



SEAD Network Standby Real World Usage Project

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Project Objective

- Examine actual daily network traffic on networked equipment in UK
- Study and assess traffic patterns for common regular negligible traffic
- Propose policy recommendations for reducing power consumption during common periods of regular negligible traffic
- Ensure project can be transferable and reproducible in other countries



Preliminary Market Research & Recruitment

- Market research exercise undertaken to seek out a representative sample of UK online population
- Volunteer selection based on:
 - Participants must use internet service provided by partner Internet Service Providers (3 major UK ISPs)
 - Questionnaire covering number of people in household, whether at home or on away during period of study, details of network-connected equipment available plus make and model, and how these products are used
- 158 volunteer households selected to participate
- Offered panel points and Amazon Voucher of £ 8.64 for participation in study



Research Methodology

- Engage with major ISPs in the UK to examine domestic network usage:
 - Over time
 - By type of usage
- Deep packet inspection equipment used to examine network traffic
 - Large volume (6000) of anonymous subscribers at 1 hour intervals to examine macro situation on network over 1 month
 - Small volume of volunteer households monitored at 5 minute intervals in greater detail, with equipment profile and household membership information



Initial Findings

- Not all the data has been received
- Analysis is substantially incomplete
- But we can give you a flavour ...





Early Findings - Macro Scale Study

- Major traffic generators include Streaming protocols, Web video, Web browsing, Peer to Peer
- Volume of traffic builds steadily throughout the day – peaking in evening between 18:00 and 20:00
- Volume mix in % terms between protocols fairly constant throughout the day, streaming increasing in evening
- Periods of negligible traffic common to the majority of users exist:
 - Marked decrease in activity over network between 00:00 and 8:00
 - Very low traffic between 03:00 and 05:00



Early Findings - Micro Scale Study

 Subject to review as more data is received 

- Major traffic generators similar to Macro Study
- Volume of traffic builds steadily throughout the day – peaking in morning and evening
- Period of negligible traffic identified in Macro Study is broader when examined for individuals
 - Approximately 6 hours overnight on weekends
 - Approximately 8 hours overnight on weekdays



Next Steps & Outcomes

Next Steps:

- Complete data acquisition exercise
- Perform detailed analysis

Possible outcomes:

- Macro Study - useful insight to operation and use of network infrastructure with multitude of aggregated users and usage patterns
- Micro Study - useful insight to network usage at an individual level, possibly identifying opportunities for energy efficiency improvements which can be selected by the individual subscriber

→ Final Report expected November 2013



Thank You!

SEAD Standards & Labelling Working Group
Network Standby Product Collaboration

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