



View Time Security for Crystal Enterprise 10

Installation & Administration Guide

February 10, 2004

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The Crystal Partner logo consists of a blue icon of four dots arranged in a square pattern, followed by the text 'crystal partner' in a lowercase, sans-serif font, and 'ENTERPRISE SOLUTIONS' in a smaller, uppercase, sans-serif font below it.

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OVERVIEW

View Time Security for Crystal Enterprise utilizes the 'processing extensions' capability of Crystal Enterprise (v. 10) combined with an external database of business rules to meet 2 specific objectives:

a) apply row level security to your reports. Report content is filtered for the current user; whether running a report now, scheduling a report or viewing a saved report instance. Now you can maintain your business rules in a database and automatically have those rules applied to your reporting system.

For each report object in your Crystal Enterprise system, you can now have the option of applying this powerful add-in. As well, *View Time Security* eliminates the need for C++ or Visual Basic programming expertise, creating an opportunity to fast track your reporting system deployment.

View Time Security also includes *View Time Security Manager*, a tool designed to assist you in assigning/deassigning processing extensions to multiple reports as well as providing an editing tool for maintaining the *View Time Security* database.

DEMO VERSION LIMITATIONS & LICENSING

The demo version of *View Time Security* is a fully functional application with an expiry date. This limitation is removed in the purchased version.

The demo entitlement database provided includes a simple example that uses the 'Product Catalog' report that is included in the Report Samples folder that was created when you installed Crystal Enterprise Professional. If you have changed this default folder structure, you can either recreate a structure that matches it or change the sample entitlement database to use a different report. In any event, we recommend that you start by doing some basic testing of *View Time Security* with simple examples.

After purchasing a license for *View Time Security*, a license file will be emailed to you in order to remove the demo limitations. Apos.lic is a license file that incorporates a license for a specific number of servers in one site. If, however, you have a different location running a separate Crystal Enterprise system, an additional license must be purchased. This apos.lic file should be copied into the directory where you copied the *View Time Security* files, replacing any existing apos.lic file that may already be there.

Note that if your demo license expires, you will receive an error message, see Error Messages section below.

WHICH PROCESSING EXTENSION SHOULD WE USE?

VIEW TIME SECURITY BY REPORT ID AND USER GROUP

Use APOSVTSG.DLL to apply a business rule to:

- a specific report as identified by 'report id', FOR
- all users that are members of a specific user group

VIEW TIME SECURITY BY REPORT ID AND USER

Use APOSVTS.DLL to apply a business rule to:

- a specific report as identified by 'report id', FOR
- a specific user as identified by 'user id'

VIEW TIME SECURITY BY REPORT NAME AND USER GROUP

Use APOSVTSGN.DLL to apply a business rule to:

- a specific report as identified by 'report name', regardless of what folder its in, FOR
- all users that are members of a specific user group

VIEW TIME SECURITY BY REPORT NAME AND USER

Use APOSVTSN.DLL to apply a business rule to:

- a specific report as identified by 'report name', regardless of what folder its in, FOR
- a specific user as identified by 'user id'

VIEW TIME SECURITY BY REPORT PATH AND USER GROUP

Use APOSVTSGP.DLL to apply a business rule to:

- a specific report as identified by 'full report path', FOR
- all users that are members of a specific user group

VIEW TIME SECURITY BY REPORT PATH AND USER

Use APOSVTSP.DLL to apply a business rule to:

- a specific report as identified by 'full report path', FOR
- a specific user as identified by 'user id'

VIEW TIME SECURITY BY DYNAMIC PATH AND USER GROUP

Use APOSVTSGW.DLL to apply a business rule to:

- all reports within a folder or its sub folders, FOR
- all users that are members of a specific user group

VIEW TIME SECURITY BY DYNAMIC PATH AND USER

Use APOSVTSW.DLL to apply a business rule to:

- all reports within a folder or its sub folders, FOR
- a specific user as identified by 'user id'

FILES INCLUDED WITH VIEW TIME SECURITY

a) *LICENSE FILE*

apos.lic - the APOS license file

B) *VIEW TIME SECURITY DATABASE*

APOSVTS.mdb - the entitlement/log database used by *View Time Security*, it contains the following tables:

ViewTimeG - the entitlement data used by APOSVTSG.dll
ViewTime - the entitlement data used by APOSVTS.dll
ViewTimeGN - the entitlement data used by APOSVTSGN.dll
ViewTimeN - the entitlement data used by APOSVTSN.dll
ViewTimeGP - the entitlement data used by APOSVTSGP.dll
ViewTimeP - the entitlement data used by APOSVTSP.dll
ViewTimeGW - the entitlement data used by APOSVTSGW.dll
ViewTimeW - the entitlement data used by APOSVTSW.dll

c) *VIEW TIME SECURITY BY REPORT ID AND USER GROUP*

APOSVTSG.dll - the processing extension itself
APOSVTSG.ini - the ini file used by APOSVTSG.DLL

d) *VIEW TIME SECURITY BY REPORT ID AND USER*

APOSVTS.dll - the processing extension itself
APOSVTS.ini - the ini file used by APOSVTS.DLL

e) *VIEW TIME SECURITY BY REPORT NAME AND USER GROUP*

APOSVTSGN.dll - the processing extension itself
APOSVTSGN.ini - the ini file used by APOSVTSGN.DLL

f) *VIEW TIME SECURITY BY REPORT NAME AND USER*

APOSVTSN.dll - the processing extension itself
APOSVTSN.ini - the ini file used by APOSVTSN.DLL

g) *VIEW TIME SECURITY BY REPORT PATH AND USER GROUP*

APOSVTSGP.dll - the processing extension itself
APOSVTSGP.ini - the ini file used by APOSVTSGP.DLL

h) *VIEW TIME SECURITY BY REPORT PATH AND USER*

APOSVTSP.dll - the processing extension itself
APOSVTSP.ini - the ini file used by APOSVTSP.DLL

g) *VIEW TIME SECURITY BY DYNAMIC PATH AND USER GROUP*

APOSVTSGW.dll - the processing extension itself
APOSVTSGW.ini - the ini file used by APOSVTSGW.DLL

h) *VIEW TIME SECURITY BY DYNAMIC PATH AND USER*

APOSVTSW.dll - the processing extension itself
APOSVTSW.ini - the ini file used by APOSVTSW.DLL

CONTINUED ON NEXT PAGE...

i) SAMPLE REPORTS

Activity Log By Date.rpt - detail listing of processing extension activity
Top 10 Report Activity.rpt - graph analysis of popular reports
Top 10 User Activity.rpt - graph analysis of user activity

j) SAMPLE DATABASE SCRIPTS

APOSVTS_Oracle_Create.sql - for migrating the database to Oracle
APOSVTS_SQL_Create.sql - for migrating the database to SQL Server

INSTALLATION OVERVIEW

Here is a checklist outline of the steps recommended to install and test *View Time Security*:

- a) Download and install the *View Time Security* files, see Page 9.
- b) Create ODBC data connectivity for the *View Time Security* entitlement/log databases, see Page 10.
- c) Decide which of the 8 supplied processing extensions you wish to use, see Page 5.
- d) Edit the ini files for the chosen processing extension(s) to match your Crystal Enterprise environment, see Page 11.
- e) Register the chosen *View Time Security* processing extensions within Crystal Enterprise, see Page 13.
- f) Assign a processing extension to a test report, see Page 15.
- g) Edit the Microsoft Access entitlement databases and update the ReportID from your system for the sample report, see Page 17.
- h) Test the row level security capabilities, see Pages 20-34.

INSTALL VIEW TIME SECURITY FROM DOWNLOAD

Please follow these steps to install *View Time Security*:

- a) Ensure that the computer server is running Crystal Enterprise 10.
- b) Download the *View Time Security* Demo zip file from the Downloads section of www.apos.on.ca and save it to your local system environment.
- c) Unzip (contact apos@apos.on.ca for the set-up password) the contents of ViewTimeSecuritySetup.zip to the following folder on your Crystal Enterprise v10 system:
C:\Program Files\Crystal Decisions\Enterprise 10\win32_x86\ProcessExt\
- d) Continue by creating ODBC data connectivity, as follows . . .

CREATING ODBC CONNECTIVITY TO ENTITLEMENT DATA

Please follow these steps to create ODBC data connectivity to the *View Time Security* entitlement databases:

- a) Using ODBC Administrator, create the following ODBC data source:
System DSN: APOSVTS
and on your Crystal Enterprise v10 system, point it to:
..\Crystal Decisions\Enterprise 10\win32_x86\ProcessExt\APOSVTS.MDB
- b) Continue by editing the *View Time Security* processing extensions ini files that you wish to use, as follows . . .

EDITING THE INI FILES

Each of the 8 processing extensions located in C:\Program Files\Crystal Decisions\win32_x86\ProcessExt has an ini file that controls how that processing extension connects to Crystal Enterprise and the entitlement database as well as some miscellaneous settings. These settings can be changed using an editor like Notepad at any time. Make sure to edit these ini files and make any changes necessary to properly identify your CMS name, administrator name, administrator password, etc.

The contents of the 8 ini files are similar and follow this APOSVTS.ini example:

```
[DB]
//Set the APOS VTS database connection string -----
ConnectionString=Provider=MSDASQL.1;Data Source=APOSVTS
//Set the CMS VTS database table name -----
TableName=ViewTime
//Convert CE user name to upper case -----
ConvertToUpperCase=Y

[CMS System]
//Set the APS name -----
CMSSystem=YOURAPSNAMHERE
//Set the CE administrator user id -----
CMSUsernameString=Administrator
//Set the CE administrator password -----
CMSPasswordString=
//Set the CE authentication -----
CMSAuth=secEnterprise
//Parse the Selection Formula -----
ParseSelForm=Y
//Set the Parse Selection Formula Delimiter -----
ParseDelim=//

[Control]
//Apply row level security -----
Security=Y
//Create log records -----
Log=Y
//Do not Append Selection Formulas with the Value True
DoNotSendFormulaTrue=N

[Trace]
//Create a trace log of steps - for debug only -----
LogActions=N
//Set the debug trace text file name -----
LogFileName=logAPOSVTS.txt
```

CONTINUED ON NEXT PAGE...

Most ini file settings are self-explanatory, please review them all and change them to suit your environment as necessary. A few settings may need some explanation . . .

ConvertToUpperCase=Y

Microsoft Access - The contents of the User, User Group and Report Name fields of the View Time Security database should normally be stored in upper case. The ConvertToUpperCase= setting should normally be set to Y.

Oracle or SQL Server - If your Oracle/SQL Server system is set to be 'not case-sensitive' the contents of the User, User Group and Report Name fields of the View Time Security database must always be stored in upper case. The ConvertToUpperCase= setting of must always be set to Y.

Oracle or SQL Server - If your Oracle/SQL Server system is set to be 'case-sensitive' the contents of the User, User Group and Report Name fields of the View Time Security database does not have to be stored in upper case. The ConvertToUpperCase= setting may be set to Y or N as you wish. Storing all data in upper case is still recommended.

Security=Y

If this flag in the ini file is set to Y as provided as the default, row level security is activated. If this flag is set to N, row level security functions are de-activated.

DoNotSendFormulaTrue=Y

If the value TRUE is in the SelForm field in the database, it will be ignored in the query.

Edit all 8 provided ini files following the same rules: APOSVTS.ini, APOSVTSN.ini, APOSVTSG.ini, APOSVTSGN.ini, APOSVTSP.ini, APOSVTSGP.ini, APOSVTSW.ini, APOSVTSGW.ini

After editing the ini files as necessary to match your system requirements, continue to the next step, as follows . . .

REGISTERING PROCESSING EXTENSIONS WITH CRYSTAL ENTERPRISE

View Time Security includes 8 different processing extensions, you may choose to use one or more or all of them. To enable any of the processing extensions you wish to use, they must be registered within the Crystal Enterprise environment, as follows:

- a) Log into the Crystal Management Console within Crystal Enterprise.
- b) Click on Objects Under the Organize Section
- c) Click on the Object Settings button at the top of the Objects screen.
- d) Enter the following exactly:
Name: APOSVTS
Location: APOSVTS
Description: VTS by Report Id & User
- e) Press Add and confirm that the entered data appears in the Existing Extensions list.
- f) Enter the following:
Name: APOSVTSG
Location: APOSVTSG
Description: VTS by Report Id & User Group
- g) Press Add and confirm that the entered data appears in the Existing Extensions list.
- h) Enter the following:
Name: APOSVTSN
Location: APOSVTSN
Description: VTS by Report Name & User
- i) Press Add and confirm that the entered data appears in the Existing Extensions list.
- j) Enter the following:
Name: APOSVTSGN
Location: APOSVTSGN
Description: VTS by Report Name & User Group
- k) Press Add and confirm that the entered data appears in the Existing Extensions list.

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- h) Enter the following:
Name: APOSVTSP
Location: APOSVTSP
Description: VTS by Report Path & User
- i) Press Add and confirm that the entered data appears in the Existing Extensions list.
- j) Enter the following:
Name: APOSVTSGP
Location: APOSVTSGP
Description: VTS by Report Path & User Group
- k) Press Add and confirm that the entered data appears in the Existing Extensions list.
- h) Enter the following:
Name: APOSVTSW
Location: APOSVTSW
Description: VTS by Dynamic Path & User
- i) Press Add and confirm that the entered data appears in the Existing Extensions list.
- j) Enter the following:
Name: APOSVTSGW
Location: APOSVTSGW
Description: VTS by Dynamic Path & User Group
- k) Press Add and confirm that the entered data appears in the Existing Extensions list.
- l) Confirm that all entered processing extensions appear in the Existing Extensions list and look like this:

Add Extension:

Name:	Location:	Description:	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

Existing Extensions:

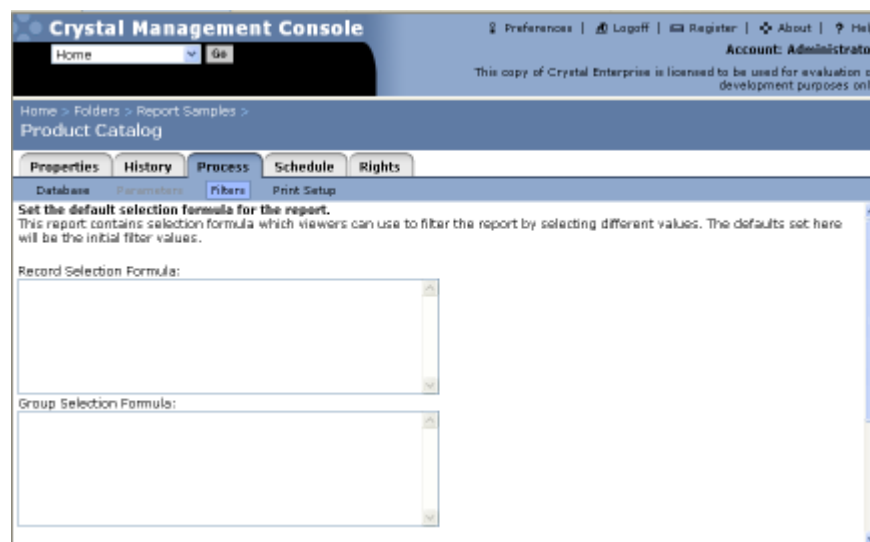
Name:	Location:	Description:	<input type="button" value="Delete"/>
ΔPOSVTSC	APOSVTSC	VTS by Report Id & User Group	<input type="checkbox"/>
ΔPOSVTS	APOSVTS	VTS by Report Id & User	<input type="checkbox"/>
ΔPOSVTSN	APOSVTSN	VTS by Report Name & User	<input type="checkbox"/>
ΔPOSVTSGN	APOSVTSGN	VTS by Report Name & User Group	<input type="checkbox"/>
ΔPOSVTSP	APOSVTSP	VTS by Report Path & User	<input type="checkbox"/>
ΔPOSVTSGP	APOSVTSGP	VTS by Report Path & User Group	<input type="checkbox"/>
ΔPOSVTSW	APOSVTSW	VTS by Dynamic Path & User	<input type="checkbox"/>
ΔPOSVTSGW	APOSVTSGW	VTS by Dynamic Path & User Group	<input type="checkbox"/>

- m) You have now successfully registered the [View Time Security](#) processing extensions to the Crystal Enterprise environment, to test them with a specific report, continue . . .

ASSIGNING A PROCESSING EXTENSION TO A REPORT OBJECT

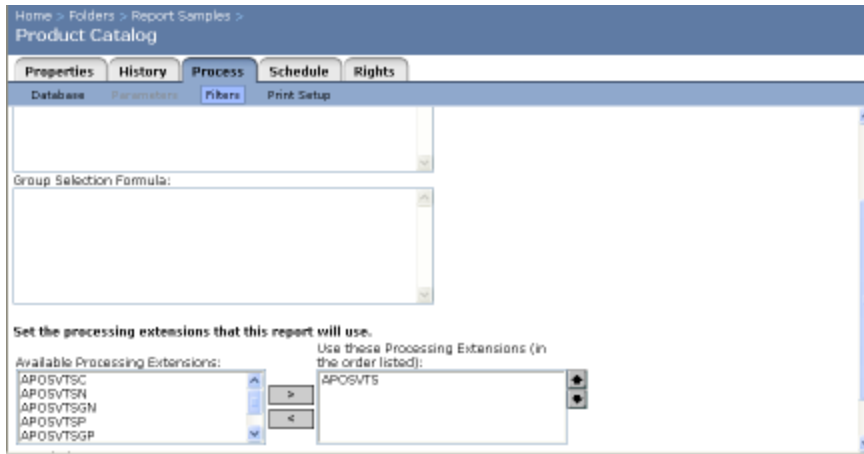
To assign a specific processing extension to a specific report object, an assignment must be made within the Crystal Enterprise environment, as follows:

- a) Log into the Crystal Management Console within Crystal Enterprise.
- b) Click on Objects Under the Organize Section
- c) Find and left mouse click on the 'Product Catalog' report located in the 'Report Samples' folder.



- d) Select 'Process' from the tabs at the top of the display, select the Filters button.
- e) Scroll to the bottom of the page and select the processing option desired from the "Available Processing Options" box and use the arrow to include the desired Process Extension in the "Use These Processing Extensions" box.

- e) Click on the Update in the lower right corner of the screen to save your changes.
- f) Confirm that the screen looks like this:



- g) Note that viewing any saved report instances that were generated using an assigned Processing Extension will always attempt to use the assigned processing extensions.
- h) You have now successfully assigned the [View Time Security](#) processing extension to the Product Catalog report, to test it, continue . . .

EDITING THE ENTITLEMENT DATA

The 8 entitlement database tables must contain the fields provided, do not change the structure, field names or field definitions. The sample database is in Microsoft Access format but you may wish to store your entitlement information in some other database, such as SQL Server or Oracle. This is acceptable; just ensure that the connection string information in the appropriate ini file is updated accordingly.

Note that the syntax for the SelForm field is critical and should be carefully tested. This is easy if you open the desired report in Crystal Reports designer and append the extra selection formula into the Record Selection Formula Editor and Check syntax. The sample entitlement databases provided are as follows:

a) VIEW TIME SECURITY BY REPORT ID AND USER GROUP

The sample entitlement data table ViewTimeG (used by APOSVTSG) contains an example that is designed to apply row level security that shows only "Accessory" products to members of the Administrators group and only "Bicycle" products to members of the Everyone group. The fields in the table are:

ReportID	the report id from your Crystal Enterprise system. For demo purposes, change the 176 number shown to match the Report ID for Product Catalog in your system.
GroupID	the user group name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

b) VIEW TIME SECURITY BY REPORT ID AND USER

The sample entitlement data table ViewTime (used by APOSVTS) contains an example that is designed to apply row level security that shows only "Accessory" products to the Administrator user and only "Bicycle" products to the Guest user. The fields in the table are:

ReportID	the report id from your Crystal Enterprise system. For demo purposes, change the 176 number shown to match the Report ID for Product Catalog in your system.
UserID	the user name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

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c) *VIEW TIME SECURITY BY REPORT NAME AND USER GROUP*

The sample entitlement data table ViewTimeGN contains an example that is designed to apply row level security that shows only "Accessory" products to members of the administrators group and only "Bicycle" products to members of the Everyone group. Because the security is by report name, this business rule will be assigned to all system-wide occurrences of this report (by name) that have this processing extension assigned to it. This helps with situations where the same report object exists in multiple folders and the entitlement database manages the rules for them all. The fields in the table are:

ReportName	the report name from your Crystal Enterprise system
GroupID	the user group name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

d) *VIEW TIME SECURITY BY REPORT NAME AND USER*

The sample entitlement data table ViewTimeN contains an example that is designed to apply row level security that shows only "Accessory" products to the Administrator user and only "Bicycle" products to the Guest user. Because the security is by report name, this business rule will be assigned to all system-wide occurrences of this report (by name) that have this processing extension assigned to it. This helps with situations where the same report object exists in multiple folders and the entitlement database manages the rules for them all. The fields in the table are:

ReportName	the report name from your Crystal Enterprise system
UserID	the user name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

e) *VIEW TIME SECURITY BY REPORT PATH AND USER GROUP*

The sample entitlement data table ViewTimeGP contains an example that is designed to apply row level security that shows only "Accessory" products to members of the administrators group and only "Bicycle" products to members of the Everyone group. This helps with situations where business rules are developed in a development/qa environment as long as the same path to the report is used in the production environment. The fields in the table are:

ReportPath	the report path from your Crystal Enterprise system
GroupID	the user group name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

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f) VIEW TIME SECURITY BY REPORT PATH AND USER

The sample entitlement data table ViewTimeP contains an example that is designed to apply row level security that shows only "Accessory" products to the Administrator user and only "Bicycle" products to the Guest user. This helps with situations where business rules are developed in a development/qa environment as long as the same path to the report is used in the production environment. The fields in the table are:

ReportPath	the report path from your Crystal Enterprise system
UserID	the user name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

g) VIEW TIME SECURITY BY DYNAMIC PATH AND USER GROUP

The sample entitlement data table ViewTimeGW contains an example that is designed to apply row level security that shows only "Accessory" products to the Administrator user and only "Bicycle" products to the Guest user on all reports (with the processing extension assigned) within the designated path. This helps with situations where the same business rule needs to be applied to all reports within a specific folder and all its subfolders. The fields in the table are:

ReportPath	the report path from your Crystal Enterprise system
GroupID	the user group name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

h) VIEW TIME SECURITY BY DYNAMIC PATH AND USER

The sample entitlement data table ViewTimeW contains an example that is designed to apply row level security that shows only "Accessory" products to the Administrator user and only "Bicycle" products to the Guest user on all reports (with the processing extension assigned) within the designated path. This helps with situations where the same business rule needs to be applied to all reports within a specific folder and all its subfolders. The fields in the table are:

ReportPath	all or part of the report path from your Crystal Enterprise system
UserID	the user name from your Crystal Enterprise system
SelForm	the selection formula that should be appended to the report's selection formula

SELECTION FORMULA PARSING

If special tags are placed in the selection formula, *View Time Security* will replace the tags with specific information. In the *View Time Security* INI file, set the delimiter you wish to use (// by default) and whether or not you want to activate this formula parsing capability.

The following options are available:

Current Crystal Enterprise User Id

<delim>USER-SI_ID<delim> - will provide the value of the current user id.

Current Crystal Enterprise User Name

<delim>USER-SI_NAME<delim> - will provide the value of the current user name.

Current Crystal Enterprise Report Id

<delim>REPORT-SI_ID<delim> will provide the value of the current report id.

Current Crystal Enterprise Report Name

<delim>REPORT-SI_NAME<delim> will provide the value of the current report name.

Current System Date

<delim>NOW-DATE<delim> - will provide the current date in the format Date(year,month,day)

Current System Date-Time

<delim>NOW-DATETIME<delim> - will provide the current date and time in the format DateTime(year,month,day,hour,minute,second)

Current System Time

<delim>NOW-TIME<delim> - will provide the current time in the format Time(hour,minute,second)

Note - All delimiters <delim> have to be entered in Upper Case.

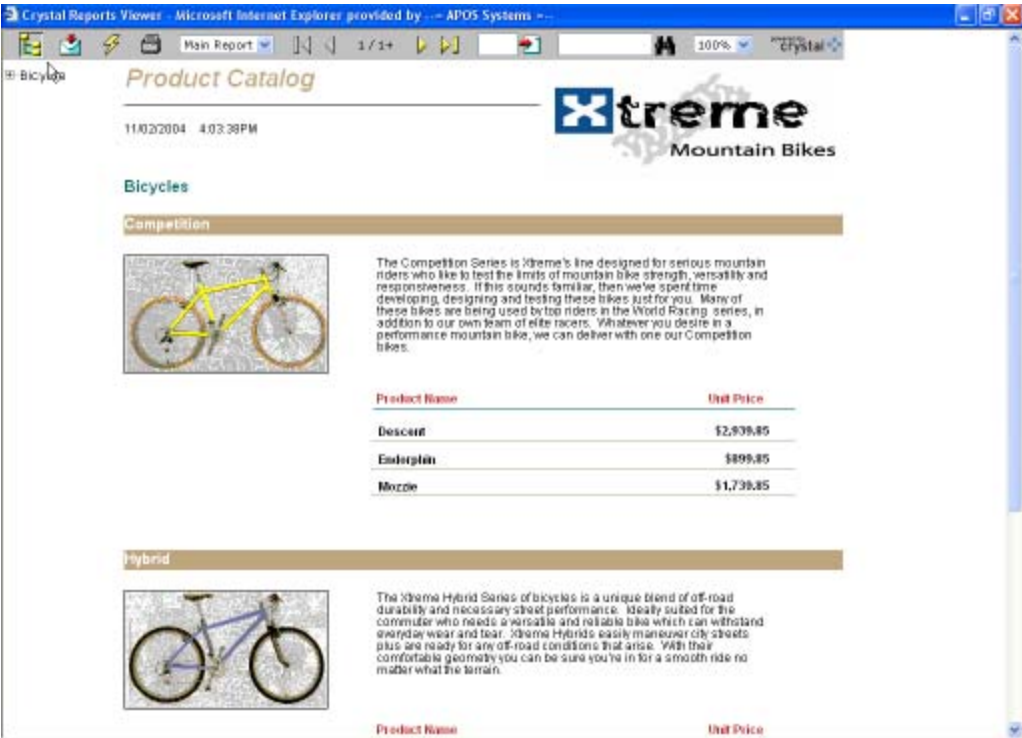
Note - Please note that View Time Security Manager will check the syntax of your special tag as part of its syntax checking function.

Note - You can use any property that exists in the Crystal Enterprise Properties property bag including your own custom properties. The syntax is:

<delim>REPORT-<your property here><delim> or
<delim>USER-<your property here><delim>

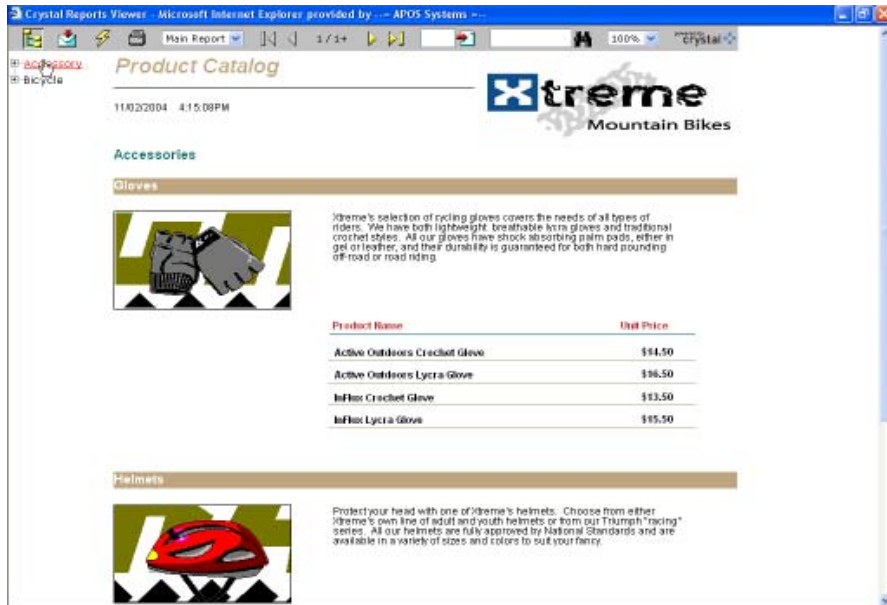
TESTING VIEW TIME SECURITY BY REPORT ID AND USER GROUP

- a) The sample entitlement data table ViewTimeG assumes that the following User Groups exist: Administrators and Everyone. Further, it assumes that the Report ID for Product Catalog is 176, make sure to change it in ViewTimeG if yours is different. To find the Report Id, Right mouse click - properties on the Product Catalog report in the Objects listing in the Crystal Management console.
- b) After assigning the APOSVTSG processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:

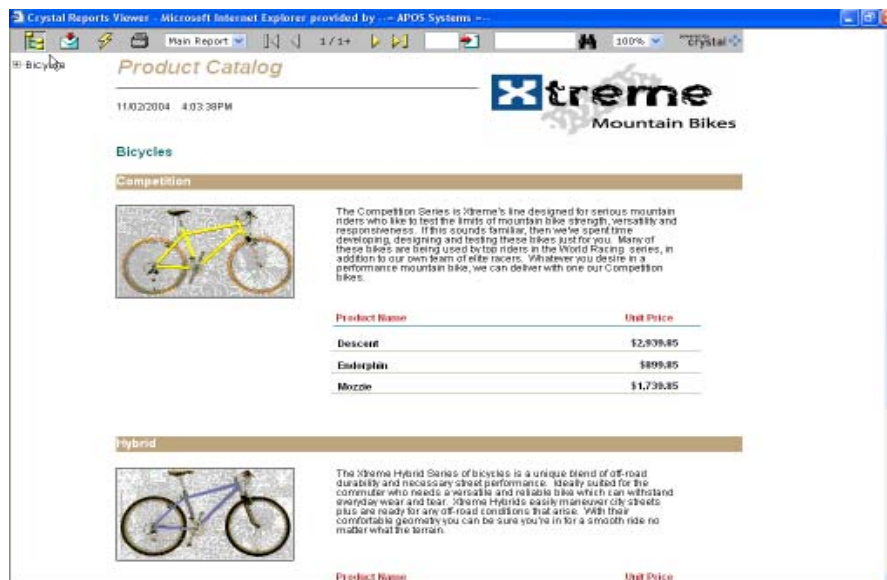


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- c) Log into ePortfolio as Administrator and View the Product Catalog. Since Administrator is a member of both user groups identified in ViewTimeG, you should see both the Accessory and Bicycle groups of products, as shown here:



- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user is a member of only the EVERYONE user groups identified in ViewTimeG, you should see only the Bicycle group of products.



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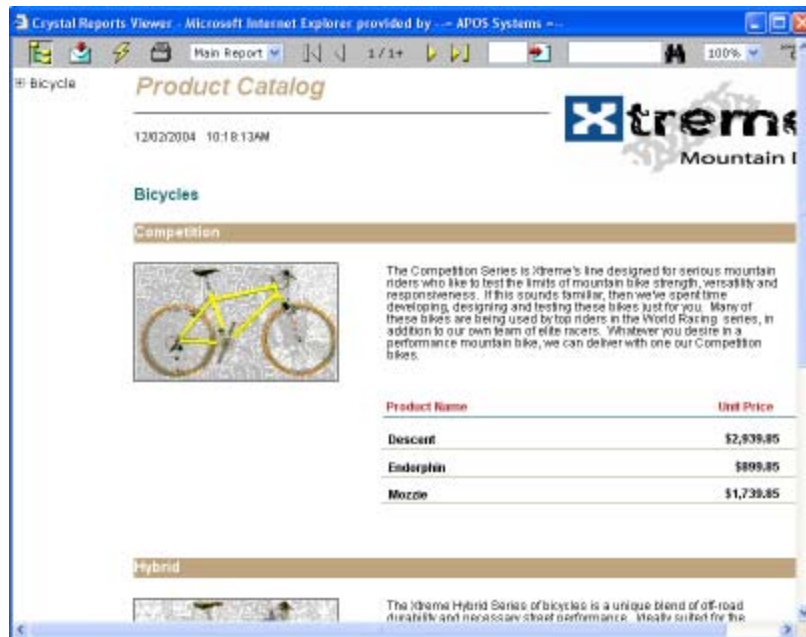
- e) Edit the ViewTimeG table and change the EVERYONE group name to a non-existent user group. Then log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in ViewTimeG, you should see an empty report, like this:



- f) This completes a demonstration of the following *View Time Security* principles:
- i) empty report if no security defined
 - ii) one data element selected for one report for one user group
 - iii) multiple data elements selected for one report for more than one user group

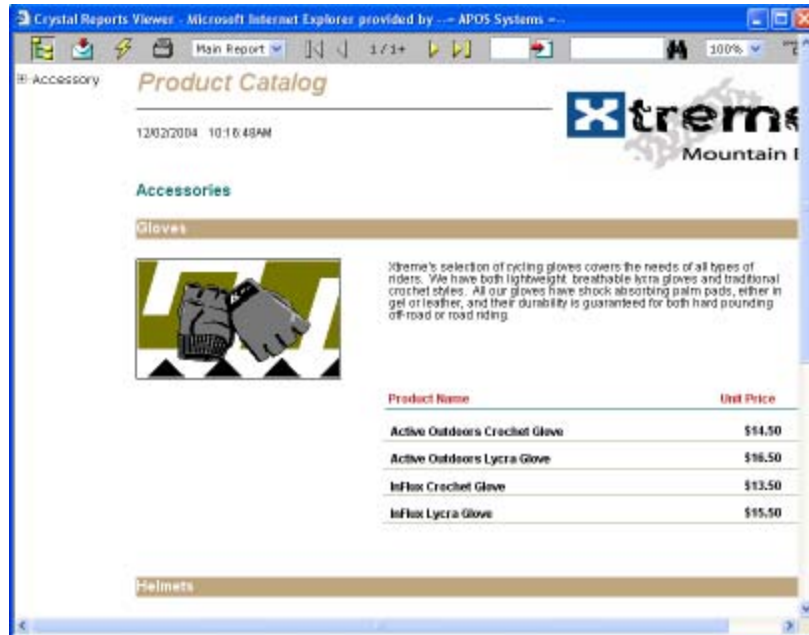
TESTING VIEW TIME SECURITY BY REPORT ID AND USER

- a) The sample entitlement data table ViewTime assumes that the following Users exist: Administrator and Guest. Further, it assumes that the Report ID for Product Catalog is 176, make sure to change it in ViewTime if yours is different. Right mouse click - properties on Product Catalog in the Objects listing in the Crystal Management console.
- b) After assigning the APOSVTS processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:



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- c) Log into ePortfolio as Administrator and View the Product Catalog. You should see only the Accessory group of products, as shown here:



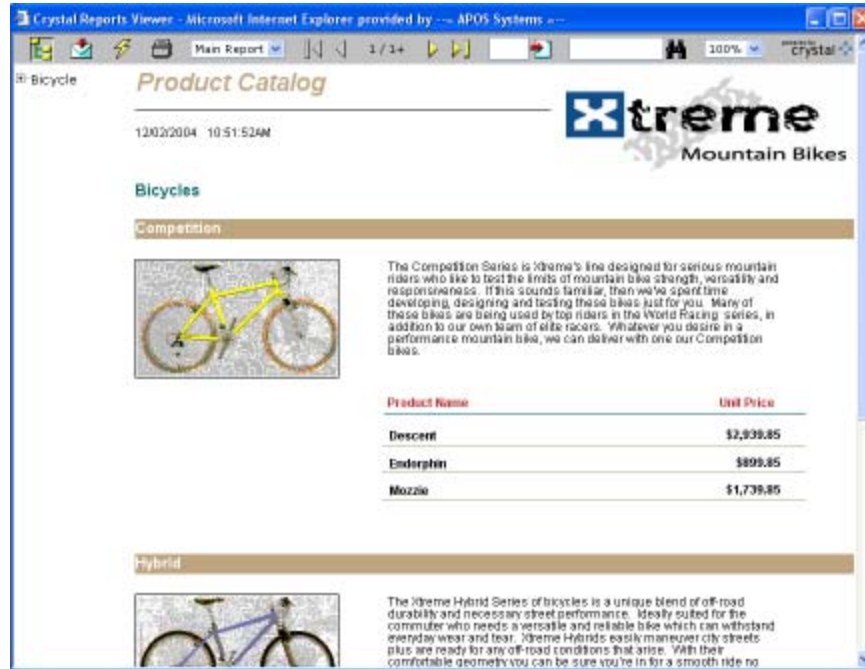
- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in ViewTime, you should see an empty report, like this:



- e) This completes a demonstration of the following *View Time Security* principles:
- i) empty report if no security defined
 - ii) one data element selected for one report for one user

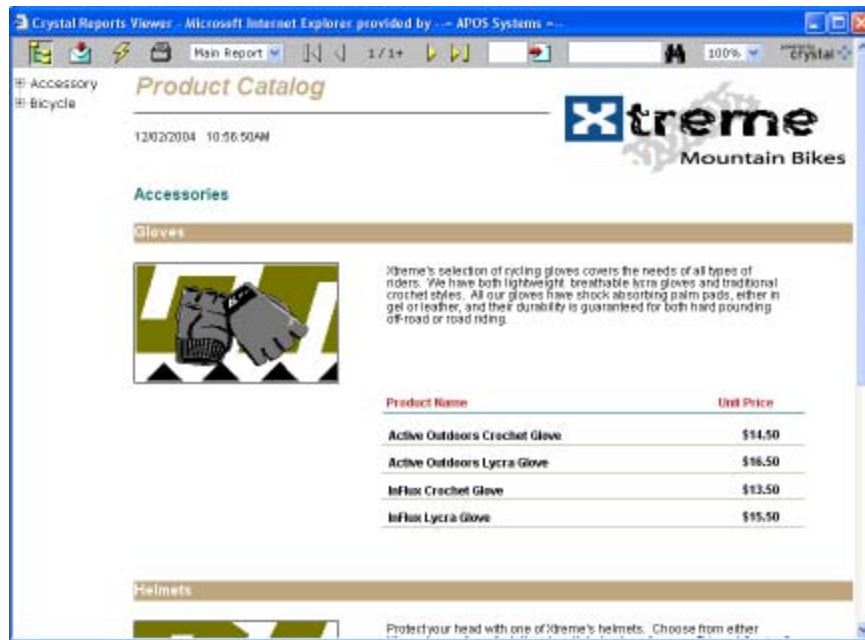
TESTING VIEW TIME SECURITY BY REPORT NAME AND USER GROUP

- a) The sample entitlement data table ViewTimeGN assumes that the following User Groups exist: Administrators and Everyone. Further, it assumes that the Product Catalog exists in your Crystal Enterprise system, make sure to change it in ViewTimeGN if yours is different.
- b) After assigning the APOSVTSGN processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:

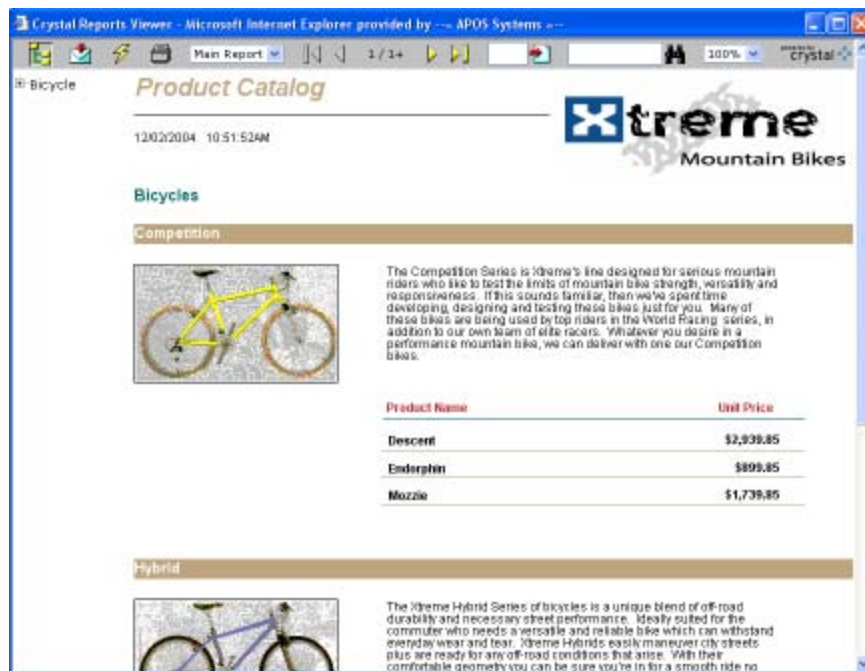


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- c) Log into ePortfolio as Administrator and View the Product Catalog. Since Administrator is a member of both user groups identified in APOSVTSGN, you should see both the Accessory and Bicycle groups of products, as shown here:

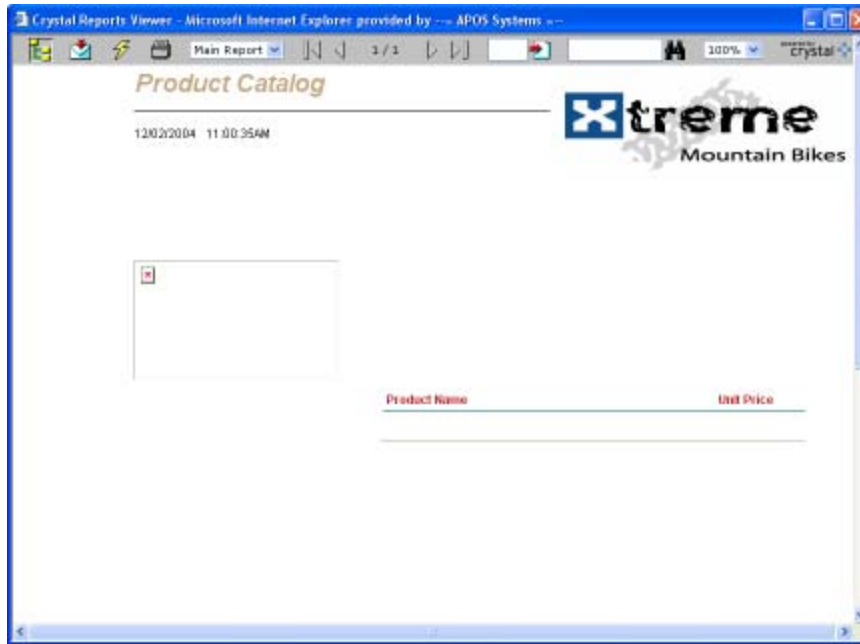


- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user is a member of only the EVERYONE user groups identified in APOSVTSGN, you should see only the Bicycle group of products.



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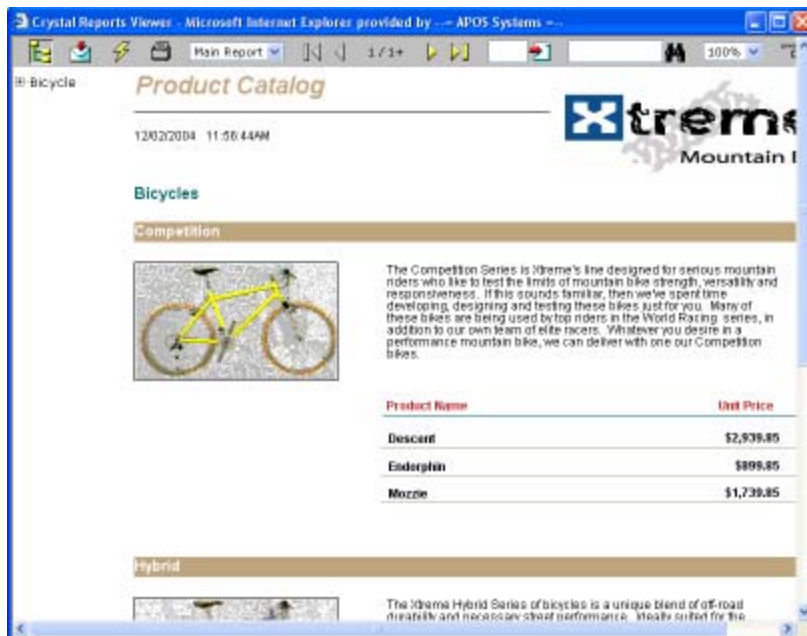
- e) Edit the ViewTimeGN table and change the EVERYONE group name to a non-existent user group. Then log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in APOSVTSGN, you should see an empty report, like this:



- f) Since this processing extension is not locked into a specific report id, consider adding Product Catalog to a different folder, applying this processing extension to it and repeating the test.
- g) This completes a demonstration of the following *View Time Security* principles:
- i) empty report if no security defined
 - ii) one data element selected
 - iii) multiple data elements selected
 - iv) one business rule applied to multiple instances of the same report

TESTING VIEW TIME SECURITY BY REPORT NAME AND USER

- a) The sample entitlement data table ViewTimeN assumes that the following users exist: Administrator and Guest. Further, it assumes that the Product Catalog exists in your Crystal Enterprise system, make sure to change it in ViewTimeN if yours is different.
- b) After assigning the APOSVTSN processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:



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- c) Log into ePortfolio as Administrator and View the Product Catalog. You should see only the Accessory group of products, as shown here:



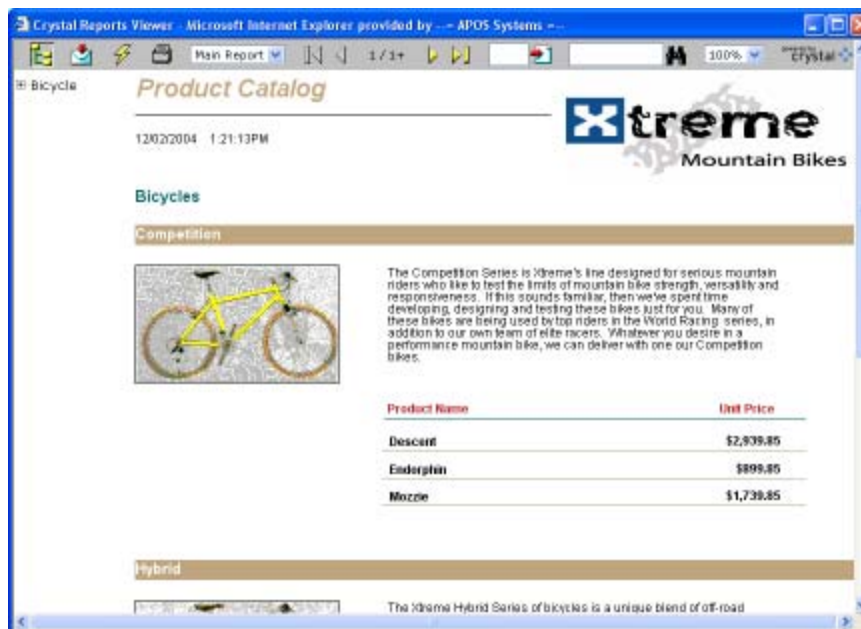
- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in ViewTimeN, you should see an empty report, like this:



- e) This completes a demonstration of the following *View Time Security* principles:
- empty report if no security defined
 - one data element selected
 - multiple data elements selected
 - one business rule applied to multiple instances of the same report

TESTING VIEW TIME SECURITY BY REPORT PATH AND USER GROUP

- a) The sample entitlement data table ViewTimeGP assumes that the following User Groups exist: Administrators and Everyone. Further, it assumes that the Product Catalog exists in your Crystal Enterprise system, make sure to change it in ViewTimeGP if yours is different. You may also have to update the Report Path columns in the ViewTimeGP table to match the location of the Product Catalog report on your system.
- b) After assigning the APOSVTSGP processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:

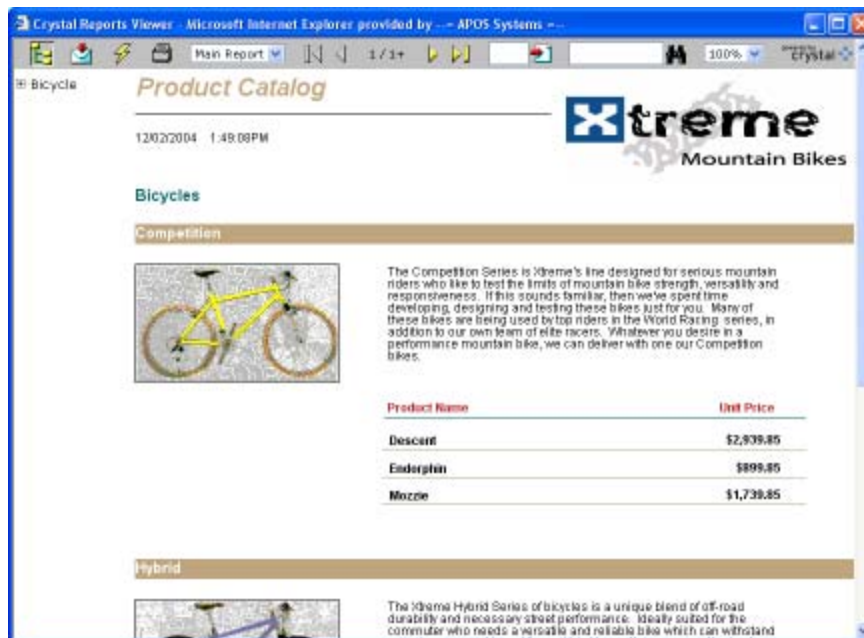


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- c) Log into ePortfolio as Administrator and View the Product Catalog. Since Administrator is a member of both user groups identified in APOSVTSGP, you should see both the Accessory and Bicycle groups of products, as shown here:

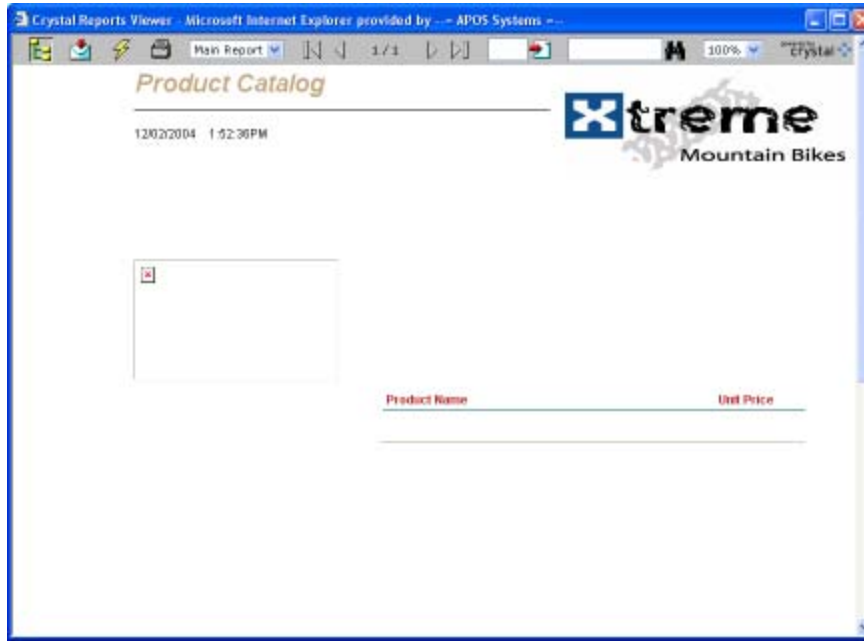


- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user is a member of only the EVERYONE user groups identified in APOSVTSGP, you should see only the Bicycle group of products.



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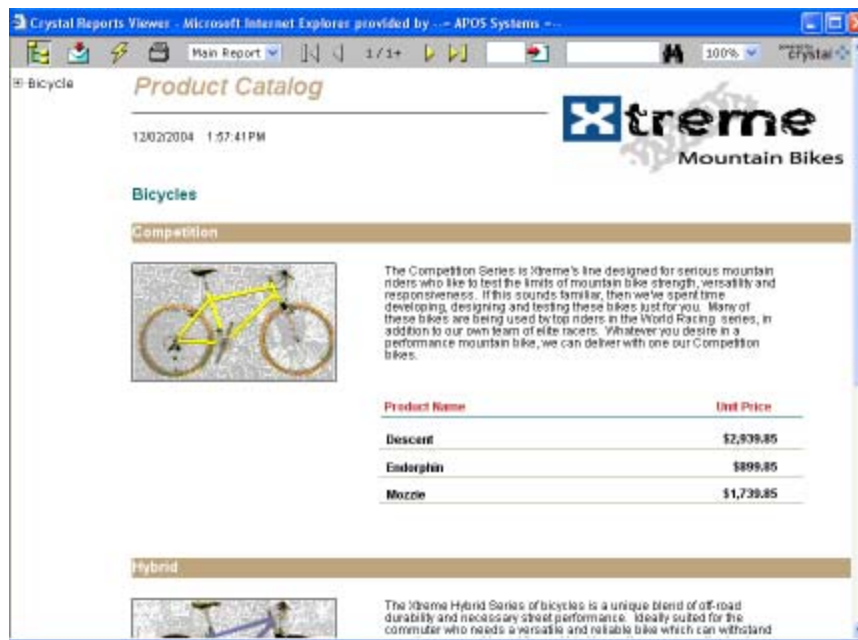
- e) Edit the ViewTimeGP table and change the EVERYONE group name to a non-existent user group. Then log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in APOSVTSGP, you should see an empty report, like this:



- g) This completes a demonstration of the following *View Time Security* principles:
- i) empty report if no security defined
 - ii) one data element selected
 - iii) multiple data elements selected
 - iv) one business rule applied to multiple instances of the same report

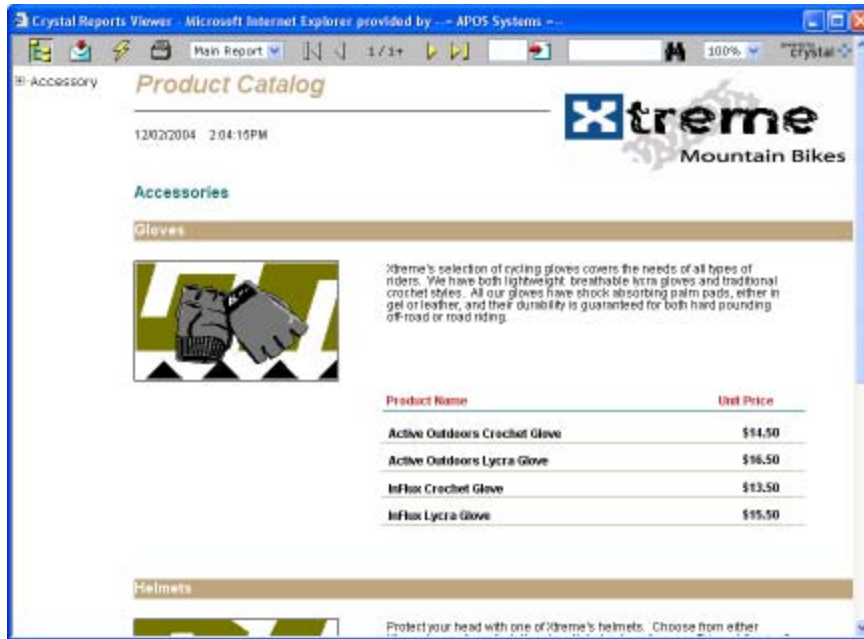
TESTING VIEW TIME SECURITY BY REPORT PATH AND USER

- a) The sample entitlement data table ViewTimeP assumes that the following users exist: Administrator and Guest. Further, it assumes that the Product Catalog exists in your Crystal Enterprise system, make sure to change the report path column in ViewTimeP if your report name or report path is different.
- b) After assigning the APOSVTSP processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:

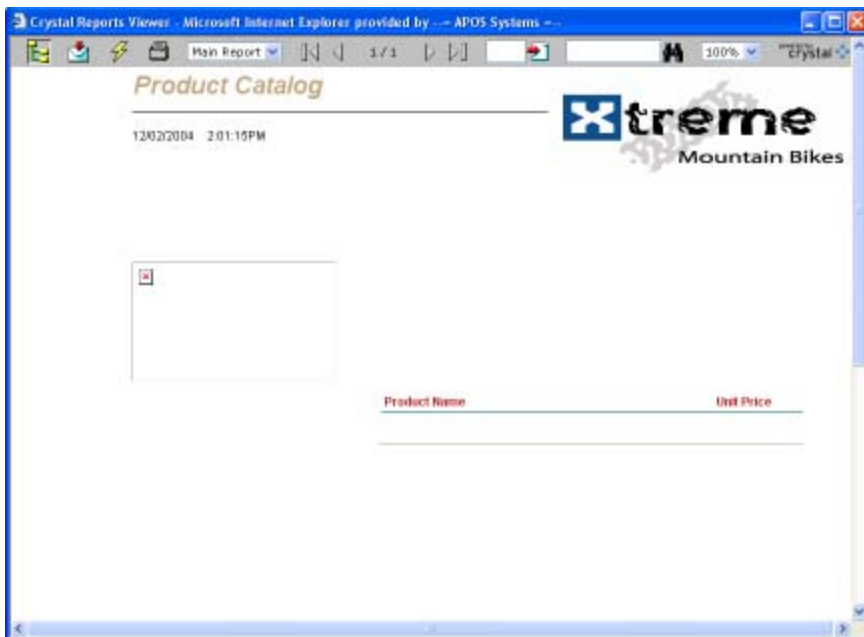


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- c) Log into ePortfolio as Administrator and View the Product Catalog. You should see only the Accessory group of products, as shown here:

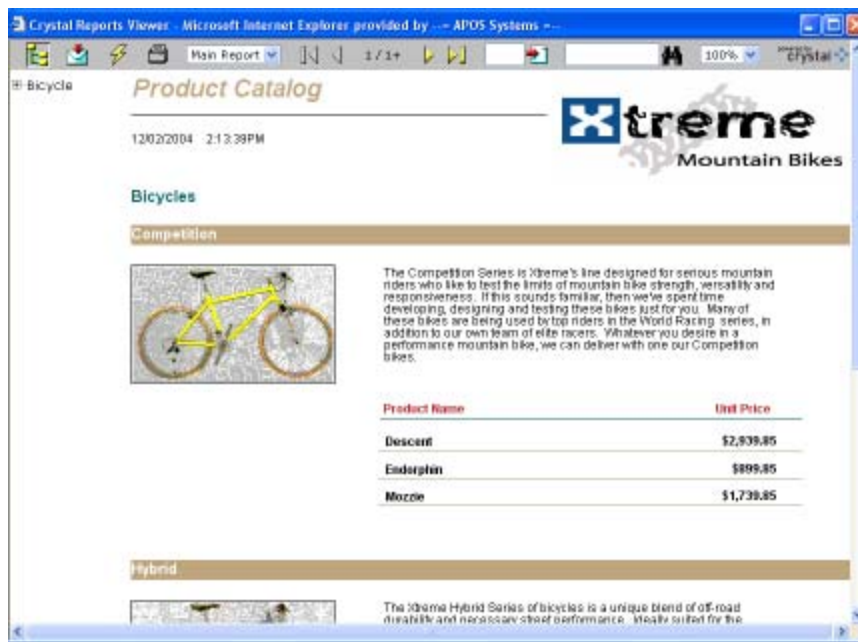


- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in ViewTimeP, you should see an empty report, like this:



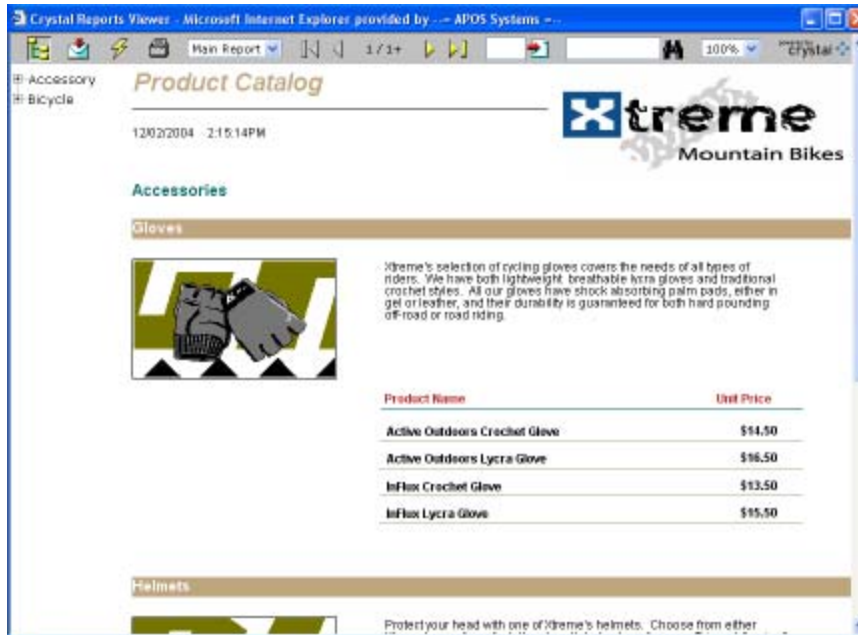
TESTING VIEW TIME SECURITY BY DYNAMIC PATH AND USER GROUP

- a) The sample entitlement data table ViewTimeGW assumes that the following User Groups exist: Administrators and Everyone. Further, it assumes that the Product Catalog exists in your Crystal Enterprise system, make sure to change it in ViewTimeGW if yours is different.
- b) After assigning the APOSTSGW processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:

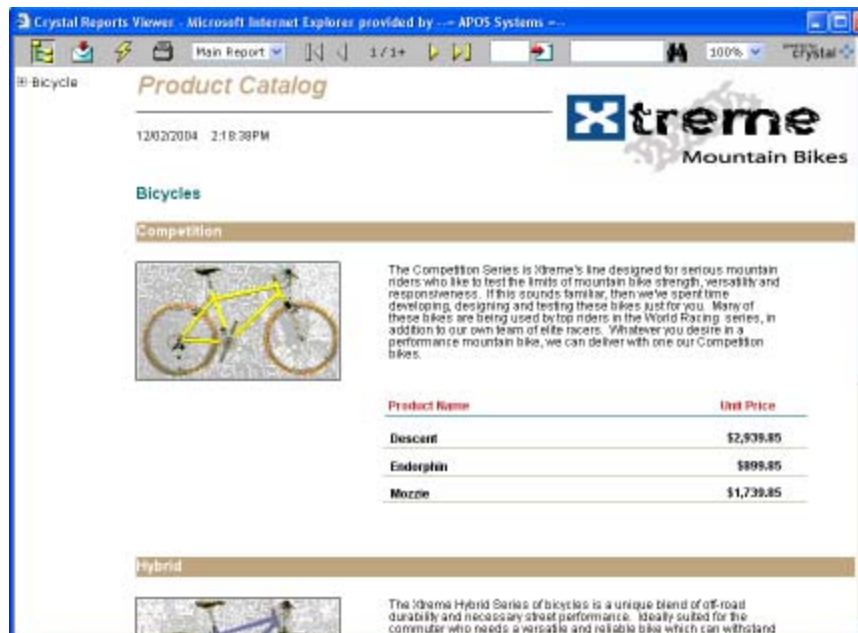


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- c) Log into ePortfolio as Administrator and View the Product Catalog. Since Administrator is a member of both user groups identified in APOSVTSGW, you should see both the Accessory and Bicycle groups of products, as shown here:

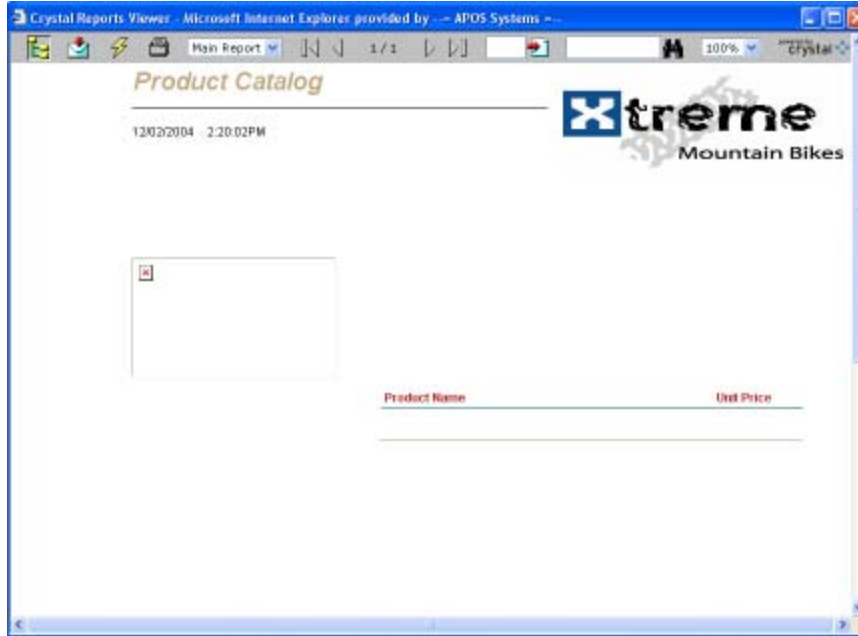


- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user is a member of only the EVERYONE user groups identified in APOSVTSGW, you should see only the Bicycle group of products.



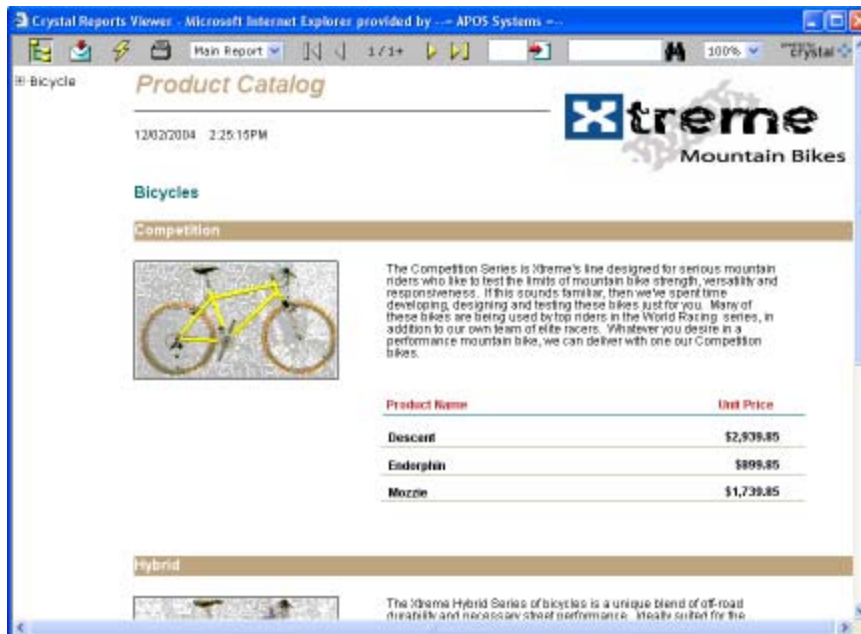
CONTINUED ON NEXT PAGE...

- e) Edit the ViewTimeGW table and change the EVERYONE group name to a non-existent user group. Then log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in APOSVTSGW, you should see an empty report, like this:



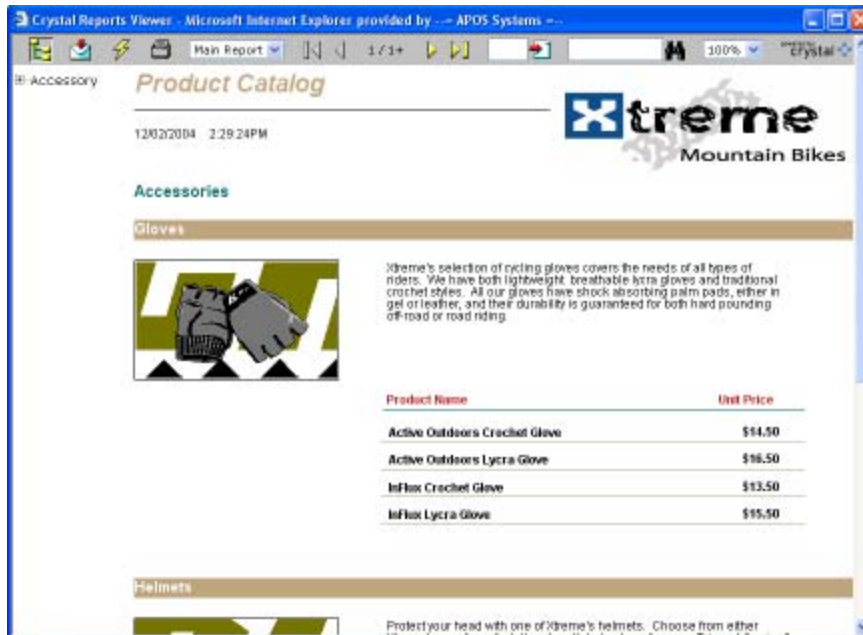
TESTING VIEW TIME SECURITY BY DYNAMIC PATH AND USER

- a) The sample entitlement data table ViewTimeW assumes that the following users exist: Administrator and Guest. Further, it assumes that the Product Catalog exists in your Crystal Enterprise system, make sure to change it in ViewTimeP if yours is different.
- b) After assigning the APOSVTSW processing extension to the Product Catalog as outlined above, log into ePortfolio as Guest and View the Product Catalog. You should see only the Bicycle group of products, as shown here:



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- c) Log into ePortfolio as Administrator and View the Product Catalog. You should see only the Accessory group of products, as shown here:



- d) Log into ePortfolio as any other user and View the Product Catalog. Since this user has no records in ViewTimeW, you should see an empty report, like this:



- e) This completes a demonstration of the following *View Time Security* principles:
- empty report if no security defined
 - one data element selected
 - multiple data elements selected
 - one business rule applied to multiple instances of the same report

ENVIRONMENT REQUIREMENTS

View Time Security must be installed on each server that contains the following Crystal Enterprise components:

Crystal Enterprise v.10 Page Server
Crystal Enterprise v.10 Job Server

In addition, any computer that has *View Time Security* on it requires ADO v.2.6 to support connectivity to the entitlement database and/or the activity log database. If required, ADO may be downloaded from Microsoft's download area or from the Downloads area of the APOS web site at www.apos.on.ca

TIPS AND TRICKS

A few tips and tricks . . .

1. Note that viewing any saved report instances that were generated using an assigned Processing Extension will always attempt to use the assigned processing extensions. To test the implications, try this:
 - a) Assign a processing extension to a report
 - b) Run a scheduled instance to generate a History instance
 - c) Confirm that viewing this instance as different users filters data correctly
 - d) Remove the processing extension assignment for this report in the Crystal Management Console.
 - e) View the same History instance as different users and you will get the same results as occurred when the Processing Extension was assigned. This is because Crystal Enterprise permanently assigns the saved instance to the Processing Extension that was used when the instance was generated.
 - f) Also, note that if this processing extension no longer exists in the `../Crystal Decisions/Enterprise 10/win32_v86/ProcessExt` folder, an error message will occur as per the Error Messages section below.
2. Note that changes to assigned Processing Extensions in the Crystal Management Console or the actual files in the `../ProcessExt` folder are essentially immediate and do not require the restarting of the Web Component Server (WCS) or restarting of browser sessions.
3. Performance of processing extensions can be enhanced through the use of indexes in your reports. If possible, try to assign an internal report index to the specific report elements that are used in the *View Time Security* database selection formula. See your Crystal Reports designer documentation for additional information.
4. If you require activity logging for all or most reports but only need to apply row level user security to some reports, you may need to apply 2 processing extensions to some reports, as follows:
 - in the row level security processing extension's ini file, set activity logging off, set row level security on and assign it to reports needing row level security. Make sure to set the security database connection string appropriately.
 - in one of the other processing extension's ini file, set activity logging on, set row level security off and assign it to all reports needing activity logging. Make sure to set the log database connection string appropriately.
5. Performance of *View Time Security* may be enhanced by turning off the following setting in the appropriate ini, set it as follows:
IncludePath=N

TECHNICAL SUPPORT

EMAIL SUPPORT

If you are unsuccessful installing *View Time Security* and require assistance, please email the details of your problem to support@apos.on.ca

HELP DESK

Telephone help desk support is available at 519-653-8332.

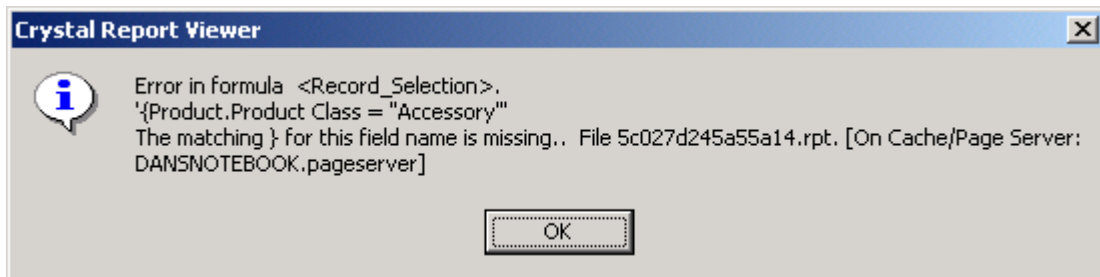
ERROR MESSAGES

Potential error messages include:

EMPTY REPORT WITH NO DATA DISPLAYED

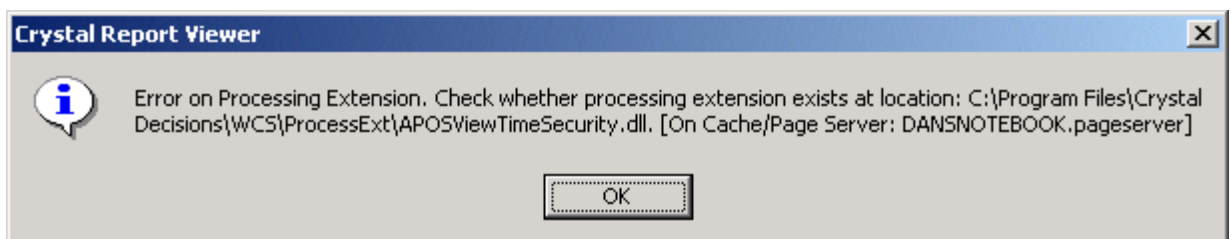
If the viewer displays the desired report without any data but does not display an error message, this is typically because the assigned processing extension is working and the current user has no rights to see any data.

ERROR IN FORMULA...



If the viewer displays an error message similar to the above, it typically indicates that there is a syntax error in the SelForm field of the record being used for this viewing request. To correct this error, make necessary changes to the SelForm syntax as necessary for the records being accessed. To confirm syntax, consider opening the target report in Crystal Reports Designer, enter the desired SelForm string into the Selection Formula editor and check syntax.

ERROR ON PROCESSING EXTENSION. CHECK WHETHER PROCESSING EXTENSION EXISTS ...



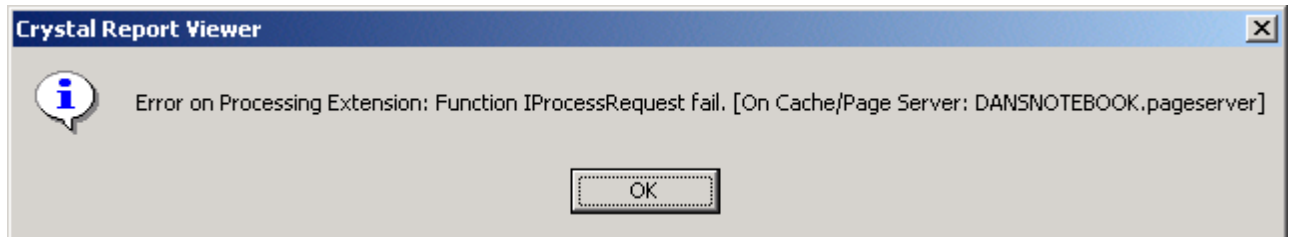
If you are viewing a report on demand and receive the above error message, it typically indicates that the assigned processing extension is missing. To correct this error, make sure the indicated processing extension exists in the ../Crystal Decisions/WCS/ProcessExt folder. Alternatively, change or remove the assigned processing extension for the parent report object in the Crystal Management Console.

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If you are viewing a saved instance and receive the above error message, it typically indicates that this instance was generated with a processing extension that no longer exists. To correct this error, make sure the indicated processing extension exists in the ../Crystal Decisions/WCS/ProcessExt folder.

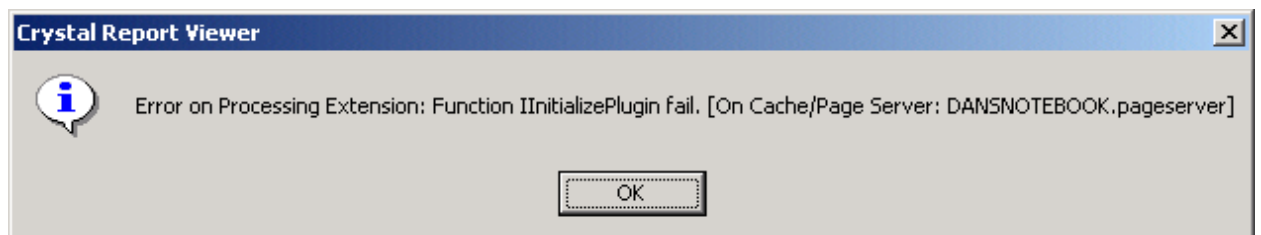
If you have scheduled a report and receive the above error message when you click on the Failed link in the History screen, it typically indicates that this instance was generated with a processing extension that no longer exists. To correct this error, make sure the indicated processing extension exists in the ../Crystal Decisions/WCS/ProcessExt folder.

ERROR ON PROCESSING EXTENSION: FUNCTION IPROCESSREQUEST FAIL.



This error typically indicates the ODBC name in the ini file cannot be found or the table name in ini file cannot be found. To correct this error, confirm that the ini file information about the ODBC connection and the table name is correct. Also, ensure that the actual ODBC connection exists and is defined correctly.

ERROR ON PROCESSING EXTENSION: FUNCTION IINITIALIZEPLUGIN FAIL.



If you are viewing on demand or scheduling a report and receive the above error message, it typically indicates that one of the following conditions exists:

- your apos.lic license file is missing, is corrupt or has expired
- the assigned processing extension is corrupt or invalid

This error message will also create an Event Log message - check it for additional error information. Note also that the supplied View Time Security files may not be renamed, doing so may also cause this error message.

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EVENT LOG ERRORS

If in doubt to what errors may be occurring, consider checking the Event Log, in the Application section, for additional information that may assist you. Most errors are self-explanatory, here are some typical examples:

APOSVTS: Could not open license file.

APOSVTS: Invalid or expired runtime license.

APOSVTS: COM error - [Microsoft][ODBC Microsoft Access Driver] The Microsoft Jet database engine cannot find the input table or query 'ViewTime'. Make sure it exists and that its name is spelled correctly. Query: SELECT SelfForm FROM ViewTime WHERE UserID='ADMINISTRATOR' AND ReportID=176;

APOSVTS: COM error - [Microsoft][ODBC Microsoft Access Driver] Could not find file '(unknown)'. Connection String: Provider=MSDASQL.1;Data Source=APOSVTS

APOSVTS: COM error - [Microsoft][ODBC Driver Manager] Data source name not found and no default driver specified Connection String: Provider=MSDASQL.1;Data Source=APOSVTS

PROCESSING EXTENSION SELECTION FORMULA IS INVALID

The Crystal Enterprise v.10 Interactive DHTML Viewer will fail if the Select statement in the report contains double carriage returns. If this occurs, please open the report in Crystal Designer and remove the extra carriage return and try again. To confirm that that the Interactive Viewer is the problem, switch to the DHTML Viewer and try again. Please contact our Help Desk for additional information.

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