EPICS DB in RDB

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DLS Schema contains

- **EPICS**
  - Domain, Sub domain, Technical Area, Component, Subsystem, Record Specifier
  - Crate
  - Device
  - IOC
  - DBD
  - DBGroups
  - DB File
  - Archiver group files
  - DB file Templates
  - IOC, Carrier & IP Cards

Device Naming

- **Domain, Subdomain, Technical Area & Component**
- **Device - DD[SSS]-TT-CCCCC-NN**
- **Examples:**

  LI-VA-PIRG-01

  BR01C-MA-VSTR-01

  BS-MA-QUAD-01

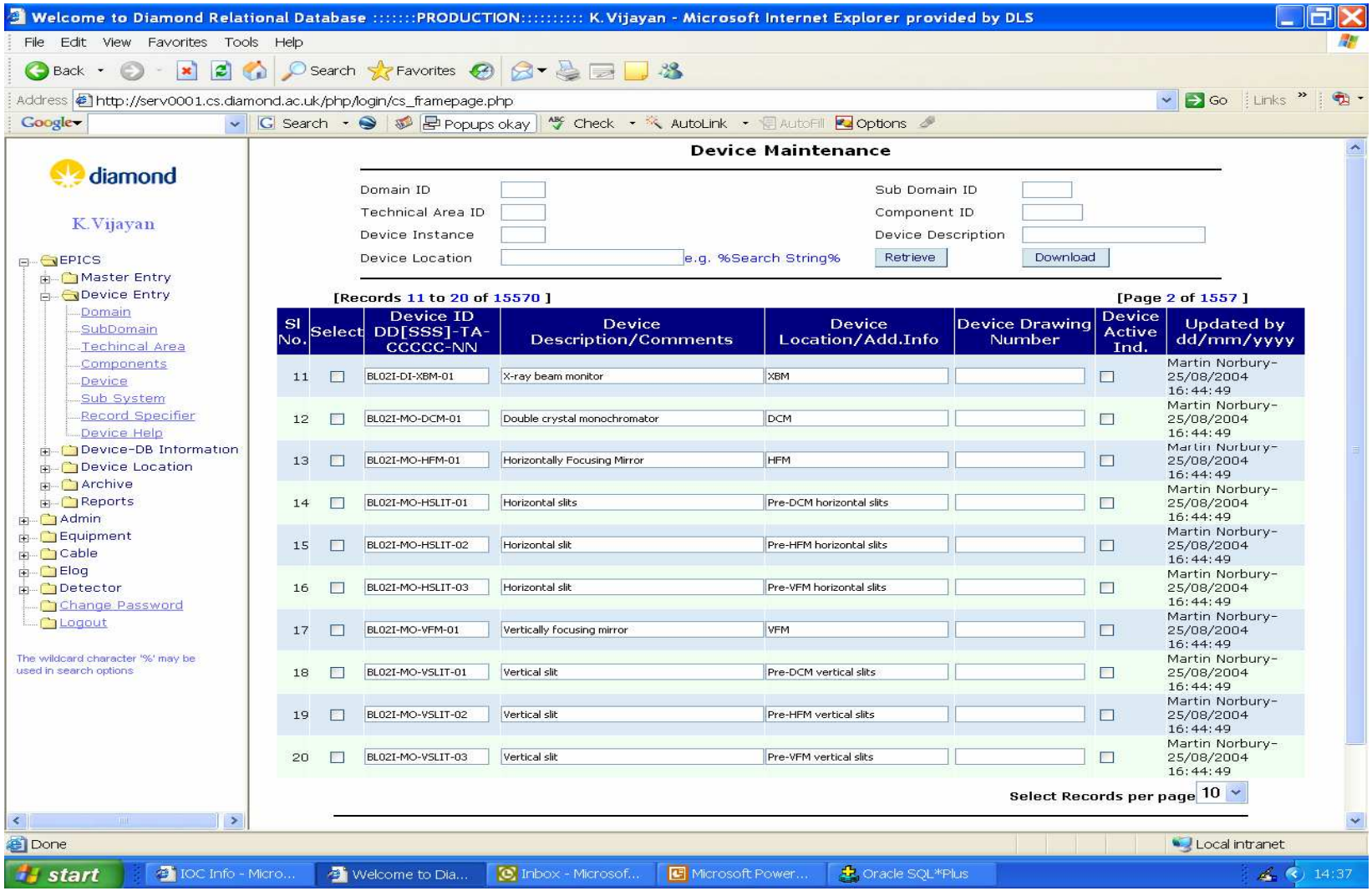
  SR01A-MA-QUAD-10

- **Subsystem**
- **Record Specifier**
- **PV Name = Device:[Subsystem]:Record Specifier**

Example:

BL06I-MO-MONO-01:AX1:HOMEF

Device


Welcome to Diamond Relational Database :::::::PRODUCTION::::::::: K.Vijayan - Microsoft Internet Explorer provided by DLS
http://serv0001.cs.diamond.ac.uk/php/login/cs_framepage.php
diamond
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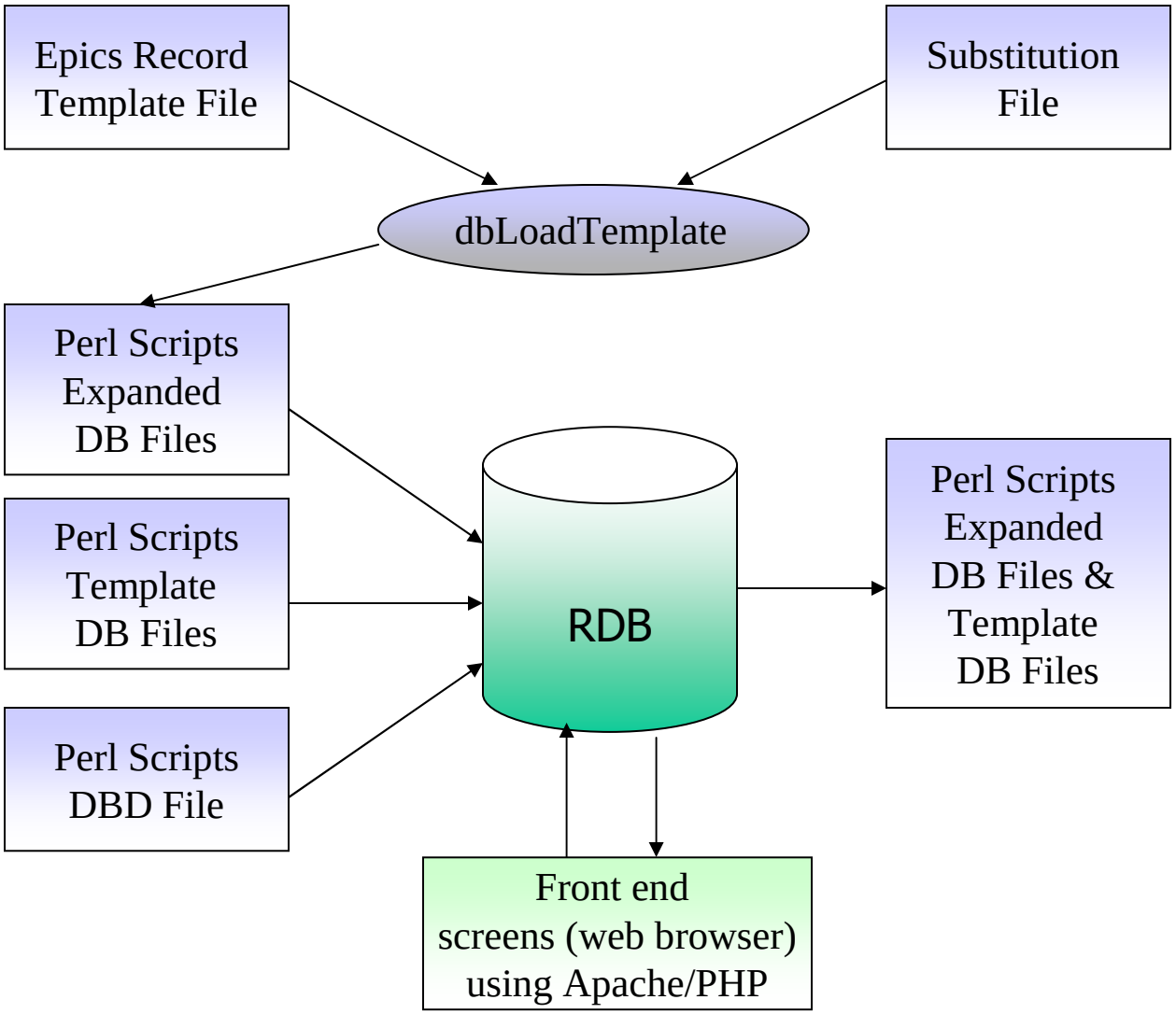
EPICS
Master Entry
Device Entry
Domain
SubDomain
Techincal Area
Components
Device
Sub System
Record Specifier
Device Help
Device-DB Information
Device Location
Archive
Reports
Admin
Equipment
Cable
Elog
Detector
Change Password
Logout
The wildcard character '%' may be used in search options
Device Maintenance
Domain ID
Sub Domain ID
Technical Area ID
Component ID
Device Instance
Device Description
Device Location
e.g. %Search String%
Retrieve
Download
[Records 11 to 20 of 15570]
[Page 2 of 1557]
Sl No.
Select
Device ID DD[SSS]-TA-CCCCC-NN
Device Description/Comments
Device Location/Add.Info
Device Drawing Number
Device Active Ind.
Updated by dd/mm/yyyy
11 BL02I-DI-XBM-01 X-ray beam monitor XBM Martin Norbury-25/08/2004 16:44:49
12 BL02I-MO-DCM-01 Double crystal monochromator DCM Martin Norbury-25/08/2004 16:44:49
13 BL02I-MO-HFM-01 Horizontally Focusing Mirror HFM Martin Norbury-25/08/2004 16:44:49
14 BL02I-MO-HSLIT-01 Horizontal slits Pre-DCM horizontal slits Martin Norbury-25/08/2004 16:44:49
15 BL02I-MO-HSLIT-02 Horizontal slit Pre-HFM horizontal slits Martin Norbury-25/08/2004 16:44:49
16 BL02I-MO-HSLIT-03 Horizontal slit Pre-VFM horizontal slits Martin Norbury-25/08/2004 16:44:49
17 BL02I-MO-VFM-01 Vertically focusing mirror VFM Martin Norbury-25/08/2004 16:44:49
18 BL02I-MO-VSLIT-01 Vertical slit Pre-DCM vertical slits Martin Norbury-25/08/2004 16:44:49
19 BL02I-MO-VSLIT-02 Vertical slit Pre-HFM vertical slits Martin Norbury-25/08/2004 16:44:49
20 BL02I-MO-VSLIT-03 Vertical slit Pre-VFM vertical slits Martin Norbury-25/08/2004 16:44:49
Select Records per page 10
Done
Local intranet
start
IOC Info - Micro...
Welcome to Dia...
Inbox - Microsof...
Microsoft Power...
Oracle SQL*Plus
14:37

Expanded DB File in RDB



Upload DB file to RDB

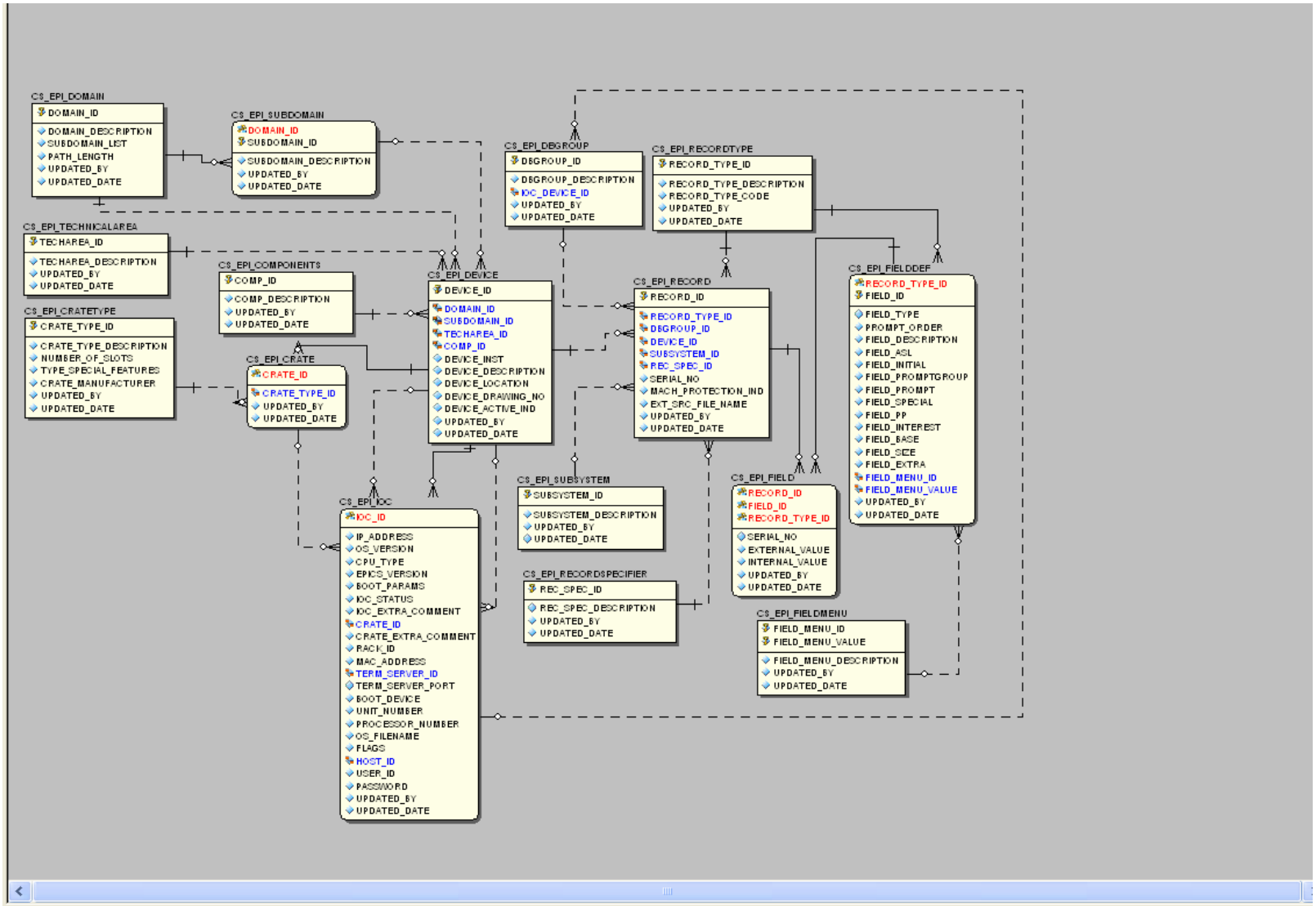
- Perl script is used to upload the expanded db file to RDB. Whenever new release of DB file, user will run this Perl script to upload to RDB
- During the upload process of expanded DB file, the device names (id) are inserted in to Device table from the PV name (device_id:[subsystem]:record specifier).
- We can view the user name and the date time of device/record creation.
- [kv73@pc0026 ~]$ read_db.pl -h
- USAGE: /home/tools/bin/read_db.pl [options]

```
-h            : help
-v            : verbose
-f DB-file      : EPICS DB file to read
-g dbgroup_id    : logic to put records under
-i Database Instance : D-Development, P-Production
-r Remove RDB Internal Values: <Default value is N-No> Y
-d Delete extra PV's from RDB: <Default value is N-No> Y
-a Adds dbgroup in RDB: <Input IOC NAME> e.g.LI-VA-IOC-01
-E Input Epics Version in RDB: <R3.13.9> e.g.R3.14.6
```

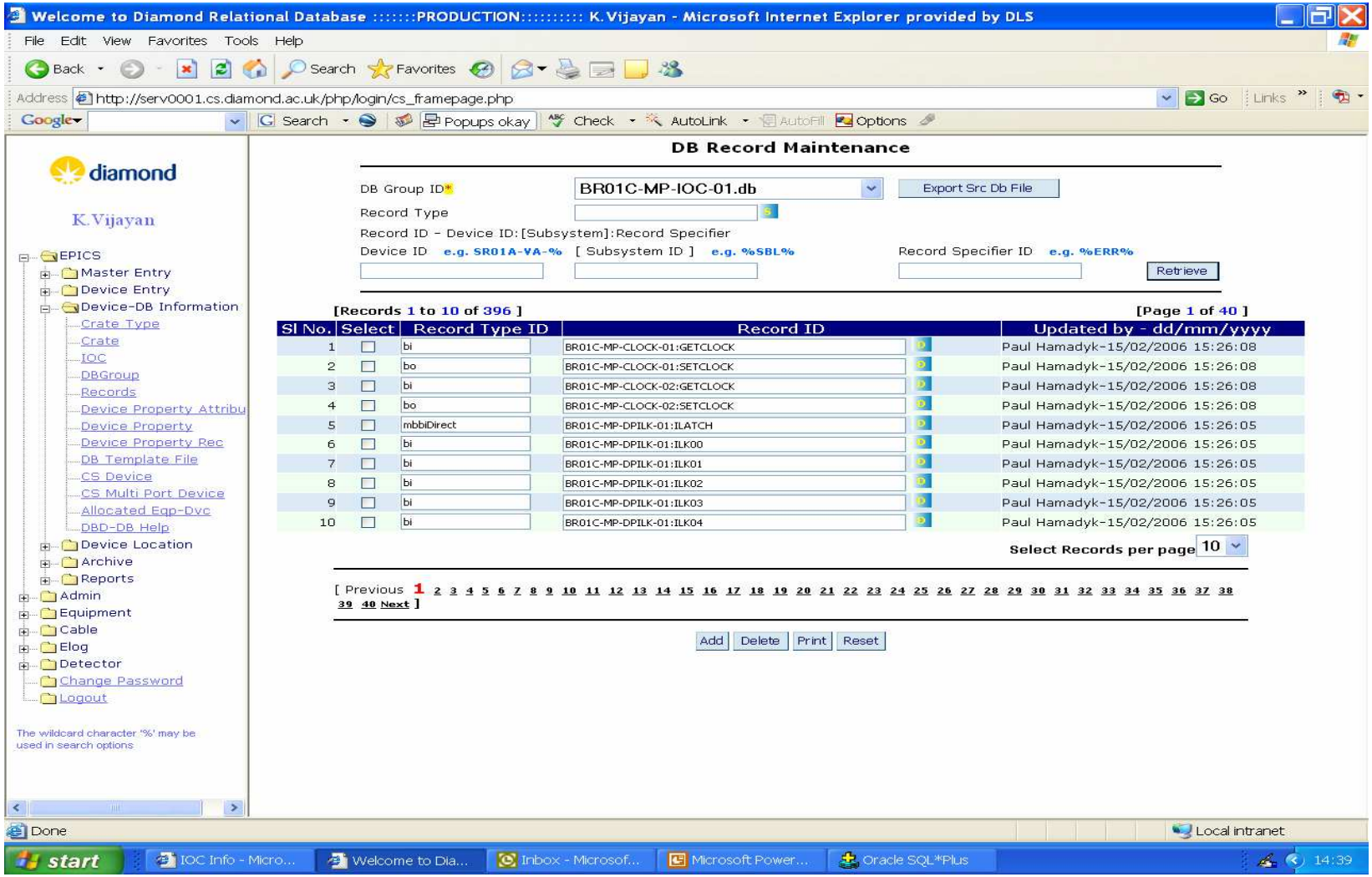
Reads an EPICS DB file into the relational database.

Does remove existing RDB entries, if you select option -d to Y, else just adds the DB file information. For a from-scratch import, first run 'dbgroups.pl -D'.

DB File


CS_EPI_DOMAIN
DOMAIN_ID
DOMAIN_DESCRIPTION
SUBDOMAIN_LIST
PATH_LENGTH
UPDATED_BY
UPDATED_DATE
CS_EPI_SUBDOMAIN
DOMAIN_ID
SUBDOMAIN_ID
SUBDOMAIN_DESCRIPTION
UPDATED_BY
UPDATED_DATE
CS_EPI_DBGROUP
DBGROUP_ID
DBGROUP_DESCRIPTION
IOC_DEVICE_ID
UPDATED_BY
UPDATED_DATE
CS_EPI_RECORDTYPE
RECORD_TYPE_ID
RECORD_TYPE_DESCRIPTION
RECORD_TYPE_CODE
UPDATED_BY
UPDATED_DATE
CS_EPI_TECHNICALAREA
TECHAREA_ID
TECHAREA_DESCRIPTION
UPDATED_BY
UPDATED_DATE
CS_EPI_COMPONENTS
COMP_ID
COMP_DESCRIPTION
UPDATED_BY
UPDATED_DATE
CS_EPI_DEVICE
DEVICE_ID
DOMAIN_ID
SUBDOMAIN_ID
TECHAREA_ID
COMP_ID
DEVICE_INST
DEVICE_DESCRIPTION
DEVICE_LOCATION
DEVICE_DRAWING_NO
DEVICE_ACTIVE_IND
UPDATED_BY
UPDATED_DATE
CS_EPI_RECORD
RECORD_ID
RECORD_TYPE_ID
DBGROUP_ID
DEVICE_ID
SUBSYSTEM_ID
REC_SPEC_ID
SERIAL_NO
MACH_PROTECTION_IND
EXT_SRC_FILE_NAME
UPDATED_BY
UPDATED_DATE
CS_EPI_FIELDDEF
RECORD_TYPE_ID
FIELD_ID
FIELD_TYPE
PROMPT_ORDER
FIELD_DESCRIPTION
FIELD_ASL
FIELD_INITIAL
FIELD_PROMPTGROUP
FIELD_PROMPT
FIELD_SPECIAL
FIELD_PP
FIELD_INTEREST
FIELD_BASE
FIELD_SIZE
FIELD_EXTRA
FIELD_MENU_ID
FIELD_MENU_VALUE
UPDATED_BY
UPDATED_DATE
CS_EPI_CRATETYPE
CRATE_TYPE_ID
CRATE_TYPE_DESCRIPTION
NUMBER_OF_SLOTS
TYPE_SPECIAL_FEATURES
CRATE_MANUFACTURER
UPDATED_BY
UPDATED_DATE
CS_EPI_CRATE
CRATE_ID
CRATE_TYPE_ID
UPDATED_BY
UPDATED_DATE
CS_EPI_SUBSYSTEM
SUBSYSTEM_ID
SUBSYSTEM_DESCRIPTION
UPDATED_BY
UPDATED_DATE
CS_EPI_FIELD
RECORD_ID
FIELD_ID
RECORD_TYPE_ID
SERIAL_NO
EXTERNAL_VALUE
INTERNAL_VALUE
UPDATED_BY
UPDATED_DATE
CS_EPI_IOC
IOC_ID
IP_ADDRESS
OS_VERSION
CPU_TYPE
EPICS_VERSION
BOOT_PARAMS
IOC_STATUS
IOC_EXTRA_COMMENT
CRATE_ID
CRATE_EXTRA_COMMENT
RACK_ID
MAC_ADDRESS
TERM_SERVER_ID
TERM_SERVER_PORT
BOOT_DEVICE
UNIT_NUMBER
PROCESSOR_NUMBER
OS_FILENAME
FLAGS
HOST_ID
USER_ID
PASSWORD
UPDATED_BY
UPDATED_DATE
CS_EPI_RECORDSPECIFIER
REC_SPEC_ID
REC_SPEC_DESCRIPTION
UPDATED_BY
UPDATED_DATE
CS_EPI_FIELDMENU
FIELD_MENU_ID
FIELD_MENU_VALUE
FIELD_MENU_DESCRIPTION
UPDATED_BY
UPDATED_DATE

DB Records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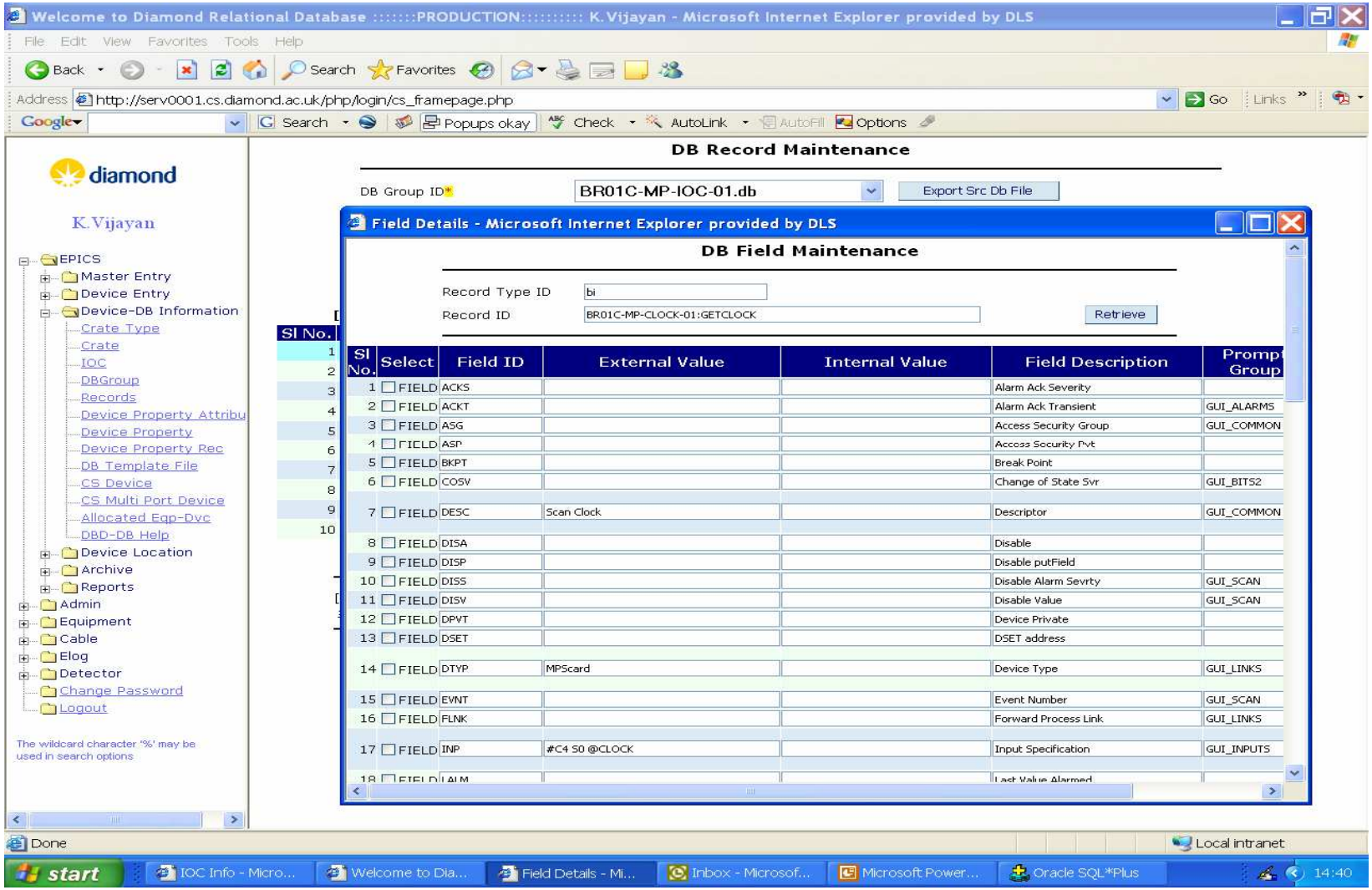
diamond
K.Vijayan
EPICS
Master Entry
Device Entry
Device-DB Information
Crate Type
Crate
IOC
DBGroup
Records
Device Property Attribu
Device Property
Device Property Rec
DB Template File
CS Device
CS Multi Port Device
Allocated Eqp-Dvc
DBD-DB Help
Device Location
Archive
Reports
Admin
Equipment
Cable
Elog
Detector
Change Password
Logout
The wildcard character '%' may be used in search options
DB Record Maintenance
DB Group ID*
BR01C-MP-IOC-01.db
Export Src Db File
Record Type
Record ID - Device ID:[Subsystem]:Record Specifier
Device ID e.g. SR01A-VA-%
[Subsystem ID] e.g. %SBL%
Record Specifier ID e.g. %ERR%
Retrieve
[Records 1 to 10 of 396]
[Page 1 of 40]
Sl No. | Select | Record Type ID | Record ID | Updated by - dd/mm/yyyy
1 | bi | BR01C-MP-CLOCK-01:GETCLOCK | Paul Hamadyk-15/02/2006 15:26:08
2 | bo | BR01C-MP-CLOCK-01:SETCLOCK | Paul Hamadyk-15/02/2006 15:26:08
3 | bi | BR01C-MP-CLOCK-02:GETCLOCK | Paul Hamadyk-15/02/2006 15:26:08
4 | bo | BR01C-MP-CLOCK-02:SETCLOCK | Paul Hamadyk-15/02/2006 15:26:08
5 | mbbiDirect | BR01C-MP-DPILK-01:ILATCH | Paul Hamadyk-15/02/2006 15:26:05
6 | bi | BR01C-MP-DPILK-01:ILK00 | Paul Hamadyk-15/02/2006 15:26:05
7 | bi | BR01C-MP-DPILK-01:ILK01 | Paul Hamadyk-15/02/2006 15:26:05
8 | bi | BR01C-MP-DPILK-01:ILK02 | Paul Hamadyk-15/02/2006 15:26:05
9 | bi | BR01C-MP-DPILK-01:ILK03 | Paul Hamadyk-15/02/2006 15:26:05
10 | bi | BR01C-MP-DPILK-01:ILK04 | Paul Hamadyk-15/02/2006 15:26:05
Select Records per page 10
[Previous 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 Next]
Add
Delete
Print
Reset
Done
Local intranet
start
IOC Info - Micro...
Welcome to Dia...
Inbox - Microsof...
Microsoft Power...
Oracle SQL*Plus
14:39

DB Fields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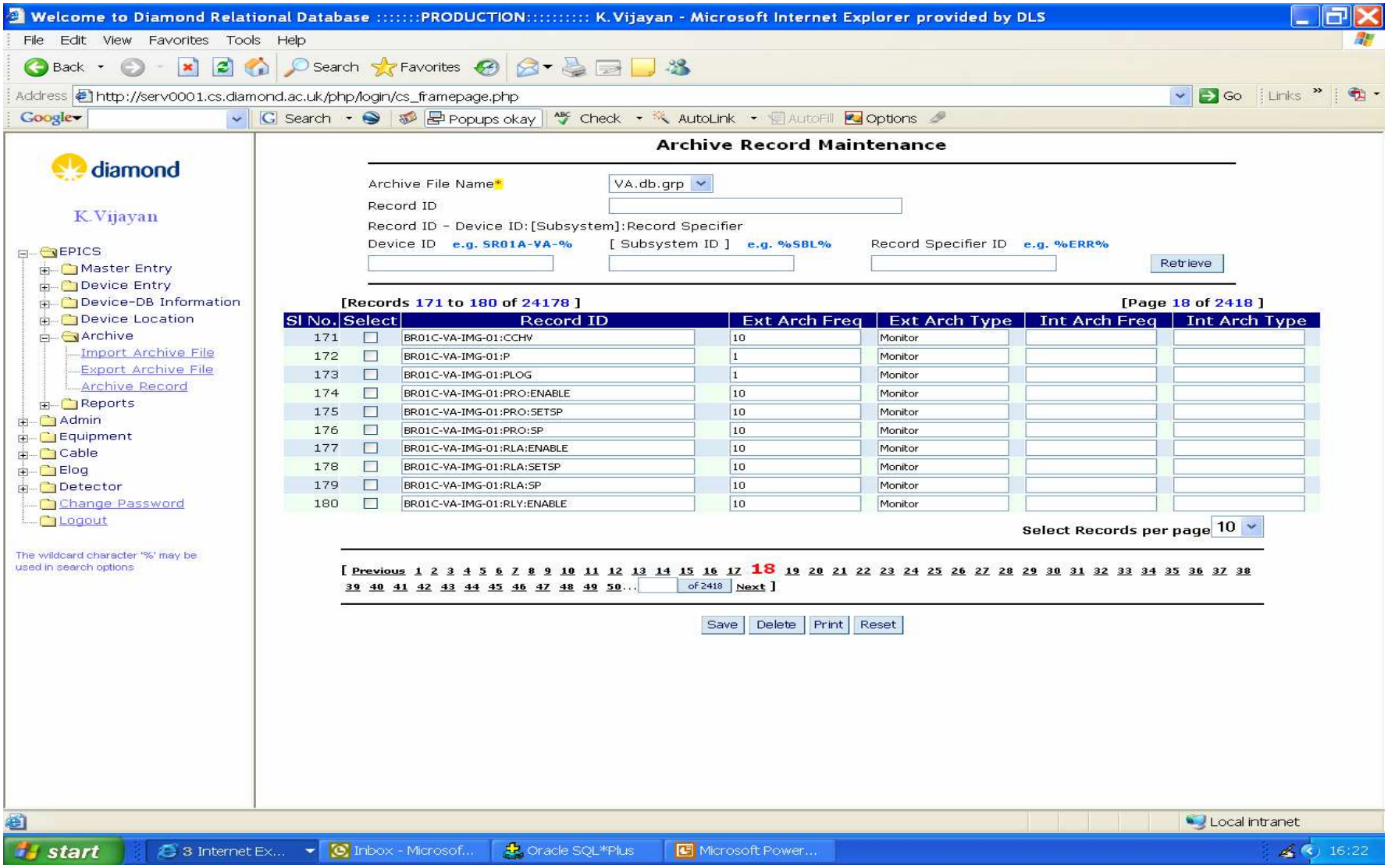
http://serv0001.cs.diamond.ac.uk/php/login/cs_framepage.php
DB Record Maintenance
DB Group ID*
BR01C-MP-IOC-01.db
Export Src Db File
K.Vijayan
EPICS
Master Entry
Device Entry
Device-DB Information
Crate Type
Crate
IOC
DBGroup
Records
Device Property Attribu
Device Property
Device Property Rec
DB Template File
CS Device
CS Multi Port Device
Allocated Eqp-Dvc
DBD-DB Help
Device Location
Archive
Reports
Admin
Equipment
Cable
Elog
Detector
Change Password
Logout
The wildcard character '%' may be used in search options
Field Details - Microsoft Internet Explorer provided by DLS
DB Field Maintenance
Record Type ID
bi
Record ID
BR01C-MP-CLOCK-01:GETCLOCK
Retrieve
Sl No. | Select | Field ID | External Value | Internal Value | Field Description | Prompt Group
1 FIELD ACKS Alarm Ack Severity
2 FIELD ACKT Alarm Ack Transient GUI_ALARMS
3 FIELD ASG Access Security Group GUI_COMMON
4 FIELD ASP Access Security Pvt
5 FIELD BKPT Break Point
6 FIELD COSV Change of State Svr GUI_BITS2
7 FIELD DESC Scan Clock Descriptor GUI_COMMON
8 FIELD DISA Disable
9 FIELD DISP Disable putField
10 FIELD DISS Disable Alarm Sevrty GUI_SCAN
11 FIELD DISV Disable Value GUI_SCAN
12 FIELD DPVT Device Private
13 FIELD DSET DSET address
14 FIELD DTYP MPScard Device Type GUI_LINKS
15 FIELD EVNT Event Number GUI_SCAN
16 FIELD FLNK Forward Process Link GUI_LINKS
17 FIELD INP #C4 S0 @CLOCK Input Specification GUI_INPUTS
Done
Local intranet
start
IOC Info - Micro...
Welcome to Dia...
Field Details - Mi...
Inbox - Microsof...
Microsoft Power...
Oracle SQL*Plus
14:40

Archiver Configuration

- Archiver configuration file
- View and Modify Archiver Configuration
- Import/Export Archiver Configuration

Archiver Configuration

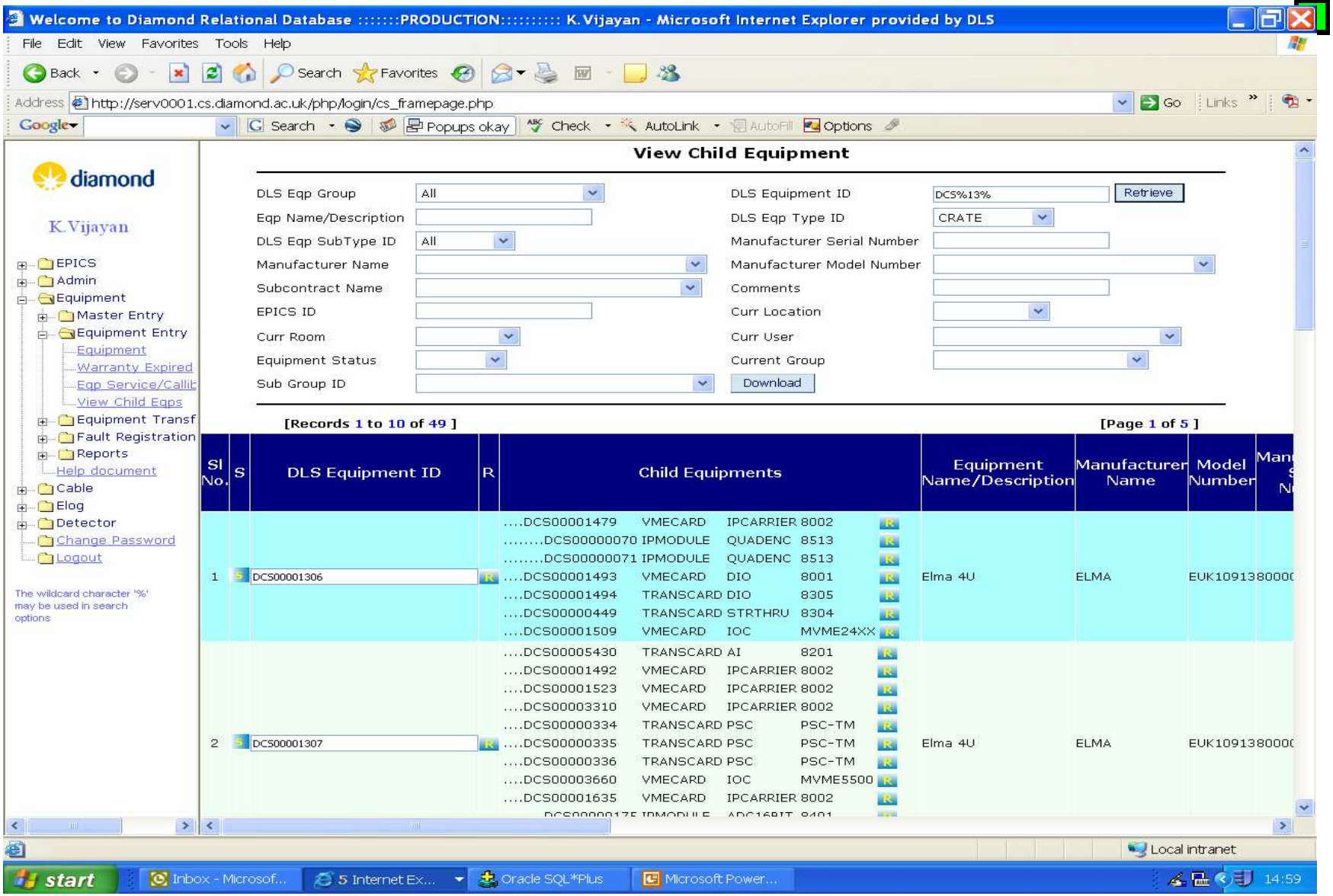


Import/Export Archiver Configuration

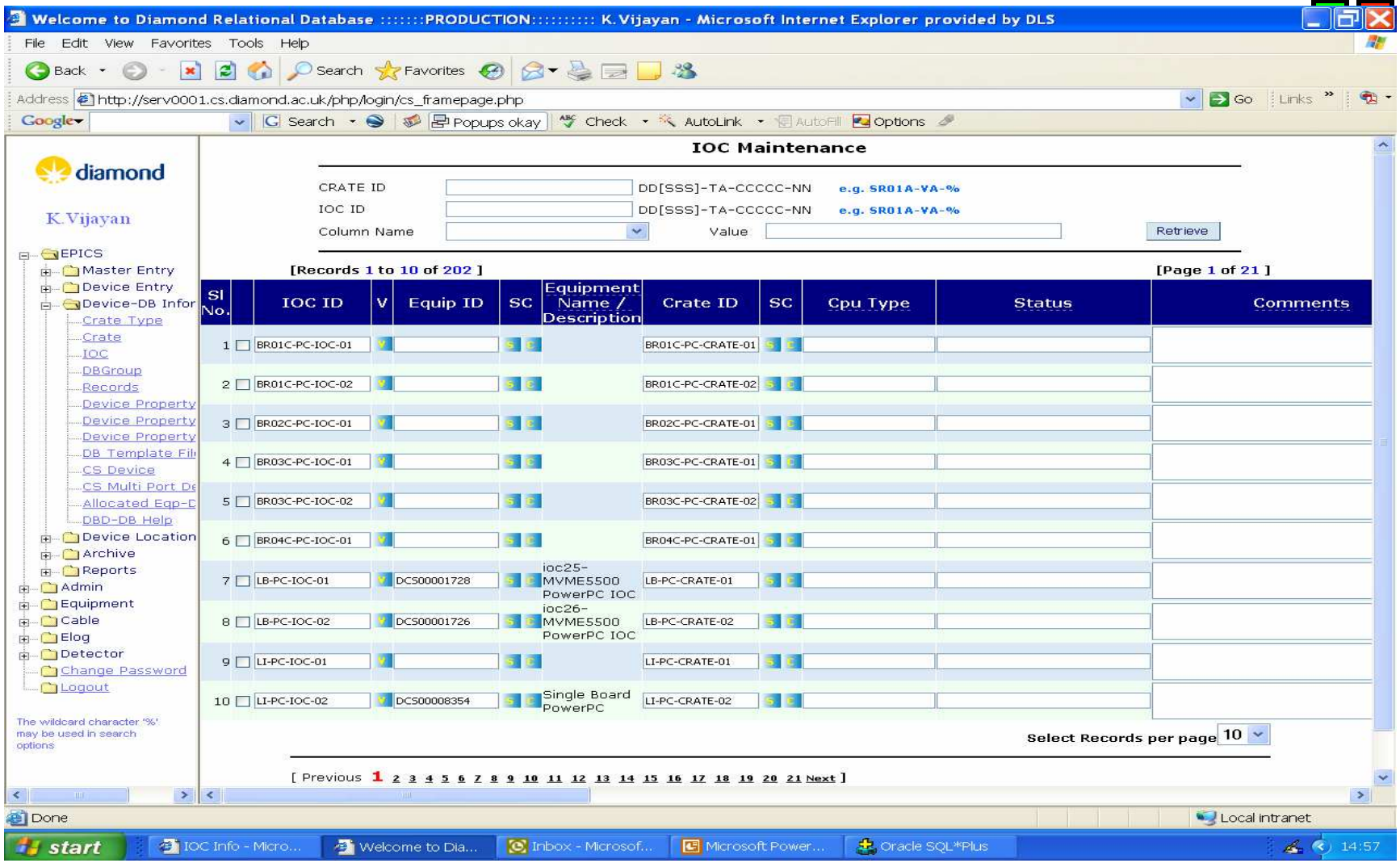
Crate Details

- Using Equipment Tracking
- Equipment details
  - IOC
  - IP Carrier
  - IP Module

View Child Equipments



IOC – Equipment Detail



View

IOC - Single Record View - Microsoft Internet Explorer provided by DLS

IOC - Single Record View

IOC ID: LB-PC-IOC-01 [Retrieve]

IOC ID	LB-PC-IOC-01	Eqp ID	DCS00001728		
Crate ID	LB-PC-CRATE-01	CPU Type			
Epics Version	R3.13.9	IOC Status			
IP Address	172.23.200.113	Subnet Mask	ffffff000	Mac Address	
Host ID		Host IP Address	172.23.240.2	Gateway	172.23.192.254
Boot Device	gei	Unit Number	0	Processor Number	0
Terminal Server ID		Terminal Server Port			
Switch Device ID		Switch Port		User ID	
CS Net Name		IOC Serial Nbr			
OS File Name	/home/Tornado2.2/target/config/mv5500netpool/vxWorks				
Boot Parameters	/home/diamond/R3.13.9/prod/ioc/st.cmd				
Comments					

Save | Print | Reset

Equipment Details	
DLS Equipment ID	DCS00001728
EPICS Device ID	LB-PC-IOC-01
Equipment Name/Description	ioc25-MVME5500 PowerPC IOC
Manufacturer Name	Motorola
Model Number	MVME5500
Manufacturer Serial Number	7191098
Manufacturing Number	
DLS Eqp Type ID	VMECARD
DLS Eqp Sub Type ID	IOC
DLS Eqp SubSub Type ID	
Delivery Date	28/07/2004
Status	Idle
Work Date	
Subcontract Name	
Current EPICS Loc*Bldg*Group*User	*DLSR79CONTROLS*CS*
Previous EPICS Loc*Bldg*Group*User	***
Parent DLS Equipment ID	DCS00001382
Comments	IOC25 Enet Addr: 0001AF12E28F 0001AF12E290
Warranty (in months)	24
Warranty Start Date (dd/mm/yyyy)	28/07/2004
Delivery Note	
Order Number	

start | IOC Info - Micro... | Welcome to Dia... | IOC - Single Rec... | Inbox - Microsof... | Microsoft Power... | Oracle SQL*Plus | 14:58

What we are using

- Oracle 9i on Red Hat Linux AS v2.1 - Dell Server
- Apache Web Server
- PHP
  - –User interface screens / forms for data input & reading using web browser
- Perl
  - – for uploading of flat files to the RDB & vice versa
- ER Studio
  - – Logical and Physical design of the EPICS database
- Plan to move Oracle 10g on Red Hat Linux AS 4.0 – Dell Server

THE END