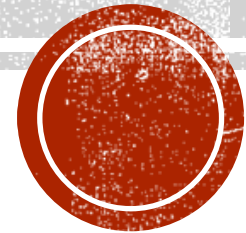


# DEVPOPS FOR SIEBEL CRM

Developer Guide

Version 21.4

April 2021



# WHAT'S DEVPOPS?

- A collection of **educational** samples
- Siebel Open UI extensions to facilitate common developer tasks
- A community effort
- Open Source
- Something which you shouldn't probably be using unless you understand how it works
  - This guide can help you with that



# GET IT ON GITHUB

- <https://github.com/blacksheep-crm/devpops>

The screenshot shows the GitHub repository page for `blacksheep-crm/devpops`. The repository has 5 stars and 6 forks. The main branch is `main` with 1 branch and 0 tags. The repository description is "Combining utilities from blacksheep and the Siebel community into a unique developer toolkit." The repository contains 82 commits. The file list includes:

File Name	Commit Message	Commit Time
BCRM NEO RR Data.sif	Add files via upload	last month
BCRM Server Manager Service.sif	Add files via upload	last month
BCRM Workspace Helper Data.sif	Add files via upload	2 months ago
BCRM Workspace Helper UI.sif	Add files via upload	2 months ago
FWK Runtime.xml	RR Reader update	5 days ago
README.md	Update README.md	3 days ago
SiebelQueryLang.js	Add files via upload	2 months ago
postload.js	bugfixes, menu is now toolbarizable	3 days ago
ui.multiselect.js	Add files via upload	27 days ago
v	Update v	3 days ago

The right sidebar shows the repository's About section, which includes a description, a Readme link, and sections for Releases, Packages, and Languages. The Languages section shows JavaScript at 100.0%.




# READ THIS!

devpops

---

STRICTLY EDUCATIONAL. DO NOT USE IN MISSION-  
CRITICAL ENVIRONMENTS!

---



Got it?  
Good, let's check it out



# INSTALL DEVPOPS

- Follow instructions in readme  
<https://github.com/blacksheep-crm/devpops/blob/main/README.md>
- Includes
  - Import SIFs
  - Import client-side business service
  - Copy JS code



# SAMPLE CODE

- Single JS file “postload.js”
- For fast evaluation, replace vanilla postload.js
- To deploy, separate code (check comments for divider line number)
  - Code above divider must stay in vanilla postload.js (because Web Tools)
  - Code below divider should be moved to custom file



# WEB TOOLS WHODUNNIT

- Postload listener: BCRMWTHelper must be in vanilla postload.js
  - BCRMWebToolsEnhancer
    - BCRMWebToolsHighlight
      - BCRMWSGetModData
        - Makes REST call to *BCRM Modified Object BO*
        - Dependency to SIF

ORACLE  
SIEBEL

Tools Debug Help

Type Flat

Business Services

W	Name	Changed	Project	Cache	Class
S S S	BCRM RR Reader	<input checked="" type="checkbox"/>	00Phoenix		CSSService
SADMIN is editing in dev_sadmin_rrr333/1	BCRM RR Reader	<input checked="" type="checkbox"/>	00Phoenix		CSSService
S	BCRM Server Manager Service	<input checked="" type="checkbox"/>	00Phoenix		CSSEXEDLSVC

Shows who is currently editing an object and in what workspace/version



# WEB TOOLS REGISTER VIEW

- Postload calls BCRMEEnhanceScreenViewListApplet()
  - Adds button to Screen Views List Applet
  - Click invokes BCRMUpserRespDialog()
    - Opens dialog with custom Responsibilities (BCRMGetRespList() )
    - Register button invokes BCRMUpserResp()
      - Upserts via REST /data API
- Dependency to SIF
  - Base IOs \_ Responsibility \_ Feature Access.sif

The ultimate time saver.  
Register views directly from  
Web Tools Screen View

The screenshot shows the 'Pick or Add Responsibility' dialog box with a list of responsibilities including 'devpops', 'My New Resp', 'Alex 495', 'BCRM', and 'ALEX TEST 2'. The 'Register' button is highlighted. Below the dialog, the 'Register View' button is visible on the main screen. A red arrow points from this button to a callout box containing the text: 'The ultimate time saver. Register views directly from Web Tools Screen View'. The background shows a list of views and a table of users.

View Name	Description	Local Access	Read Only View
A Account Action Plan View	A Account Act...	✓	
Account Detail - Revenue Schedule Smart Script View	Account Detail...	✓	
Action Screen Homepage View	Action Screen ..	✓	
Activity Chart View - New Activities Analysis	Activity Chart ..	✓	
Activity Explorer View	Activity Brows...	✓	
BCRM Test View 04		✓	
Pharma Meeting Attachment View	Pharma Meet...	✓	

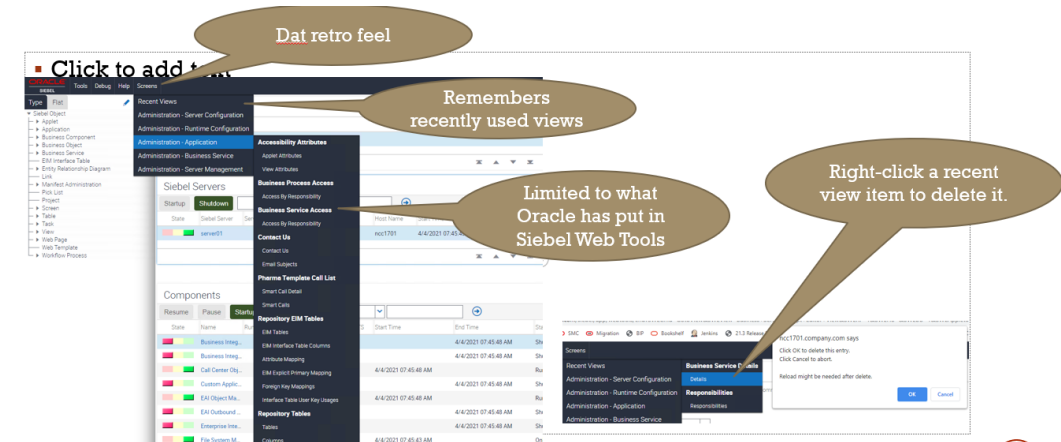
Last Name	First Name	User ID	Job Title
Administrator	Seibel	SADMIN	Sys Admin
Tao	Developer	DEV2	Dev





# WEB TOOLS SCREEN MENU

- Postload invokes BCRMAddWTScreenMenu ()
  - BCRMCreateScreenMenu()
    - BCRMGetAppScreens()
      - BCRMGetWTScreenViews()
  - REST API used to retrieve Screen/View metadata
  - Support for Recent Views via devpops persistent storage (next slide)



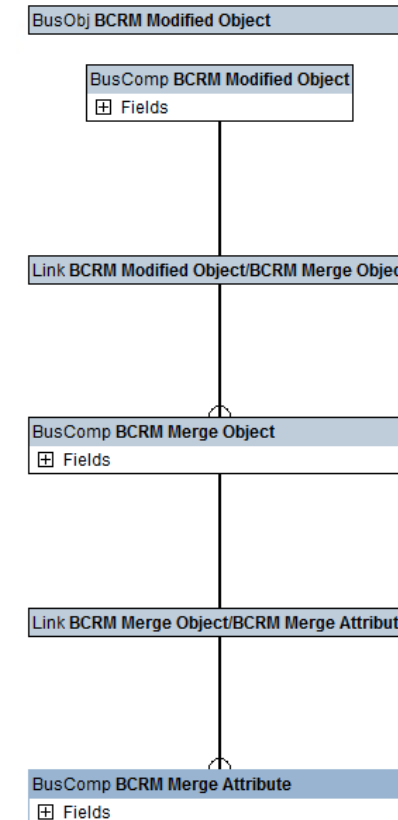
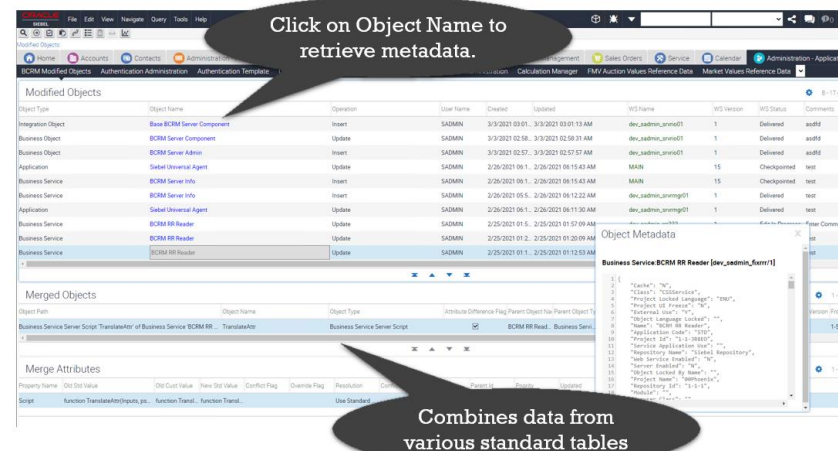
# DEVPOPS STORAGE

- Persisted to Server DB using Client Side Business Service Script tables
- Dependency on BCRM devpops Storage.sif
- BCRMGetStorageItem()
  - Get item (string) from storage
- BCRMSetStorageItem()
  - Write item (string) to storage
- BCRMGetStorageId()
  - Helper to get storage “service” ROW\_ID
- BCRMStorageCheck()
  - Verifies if IO for REST is in place



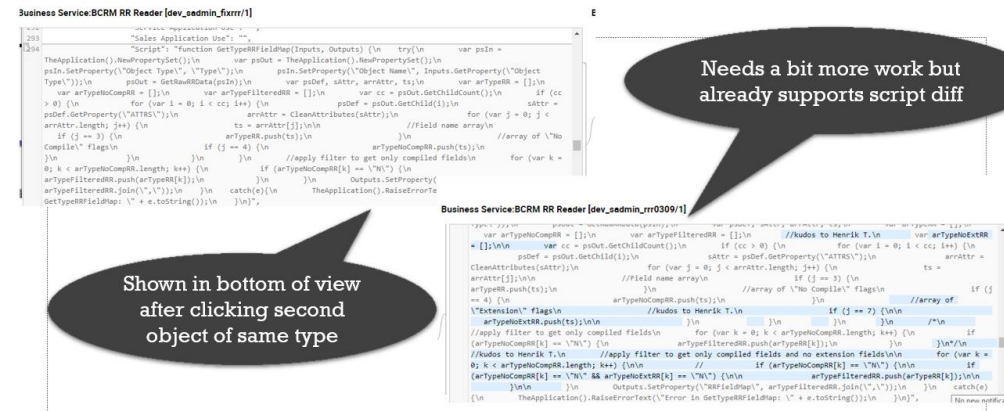
# MODIFIED OBJECTS VIEW

- Dependency on SIFs
- Add view to responsibility and screen of your choice
- Exposes standard tables with custom BCs/BO
  - S\_RTC\_MOD\_OBJ
  - S\_WS\_MG\_LOGOBJ
  - S\_WS\_MG\_LOGATTR



# METADATA COMPARISON/DIFF

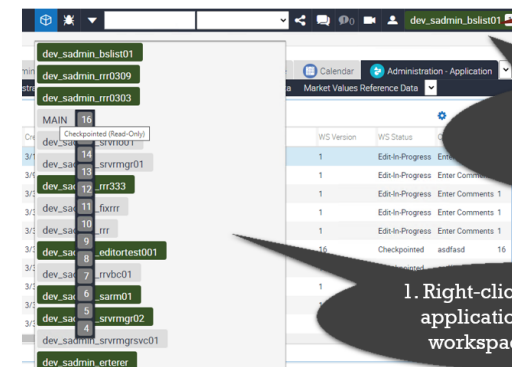
- Modified Objects View is enhanced via postload BCRMWSHelper()
  - BCRMWSEnhancer()
- Click on object name triggers BCRMWSGetObjectDef
  - Retrieves object def metadata via REST /workspace API
  - Opens JSON in CodeMirror dialog
  - Second click opens Mergely diff on bottom of view with current and last item
    - BCRMCompare()
  - Mergely loaded via <header> injection



# WORKSPACE FAST INSPECT AND BANNER

- Postload BCRMWSHelper() invokes BCRMWSIconEnhancer()
  - Adds right-click to cube/dashboard icon
    - BCRMGetWorkspaceList() gets aggregated WS/version list via REST
      - Dependency on custom BO/SIFs
    - BCRMCreateWSMenu() generates menu
      - Click on item runs BCRMWSFastInspect()
        - Invokes BS: FWK Runtime / FastInspect
        - Dependency on FWK Runtime BS
        - Reloads view/page
  - BCRMWSGenerateWSBanner() shows WS banner
    - On session start workspace/version and Siebel version are loaded via BCRMGetTechSupportInfo()
      - Opens Technical Support Applet in hidden state (only once at session start)

## WORKSPACE FAST INSPECT



NEW: Double-click on banner to re-open/re-inspect current Workspace

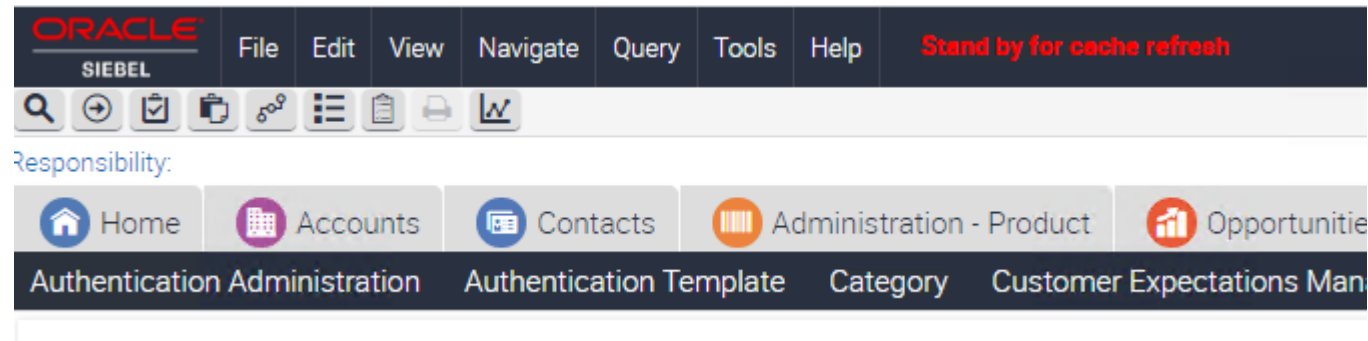
2. Workspace opened and inspected instantly (and displayed in toolbar as it should be)

1. Right-click cube icon in application and select workspace / version



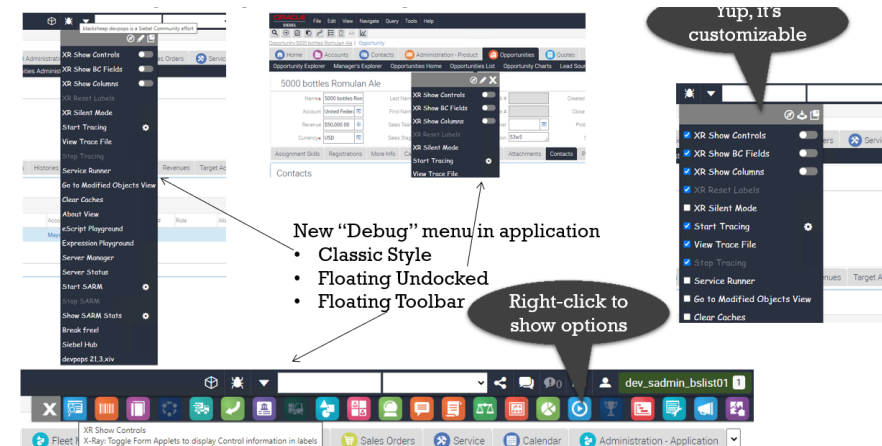
# AUTO CACHE REFRESH

- If workspace contains an update to a Screen definition (likely a new/updated Screen View), a sessionStorage item is set
- BCRMReloadCache() runs BCRMClearCaches() if item = Y



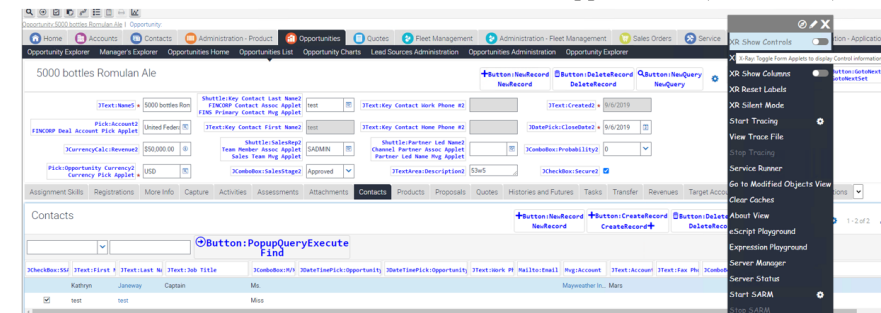
# APPLICATION MENU

- Postload BCRMWSHelper() invokes BCRMAddDebugButton()
  - Adds button (bug icon) next to WS Dashboard/cube icon
  - Button click / right-click invokes BCRMCreateDebugMenu()
    - Controls BCRM\_MENU global menu definition
    - Overridable in BCRMCustomizeDebugMenu()
    - Creates menu from properties in BCRM\_MENU items
      - seq(uence): for future use
      - enable: true/false
      - label: visible text
      - title: tooltip text
      - onclick: function
      - options: show gear icon and option dialog
      - img: icon for horizontal mode
      - acl: access control list based on responsibilities
        - BCRMGetResps(), BCRMQuickEval()



# X-RAY SHOW CONTROLS

- **BCRMUtils.ShowControls()**
- **Input can be PM, PR, Applet object or Applet Name**
  - supports form and list applets
- **Gets applet metadata from RR via BCRMUtils.GetAppletData()**
- **Creates label text from Control props and RR metadata**
  - Pick, MVG, Assoc applet from RR
- **Invokes SetLabel() to change label/column header**
  - Uses GetLabelElement()
    - Toggle label to show Control UI Type and Name

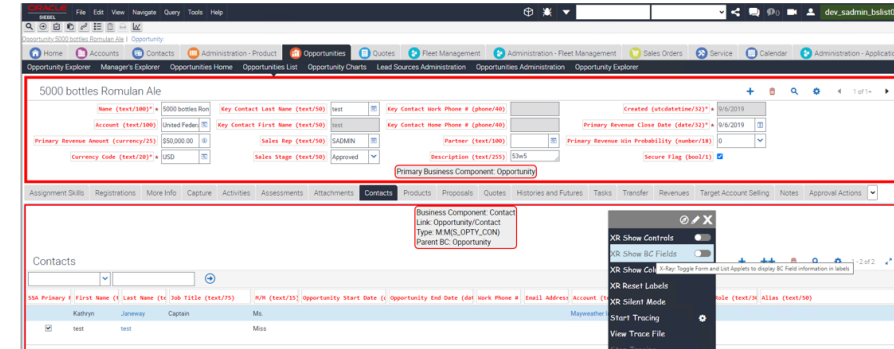




# X-RAY SHOW BC FIELDS

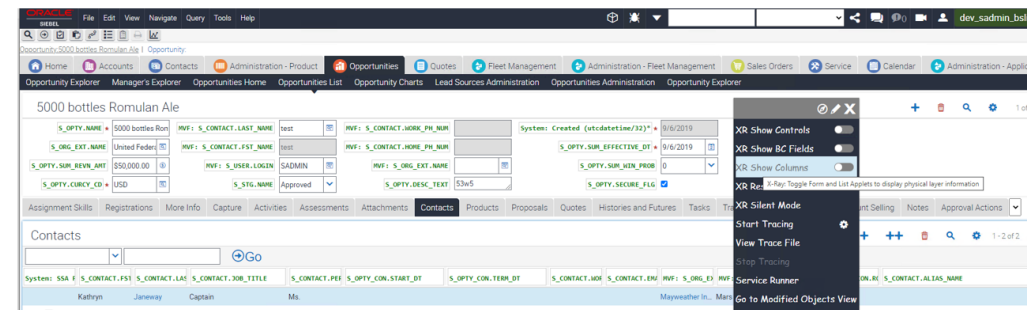
- `BCRMUtils.ShowBCFields()`
- Input can be PM, PR, Applet object or Applet Name
  - supports form and list applets
- Gets field metadata from Open UI API
- Augmented by `LinkOverlay()` to get Link metadata from RR
- Invokes `SetLabel()` to change label/column header
  - Uses `GetLabelElement()`

- Shows BC Field, Type, Length, Required/Calc flags
- Shows BC and Link information for each applet




# X-RAY SHOW TABLES/COLUMNS

- BCRMUtils.ShowTableColumns()
- Input can be PM, PR, Applet object or Applet Name
  - supports form and list applets
- Gets Table/Column and BC metadata from RR via BCRMUtils.GetBCData()
- Invokes SetLabel() to change label/column header
  - Uses GetLabelElement()
- Shows Table.Column for each control
- Shows calculation expression in case of calculated field



# X-RAY SILENT MODE / TOOLTIP

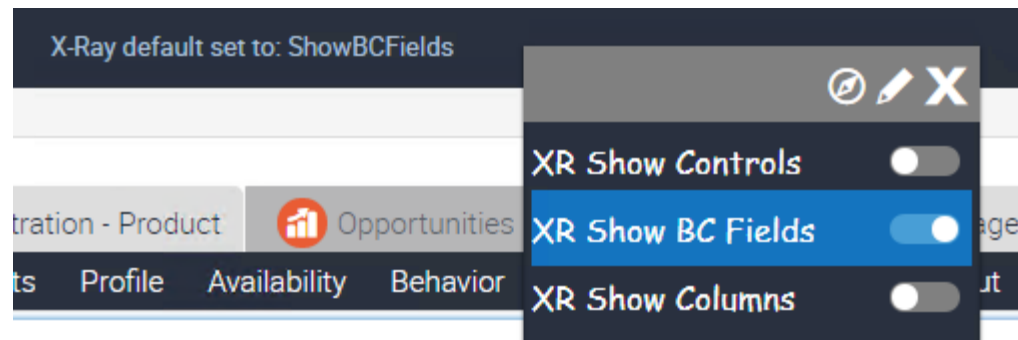
- Runs BCRMdevpopsTest()
  - Invokes all X-Ray methods programmatically

Last Name	test		Work #		Created Date★	9/6/2019
First Name	<div>DisplayName: Last Name _ShowBCFields: Key Contact Last Name (text/50) _ShowTableColumns: MVF: S_CONTACT.LAST_NAME _ShowControls: Shuttle:Key Contact Last Name2&lt;br&gt;FINCORP Contact Assoc Applet&lt;br&gt;FINS Primary Contact Mvg Applet</div>					
Sales Team						
Sales Stage	Approved	▼	Description	53w5	Secure	<input checked="" type="checkbox"/>



# X-RAY ALWAYS ON

- Special *showtoggle* property in BCRM\_MENU items related to X-Ray
- Sets BCRM\_TOGGLE\_DEFAULT session storage item
- Used in BCRMApplyDefaultXray()
  - Run from postload BCRMWSHelper()
  - Run from BCRMPopupPW() to support popup applets



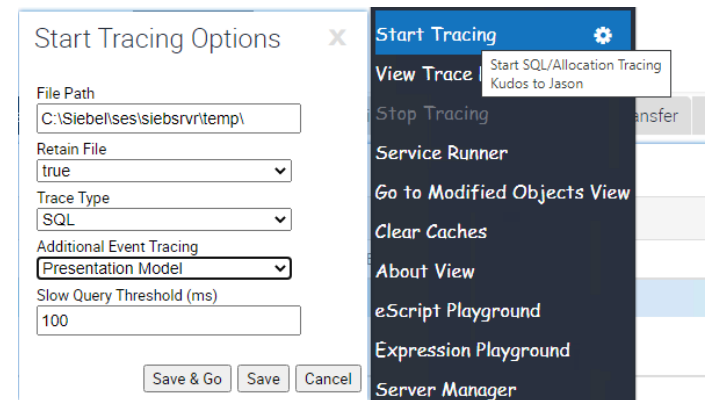
# X-RAY DOUBLE-CLICK HANDLER

- `BCRMUtils.AddXrayHandler()` invoked in `BCRMWSHelper` postload
- Adds double-click handler to all list and form applets
  - Users can double-click applets to cycle X-Ray modes



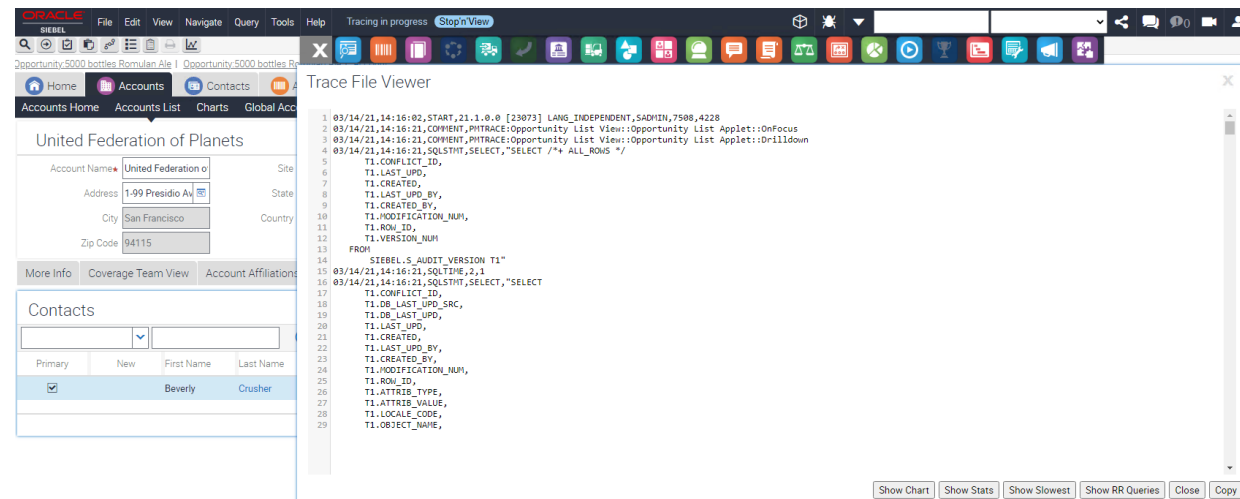
# SQL TRACING

- `BCRMStartLogging()`
  - Invokes `FWK Runtime.ProcessLogRequest`
    - `TheApplication().TraceOn()`
- Trace messages can be written through `BCRMTrace()`
  - Used for PM and View tracing
- Option dialog sets `sessionStorage` items



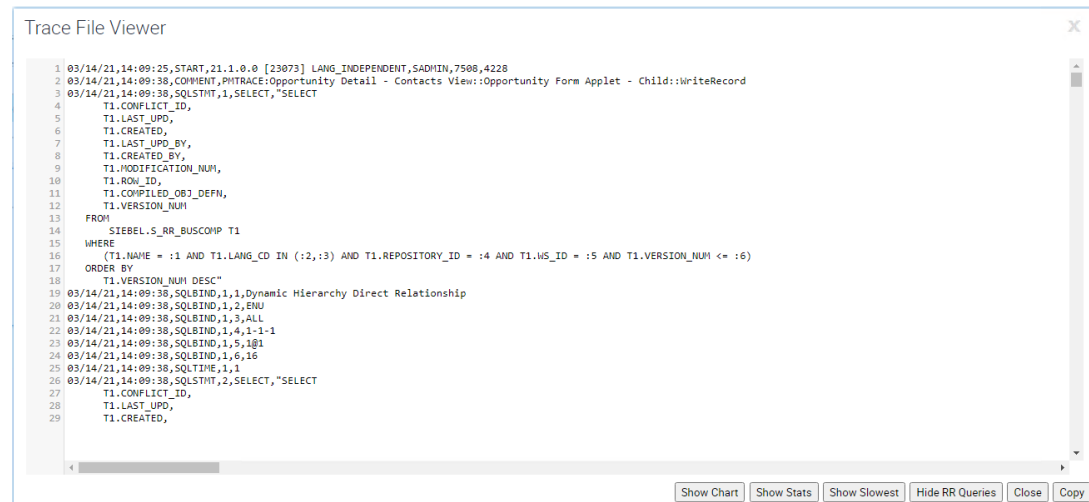
# MESSAGE BAR: STOP'N'VIEW

- Message bar button and menu item invoke `BCRMStopLogging()`
  - `TheApplication.TraceOff()`
- Message bar button also invokes `BCRMViewLog()`
  - see next slide



# TRACE FILE VIEWER

- BCRMViewLog()
  - Calls FWK Runtime.ProcessLogRequest
    - Use EAI File Transport and Transcode Service to fetch trace file content
  - Content shown in dialog using CodeMirror



The screenshot shows a window titled "Trace File Viewer" with a close button (X) in the top right corner. The main area contains a SQL trace log with line numbers 1 through 29. The log includes timestamps, user information, and SQL statements. At the bottom of the window, there is a toolbar with buttons: "Show Chart", "Show Stats", "Show Slowest", "Hide RR Queries", "Close", and "Copy".

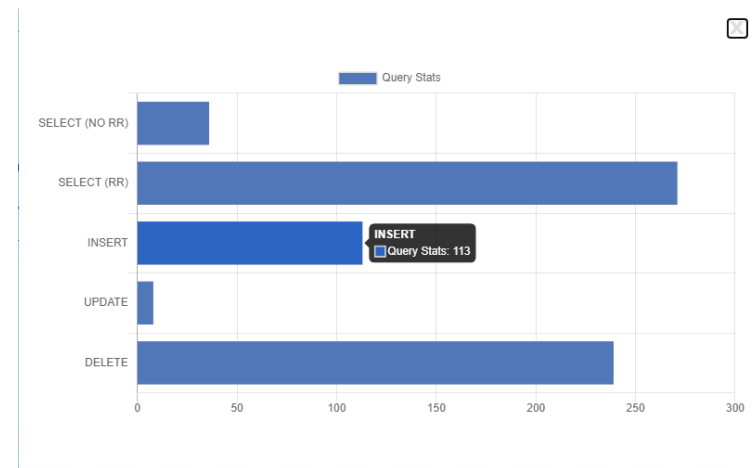
```
1 03/14/21,14:09:25,START,21.1.0.0 [23073] LANG_INDEPENDENT,SADMIN,7500,4228
2 03/14/21,14:09:38,COMMENT,PHTRACE:Opportunity Detail - Contacts View:Opportunity Form Applet - Child::WriteRecord
3 03/14/21,14:09:38,SQLSTMT,1,SELECT,"SELECT
4     T1.CONFLICT_ID,
5     T1.LAST_UPD,
6     T1.CREATED,
7     T1.LAST_UPD_BY,
8     T1.CREATED_BY,
9     T1.MODIFICATION_NUM,
10    T1.ROW_ID,
11    T1.COMPILED_OBJ_DEFN,
12    T1.VERSION_NUM
13 FROM
14     SIEBEL.S_RR_BUSCOMP T1
15 WHERE
16     (T1.NAME = :1 AND T1.LANG_CD IN (:2,:3) AND T1.REPOSITORY_ID = :4 AND T1.HS_ID = :5 AND T1.VERSION_NUM <= :6)
17 ORDER BY
18     T1.VERSION_NUM DESC"
19 03/14/21,14:09:38,SQLBIND,1,1,Dynamic Hierarchy Direct Relationship
20 03/14/21,14:09:38,SQLBIND,1,2,ENR
21 03/14/21,14:09:38,SQLBIND,1,3,ALL
22 03/14/21,14:09:38,SQLBIND,1,4,1-1-1
23 03/14/21,14:09:38,SQLBIND,1,5,181
24 03/14/21,14:09:38,SQLBIND,1,6,16
25 03/14/21,14:09:38,SQLTIME,1,1
26 03/14/21,14:09:38,SQLSTMT,2,SELECT,"SELECT
27     T1.CONFLICT_ID,
28     T1.LAST_UPD,
29     T1.CREATED,
```





# TRACE STATS CHART

- `BCRMShowTraceStats("chart")`
  - Aggregates trace file content and generates input data for chart renderer
- `BCRMChartEngine()`
  - Simple wrapper based on chartjs
  - chartjs loaded dynamically from postload



# TRACE STATS

- BCRMShowTraceStats()
- Returns aggregated trace file content as text
- Populates several global vars
  - e.g. trace\_parsed

```
1 SQL TRACE STATS
2 Trace started   : 3/14/2021, 2:09:38 PM
3 Trace stopped  : 3/14/2021, 2:10:10 PM
4 Total Statements : 667
5 Time Measurements: 326
6 Total DB Time(ms): 1015
7 Worst SELECT (ms): 217
8 Worst INSERT (ms): 0
9 Worst UPDATE (ms): 0
10 Worst DELETE (ms): 296
11
12
13 DETAILED QUERY COUNTS
14 SELECT (NO RR):36 #####
15 SELECT (RR)   :271 #####
16 INSERT        :113 #####
17 UPDATE        :8   ###
18 DELETE        :239 #####
19
20
21 TOP 10 TABLE USAGE: SELECT
22 S_USER          : 40 #####
23 S_PROJECT       : 34 #####
24 S_LST_OF_VAL    : 12 #####
25 S_POSTN        : 10 #####
26 S_OPTY         : 9   #####
27 S_PARTY        : 9   #####
28 S_ORG_EXT      : 7   #####
29 S_CONTACT      : 6   #####
30 S_LST_OF_VAL_BU: 6   #####
31 S_SM_STATE     : 6   #####
32
33
34 TOP 10 TABLE USAGE: INSERT
35 S_DOCK_TXN_LOG : 55 #####
36 S_DOCK_TXN_SET : 45 #####
37 S_AUDIT_ITEM   : 6   #####
38 S_OPTY         : 1   ###
39 S_OPTY_DSGN_REG: 1   ###
40 S_REVN         : 1   ###
41 S_OPTY_INTX    : 1   ###
42 S_OPTY_POSTN   : 1   ###
43 S_OPTY_BU      : 1   ###
44 S_OPTY_UTX     : 1   ###
45
46
47 TOP 10 TABLE USAGE: UPDATE
48 S_OPTY         : 2   ###
49 S_SSA_ID       : 1   ###
50 S_OPTY_POSTN   : 1   ###
51 S_OPTY_BU      : 1   ###
52 S_DOC_QUOTE    : 1   ###
53 S_EVT_ACT      : 1   ###
54 S_DOC_AGREE    : 1   ###
55
56
57 TOP 10 TABLE USAGE: DELETE
58 S_OPTY_PROD_FNX: 24 #####
59 S_OPTY_PROD1_FNX: 24 #####
60 S_REVN_X       : 24 #####
```



# SLOW SQL

- BCRMShowWorstQueries()
- Retrieves worst queries from trace\_parsed

## Trace File Viewer

```
1  MILLISECONDS:296 *****
2  "DELETE FROM SIEBEL.S_SALES_ACT
3  WHERE PAR_ROW_ID IN (SELECT ROW_ID FROM SIEBEL.S_EVT_ACT
4  WHERE OPTY_ID = :1)
5  "
6  03/14/21,14:10:09,SQLBIND,409,1,1-70NX
7  03/14/21,14:10:10,SQLTIME,409,296
8  03/14/21,14:10:10,
9
10 MILLISECONDS:217 *****
11 "SELECT
12     T27.CONFLICT_ID,
13     T27.LAST_UPD,
14     T27.CREATED,
15     T27.LAST_UPD_BY,
16     T27.CREATED_BY,
```



# HIDE/SHOW RR QUERIES

- BCRMRemoveRRTrace()
- Returns trace content without RR queries
  - Table names containing
    - S\_RR
    - S\_WEB\_TEMPL
    - S\_UI\_

Trace File Viewer

```
1 03/14/21,14:09:25,START,21.1.0.0 [23073] LANG_INDEPENDENT,SADMIN,7500,4228
2 03/14/21,14:09:38,COPYENT,PHTRACE:Opportunity Detail - Contacts View::Opportunity Form Applet - Child::WriteRecord
3 03/14/21,14:09:38,SQLSTMT,INSERT/UPDATE,
4 UPDATE SIEBEL.S_OPTY SET
5   DB_LAST_UPD_SRC = :1,
6   DB_LAST_UPD = current_date,
7   LAST_UPD = :2,
8   LAST_UPD_BY = :3,
9   MODIFICATION_NUM = :4,
10  DESC_TEXT = :5
11 WHERE
12   ROW_ID = :6 AND MODIFICATION_NUM = :7
13 =
14 03/14/21,14:09:38,SQLBIND,3,1,User
15 03/14/21,14:09:38,SQLBIND,3,2,03/14/2021 14:09:38
16 03/14/21,14:09:38,SQLBIND,3,3,0-1
17 03/14/21,14:09:38,SQLBIND,3,4,6
18 03/14/21,14:09:38,SQLBIND,3,5,updated
19 03/14/21,14:09:38,SQLBIND,3,6,1-N7L
20 03/14/21,14:09:38,SQLBIND,3,7,5
21 03/14/21,14:09:38,SQLTIME,3,5
22 03/14/21,14:09:38,SQLSTMT,SELECT,"SELECT
23   T1.CONFLICT_ID,
24   T1.DB_LAST_UPD_SRC,
25   T1.DB_LAST_UPD,
26   T1.LAST_UPD,
27   T1.CREATED,
28   T1.LAST_UPD_BY,
29   T1.CREATED_BY,
30   T1.MODIFICATION_NUM,
31   T1.ROW_ID,
32   T1.CORPORATE_PREFIX,
33
```

Show Chart Show Stats Show Slowest Show RR Queries Close Copy



# COPY TO CLIPBOARD

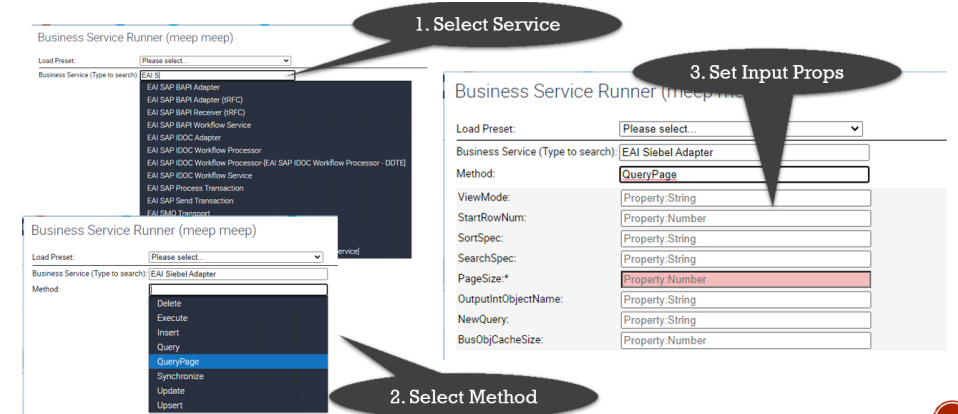
- Creates temp text area
- uses `document.execCommand('copy');`

```
217 03/14/21,14:09:43,,COMMENT,VIEWTRACE:Opportunity Attachment View::postload
218 03/14/21,14:09:46,COMMENT,PMTRACE:Opportunity Attachment View::Opportunity Attachment Applet::Drilldown
219 03/14/21,14:09:54,SQLSTMT,SELECT,"SELECT /*+ ALL_ROWS */
220      T1.CONFLICT_ID,
221      T1.LAST_UPD,
222      T1.CREATED,
223      T1.LAST_UPD_BY,
224      T1.CREATED_BY,
225      T1.MODIFICATION_NUM,
226      T1.ROW_ID,
227      T1.VERSION_NUM
228 FROM
229      SIEBEL.S_AUDIT_VERSION T1"
230 03/14/21,14:09:54,SQLTIME,73,1
231 03/14/21,14:09:54,SQLSTMT,SELECT,"SELECT
232      T27.CONFLICT_ID,
233      T27.LAST_UPD,
234      T27.CREATED,
235      T27.LAST_UPD_BY,
236      T27.CREATED_BY,
237      T27.MODIFICATION_NUM,
```



# BUSINESS SERVICE RUNNER

- Main dialog: BCRMBusinessServiceRunner()
- Retrieves list of Business Services using BCRMUtils.GetBusinessServiceList()
  - FWK Runtime.GetBusinessServiceList
    - Instantiates PicklistBusComp on BC Business Service Test, Name field
- Generates dialog and click handlers for buttons
- uses jQuery Autocomplete for service, method and selected properties (e.g. Integration Objects)



# SAVE/LOAD/MANAGE PRESETS

- BCRMCreatePreset()
- Reads current settings and saves them in localStorage
- Dropdown populated from localStorage
- Delete removes item from localStorage and dropdown

As simple as Save As..

Load Preset: EAI Siebel Adapter\_QueryPage\_Vie\_All\_1217

Business Service (Type to search): Please select...

Method: EAI File Transport\_Send\_Fil\_C:\1865

NewQuery: EAI XML Converter\_IntObjHierToXMLDoc\_Sie\_@0\*8472

OutputIntObjectName: EAI Siebel Adapter\_QueryPage\_Pag\_105398

PageSize: Eliza\_Analyze\_Inp\_mee\_4338

StartRowNum: EAI File Transport\_Send\_Fil\_C:\2615

ViewMode: EAI File Transport\_Send\_Fil\_C:\9639

EAI Siebel Adapter\_QueryPage\_Vie\_All\_1217

ncc1701.company.com:4430 says

Save Preset as...

EAI Siebel Adapter\_QueryPage\_Vie\_All\_1217

OK Cancel

Delete current preset

Business Service Runner (meep meep)

Load Preset: EAI File Transport\_Send\_Fil\_C:\1865

Business Service (Type to search): EAI File Transport

Delete

Delete current preset



# USE LAST OUTPUT

- global var last\_meep stores output property set as string
- uses DecodeFromString() to create temp PS
- Maps last output properties to fields and populates them





# ESCRIPT GENERATOR

- BCRMInvokeServiceMethod()
- Input is a “preset” (simple input PS representation with service name and method)
- Generates eScript code as string
- Invokes FWK Runtime.EvalScript

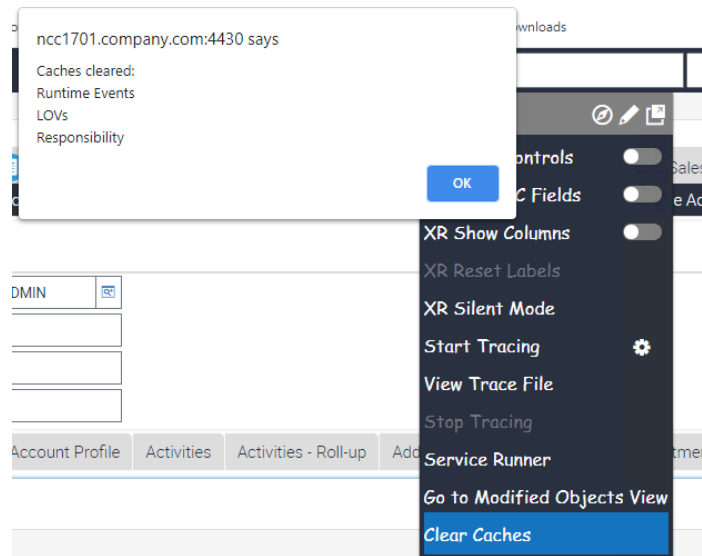
```
eScript copied to clipboard

var svc = TheApplication().getService("EAI File Transport");
var ips = TheApplication().NewPropertySet();
var ops = TheApplication().NewPropertySet();
var bshUtils = TheApplication().getService("Workflow Utilities");
var psin = TheApplication().NewPropertySet();
var psout = TheApplication().NewPropertySet();
var retval;
ips.SetValue("<?xml version='1.0' encoding='UTF-8'><SiebelMessage MessageId='1-259N' MessageType='Integration
Object' IntObjectName='Internal Account Interface' IntObjectFormat='Siebel Hierarchical'>
<ListOfAccountInterface><Account><AccountId>1-103</AccountId><AccountStatus>Active</AccountStatus><Alias>
</Alias><AssignmentAreaCode></AssignmentAreaCode><AssignmentCountryCode></AssignmentCountryCode>
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</CreditStatusDate><CurrencyCode>USD</CurrencyCode><DUNSNumber></DUNSNumber><DomesticUltimateDUNS>
</DomesticUltimateDUNS><NumberOfEmployees></NumberOfEmployees><Expertise></Expertise><GlobalUltimateDUNS>
</GlobalUltimateDUNS><HomePage></HomePage><IntegrationId></IntegrationId><Location>San Francisco</Location>
<MainFaxNumber></MainFaxNumber><MainPhoneNumber></MainPhoneNumber><Name>United Federation of Planets</Name>
<POApprovedFlag></POApprovedFlag><POAutoApprovalCurrencyCode>USD</POAutoApprovalCurrencyCode>
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<PartnerFlagNk></PartnerFlag><PriceList></PriceList><PriceListId></PriceListId><PriceListIntegrationId>
</PriceListIntegrationId><PrimaryOrganization>Default Organization</PrimaryOrganization>
<SkipCreditCheckNk></SkipCreditCheck><Type>Customer</Type><VATRegistrationNumber></VATRegistrationNumber>
<ListOfBusinessAddress><BusinessAddress IsPrimaryNWG='Y'><AddressId>1-131V</AddressId><AddressIntegrationId>
</AddressIntegrationId><City>San Francisco</City><Country>USA</Country><County></County>
<PostalCode>94115</PostalCode><Province></Province><State>CA</State><StreetAddress>1-99 Presidio
```



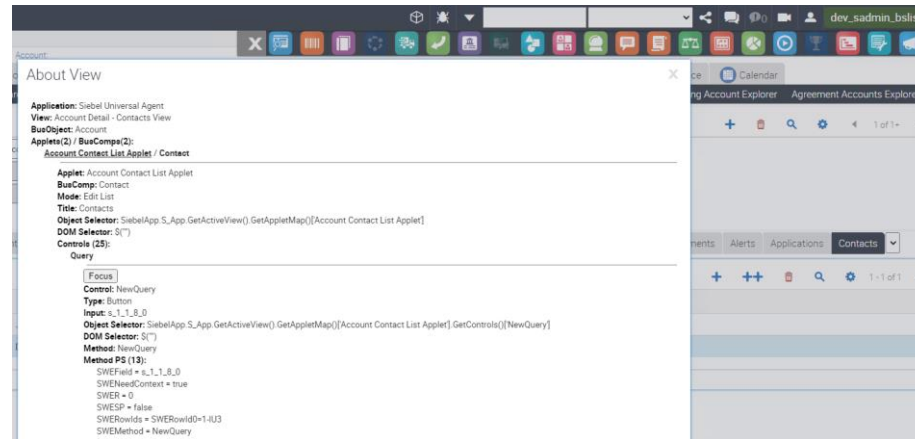
# CLEAR CACHES

- Invokes methods on active applet
- e.g. ClearLOVCache



# ABOUT VIEW

- BCRMAboutView()
- Dependency to 3rdParty/ejs/ejs\_production
- Reads information from Open UI API
- Renders as interactive dialog (click to copy, right-click to expand)

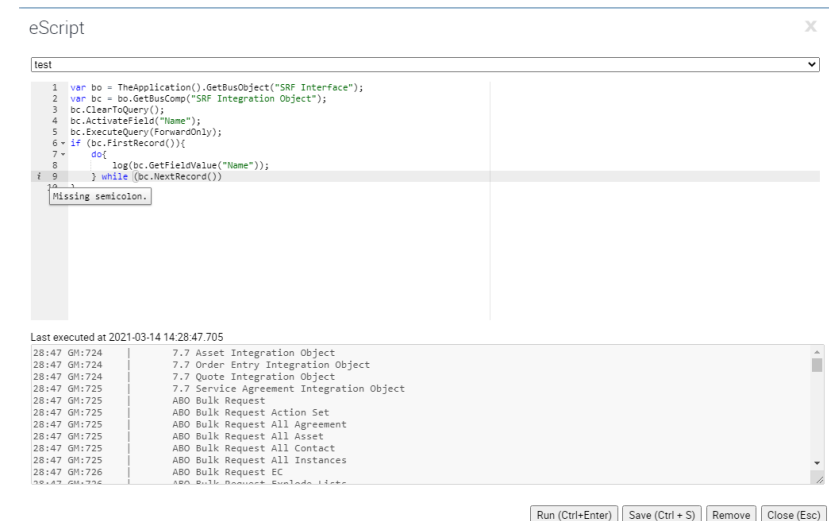


More: <http://xapuk.com/index.php?topic=80>



# ESCRIPIT PLAYGROUND

- BCRMScriptEditor()
- Dependency on ace.js
- Uses localStorage to store snippets
- Runs BCRMEval()
  - Invokes FWK Runtime.EvalScript
    - Uses eScript eval function



The screenshot shows the eScript playground interface. At the top, there's a title bar "eScript" with a close button. Below it is a dropdown menu set to "test". The main area is a code editor with the following JavaScript code:

```
1 var bo = TheApplication().GetBusObject("SRF Interface");
2 var bc = bo.GetBusComp("SRF Integration Object");
3 bc.ClearToQuery();
4 bc.ActivateField("Name");
5 bc.ExecuteQuery(ForwardOnly);
6 if (bc.FirstRecord()) {
7     do {
8         log(bc.GetFieldValue("Name"));
9     } while (bc.NextRecord());
10 }
11
```

A tooltip "Missing semicolon." is visible at the end of line 11. Below the code editor is a console output area showing the results of the execution:

```
Last executed at 2021-03-14 14:28:47.705
28:47 GH:724 7.7 Asset Integration Object
28:47 GH:724 7.7 Order Entry Integration Object
28:47 GH:724 7.7 Quote Integration Object
28:47 GH:725 7.7 Service Agreement Integration Object
28:47 GH:725 ABO Bulk Request
28:47 GH:725 ABO Bulk Request Action Set
28:47 GH:725 ABO Bulk Request All Agreement
28:47 GH:725 ABO Bulk Request All Asset
28:47 GH:725 ABO Bulk Request All Contact
28:47 GH:725 ABO Bulk Request All Instances
28:47 GH:726 ABO Bulk Request EC
28:47 GH:726 ABO Bulk Request RunMode: false
```

At the bottom right, there are buttons for "Run (Ctrl+Enter)", "Save (Ctrl+S)", "Remove", and "Close (Esc)".

More: <http://xapuk.com/index.php?topic=91>



# EXPRESSION PLAYGROUND

- BCRMEExprEditor()
- Dependency to SiebelQueryLang.js
- Runs BCRMEvalExpr()
  - Invokes FWK Runtime.EvalExpr
    - Uses bc.InvokeMethod("EvalExpr", sExpr)

Runtime calculations

Business Component:

Contact

Expression:

`GetProfileAttrAsList("User Responsibilities")`

Results:

Siebel Administrator,PH Call Activity Analytics Admin,PH US Executive Analytics User,PH EMEA Executive Analytics User,PH Executive Analytics Admin,PH Service Analytics User,PH Mobile Analytics Admin,Investigative Agent Analytics,Health Professional Analytics,PH Objective Analytics Admin,PH Objective Analytics User,PH Mobile Manager Analytics Admin,PH Mobile Manager Analytics User,FINIS B1B Responsibility,Dispatcher,Customer Service Representative,Customer Service Manager,Call Center Administrator,Channel Operations Manager,Web Sales Representative,Pricing Administrator,Engagement Manager,Resource Manager,Product Administrator,Web Anonymous

Format/Linise

Run (Ctrl+Enter)

Close (Esc)

More: <http://xapuk.com/index.php?topic=93>



# SERVER MANAGER

- BCRMSrvrMgr()
- Dependency on BCRM Server Manager Service (SIFs)
  - Implements DLLExec class to run srvmgr command line
  - commands are written to temp file
  - output is written to file
- Wrapped by FWK Runtime.srvmgr
  - Uses EAI File Transport and Transcode Service to retrieve output file
- File content displayed in dialog

```
Server Manager Output

1  *
2  srvmgr> list servers
3  list servers
4
5  -----
6  SBLSRVR_NAME  SBLSRVR_GROUP_NAME  HOST_NAME  INSTALL_DIR  SBLMGR_PID  SV_DISP_STATE  SBLSRVR_STATE  START_TIME  END_TIME  SBLSRVR_STATUS
7  server01      ncc1701              c:\Siebel\ses\siebsrvr  5992        Running      Running        2021-03-14 11:52:03  21.1.0.0 [2307:
8  server02      ncc1701              c:\Siebel\ses\siebsrvr  5528        Running      Running        2021-03-14 11:52:01  21.1.0.0 [2307:
9
10 2 rows returned.
11
12 srvmgr> list comps
13 list comps
14
15 -----
16 SV_NAME  CC_ALIAS  CC_NAME  CT_ALIAS  CE_ALIAS  CC_RUNMODE  CP_DISP_RUN_STATE  CP_STARTMODE  CP_NUM1_RUN
17 server02 SCCObjMgr_enu  Call Center Object Manager (ENU)  AppObjMgr  CallCenter  Interactive  Running  Auto  1
18 server02 FSHSrvr  File System Manager  FSHSrvr  SystemAux  Batch  Online  Auto  0
19 server02 SServiceObjMgr_enu  Self Service Object Manager (ENU)  AppObjMgr  CallCenter  Interactive  Online  Auto  0
20 server02 ServerMgr  Server Manager  ServerMgr  System  Interactive  Running  Auto  1
21 server02 SRBroker  Server Request Broker  ReqBroker  System  Interactive  Running  Auto  13
22 server02 SRProc  Server Request Processor  SRProc  SystemAux  Interactive  Running  Auto  2
23 server02 SvrTbClCleanup  Server Tables Cleanup  BusSvcMgr  SystemAux  Background  Running  Auto  1
24 server02 SvrTaskPersist  Server Task Persistence  BusSvcMgr  SystemAux  Background  Running  Auto  1
25 server02 AdminNotify  Siebel Administrator Notification Component  AdminNotify  SystemAux  Batch  Online  Auto  0
26 server02 SCBroker  Siebel Connection Broker  SCBroker  System  Background  Running  Auto  1
27 server02 eServiceObjMgr_enu  eService Object Manager (ENU)  AppObjMgr  CallCenter  Interactive  Online  Auto  0
28 server01 BusIntBatchMgr  Business Integration Batch Manager  BusSvcMgr  EAI  Batch  Shutdown  Manual  0
29 server01 BusIntMgr  Business Integration Manager  BusSvcMgr  EAI  Batch  Shutdown  Manual  0
30 server01 SCCObjMgr_enu  Call Center Object Manager (ENU)  AppObjMgr  CallCenter  Interactive  Online  Auto  0
31 server01 CustomAppObjMgr_enu  Custom Application Object Manager (ENU)  CustomAppObjMgr  EAI  Interactive  Shutdown  Manual  0
32 server01 EAIObjMgr_enu  EAI Object Manager (ENU)  EAIObjMgr  EAI  Interactive  Online  Auto  0
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# SERVER STATUS

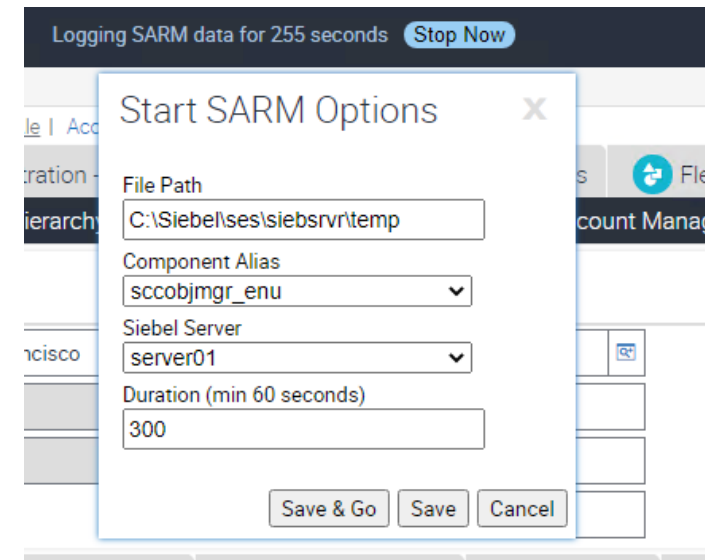
- Uses (undocumented) CGW REST API to retrieve component status
- Formats return value JSON as simple dialog
- `BCRMDisplayServer()`
  - `BCRMGetCredentials()` uses dialog for user/password
  - `BCRMGetEnterprise()` returns enterprise name
  - `BCRMGetServers()` returns list of servers
  - `BCRMGetComponents()` returns component list

Server Component Status	
server01: Running	
eService Object Manager (ENU): Shutdown (0 of 20 tasks)	
XMLP Report Server: Online (0 of 20 tasks)	
Siebel Web Tools Object Manager (ENU): Running (1 of 20 tasks)	
Siebel Mobile Connector Object Manager (ENU): Shutdown (0 of 20 tasks)	
Siebel Connection Broker: Running (1 of 1 tasks)	
Siebel Administrator Notification Component: Online (0 of 10 tasks)	
Server Task Persistence: Running (1 of 1 tasks)	
Server Tables Cleanup: Running (1 of 1 tasks)	
Server Request Processor: Running (2 of 20 tasks)	
Server Request Broker: Running (15 of 100 tasks)	
Server Manager: Running (1 of 20 tasks)	
Self Service Object Manager (ENU): Shutdown (0 of 20 tasks)	
Sales Object Manager (ENU): Online (0 of 20 tasks)	
SMQ Receiver: Shutdown (0 of 20 tasks)	
MSMQ Receiver: Shutdown (0 of 20 tasks)	
MQSeries Server Receiver: Shutdown (0 of 20 tasks)	
MQSeries AMI Receiver: Shutdown (0 of 20 tasks)	
JMS Receiver: Shutdown (0 of 20 tasks)	
File System Manager: Online (0 of 20 tasks)	
Enterprise Integration Mgr: Shutdown (0 of 5 tasks)	
EAI Outbound Server: Shutdown (0 of 20 tasks)	
EAI Object Manager (ENU): Online (0 of 20 tasks)	
Custom Application Object Manager (ENU): Shutdown (0 of 20 tasks)	
Call Center Object Manager (ENU): Online (0 of 20 tasks)	
Business Integration Manager: Shutdown (0 of 20 tasks)	
Business Integration Batch Manager: Shutdown (0 of 20 tasks)	
server02: Running	
eService Object Manager (ENU): Online (0 of 20 tasks)	
Siebel Connection Broker: Running (1 of 1 tasks)	
Siebel Administrator Notification Component: Online (0 of 10 tasks)	
Server Task Persistence: Running (1 of 1 tasks)	
Server Tables Cleanup: Running (1 of 1 tasks)	
Server Request Processor: Running (2 of 20 tasks)	
Server Request Broker: Running (15 of 100 tasks)	
Server Manager: Running (1 of 20 tasks)	
Self Service Object Manager (ENU): Online (0 of 20 tasks)	
File System Manager: Online (0 of 20 tasks)	
Call Center Object Manager (ENU): Running (1 of 20 tasks)	



# SARM LOGGING

- BCRMSARMon()
  - Uses BCRMSrvrMgr() to enable SARM for current user
  - Reads options from localStorage
  - Sets timer to call BCRMSARMOff()





# STOP SARM

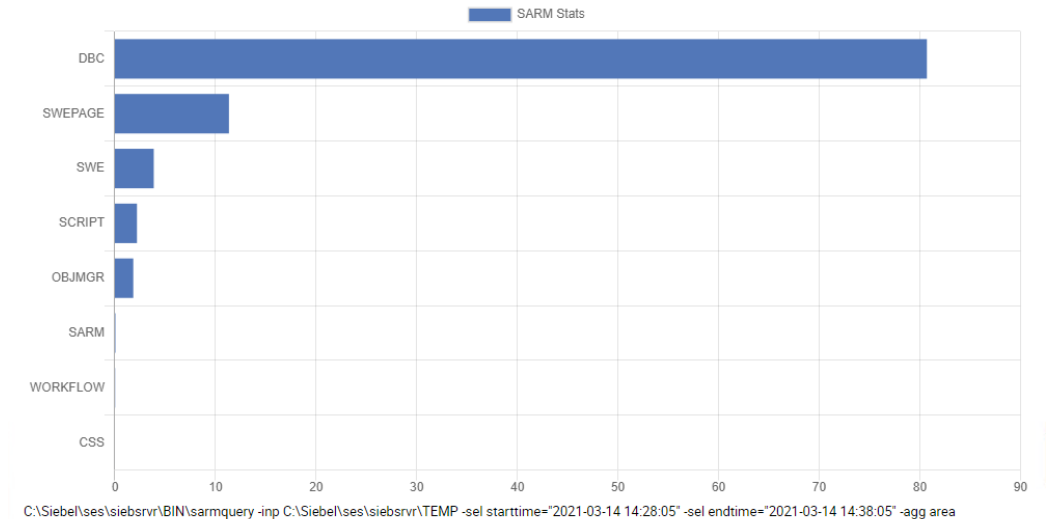
- BCRMSARMOff()
- Uses BCRMSrvrMgr() to delete parameter override for SARM params

```
Server Manager Output
1
2 srvmgr> delete parameter override for server server01 component sccobjmgr_enu param sarmperiod
3 delete parameter override for server server01 component sccobjmgr_enu param sarmperiod
4 Command completed successfully.
5
6 srvmgr> delete parameter override for server server01 component sccobjmgr_enu param sarmlogdirectory
7 delete parameter override for server server01 component sccobjmgr_enu param sarmlogdirectory
8 Command completed successfully.
9
10 srvmgr> delete parameter override for server server01 component sccobjmgr_enu param sarmusers
11 delete parameter override for server server01 component sccobjmgr_enu param sarmusers
12 Command completed successfully.
13
14 srvmgr> delete parameter override for server server01 component sccobjmgr_enu param sarmlevel
15 delete parameter override for server server01 component sccobjmgr_enu param sarmlevel
16 Command completed successfully.
17
18 srvmgr> list param sarm% for comp sccobjmgr_enu
19 list param sarm% for comp sccobjmgr_enu
20
21 PA_ALIAS PA_VALUE PA_DATATYPE PA_SCOPE PA_SUBSYSTEM PA_SETLEVEL PA_DISP_SETLEVEL PA_EFF_NEXT_TASK PA_EFF_CHIP_RSTRT PA_EFF_SRVR_RST
22 -----
23 SARMLevel 0 Integer Subsystem (SARM) Response Measurement Default value Default value N N N
24 SARMLevel 0 Integer Subsystem (SARM) Response Measurement Default value Default value N N N
25
26 2 rows returned.
27
28 srvmgr> list advanced param sarm% for comp sccobjmgr_enu
29 list advanced param sarm% for comp sccobjmgr_enu
```



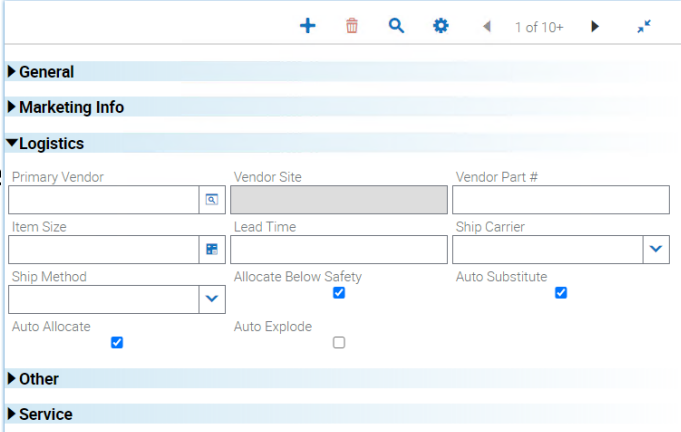
# SHOW SARM STATS

- BCRMShowSARM()
- Generates sarmquery string from options
- Runs sarmquery using BCRMRunCmd()
  - FWK Runtime.runcmd
    - Clib.system(cmd);
- Retrieves output file using BCRMReadFile()
  - FWK Runtime.readFile
    - EAI File Transport and Transcode Service
- Simple dialog or BCRMChartEngine() to display
  - Dependency on chartjs



# BREAK FREE DEMO

- Example implementation of RWDFactory (of Siebel2Phone)
- SiebelAppFacade.BCRMWDFactory()
- Parses form applet <TABLE>
- Creates valid pairs of label/control and detaches them
- Appends label/control pairs to new DIV
- Uses jQuery Accordion to transform form sections
- Reads optional BCRMWDCnf definition to define place of controls and accordion panels



The screenshot displays a Siebel CRM form applet with an accordion interface. The top navigation bar includes icons for adding, deleting, searching, and settings, along with a page indicator '1 of 10+'. The accordion sections are: 'General', 'Marketing Info', 'Logistics' (expanded), 'Other', and 'Service'. The 'Logistics' section contains the following fields and controls:

Primary Vendor	Vendor Site	Vendor Part #
<input type="text"/>	<input type="text"/>	<input type="text"/>
Item Size	Lead Time	Ship Carrier
<input type="text"/>	<input type="text"/>	<input type="text"/>
Ship Method	Allocate Below Safety	Auto Substitute
<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Auto Allocate	Auto Explode	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	



# EDIT LAYOUT DEMO

- Break Free Demo adds “Edit Layout” button to form applets
  - Expands accordion (if present)
  - Makes all field containers sortable and resizable (jQuery)
  - Adds option button to field container for custom CSS override
  - Changes written to persistent storage for each applet in JSON
  - When applet is loaded, overrides are applied after applying free grid
- BCRMRWDFactory
  - SaveConfig()
  - ApplyOverrides()
  - ShowFieldOptions()

The screenshot shows a web application interface for editing a form layout. The main form is titled "1-263625" and includes fields for "Order #", "Order Date" (3/20/2021), "Total" (\$0.00), and "Revision". A blue "Edit Layout" button is visible in the top right corner. A modal window titled "Layout Options for Order Date" is open, displaying a list of CSS overrides: "font-size: 2em;", "background-color: coral;", and "border-radius: 10px;". The modal also has "Preview", "Save", and "Cancel" buttons. The background form contains various input fields and dropdown menus, including "Account" (Alpha Trilithium Mining Corp.), "Status" (Pending), "Created" (3/20/2021 05:14:29 AM), "Currency" (USD), "Due" (3/20/2021 12:00:00 AM), "Discount", "Comments", "Billing Account" (Alpha Trilithium Mining Corp.), "Status As Of" (3/20/2021 05:14:29 AM), "Agreement", "Purchase Order #", "Network" (1-SNEX), "Quote #", "Quote #", "MRC Total" (\$0.00), "NRC Total" (\$0.00), "Hold Reason", "Type" (Sales Order), "First Name", "Campaign", "Created By" (DEV2), and "Approved By".



# VERSION CONTROL

- **BCRMCheckVersion()**
  - Checks for newer version on GitHub
  - Alerts if FWK Runtime service is out of date
- **BCRMGetWSContext()**
  - Invokes Web Engine Client Preferences business service to get workspace info
- **BCRMGetTechSupportInfo()**
  - Opens a stealth instance (css trickery) of the Technical Support Applet
  - Reads Siebel version
- **BCRMSiebelVersionCheck()**
  - Allows quick check of current version against other versions (continuous release e.g. 20.7)



# GET IT ON GITHUB

- <https://github.com/blacksheep-crm/devpops>

The screenshot shows the GitHub repository page for `blacksheep-crm/devpops`. The repository is in the `main` branch with 1 branch and 0 tags. It has 5 stars and 6 forks. The repository description states: "Combining utilities from blacksheep and the Siebel community into a unique developer toolkit." The repository contains 82 commits. The file list includes:

File Name	Commit Message	Commit Time
BCRM NEO RR Data.sif	Add files via upload	last month
BCRM Server Manager Service.sif	Add files via upload	last month
BCRM Workspace Helper Data.sif	Add files via upload	2 months ago
BCRM Workspace Helper UI.sif	Add files via upload	2 months ago
FWK Runtime.xml	RR Reader update	5 days ago
README.md	Update README.md	3 days ago
SiebelQueryLang.js	Add files via upload	2 months ago
postload.js	bugfixes, menu is now toolbarizable	3 days ago
ui.multiselect.js	Add files via upload	27 days ago
v	Update v	3 days ago

The right sidebar shows the repository's About, Releases, Packages, and Languages sections. The Languages section shows JavaScript at 100.0%.

