

2024-12-31 Trace分析

本次Trace的绝对时间数据有问题, 并不是标准测试环境的消耗时间. 本次只看时间占Tick百分比. (% of Root: **EngineTick**)

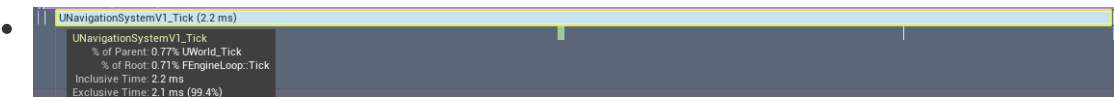
2024-12-31 Trace分析

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WorldTick

NavigationSystem

- 总览: 整体占比偏小. 低优先级处理,可先处理更大块严重的问题
- 占比: **0.71%**
- 问题: Trace不完整, 具体里面干了什么并不知道



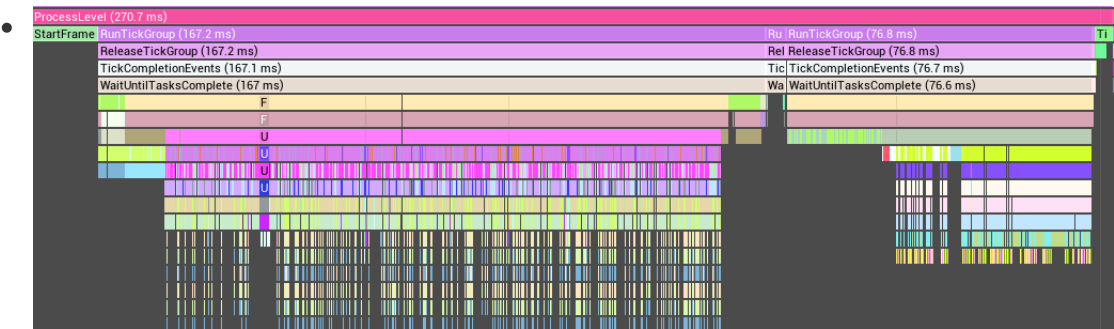
RVOWorldSubSystem

- 总览: 需要占用一定的时间. 内部执行的Trace有部分未知的异常数据, 猜测可能是避障的复杂环境不一样导致的. 可以新增Trace确认下看是否有优化的空间.
- 占比: 2.47%
- 问题: Trace不完整. 漏掉了部分异常的Trace.



ProcessLevel-1

- 总览: 主要的Tick逻辑环节
- 占比: **89.18%**
- 问题:



StartFrame

- 总览: 主Tick环节的帧首,有挺大的固定消耗
- 占比: **5.4%**
- 问题: Trace内容不完整

```
Queue all of the ticks for a frame
形参: World -- World currently ticking
DeltaSeconds -- time in seconds since last tick
TickType -- type of tick (viewports only, time only, etc)
virtual void StartFrame(UWorld* InWorld, float DeltaSeconds, ELevelTick TickType, const TArray<ULevel*>& LevelsToTick) = 0;
```



RunTickGroup

PrePhysics

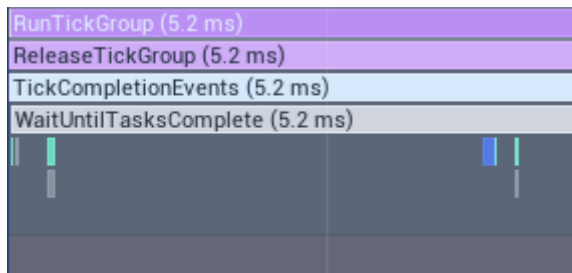
- 概览: 执行物理前的Tick组, 占比时间为最大头的, 主要执行AbilitySystemComponent_Advance & Movement相关内容
- 占比: **54%**
- Calleees

Callees	Count	Incl	Excl
WaitUntilTasksComplete	1	165.2 ms	23.4 ms
FactorComponentTickFunction::ExecuteTick	2175	141.1 ms	80.5 μs
FactorComponentTickFunction::ExecuteTickHelper	2175	141 ms	438.1 μs
USocCharacterMovementComponent_TickComponent	843	131.6 ms	295.1 μs
USocAbilitySystemComponent_Advance	843	85.4 ms	71.8 ms
USocGameplayAbility_Active_EndAbility	104	13 ms	4.8 ms
USocInputOperatorManager_TryExecutePreInput	52	11.5 ms	7.7 ms
UNavigationSystemV1_FindPathAsync	51	544.9 μs	544.9 μs
USocTimelineInstance_TryEnd	104	1.9 μs	1.9 μs
USocTimelineInstance_TryAdvance	649	501.1 μs	69.9 μs
USocTimelineInstance_TryStart	529	26.7 μs	26.7 μs
USocTimelineInstance_TryForecast	529	14 μs	14 μs
USocTimelineInstance_TryEnd	176	3.8 μs	3.8 μs
UCharacterMovementComponent_TickComponent	843	25.8 ms	243.9 μs
USocFighterDirectorManager_OnCharacterAdvance	843	18.7 ms	18.7 ms
USocCharacterStateMachine_Advance	843	1.3 ms	953 μs
USocRideManager_UpdateGaArray	843	129.6 μs	129.6 μs
USocCharacterMovementComponent_TryStandOnNavFloor	12	13.6 μs	13.6 μs
USocKinematicComponent_TickComponent	1310	9 ms	9.1 ms
PrimitiveComponent_MoveComponentIntgl	20	39.8 μs	7.3 μs
ABuildingPawn_Tick	97	619.5 μs	20.7 μs
AAIController_SetControlRotation	127	76.9 μs	15.4 μs
ProcessLaterActions	1924	38.6 μs	38.6 μs
PrimitiveComponent_MoveComponentIntgl	2	23.1 μs	690 μs

- MoveComponent

- 概览: 开始物理的Tick组, 占比较小
- 占比: **1.71%**
- 问题: Trace不全, 只能看到零星的Chaos的Trace\

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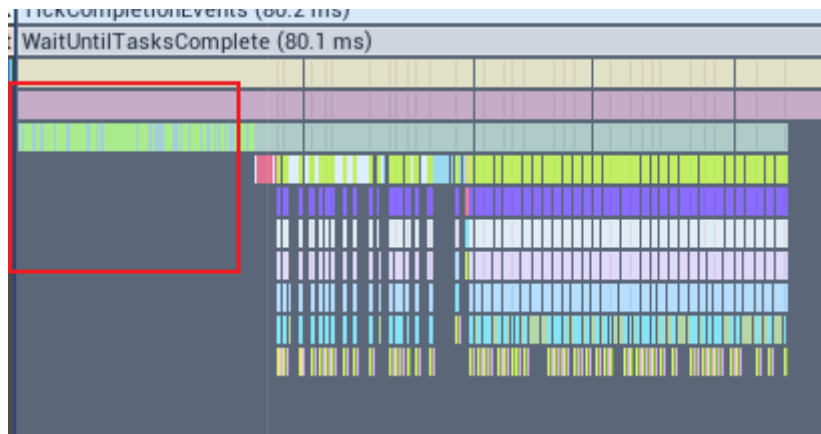


DuringPhysics

- 概览:物理执行Tick组
- 占比:26.22%
- Calleees

Callees	Count	Incl	Excl
RunTickGroup	1	80.3 ms	100 ms
ReleaseTickGroup	1	80.3 ms	131.1 μs
TickCompletionEvents	1	80.2 ms	83.8 μs
WaitUntilTasksComplete	1	80.1 ms	29.7 ms
FactorComponentTickFunction: ExecuteTick	4417	50.4 ms	162.8 μs
FactorComponentTickFunction: ExecuteTickHelper	4417	50.3 ms	432.7 μs
UBehaviorTreeComponent: TickComponent	458	49.7 ms	12.1 ms
SetupMoveToTask	107	37.2 ms	2.2 ms
USocAITask_MoveTo: Activate	107	35 ms	1.7 ms
ASocAIController: MoveToSmoothly	106	32.9 ms	768.6 μs
UFighterObject: ExecuteGameplayOperatorArray	106	31.4 ms	2.2 ms
USocInputOperatorManager: TryExecutePreinput	106	29.1 ms	8.4 ms
USocGameplayAbility_Active_ActivateAbility	54	19.6 ms	14.7 ms
AbilityActivatedEvent: Broadcast	54	4.8 ms	4.8 ms
MakeUniqueObjectName	270	94.1 μs	94.1 μs
USocTimelineInstance_TryAdvance	108	11.2 μs	11.2 μs
SkillManager_Deconstruct	54	8.7 μs	8.7 μs
USocTimelineInstance_TryStart	61	6.9 μs	6.9 μs
USocGameplayAbilityBase: ActivateAbility	54	3.5 μs	3.5 μs
USocTimelineInstance_TryForecast	63	1.5 μs	1.5 μs
UNavigationSystemV1_FindPathSync	52	647.9 μs	647.9 μs
USocGameplayAbility_Active_PrepActivate	54	418.8 μs	403.9 μs
SkillManager_CheckOneCost	54	36.4 μs	36.4 μs
MakeUniqueObjectName	266	83 μs	83 μs
UFighterObject: ClearPreinputList	106	433.8 μs	433.8 μs
AddElementInterface	54	238.5 μs	238.5 μs
ASocAIController: CheckShouldUseTurnAbility	106	45.5 μs	45.5 μs
ASocAIController: PrepareTurnAbility	54	24.9 μs	24.9 μs
UFighterObject: ExecuteGameplayOperatorArray	1	439.2 μs	23.9 μs
UFighterObject: ClearPreinputList	1	8.7 μs	8.7 μs
AddElementInterface	1	5 μs	5 μs
UAITask_Activate	107	2.2 μs	2.2 μs
ASocAIController: PrepareTurnAbility	1	500 ms	500 ms
MakeUniqueObjectName	107	36.5 μs	36.5 μs
USocBTTask_ActivateAbility_ExecuteTask	1	304.6 μs	12.1 μs
UBTDecorator: WippedCanExecute	246	37.5 μs	37.5 μs
UBTDecorator: WippedDirNodeProcessed	252	5 μs	5 μs
UBTDecorator: WippedDirNodeActivation	140	3.4 μs	3.4 μs
UBTDecorator: WippedDirNodeDeactivation	146	3 μs	3 μs
UBTTaskNode: ExecuteTask	107	2.5 μs	2.5 μs
MakeUniqueObjectName	2	700 ms	700 ms
UAITask_Activate	2	0	0
USocPathFollowingComponent: TickComponent	810	140.4 μs	140.4 μs
ProcessLatentActions	810	12.5 μs	12.5 μs

- 前未知领域,零星看到一些PathFollowing的内容. 占比大概三分之一

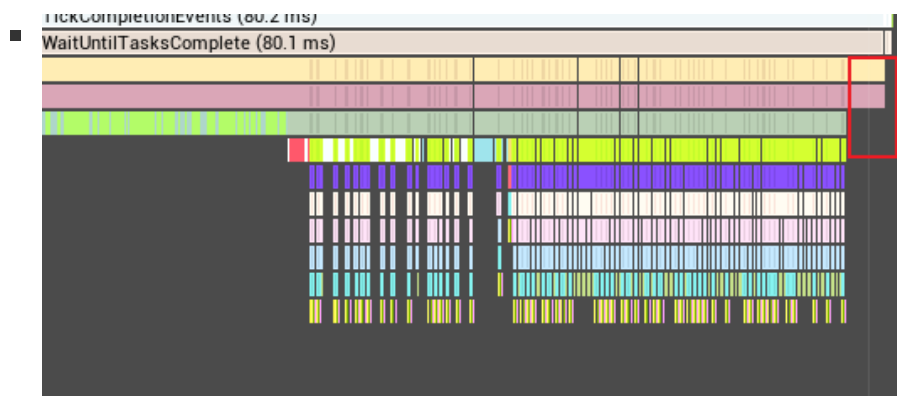


- BehaviorTreeComponent

- 在未发生战斗情况下,大部分消耗来自于Move时调用到转身GA. 技能内部最大的地方为一个全局的技能激活事件

UBehaviorTreeComponent: TickComponent	458	49.7 ms	12.1 ms
SetupMoveToTask	107	37.2 ms	2.2 ms
USocAITask_MoveTo: Activate	107	35 ms	1.7 ms
ASocAIController: MoveToSmoothly	106	32.9 ms	768.6 μs
UFighterObject: ExecuteGameplayOperatorArray	106	31.4 ms	2.2 ms
USocInputOperatorManager: TryExecutePreinput	106	29.1 ms	8.4 ms
USocGameplayAbility_Active_ActivateAbility	54	19.6 ms	14.7 ms
AbilityActivatedEvent: Broadcast	54	4.8 ms	4.8 ms

- 后未知领域, 占比稍小, 只能看到有ActorComponentTick, 看不到任何信息



EndPhysics

- 占比: 0.17%

PostPhysics

- 占比: 0.01%

PostUpdateWork

- 占比: 0%

LastDemotable

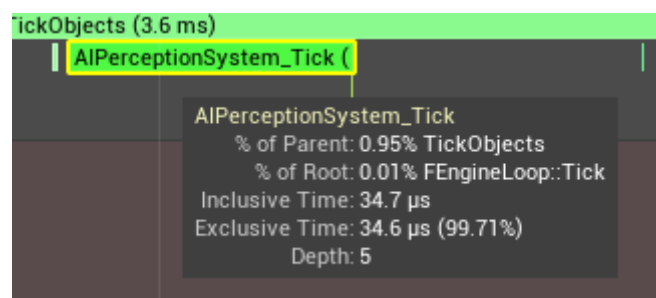
- 占比: 0%

TimerManagerTick

- 占比: 0.02%

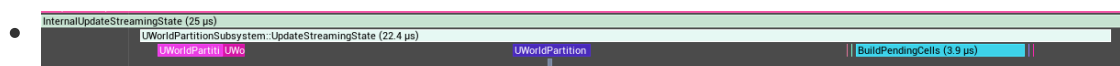
World TickObjects Tick

- 概览: 大部分自己实现TickableObject的对象. Trace不完整
- 占比: 1.19%
 - AI感知系统的Tick位于此处
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UpdateStreamingState

- 占比: 0.01%



NetBroadcastTick

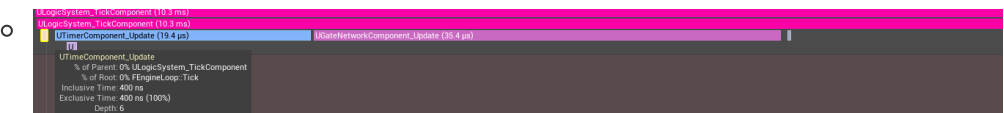
- 占比: 0%
- 没有客户端机器人

GameEngineTick

ULogicSystem_TickComponent

- 总览: 业务逻辑的Tick入口, 调用各个Components的Tick
- 占比: 3.41%
- 问题:

- Trace信息不准确, 大部ComponentTick没有Trace



- 在LogicSystemTick前 有一个LogicSystem_EndTickComponent的调用, 是在WorldTickEnd中调用的. LogicSystem的Tick是划分在了GameEngineTick 整体比WorldTick靠后. 原因可能是USocContext作为EngineSubSystem, 实现TickableObject时不方便返回World, 或本身就不应依赖World.



空白

- 帧尾有一片空白
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