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Game Dev

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Run Phaser3 on WeChat Minigame Platform

1. Customise Image loader

WeChat platform doesn't support `blob` for the time being hence Phaser's way of loading images won't work here. Some modifications to the source code are neccessary.

```
> git clone https://github.com/photonstorm/phaser3-custom-build
> cd phaser3-custom-build
> npm install
```

Go to `node_modules/phaser/src/loader/filetypes/ImageFile.js` and change it as following:

```
...
+   load: function()
+   {
+       this.loader.nextFile(this, true);
+   },

    onProcess: function ()
    {
        this.state = CONST.FILE_PROCESSING;

        this.data = new Image();

        this.data.crossOrigin = this.crossOrigin;
        var _this = this;

        this.data.onload = function ()
        {
            File.revokeObjectURL(_this.data);

            _this.onProcessComplete();
        };


        this.data.onerror = function ()
        {
            File.revokeObjectURL(_this.data);

            _this.onProcessError();
        };

-       File.createObjectURL(this.data, this.xhrLoader.response, 'image/pn
+       this.data.src = this.url;
    },
...
```

Save it and then:

```
> cd phaser3-custom-build
> npm run buildfull
```

Copy `./dist/phaser-full.min.js` to your libs directory, in my case, `./js/libs/`.

2. Update weapp-adapter

```
> git clone https://github.com/xiandew/weapp-adapter
> cd weapp-adapter
> npm install
> npm run build
```

Copy `./dist/weapp-adapter.js` to your libs directory.

2.1. If you want to use Phaser’s scene level input manager

If you want Phaser's `scene.input.on("pointerup")` (or plugins that relies on that, e.g. `rexvirtualjoystickplugin`) to work properly, you need to add `target` to `changedTouches`:

Locate the following line in `src/EventIniter/TouchEvent.js`:

```
event.changedTouches = rawEvent.changedTouches
```

and change it to

```
event.changedTouches = rawEvent.changedTouches.map((touch) => {
    touch.target = event.target
    return touch
})
```

Rebundle the file and copy it to you libs directory.

3. Introduce DOMParser

WeChat minigame doesn't support DOMParser, which will cause problem if you want to use Phaser's Bitmap fonts.

`xmldom.DOMParser` is used for the DOMParser. I made a custom build to it so we only need to put a single file under our libs directory rather than a folder.

```
> git clone https://github.com/xiandew/xmldom-custom-build
> cd xmldom-custom-build
> npm install
> npm run build
```

Copy `./dist/dom-parser.min.js` to your libs directory.

4. Import

Import the following to whichever file you want to use Phaser.

```
import './js/libs/weapp-adapter';
import Phaser from './js/libs/phaser.min';
```

```
// Only required if you're having issue with parsing XML files.
window.DOMParser = require('./js/libs/dom-parser.min');
```

5. Expose the global canvas to Phaser

When setup Phaser, make sure to expose WeChat’s global canvas.

```
var config = {
    type: Phaser.CANVAS,
    canvas: canvas,
    ...
};
```

6. Make sure to switch on touch support

You have to specify `input.touch = true` explicitly in `config` for Phaser’s touch support.

```
var config = {
    type: Phaser.CANVAS,
    canvas: canvas,
    input: {
        touch: true
    }
    ...
};
```

7. If you want to make use of WeChat Relationship Chain Data

Making use of WeChat Relationship Chain Data involves sensative privacy of WeChat users so WeChat introduces the idea of “open data domain (ODD)” which is the only place that the relationship chain data can exist.

There are lots of limitations after enabling the ODD. One of them is that the sharedCanvas cannot call `getContext` and it breaks Phaser3’s way of rendering `CanvasTexture`.

So as a work-around, we need set the `sharedCanvas` as the texture directly using `texImage2D` (since I’m on `WebGL` mode) instead of setting its pixels which are not available in this case.

Once we are clear of that, modifications are pretty simple. Goto `node_modules/phaser/src/textures/CanvasTexture.js` and change as following:

```
    ...
    function CanvasTexture (manager, key, source, width, height)
    {
        Texture.call(this, manager, key, source, width, height);

        this.add('__BASE', 0, 0, 0, width, height);

        /** ... */
        this._source = this.frames['__BASE'].source;

        /** ... */
        this.canvas = this._source.image;

        /** ... */
        this.context = this.canvas.getContext('2d');

        /** ... */
        this.width = width;

        /** ... */
        this.height = height;

+       this.pixels = this.canvas;
+       return;

        /** ... */
        this.imageData = this.context.getImageData(0, 0, width, height);

        /** ... */
        this.data = null;

        if (this.imageData)
        {
            this.data = this.imageData.data;
        }

        /** ... */
        this.pixels = null;

        /** ... */
        this.buffer;

        if (this.data)
        {
            if (this.imageData.data.buffer)
            {
                this.buffer = this.imageData.data.buffer;
                this.pixels = new Uint32Array(this.buffer);
            }
            else if (window.ArrayBuffer)
            {
                this.buffer = new ArrayBuffer(this.imageData.data.length);
                this.pixels = new Uint32Array(this.buffer);
            }
            else
            {
                this.pixels = this.imageData.data;
            }
        }
    },
    ...
```

One thing that might be worth mentioning here: don't expect there are anyhting on the `sharedCanvas` after you set its size since resizing it will clear everything drawn.

Ready to go!

References

- Relationship Chain Data | Weixin public doc
- 利用 Phaser 开发微信小游戏的尝试
- phaser3 微信小游戏若干问题

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3 Responses

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XianDe WEN's personal blog. "I am currently a Master student (Master of IT - Computing Stream) at University of Melbourne. I love programming, working, being with friends and sleeping😁." More about me, click here.