Resistance 2
Tech Team Debriefing

Mike Acton
macton@insomniacgames.com

Technical Goals

Simultaneous engine and game production

Tech Goals

- Huge Levels
- Huge Characters
- Tons of Characters
- Lots of Action
- Massive Ships, Filling the Sky
- More Dynamic Lighting
- Improved Shadows
- Tons of Water
- Improved Cinematics

Some Tech Features for R2

- Blend Shapes
- Wrinkle Maps
- Integrated Cinematics
- Navigation SPU
- Expand World Size
- Region Streaming
- Loose Attachments
- Depth of Field
- Motion Blur
- Depth-based Color Correction
- Light Scattering
- Guppys
- Sun Shadows
- Off-Screen Particle Effects
- Asynchronous Moby Update
- Glass/Fragmentation
- Prelighting
- Interactive Water
- Invisible Effects
- See-Through Effect
- PSP Plus Connectivity
- Voice Chat SPU
- Debug Menu System
- PPU Math Asm
- Color Level Curves

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Theme = Quantity

Not Just Tech...

e.g. Art

Number of Entities : 11,267
Number of Shaders: 8,030
Number of Textures: 21,378

Did I mention...?

Three Independent Game Modes

- Online 8 Player Co-Op
- 60 Player Competitive
- Single Player Campaign

Quantity vs. Quality

More isn't always better

But first...

Iteration Time

Brute Force

R2 represents a turning point for Insomniac. It's where we learned that brute force can no longer get us where we want to go.

Some of our brute force methods

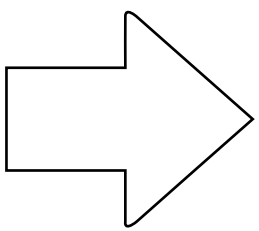
Memory Tracking
VRAM Tracking
Performance Tracking
Occlusion Grids
Collision Holes
Physics Collision Limits
Ragdoll Limits
Navigation Meshes
Lightmap Generation
LOD and shader settings
Sound settings
Update classes
Creating levels

Oh, and...

Pre-Production Time

FAIL

- Changing gameplay leads.
- Difficulties integrating project.



Too many decisions needed to be made during production.

In Short,

- We did a lot
- We did it the hard way
- We did it in very little time

But before you think we had it too easy...

Debugging and Optimization

Debugging and Optimization

- SPU "Job Management"
- Tie Trimming
- Keeping Levels in Memory
- Balancing VRAM Usage
- Setting LODs
- Last-Minute Geometry Reduce
- Streaming Audio
- SPU Shaders
- Gameplay on SPUs
- Lua Memory Pools
- Lua Script Sizes
- Lua Compiled Scripts
- Particle Effects GPU Budget

Frame-rate Police
Dynamic Screen Resolution
Out-Running Streaming
Ragdoll Counts

What Did We Learn?

Our New Direction

- Less Unique Assets
- More Combinations
- Test Combinations *Quickly*
- Only the Things that Matter
- Review Results

Thanks.

Thanks guys, for all your hard work.