doModelFile (const char *preferredPath,  
                                const char *defaultPath,  
                                const char *modelName)  
{  
    char filename[MAX_QPATH*2];  
    qhandle_t q;  
  
    Com_sprintf (filename, sizeof (filename), preferredPath, modelName);  
    q = trap_R_RegisterModel (filename);  
    if (q == 0 && defaultPath != NULL) {  
        Com_sprintf (filename, sizeof (filename), defaultPath, modelName);  
        q = trap_R_RegisterModel (filename);  
    }  
    return q;  
}
```

## new function doModelFile

```
/*
=====
UI_ParseBodyFile
=====
*/
void UI_ParseBodyFile (const char *fmt, const char *modelName, playerInfo_t *pi)
{
    char          *textPtr;
    int           len;
    char          *token;
    char          text[20000];
    char          filename[MAX_QPATH];
    fileHandle_t   f;

    UI_set_default_body_parts (pi);
    Com_sprintf (filename, sizeof (filename), fmt, modelName, modelName);
    Com_Printf (``About to read file: %s'', filename);
```

## new function doModelFile

```
// load the file
len = trap_FS_FOpenFile (filename, &f, FS_READ);
if (len <= 0)
    return ;

if (len >= (sizeof (text)-1)) {
    Com_Printf("`File %s too long\n'", filename);
    trap_FS_FCloseFile (f);
    return;
}
trap_FS_Read (text, len, f);
text[len] = 0;
trap_FS_FCloseFile(f);

Com_Printf("`About to parse file: %s'", filename);

// parse the text
textPtr = &text[0];
```

## new function doModelFile

```
token = COM_Parse (&textPtr);
if (UI_seen_token (token, ``{'')) {
    token = COM_Parse (&textPtr);
    while ((token != NULL) && (! UI_seen_token (token, ``}''))) {
        if (UI_seen_value (&textPtr, &token, ``BODY_NO_OF_SKULLS'', &pi->nSkulls) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_BRAINS'', &pi->nBrains) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF ABDOMENS'', &pi->nAbdomens) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_ARMS'', &pi->nArms) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_FISTS'', &pi->nFists) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_FEET'', &pi->nFeet) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_FOREARMS'', &pi->nForearms) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_CHESTS'', &pi->nChests) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_INTESTINES'', &pi->nIntestines) ||
            UI_seen_value (&textPtr, &token, ``BODY_NO_OF_LEGS'', &pi->nLegs))
            ;
        else
            token = COM_Parse (&textPtr);
    }
}
```

## q3\_ui/ui\_players.c

```
static int UI_seen_token (char *token, const char *match)
{
    return (Q_stricmp (token, match) == 0);
}

static int UI_seen_value (char **textPtr, char **token,
                          const char *match, int *value)
{
    if (UI_seen_token (*token, match)) {
        *token = COM_Parse (textPtr);
        if (token != NULL)
            if (isdigit (**token)) {
                *value = atoi (*token);
                *token = COM_Parse (textPtr);
                return qtrue;
            }
    }
    return qfalse;
}
```

## q3\_ui/ui\_players.c

```
/*  
 * UI_set_default_body_parts - sets the default for human structures.  
 */  
  
static void UI_set_default_body_parts (playerInfo_t *pi)  
{  
    pi->nSkulls = 1;  
    pi->nBrains = 1;  
    pi->nAbdomens = 1;  
    pi->nArms = 2;  
    pi->nFists = 2;  
    pi->nFeet = 2;  
    pi->nForearms = 2;  
    pi->nChests = 1;  
    pi->nIntestines = 1;  
    pi->nLegs = 2;  
}
```