



Friedrich Kittler's digital legacy

Challenges, findings and approaches in dealing with complex data collections

Friedrich Kittler's digital legacy

Kittler's legacy

Kittler and DH

Challenges met at the DLA

IRONMAIDEN aka Indexer

Mining Kittler

M0250

FUJITSU
SIEMENS



M0250
Dankt, schalten im Bild



Kittler's legacy About Kittler

LEHRE.LAT

Ruhr-Universität Bochum

SS 92 Literatur und Informatik I. Oberseminar
WS 92/93 Literatur und Informatik II. Oberseminar

Humboldt-Universität zu Berlin

SS 94 Oberflächenprogrammierung in C (I). Hauptseminar.
WS 94/95 Oberflächenprogrammierung in C (II). Hauptseminar.
SS 95 Oberflächenprogrammierung in Assembler. Hauptseminar.
WS 95/96 Graphikprogrammierung auf Workstations I. Hauptseminar.
SS 96 Graphikprogrammierung auf Workstations II. Hauptseminar.
WS 96/97 Digitale Signalverarbeitung I. Seminar.
SS 97 Digitale Signalverarbeitung II. Seminar.
WS 97/98 Computerakustik. Oberseminar.
SS 98 Computerakustik. Oberseminar.
WS 98/99 Computerakustik II. Oberseminar.
WS 99/00 Programmieren in 32-Bit Betriebssystemen und Netzwerken. Hauptseminar.
SS 00 Programmieren in 32-Bit-Betriebssystemen und Netzwerken. Hauptseminar.
SS 01 Akustik und Computermusik in C. Proseminar.
WS 01/02 Akustik und Computermusik in C. Seminar.
SS 02 Akustik und Computermusik in C II. Seminar.
WS 02/03 Graphikprogrammierung in 32-Bit Betriebssystemen. Hauptseminar.
SS 03 Graphikprogrammierung in 32-Bit Betriebssystemen. Hauptseminar.
WS 03/04 Graphikprogrammierung in 32-Bit Betriebssystemen. Hauptseminar.
SS 04 Graphikprogrammierung in 32-Bit Betriebssystemen. Hauptseminar.
WS 04/05 Einführung in die Computergraphik unter Linux I. Seminar.
SS 05 Einführung in die Computergraphik unter Linux II. Seminar.
WS 05/06 Einführung in die Computergraphik unter Linux I. Seminar.
SS 06 Einführung in die Computergraphik unter Linux II. Seminar.
WS 06/07 Einführung in die Computergraphik unter Linux I. Seminar.
SS 07 Einführung in die Computergraphik unter Linux II. Seminar.
WS 07/08 Einführung in die Computergraphik unter Linux I. Proseminar.
SS 08 Einführung in die Computergraphik unter Linux II. Proseminar.

#2001.13728, text/plain (2003-12-18T23:28:28Z). LEHRE.LAT. In: Bestand A:Kittler/DLA Marbach. hd01-p01:/SAVE [hd, 7.81 KiB].

Kittler's legacy About Kittler

* 12.06.1943
† 18.10.2011

Kittler's legacy About Kittler



DLA-Marbach, www.dla-marbach.de

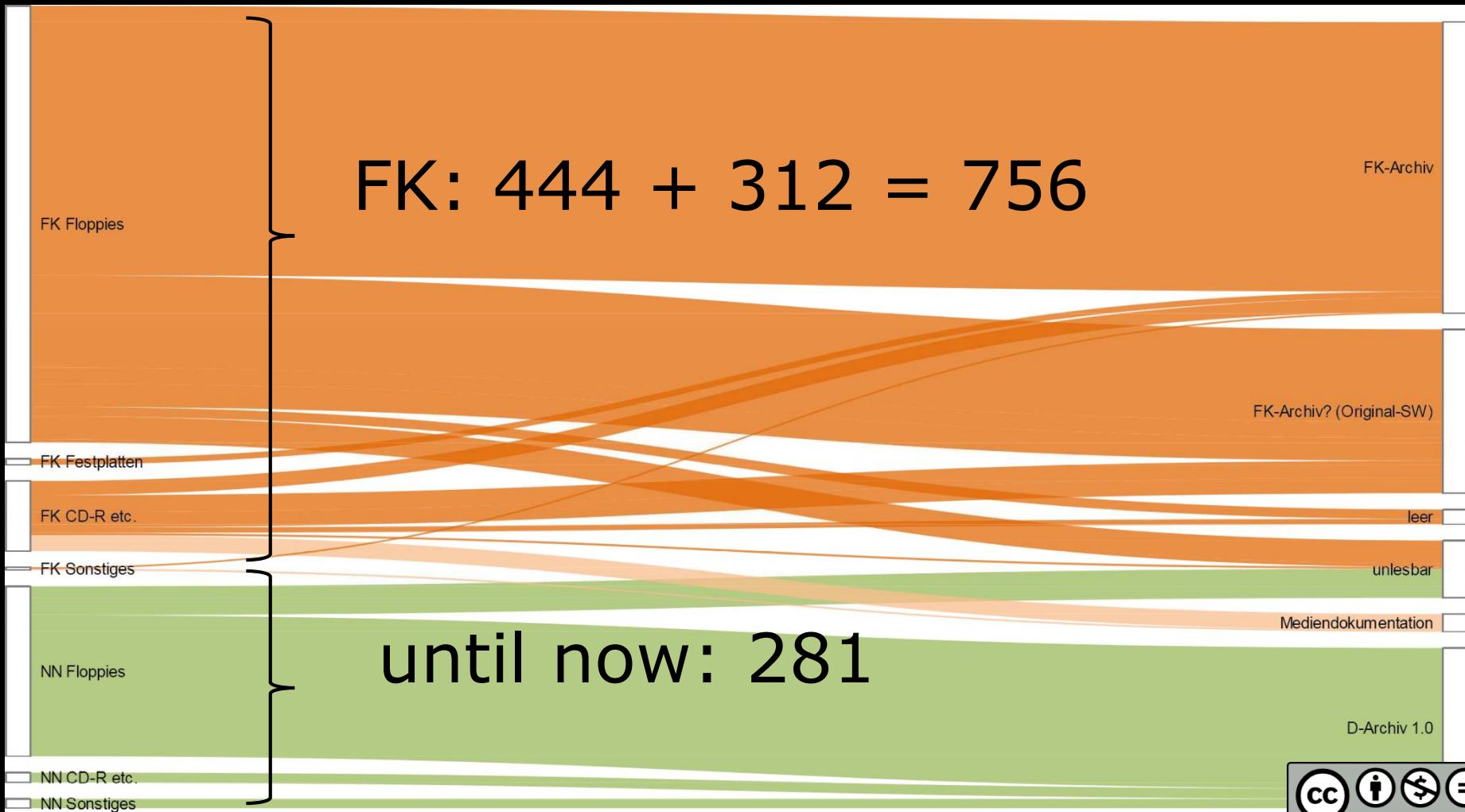
Kittler's legacy

Challenges met at DLA Marbach



Kittler's legacy DLA Marbach

Data carriers



Kittler's legacy DLA Marbach

Data files

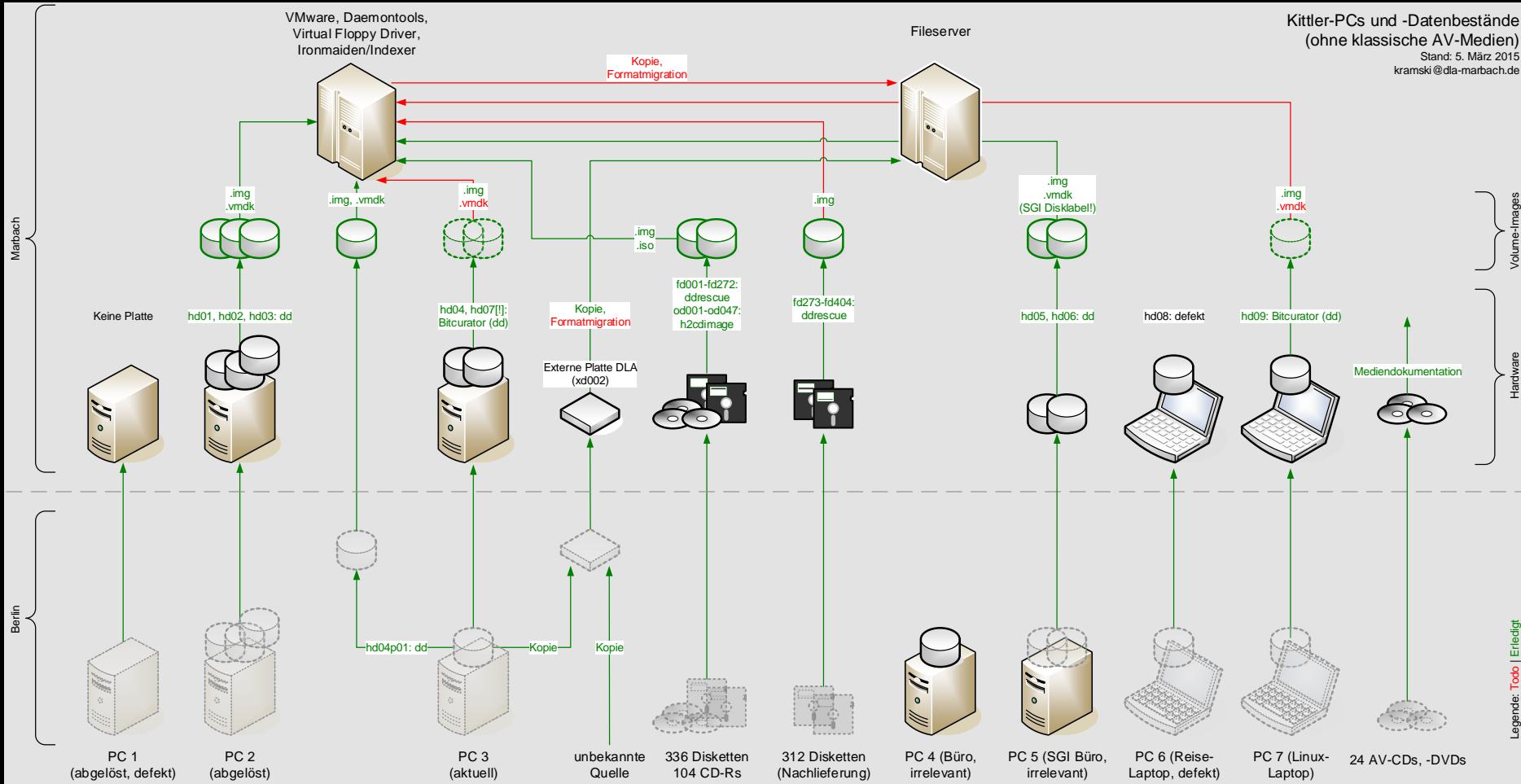
FK-Archiv

FK: about 1,7 millions

Until now: about 26.700

Kittler's legacy

Content



Kittler's legacy

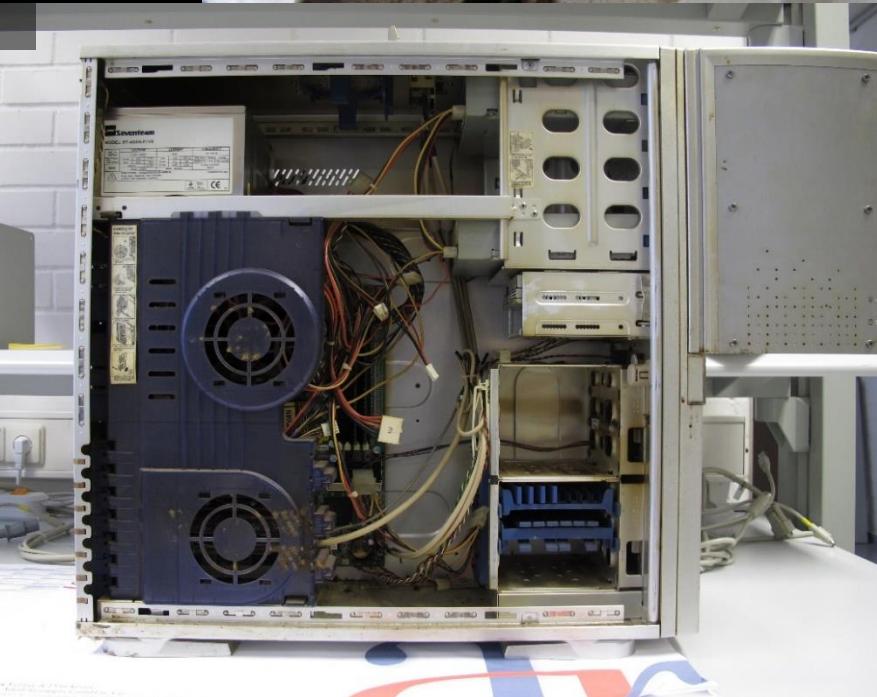
Content



Kittler's legacy

Content

- 5 Desktop Computer



Kittler's legacy

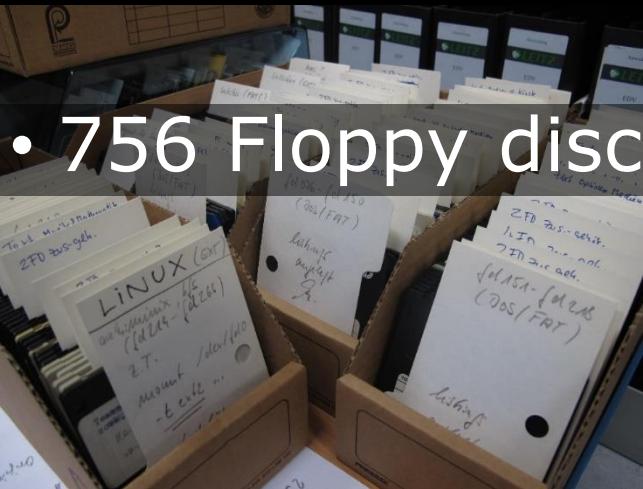
Content

- 2 Laptop



Kittler's legacy

Content

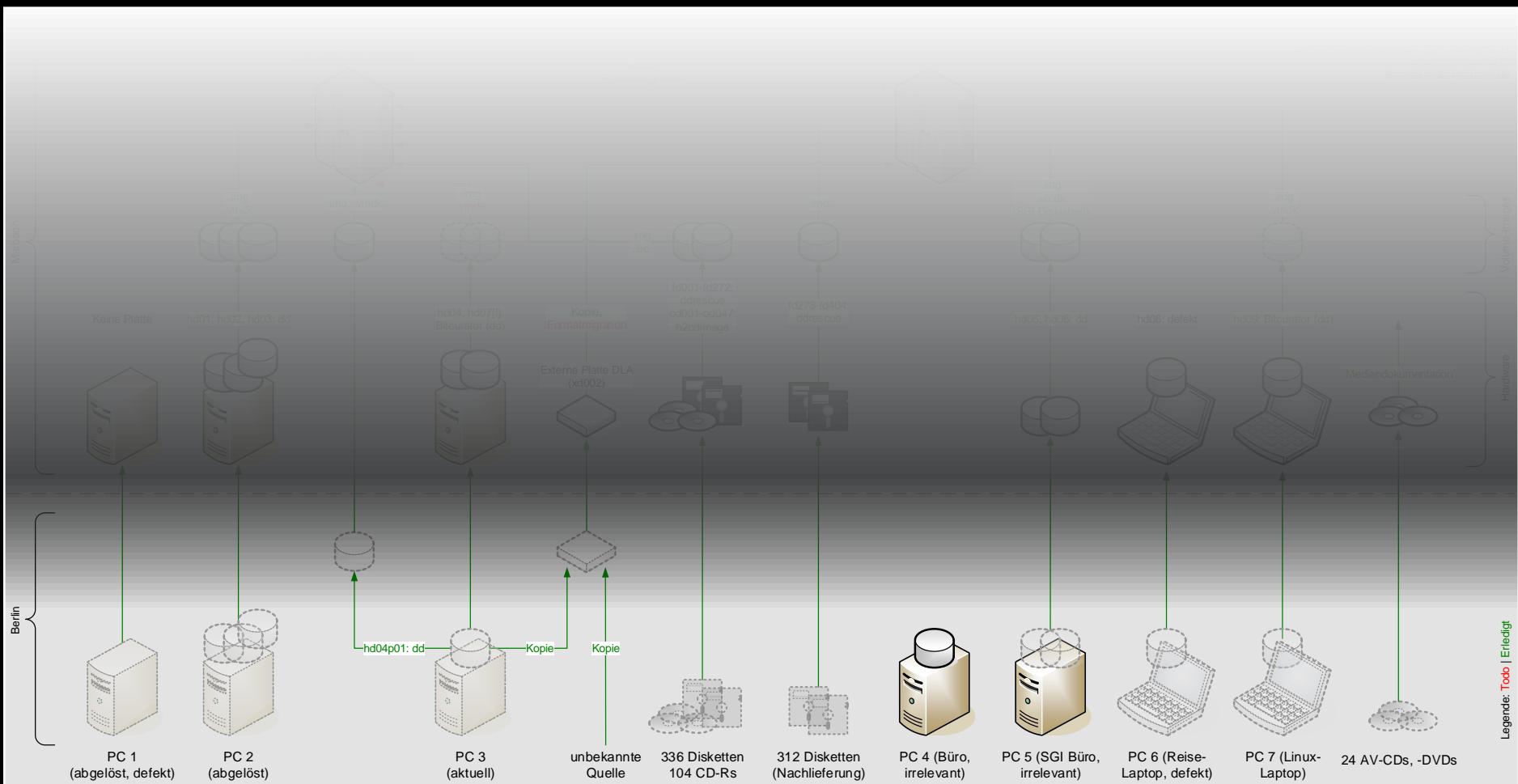


- 756 Floppy discs



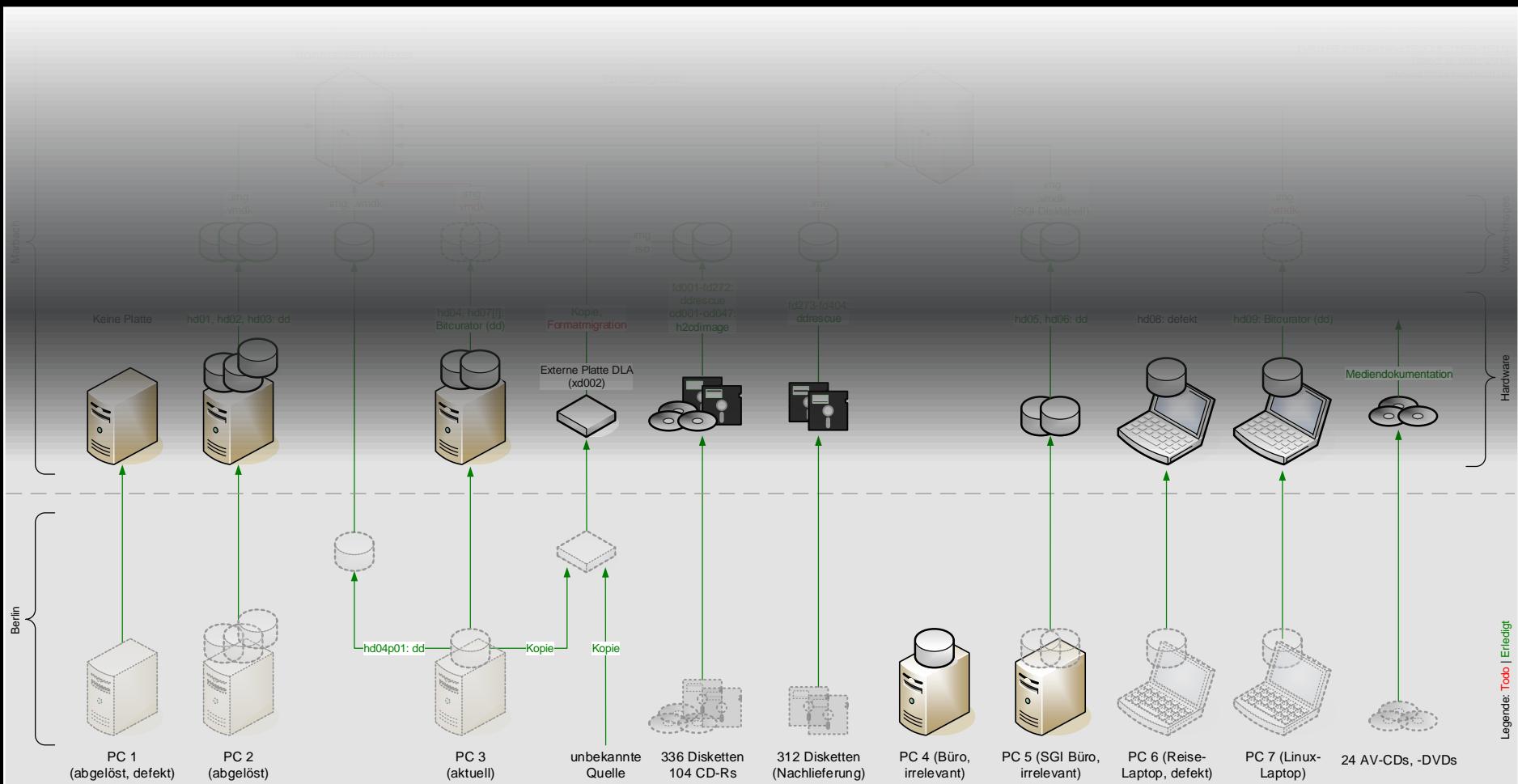
Kittler's legacy

Content



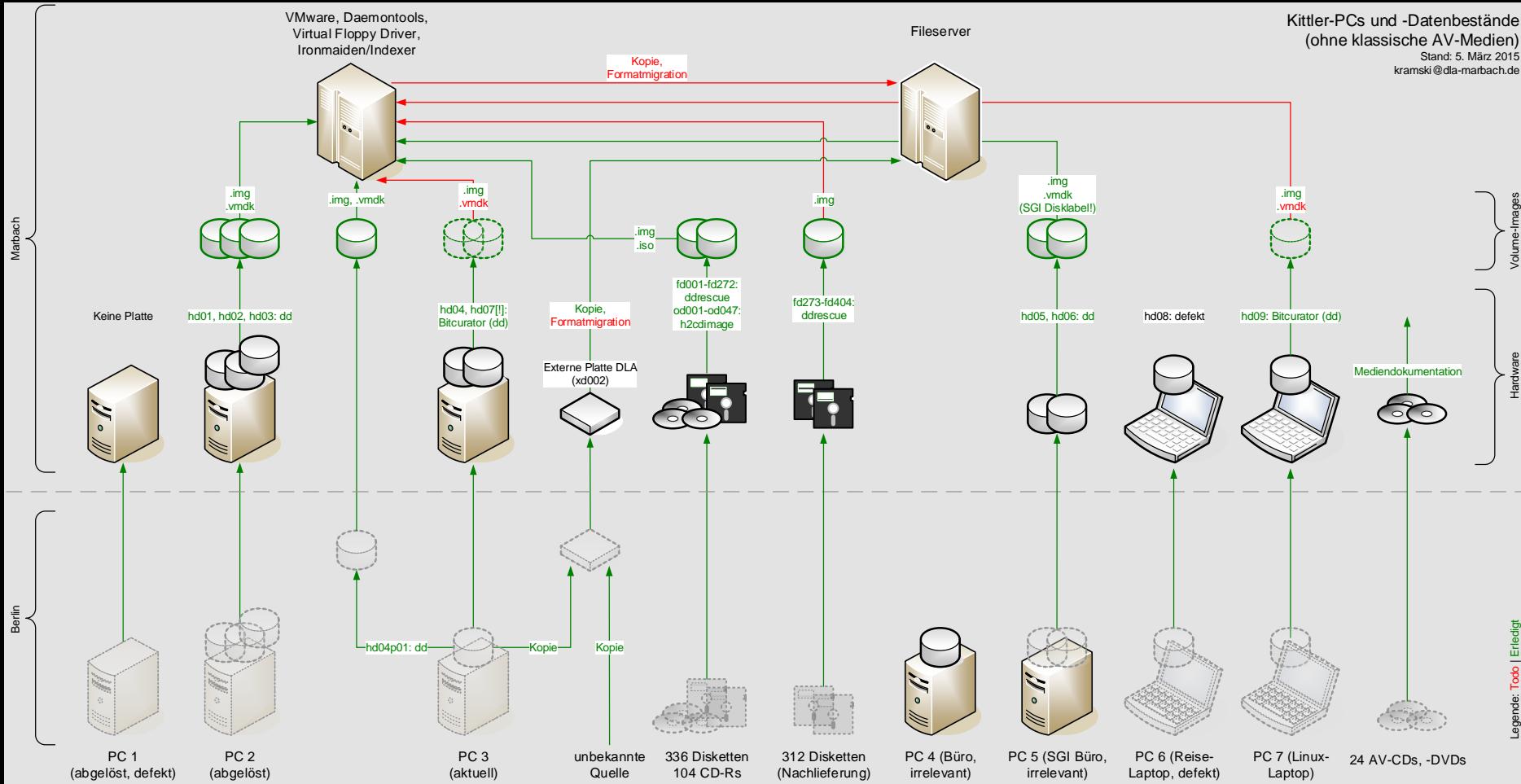
Kittler's legacy

Content



Kittler's legacy

Content

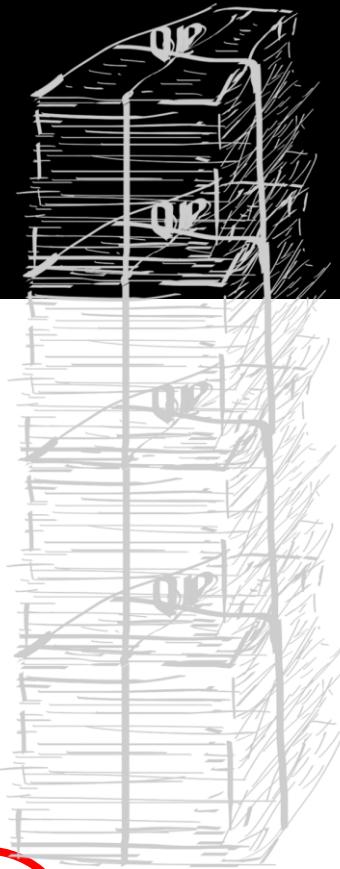
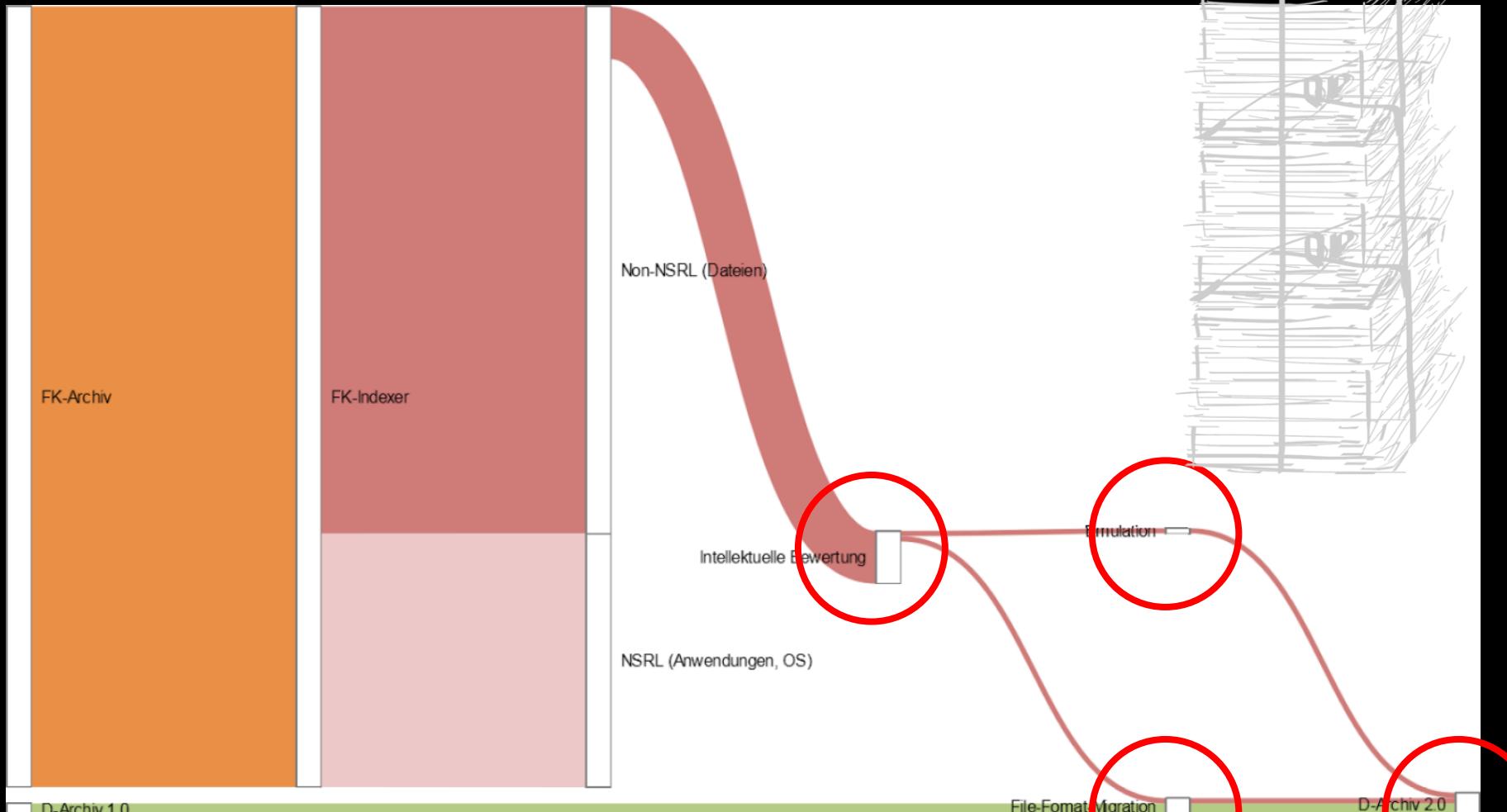


IRONMAIDEN aka Indexer



IRONMAIDEN aka Indexer

Extraction of relevant files



IRONMIDEN aka Indexer

Target

```
1 <?php
2
3 namespace indexer;
4 class ImageMagick extends Plugin
5 {
6     public function __construct()
7     {
8         parent::__construct();
9     }
10
11
12
13
14
15     public function check()
16     {
17         $sql = "SELECT COUNT(*) FROM `info_imagick` WHERE sessionid={$this->sessionid} AND fileid={$this->fileid}";
18         $num = intval($this->db->getOne($sql));
19         if ($num > 0)
20         {
21             $update = "UPDATE `info_imagick` SET fileid=" . $this->fileid . ", thumb=" . $this->thumb . " WHERE sessionid=" . $this->sessionid . " AND fileid=" . $this->fileid;
22             $this->db->query($update);
23         }
24     }
25
26     public function getThumbnail($file)
27     {
28         global $config;
29         $db = $this->db;
30         $cmd = $config['ImageMagick'] . " -format 'Format: %m; Geometry: %wx%h; xres: %x; yres: %y;' ".escape($file);
31         $info = exec($cmd);
32         echo $info;
33         if (preg_match("/.*Format: (\S+);.*Geometry: ([0-9]+)x([0-9]+);.*xres: ([^;]*);.*yres: ([^;]*);/", $info))
34         {
35             $magick = $matches[1];
36             $width = intval($matches[2]);
37             $height = intval($matches[3]);
38             $xres = $matches[4];
39             $yres = $matches[5];
40             $thumb = "{$this->localfile}{$config['thumb_file_ext']}"; // $config['thumb'];
41         }
42     }
43 }
```

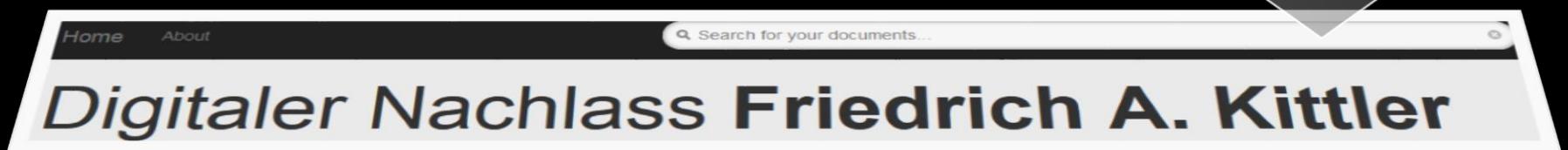
- Tool to inventory unstructured digital data before archival ingest
- Low-threshold access
- High degree of automation
- Easy to extend
- High performance
- Transparent systematics



IRONMAIDEN aka Indexer

Target

- Low-threshold access
- Web Frontend
- Simple Access
- Multiple levels of complexity



IRONMaidEN aka Indexer

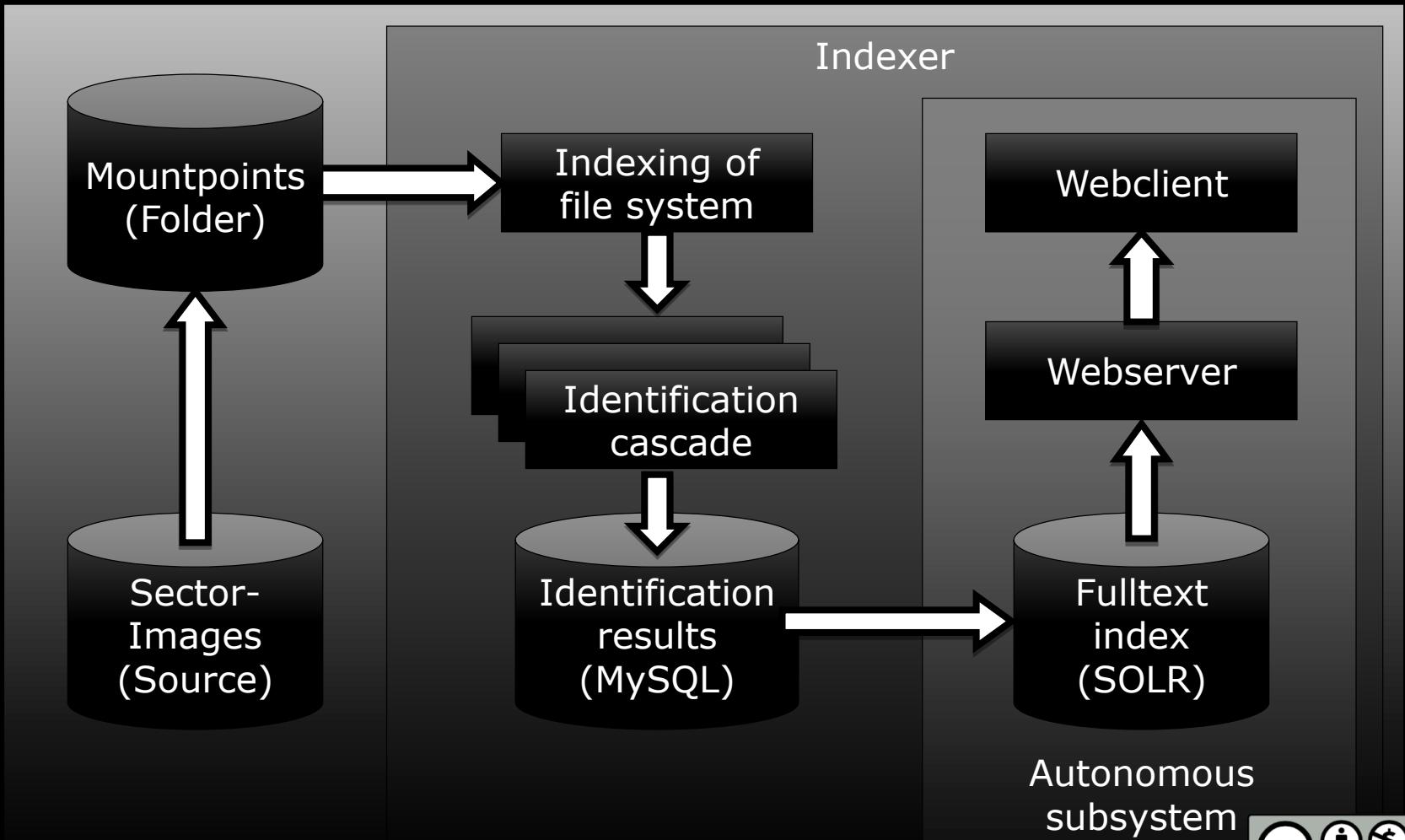
Target

- High degree of automation / extensibility
- Logical approach:
 - Import of file structure into database
 - Creation of checksums
 - Identification
 - Libmagic
 - Gvfs-info
 - Tika
 - Detex



IRONMADEN aka Indexer

System architecture



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Identification cascade

- Filesystem / Checksum

sessionid	fileid	parentid	name	path	fullpath	filetype	filesize	sha256	filectime
1001	1	0	kittler		kittler	dir	16384		NULL 2013-04-10 13:10:10
1001	2	1	ggears	kittler	kittler/ggears	file	13872	340c104d4ecdf4f199b5a5ee3d78f2cc8bd0f1ae4886f4fd034bebbba2d93a1a	2013-04-12 12:00:00
1001	3	1	matrices.s	kittler	kittler/matrices.s	file	14196	3bbe482e90c0ec6cbbdd9cf6a747e178b8306cc6db96ebdd7f3ee1a39208be	2012-05-23 13:00:00
1001	4	1	euler.s	kittler	kittler/euler.s	file	2798	e80e28a92832b140102bdd4e19ef29249f954d1676a97dec1cde1d62e7dd63d	2013-04-12 12:00:00
1001	5	1	xraster1.c	kittler	kittler/xraster1.c	file	13326	7e159dbc8df54da0884f0c82b4568a291537d6991f76e3082063a24508e05953	2013-04-12 12:00:00
1001	6	1	hilbert	kittler	kittler/hilbert	file	5984	208bef05d6d2cc75557a54f246dab551fbcb611aafe658444fb62c6be209b1d	2012-07-01 08:00:00
1001	7	1	xraster17.c	kittler	kittler/xraster17.c	file	13326	7e159dbc8df54da0884f0c82b4568a291537d6991f76e3082063a24508e05953	2013-04-12 12:00:00
1001	8	1	digspei.c	kittler	kittler/digspei.c	file	3309	76a26733f6e4acf36cf3ee6a1547ffc24a28db9f2e97ffbad4a87b2923a6b1c8	2013-04-12 12:00:00
1001	9	1	xebild.c	kittler	kittler/xebild.c	file	98571	6f15f1cec6793053123d9cb37a4b17dc32a678e33781b3260acc63ee479842c0	2013-04-12 12:00:00
1001	10	1	quer.c	kittler	kittler/quer.c	file	787	3d5a0b2552eaa02ae7560284cbd1fa47162884b89c315eb511234620cb1548e2	2013-04-12 12:00:00
1001	11	1	gfibon	kittler	kittler/gfibon	file	9676	fe341df56361070f555397d49de51313d52cccd1788967fd1fcc313208b6160f	2013-04-12 12:00:00
1001	12	1	ray1akf.24f.gz	kittler	kittler/ray1akf.24f.gz	file	95370	52eec501941374e813b7209180333172bf092487cd28ca2e8bb2420d9d3d8d05	2013-04-12 12:00:00

IRON MAIDEN aka Indexer

Identification cascade

- libmagic



sessionid	fileid	mimetype	mimeencoding	description
1001	1	directory	directory	directory
1001	2	application/x-executable	binary	ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV)
1001	3	text/x-asm	us-ascii	assembler source, ASCII text
1001	4	text/x-asm	us-ascii	assembler source, ASCII text
1001	5	text/x-c	iso-8859-1	C source, ISO-8859 text
1001	6	application/x-executable	binary	ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV)
1001	7	text/x-c	iso-8859-1	C source, ISO-8859 text
1001	8	application/octet-stream	binary	data
1001	9	text/x-c	iso-8859-1	C source, ISO-8859 text
1001	10	text/x-c	us-ascii	C source, ASCII text
1001	11	application/x-executable	binary	ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV)
1001	12	application/x-gzip	binary	gzip compressed data, was "ray1akf.24f", from Unix, last modified: Tue Sep 25 01:28:58 2001
1001	13	text/x-c	us-ascii	C source, ASCII text
1001	14	text/x-c	iso-8859-1	C source, ISO-8859 text
1001	15	directory	directory	directory

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Identification cascade

- gvfs-info

sessionid	fileid	mimetype	fullinfo
1001	1	inode/directory	display name: kittler edit name: kittler name: kit...
1001	2	application/x-executable	display name: ggears edit name: ggears name: ggear...
1001	3	text/plain	display name: matrices.s edit name: matrices.s nam...
1001	4	text/plain	display name: euler.s edit name: euler.s name: eul...
1001	5	text/x-csrc	display name: xraster1.c edit name: xraster1.c nam...
1001	6	application/x-executable	display name: hilbert edit name: hilbert name: hil...
1001	7	text/x-csrc	display name: xraster17.c edit name: xraster17.c n...
1001	8	text/x-csrc	display name: digspei.c edit name: digspei.c name:....
1001	9	text/x-csrc	display name: xebild.c edit name: xebild.c name: x...



IRON MAIDEN aka Indexer

Identification cascade

- Apache Tika



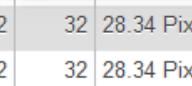
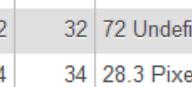
sessionid	fileid	mimetype	mimeencoding	fullinfo	content	hascontent	status
2008	868450	application/x-gzip	NULL	Content-Length: 698718 Content-Type: application/x...	06e41d66101105c9e501827b57eda	1	done
2008	868449	application/octet-stream	NULL	Content-Length: 1751 Content-Type: application/oct...	NULL	0	done
2008	868448	application/x-bzip2	NULL	Content-Length: 395776 Content-Type: application/x...	cc161f4f983028324be5cb4c29737d	1	done
2008	868447	application/x-xz	NULL	Content-Length: 2640 Content-Type: application/x-x...	cc01d86fc2336da0066e6f75c2ea6d	1	done
					tex/latex/lkproof...		
2008	868446	application/x-xz	NULL	Content-Length: 8288 Content-Type: application/x-x...	1bcfdb10ee15da730325a1760e8885	1	done
					texmf-dist/script...		
2008	868445	application/x-bzip2	NULL	Content-Length: 297096 Content-Type: application/x...	9e157c3760b8eda06218c9cb9f2abb	1	done
2008	868444	application/x-xz	NULL	Content-Length: 3020 Content-Type: application/x-x...	13f397ac3071b09e265e3bb907246d	1	done
					tex/latex/showlab...		
2008	868443	application/octet-stream	NULL	Content-Length: 10183 Content-Type: application/oc...	NULL	0	done
2008	868442	application/x-bzip2	NULL	Content-Length: 540345 Content-Type: application/x...	190a649378a3794e420172a8088459 libwpd-0.9.1/◆◆◆◆◆...	1	done
2008	868441	application/zip	NULL	Content-Length: 1190258 Content-Type: application/...	passivetex/test/Makefile all: teiu5 teimath exerci...	1	done

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Identification cascade

- Image Magick



sessionid	fileid	magick	width	height	xres	yres	thumb	fullinfo
2003	224175	PNG	32	32	28.34 PixelsPerCentimeter	28.34 PixelsPerCentimeter	[BLOB - 2.1 KiB]	Format: PNG; Geometry: 32x32; xres: 28.34 PixelsPerCentimeter
2003	224176	PNG	32	32	28.32 PixelsPerCentimeter	28.32 PixelsPerCentimeter	[BLOB - 2 KiB]	Format: PNG; Geometry: 32x32; xres: 28.32 PixelsPerCentimeter
2003	224177	PNG	32	32	28.33 PixelsPerCentimeter	28.33 PixelsPerCentimeter	[BLOB - 3.1 KiB]	Format: PNG; Geometry: 32x32; xres: 28.33 PixelsPerCentimeter
2003	224178	PNG	32	29	28.34 PixelsPerCentimeter	28.34 PixelsPerCentimeter	[BLOB - 4.1 KiB]	Format: PNG; Geometry: 32x29; xres: 28.34 PixelsPerCentimeter
2003	224179	PNG	 xd xd002 #1 ger gif Tafel-6-Bil kittler/moss		28.66 PixelsPerCentimeter	[BLOB - 3.1 KiB]	Format: PNG; Geometry: 32x32; xres: 28.66 PixelsPerCentimeter	
2003	224180	PNG	 xd xd002 #1 ger gif Tafel-6-Bil kittler/moss		28.29 PixelsPerCentimeter	[BLOB - 2.2 KiB]	Format: PNG; Geometry: 32x32; xres: 28.29 PixelsPerCentimeter	
2003	224181	PNG	 xd xd002 #1 ger gif Tafel-6-Bil kittler/moss		28.32 PixelsPerCentimeter	[BLOB - 2.9 KiB]	Format: PNG; Geometry: 32x32; xres: 28.32 PixelsPerCentimeter	
2003	224182	PNG	 xd xd002 #1 ger gif Tafel-6-Bil kittler/moss		28.31 PixelsPerCentimeter	[BLOB - 3 KiB]	Format: PNG; Geometry: 32x32; xres: 28.31 PixelsPerCentimeter	
2003	224183	PNG	32	32	72 Undefined	72 Undefined	[BLOB - 1.6 KiB]	Format: PNG; Geometry: 32x32; xres: 72 Undefined; ...
2003	224184	PNG	32	32	28.34 PixelsPerCentimeter	28.34 PixelsPerCentimeter	[BLOB - 2.4 KiB]	Format: PNG; Geometry: 32x32; xres: 28.34 PixelsPerCentimeter
2003	224185	PNG	32	32	28.34 PixelsPerCentimeter	28.34 PixelsPerCentimeter	[BLOB - 2.9 KiB]	Format: PNG; Geometry: 32x32; xres: 28.34 PixelsPerCentimeter
2003	224186	PNG	32	32	72 Undefined	72 Undefined	[BLOB - 3 KiB]	Format: PNG; Geometry: 32x32; xres: 72 Undefined; ...
2003	224187	PNG	34	34	28.3 PixelsPerCentimeter	28.3 PixelsPerCentimeter	[BLOB - 2.6 KiB]	Format: PNG; Geometry: 34x34; xres: 28.3 PixelsPerCentimeter
2003	224188	PNG	32	32	72 Undefined	72 Undefined	[BLOB - 1.6 KiB]	Format: PNG; Geometry: 32x32; xres: 72 Undefined; ...
2003	224189	PNG	32	32	72 Undefined	72 Undefined	[BLOB - 1.2 KiB]	Format: PNG; Geometry: 32x32; xres: 72 Undefined; ...
2003	224190	PNG	32	32	28.34 PixelsPerCentimeter	28.34 PixelsPerCentimeter	[BLOB - 3.1 KiB]	Format: PNG; Geometry: 32x32; xres: 28.34 PixelsPerCentimeter
2003	224191	PNG	32	32	28.32 PixelsPerCentimeter	28.32 PixelsPerCentimeter	[BLOB - 3.1 KiB]	Format: PNG; Geometry: 32x32; xres: 28.32 PixelsPerCentimeter
2003	224192	PNG	32	32	28.33 PixelsPerCentimeter	28.33 PixelsPerCentimeter	[BLOB - 2.3 KiB]	Format: PNG; Geometry: 32x32; xres: 28.33 PixelsPerCentimeter
2003	224193	PNG	32	32	28.34 PixelsPerCentimeter	28.34 PixelsPerCentimeter	[BLOB - 2.2 KiB]	Format: PNG; Geometry: 32x32; xres: 28.34 PixelsPerCentimeter

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Identification cascade

- avconv/ffmpeg

sessionid	fileid	thumb	fullinfo
1001	1530	NULL	/Primaerbestand/Kittler,_Friedrich_Adolf/1_Origina...
1001	1531	NULL	/Primaerbestand/Kittler,_Friedrich_Adolf/1_Origina...
1001	1532	NULL	/Primaerbestand/Kittler,_Friedrich_Adolf/1_Origina...
1001	3878	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...
1001	3879	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...
1001	8826	NULL	Truncating packet of size 1024 to 502 Guessed Chan...
1001	8827	NULL	[wav @ 0x633240] max_analyze_duration 5000000 reac...
1001	8828	NULL	[mp3 @ 0x633240] max_analyze_duration 5000000 reac...
1001	8829	NULL	/Primaerbestand/Kittler,_Friedrich_Adolf/1_Origina...
1001	8830	NULL	[wav @ 0x633240] max_analyze_duration 5000000 reac...
1001	8836	NULL	Guessed Channel Layout for Input Stream #0.0 : st...
1001	8838	NULL	[wav @ 0x633240] max_analyze_duration 5000000 reac...
1001	8840	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...
1001	8841	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...
1001	8842	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...
1001	8843	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...
1001	8844	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...
1001	8845	NULL	Guessed Channel Layout for Input Stream #0.0 : mo...



IRONMAIDEN aka Indexer

Identification cascade

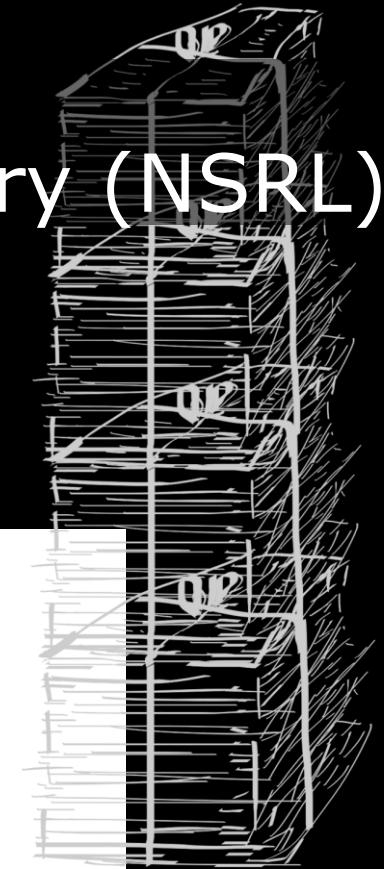
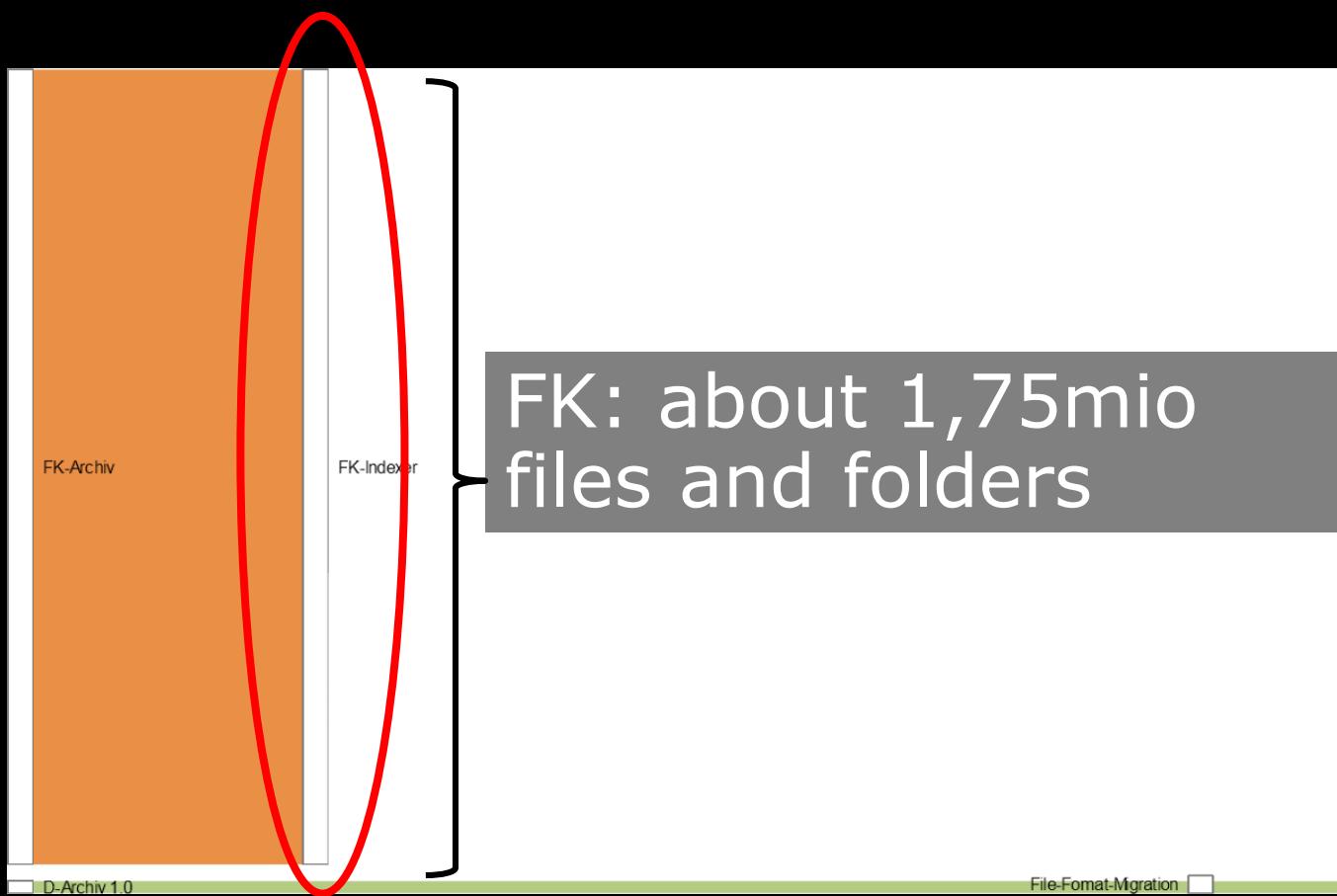
- Additional fulltext

sessionid	fileid	content
1001	1984	Philosophie der Literatur, Berlin 10 Hinrichs, Nie...
1001	1986	Philosophien der Literatur / Weimar Deutschsprach...
1001	1990	Philosophie der Literatur, Berlin, 12 Nietzsche, F...
1001	1992	[alt Resume] Die letzte Vorlesung begann damit, Re...
1001	1995	Hegel, Ästhetik heißt besser Philosophie der schön...
1001	2001	Rosenkranz, Mittelalter IV keine literarische Arb...
1001	2012	Philosophien der Literatur / Berlin 13 Scherer, Fr...
1001	2064	Margaretmary Daley The Gendered Eye of the Beholde...
1001	2066	Margaretmary Daley The Gendered Eye of the Beholde...
1001	2073	Pure Sex Where does it come from? Pure sex. V...
1001	2262	Heid6 Weg zur Sprache 242 der Sprache ohne Seiten...



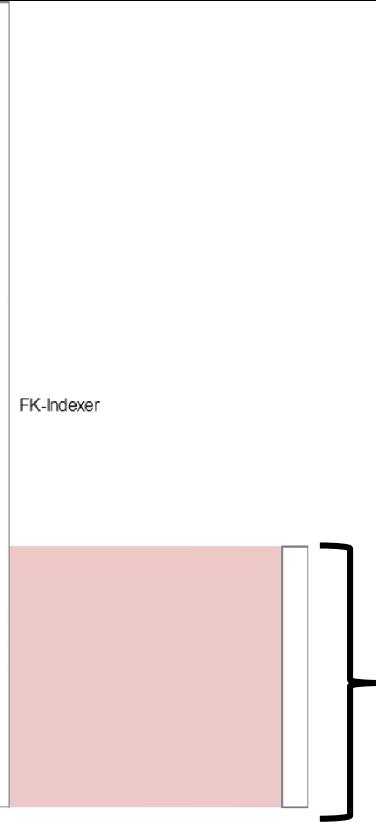
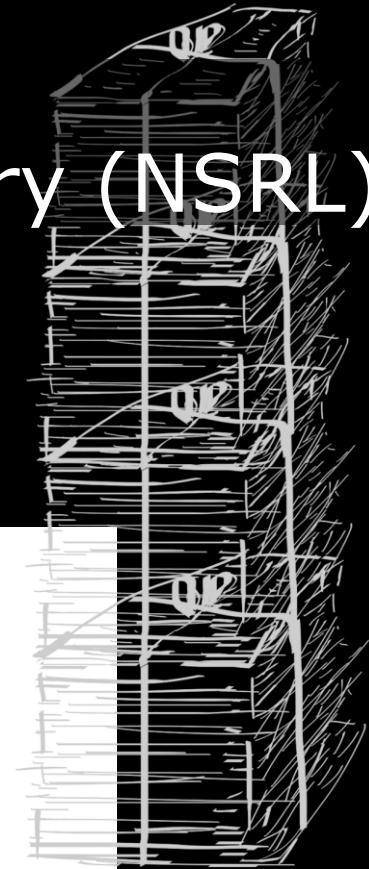
IRONMAIDEN aka Indexer

National Software Reference Library (NSRL)



IRONMAIDEN aka Indexer

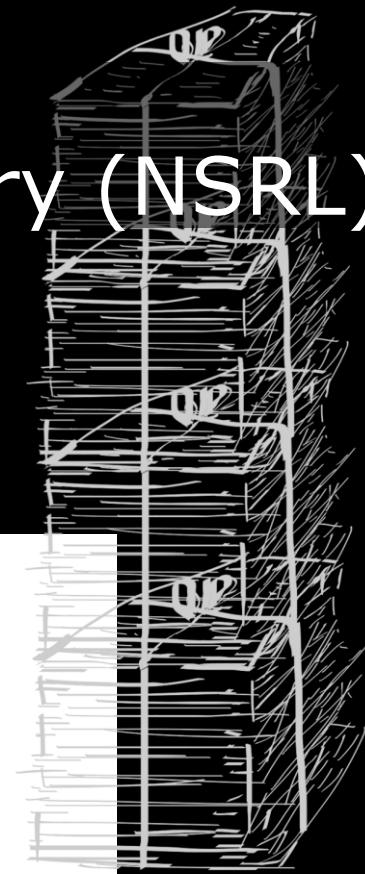
National Software Reference Library (NSRL)



NSRL hits:
about 567.000
application and system
files (not from FK)

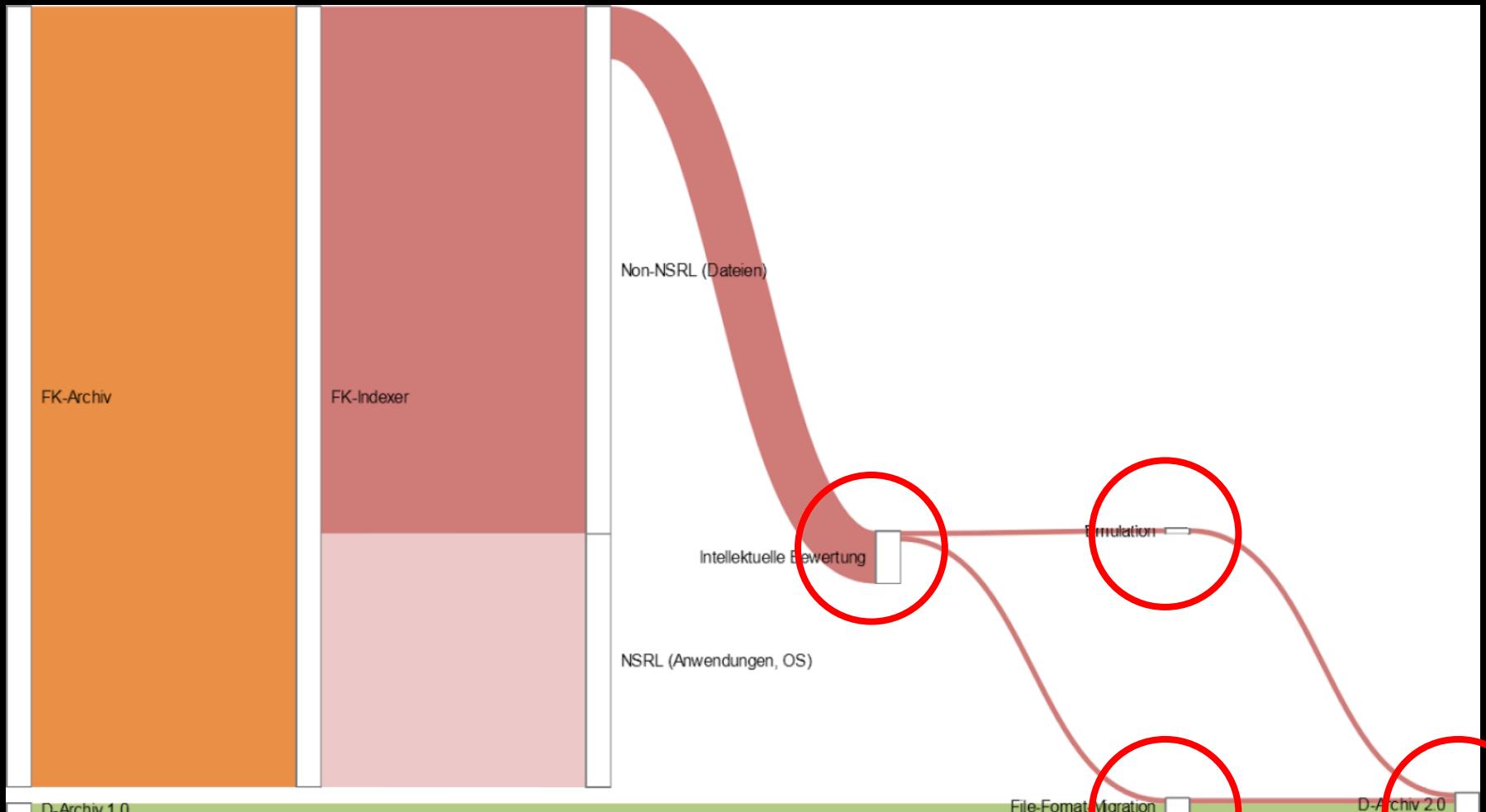
IRONMAIDEN aka Indexer

National Software Reference Library (NSRL)



IRONMAIDEN aka Indexer

National Software Reference Library (NSRL)



IRONMAIDEN aka Indexer

National Software Reference Library (NSRL)

sessionid	fileid	name	path	filetype	filesize	md5	filectime	filemtime	fileatime
4078	1749382	README		file	10579	f4ef68217eec088bff6417de0f86d865	1980-01-01 00:00:00	1990-07-06 02:00:00	1980-01-01 00:00:00
4078	1749383	CALLTEST.C		file	389	8cff8af7677b8078747a8387d3e49f55	1980-01-01 00:00:00	1990-07-06 02:00:00	1980-01-01 00:00:00
4078	1749384	PLOST.C		file	512	b6c54a9047c021bd21e9a059a8e9d87	1980-01-01 00:00:00	1990-07-06 02:00:00	1980-01-01 00:00:00
4078	1749385	PRIME0.C		file	725	b68ddd9aadcc53be90012614f3937d29b	1980-01-01 00:00:00	1990-07-06 02:00:00	1980-01-01 00:00:00
4078	1749386			file	275	ce4c29a6d5b56bef048abb470ca87cf4	1980-01-01 00:00:00	1990-07-06 02:00:00	1980-01-01 00:00:00
4078	1749387			file	356	d8954edbe7e27dbf8fd4d2acce85cf9	1980-01-01 00:00:00	1990-07-06 02:00:00	1980-01-01 00:00:00

sessionId 4078 =
Floppy 077, 3,5", vfat,
ca. 1992

MD5	FileName	FileSize	ProductCode	OpSystemCode	SpecialCode
8CFF8AF7677B8078747A8387D3E49F55	CALLTEST.C	389	5593	Gen	

sessionid	fileid	FileName	FileSize	ProductCode	OpSystemcode	Specialcode
4078	1749383	CALLTEST.C	389	5593	Gen	
4078	1749384	PLOST.C	512	5593	Gen	
4078	1749385	PRIME0.C	725	5593	Gen	

ProductCode	ProductName	ProductVersion	OpSystemCode	MfgCode	Language	ApplicationType	
5593	Borland C++	Unknown	DOS20	Borland	Unknown	Programming environment	
5593	Embarcadero C++	Unknown	Gen	Borland	Unknown	Programming environment	
5593	Borland C++	Unknown	WIN30	Borland	Unknown	Programming environment	
5593	Borland C++	Unknown	msdos30	Borland	Unknown	Programming environment	

IRONMaidEN aka Indexer

The web interface

Search field

Home About

 Search for your documents..

Digitaler Nachlass Friedrich A. Kittler

Native lucene query

1756984 Ergebnisse (0.009 Sekunden)

Expertensuche

Prev 1 2 3 ... 175699 Next

1 Page



hd hd04-p01 #2008.869948 ⏷ 🔒 ⌚ ⏴ ⏵ ⏶ ⏷ ⏸ ⏹ lzma texlive-module-paper.source-2008.tar.lzma application/octet-stream 16.2 KiB 2008-09-09T18:30:51Z

Search results

IRONMÄDEN aka Indexer

Citation of files

The screenshot shows a file entry in the IRONMÄDEN aka Indexer application. At the top, there's a toolbar with icons for file operations like Open, Save, and Delete. Below the toolbar, the file details are listed: 'hd' (highlighted), 'hd04-p01', '#2008.869943', a lock icon, a pencil icon, a clock icon, and three small colored circles. The file name is 'texlive-module-coollist.source-2008.tar.lzma', its type is 'application/octet-stream', its size is '6.18 KiB', and it was modified on '2008-09-09T18:29:53Z'. The path is 'usr/portage/distfiles'. Below this, there are tabs for 'File', 'LibMagic', 'GVFSinfo', 'TIKA', and 'Cite this item' (which is currently selected). A large text area displays the citation information: '#2008.869943, application/octet-stream (2008-09-09T18:29:53Z). texlive-module-coollist.source-2008.tar.lzma. In: Bestand A:Kittler/DLA Marbach. hd04-p01:/usr/portage/distfiles [hd, 6.18 KiB]'.

#2008.869943, application/octet-stream (2008-09-09T18:29:53Z).
texlive-module-coollist.source-2008.tar.lzma. In: Bestand A:Kittler/DLA
Marbach. hd04-p01:/usr/portage/distfiles [hd, 6.18 KiB].