crystal decisions ™

Crystal Enterprise Enhanced SAP Edition

Secure Network Communications

Overview

This technical brief explains how the Crystal Enterprise 8.5 Enhanced SAP Monthly Hot Fix, **ce85sapwin_en.zip** removes limitations with Secure Network Communications (SNC) and single sign on (SSO). The hot fix **ce85sapwin_en.zip** can be found on the support site at:

http://support.crystaldecisions.com/

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Introduction

Crystal Enterprise Enhanced SAP Edition (ESE) (for BW3.0b) contains a software solution that provides connectivity to SAP BW3.0b. Crystal Enterprise Solution Kit for mySAP.com v2.5 (CESK 2.5) contains the OpenSQL and InfoSet drivers that provide connectivity to SAP R/3. In both these products, single sign on (SSO) is possible but it has these limitations:

- Although you can have multiple SAP entitlement systems, SSO is only possible to one SAP system, the default system.

- Secure network communication (SNC) is only possible for authenticating the entitlement user

- SSO is only possible when viewing reports on-demand. Password is still needed when scheduling reports

With the Crystal Enterprise 8.5 Enhanced SAP Monthly Hot fix, **ce85sapwin_en.zip**, these 3 limitations have been removed.

Features

After installing the **ce85sapwin_en.zip** hot fix the following features will now be available:

- Reports using InfoSet and OpenSQL driver will be SSO capable. This is actually a feature of CESK 2.5, rather than a core feature of the **ce85sapwin_en.zip** hot fix. However, the **ce85sapwin_en.zip** hot fix contains updated InfoSet and OpenSQL drivers that make this possible.

- SSO will be possible for multiple SAP systems – through the use of SAP Portals tickets or NT Lan Manager (NTLM).

- Ability to import SAP users when importing Roles into Crystal Enterprise

- Ability to schedule report without entering password – SNC must be present and set up properly

- SNC support when connecting to SAP via Crystal Reports – SAP log on prompt will appear but password tab will be unavailable.

Limitations

There are still some limitations after installing the **ce85sapwin_en.zip** hot fix. For example:

- SAP users need to be mapped to NT users via the Crystal Management Console.

- If multiple SAP systems and roles exist, the SAP ePortfolio will only display the first role.

Installation Considerations

The **ce85sapwin_en.zip** hot fix contains both ESE components, as well as the updated OpenSQL driver. Installations that have both ESE and CESK 2.5, only need to install this hot fix in order to get the SNC functionality, which will cover both the BW and R/3 scenarios.

NOTE	• CESK 2.5 contains files and drivers which have a higher version number than the ce85sapwin_en.zip hot fix.
	• CESK 2.5 does not contain any SNC SSO functionality.

If the **ce85sapwin_en.zip** hot fix is installed, and then the CESK V2.5 is installed, the SNC functionality will be overwritten. The **ce85mysap25win_en.zip** hot fix for CESK will need to be installed in order to restore that functionality.

Ce85sapwin_en.zip Hot fix – Installation and Configuration - NTLM example

System Scenario:

- Crystal Enterprise (CE) system using NT Authentication and NT SSO.

- One SAP R/3 system with SNC configured

- One BW3 system with SNC configured

Objectives:

- To configure a CE system so that it has SNC SSO with both SAP systems.

- Both R/3 and BW3 Reports must run on-demand without prompting for logon

- Both R/3 and BW3 Reports must schedule without the need for username/password

Prerequisite:

- The CE system has already been set up for NT Authentication and NT SSO. Please see the Crystal Enterprise Administrator's Guide (Admin.pdf) in the **\Doc** folder on the Crystal Enterprise 8.5 product CD for more details.

- The SAP system has already been set up for SNC. Please refer to SAP's documentation for details on how to set up SNC in SAP.

Step 1: Starting Crystal Enterprise servers under the appropriate user account

The CE servers need to be running under an appropriate domain network user account. This particular user account is used for SNC purposes and will also be utilized in Step 2. CE servers that need to run under this account are:

- Automated Process Scheduler (APS)

- Page Server

- Job Server

- Web Component Server (WCS).

This step is performed using the Crystal Configuration Manager. Figure 1 shows an example where the Page Server is using a network user account named "PYeung" belonging to the domain called "Enterprise" in the **User** box.
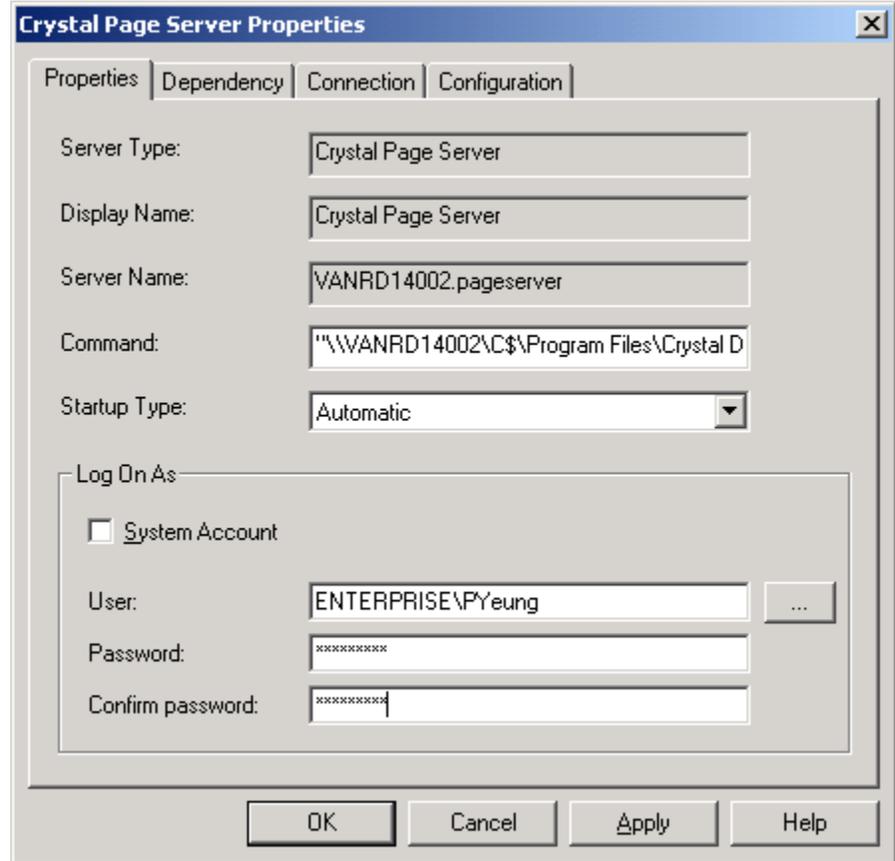
Figure 1. – Running Page Server under the appropriate domain network user account

Step 2: Configuring the SAP system to trust the CE system

The SAP system needs to be configured to trust the CE system. This is done through **Transaction** "SNC0" by creating a **Type of ACL entry** of type "E". Fill in the rest of the information as shown in Figure 2.
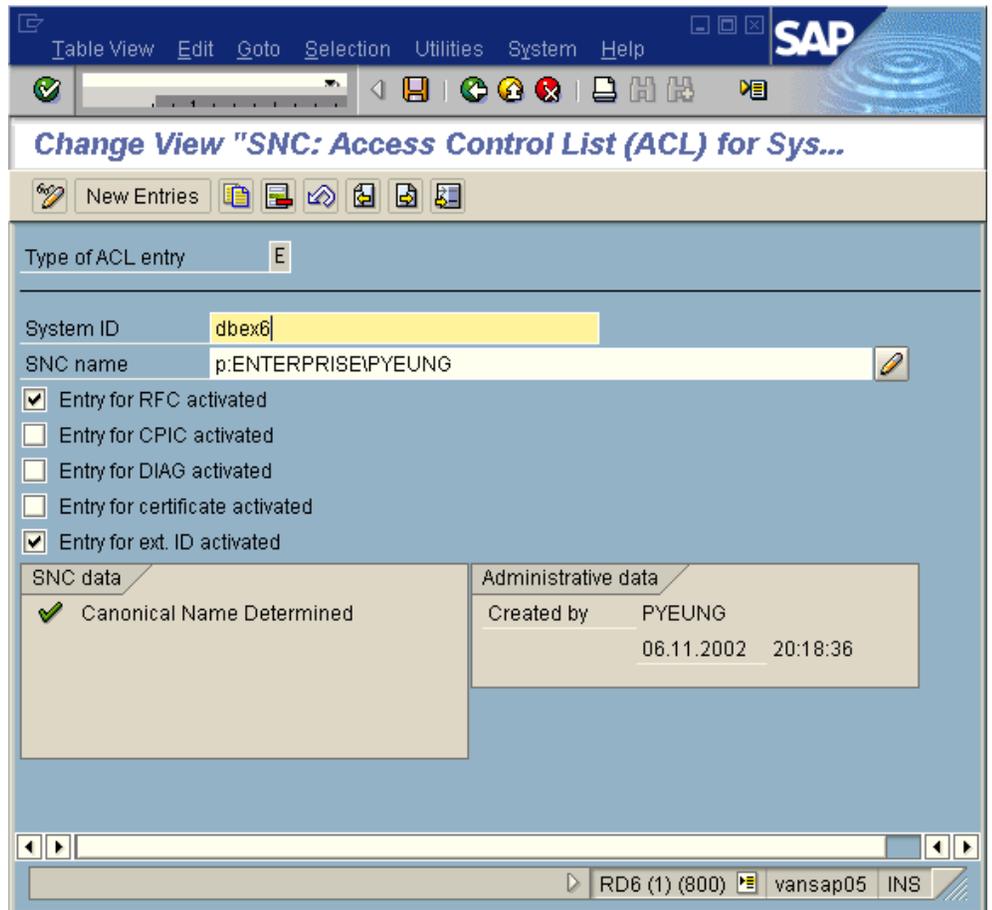

Figure 2 – Creating an ACL entry in SNC0

1. **System ID** = name of the Crystal Enterprise system, example: "DBEX6"

2. **SNC name** = p:<*SNC User Account*>. The user account should be the same as that specified in Step 1. In this example "p:ENTERPRISE\Pyeung"

3. Select the checkbox for **Entry for RFC activated** and **Entry for ext. ID activated**. Clear all other checkboxes.

4. Save the information.

5. You should get a green checked icon as shown in the Figure 2.

NOTE	The SAP system must have been configured for SNC. Check with your SAP Administrator.

Step 3: Configuring SNC settings in Crystal Enterprise Crystal Management Console

In this step, you will set up CE appropriately for SNC. Start the Crystal Management Console (CMC), and navigate to **Manage Authorization** then choose the **SAP** tab.

Step 3.1 – Entitlement Systems page

In this page, you will enter your SAP system information. Basic details of this should be available in the Installation Guide of Crystal Enterprise – SAP Edition (installguide.pdf) on the Crystal Enterprise SAP Edition product CD in the **Sapdocs** folder.

Make sure to click the **Update** button before navigating away from the page, otherwise the entries will be not be saved.

For the entitlement user, you can either:

- Enter the username and password information, or

- Enter the username without password and use an SNC name. To do this, you will first need to indicate that you are using SNC in the SNC Settings page (see Step 3.2).
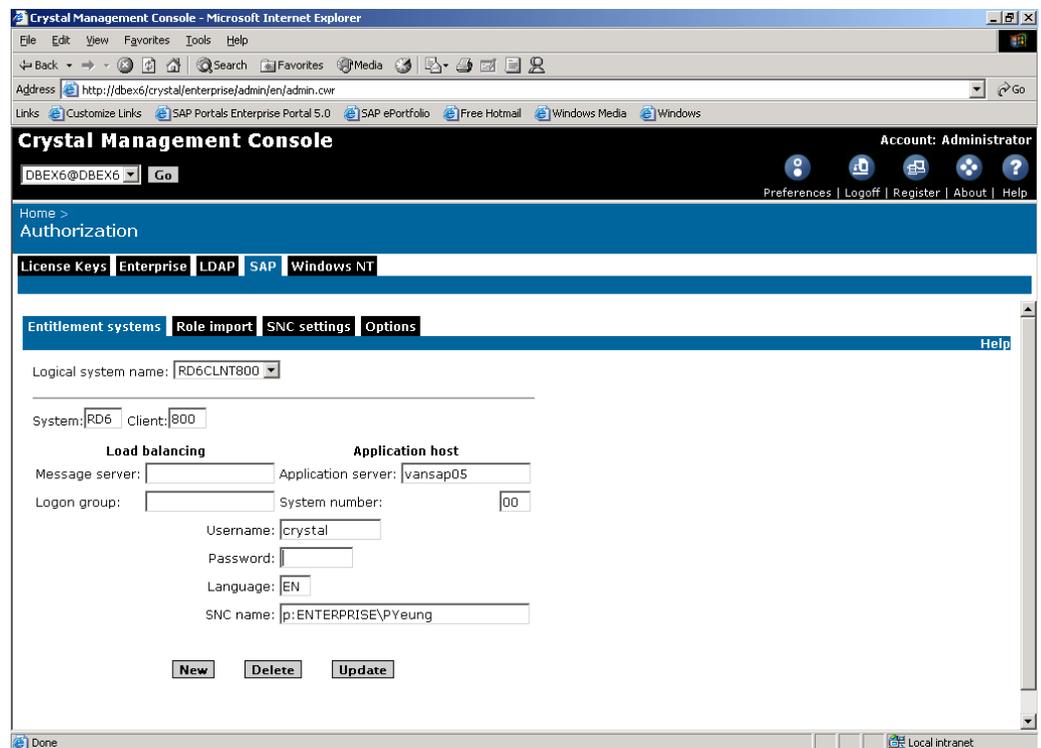

Figure 3 – Setting up entitlement systems in the CMC

A prerequisite of this is that the entitlement user "Crystal" in Figure 3, must also be configured to have an SNC account with transaction SU01 in the SAP system (consult the SAP documentation for more details). The SNC name specified in SU01 must be the same as the one used here. The configuration screen will be similar to Figure 4.
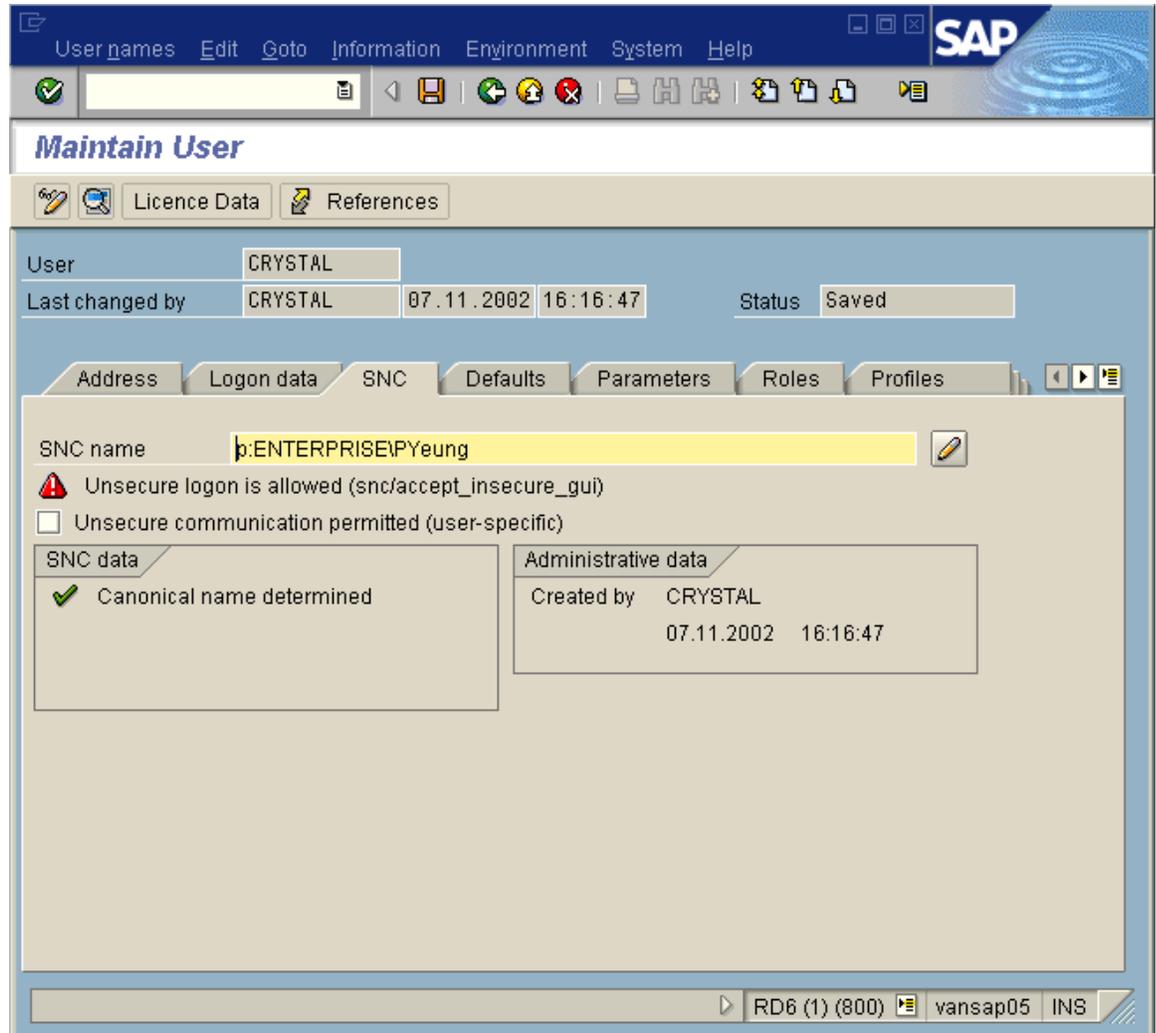

Figure 4 – Specifying SNC name for entitlement user in SU01

Step 3.2 – SNC Settings page

In this page indicate the SNC settings. Figure 5a indicates the settings that are needed. SNC settings should be configured for each entitlement system that you have set up in Step 3.1.
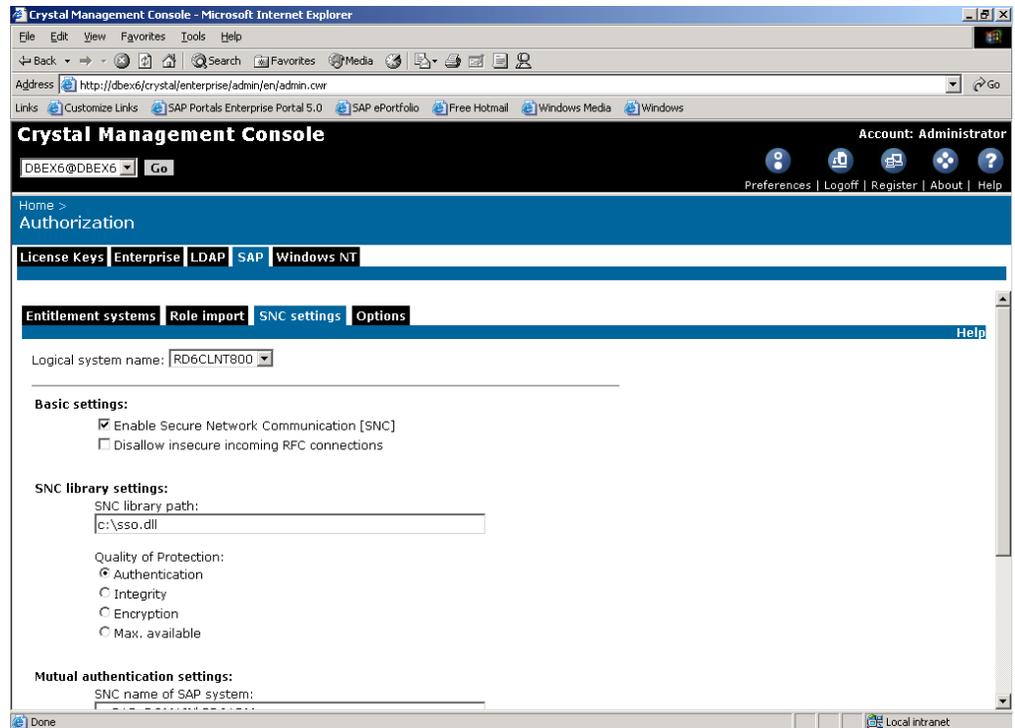

Figure 5a – Configuring SNC Settings in the CMC

1. Select the appropriate logical system, in this example choose the entitlement system that's configured in Step 3.1.

2. Enter the full path of the SNC library file. For the NTLM implementation of GSS API V2, the implementation is hosted in a file called gssapi32.dll. This DLL has to be installed or copied onto any computer running CE servers that is required to use SNC (APS, Page Server, Job Server, and WCS). The name of the file does not matter. We recommend that the file be called sso.dll and be installed onto the root directory of each of these computer.
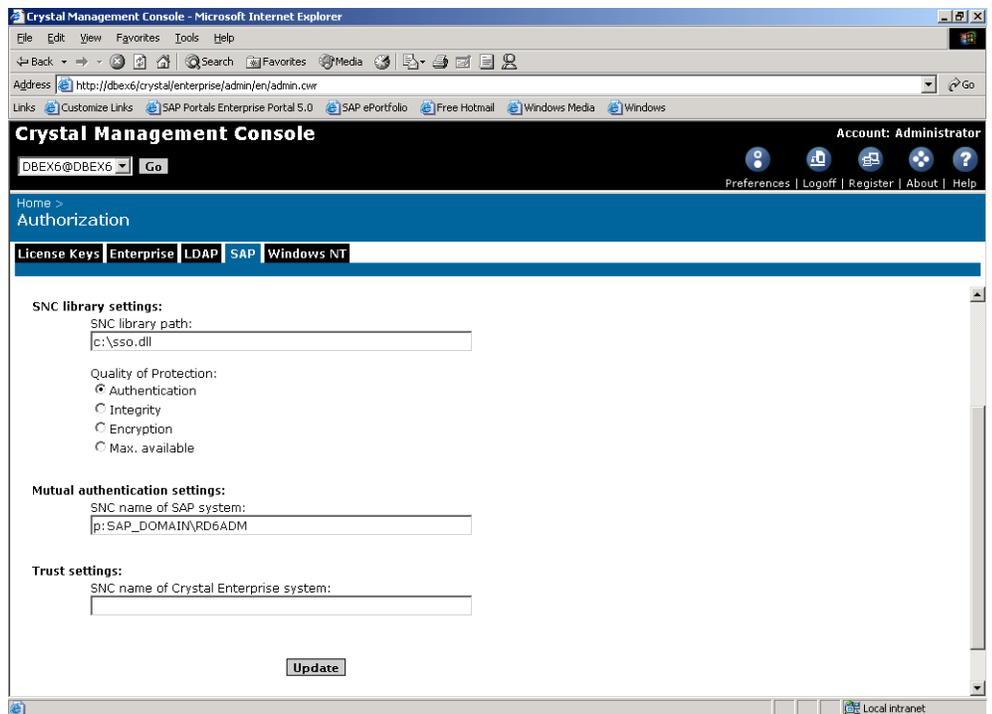
ce85_sap_snc.pdf

Figure 5b – Configuring SNC Settings in the CMC

1. Under **Quality of Protection**, select **Authentication**. The other options are for used for other implementations of SNC.

2. Under **Mutual authentication settings**, you should enter the **SNC name of SAP** system. This should be
"p:<*sap_server_domain*>\<*3_char_sysid*>ADM" for example:
"p:\SAP_DOMAIN\RD6ADM"

3. Trust settings is not used.

4. Click on **Update** to save your settings.

Step 3.3 – Options page

In the **Options** tab:

1. Select one of the Entitlement systems as the **Default** system. This is important, especially when using SAP tickets. The **Default** system will be the system that the SAP ticket is authenticated against.

2. Select the option to **Automatically import users**. If this option is selected, all the users under a Role will be automatically imported in Crystal Enterprise when the Role itself is imported (see Step 4). This is important when you have multiple SAP entitlement systems because it allows SAP users to be automatically created in Crystal Enterprise so that they can be mapped as aliases to the Enterprise or NT user.

NOTE	The **Automatically import users** option is independent of the entitlement system, and cannot be set per entitlement system. Once checked, it will automatically import users for all SAP systems when the corresponding roles are imported.

Step 4: Importing SAP Roles/Users into Crystal Enterprise

When you have completed setting up the entitlement systems, SNC settings, and Options, you can start to import your SAP roles into Crystal Enterprise. Only SAP users who belong to these imported SAP roles will be able to log on to Crystal Enterprise. With the option to **Automatically import users** checked, all corresponding SAP users in the imported roles will be created in Crystal Enterprise.

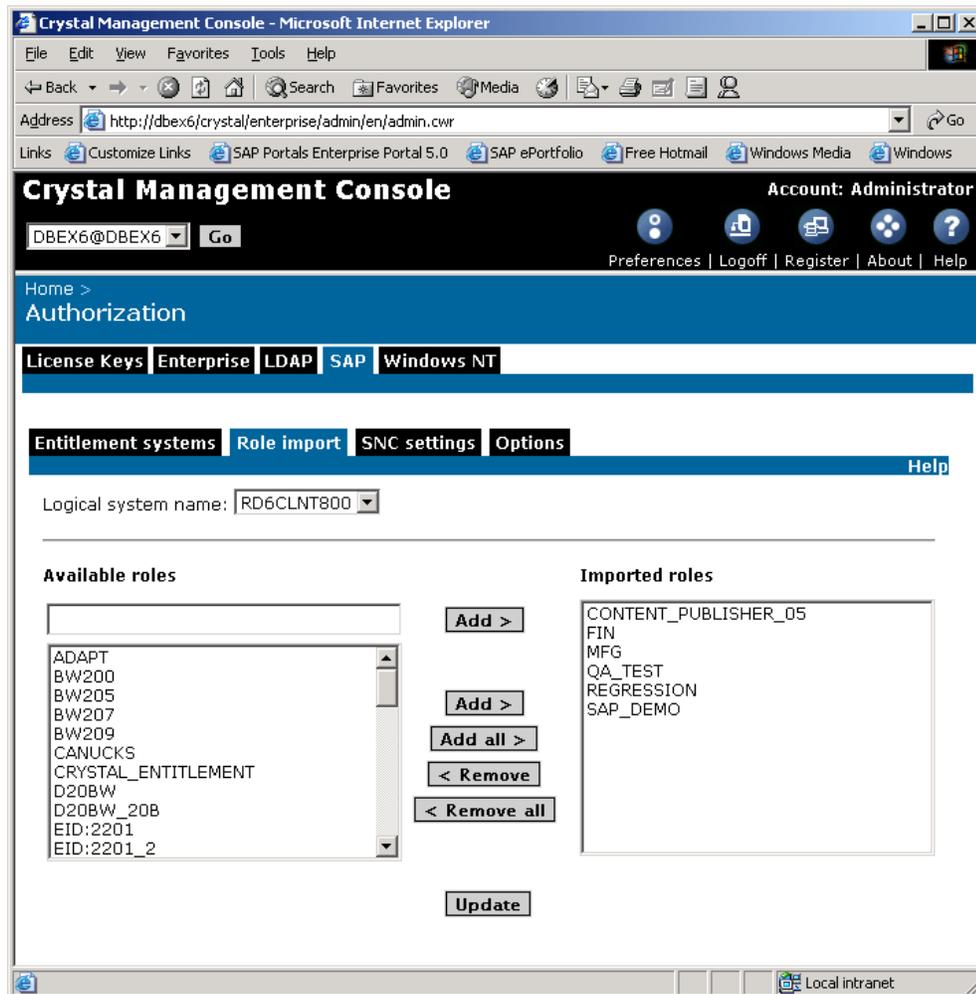Figure 6a and 6b show the imported roles and imported users.
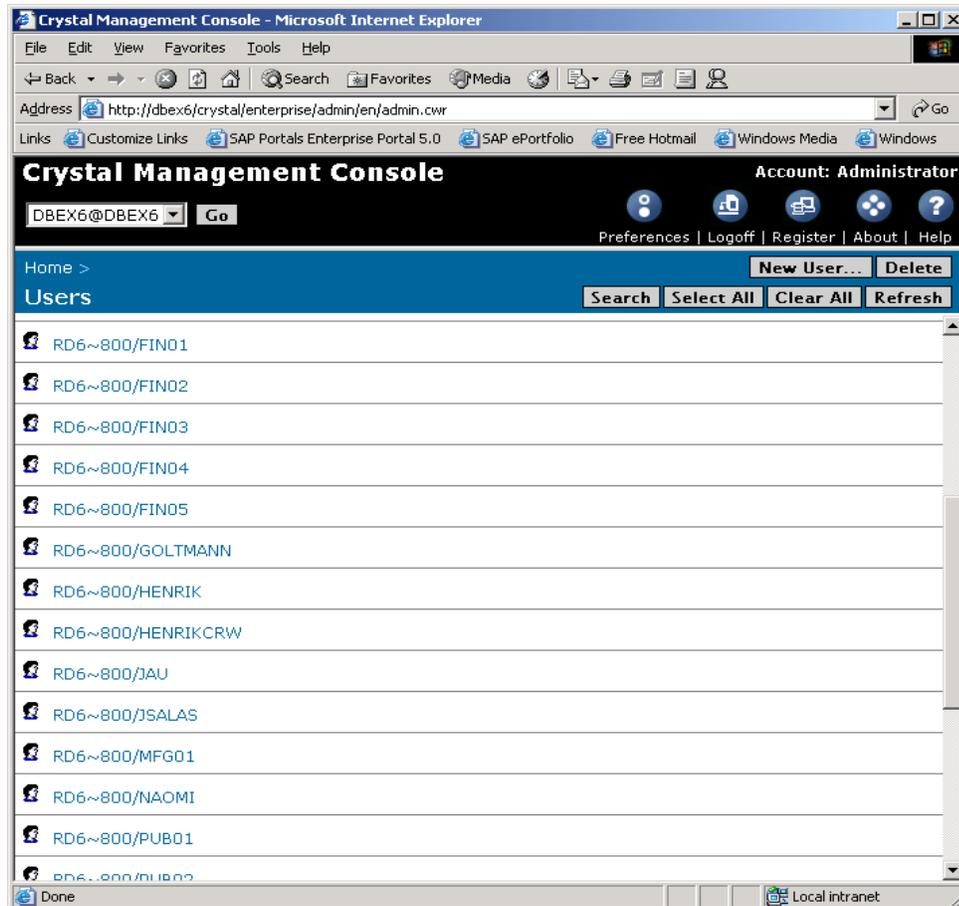

Figure 6a - Imported SAP Roles

Figure 6b - Imported SAP Users.

Step 5: Mapping SAP users as Aliases to NT Users

In this step, we will perform SAP to NT user mapping in the Crystal Management Console. The NT user will be set as the primary user and assign the other SAP users as Aliases to this user. For example, the NT user "Pyeung" is user "R3User" in the SAP R/3 System QA4, and he is user "PYeung" in the SAP BW3 System RD6, see Figure 7.

It is theoretically possible that an NT user called "PYeung" is in fact user "R3User" in the SAP R/3 system. This is an administration step that needs to be manually performed.

If your organization follows a specific naming convention for identifying NT and SAP users, it will be possible to write a script to perform the user mapping automatically, for example NT user NNN = SAP user S_NNN. For more details please see the CE Web Developer's Guide or contact Crystal Decisions Professional Services Organization at:
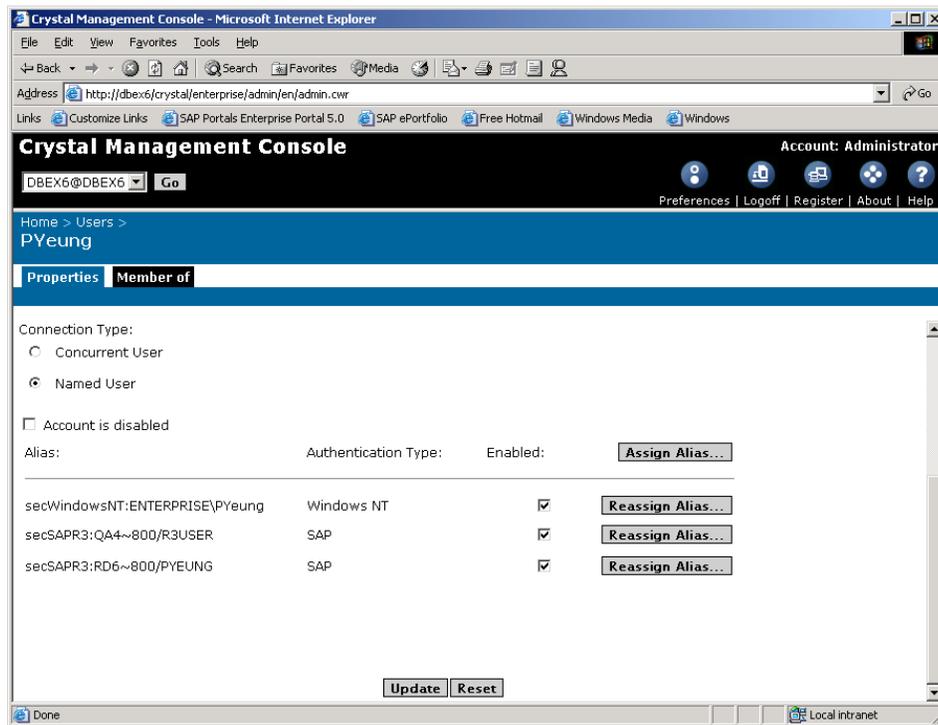
http://www.crystaldecisions.com/services/

Figure 7 – Assigning SAP users as Aliases to the NT user

Step 7: Creating and publishing reports

To enable SSO with your SAP systems, BW3 reports must be saved and published to CE through SAP BW. BW3 reports need to be saved in this manner because custom report object properties are used when retrieving BW3 pick lists. InfoSet or OpenSQL reports can be saved directly to Crystal Enterprise or from SAP BW as well.

Step 8: Scheduling reports

With the SNC functionality, users can now schedule reports to run without having to enter passwords, which are only known to administrators. In the scheduling page of the SAP ePortfolio, there is now an **SNC** checkbox under the **Database Logon** option. Select the box and click on **Update**. The username will be filled in and the password entry will be disabled, allowing the user to schedule the report using SNC and without requiring a password.
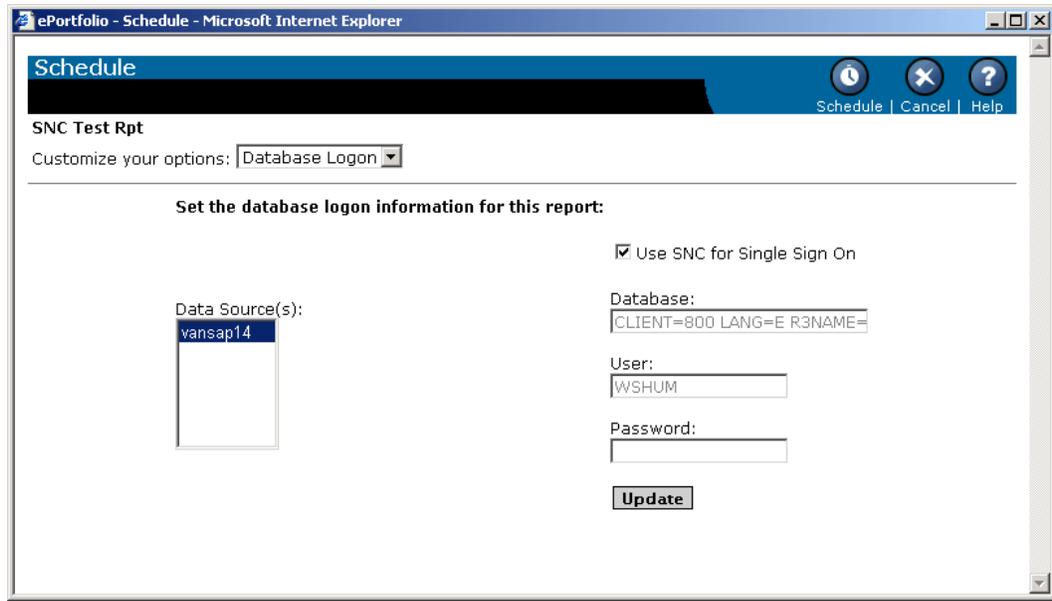
Figure 8

Step 9: Testing using SAP ePortfolio

The SAP ePortfolio has been developed to support SSO. Hence, you can use it to perform a final test to determine if all your configuration and set up has been correct.

Log on to the CE system using your NT logon. Once you are in CE, you will have the secondary identification as the R3 and BW users. In the SAP ePortfolio application, when a report is viewed or scheduled, the data source for that report is first checked, and then the application will check through the user's aliases to find out what SAP user it should be using to run the report.

For example, NT user "Pyeung" is currently logged in to CE. He chooses an R/3 Sales Report that is to be run against the SAP system (sysid=QA4, client number = 800).

The application looks at his aliases and determines that it should use the userid called "R3User" to run this report. No password is necessary because SNC has already been configured.

Contacting Crystal Decisions for Technical Support

We recommend that you refer to the product documentation and that you visit our Technical Support web site for more resources.

Self-serve Support:

http://support.crystaldecisions.com/

Email Support:

http://support.crystaldecisions.com/support/answers.asp

Telephone Support:

http://www.crystaldecisions.com/contact/support.asp