APEX MasterAPP

Supporting modularity in hierarchical structures

Robert Johannesson

SoftBASE

ORACLE Gold Partner

- who is SoftBASE?

- ERP Developers, based on classic Oracle tools
- Upgrade tools for Forms, build from need and experience
- Modernization tools for Forms, build from need and experience
- APEX developers, APEX integration
- APEX templates for individual development incl. enterprise features
- ORDS REST Services with OAUTH protection
- Oracle system practice for Hosting(OVM)/Cloud(OCI) (IAAS) deployment

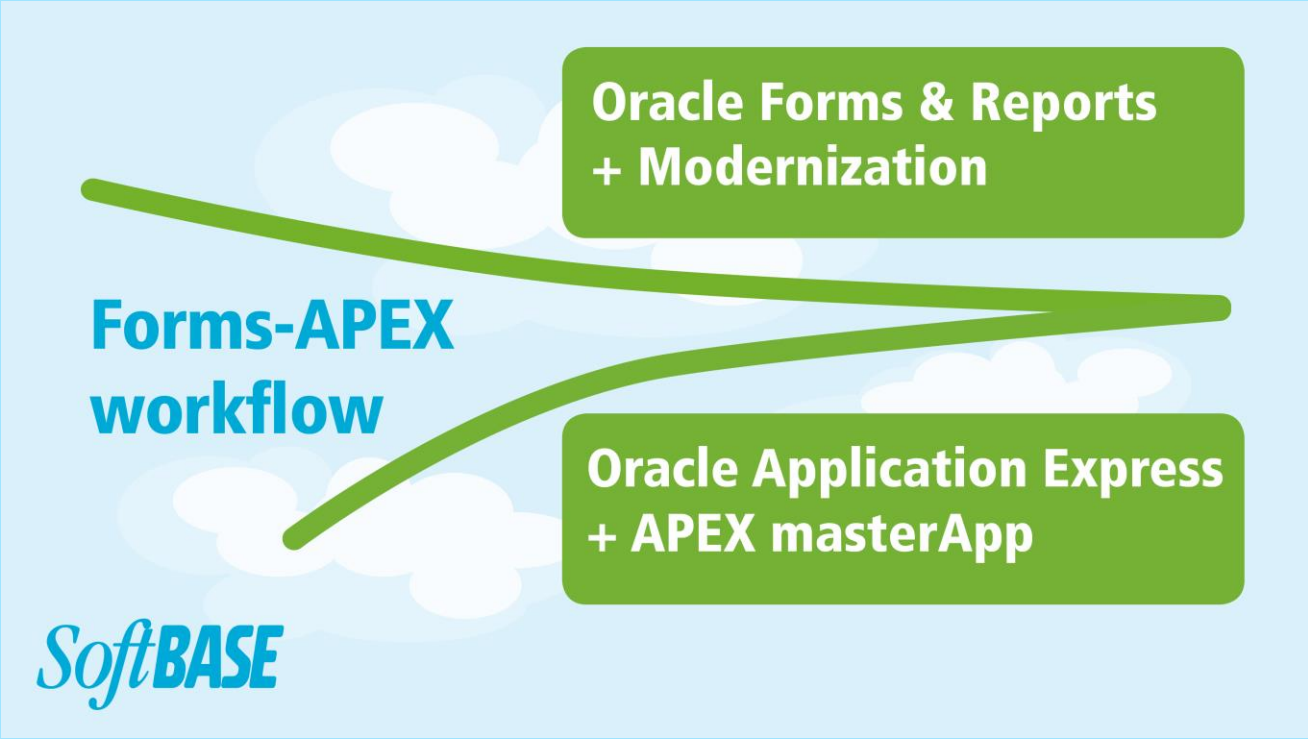
- who am I? Robert Johannesson



- ERP developer for 30 years
  - Data modelling
  - Function design
  - Customer requirements – Solutions
  - Implementation
- Oracle technologies such as PL/SQL, Forms, Reports, APEX, ORDS/REST
- Deployment WLS/Tomcat/Apache
- Consultant and developer
- Promote APEX/REST/FORMS - Speaker at UKOUG/DOAG/SOUG/DOUG

- APEX MasterAPP

- The SoftBASE MasterApp adds modularity to APEX allowing new Apps to inherit authentication, authorization and navigation.
- The MasterApp navigation, defined on modular level, provides seamless linking of APEX application into one App.
- Fits collaboration and complex App-development.



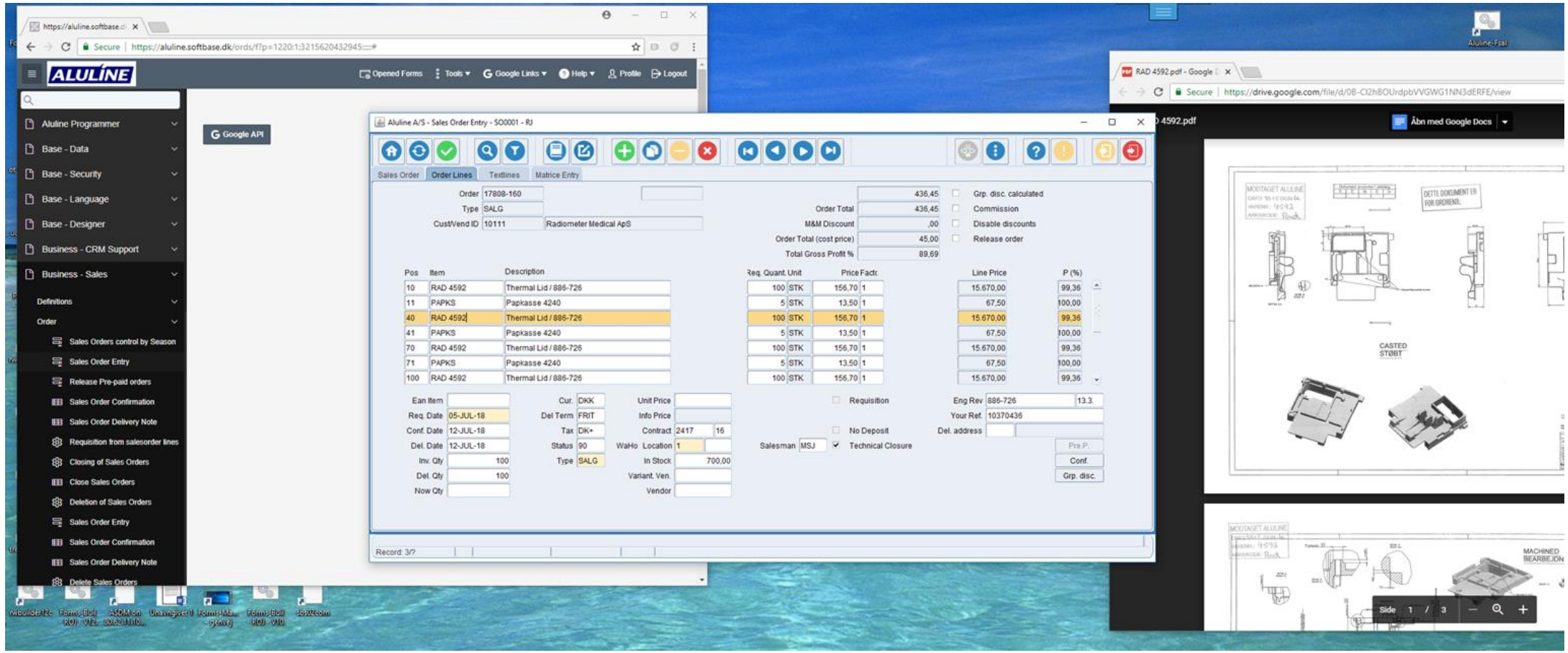
- a bit more on our background

- Coming from enterprise ERP/logistic application
- Focus on security, developer cooperation and quality control
- Embarked on extension- and migration projects from Forms to APEX several times
- It started with the Forms-APEX workflow (Application 1220)

  - Forms-APEX single sign on/off, common security Systems.
  - Forms to APEX deep linking including parameter passing for reporting or extended functionality.
  - APEX Forms Cross Tool Integration

- 12c - cross tool workflow

… workflow screen example, v12.x



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- 12c APEX MasterApp - features

Authentication – Custom auth

- Adaptable to your security Model

```
Function SoftBASE_Login (
   p_username in varchar2,
   p_password in varchar2 )
   return boolean is
      wf_ret    Boolean;
begin
 wf_ret := mm1_apex_auth.mm_login(wf_mm_username_in => p_username,
                                  wf_mm_password_in => p_password);
  Return wf_ret;
 Exception
  when others then
  Return false;
End;
```

- 12c APEX MasterApp - features

Dynamic Navigation, based on hirarchical Menu/Navigation tables.

- Table Query Function
- Builtin Authorization

```
return
q'[
Select lvl,
 label,
 target,
 wf_linage,
 image
 From
 (
select lvl, label,
 target,
 wf_linage,
 image from table(mm1_apex_app_1220.mm1_apex_app_menu_piped(
wf_mm_app_id            => :APP_ID,
wf_mm_user_id           => :CTR_MM_USER_ID,
wf_mm_lang_user_id      => :CTR_MM_LANG_USER_ID,
wf_mm_license_id        => :CTR_MM_LICENSE_ID,
wf_mm_session_id        => :APP_SESSION)));
]';
```

- 12c APEX MasterApp - features

Dynamic Navigation The table function (example)

```
 return
wf_query := q'[
Select distinct lvl, label,
target,
wf_lineage,
image
From (select /*+ LEADING(t9 t10) USE_NL(t9 t10) INDEX(t9 MM_INST_APP_MODULE_TREE_UC) */
level lvl, nvl(t10.mm_module_label,t9.mm_description) label,
(Case
When t9.mm_type='MENU' then
'#'
else
'javascript:MMAPEX('||MM1_APEX_APP_1220.mm1_get_APEX_URL(']'||wf_mm_license_id||q'[', ']'||wf_mm_session_id||q'[',
t9.mm_command,'_top')||')'
end) as target,
'B'||mm_app_tree_lineage(t9.mm_app_module_id, t9.mm_son_menu_id) wf_lineage, /* sorting */
(case
When t9.mm_icon='tree_form' then 'fa-forms'
When t9.mm_icon='tree_batch' then 'fa-gear'
When t9.mm_icon='tree_report' then 'fa-table'
When t9.mm_icon='tree_url' then 'fa-link'
When t9.mm_icon='tree_spec' then 'fa-file-text'
When t9.mm_icon='tree_apex' then 'fa-window-file'
end) as image
...
```

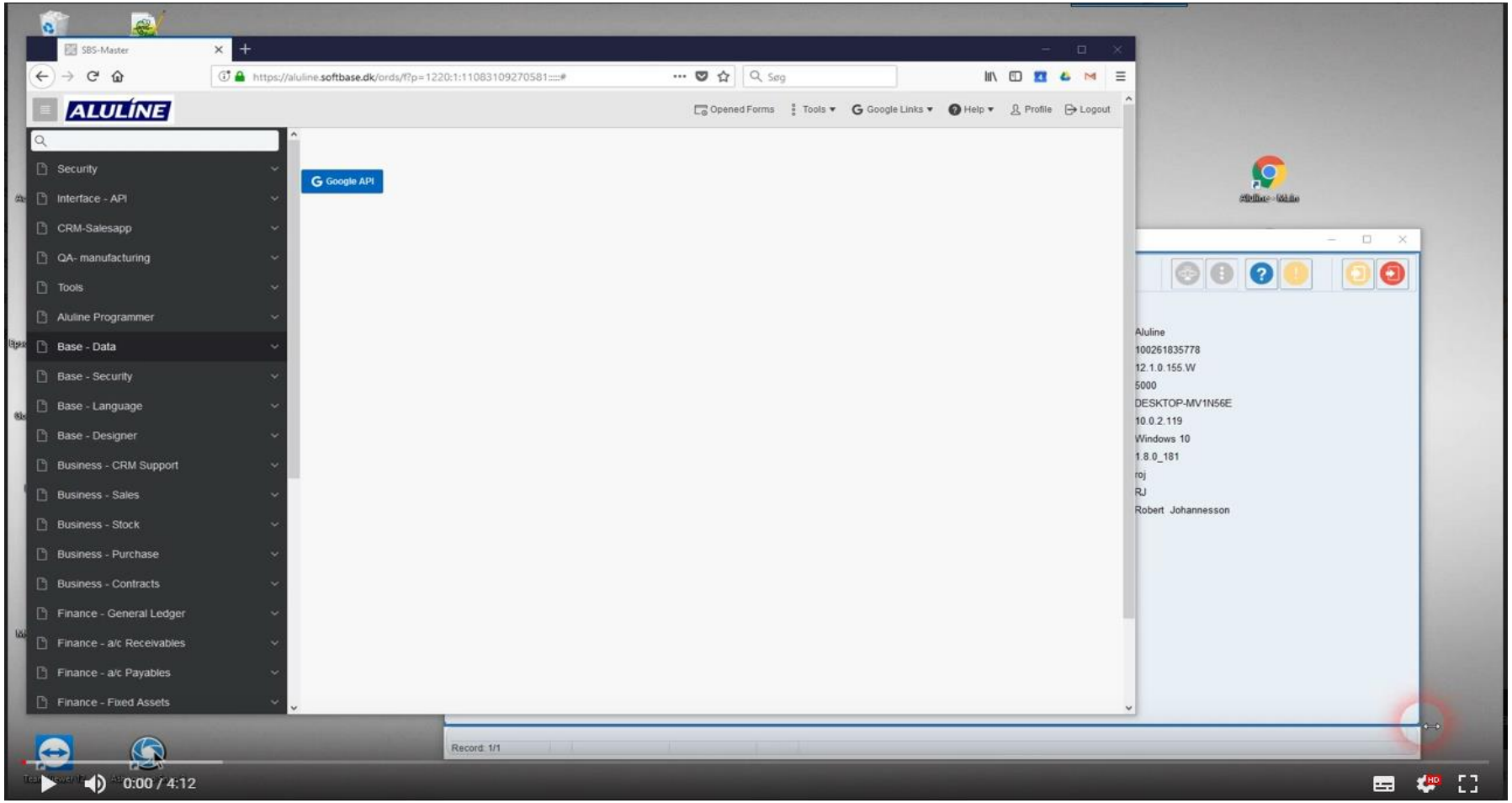
- 12c APEX MasterApp - features

Dynamic Navigation The table function (example)

```
  ...
from mm_inst_app_module_tree t9
 LEFT JOIN MM_INST_APP_MODULE_TREE_TEXTS t10 ON
 t10.mm_tree_id = t9.mm_tree_id and
 t10.mm_lang_id = ']'||wf_mm_lang_user_id||q'['
 where t9.mm_app_module_id = ']'||wf_module_id||q'['
 -- Module id in
/* Authorization */
 and ( (t9.mm_type = 'APEX' and
MM1_APEX_APP_1220.mm1_check_app_command(']'||wf_mm_license_id||q'[','']'||wf_mm_user_id||q'[',t9.mm_command,
t9.mm_app_module_id ) = 'TRUE' or t9.mm_type <>]'||q'['APEX') )
 and ( (t9.mm_type = 'MENU' and
MM1_APEX_APP_1220.mm1_check_app_menu(']'||wf_mm_license_id||q'[','']'||wf_mm_user_id||q'[',t9.mm_tree_id, t9.mm_app_module_id )
= 'TRUE' or t9.mm_type <>]'||q'['MENU') )
 start with t9.mm_app_module_id = ']'||wf_module_id||q'[' and
         t9.mm_father_menu_id = t9.mm_app_module_id
 connect by prior t9.mm_son_menu_id = t9.mm_father_menu_id)
 order by 4
 ';
```

DEMO

… Authentication – Authorisation - Navigation



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- 12c APEX MasterApp - features

Home Link

- Home Url - f?p=&CTR_BACKURL_APP.:1:&SESSION.
- Login Url - f?p=&CTR_BACKURL_APP.:LOGIN_DESKTOP:&SESSION.

```
Procedure MM1_INIT_BACKURL is
wf_backurl_app              varchar2(512)          := nvl(v('CTR_BACKURL_APP'),v('APP_ID'));
wf_backurl_page             varchar2(10)           := nvl(v('CTR_BACKURL_PAGE'),'1');
begin
 apex_util.set_session_state('CTR_BACKURL_APP',wf_backurl_app);
 apex_util.set_session_state('CTR_BACKURL_PAGE',wf_backurl_page);
end;
```

- 12c APEX MasterApp - features

APEX URL

- From the Navigation query

```
'javascript:MMAPEX('||MM1_APEX_APP_1220.mm1_get_APEX_URL(']'||wf_mm_license_id||q'[', ']'||wf_mm_session_id||q'[', t9.mm_command,'_top')||')' as target,
```

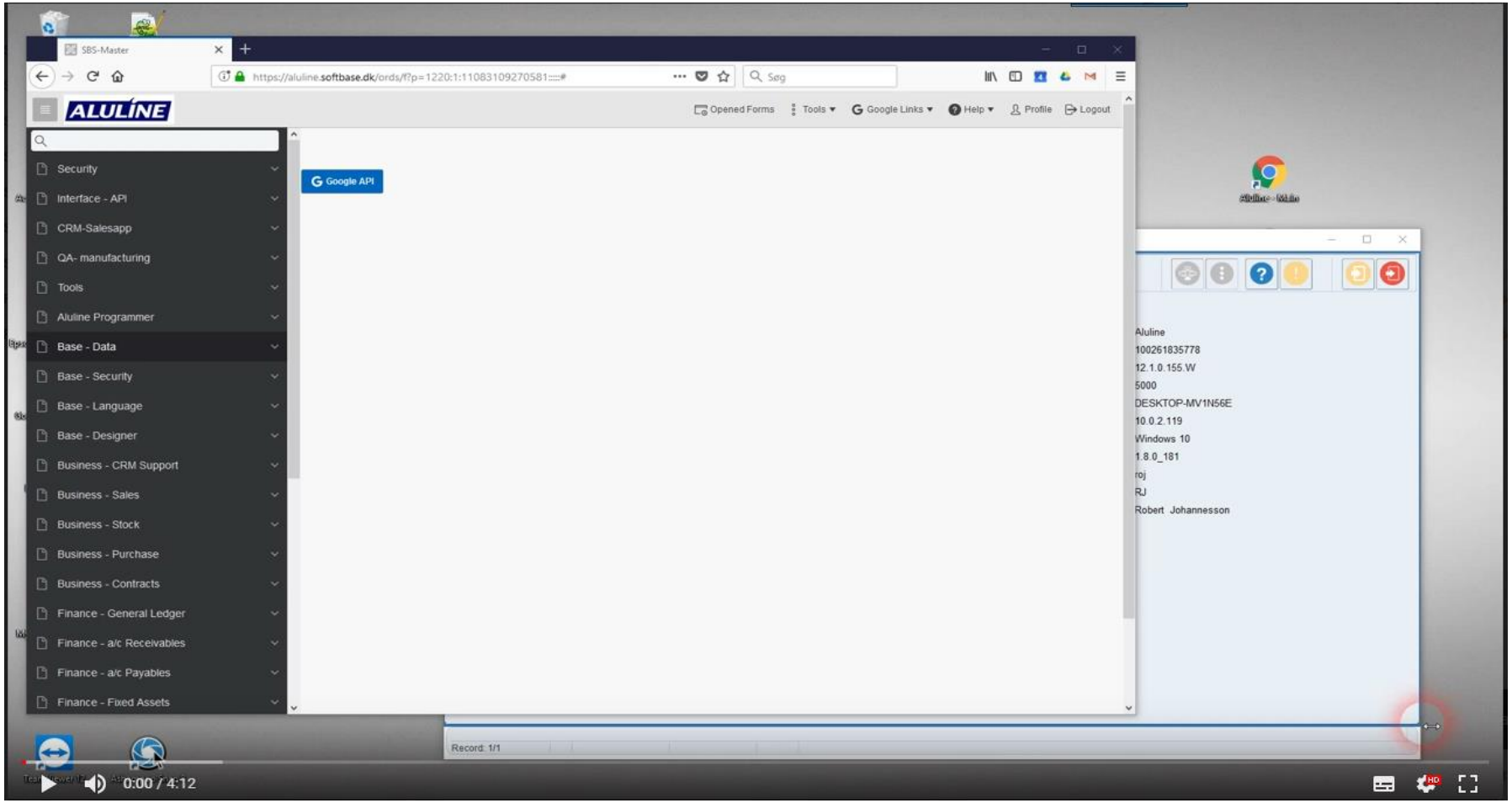
Results in (example)

```
javascript:MMAPEX('6262997809629', '21210:4', ':::4:CTR_BACKURL_APP,CTR_BACKURL_PAGE:20000,1', '_top')
```

```
If wf_param_type = '3-APP' then
    wf_param_value := v(wf_param_name);
Else – Page items or OG/IR columns
    wf_param_value := '#'||wf_param_name||'#';
end if;
```

DEMO

Administration – Users/Groups/Applications/Modules/Menues



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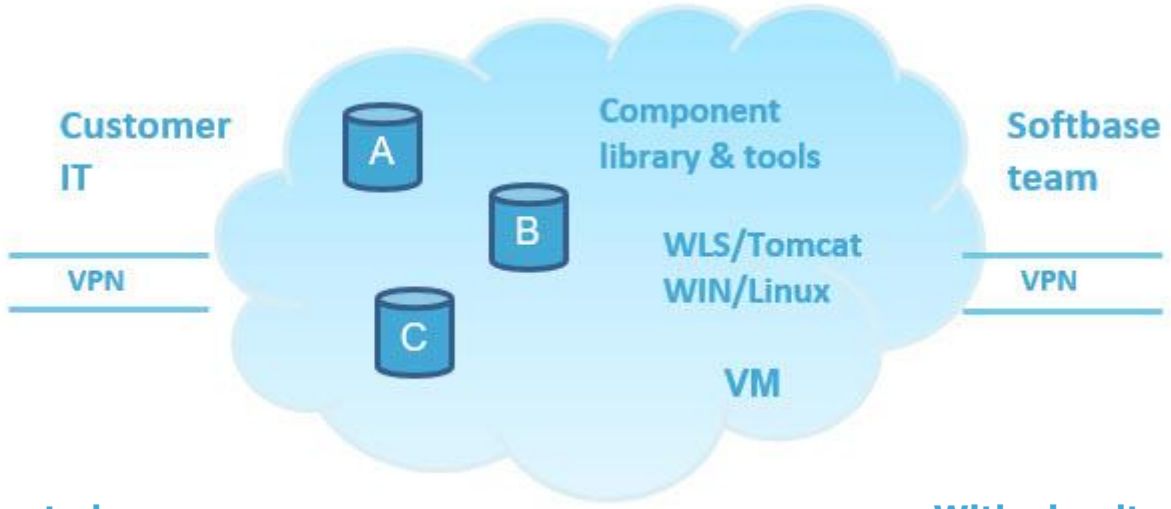
- 12c APEX MasterApp – is there more to it?

A few nice things (the Administration/Designer/Language Modules)

- Dynamic style choice per Unit (Firm, Department..)
- Dynamic choice of Logo per Unit (Firm, Department..)
- Dynamic language control at runtime, per user (All headings, texts, messages error texts etc.)
- Dynamic Default Values per user group
- Dynamic LOV's, via user table App
- Dynamic designer at Runtime, for instance choosing an items color
- Dynamic validation and error handling framework

Note! The APEX MasterApp, or it's Administration modules, does not compete with, replace , or exclude usage of any other APEX add-ons including APEX standard javascript framworks, third party plugins or otherwise.

- setup for shared prototyping / development



- Hosting facility originated from SaaS business
- Extension to customer development environment
- With simultaneous access to the code
- Combined with online web meetings

- benefits from the APEX MasterApp - freeware

SUMMARY

- Adds security, consistency and ease-of use
- Facilitates team development for complex systems
- Speeds-up both development and maintenance
- Softbase offers design
- Softbase offers prototyping
- and ongoing support

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