Database for Anode Board Production and Testing

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Oracle was selected by CERN in 80-s.

Long time available and well developped system.

Very good support.

Many tools
(*like SQL, SQL*Plus, PL/SQL, precompilers (Pro*FORTRAN, Pro*C/C++ ...), JDBC, OAS, iAS, Oracle XML Developer Kit, ...*)

Was designed as **RDBMS**
- Relational Database Management System.

Information - in **Tables**

Since version 8 - new features.

Unstructured data - **LOB** (Large OBjects (up to 4 Gbytes)):

❏ **BLOB** (Binary Large Objects)

❏ **CLOB** (Character Large Objects)

❏ **BFILE** (Reference to a file)

Internet access $->$ **Oracle HTTP Server.**

BLOB + Internet access

$\Downarrow$

Upload and download files.

New coming version 9i - object oriented

Currently in use:

Oracle 8i

Oracle 9i Application Server

ORACLE at CERN

Public Services:
————————————

Central Database - General purpose
environment
Development Database - Test and deployment
of new applications
Case Database   - Designer/2000 environment

Private Services:
————————————

ALARM Oracle database
CHORUS Oracle database
CRYOGENICS Oracle database
EDMS Oracle database
IT/CS Oracle database
LEP logging Oracle database
LEP measurements Oracle database
REMEDY Oracle database
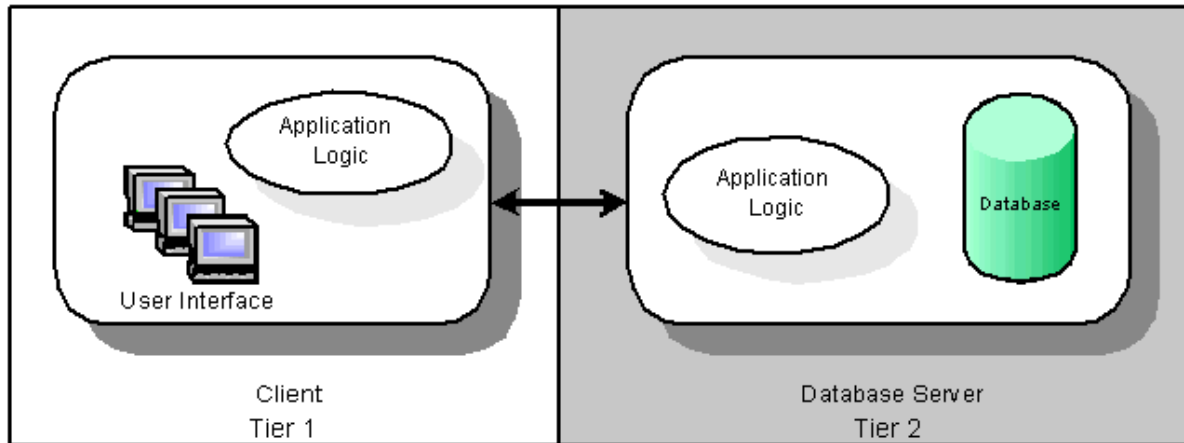**Radio Frequency Oracle database**
SL division development Oracle database
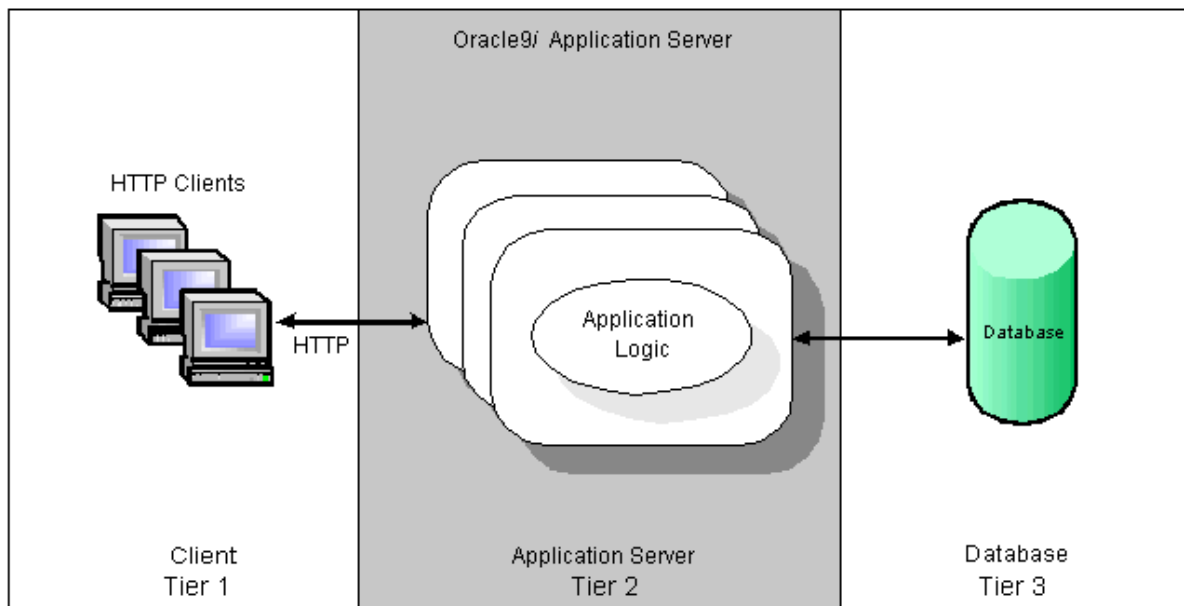**SPS measurements Oracle database**
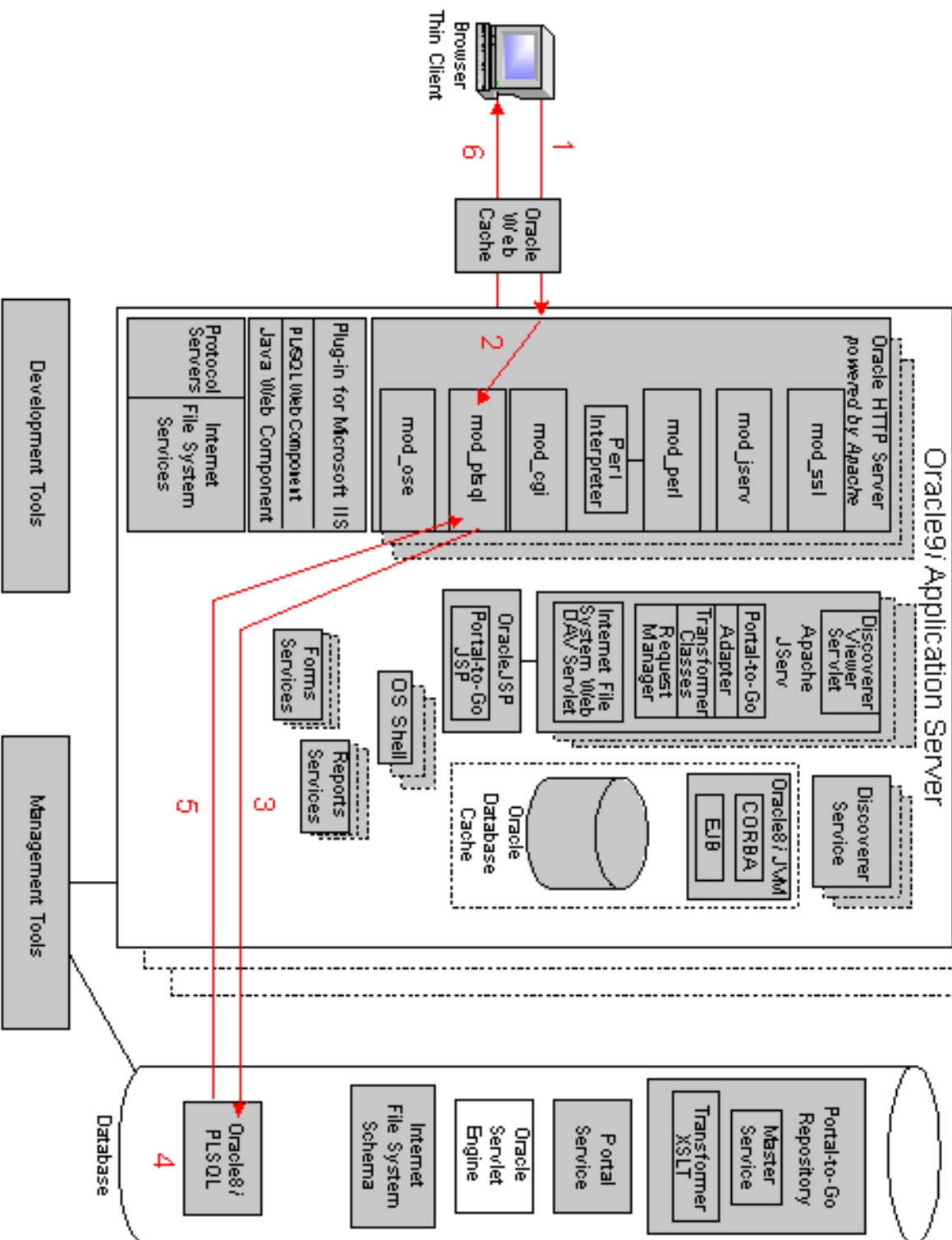**Tape Management System Oracle database**

Two-Tier Computing Model

Three-tier Oracle9i Application Server Architecture

Oracle9i Application Server

Browser Thin Client

1 6

Oracle Web Cache

2

Oracle9i Application Server

Oracle HTTP Server *powered by Apache*

- mod_ssl
- mod_jserv
- mod_perl
- Perl Interpreter
- mod_cgi
- mod_plsql
- mod_ose

- Java Web Component
- PL/SQL Web Component
- Plug-in for Microsoft IIS
- Protocol Servers
- Internet File System Services

- Discoverer Viewer Servlet
- Apache JServ
- Portal-to-Go Adapter
- Transformer Classes
- Request Manager
- Internet File System Web DAV Servlet
- Oracle JSP Portal-to-Go JSP
- OS Shell
- Forms Services
- Reports Services

- Discoverer Service
- Oracle8i JVM
  - EJB
  - CORBA
- Oracle Database Cache

Development Tools

Management Tools

5 3

Database

4

- Oracle8i PL/SQL
- Internet File System Schema
- Oracle Servlet Engine
- Portal Service
- Portal-to-Go Repository
  - Master Service
  - Transformer XSLT

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1. The Oracle HTTP Server receives a PL/SQL Server Page request, through Oracle Web Cache, from a client browser.

2. The Oracle HTTP Server routes the request to mod_plsql.

3. The request is forwarded by mod_plsql to Oracle8i PLSQL. By using the configuration information stored in DAD (Database Access Descriptor), mod_plsql connects to the database, prepares the call parameters, and invokes the PL/SQL procedure in the database.

4. The PL/SQL procedure generates an HTML page using data and stored procedures accessed from the database.

5. The response is returned to mod_plsql.

6. The Oracle HTTP Server sends the response, through Oracle Web Cache, to the client browser.

ORACLE

⇓

Accessed from PL/SQL stored procedures

⇓

Accessed from HTTP Server (iAS)

⇓

URL addresses:

http://oraweb03.cern.ch:9000/pls/cms_anode_boards.dev/
display.board
http://oraweb03.cern.ch:9000/pls/cms_anode_boards.dev/
board_files.board_list?p_board_num=20001
http://oraweb03.cern.ch:9000/pls/cms_anode_boards.dev/
board_files.board_select

PL/SQL Web Toolkit - facility to create HTML pages.

Packages:

htp, htf – generate HTML tags
owa   – subprograms and functions

Main mode: saving files.

Files contain measurements and results of analysis.

Each board - few files (text (numbers) + pictures).

Pictures can be of any format: jpeg, gif, ps, compressed ps.

HTML page: select board number

$$\Downarrow$$

list of files for requested board

Click on file name $\Rightarrow$ view

Shift-click $\Rightarrow$ save in external file

Files - universal and flexible mean to save information.

Main results and status of boards - in tables.

Location: `http://oraweb03:9000/pls/cms_anode_boards/board_files.board_list`

The board selected is => 20002

Board measurements

File	Size	Type	Date of file	Board	Run	Condition
F11895/mt100001_20002_1.dat	3384	text/plain	14-MAY-2001 12:55:07	20002	100001	1
F31023/rt100001_20002_1.dat	2382	text/plain	14-MAY-2001 12:59:06	20002	100001	1
F5196/th100001_20002_1.dat	2273	text/plain	13-MAY-2001 21:41:46	20002	100001	1
F10164/th100001_20002_2.dat	2263	text/plain	13-MAY-2001 21:41:53	20002	100001	2
F10648/th100001_20002_3.dat	2125	text/plain	13-MAY-2001 21:42:03	20002	100001	3
F14282/th100001_20002_4.dat	2214	text/plain	13-MAY-2001 21:42:15	20002	100001	4

Board test results

| File	Size	Type	Date of file	Board	Run
F20438/mt100001_20002.out	772	text/plain	14-MAY-2001 17:02:41	20002	100001
F12618/rt100001_20002.out	564	text/plain	14-MAY-2001 17:03:58	20002	100001
F12948/th100001_20002.out	2145	text/plain	14-MAY-2001 17:15:04	20002	100001

Pictures

File	Size	Type	Date of file	Board	Run
F25338/rt100001_20002.ps.gz	30711	application/postscript	14-MAY-2001 17:28:11	20002	100001
F4713/th100001_20002.ps.gz	63640	application/postscript	14-MAY-2001 17:30:31	20002	100001

Board to select: [ ]   Submit

Netscape access
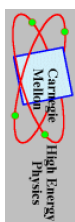
File Edit View Go Communicator   Help

Back Forward Reload Home Search Netscape Print Security Stop

Bookmarks Location: `http://oraweb03:9000/pls/cms_anode_boards/docs/F31023/rt100001_20`

Row											
0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0	0	0	0
300	0	0	0	0	0	0	0	0	0	0	0
400	429	308	445	405	414	372	199	424	151	200	329
500	426	378	440	371	305	378	378	314	351	445	371
600	256	221	245	314	204	250	250	213	243	246	228
700	183	196	196	220	196	196	196	186	178	178	217
800	176	168	179	181	179	165	179	179	150	161	193
900	156	142	166	156	159	150	151	167	153	150	174
1000	179	145	160	172	154	142	151	170	152	153	187
1100	162	136	153	164	151	151	139	168	139	148	178
1200	155	156	156	151	150	148	138	142	142	147	155
1300	137	138	128	142	148	139	135	132	132	132	167
1400	125	132	121	121	140	133	120	129	129	130	152
1500	111	120	105	110	135	118	111	122	122	119	139
1600	97	101	86	111	109	101	102	120	108	106	136
1700	89	95	88	110	104	101	95	108	94	96	120
1800	87	91	81	90	96	89	96	105	89	82	107
1900	88	85	83	91	93	87	92	87	86	80	102
2000	78	77	80	83	85	85	85	82	78	79	107
2100	69	77	73	78	81	78	78	77	84	71	98
2200	76	69	76	76	84	77	80	76	72	74	87
2300	65	66	65	77	88	82	76	78	75	72	92
2400	67	63	62	74	77	71	75	68	69	69	83
2500	64	69	61	78	85	73	74	64	70	69	81
2600	64	65	59	74	81	76	77	65	67	64	79
2700	65	63	58	73	73	72	72	62	64	63	73
2800	59	69	56	74	75	75	74	59	61	60	77
2900	60	55	53	72	70	73	75	56	58	63	68
3000	55	50	51	70	71	71	73	59	59	60	62
3100	59	52	56	67	68	68	68	54	54	59	61
3200	55	55	55	66	62	65	65	53	55	56	64
3300	52	52	52	71	67	69	69	49	56	57	66
3400	51	53	50	65	63	65	70	49	53	57	62
3500	51	52	52	64	63	64	64	49	56	55	61
3600	52	53	56	66	64	70	64	50	52	54	59
3700	50	51	48	71	66	64	64	49	51	49	61
3800	49	48	45	66	68	67	65	46	53	50	61
3900	48	51	48	62	62	60	50	42	51	45	57
4000	47	46	47	66	57	65	67	44	52	46	59

Netscape access

```
20002     3      0
 1400   180     23 101.4    100     50    180     16
    1   2.20   0.80   0.60   1.63
    2   1.69   0.70   0.56   1.21
    3   1.69   0.70   0.58   1.16
    4   1.84   0.79   0.58   1.31
    5   1.77   0.78   0.55   1.29
    6   1.61   0.76   0.68   0.96
    7   1.54   0.73   0.56   1.07
    8   2.04   0.90   0.64   1.50
    9   1.67   0.73   0.54   1.19
   10   1.58   0.70   0.51   1.10
   11   1.54   0.73   0.62   0.99
   12   1.97   0.97   0.63   1.45
   13   1.56   0.86   0.68   0.90
   14   1.59   0.73   0.60   1.04
   15   1.72   0.83   0.68   1.07
   16   1.77   0.84   0.71   1.21
```

Netscape access
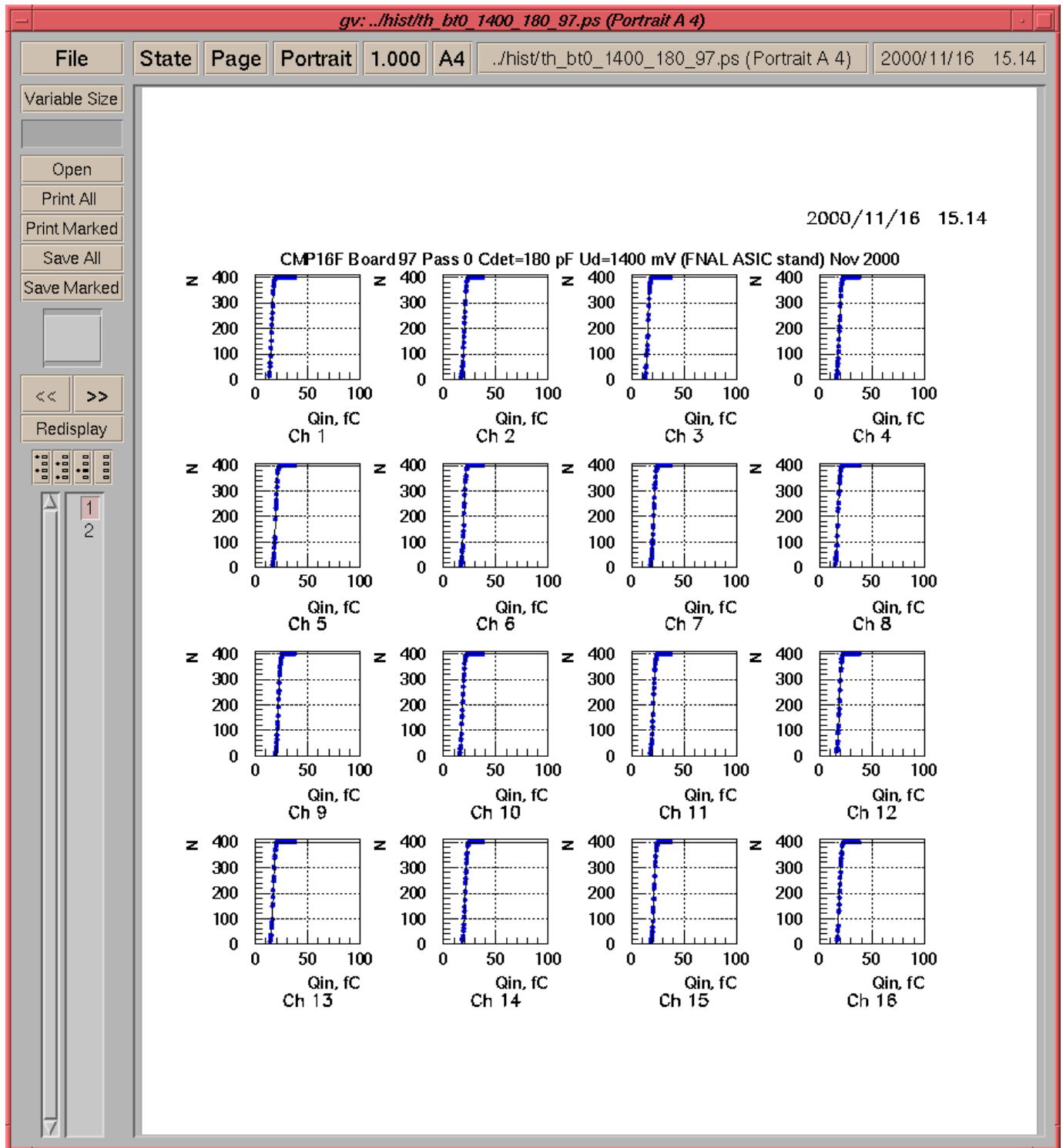
LWP - Library for WWW access in Perl.

$ua = new LWP::UserAgent;
$response = $ua→request(...URL...);
$response→content

To upload files:

Server in C
⇓
Calls Perl scripts

Save files in a structure:

CSC chamber $\Rightarrow$ object
test (one of 24) $\Rightarrow$ document

$$\Downarrow$$

files

File server $+$ Oracle catalogue
No imposed limitation on space

MTF/Travelers system
(Manufactoring and Test Folder)

System will be available by the end of July.