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# Easy AF Modernisation

with HTML5 and SAS





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**Nik Markovic**

Setting the Scene





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# Michael Saunders

The Challenge Ahead



## DHOLAP

- Month-end & ad-hoc reporting
- 100+ users across PL, CL & Engineering
- Various KPI's, e.g.
  - Business volumes & premium income
  - Date basis – underwriting, financial or loss
  - Loss ratios (claims incurred/GEP)
- Development triangles



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# DHOLAP – Development Triangles

Alliance SAS Classic MR					
Commercial Lines Version 1.00	Personal Lines version 1.20	Auto Version 2.00	Financial Results Version 1.00	A/PM Version 1.00	FAI Version 1.00
Endor Direct Version 1.00	Bank Endor Direct version 1.20	Development Telesight Version 1.00	Update/Download File Version 1.00	Claims MR Version 1.00	Expenses MR Version 1.00
DRG - DRG Version 1.00	DRG - PCR version 1.20	File System 2011-10			



SLIDES REMOVED





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# Allan Bowe

How We Did It





# SAS/AF & SCL

Year: 1994

Quarter:

1  
 2  
 3  
 4

Country:

CANADA  
 GERMANY  
 U.S.A.

Create Report

Sales Figures for U.S.A.: Quarter 3 in 1994

Product	Variable	Label	Sum
BED	PREDICT	Predicted Sales	6015.00
	ACTUAL	Actual Sales	6969.00
CHAIR	PREDICT	Predicted Sales	4994.00
	ACTUAL	Actual Sales	7469.00
DESK	PREDICT	Predicted Sales	6457.00
	ACTUAL	Actual Sales	5845.00
SOFA	PREDICT	Predicted Sales	4775.00
	ACTUAL	Actual Sales	6363.00
TABLE	PREDICT	Predicted Sales	6210.00
	ACTUAL	Actual Sales	4647.00

Close Window



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# SAS/AF & SCL

Main Windows of the SAS/AF Development Environment

The screenshot displays the SAS/AF Development Environment with several key windows:

- Components window:** Located on the left, it lists various UI components such as Catalog Entry List Model, Display Form Model, and various controls like Check Box Control and Text Control.
- Frame:** A central window titled "SALES\_DISPLAY\_SASURGE\_CONNECT\_FRAME\_WINDOW" containing a "Sales Viewer" and buttons for "Display Sales Data" and "Create Sales Report".
- Source window:** A window titled "BUILD\_SOURCE\_SASURGE\_CONNECT\_FRAME\_WINDOW" showing SCL code for the "DisplaySalesData" and "CreateSalesReport" methods.
- Properties window:** A window titled "Properties - SASURGE\_DISPLAY\_SASURGE\_CONNECT\_FRAME\_WINDOW" showing the properties of the selected component, including its name, position, and label.

Component Name	Value	Default
HorizontalPosition		
VerticalPosition	13	
Label	Left	
LabelText	Print View	
Name	PrintView	
ParentComponent	PrintView	
Model		
...		



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## Drawbacks

- Security
- Scalability
- Support
- Cost



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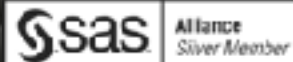
## Benefits

- Security
- Scalability
- Support
- Cost

# SPWNA



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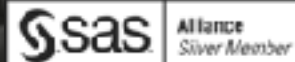


# Easy AF – Steps for Success

- Front End
- Back End
- API



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AF

SCL



Bootstrap



React JS

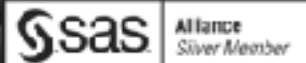


HANDSONTABLE



Mentimeter

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## Easy AF – Front End

- Screenshots
- Screen recordings
- Wireframes



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## Easy AF – Backend

- Extract source entries
- Extract slists
- Prepare services



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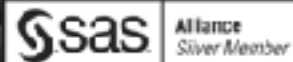


# SCL Functions

```
varname = nameitem(l_types,i);  
type_no = getitemn(l_types,i);  
l_typvar = insertc(l_typvar,varname,-1);  
l_typnum = insertn(l_typnum,type_no,-1);
```



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# SCL Functions

```
varname    = nameitem(l_types,i);  
type_no    = getitemn(l_types,i);  
l_typvar   = insertc(l_typvar,varname,-1);  
l_typnum   = insertn(l_typnum,type_no,-1);
```

## proc fcmp

```
varname    = nameitem(l_types,i);  
type_no    = getitemn(l_types,i);  
l_typvar   = insertc(l_typvar,varname,-1,'');  
l_typnum   = insertn(l_typnum,type_no,-1,'');
```



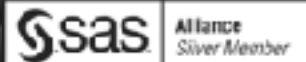
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# SUBMIT BLOCKS

```
·· submit;  
···· data _trans4_(drop=i) ;  
······ set &i_dsname (keep=  
·· endsubmit;
```



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# SUBMIT BLOCKS

```
·· submit;  
···· data _trans4_(drop=i) ;  
······ set &i_dsname (keep=  
·· endsubmit;
```

```
·· rc=bscl_submit(bafref, '  
···· data _trans4_(drop=i) ;  
······ set '!!i_dsname!!' (keep=');
```



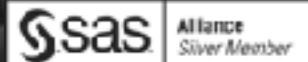
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# OBJECT METHODS

```
do i = 1 to numanl;  
  varname = nameitem(l_analys, i);  
  MetaDataID.GetDataSetVariableAttribute(i_dsname, varname, "VARTYP", vartyp);  
  MetaDataID.GetDataSetVariableAttribute(i_dsname, varname, "VARLEN", varlen);  
  if vartyp = 'C' then varlenx = max(varlenx, varlen);  
end;
```



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# OBJECT METHODS

```
do i = 1 to numanl;  
    varname = nameitem(l_analys,i);  
    MetadataID.GetDataSetVariableAttribute(i_dsname,varname,"VARTYP",vartyp);  
    MetadataID.GetDataSetVariableAttribute(i_dsname,varname,"VARLEN",varlen);  
    if vartyp = 'C' then varlenx = max(varlenx,varlen);  
end;
```

```
do i = 1 to numanl;  
    varname = nameitem(l_analys,i);  
    %baf_class(class=objects.dhobject.metadata  
        ,method=GetDataSetVariableAttribute  
        ,varlist='i_dsname,varname, "VARTYP",vartyp');  
    %baf_class(class=objects.dhobject.metadata  
        ,method=GetDataSetVariableAttribute  
        ,varlist='i_dsname,varname,"VARLEN",varlen');  
    if vartyp = 'C' then varlenx = max(varlenx,varlen);  
end;
```



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# METHOD BLOCKS

```
5953 TYPES: method optional = StatType $ ;
5954
5955   ··· AuditID ··· = _self_.OwnerID.AuditID;
5956   ··· AuditID.LogFunctionCall('DAENGINE', 'SubmitTypes');
5957
5958   ··· MetaDataID = _self_.OwnerID.MetaDataID;
5959   ··· l_define ··· = MetaDataID.DefineID;
5960   ··· l_typinf ··· = getniteml(l_define, '_TYPE_ INFO');
5961   ··· l_typnum ··· = getniteml(l_typinf, 'REQUIRED _TYPES_');
5962   ··· l_rclcmb ··· = getniteml(l_typinf, 'REQUIRED CLASS COMBINATIONS');
```



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# METHOD BLOCKS

```
5953 TYPES: method optional = StatType $ ;
5954
5955   · · · AuditID · · · = _self_.OwnerID.AuditID;
5956   · · · AuditID.LogFunctionCall('DAENGINE', 'SubmitTypes');
5957
5958   · · · MetaDataID = _self_.OwnerID.MetaDataID;
5959   · · · l_define · · · = MetaDataID.DefineID;
5960   · · · l_typ
5961   · · · l_typ function bscl_class(catalog $,method $,varlist $, src, bafmsig $);
5962   · · · l_rcl   · · · rc=bafhasheport();
   · · ·         · · · length baf_sysmsg $1000;
   · · ·         · · · rc=run_macro('bscl_class',catalog,method,varlist,src,listid,bafms
   · · ·         · · · file log; put 'bscl_class (out):' catalog= method= varlist= listi
   · · ·         · · · return (listid);
   · · ·         endsb;
```



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```

1541 unless $if $switchoff=DTCCUTOFF $then &obj; /* GetDateCutOff */
1542 * DTCCUTOFF: method outdate 3 optional = whr_mnth out_mnth $200 ;
1543 length outdate 9 whr_mnth out_mnth $200;
1544 $baf_assignvars[var]list=attr[&varlist],methodvars=&methodvars,proc=err);
1545
1546 * l_define = _self .defineid;
1547 l_define=bscl_publiclist["DefineID", "objects.dhobject.metadata"];
1548 outdate = . ;
1549 whr_mnth = . ;
1550 out_mnth = . ;
1551
1552 if naneditex(l_define, 'DATECARD') then do;
1553 dcard=getnitenc(l_define, 'DATECARD', 1, 1, .);
1554
1555 * submit remote continue;
1556 rc=doeubl("
1557 filename datecard '%trim[dcard]!';
1558 data null;
1559 infile datecard;
1560 input date $8;
1561 newdate=mdy(substr(date, 3, 2), substr(date, 1, 2),
1562 , substr(date, 5, 4))+1;
1563 call symput('datecard', newdate, 'e');
1564
1565 RUN;
1566 filename datecard;
1567 %symput datecard=&datecard;");
1568 %endsubmit;
1569
1570 outdate=input(symget('datecard'), 8.);
1571
1572 end;
1573
1574 else outdate=today();
1575
1576 pos = naneditex(l_define, 'STATISTIC DATE VARIABLES');
1577
1578 if pos then do; /* If date variables have been registered then check for
1579 /* date cut-off processing */
1580
1581 l_across = getnitenc(l_define, 'ACROSS');
1582 l_down = getnitenc(l_define, 'DOWN');
1583 lastmnth = 'N';
1584
1585 * _self_.GetDateVariables(year_var, qtr_var, mnth_var);
1586 %baf class(class=objects.dhobject.metadata
1587 ,method=GetDateVariables
1588 ,varlist=year_var,qtr_var,mnth_var !);
1589
1590 /* Get cut-off at last month indicator */
1591 lastmnth = getnitenc(l_define, 'UP TO LAST MONTH ONLY', 1, 1, 'N');
1592
1593 /* Get last month cut-off offset if it exists - else it is 0 */
1594 lnoffset = getnitenc(l_define, 'MONTH CUT-OFF OFFSET', 1, 1, 0);
1595

```

```

1546 DTCCUTOFF: method outdate 3 optional = whr_mnth out_mnth $200 ;
1547
1548 l_define = _self .defineid;
1549
1550 outdate = . ;
1551 whr_mnth = . ;
1552 out_mnth = . ;
1553
1554 if naneditex(l_define, 'DATECARD') then do;
1555 dcard=getnitenc(l_define, 'DATECARD');
1556
1557 submit remote continue;
1558
1559 filename datecard '&dcard';
1560 data null;
1561 infile datecard;
1562 input date $8;
1563 newdate=mdy(substr(date, 3, 2), substr(date, 1, 2),
1564 , substr(date, 5, 4))+1;
1565 call symput('datecard', newdate);
1566
1567 RUN;
1568 filename datecard;
1569 %symput datecard=&datecard;
1570 %endsubmit;
1571
1572 outdate=input(symget('datecard'), 8.);
1573
1574 end;
1575
1576 else outdate=today();
1577
1578 pos = naneditex(l_define, 'STATISTIC DATE VARIABLES');
1579
1580 if pos then do; /* If date variables have been registered then check for */
1581 /* Date cut-off processing */
1582
1583 l_across = getnitenc(l_define, 'ACROSS');
1584 l_down = getnitenc(l_define, 'DOWN');
1585 lastmnth = 'N';
1586
1587 _self_.GetDateVariables(year_var, qtr_var, mnth_var);
1588
1589 /* Get cut-off at last month indicator */
1590 lastmnth = getnitenc(l_define, 'UP TO LAST MONTH ONLY', 1, 1, 'N');
1591
1592 /* Get last month cut-off offset if it exists - else it is 0 */
1593 lnoffset = getnitenc(l_define, 'MONTH CUT-OFF OFFSET', 1, 1, 0);
1594

```

```
d_objects_dhobject_dhdata.m.sas x perharbour.sh x d_objects_dhobject_formats.sas x baf_reportingbwest.sas x library_locations.sas x
1 cd ../src/macros
2 perl -pi -w -e "s/getnitemc\(\l_define,'SUMMARY TABLE'\)/getnitemc\(\l_define,'SUMMARY TABLE',1,1,'\)/g;" d_*.sas
3 perl -pi -w -e "s/getnitemc\(\l_define,'BASE TABLE'\)/getnitemc\(\l_define,'BASE TABLE',1,1,'\)/g;" d_*.sas
4 perl -pi -w -e "s/getnitemc\(\l_varfmt,varname'\)/getnitemc\(\l_varfmt,varname,1,1,'\)/g;" d_*.sas
5 perl -pi -w -e "s/(\bgetnitemc)\(([\^,]+),([\^,]+)\)/\1\(\2,\3,1,1,'\)/g;" d_*.sas
6 perl -pi -w -e "s/getniteml\(\l_define,'PAGE WHERE CLAUSES',1,1,0'\)/getniteml\(\l_define,'PAGE WHERE CLAUSES',1,1,0'\)/g;" d_*.sas
7 perl -pi -w -e "s/\l_define = MetaDataID\.\DefineID;/\l_define=bscl_publiclist\('DefineID','objects\.\dhobject\.\daengine',method=SetNWay\)/g;" d_*.sas
8 perl -pi -w -e "s/(\bgetniteml)\(([\^,]+),\([\^,]+\)\('(?:,\d+){3}\)/\1\(\2,\3\)/g;" d_*.sas
9 perl -pi -w -e "s/MetaDataID\.\PreSummaryLookUp\(\i_dsname,next_type,type_req'\);/%baf_class\(\class=objects\.\dhobject\.\daengine\)/g;" d_*.sas
10 perl -pi -w -e "s/then submit;/then do;*submit;/g;" d_*.sas
11 perl -pi -w -e "s/_self\.\SetNWay\(\nway'\);/%baf_class\(\class=objects\.\dhobject\.\daengine,method=SetNWay\)/g;" d_*.sas
12 perl -pi -w -e "s/else submit;/else do;*submit;/g;" d_*.sas
13 perl -pi -w -e "s/endsubmit;/end;*end the submit;/g;" d_*.sas
```

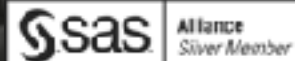


## Easy AF – API

- STP location
- Inputs / Outputs
- Permissions



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Service Name: **reportSave**

---

Service Path: **/Apps/Allianz/** SELECT

---

Service Description: **Request to save a report SPEC. Accepts a parameter table (Iwant) and the spec object.**

---

GENERATE SAS STUB

GENERATE JS STUB

DELETE

- ▼ editorGetTable
  - ↳ Input Tables +
    - Iwant
  - ↳ Output Tables +
    - columnspec
    - tabledata
- ▼ editorStartup
  - ↳ Input Tables +
  - ↳ Output Tables +
    - filesec
- ▼ editorSortTable
  - ↳ Input Tables +
    - Iwant
  - ↳ Output Tables +
- ▼ editorPutTable
  - ↳ Input Tables +
    - metadata
    - target
  - ↳ Output Tables +
    - fromSAS
- ▼ whereValues
  - ↳ Input Tables +

Column	Type	
report_type	String	▼ <span style="background-color: #e55e5e; color: white; padding: 2px 5px; border-radius: 4px;">X</span>
report_name	String	▼ <span style="background-color: #e55e5e; color: white; padding: 2px 5px; border-radius: 4px;">X</span>
report_description	String	▼ <span style="background-color: #e55e5e; color: white; padding: 2px 5px; border-radius: 4px;">X</span>
report_id	String	▼ <span style="background-color: #e55e5e; color: white; padding: 2px 5px; border-radius: 4px;">X</span>
<span style="background-color: #00a68a; color: white; border-radius: 50%; padding: 10px 15px; display: inline-block; width: 20px; height: 20px; line-height: 20px;">+</span>		

	report_type	report_name	report_description	report_id
1	GROUP	af.dholap.somelist	This is my extra well good report of lore	a;lkstdfjp434309asdf
2	PRIVATE	af.dholap.somelist	My private report	gfsdgvftrtd5seggg%
3	PUBLIC	af.dholap.somelist	Public Facing - call this in usual way (not via reportSelect)	af.dholap.somelist
4				

## Generated SAS

```
1 - /*-----reportSave-----*/
2
3 * load h54s from location variable ;
4 %include "%H54LOC.";
5
6 * parse the input tables ;
7 %hfsGetDataset(iwant,work.iwant);   %hfsGetDataset(spec,work.spec);
8 %hfsErrorCheck;
9
10 - /* SAS Code Goes Here */
11
12 data report_list;
13     report_type = 'GROUP';
14     report_name = 'af.dholap.somelist';
15     report_description = 'This is my extra well good report of lore';
16     report_id = 'a;lk sdfjp434309asdf';
17     output;
18     * end row for loop;
19     report_type = 'PRIVATE';
20     report_name = 'af.dholap.somelist';
21     report_description = 'My private report';
22     report_id = 'gfsdgsvfantd5seggg%';
23     output;
24     * end row for loop;
25     report_type = 'PUBLIC';
```

reportSave.sas

CLOSE

SAVE



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## Generated JavaScript

```
1 var adapter = new h54s({/* options */});
2
3 var tables = new h54s.Tables([
4   {
5     "report_type": "GROUP/PRIVATE",
6     "report_name": "af.pholap.somelist",
7     "report_description": "This is my extra well good report of lore",
8     "group_report_paths": "CLSGROUP.REPORTS"
9   }
10 ], 'iwant');
11
12 tables.add([], 'spec');
13
14 adapter.call('undefined/Apps/Allianz/reportSave', tables, function(err, res) {
15   if(err) {
16     alert(err.message);
17     return;
18   }
19
20   console.log(res.report_list);
21
22 });
```

reportSave.js

CLOSE

SAVE



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SLIDES REMOVED





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