Realistic and Interactive Clothing in Epic Games “Samaritan” Demo using NVIDIA APEX

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Overview

- Clothing Authoring in 3ds Max (live)
  - Clothing tool workflow (trenchcoat)

- Clothing in the Samaritan Demo (live)
  - Clothing requirements
  - Hero’s trenchcoat in UE3
  - APEX Debug Visualization in UE3

- Additional APEX Modules
  - APEX Overview
  - APEX Destruction
  - APEX Particles
  - APEX Turbulence

- Q & A
Clothing Authoring in 3dsMax
Hero’s Trenchcoat
Clothing in Samaritan Demo
So, what is APEX?

APEX is a “Scalable Dynamics Framework”

- **Scalable**: Content adapts to different hardware capabilities
- **Dynamics**: The way things move and interact
- **Framework**: A structured environment

APEX consists of two major components:

**Authoring**:
- High-level authoring of dynamic systems
- DCC plugins, standalone tools, and game engine plug-ins

**Runtime**:
- A modular SDK – minimal integration into game engine
- Leverages PhysX for simulations
APEX Architecture

Authoring

DCC Plug-In

Standalone APEX Tools

Destruction
Clothing
Particles

APEX Core

Renderer
PhysX SDK

Consoles
PC
PC + GPU

Run-time
APEX Destruction

- Fully and partial destructible environments
- PhysXLab tool with preview functionality
- Fully integrated with APEX Particles
- Fracture with noise
- Hierarchical destruction
- Plastic deformation
- Level of Detail
- Scalability
APEX Destruction
Realtime example of authored destruction asset
APEX Destruction
Massive Destruction
APEX Particles

- Full Collision with PhysX environment
- Force fields (wind, explosions)
- Authorable behavior and effect modifiers
- Renderable as sprites or meshes (with orientation)
- Generic emitter
- Special purpose emitters
  - Air/Ground emitter
  - Weapon emitter
APEX Particles
Particle Authoring DLL

Game Editor

APEX Asset Parameter Object

Change Notifications

Particle Authoring DLL

APEX

PhysX

APEX Asset Parameter Object

Graphical user interface with parameter settings and color selection.
APEX Particles
Particle Authoring DLL in UE3
From where can I get APEX?

Register at NVIDIA Developer Zone and request access for APEX SDK and APEX Tools


Questions?
NVIDIA @ GDC 2011

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