

Pre-production/Production Database

UC Davis

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Outline

- What is the database
- What are the database components
- How the database works
- Some advantages
- Conclusion
- Demonstration

Hybrid Tracker

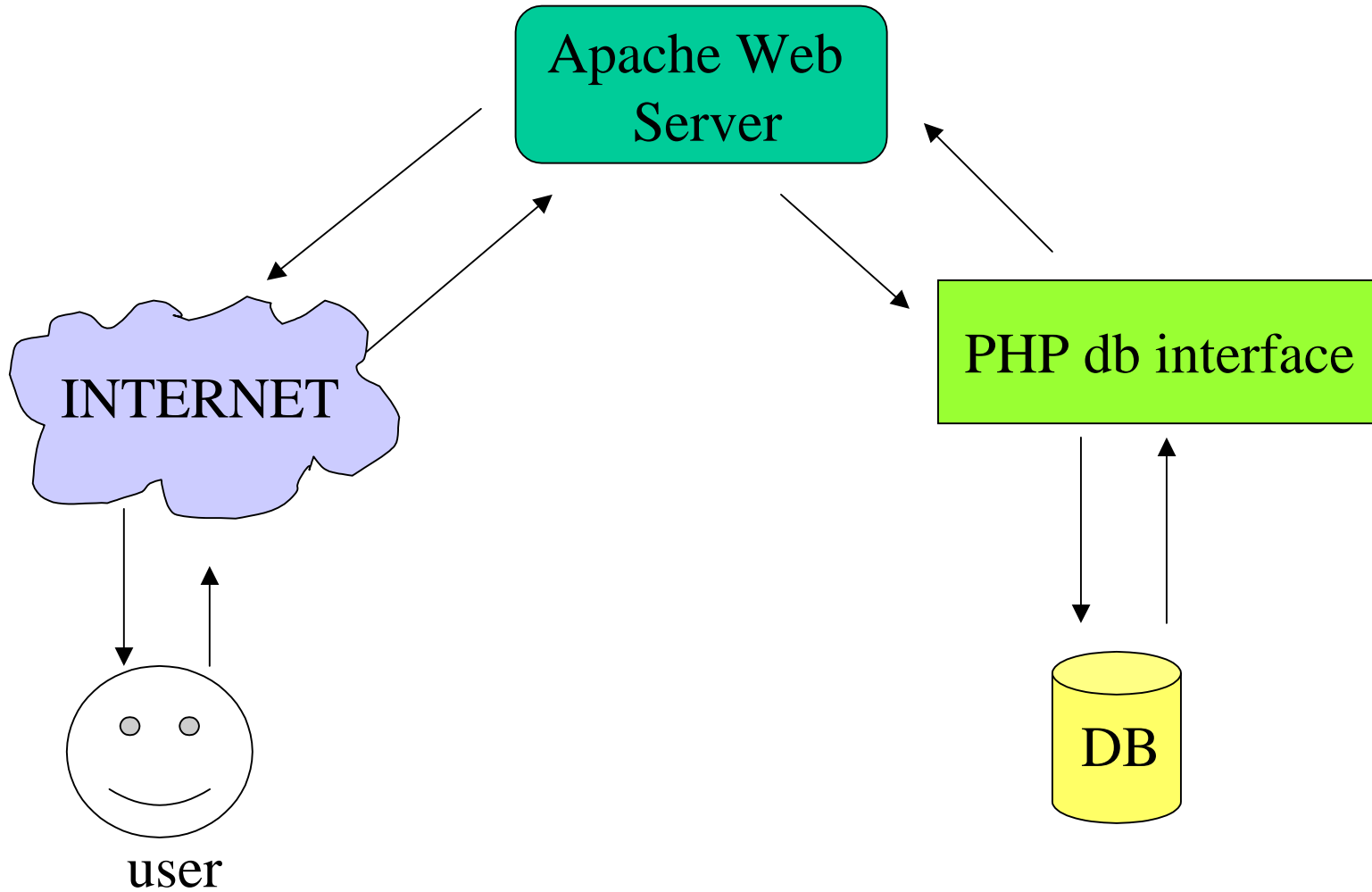
- What is this Hybrid database?
 - It is a web-accessible-database system.
 - Records
 - Shipping/Arrival Dates
 - Test Results
 - Hybrid Repairs
 - Can monitor Production Statistics
 - It only handles the first few production stages of Run2b
 - Wafer Probing
 - Substrates & Assembly
 - Initial Testing at LBNL
 - Burn-In at UC Davis
 - Also keeps track of Bus Cables

Software Components

- Hybrid Tracker Components
 - Apache Web Server 1.3.27
 - Mysql Database 3.23.56-1
 - PHP 4.3.2 (scripting language)

Fortunately these are all open source software tools which means the licenses do not need to be provided for in the budget.

How it works



Usability

- **User Interface**
 - The user interface was designed to be as intuitive and as natural as possible, placing minimal reliance on documentation.
 - Simple to access and update information.
- **Accuracy**
 - Relies on user input, so the user must keep up otherwise the system will report outdated information.
- **Security**
 - Only people with accounts on the system will be able to log in and modify the database tables.
 - To ensure that passwords are protected, SSL encryption is used.

Advantages

- Central repository for production information
- Accessibility
- **Production Monitoring / Analysis**
- Records Hybrid Repairs
- Evolution
- Hybrid Location Tracking
- Backed up as frequently as needed

Conclusion

- **Functionality**
 - Hybrid Tracker records important workflow information, and test results, as well as repair records and location of hybrids.
- **Status**
 - Aside from a few additional features we'd like to add, Hybrid tracker is ready to usage.
- **Evolution**
 - Some adjustments are expected during pre-production
 - Unless there is high demand, Hybrid Tracker will only track production stages up through Burn-In.

Demonstration of Database Features

Login Page



Run2B Hybrid Uber Tracker Database

Login:

Password:

Main Page of Hybrid Tracker



Production Statistics for Wafers and Hybrids

Run2B Hybrid Tracker beta

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You are here: Production Statistics

Wafer Productions Statistics:

There are 9 wafers in Production

Production Stage:	Probed	Sent to Dicing	Back from Dicing
Completed/Total	7/9	6/9	5/9

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Hybrid Production Statistics:

There are 10 assembled hybrids in Production

Production Stage:	Assembled Substrates	Hybrid Initial Testing	Hybrid Burn In	Hybrid Final Test	Module Construction	Slave Construction
Completed/Total	10 / 60	10 / 10	0 / 10	0 / 10	0 / 0	0 / 0

View Production Summary for a Particular Hybrid:

H000

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Hybrid Repair Records

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You are here: Hybrid Repairs

Note: Each repair is a separate entry; one hybrid can have multiple entries for multiple repairs

Hybrid Serial	Repair Date	Repaired By	Short	Faulty Chip	Wire Bonds	Comments
H000	2002-08-02	Paul	DG-AG	Chip1:C000	--	
H000	2002-05-12	John Freeman		Chip3:C002	--	broken wirebond
H000	2002-05-25	Eric Feng		Chip1:C000	--	Wirebonds broke again.
H000	2002-06-02	Marc Weber		Chip1:C000	--	bad channel fixed
H001	2003-08-17	Marc Weber		Chip2:C005	--	broken wirebonds
H001	2002-06-03	Eric Feng		Chip2:C005	--	I think we need to get purebrids
H008	2002-06-01	Marc Weber		Chip4:C033	--	AVDD was shorted to AVDD gnd
H008	2002-06-02	Paul		Chip4:C033	--	Bad capacitor

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Wafer Probing and Dicing Information

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You are here: Wafer Probing

List of Wafers

Wafer ID	Probed Date	Tester	Sent To Dicing	Received from Dicing	Comments
W000	2003-04-02	Wren Morrow	2003-04-05	2003-04-20	view update
W001	2003-05-02	Wren Morrow	2003-04-06	2003-04-21	add
W002	2003-06-02	not probed	2003-04-07	2003-04-22	add
W003	2003-07-02	Candice Morrow	not sent	not back	view update
W004	not done	not probed	not sent	not back	view update
W005	2003-04-23	Wren Morrow	2003-04-25	2003-05-10	add
W006	2003-05-16	Wren Morrow	2003-05-20	2003-05-29	add
W007	2003-06-12	Wren Morrow	2003-06-20	not back	add
W6789	not done	not probed	not sent	not back	add

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Actions:
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[Add new Wafer to Database](#)

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Information on Chips From a Given Wafer

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Chips made from Wafer W000
(Alternate View of Chips on Wafer)

Position	Chip ID	Test Result	Detailed Summary	DB Location
1	C000	A	view	/WaferProbing/data/chip0.db
2	C001	A	view	/WaferProbing/data/chip1.db
3	C002	A	view	/WaferProbing/data/chip2.db
4	C003	A	view	/WaferProbing/data/chip3.db
5	C004	A	view	/WaferProbing/data/chip4.db
6	C005	A	view	/WaferProbing/data/chip5.db
7	C006	A	view	/WaferProbing/data/chip6.db
8	C007	C	view	/WaferProbing/data/chip7.db
9	C008	A	view	/WaferProbing/data/chip8.db
10	C009	A	view	/WaferProbing/data/chip9.db
11	C010	Fail	view	/WaferProbing/data/chipa.db
12	C011	A	view	/WaferProbing/data/chipb.db
13	C012	A	view	/WaferProbing/data/chipc.db
14	C013	Fail	view	/WaferProbing/data/chipd.db
15	C014	A	view	/WaferProbing/data/chipe.db
16	C015	C	view	/WaferProbing/data/chipf.db
17	C016	A	view	/WaferProbing/data/chipg.db
18	C017	A	view	/WaferProbing/data/chiph.db
19	C018	A	view	/WaferProbing/data/chipi.db
20	C019	A	view	/WaferProbing/data/chipj.db
21	C020	A	view	/WaferProbing/data/chipk.db
22	C021	A	view	/WaferProbing/data/chipL.db
23	C022	A	view	/WaferProbing/data/chipm.db
24	C023	A	view	/WaferProbing/data/chipn.db
25	C024	A	view	/WaferProbing/data/chipo.db
26	C025	A	view	/WaferProbing/data/chipp.db
27	C026	A	view	/WaferProbing/data/chipq.db

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Chip Information Related to Position on Wafer

Chip Color Indicates Quality

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http://localhost/wafer_probing.php?control=waferpict&wafer_id=W000

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Run2B Hybrid Tracker beta

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				C000	C001	C002	C003	C004	C005	C006	C007				
				C008	C009	C010	C011	C012	C013	C014	C015				
			C016	C017	C018	C019	C020	C021	C022	C023	C024	C025			
			C026	C027	C028	C029	C030	C031	C032	C033	C034	C035			
		C036	C037	C038	C039	C040	C041	C042	C043	C044	C045	C046	C047		
		C048	C049	C050	C051	C052	C053	C054	C055	C056	C057	C058	C059		
	C060	C061	C062	C063	C064	C065	C066	C067	C068	C069	C070	C071	C072	C073	
	C074	C075	C076	C077	C078	C079	C080	C081	C082	C083	C084	C085	C086	C087	
C088	C089	C090	C091	C092	C093	C094	C095	C096	C097	C098	C099	C100	C101	C102	C103
C104	C105	C106	C107	C108	C109	C110	C111	C112	C113	C114	C115	C116	C117	C118	C119
C120	C121	C122	C123	C124	C125	C126	C127	C128	C129	C130	C131	C132	C133	C134	C135
C136	C137	C138	C139	C140	C141	C142	C143	C144	C145	C146	C147	C148	C149	C150	C151
C152	C153	C154	C155	C156	C157	C158	C159	C160	C161	C162	C163	C164	C165	C166	C167
C168	C169	C170	C171	C172	C173	C174	C175	C176	C177	C178	C179	C180	C181	C182	C183
C184	C185	C186	C187	C188	C189	C190	C191	C192	C193	C194	C195	C196	C197	C198	C199

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Hybrid Initial Testing Information

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http://localhost/init_test.php Search

Mail Home Radio My Netscape Search Bookmarks

UC Davis Run2B Hybrid Database

Run2B Hybrid Tracker beta

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List of Hybrids

Hybrid ID	Arrived at LBL	Inspection	Bonding	Svxscope	Svxscope Tester	Htest	Htest Tester	Sent to Burnin	Comment
H000	2003-06-27	pass	not done	pass	N/A	pass	Eric Feng	2003-06-29	add
H001	2003-06-27	pass	done	fail	Stacy Stocker	fail	Marc Weber	2003-06-29	add
H002	2003-06-27	pass	not done	pass	N/A	fail	John Freeman	2003-06-29	add
H003	2003-06-27	fail	not done	pass	N/A	pass	John Freeman	2003-06-30	view update
H004	2003-06-27	pass	done	pass	Gina Tuazon	pass	John Freeman	2003-06-30	add
H005	2003-06-27	pass	done	pass	Daniel Underhill	pass	John Freeman	2003-06-30	add
H006	2003-06-27	pass	done	pass	Ryan Sahadeo	pass	John Freeman	2003-06-30	add
H007	2003-06-27	pass	done	fail	Daniel Underhill	fail	John Freeman	2003-06-29	add
H008	2003-06-27	fail	done	pass	Chris Bryce	pass	John Freeman	2003-06-30	add
H009	2003-06-27	pass	done	fail	Ryan Sahadeo	fail	John Freeman	2003-06-29	add

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Add Hybrid Repairs

[Add New Stuffed Hybrid to Database](#)

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Testing and Repair Information for Specific Hybrid

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http://localhost/init_test.php?control=hybrid&id=H000&dummy=1

UC Davis Run2B Hybrid Database

run2B hybrid tracker beta

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Hybrid ID	Chip1	Chip2	Chip3	Chip4	Hybrid Type	Assembly Company
H000	C000	C001	C002	C003	outer	LBNL

Assembler Name: Joe

Testing Information

Test	Status	Date Performed	Performed By
Visual Inspection	pass	2003-06-27	N/A
Bonding	not done		Alejandra Escandel
Svxscope	pass	2003-06-29	----
Htest	pass view	2003-06-29	Eric Feng

Htest DB location: /home/htest/data/

Repairs ([Add Repair](#))

Date	Person	Short	Faulty Chip	Broken bonds	Comment
2002-08-02	Paul	DG-AG	Chip1	--	----
2002-06-02	Marc Weber		Chip1	--	view
2002-05-25	Eric Feng		Chip1	--	view
2002-05-12	John Freeman		Chip3	--	view

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Hybrid Burn-in Information

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http://localhost/burnin.php Search

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List of Hybrids

Hybrid ID	Arrived	Start Time	Hours Burned	Sent to FNAL	Comment
H000	2003-07-01	2003-07-03 12:23:32	48:40	not sent	view update
H001	2003-07-01	2003-07-03 12:33:32	48:40	2003-07-06	view update
H002	2003-07-01	2003-07-03 12:43:32	48:40	2004-07-06	view update
H003	2003-07-01	2003-07-03 03:41:00	48:40	not sent	view update
H004	2003-07-01	2003-07-03 13:23:32	48:40	2003-07-07	view update
H005	2003-07-01	2003-07-03 13:23:00	48:40	not sent	view update
H006	2003-07-01	2003-07-03 05:09:00	48:40	not sent	view update
H007	2003-07-01	2003-07-03 13:23:32	48:40	2003-07-06	add

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Form to Record Hybrid Repair

File Edit View Go Bookmarks Tools Window Help

http://localhost/bumin.php?control=mod_comment&id=H001&num=5 Search

Mail Home Radio My Netscape Search Bookmarks

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Run2B Hybrid Tracker beta

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Repair Person:

Repair Date: Year Month Day

Repair Options

Short Faulty Chip Broken Bonds

Additional Repair Notes

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