

Archiving DAB/DAB+ Feeds

Ben Cartwright-Cox
@benjojo12

```
$ whoami  
ben
```

- I don't do this as a job like some of you
- Just a rogue archiver
- "Systems" Engineer (aka software) / Ops in the day
- For the most part have no idea what I am doing



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The Free Encyclopedia

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Lost television broadcast

From Wikipedia, the free encyclopedia

Lost television broadcasts are composed of mostly early television programs and series that for various reasons cannot be accounted for in personal collections or studio archives.

United Kingdom [edit]

Main article: List of lost television broadcasts in the United Kingdom

- Early BBC-created programmes from the 1930s and 1940s such as *Telecrimes*, *Pinwright* recorded. The only visual evidence of these programmes today consists of still photographs.
- All recordings of the early televised *Francis Durbridge* serials from 1952 to 1959 were complete.
- Only one episode survived from the 1961 TV Series *Call Oxbridge 2000*.
- Four of the six episodes of *The Quatermass Experiment*, Britain's first science fiction television series, survive.






BBC Redux

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result(s) 1-25, [More...](#)

-  [Harvesting the Archive](#)
An investigation into the meaning of archives, as curator Jamie Andrews looks through the materials writer John Berger donated to the British Library.
[broadcast Fri, 29 Jul 2011 22:00 BST, bbc3, duration 45:00](#)
-  [Music Feature](#)
Sir Henry's Hoard: Using Prem's founder Henry Wood's collection of concert programmes in the British Library, Stephen Johnson builds a picture of concert-going life around 1900.
[broadcast Sat, 9 Jul 2011 12:15 BST, bbc3, duration 45:00](#)
-  [Leaves of the Dead](#)
Steeds and Baps and Amulets: Felicity Duffell Erfield probes a murder at London's British Library. Nick Fisher thriller with Imelda Staunton and Geoffrey Matthews. Episode 2 of 4.
[broadcast Wed, 27 Apr 2011 06:00 BST, bbc7, duration 30:00](#)
-  [Simon Mayo](#)
Entertainment, music and conversation. Including Matt's Midweek Middle Aged Moshing Moment, and two live tracks from The Goo Goo Dolls in the Great British Songbook Library.
[broadcast Wed, 10 Nov 2010 17:05 GMT, bbc2, duration 115:00](#)
-  [Simon Mayo](#)
Elvis Costello plays live on Drive performing a cover of a great British-penned hit as part of the Great British Songbook Library series.
[broadcast Wed, 27 Oct 2010 17:05 BST, bbc2, duration 115:00](#)

United Kingdom [edit]

Main article: List of lost television broadcasts in the United Kingdom

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ezCam™
DVB-T/FM/DAB



6 TB

SATA / 64 MB Cache
WD60PURX



24 X 7
Reliability

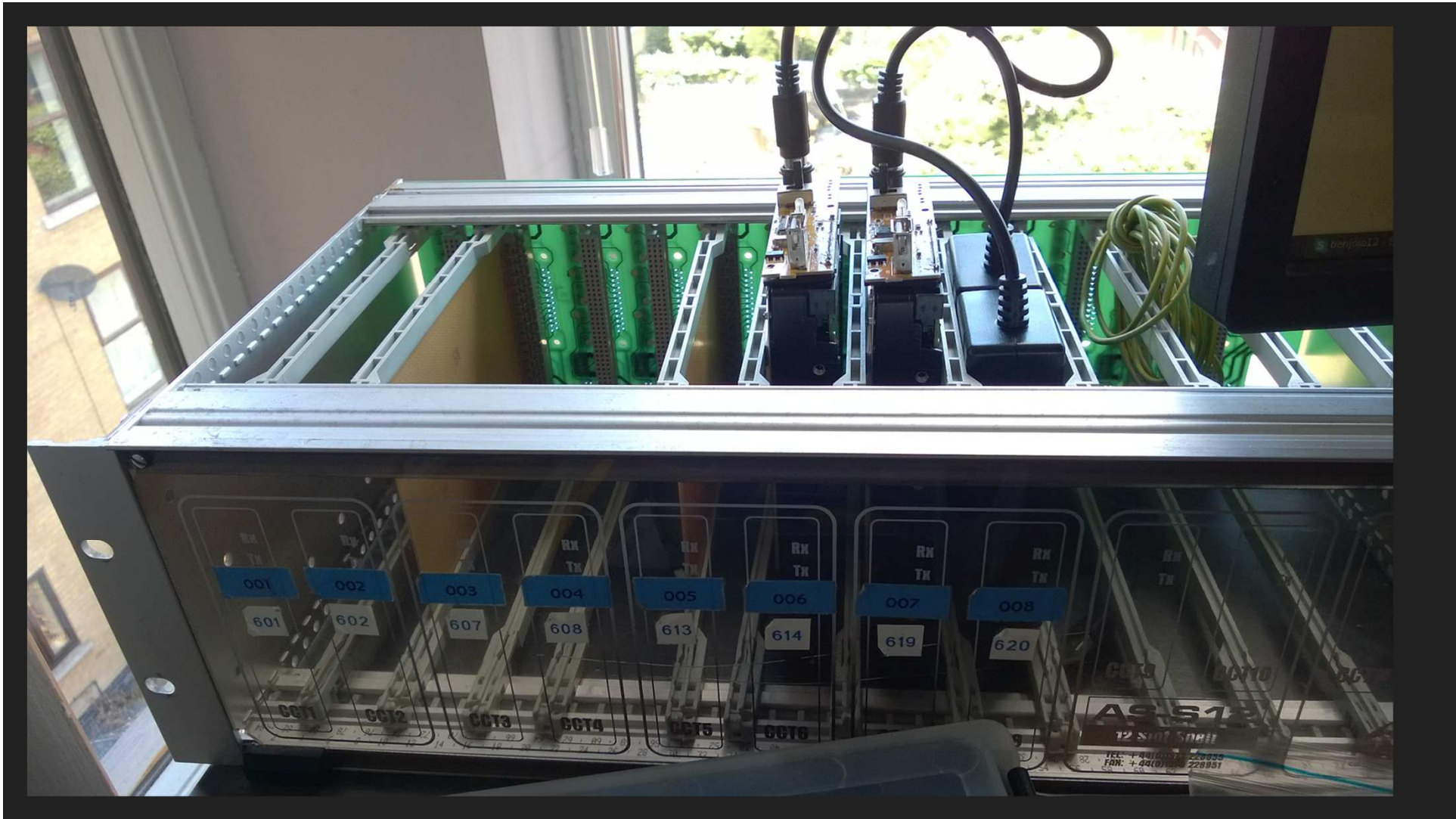
Scan QR code here to learn about your hard drive or visit wd.com

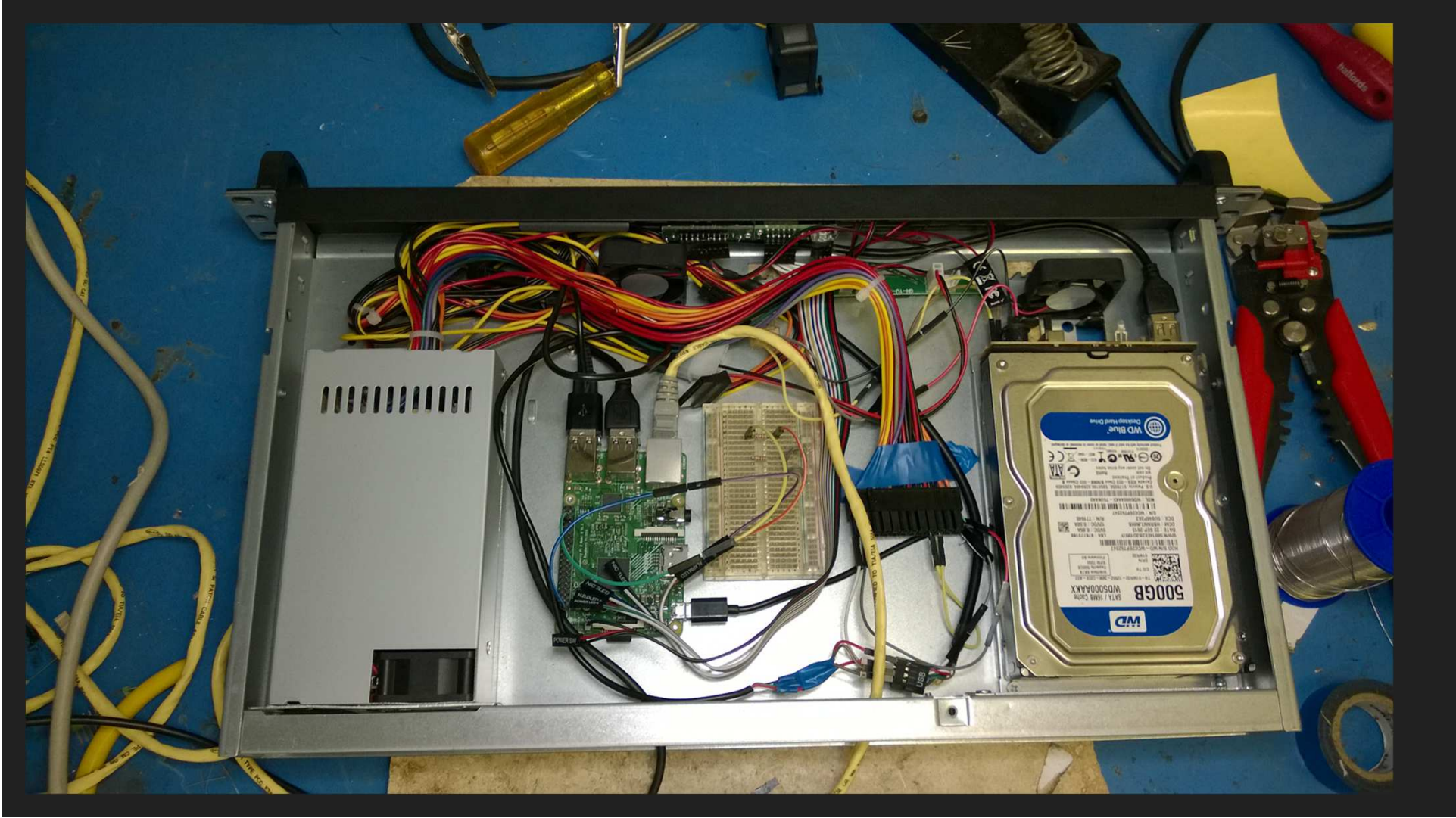
S/N: [Barcode]
MDL: WD60PURX
U.S. Patents: 6178056, 5956196, 6289484, 6263459
Do not cover any drive holes
Canada ICES-003 Class B / NMB-003 Classe B



Product warranty will be void if seal, label or cover is removed or damaged

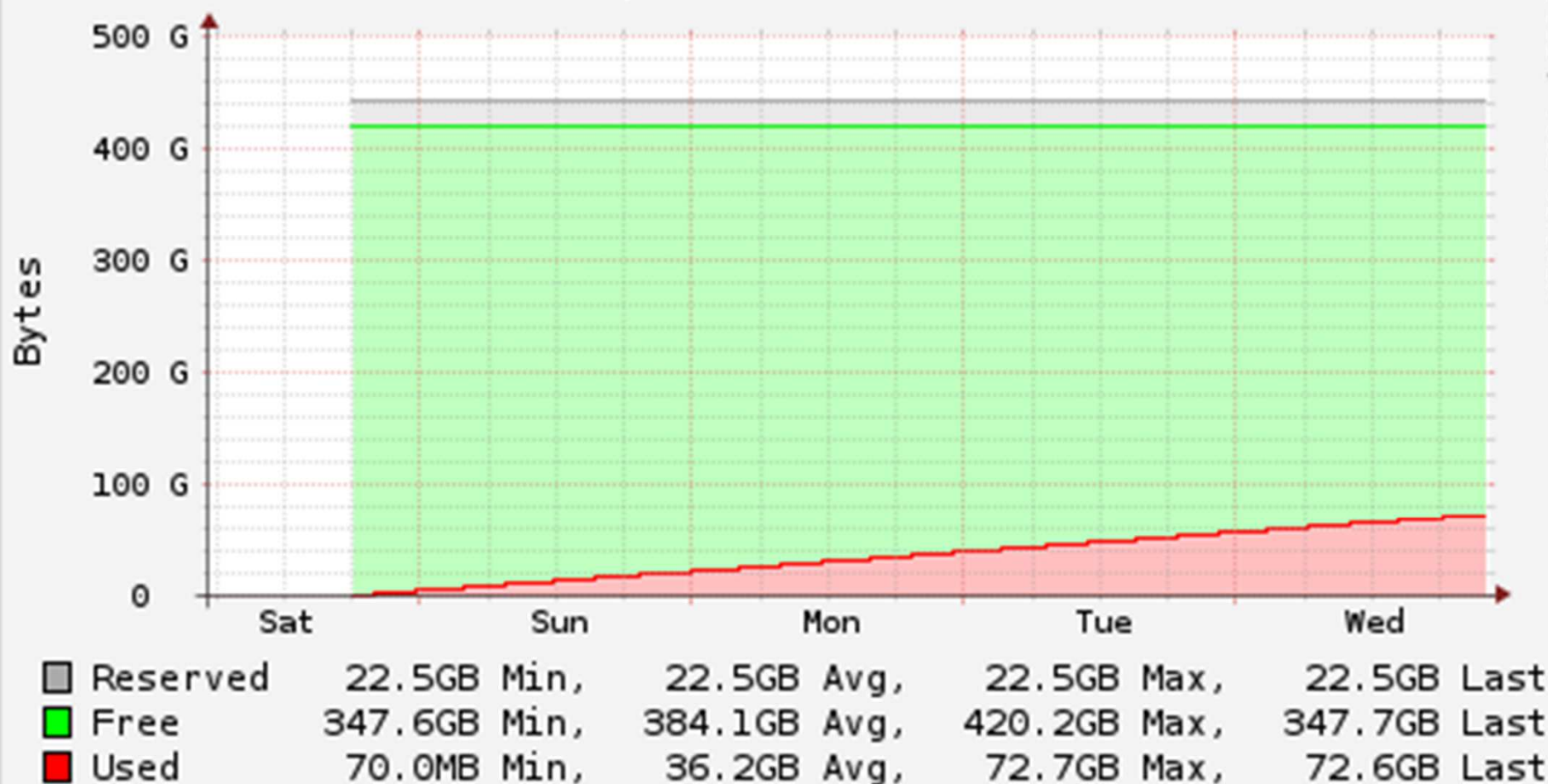
WD Purple™
Surveillance Hard Drives

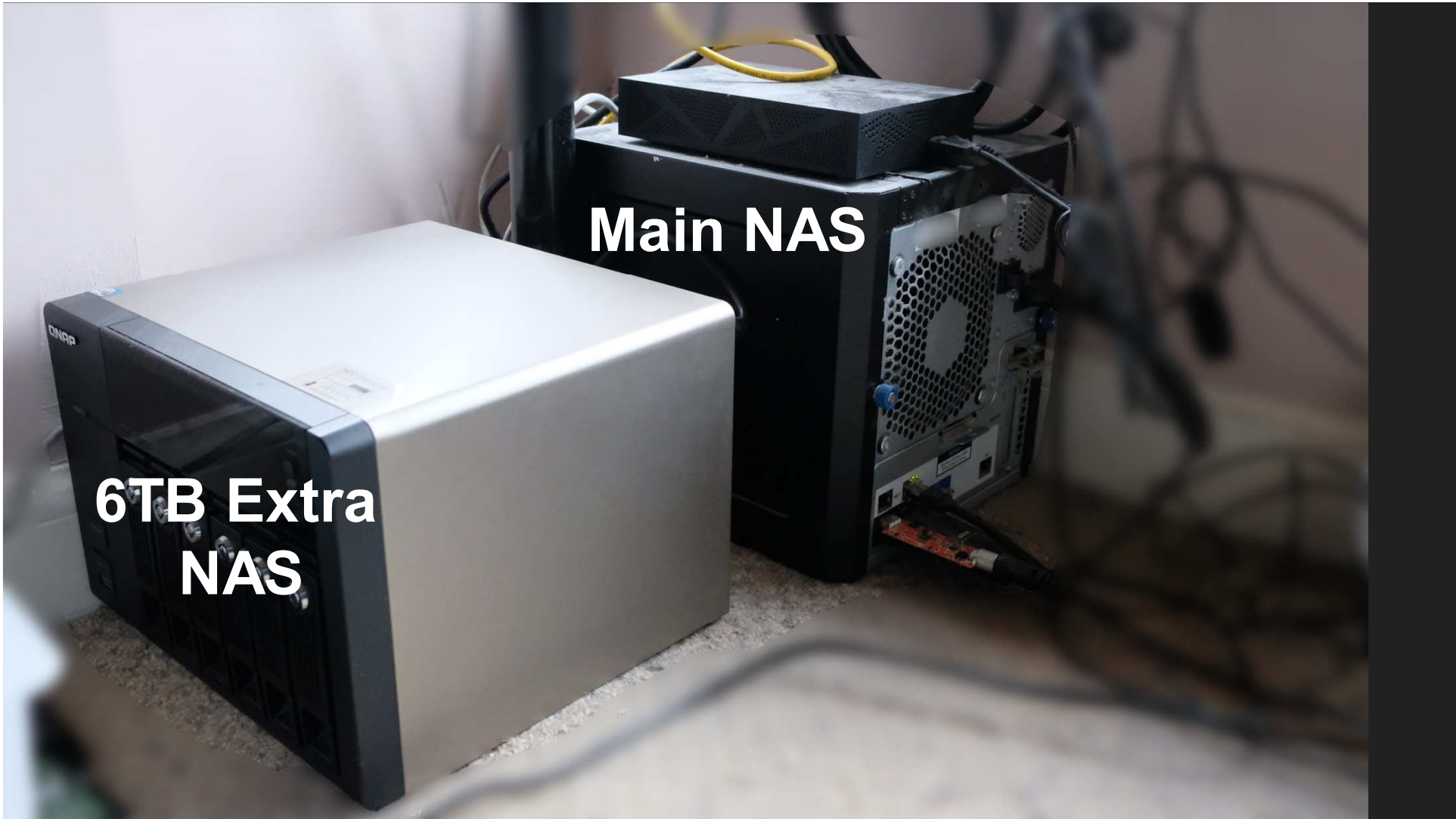




Free space (dvh1) on bdux

RRDTool / TOBI OETIKER





**6TB Extra
NAS**

Main NAS

Sum of free space over all RAIDs

Sum of used space over all RAIDs

**Double
physical space
for RAID-1**

4.37 TB

19.60 TB

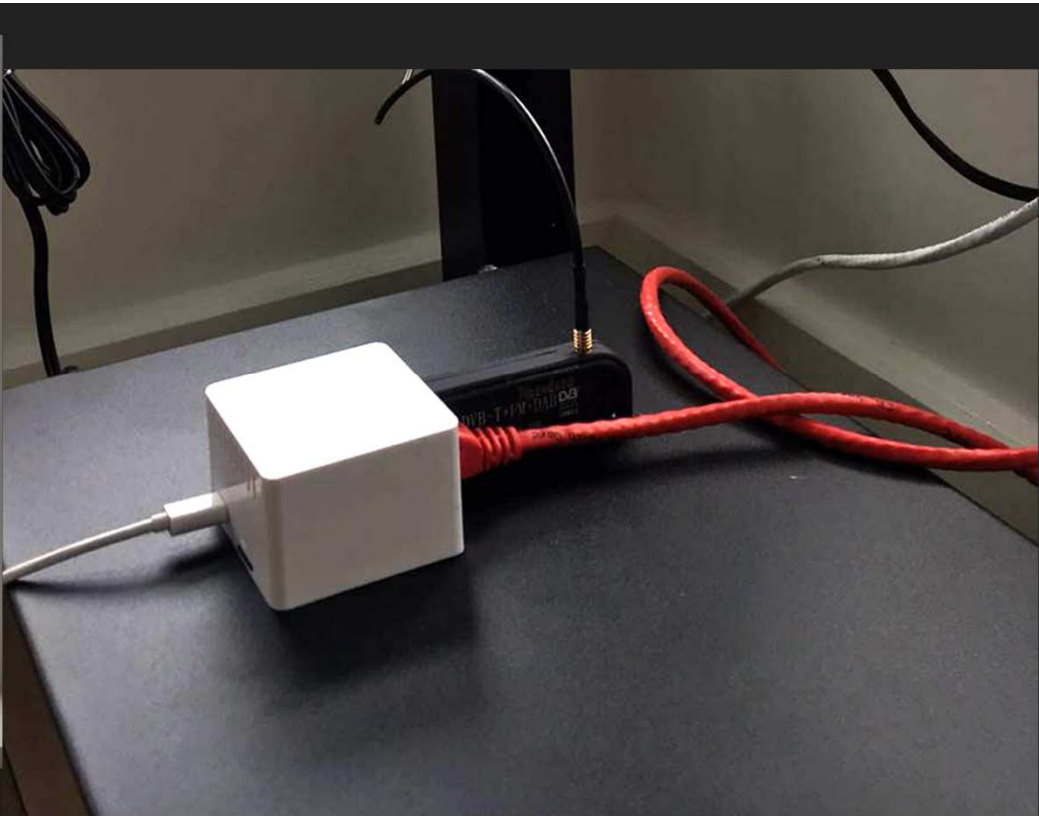


```
root@vorsk:~# sqlite3 /bdux/metadata/tracks.db \  
> 'SELECT COUNT(*) FROM radiostate;'  
1320206
```





538:  





192 kbps MP2



80 kbps AAC



160 kbps MP2



60 kbps AAC



192 kbps MP2



64 kbps AAC

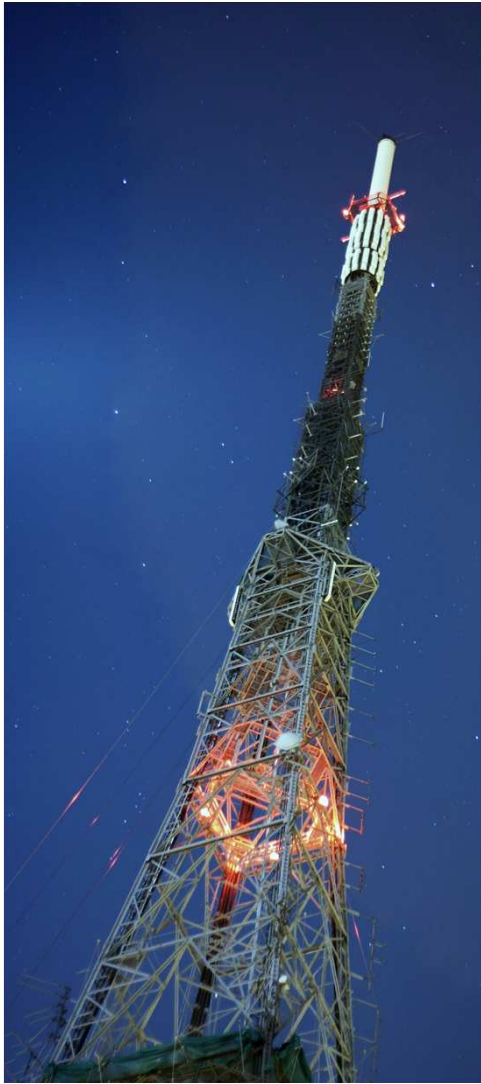


160 kbps MP2

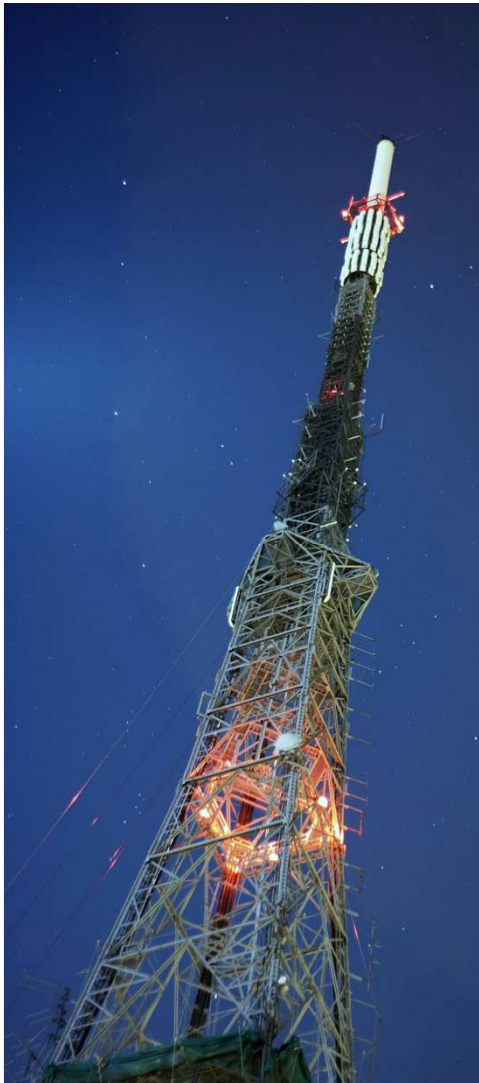


192 kbps MP2

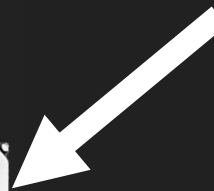
Wrap up tech overview



Critical Path: Recording



"BStreamer"

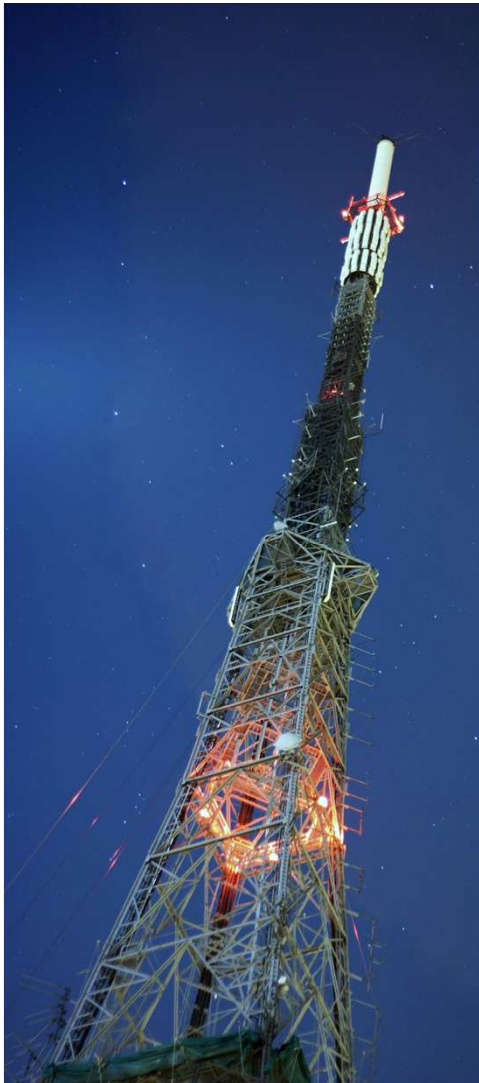


---> "Old content NAS"



"BStreamer"

```
$ pwd
/home/ben/go/src/github.com/benjojo/bdux/bstreamer
$ wc -l *
 22 data.go
 49 main.go
105 stream.go
176 total
```



Homemade decoders for
DAB+
NRSC-5



buploader



bnetworksink



High Priority: Tagging



EPG Decoding
Dynamic Label Decoding

“Now playing”
Track info



Tracks.db




“btagger”

EPG Decoding


“Now playing”
Track info




Tracks.db



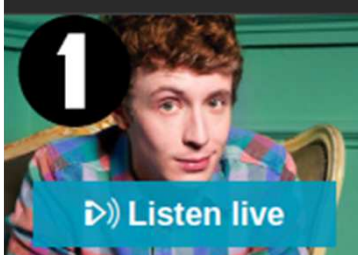
WD
6 TB
SATA / 64 MB Cache
WD60PURX
24 X 7 Reliability



Scan QR code here to learn about your hard drive or visit wd.com



BBC iPlayer Radio))



1
18/03/2
Listen live

“btagger”

```
$ wc -l *  
105 bbcjson.go  
257 epgscanner.go  
101 main.go  
106 sqlite.go  
569 total
```



Tracks.db

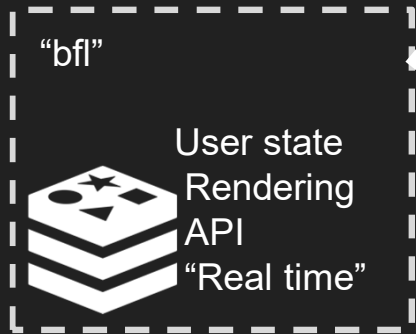
Track info

```
# ls -hl
8 00:23 1521331762.epg.json
8 00:19 1521331762.manifest
8 00:19 1521331762.ts
8 00:23 1521332362.epg.json
8 00:29 1521332362.manifest
8 00:29 1521332362.ts
8 00:43 1521332962.epg.json
8 00:39 1521332962.manifest
8 00:39 1521332962.ts
8 00:43 1521333562.epg.json
8 00:49 1521333562.manifest
8 00:49 1521333562.ts
8 01:03 1521334162.epg.json
8 00:50 1521334162.manifest
8 00:50 1521334162.ts
```

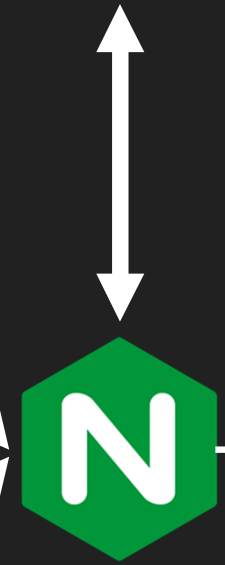
Low Priority: Playback



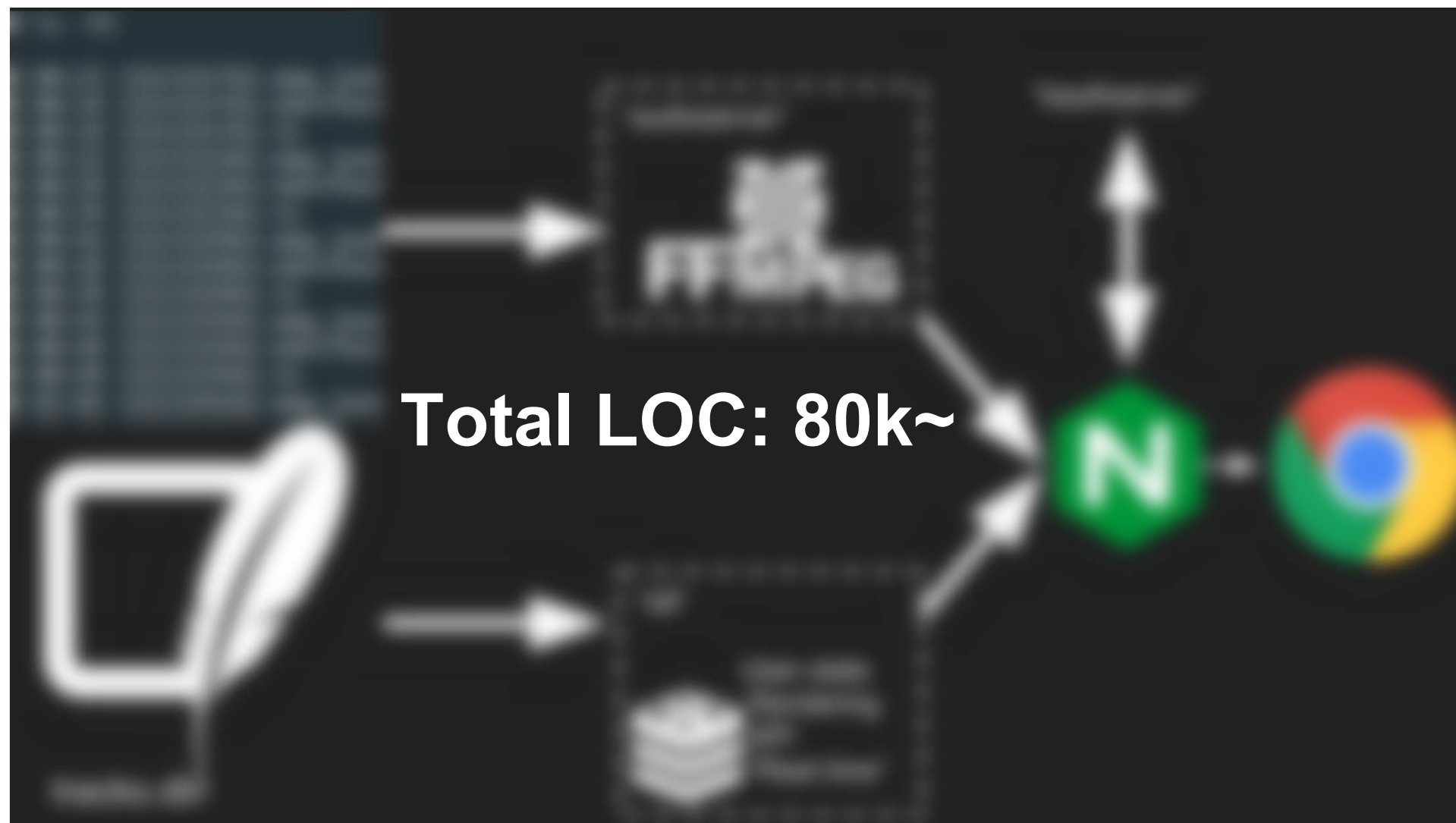
```
# ls -hl
8 00:23 1521331762.epg.json
8 00:19 1521331762.manifest
8 00:19 1521331762.ts
8 00:23 1521332362.epg.json
8 00:29 1521332362.manifest
8 00:29 1521332362.ts
8 00:43 1521332962.epg.json
8 00:39 1521332962.manifest
8 00:39 1521332962.ts
8 00:43 1521333562.epg.json
8 00:49 1521333562.manifest
8 00:49 1521333562.ts
8 01:03 1521334162.epg.json
8 00:50 1521334162.ts
```



"bauthserver"



Total LOC: 80k~





Total LOC: 80k~
+ breaks from time to time

BDUX RADIO RECALL SYSTEM

LAST LISTENED TO (24H20M54S AGO):

What We Got. By: The Vanguard Project [Resume](#)

Starred Tracks

Name	Artist	Station	
What We Got	The Vanguard Project	6720	Stream
Callback	Krakota	6720	Stream
Purple People Eater	Pegboard Nerds	6720	Stream
Lit Up	Phace	6720	Stream
Deep In My Heart	Hamilton	6720	Stream
Lullaby (Logistics Remix)	Andreya Triana	5888	Stream
Play (feat. UK:ID)	Muzzy	6720	Stream
Give It Up	J Majik	6720	Stream
Bar Fight	Delta Heavy	6720	Stream
Time Traveller	TC	6720	Stream
Trouble	Offaiah	6720	Stream
Stranger	Chris Lake	6720	Stream

Data isn't always great

Simulcasts

Tue Sep 06 2016 02:19:56 GMT+0100 (BST)

Friction

bbc_1extra

[Stream](#)

Tue Sep 06 2016 02:20:04 GMT+0100 (BST)

Friction

bbc_radio_one

[Stream](#)

B|B|C|1

+

B|B|C|1

Spelling errors in track data

Song Results:

Name	Artist
Anomalie	Noisia
Anomaly	Noisia
Anomaly	Nosia

Name	Artist	Link
Black *TARGET EMBARGO 281016 DO NOT PLAY*	Donae'o, Jme & Dizzee Rascal	Stream
Cotton Candy (TARGO EMBARGO 30th Nov 2017 9PM)	Jessie Reyez	Stream
Dive (STRICT EMBARGO FRIDAY 030317 1PM)	Ed Sheeran	Stream
Glue	Bicep	Stream
In The Morning (TARGO EMBARGOED)	LiTek	Stream
Jus Come (DANNY EMBARGO 111117)	Mark Knight & Tuff London	Stream
Lost Away (ANNIE MAC EMBARGO 041215) (feat. Shakka)	Sigma	Stream
Matador **DANNY EMBARGOED 03/02**	Solardo	Stream
Nobody Knows *FRICTION EMBARGO 251016*	Sub Focus	Stream
One More Time (TARGO EMBARGO 12th Jan DO NOT PLAY) (feat. Abra Cadabra & Kush)	Frass	Stream
We Just Don't Care ***DO NOT PLAY*** EMBARGOED TILL 730 6th April	Shy FX	Stream
** strictly embargoed / world exclusive DO NOT PLAY ** Humility	Kamasi Washington	Stream
**EMBARGOED TILL 10AM - 7TH JULY ** Smile (feat. Gloria Carter)	JAY-Z	Stream
Alarm (Naughty Boy Remix) (Embargoed 24062016 after 10pm)	Anne-Marie & Chip	Stream
All A Dream (MistaJam Embargo TX210716)	Wretch 32	Stream

BUBBLES (+ 1 SECONDS)

⏮ ⏪ ⏩ ⏭ | Played on: bbc_radio_one : Annie Nightingale



BUBBLES (+ 1 SECONDS)

🔊 02 🔊 | Played on: bbc_radio_one : Annie Nightingale



Song Results:

Name	Artist	Link
C3_m	$\Sigma=7$	Stream
Untitled	$\Sigma=7$	Stream

EIDOLONS BEGINNING P = (M²A² AM TO (RHO-Z)-Y ∂T+(P SEE TO WAIT DZ,DT = IT XY TH (+ 21 SECONDS)



|| Pause | < Last Track | Track Replay | > Next Track

BUBBLES (+ 1 SECONDS)

⏮ ⏪ ⏩ ⏭ | Played on: bbc_radio_one : Annie Nightingale



Song Results:

Name	Artist	Link
C3_m	Σ=7	Stream
Untitled	Σ=7	Stream

EIDOLONS BEGINNING P = (M²A² AM TO (RHO-Z)-Y ∂T+(P SEE TO WAIT DZ,DT = IT XY TH (+ 21 SECONDS)

Paul Jebanasam | Played on: bbc_6music : 6 Music Recommends



|| Pause | < Last Track | Track Replay | > Next Track

BUBBLES (+ 1 SECONDS)

Uz | Played on: bbc_radio_one : Annie Nightingale



Song Results:

Name	Artist	Link
C3_m	$\Sigma=7$	Stream
Untitled	$\Sigma=7$	Stream



MUSIC

Search Music



Track



မလ္လိကီ ရီလီဒီယို မလ္လိကီ
Mysterious artist // probably a "Four Tet" alias



|| Pause | < Last Track

Tracks (1)

Links

LAST PLAYED ON BBC

/ , QQ မလ္လိကီ

Official Links

DESTINY'S CHILD

Destiny's Child

“Don’t mess up like Ben did”

- NTP 🙌 Sync 🙌 All 🙌 Systems
- Ensure you think about failure boundaries and expectations for each μ -service you run
- Run migrations as slow as you need for irreplaceable data
- Keep original copies of data you are importing, you can fix your mess ups years after you make them
- Don’t live in the UK where all digital radio is MPEG-2
- Don’t forget about metrics
 - Make sure your metrics *actually* connect to bad things happening

Questions?

Or complaints to: ben+nttw3@benjojo.co.uk