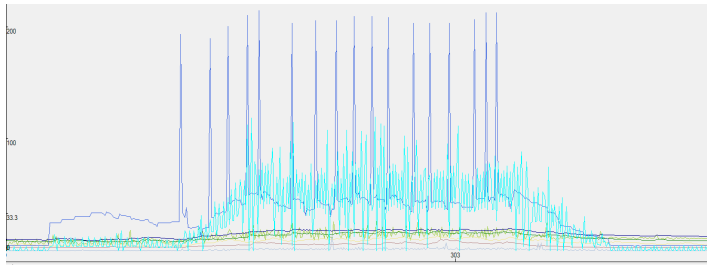


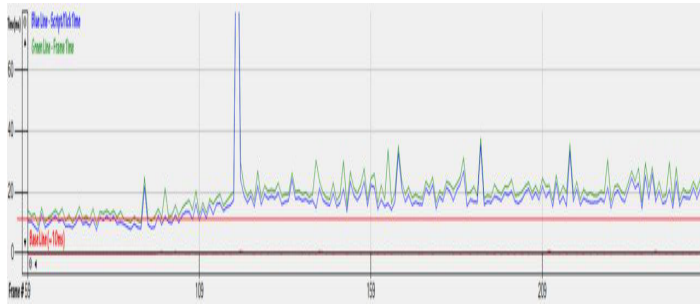
Game's Ability Audit - Sept/Oct 2016

- Guy1
 - Guy1 Ultimate
 - Rendering Graph
 - Rendering Analysis
 - Script Graph
 - Script Analysis
 - Suggested Actions

Guy1

Guy1	Guy1 Ultimate																																																																									
Rendering Graph	 <table border="1" data-bbox="329 1050 1031 1144"> <thead> <tr> <th>Stat</th> <th>Count</th> <th>Set Total</th> <th>Set Calls</th> <th>Dist. Avg</th> <th>Dist. Call</th> <th>Dist. Min</th> <th>Dist. Max</th> </tr> </thead> <tbody> <tr> <td>FrameTime</td> <td>7.59</td> <td>2</td> <td>12.26</td> <td>6.14</td> <td>0.01</td> <td>26.12</td> <td></td> </tr> <tr> <td>Dist. Line FrameTime</td> <td>0.79</td> <td>0</td> <td>14.05</td> <td>14.05</td> <td>0.19</td> <td>20.06</td> <td></td> </tr> <tr> <td>Dist. Line Client ThreadTime</td> <td>8.57</td> <td>0</td> <td>11.74</td> <td>11.74</td> <td>7.65</td> <td>17.43</td> <td></td> </tr> <tr> <td>Dist. Line GPU Time</td> <td>3.01</td> <td>0</td> <td>4.55</td> <td>4.55</td> <td>2.94</td> <td>10.56</td> <td></td> </tr> <tr> <td>Dist. Line Render ThreadTime</td> <td>6.52</td> <td>0</td> <td>7.92</td> <td>7.92</td> <td>4.27</td> <td>13.27</td> <td></td> </tr> <tr> <td>Particle Pender Time</td> <td>0.51</td> <td>41</td> <td>0.14</td> <td>0.01</td> <td>0.00</td> <td>13.13</td> <td></td> </tr> <tr> <td>Particle Particles</td> <td>6.00</td> <td>0</td> <td>29.16</td> <td>29.16</td> <td>4.00</td> <td>219.00</td> <td></td> </tr> <tr> <td>Particle Draw Calls</td> <td>3.00</td> <td>0</td> <td>27.65</td> <td>27.65</td> <td>1.00</td> <td>120.00</td> <td></td> </tr> </tbody> </table>		Stat	Count	Set Total	Set Calls	Dist. Avg	Dist. Call	Dist. Min	Dist. Max	FrameTime	7.59	2	12.26	6.14	0.01	26.12		Dist. Line FrameTime	0.79	0	14.05	14.05	0.19	20.06		Dist. Line Client ThreadTime	8.57	0	11.74	11.74	7.65	17.43		Dist. Line GPU Time	3.01	0	4.55	4.55	2.94	10.56		Dist. Line Render ThreadTime	6.52	0	7.92	7.92	4.27	13.27		Particle Pender Time	0.51	41	0.14	0.01	0.00	13.13		Particle Particles	6.00	0	29.16	29.16	4.00	219.00		Particle Draw Calls	3.00	0	27.65	27.65	1.00	120.00	
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Rendering Analysis	<ul style="list-style-type: none"> • Adds anywhere from 5-10ms to frame time. • Creates multiple bursts across a few seconds of 200+ particles. (blue line spikes are all creations of 200+ particles). Too many for Low Settings. 																																																																									

Script Graph



```

5.53 TgDevice_HexaFireGuns ( 1 excl, 1058 incl)
├── 5.53 TgDevice_HexaFireGuns_2 ( 1 excl, 1057 incl)
│   ├── 5.52 Function TgGame.DeviceFiring.FirePostHitDelay ( 17 excl, 1056 incl)
│   │   ├── 5.26 Function TgGame.DeviceFiring.RestartFireLoop ( 16 excl, 973 incl)
│   │   ├── 5.04 Function TgGame.DeviceFiring.FirePreHitDelay ( 7 excl, 907 incl)
│   │   └── 4.27 Function TgGame.DeviceFiring.FirePostHitDelay ( 17 excl, 791 incl)
│   └── 4.00 Function TgGame.DeviceFiring.RestartFireLoop ( 16 excl, 708 incl)
└── 3.05 TgDevice_HexaFireGuns ( 1 excl, 265 incl)
    ├── 4.03 TgWeaponMeshActor_RuckusInhand_2 ( 4 excl, 101 incl)
    │   ├── 2.07 Function TgGame.TgWeaponMeshActor.PlayQueuedInstantHitImpactEffects ( 2 excl, 46 incl)
    │   │   ├── 1.21 Function TgGame.TgWeaponMeshActor.PlayInstantHitImpactEffects ( 4 excl, 22 incl)
    │   │   └── 0.86 Function TgGame.TgWeaponMeshActor.PlayInstantHitImpactEffects ( 4 excl, 22 incl)
    │   ├── 1.86 TgSkeletalMeshComponent_WeaponFirstPerson_38 (SKL_WEP_Minigun_Skin0_1p) ( 4 excl, 26 incl)
    │   └── 0.08 Function TgGame.TgWeaponMeshActor.Tick ( 2 excl, 25 incl)
    │   └── 0.00 AkComponent_1429 ( 0 excl, 0 incl)
    ├── 3.05 TgDevice_HexaFireGuns ( 1 excl, 264 incl)
    │   ├── 3.04 Function TgGame.DeviceFiring.FirePostHitDelay ( 17 excl, 263 incl)
    │   │   ├── 2.32 Function TgGame.DeviceFiring.RestartFireLoop ( 16 excl, 180 incl)
    │   │   └── 1.95 Function TgGame.DeviceFiring.FirePreHitDelay ( 6 excl, 114 incl)
    │   └── 7.86 TgDevice_HexaFireGuns ( 1 excl, 266 incl)
    │       ├── 7.86 TgDevice_HexaFireGuns_2 ( 1 excl, 265 incl)
    │       │   ├── 7.77 Function TgGame.DeviceFiring.FirePostHitDelay ( 17 excl, 264 incl)
    │       │   │   ├── 7.26 Function TgGame.DeviceFiring.RestartFireLoop ( 16 excl, 181 incl)
    │       │   │   └── 6.97 Function TgGame.DeviceFiring.FirePreHitDelay ( 6 excl, 115 incl)
    │       └── 4.93 TgEmitter_CameraEffect_CCImmune ( 1 excl, 2 incl)
    │           ├── 4.93 TgEmitter_CameraEffect_CCImmune_2 ( 1 excl, 1 incl)
    │           └── 4.92 ParticleSystemComponent_2182 (FX Gen Stat Cleanse Loop CAM) ( 0 excl, 0 incl)
    └── 7.86 TgDevice_HexaFireGuns ( 1 excl, 266 incl)
        ├── 7.86 TgDevice_HexaFireGuns_2 ( 1 excl, 265 incl)
        │   ├── 7.77 Function TgGame.DeviceFiring.FirePostHitDelay ( 17 excl, 264 incl)
        │   │   ├── 7.26 Function TgGame.DeviceFiring.RestartFireLoop ( 16 excl, 181 incl)
        │   │   └── 6.97 Function TgGame.DeviceFiring.FirePreHitDelay ( 6 excl, 115 incl)
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```

Script Analysis

- Firing loop fires FirePostHit, RestartFireLoop, FirePreHit multiple times in a single frame that repeats every few frames during the ultimate. This contributes to most of the script increases. 14ms in the worst case.
- In multiple instances, both the HexaFire and InHand are firing together, similar/overlapping behaviors that have separate costs.
- CCImmune effect pops up a few times with high script times. (4.93ms)

Suggested Actions

- Optimize/reduce particle counts on low LODs for ultimate effects/projectiles.
- Look into problematic functions to see if they can work more optimized.
- Possibly combine in-hand behavior into the ult, during the ult so it's only one device firing.