Network Data Repository for Researchers

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Outline of talk

1. Outline of how to get started

2. What we have set up at St Andrews

3. CRAWDAD mirror

4. Questions

5. (Demo after talk)

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Gathering network data

- Researchers are increasingly eager to test their ideas by taking measurements.

- UKERNA support for data capture becoming available.

- Sharing of data:
  - network traces, data used for papers.
  - reproducibility of results.
  - (applies to simulation studies too.)

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Instrumentation and measurement

- Internet Measurement Masterclass in Cambridge, Dec 2006 - how to get started.
- However, it can take a long time to undertake:
  - sys/net admin interaction and agreement.
  - clarify legal aspects.
- Sys/net admins often reluctant to engage due to:
  - lack of previous experience of such activity.
  - insufficient knowledge of legal ramifications.

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Local agreement

- Research Use of Network Traffic Data: http://www.ja.net/development/traffic-data/
  - Policy + SLA.
  - MASTS project (UKLIGHT monitoring)
- Can be used locally:
  - local variant in use at St Andrews.
  - plus some additional guidelines agreed locally.
  - (will make available end of Aug 2007)

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What you need to do

1. Define what data you need:
   - Unlikely to need full packet dumps.
2. Start talking to your sys/net admin staff:
   - Be patient ... these folk have a day job.
3. Ensure data users are briefed on DPA:
   - Ignorance is no defence.
4. Have a well-defined data distribution system:
   - Keep track of who uses data.

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St Andrews agreement

- A modified version of the UKERNA document:

    - plus four Annexes

    1. List of users

    2. List of administrators

    3. Guidelines for producing publications

    4. Guidelines for using data

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Process

User downloads Trace

User requests Trace File

User Request is queued

Trace File is Sanatised/ Anonymised

User notified that File is ready

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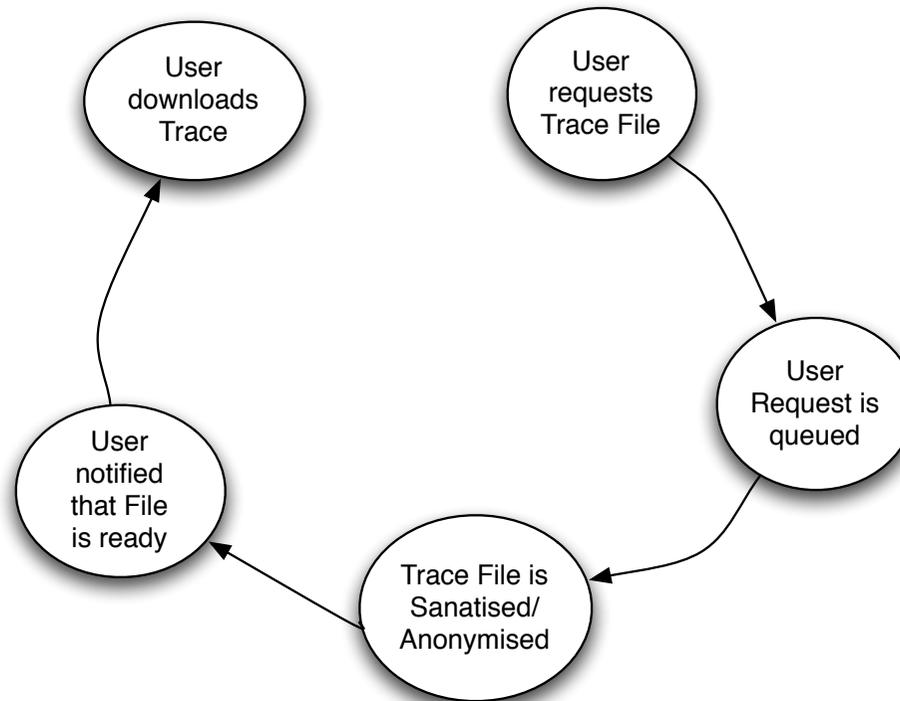
Outline architecture
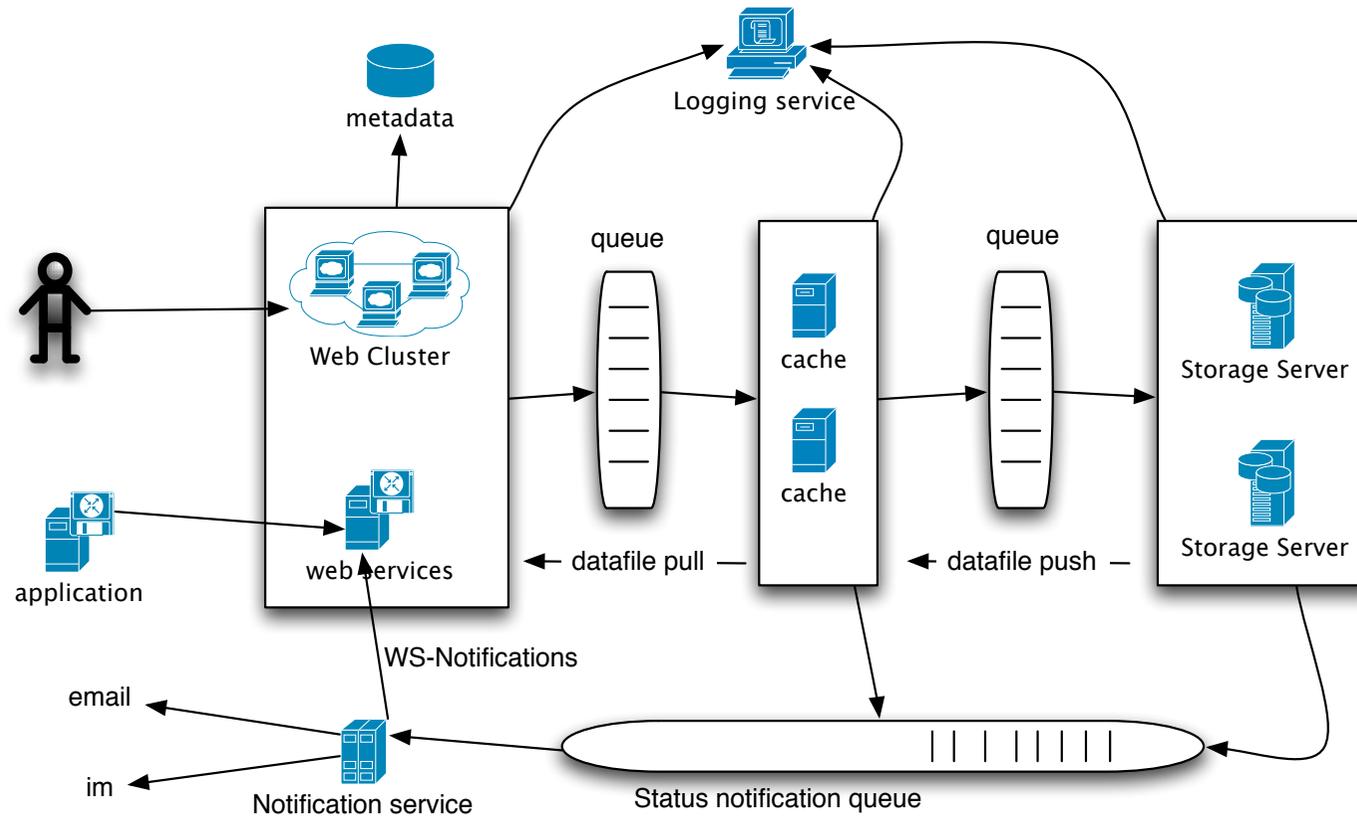
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CRAWDAD

Community Resource for Archiving Wireless Data At Dartmouth

Researchers in wireless networks need data to
- understand real network usage
- identify the real problems
- evaluate possible solutions

CRAWDAD is an NSF-funded project to build a wireless network data archive for the research community.

CRAWDAD provides

- Archive of wireless-network traces
  802.11, MANET, VANET, Sensor network, DTN, location, etc.
- Tools for trace collection
  collect, process, sanitize, analyze, etc
- HOWTO documents in wiki
- Support for the research community
  Event calendar
  Bibliography
  Specialist groups (MANET, Education)
  Annual Workshop (free!)

Currently (March 2007),

- 598 users from 365 institutions around the world
- 23 data sets
- 12 tools
- 70 papers
- Staff:
  full-time programmer plus 2 undergrads

Contact: crawdad@cs.dartmouth.edu
Hosted by Center for Mobile Computing at Dartmouth College

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Example: Dartmouth campus 802.11 WLAN

- Dartmouth campus, 500-1500 access points
- 6 years of mobility traces
  - location = access point
- 2 detailed (3-4 month) packet traces
  - layer 2-4
- Used by over 200 researchers
  - mobility modelling, DTN, security, routing

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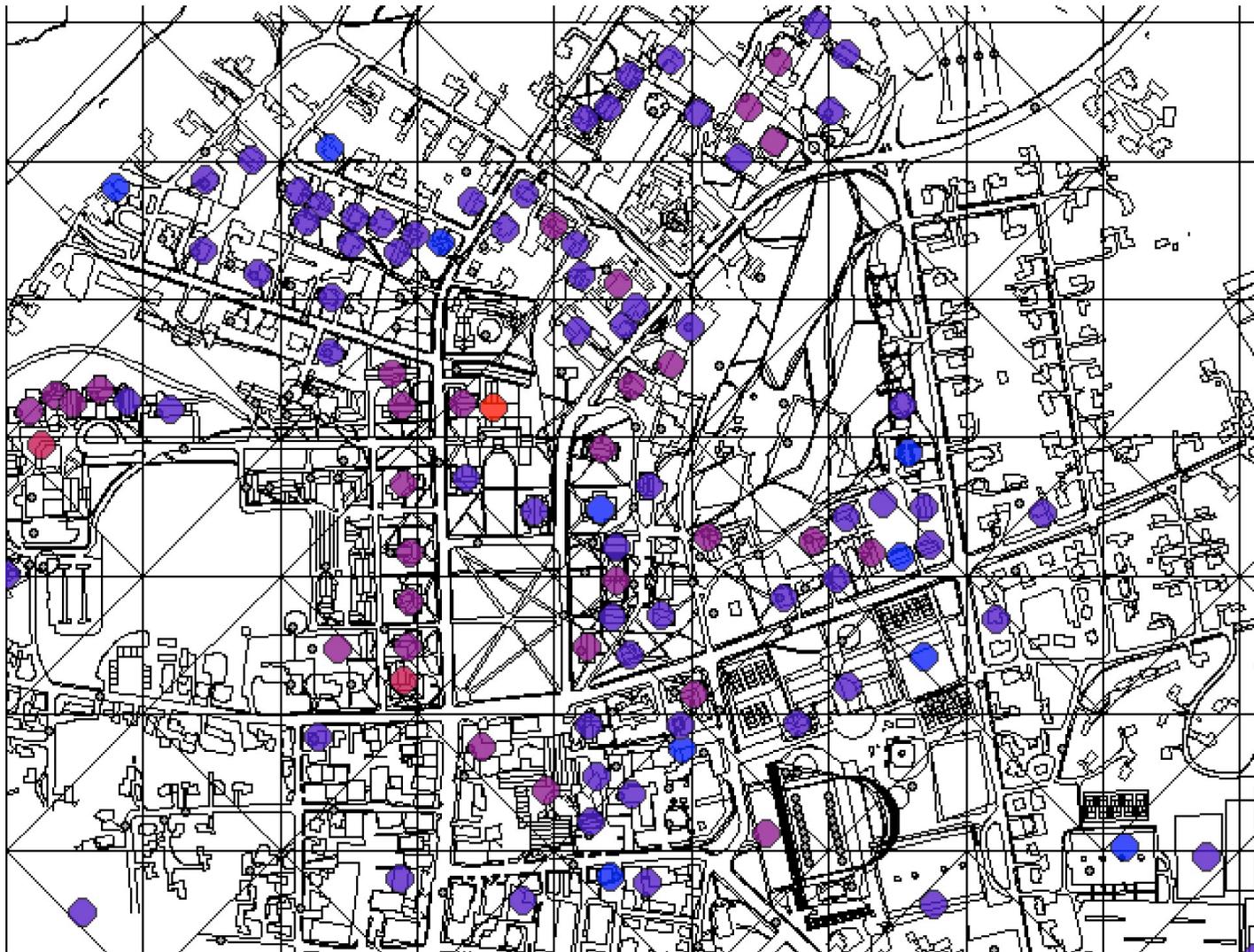
**Daily WLAN Users
(April 11, 2007)**

■ 1 - 10

■ 10 - 100

■ 100 - 400

■ 400 - 800

■ 800 - 1200

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Questions, queries, comments ...

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To view this page, you need to log in to area "WNDS" on localhost:8080.

Home – Network Monitoring Repository

https://localhost:8080/

d-scent RSS Feed   Hopback RSS Feed   Apple (76) ▼   News (826) ▼

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Network Traces

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From: [   ] 📅 To: [   ] 📅
[   ] Search

	Start	End	Description
📄	2007-07-06 14:42:52.155	2007-07-06 14:42:52.155	This is trace data 1
📄	2007-07-06 14:42:52.157	2007-07-06 14:42:52.157	This is trace data 2
📄	2007-07-06 14:42:52.158	2007-07-06 14:42:52.158	This is trace data 3
📄	2007-07-06 14:42:52.159	2007-07-06 14:42:52.159	This is trace data 4
📄	2007-07-06 14:42:52.16	2007-07-06 14:42:52.16	This is trace data 5
📄	2007-07-06 14:42:52.161	2007-07-06 14:42:52.161	This is trace data 6
📄	2007-07-06 14:42:52.161	2007-07-06 14:42:52.161	This is trace data 7
📄	2007-07-06 14:42:52.162	2007-07-06 14:42:52.162	This is trace data 8
📄	2007-07-06 14:42:52.163	2007-07-06 14:42:52.163	This is trace data 9
📄	2007-07-06 14:42:52.164	2007-07-06 14:42:52.164	This is trace data 10

Next

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18
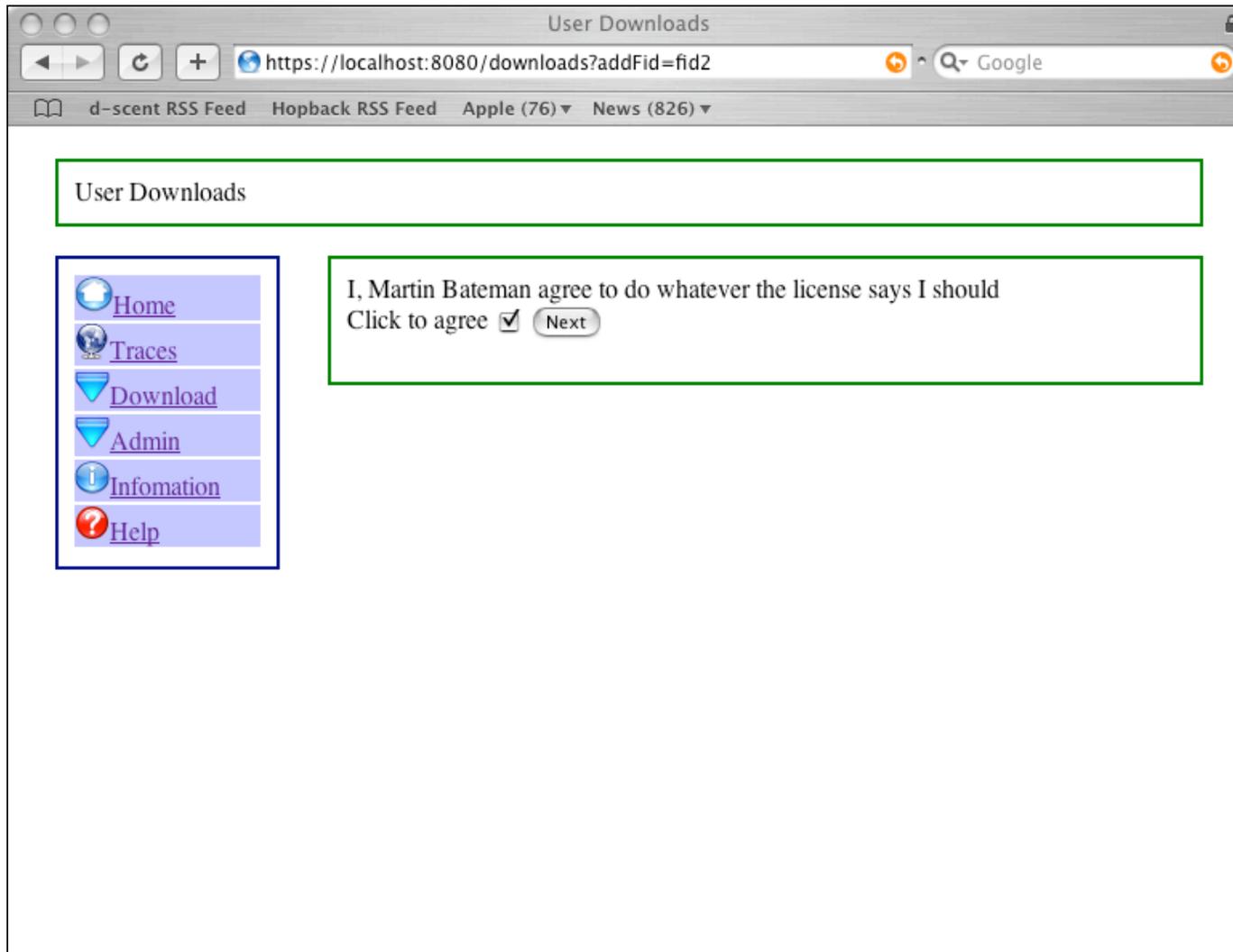
User Downloads

https://localhost:8080/downloads?addFid=fid2

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User Downloads

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I, Martin Bateman agree to do whatever the license says I should
Click to agree ☑ [Next]

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License Agreement

https://localhost:8080/downloadTrace?addFid=1&requestID=126

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Click to agree ☑ [Next]

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Trace id State
fid2   Downloaded

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