NVIDIA® NSIGHT™ VSE 4.7™帮助开发更快更炫的图形效果

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开发者工具: NVIDIA GameWorks™

NVIDIA® Nsight™ Visual Studio Edition 4.7™介绍

分析 Infiltrator (Epic Games)

在现代GPU上进行开发可能会
让您觉得云深雾绕

NVIDIA开发者工具

构建 调试 性能剖析

Microsoft DirectX

OpenGL

NVIDIA CUDA

OpenGL ES

ANDROID NDK

GNU C/C++

集成开发环境

Visual Studio

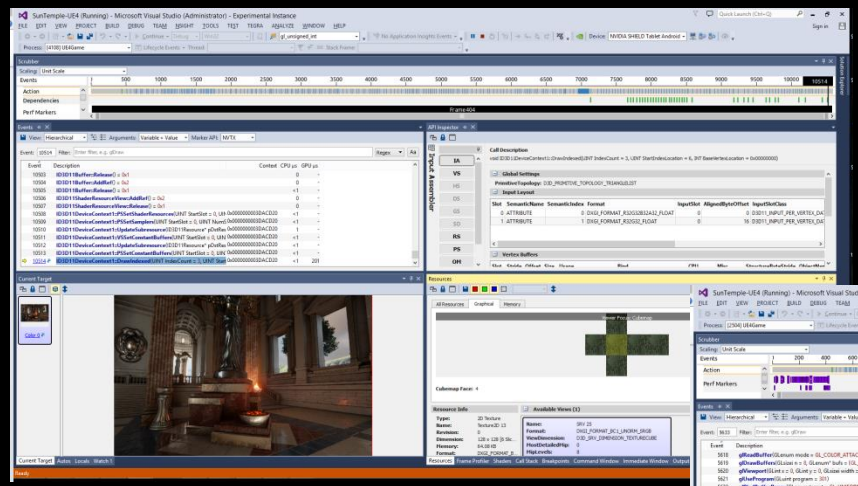
eclipse

独立工具

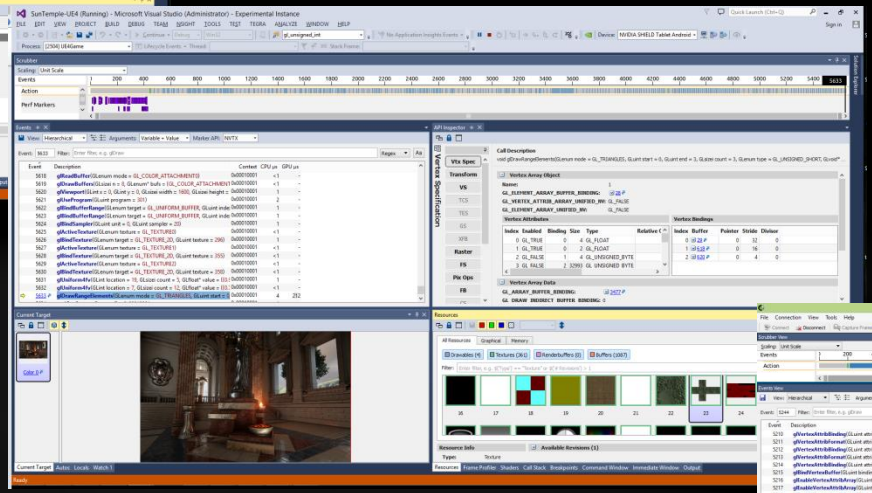
硬件支持
CPU和GPU的调试和性能剖析

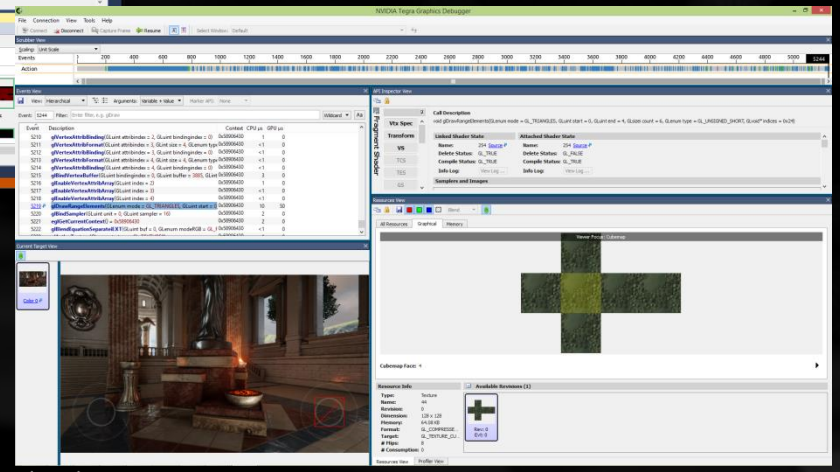
NVIDIA GAMEWORKS™

选择一个平台



Microsoft® DirectX®





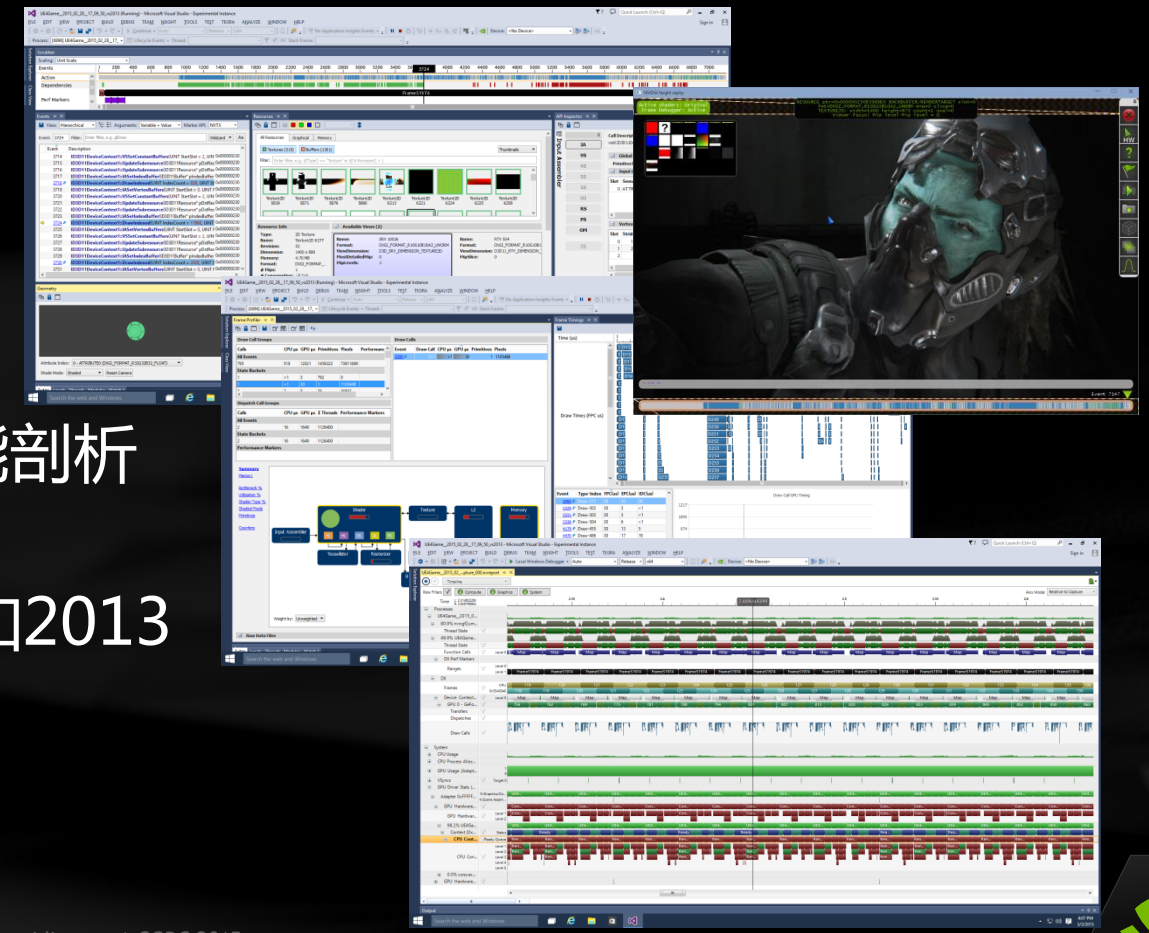
OpenGL

OpenGL ES

NVIDIA® NSIGHT™ VISUAL STUDIO EDITION

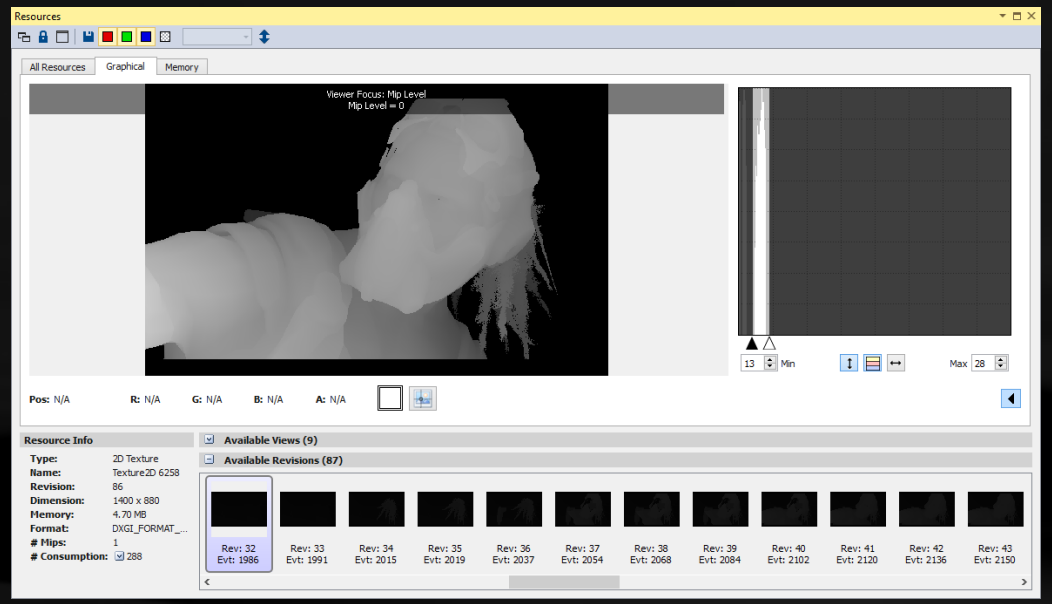
加速视觉计算的开发

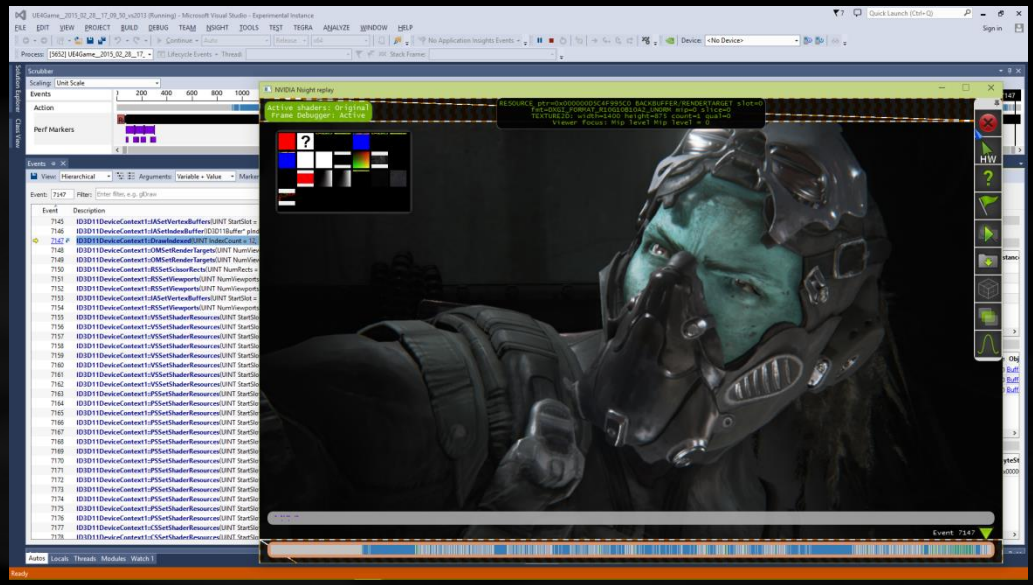
- 支持DirectX 9/11和OpenGL
- 图形开发的调试和性能剖析
- 调试HLSL和GLSL着色器代码
- CUDA kernels开发的调试和性能剖析
- 系统级的性能剖析
- 支持Visual Studio 2010, 2012和2013



4.7的新功能

- Maxwell架构支持 (不含Shader Debugging功能)
- OpenGL 4.4支持 (不含ARB_sparse_texture)
- 截取OpenGL调用并生成对应源代码及工程
- 贴图的直方图显示和颜色范围重映射
- CUDA 7.5支持

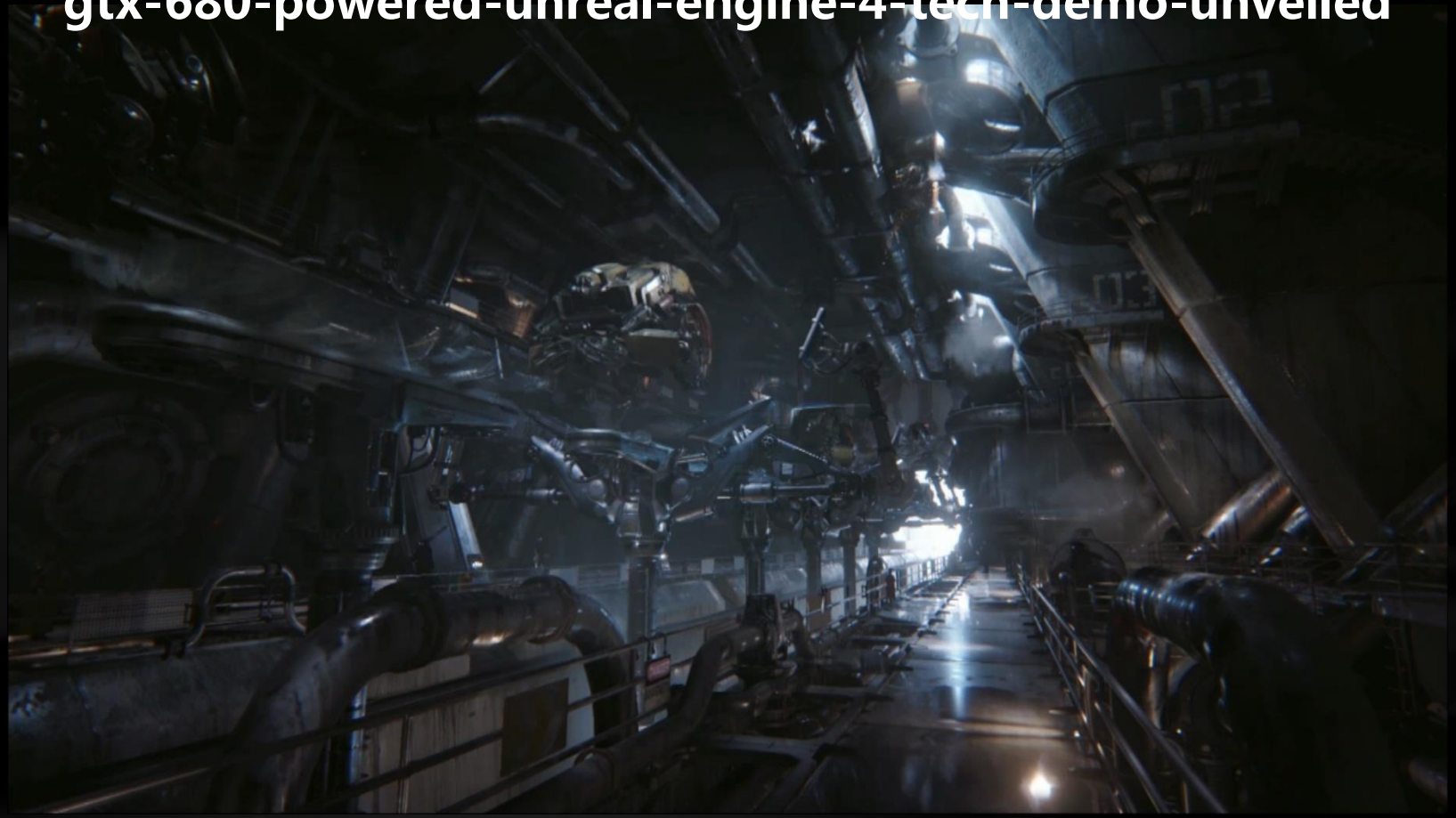




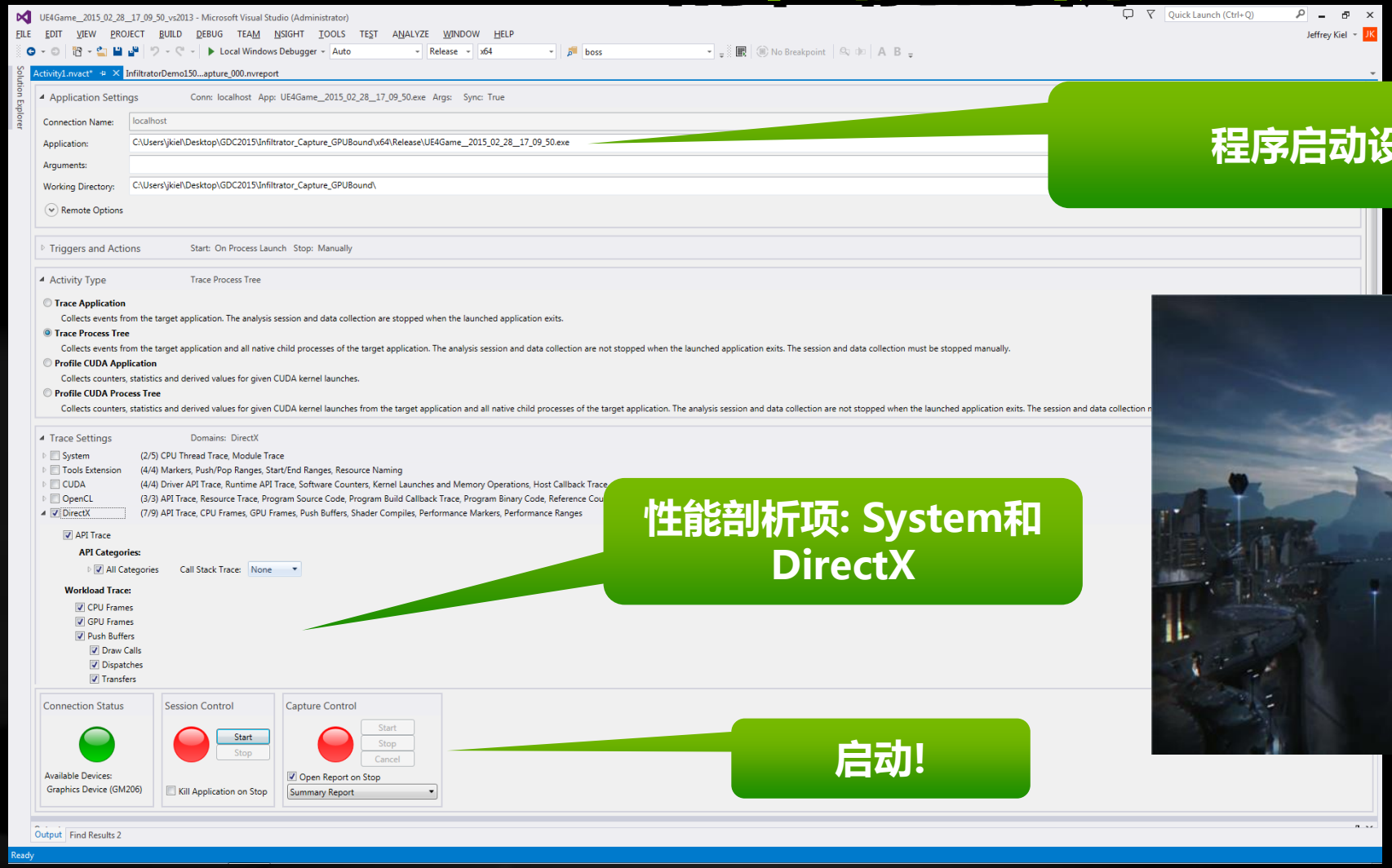
INFILTRATOR的性能剖析

INFILTRATOR的性能剖析

观看Infiltrator演示: http://www.geforce.cn/whats-new/articles/infiltrator-gtx-680-powered-unreal-engine-4-tech-demo-unveiled



INFILTRATOR的性能剖析 – CPU BOUND

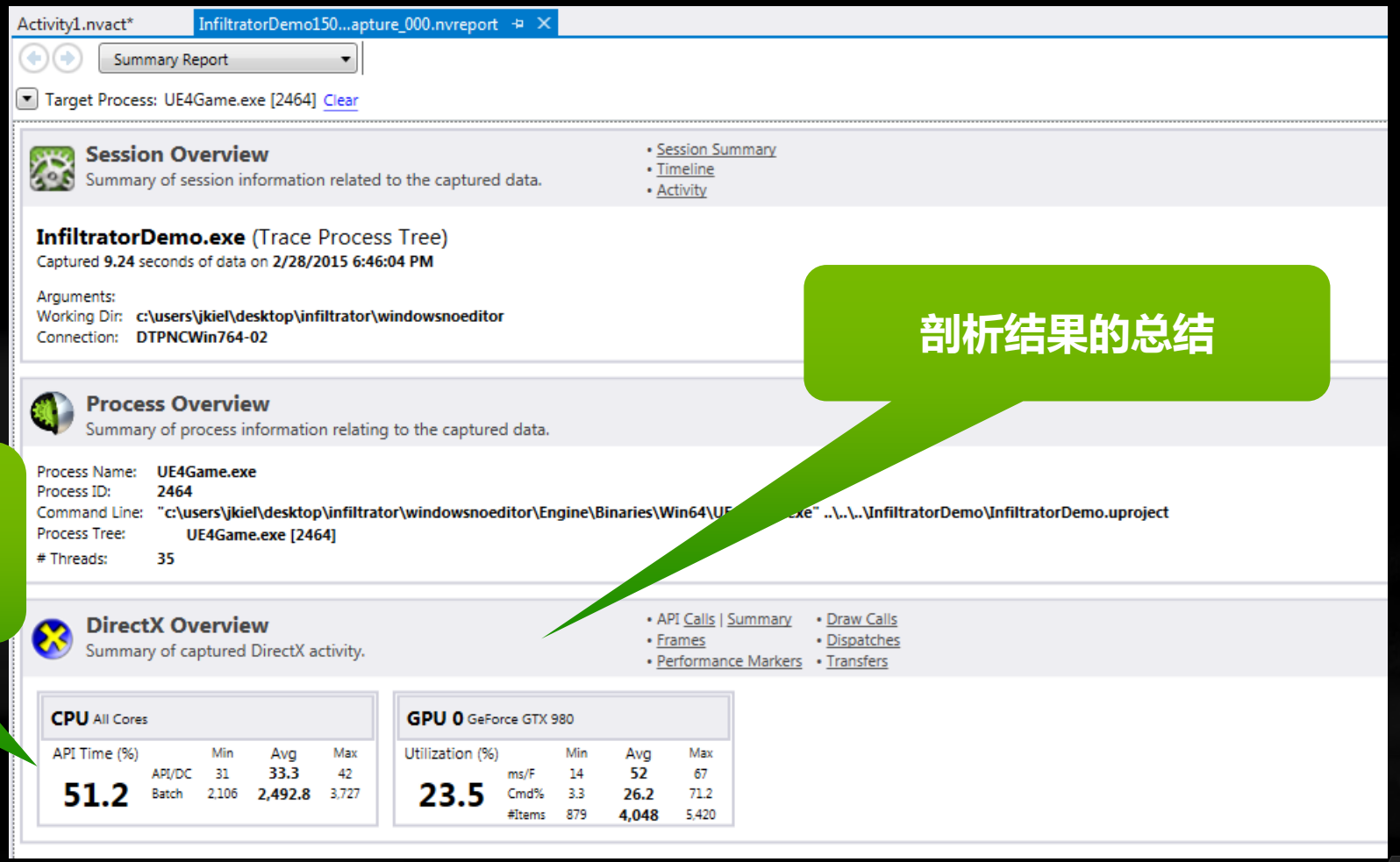


程序启动设置

性能剖析项: System和 DirectX

启动!

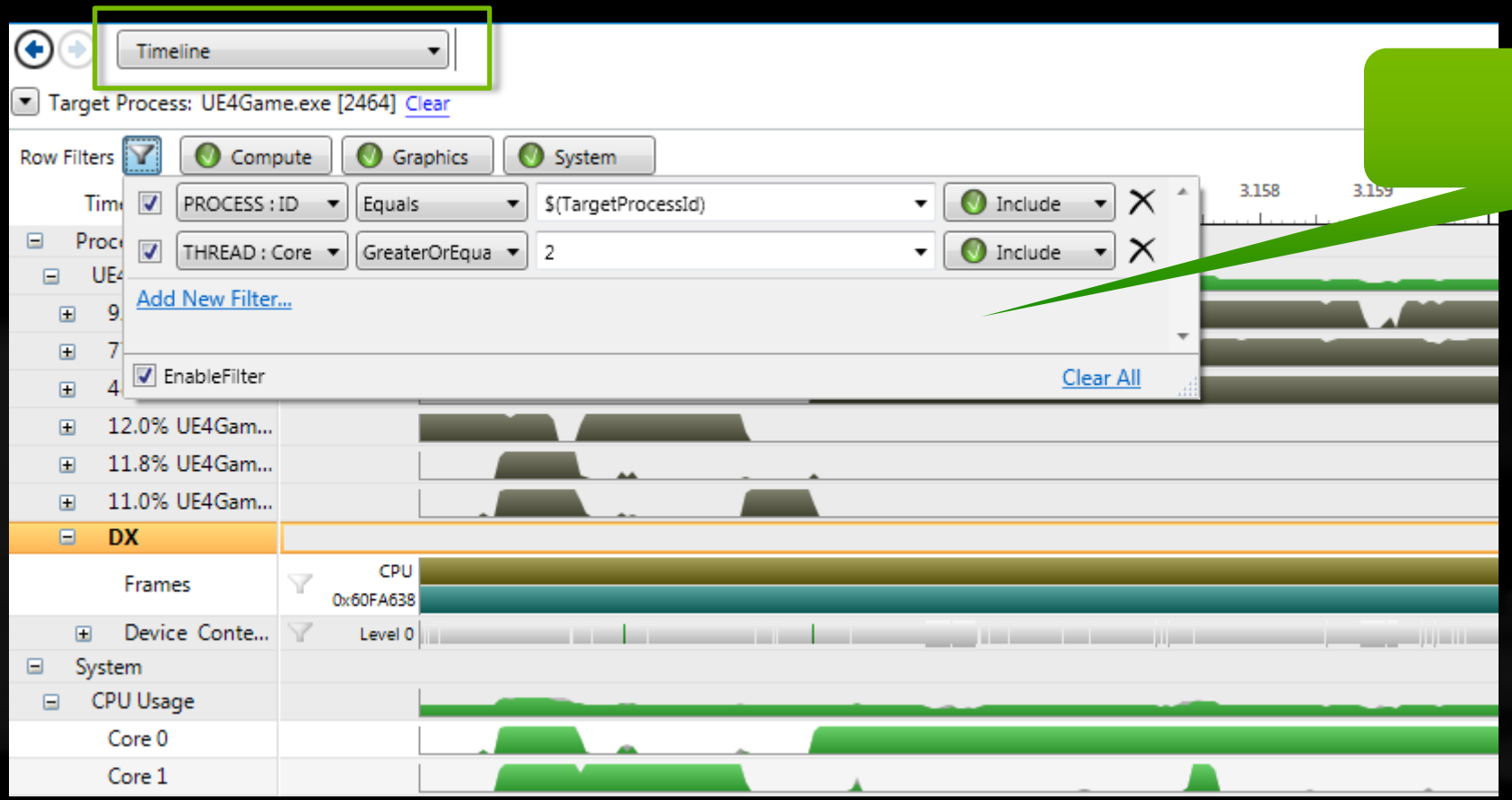
INFILTRATOR的性能剖析 – CPU BOUND



剖析结果的总结

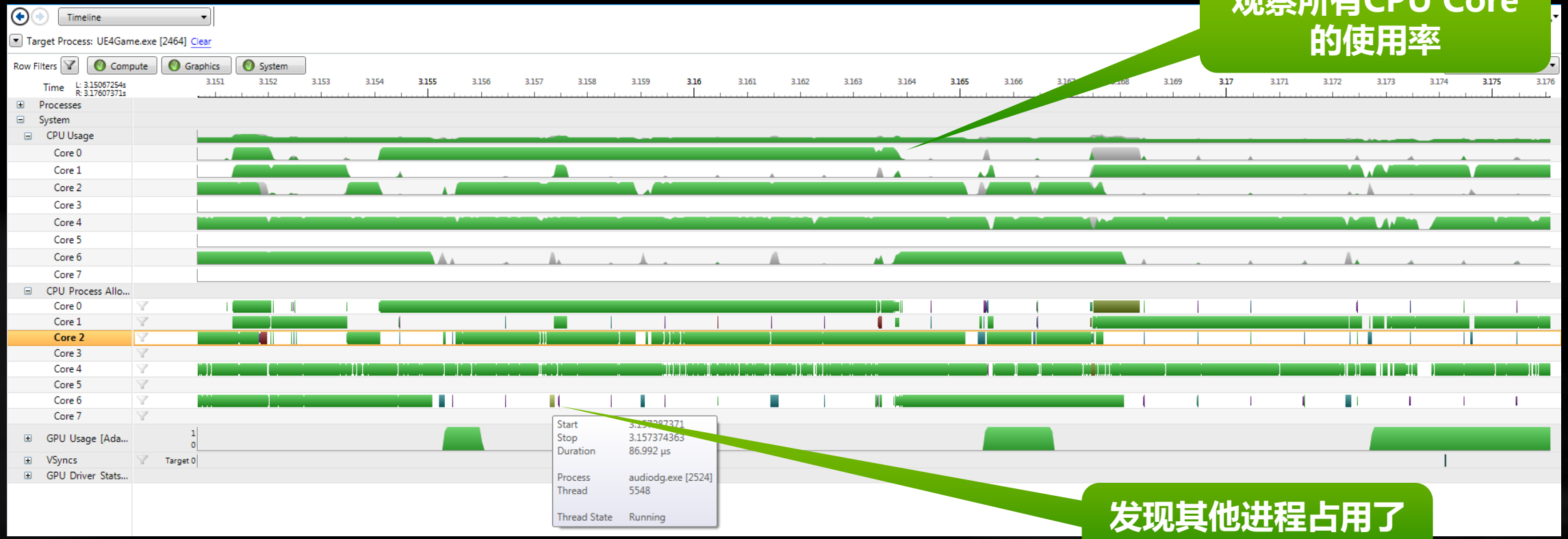
运行时/驱动会消耗CPU时间…下一代API会帮助改进CPU的占用!

INFILTRATOR的性能剖析 – CPU BOUND

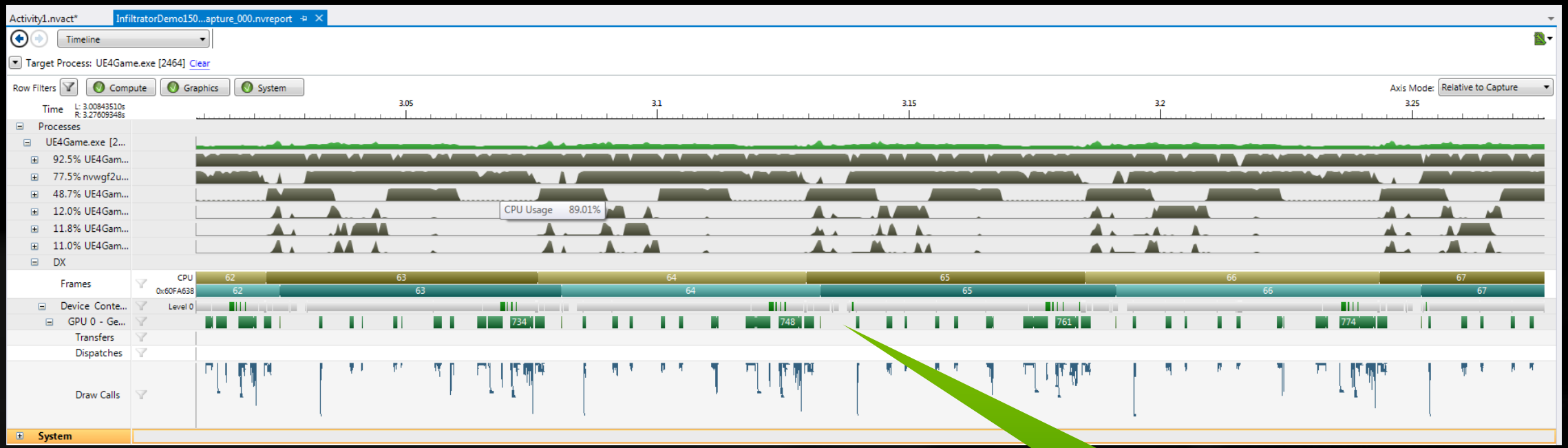


丰富的过滤选项

INFILTRATOR的性能剖析 – CPU BOUND

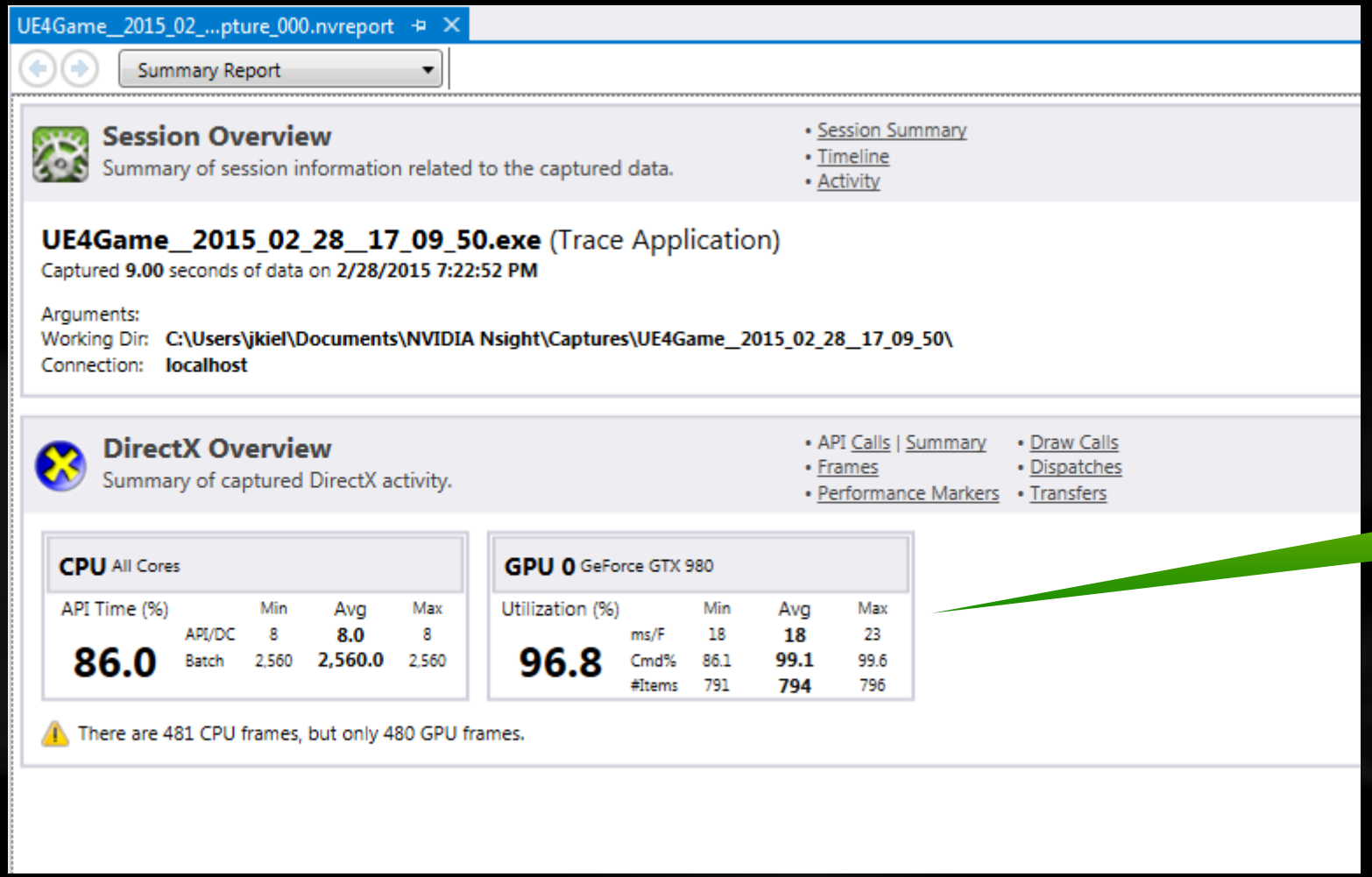


INFILTRATOR的性能剖析 – CPU BOUND



GPU负载之间的间隙 = CPU Bound

INFILTRATOR的性能剖析 – GPU BOUND

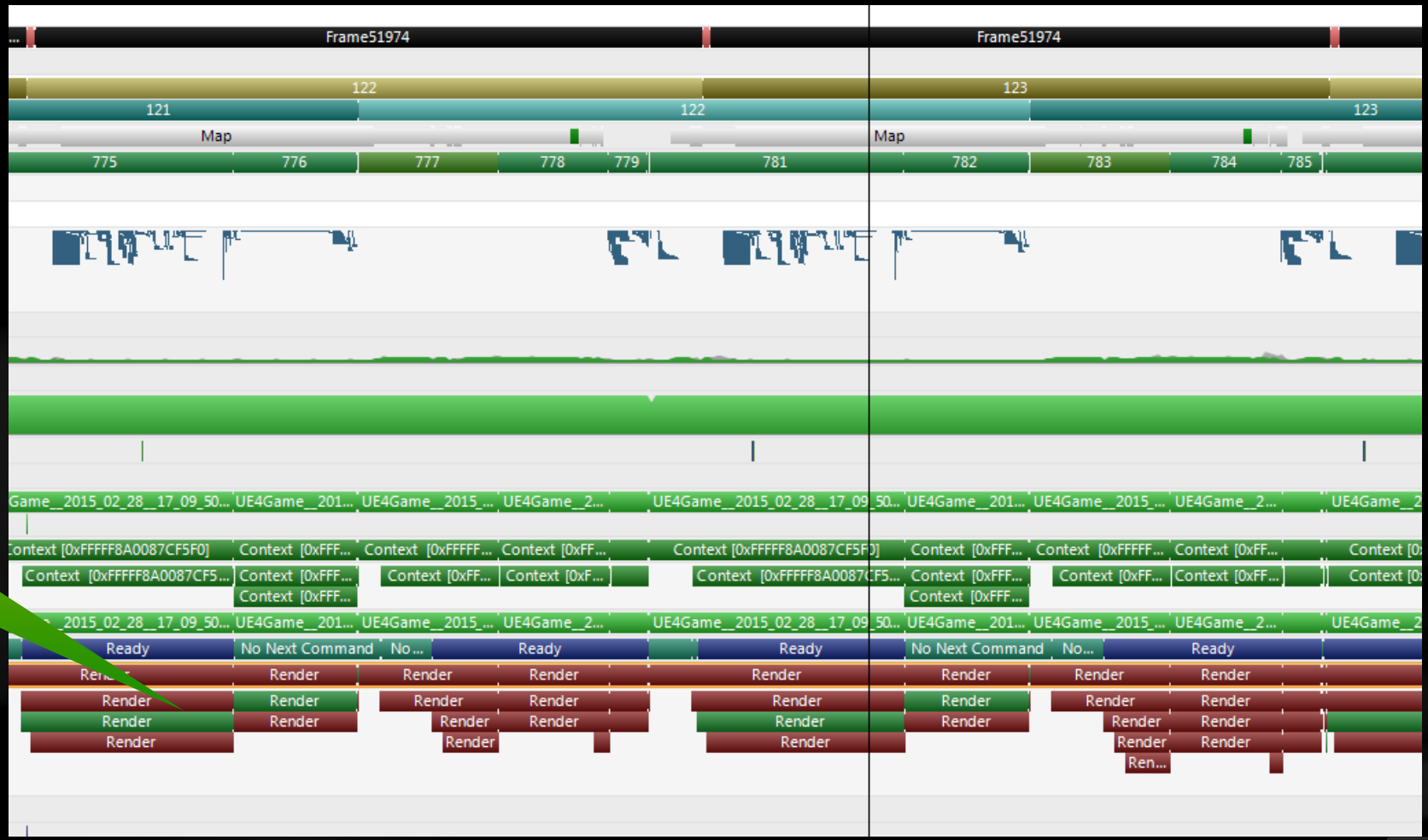


结果总结: 更多的GPU负载

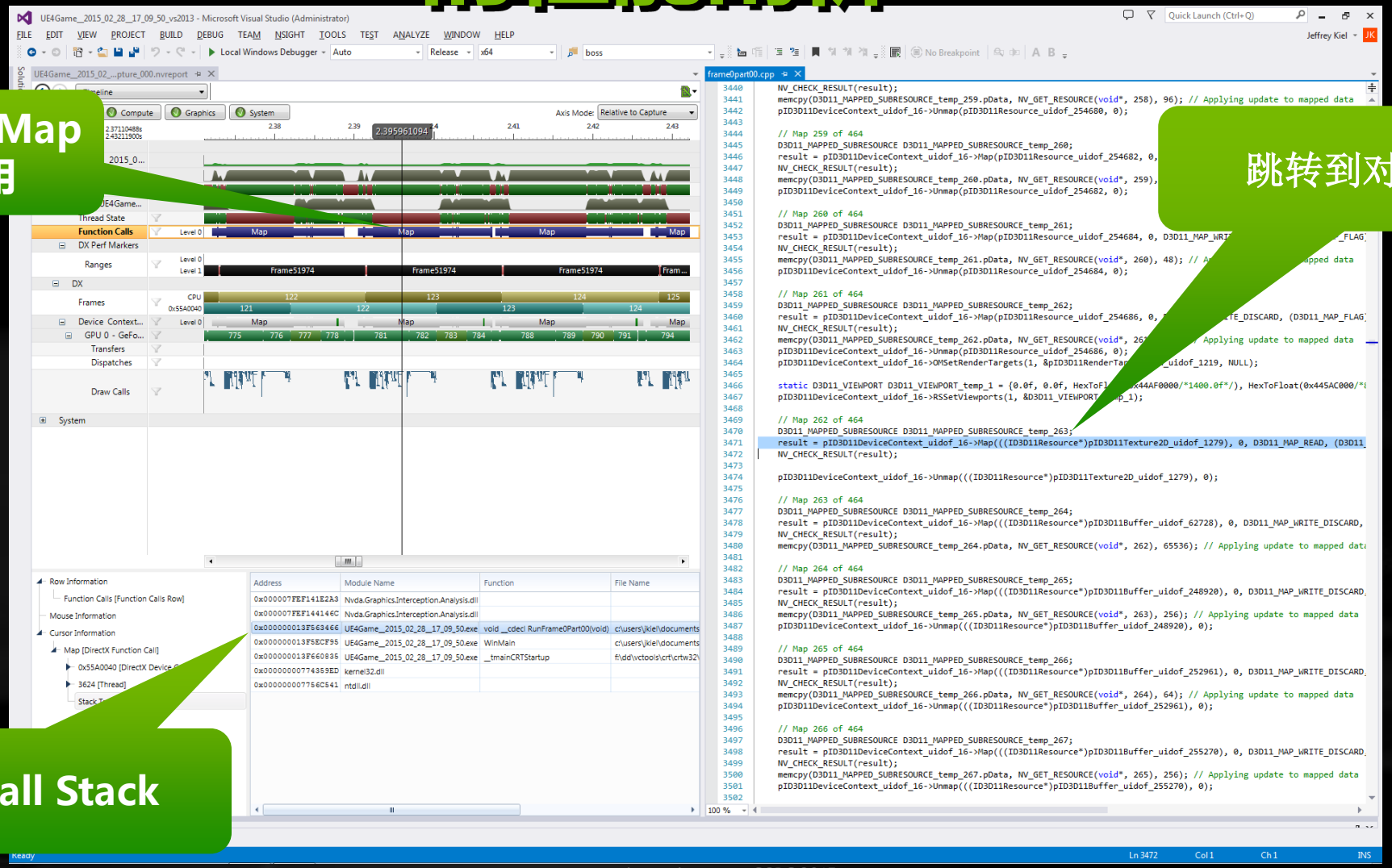
INFILTRATOR的性能剖析 – GPU BOUND

INFILTRATOR的性能剖析 – GPU BOUND

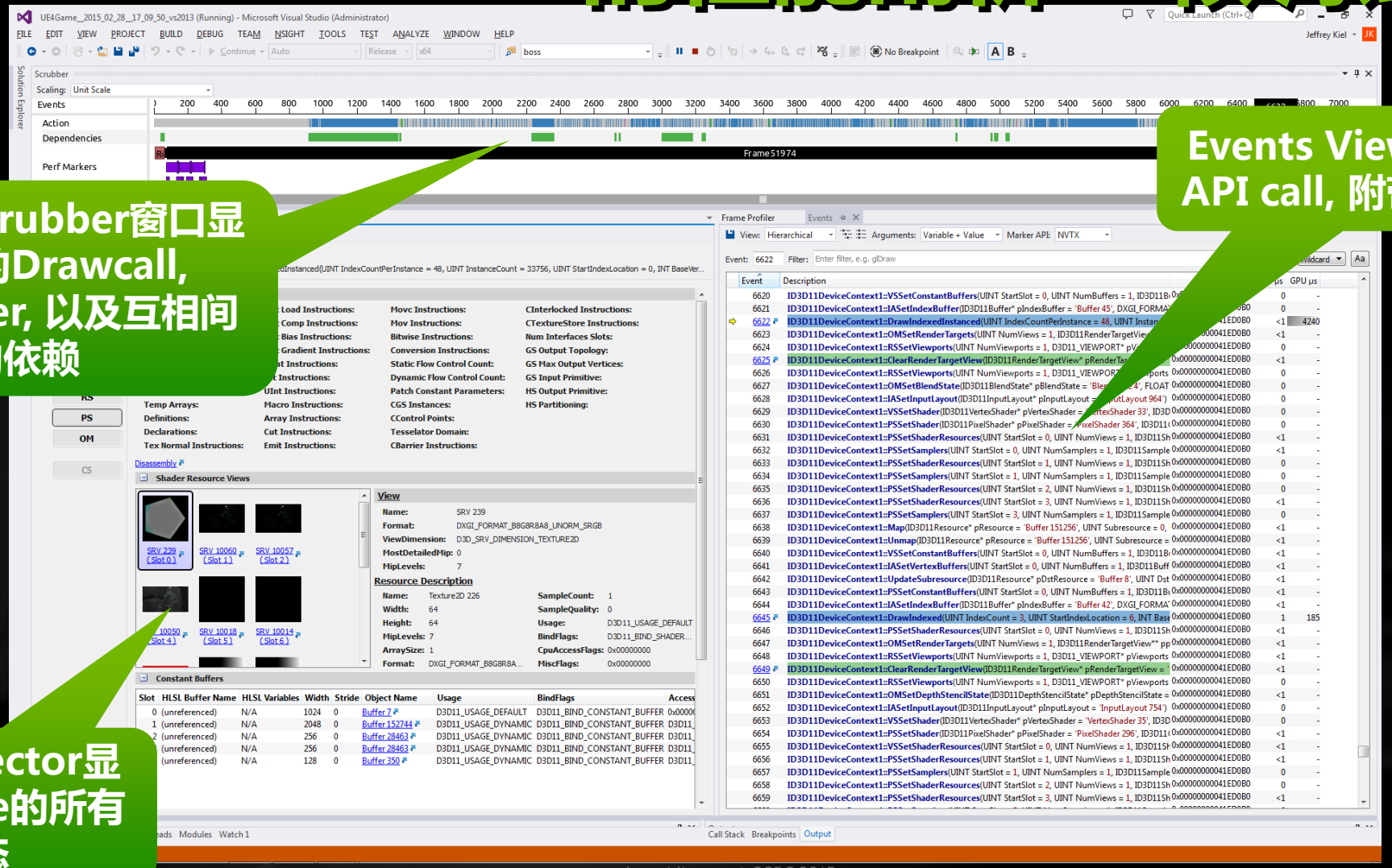
和GPUView的ETW数据相关联



INFILTRATOR的性能剖析 – GPU BOUND



INFILTRATOR的性能剖析 – 帧调试

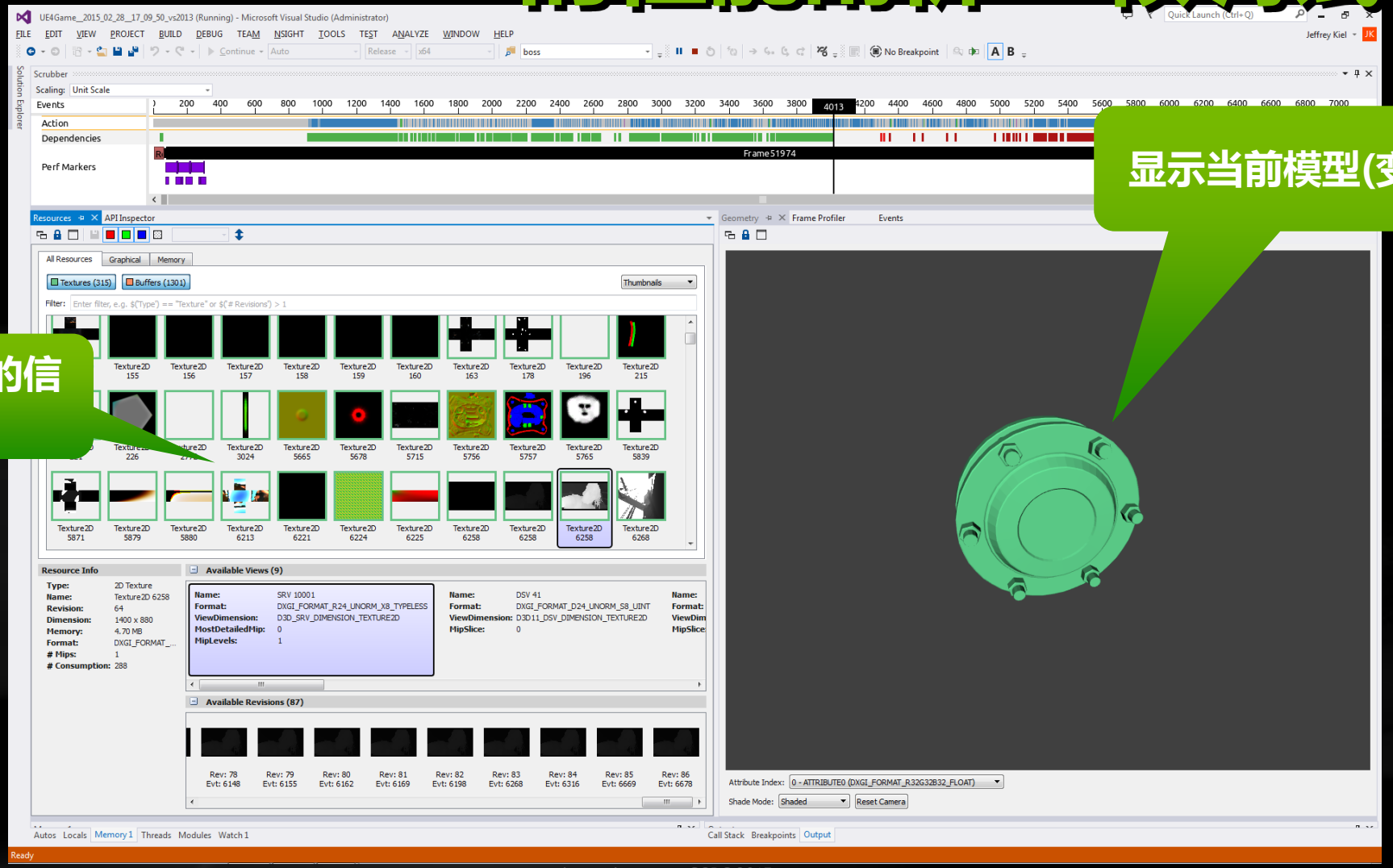


当前帧的Scrubber窗口显示所有的Drawcall, PerfMarker, 以及互相间的依赖

Events View显示所有API call, 附带过滤功能

API Inspector显示Pipeline的所有状态

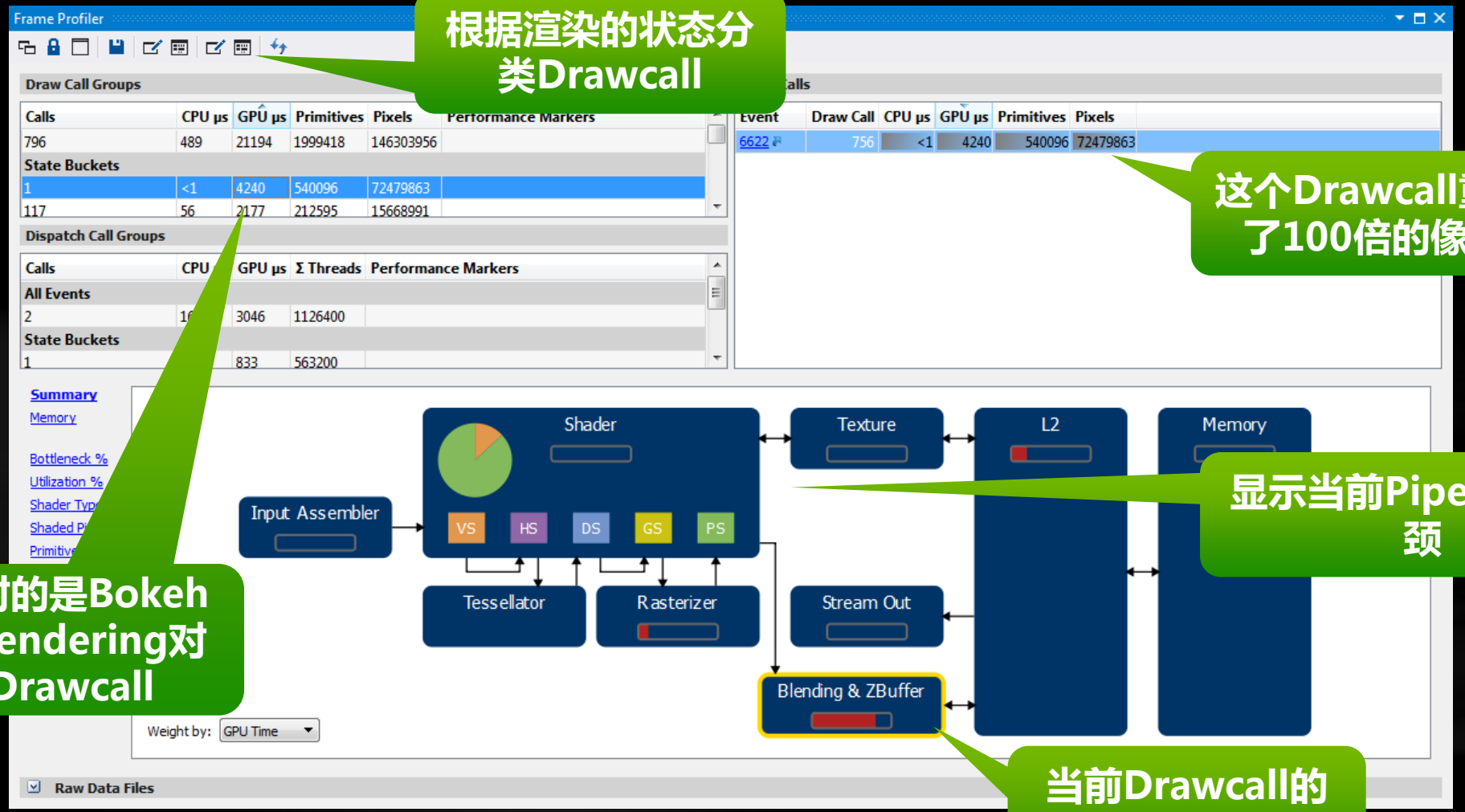
INFILTRATOR的性能剖析 – 帧调试



查看所有资源的信息

显示当前模型(变形前)

INFILTRATOR的性能剖析 – 帧调试



根据渲染的状态分类Drawcall

这个Drawcall重复渲染了100倍的像素个数

显示当前Pipeline的瓶颈

更加耗时的是Bokeh Filter Rendering对应的Drawcall

当前Drawcall的瓶颈在Blend上

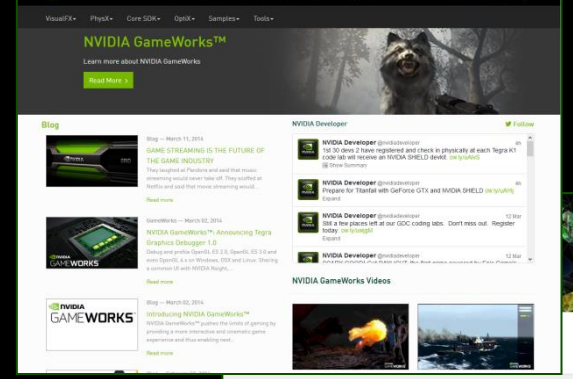
NVIDIA GAMEWORKS™

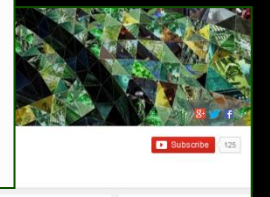
Web: http://gameworks.nvidia.com

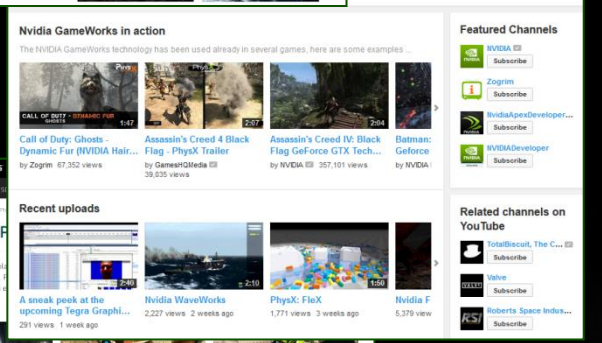
Survey: https://developer.nvidia.com/developer-tools-survey-201503

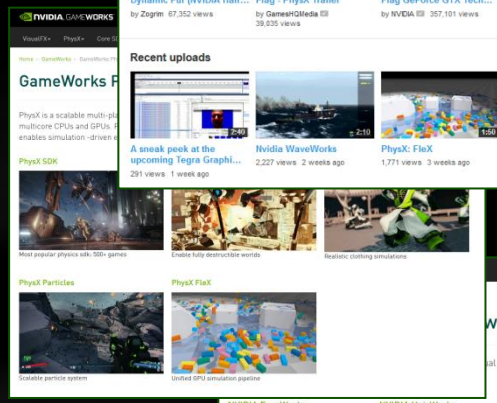
YouTube: https://www.youtube.com/user/nvidiaGameWorks

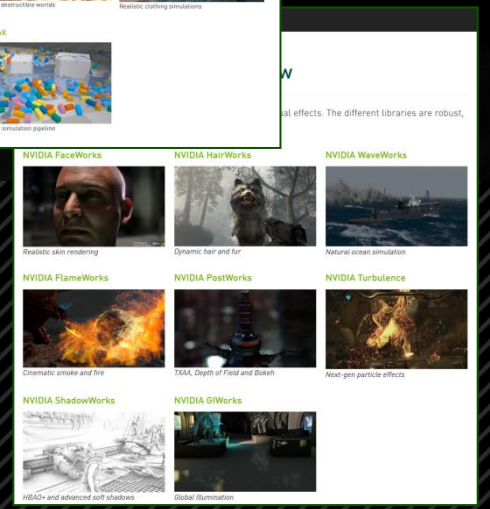
Twitter: https://twitter.com/nvidiadeveloper











Q&A

- E-mail: devtools-support@nvidia.com
- Forum: https://devtalk.nvidia.com/default/board/84/nsight-visual-studio-edition/