

## A measurement study of a massive multi-player online first person shooter game in play-station networks

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Abstract: Massive multi-player online games (MMOGs) have been attracting thousands of millions of participants on the Internet in the past decades. The newly emerging smart phones and game consoles together with PCs have enlarged the player base to an even larger scale. The increasing game traffic may generate significant real-time traffic across different ISP networks. In this paper, we conducted a measurement study of the traffic locality property of a popular online game, Call-of-Duty (CoD), which is a hybrid peer-to-peer (P2P) client/server massive multi-player online first person shooter (MMOFPS) game in the play station network (PSN) over the Internet. To facility our measurement, we designed and implemented a peer crawler over the PSN. Our instrumented crawler applies the principle of the ARP poisoning attack in our justified scenario so that our crawler is able to penetrate the PSN to harvest player's information successfully. We analyzed the measurement results for finer granularity at the autonomous system (AS) level compared with previous measurement studies. Our results show that the sessions in this CoD game are constructed with players' locality in mind. Nevertheless, optimized locality-aware game sessions are yet to be found. Insights obtained from this study may be valuable for the development and deployment of future P2P online gaming systems.