ABSTRACT
Access data from throughout your organization via a single set of web interfaces. With the ability to author reports, view reports, execute stored processes, apply report level or data level security, deploy custom portlets utilizing the WIK API, and personalize user experience, the SAS® Information Delivery Portal gets data into the hands of business users in an automated and secure fashion.

INTRODUCTION
The purpose of this paper is to provide examples of functionality from within SAS® Information Delivery Portal in a manner that is easy to follow and replicate.

SAS® Information Delivery Portal is similar to the popular TV device Tivo®, in the fact that users can organize their favorite programs (or for SAS, its reports) and view them when they desire. Also, administrators can push specific Tivo® suggestions (again for SAS its reports) out to user communities.

CONNECTIONS
The SAS specific users that are required before SAS v9 Server installs have designated responsibilities within the SAS Information Delivery Portal. It is extremely important for the SAS administrators to understand the differences.

sasadm – This administrator has the ability to change permissions in the SAS Management Console, but sharing pages from within the SAS Information Delivery Portal user interfaces will not get you anywhere.

sasdemo – This sample user is capable of doing most anything, since it is set up for testing the systems after installation.

saswbadm – This WEB administrator is the log in to use when you are setting up new pages for the entire company or one group. However, you can not modify the main page otherwise known as the Public Kiosk.

sasguest – Be careful who you share this user id with. This is the account to use when setting up or changing the Public Kiosk.

Refer to Appendix 1 in the Security Administration guide for more information on SAS user accounts. (http://support.sas.com/documentation/configuration/bisecag.pdf)

But before I move on, I heard someone ask: “What is the Public Kiosk?”

PUBLIC KIOSK
When you first open the SAS Portal, you are directed to the log in page. Some organizations like to have some (if not all) information accessible to all users, so the first page is a portal page rather than the log in screen. This is when the sasguest account and the Public Kiosk come into play.
Log into the SAS Portal as sasguest and add a page called the Public Kiosk. (Search to verify it doesn’t exist already, since having two might be confusing.) Add content, modify the display, etc. When anyone goes to the http://hostname:8080/Portal URL, they will then be directed to an initial page(s) and for authentication will need to select ‘Log in’ on the top right of the page.
EXAMPLES
Included are four examples of how organizations have implemented the SAS Information Delivery Portal for their project, department, initiative, etc. As you can see, the Information Delivery Portal is flexible in its ability to include the image, content, and utilization of preferences. (Note: Logos were removed to ensure confidentiality.)

- **Report Navigator Listing**
- **Web Report Studio Reports**
- **WebDAV Content of SAS Data Table**

- **Custom Displays with user selections via drop down boxes and OLAP cube queries and graphs.**
- **Including content from external applications (in this case ESRI) in a URL Display Portlet**
PREREQUISITES FOR EXAMPLES
The examples are based off of the reports generated during the SAS® Web Report Studio and SAS® Information Map Studio Tutorials (see SGF Paper 212-2007).

ADDITION A PORTAL PAGE
In 99.9% of cases, the Home Page just isn’t enough when using the Portal. Organizing all of the information into actionable tabs, organizations, or some other logical breakout is required for a user or company to keep the current view from becoming unwieldy. Adding a page alone is simple enough. There are just two prefaces:

1. You must have access to this feature.
2. Be aware of the log in id that you choose:
   As SASGUEST, you are adding information that any user can see before authenticating.
   As SASWBADM, you have the ability to share the page with other users or groups.

Step 1: The first step in adding a page to the portal is to select Options, Pages, Add…
Step 2: To add an existing page, run a search by selecting Search and entering in a keyword (* is the wildcard).
And choosing a result, clicking Add, and clicking Done.

Included are the search results for the * wildcard in an initial installation.
Since this was pretty boring, I added a new Page called ‘Shoes’ by going back to the ‘Create’ tab, typing the word ‘Shoes’ and selecting ‘Add’. As you can see below this screen was added successfully, but know the white space has to be eradicated.

**ADDING CONTENT (PORTLETS)**

So how to eliminate an empty Portal Page you ask? You know real content is needed to add the real value.

**Step 1.** Click Options, and Edit Content while on the Page you are working to change.
Step 2. Search for an existing Portlet by clicking Search, typing in a keyword and selecting from the results.

Step 3. Create a new Portlet by Choosing from the Available Types.

Now wait, what do these types mean? Most general web users have no idea what the differences are, how they work, and more importantly what is necessary to get them to work.
PORTLET DEFINITIONS
Included is reference material available from SAS Information Delivery Portal’s online Help, and examples from our new installation.

Collection Portlets
“A collection portlet is a portlet that contains a list of portal content items. The items can be of any type or combination of types.” This is a great place for a user to list multiple media items in a central location. The example below is the ‘My Collection’ default portlet that you find on your home page by default.

Now think in context of your organization. If there is a topic of great interest, say ‘Shareholder Value’, you might then link to an external site (Yahoo Finance) that details the stock price, an internal intranet site that provides the recent Customer Satisfaction results, and links to web report studio reports and stored processes that detail return on value, employment attrition, backlog, etc. The point is that now this portlet can be published to all of your users, or anyone can be given access so they may add it to their page and not have to search on all the individual pieces.

Information Map Viewer
“An information map viewer portlet displays data by using bookmarks that you create in the Visual Data Explorer component. For more information about the Visual Data Explorer, see Overview of Viewing Information Maps.”

But what does that mean? Well, you can use SAS Web OLAP Viewer to navigate through an OLAP cube, save this as a Data Exploration and then surface that on a Portal Page. Providing this to other users will then remove the need of explaining the BIP Tree drill path and bookmarks of the report. Then all they need to do is open the SAS Portal Page.

After adding a new portlet to the page with the type of Information Map Viewer the page displays an initial display of a blank table. Select the ‘Edit Content’ button on the top right corner of the portlet.

<table>
<thead>
<tr>
<th>Shoes Report</th>
<th>Shoes Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 1</td>
<td>Column 2</td>
</tr>
<tr>
<td>Column 3</td>
<td>Column 4</td>
</tr>
<tr>
<td>Column 5</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
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<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>
Quiesce Portlet

“Prepares the portal Web application to be shut down by preventing new users from logging on. This portlet type is only available to SAS Web administrators.” So I haven’t tried this portlet but it looks awfully handy. If you have to restart the SAS system and need everyone to be out of the application you can utilize this.

URL Display Portlet

“URL display portlet is a portlet that accesses a specified URL address and displays the returned information inside the portlet's borders. You can create your own URL display portlets to point to a URL that you specify. The URL can point to either a complete HTML page or to an HTML fragment.”

Step 1. Select the URL Display Portlet when Creating a New Portlet.

Step 2. Select the Edit option on the top right of the portlet to enter the webpage URL to display.

Step 3. View the content on the Portal Page.

Businesses derive value out of this by displaying java applications within the branding of the SAS Portal. Having a one-stop shop for multiple media can require a URL Display for another corporate intranet website.

Another idea is to create a custom HTML interface to your SAS Stored Processes and surface them through this technique.
WebDAV Graph Portlet

“A WebDAV graph portlet creates and displays a line graph, bar chart, or pie chart of data that is stored in a WebDAV repository. If data in the appropriate XML format is present in the WebDAV repository, then you can create your own WebDAV graph portlets to meet your specific requirements.”

WebDAV Portlets only work for those using Xythos as the WebDAV server. When using Apache as the WebDAV, these portlets will not return results.

In order to get this DAV Graph populated, you will need to run the ‘publishtowebdav’ macro that SAS has provided users. Included in Appendix A is a copy of this valuable code.

Included is the resulting code to execute this macro.

%publishToWebDAV('sashelp.shoes', 'http://localhost:8300/sasdav/wrs/Report Studio/Shared/Shoe Sales Data', 'saswbadm', 'xxxxxxx');

The next item is to connect a DAV Graph Portlet to the xml file generated and stored on the WebDAV server. After adding a blank DAV Graph Portlet to the page, select the ‘Edit Content’ icon at the top right corner. The next two images provide a summary of what edits are required to link into the data table and create a graph.

Select the Data File that you created using the PublishToWebDAV Macro
WebDAV Repository Navigator
“A WebDAV navigator portlet enables you to view files that are stored in a WebDAV repository, which is a collection of files that are stored on a Web server.”

WebDAV Portlets only work for those using Xythos as the WebDAV server. When using Apache as the WebDAV, these portlets will not return results.

These files can be the data elements published with the PublishToWebDav Macro, or elements published through the SAS Enterprise Guide publish functionality.

VARIOUS SAS DISPLAYS
Each type of SAS Output can be displayed within the SAS Information Delivery Portal. These can be added to collection portlets, or viewed directly from Information Map Portlets. To begin, simply run a Search, limit the type of content to SAS Report, or SAS Stored Processes, for example and you can quickly see how information is displayed within the SAS Portal frame.
SAS Web Report Studio Results

SAS Stored Processes

Sales Donut Chart

* Indicates a required field.
There are options available for the user to modify their view of the portal. From the initial Preferences page, a user can change the theme and create alerts for themselves when changes occur to the system.

When selecting Portal from the Preferences menu bar, a user can change the navigation on the page from Horizontal to Vertical. This means that the Portal Menu Bar with Home and other Portal Pages will be displayed from Top-Bottom on the left of the page (when selecting Vertical), versus across the top for Horizontal navigation.
ADVANCED TOPICS
Themes
Deploying additional themes is accomplished by following these steps.

1. Move the SAS Winter Theme from the Portal Configuration Directory into the Web Servlet Container.
   a. This is located in Windows by default at: C:\Program Files\SAS\Web\Portal2.0.1\themes\SASTheme_winter
2. Restart (if necessary) the Web Servlet Container to recognize the new application.
3. Register this within the SAS Metadata by running the OMR Program on the SAS BI System
   a. C:\Program Files\SAS\Web\Portal2.0.1\OMR\LoadThemeConnection.sas


Custom Portlets
On various occasions, the packaged/standard portlets are not going to provide the content display that users require. Custom developed portlets allow for greater flexibility and can be developed by java programmers. The following reference material is a great starting point for developers.


PUBLICATION CHANNEL / PACKAGE
Step 1: Have subscribers and channels defined via SAS Management Console within the Publishing Framework.

Step 2: Utilize SAS EG to create content and publish packages to the framework. There is another SAS Users Group paper that provides more details for those publication questions: http://www2.sas.com/proceedings/sugi31/217-31.pdf.
APPENDIX A PUBLISHTOWEBDAV MACRO
/*Copyright (c) 2005 by SAS Institute Inc., Cary, NC 27513. All Rights Reserved.
publishToWebDAV
This macro takes a sas dataset and converts it to SASReport XML and then publishes it to a WebDAV server.
Parameters:
sasdsn - name of the sas dataset, e.g. 'sashelp.class'
davloc - URL to publish to, e.g. 'http://domain.com/sasdav/public/graph1'
each dataset to be published should go to a unique location, or else it will be overwritten.
userid - userid to authenticate to the WebDAV server, e.g. 'domain\userid'
passwd - password to authenticate to the WebDAV server, preferably encoded and not clear text.
Example usage:
%include 'publishToWebDAV.sas';
%publishToWebDAV('sashelp.class',
'http://localhost:8300/sasdav/graph1/',
'domain\userid',
'Password')
*/
%macro publishToWebDAV(sasdsn, davloc, userid, passwd);
/* select a tempfile based on the current platform */
%if /* Unix */ &sysscp=HP 800 or &sysscp=HP 300 or &sysscp=SUN 4 %then
  %do;
  %let tempfile=/tmp/data.xml;
  %end;
%else %if /* WINDOWS PLATFORMS */ &sysscp=WIN %then
  %do;
  %let tempfile=c:\temp\data.xml;
  %end;
/* output simple data */
%let format=no;
data _null_;
file "&tempfile";
length ivar 8 irec 8 nvars 8 nobs 8 id 8 today 8 nvalue 8 rc 8;
length name $ 200 desc $ 200 type $ 1 cvalue $ 200 fmt $ 200 strg $ 200;
length idx 8;
format today date. ;
today = today() ;
id = OPEN( &sasdsn ) ;
if id =~ 0 then do ;
  nvars = ATTRN( id, 'NVARS' ) ;
  nobs = ATTRN( id, 'NOBS' ) ;
  end ;
do ;
nvars = 0 ;
nobs = 0 ;
end ;
put '<SASReport>' ;
put '<Data>' ;
put '<IQData type="2DEmbedded" name="&sasdsn"/>
put '<EmbeddedData>' ;
put '<Variables>' ;
do ivar = 0 to nvars-1 ;
  name = VARNAME( id, ivar+1 ) ;
  type = VARTYPE( id, ivar+1 ) ;
  desc = VARLABEL( id, ivar+1 ) ;
  fmt = VARFORMAT( id, ivar+1 ) ;
  strg = '<Variable encoding="Text" name="'||trim(name)||'" varName="'||trim(name)||'"';
  if desc ~=' ' then strg = trim( strg ) || ' label="'||trim(desc)||'"' ;
  if fmt ~=' ' then strg = trim( strg ) || ' SASFormat="'||trim(fmt)||'"' ;
  if type = 'C' then strg = trim( strg ) || ' type="String"/' ;
  else strg = trim( strg ) || ' type="Numeric"/' ;
  put ' ' strg ;
end ;
put '</Variables>' ;
if &format = 'rows' then put '</Rows>' ;
else put '</ValuesList>' ;
do irec = 0 to nobs-1 ;
  rc = FETCHOBS( id, irec+1 ) ;
  if rc =~ 0 then stop ;
  if &format = 'rows' then put '</Row>' @ ;
  else put '</Values>' ;
do ivar = 0 to nvars-1 ;
  type = VARTYPE( id, ivar+1 ) ;
  if type = 'C' then do ;
    cvalue = GETVARC( id, ivar+1 ) ;
    strg = cvalue ;
    end ;
  else do ;
    nvalue = GETVARN( id, ivar+1 ) ;
    strg = nvalue ;
    end ;
  temp = strg ;
  idx = index( temp, '&amp;' ) ;
  if idx > 0 then do ;
    strg = substr( temp, 1, idx ) || '&amp;' ;
    temp = substr( temp, idx+1 ) ;
    idx = index( temp, '&amp;' ) ;
  end ;
end ;
*/
end;
strg = trim(strg) || temp;
end;
if &format = 'rows' then
    put "  <Value>' strg +(-1) '</Value>'; end; /* do ivar */
if &format = 'rows' then
do;
    put +(-1) '</Row>';
end;
else
    put '        </Values>';
end; /* do irec */
if &format = 'rows' then
do;
    put +(-1) '</Row>';
end;
else
    put '        </ValuesList>';
put '</Data>';
put '</SASReport>'; run;

data _null_;rc = 0;pid = 0;fileName = "filename:&tempfile";
filetype = "binary";
desc = "WebDAVGraph Portlet data";
nameValue = ";userString = "application/xml";
Call package_begin(pid, desc, nameValue, rc);
if rc ne 0 then do
    msg = sysmsg();put msg;
    ABORT;
end;
put 'Package init successful.';
CALL INSERT_FILE(pid, filename, filetype,
userString, desc, nameValue, rc);
if rc ne 0 then do
    msg = sysmsg();
    put msg;
    ABORT;
end;
put 'XML is ok';
pubType = "TO_WEBDAV";
properties="COLLECTION_URL, HTTP_USER,
HTTP_PASSWORD";
call package_publish(pid, pubType, rc, properties,
&davloc, &userid, &passwd);
if rc ne 0 then do;
    msg = sysmsg();
    put msg;
    ABORT;
end;
put 'Publish successful';Call package_end(pid, rc);
if rc ne 0 then do
    msg = sysmsg();
    put msg;
    ABORT;
end;
put 'Package term successful';run;

%let rc=%sysfunc(filename(filerf, &tempfile));
%let rc=%sysfunc(fdelete(&filerf));
%let rc=%sysfunc(filename(filerf));
%mend publishToWebDAV;

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