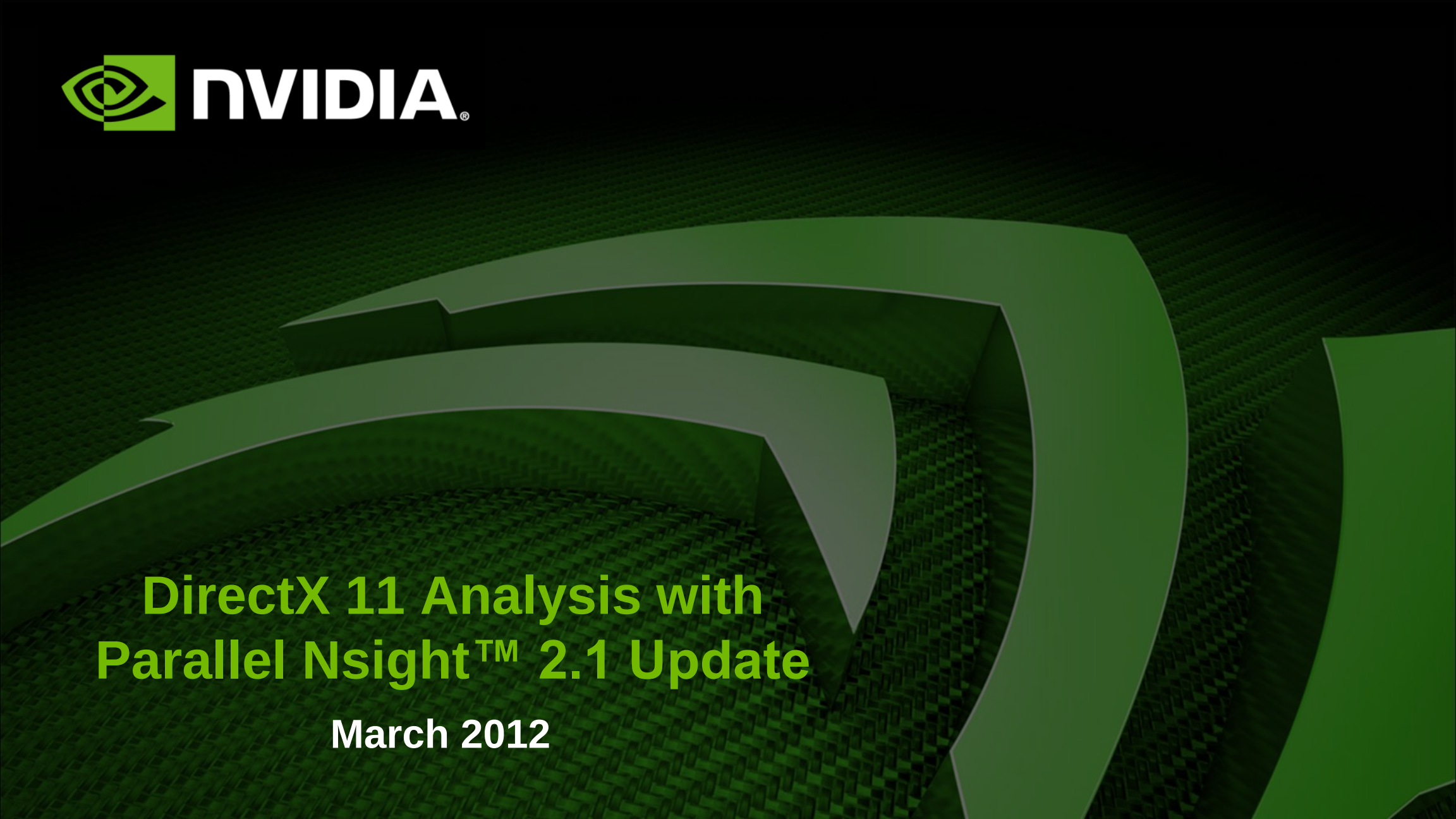


# DirectX 11 Analysis with Parallel Nsight™ 2.1 Update

March 2012

# NVIDIA Parallel Nsight™

## Visual Studio integrated development for GPU and CPU

**Build** **Debug** **Profile**

Microsoft® Visual Studio® PARTNER

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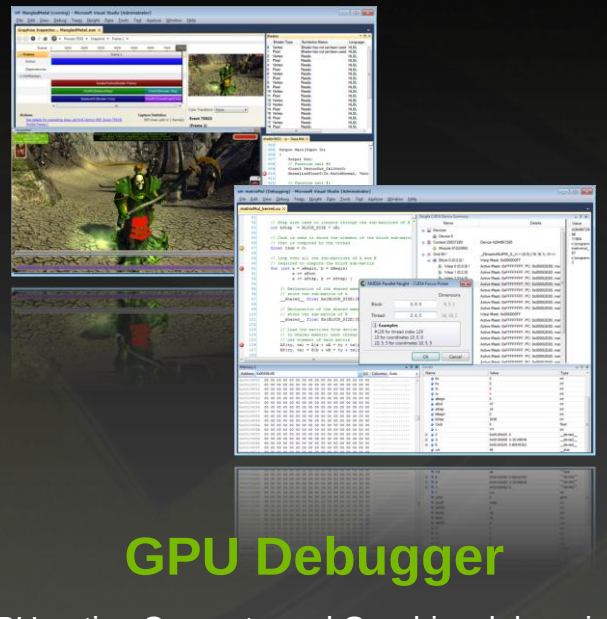
# NVIDIA Parallel Nsight™

Microsoft® Visual Studio®

NVIDIA

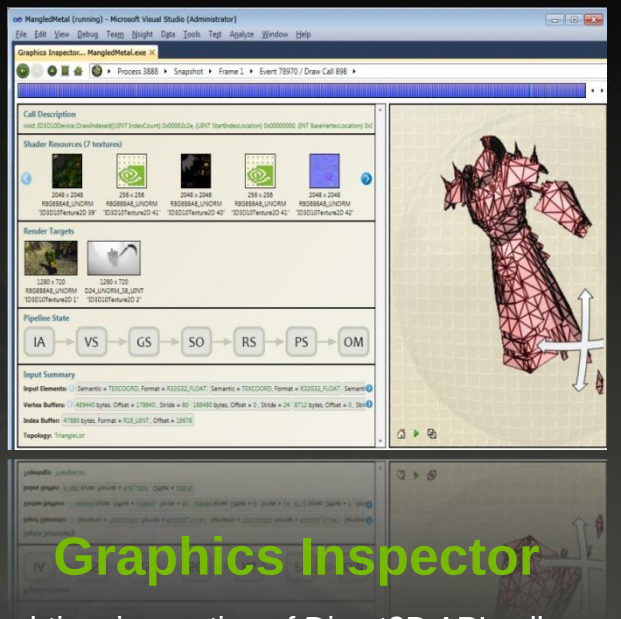


## GPU Debugger

GPU native Compute and Graphics debugging

GPU breakpoints including complex conditionals

GPU memory views and exception reporting



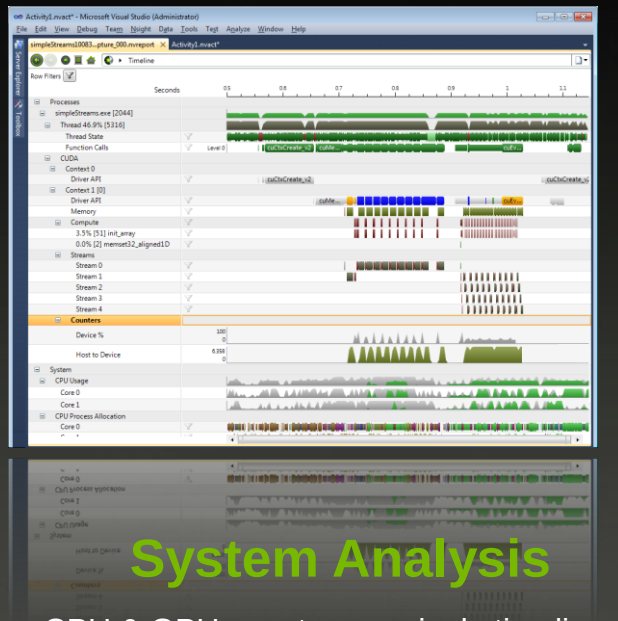
## Graphics Inspector

Real-time inspection of Direct3D API calls

Investigate GPU pipeline states

See contributing fragments with Pixel History

Profile frames to find GPU bottlenecks



## System Analysis

View CPU & GPU events on a single timeline

Examine workload dependencies, memory transfers

CPU/OS, Compute, Direct3D and OpenGL Trace

## Free License!

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# One computer, one NVIDIA GPU

## Host + Target (32/64 bit)

- ✓ Frame Debugger
- ✓ Frame Profiler
- ✓ Frame Timings
- ✓ System Analysis

- Install appropriate NVIDIA driver
- Install Parallel Nsight Host and Monitor

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# Two computers, one with NVIDIA GPUs

Host (32/64-bit)

Network

Target (32/64-bit)

- ✓ Frame Debugger
- ✓ Frame Profiler
- ✓ Frame Timings
- ✓ System Analysis
- ✓ Shader Debugger
- ✓ Pixel History

- Install appropriate NVIDIA driver on the Target System
- Install Parallel Nsight Monitor on the Target System
- Install Parallel Nsight Host on the Development System

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# One computer, two NVIDIA GPUs

## Host + Target (32/64-bit)

- ✓ Frame Debugger
- ✓ Frame Profiler
- ✓ Frame Timings
- ✓ System Analysis
- ✓ Shader Debugger
- ✓ Pixel History

- Install appropriate NVIDIA driver
- Install Parallel Nsight Host and Monitor
- Configure Local Headless Debugging (see User's Manual)

Parallels™ Optimized Computing

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# New in Parallel Nsight 2.1

- Dynamic shader editing
- Show constant buffer with HLSL variable names
- Frame timings page
- Save and load profiler sessions
- Call stack trace capture
- Trace workload correlation
- 5X trace overhead improvement
- New system information page

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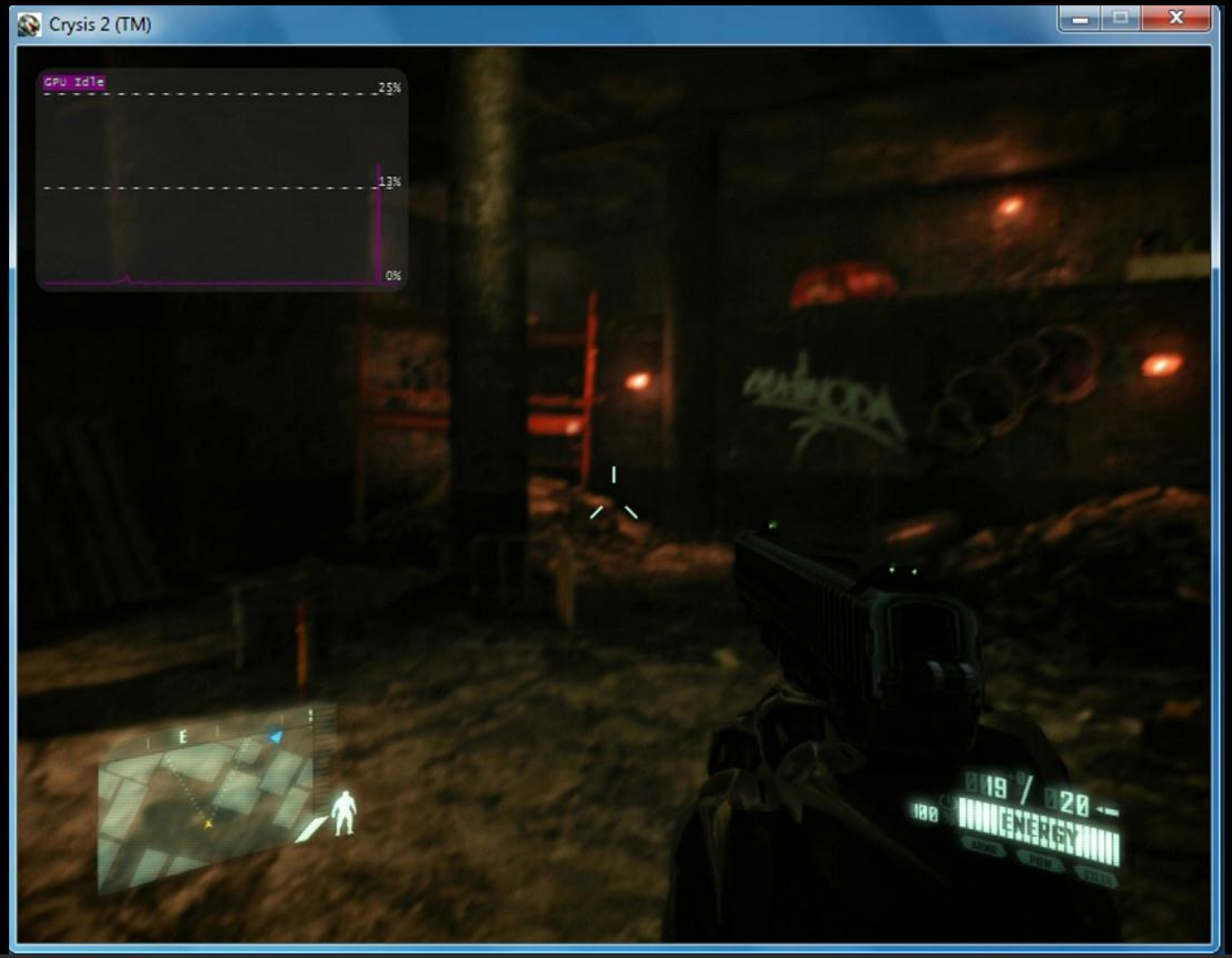
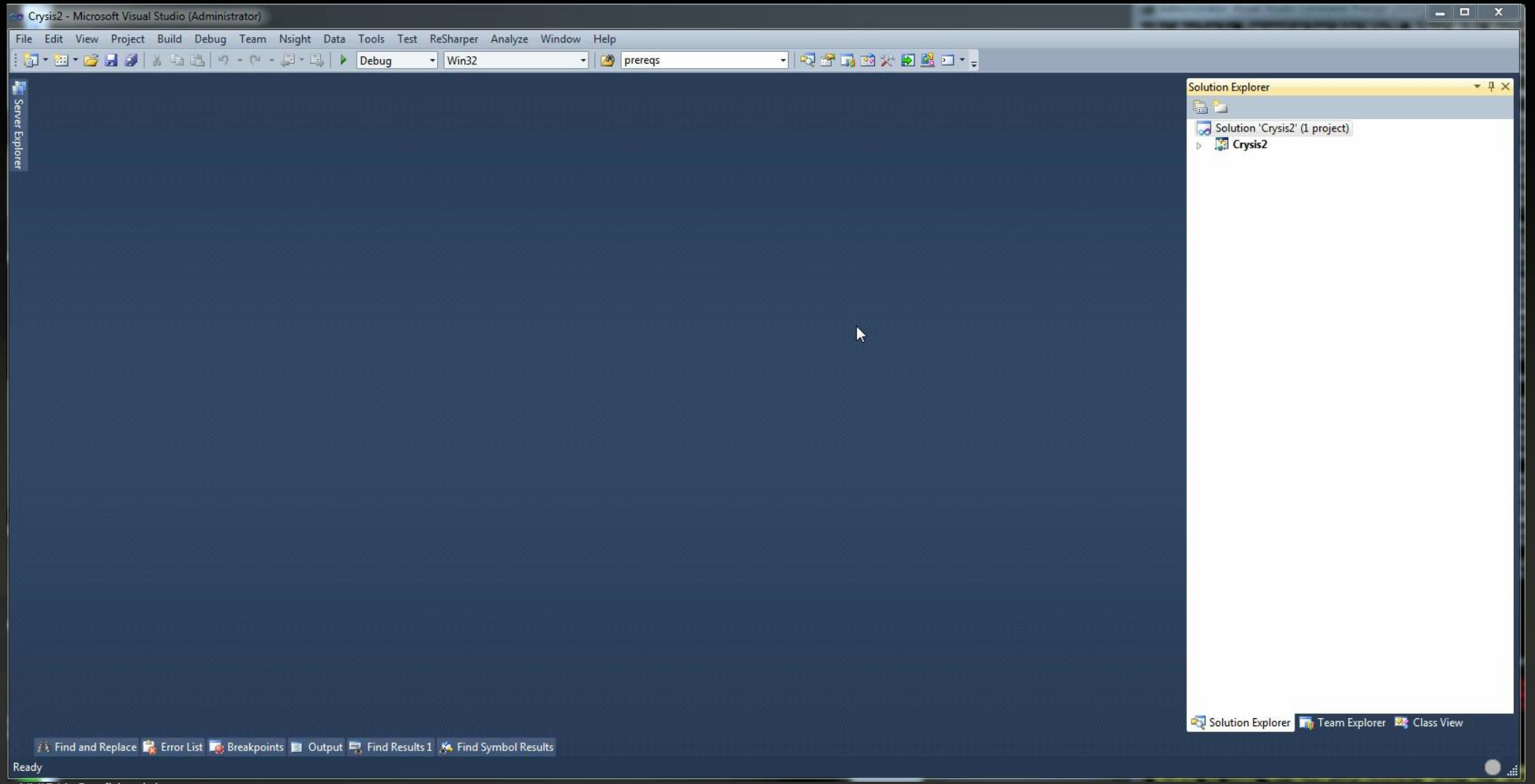
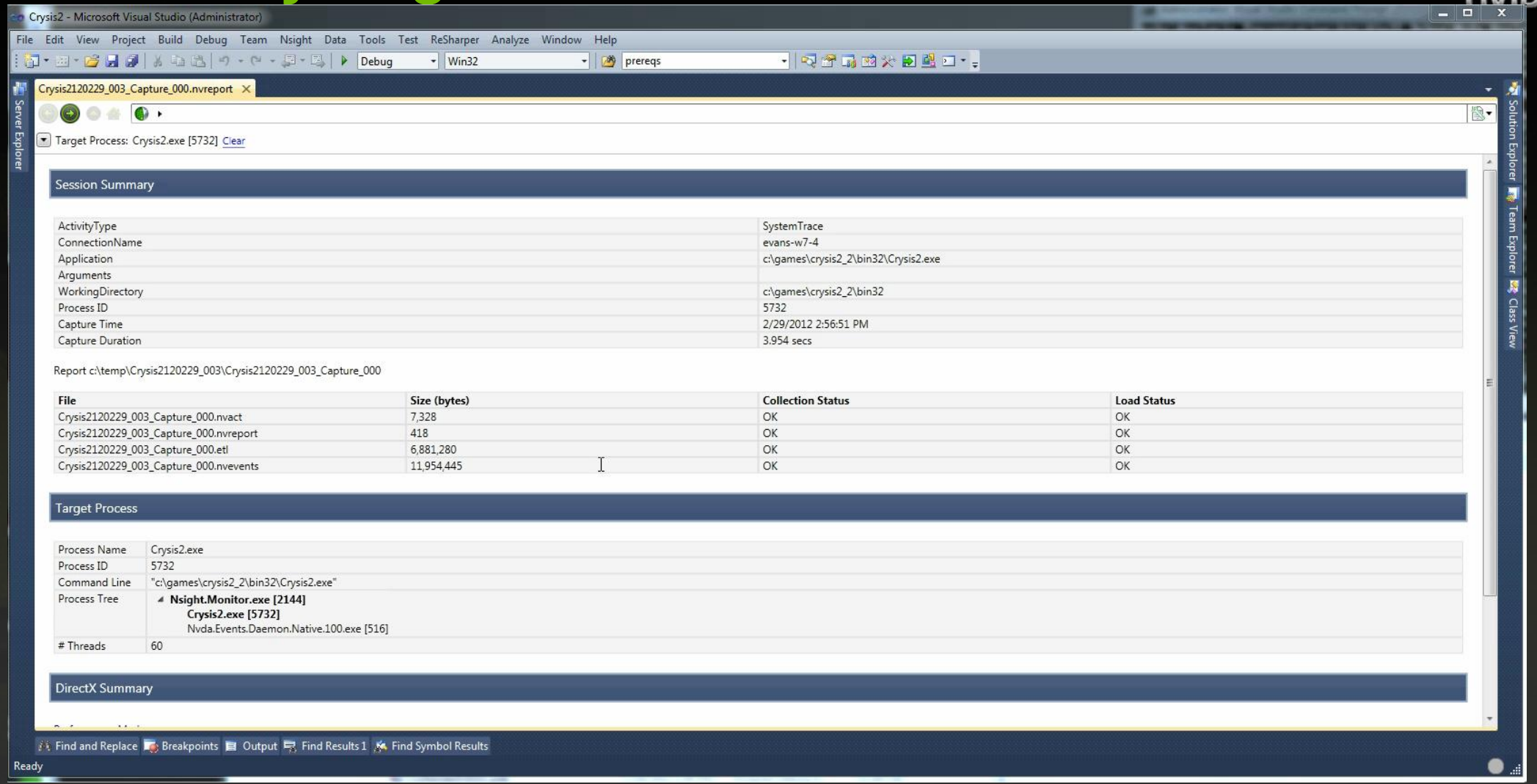
# Real-time HUD graphs



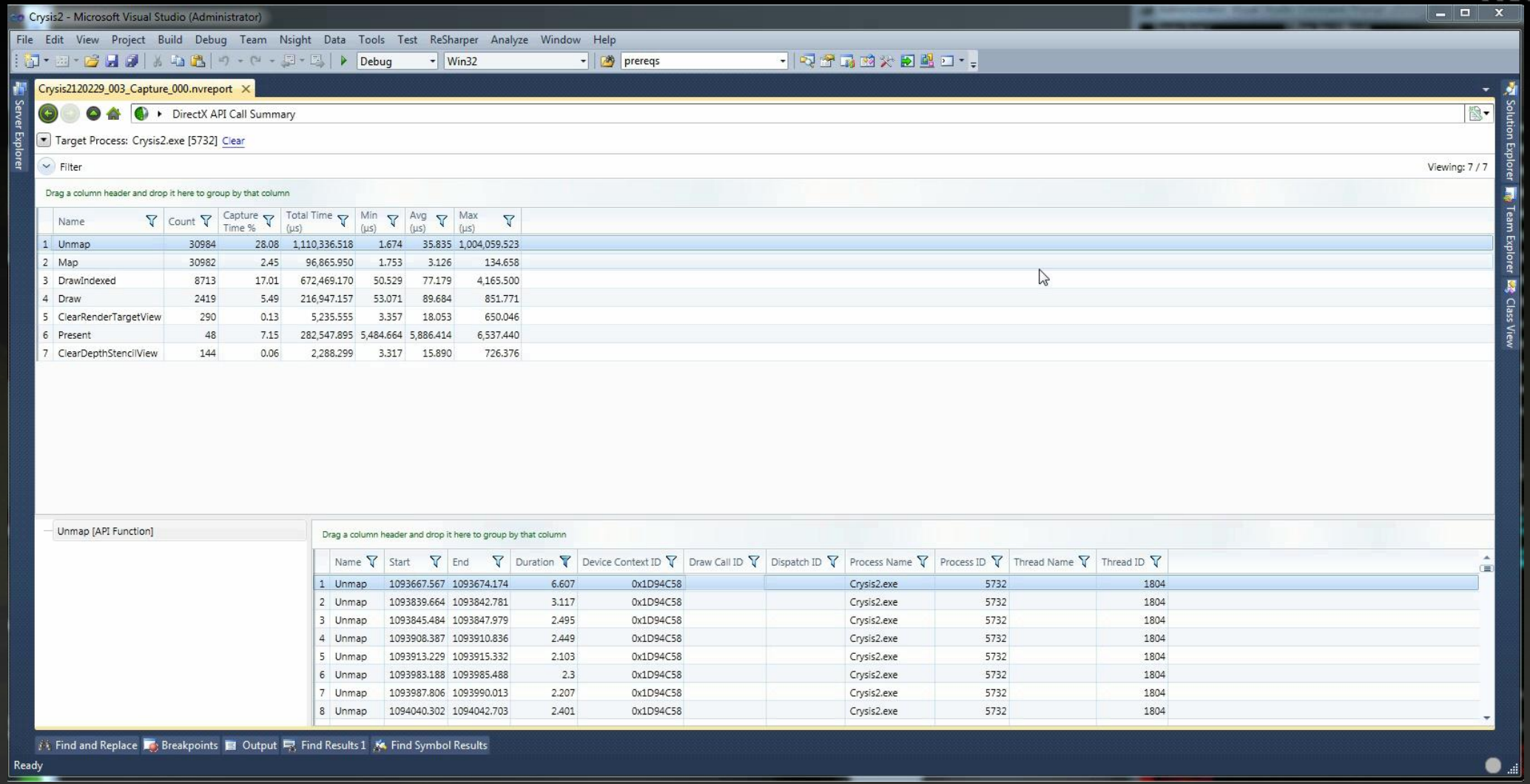
# Launching an Analysis job



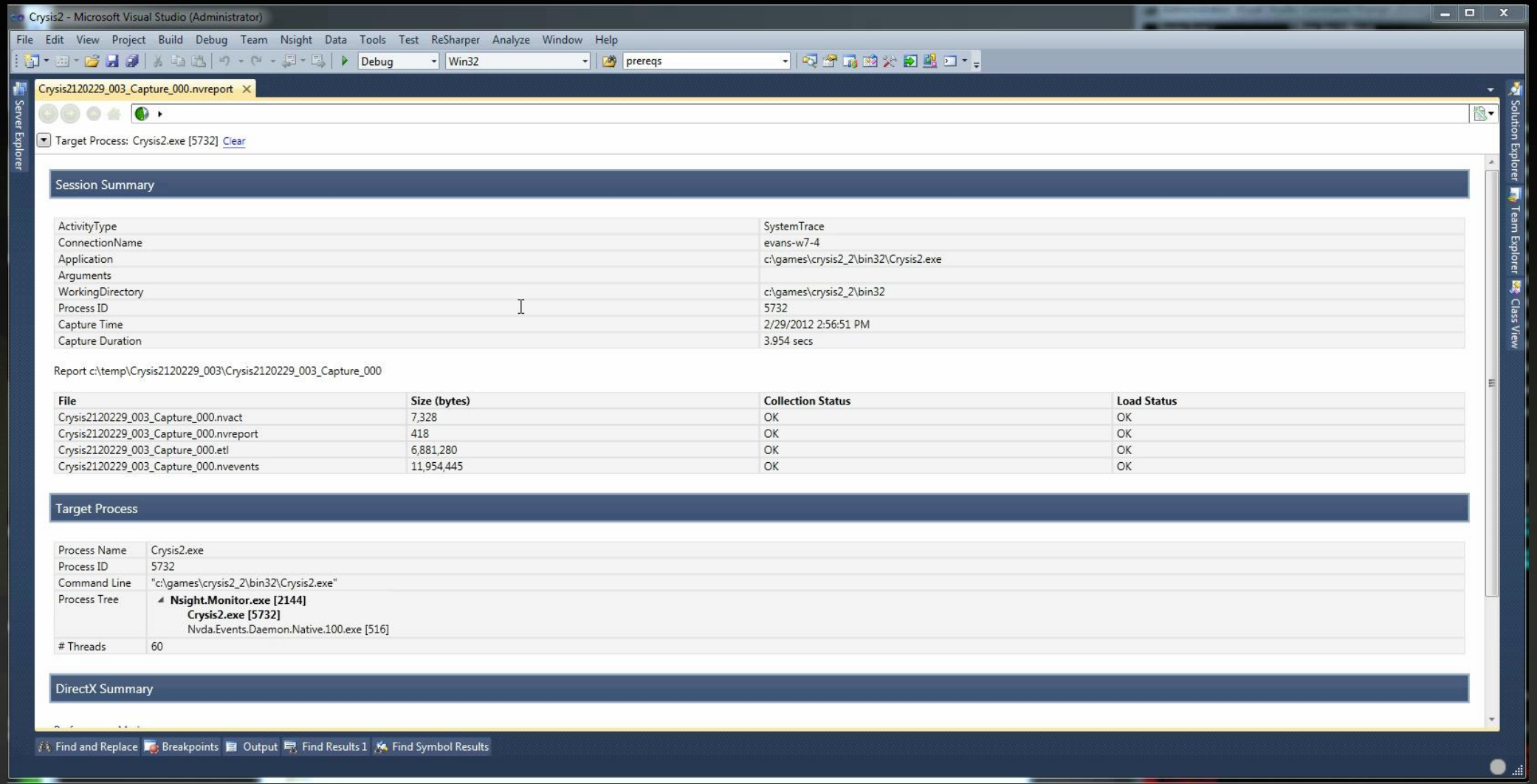
# Summary Page and Timeline



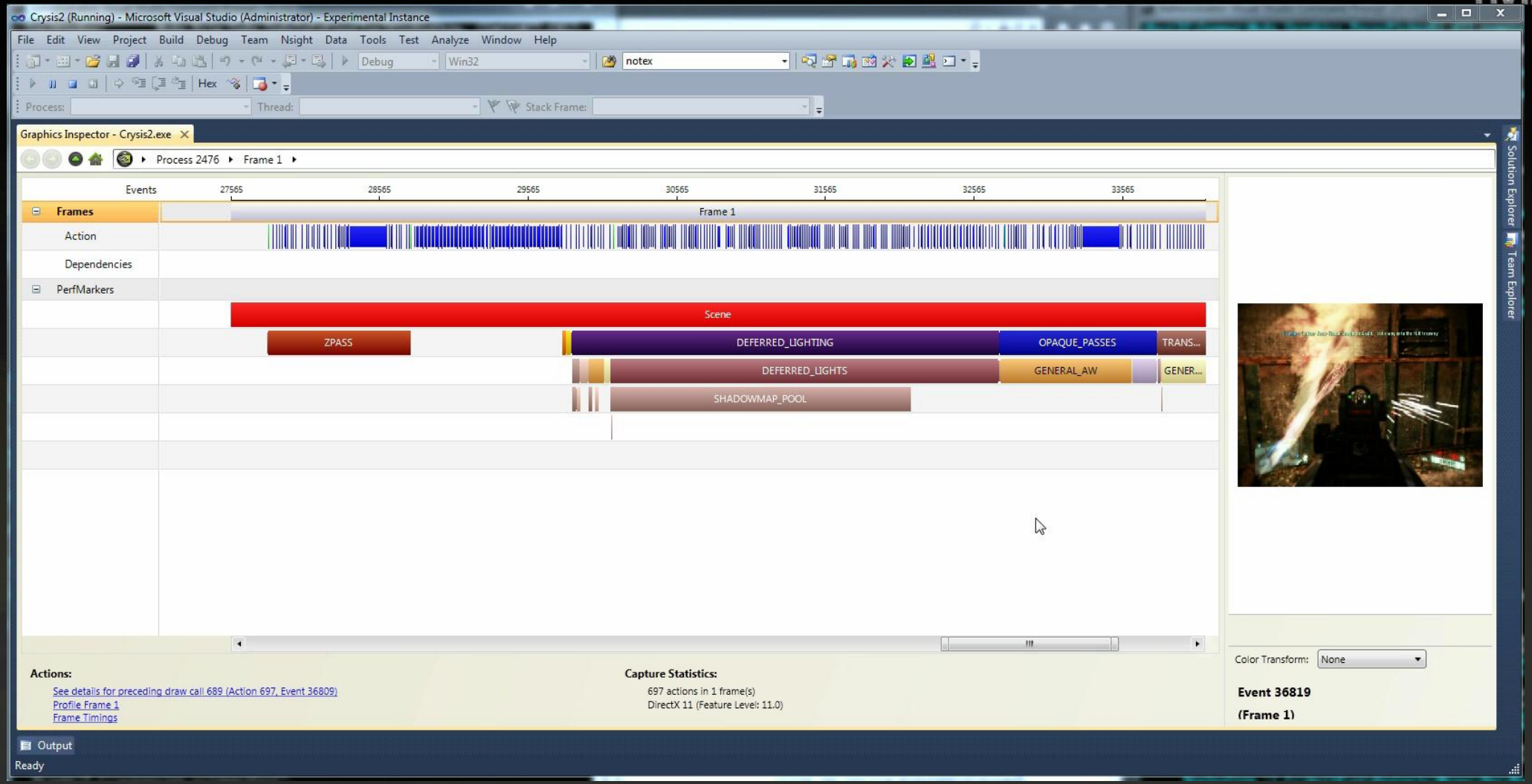
# Data tables: API Calls, Frames, PerfMarkers



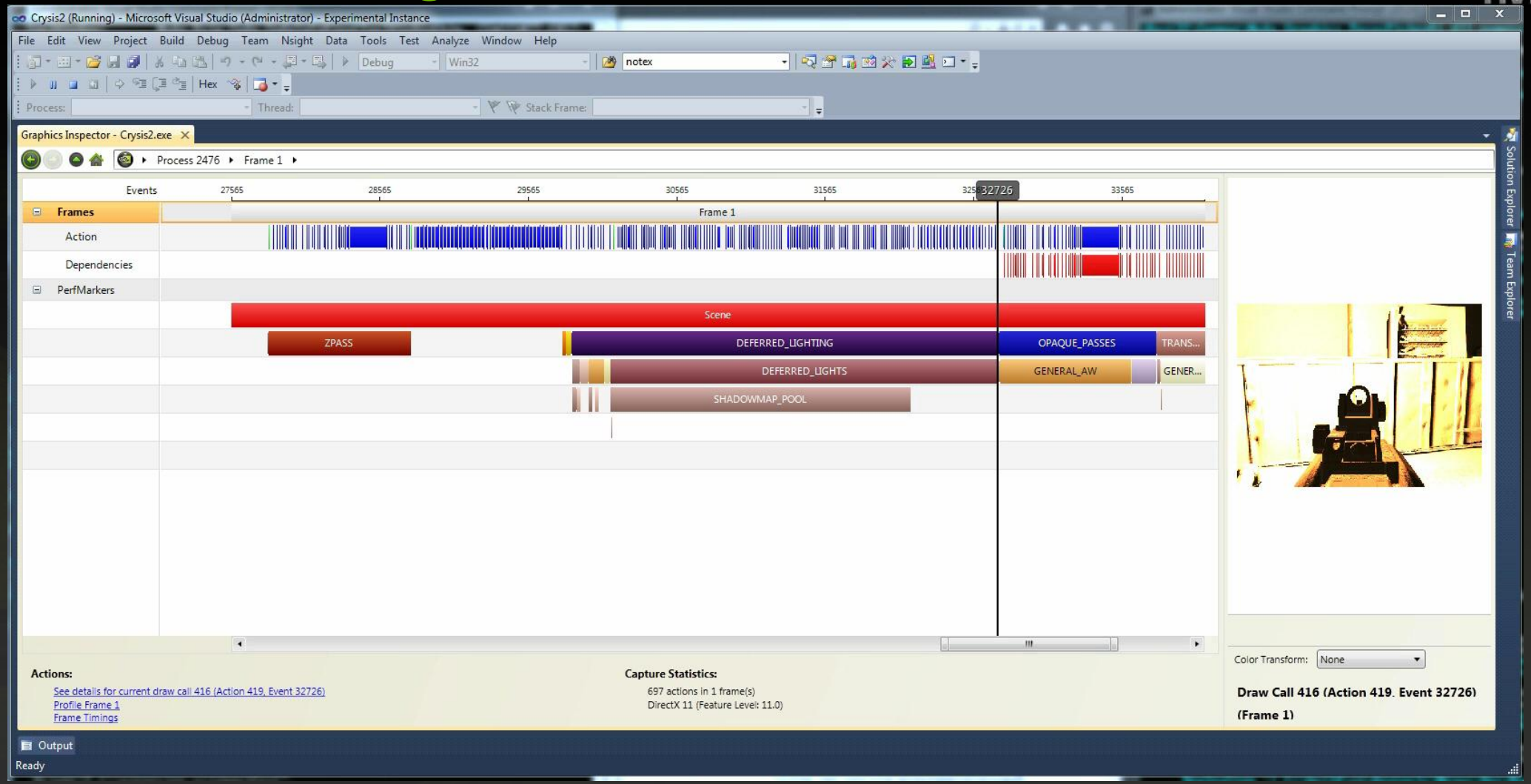
# Launching a FrameDebugger job



# Frame Profiler



# Frame Timings



# Questions?

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