

CONFIDENTIAL



Emissary®

Cerner

Install Instructions

July 2018

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## Cerner Services Setup Overview

A technical guide to getting Cerner Services installed and operational on a single server. This is intended for technical resources familiar with Cerner and CCL/MPages.

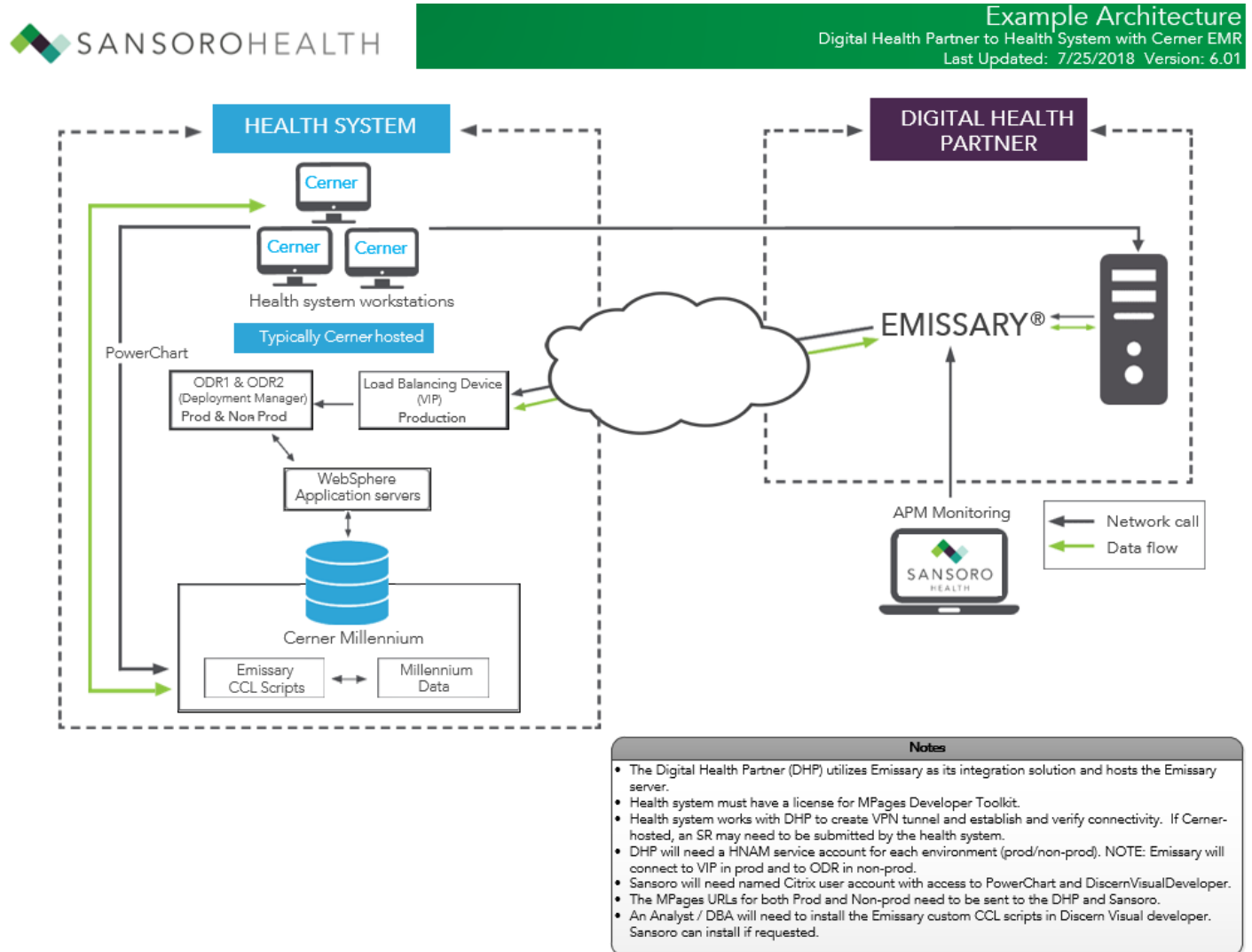
Please verify with CernerWorks if your site is Cerner hosted or with your site's Cerner CCL/MPages technical leader to ensure the following pre-requisites within this Install Instruction guide have been met prior to proceeding.

Installation Guide Information includes:

- 1) Architecture Diagram
- 2) Account access,
- 3) Installation.

## Architecture Diagram

The integration solution consists of the digital health partner's application making a request to the Emissary middleware server which in turn calls the Health System's ODR or Load Balancing Device which then calls the WebSphere Application Servers along with the Emissary CCL Scripts. The below diagram is an example of the architecture:



## Before Getting Started

Before getting started, please review the bullets below to ensure the following Cerner package, Licenses, Servers and Environments are in place and ready for Emissary installation:

- ✓ Confirm Cerner package 87399 (or its equivalent) is already installed.
- ✓ Proper license to MPages development Toolkit (PS-22700).
- ✓ Install & Deploy Discern Web Services on a non-production and production WebSphere application server.
  - The Discern MPages URLs must be provided to Sansoro Health and their digital health partner. This would be an example:  
http://<IP of VIP or ODR  
server>/discern/<domain>.<site\_mnemonic>.cernerasp.com/mpages/reports
- ✓ Ensure the person (typically a Cerner Millennium analyst) that will perform the installation has DBA access (or equivalent approved role).
  - The Cerner Millennium analyst must have the ability to include CCL programs with GROUP0 in Discern Visual Developer (front-end accounts for GROUP0) or backend CCL.

## Discovery Server Options:

If leveraging Emissary Discovery APIs, there are two options to help support these calls. As designed, these calls are longer running in nature while providing reference data for a given data set for each Cerner installation. To provide full support for Emissary and underlying Discovery CCL programs, the Cerner environment has the following two options:

Option	Action
1	<p><b>Update Cerner timeout settings for each server:</b></p> <p>Each 79 server should be setup with a killtime of 10 minutes and the recache property. The following property should be added to each server:</p> <ul style="list-style-type: none"><li>⇒ startup script = recache</li><li>⇒ killtime = 10</li></ul> <p>SCP Command for this is:</p> <ul style="list-style-type: none"><li>➤ modify 79 -prop "startup script=recache"</li><li>➤ modify 79 -prop "killtime = 10"</li></ul>
2	<p><b>Leverage a separate Cerner server for Discovery calls only:</b></p> <ul style="list-style-type: none"><li>• Please work with your Cerner infrastructure representative or create an SR for CernerWorks to create a copy of server 79 with 3 instances on each node.</li><li>• The server copy should be setup with a killtime of 10 minutes and it requires the binding parameter to be set to "cpmscript_cust_emissary". Note: The binding parameter can be customized if desired. For reference, here is the workplan to create the new server:<ol style="list-style-type: none"><li>1. Find a server number that is not already in use in the custom range 400-419, refer to steps 5-7 from "request class routing guide" available via <a href="https://wiki.ucern.com/display/public/reference/Configure+Request+Class+Routing">uCern</a>. <a href="https://wiki.ucern.com/display/public/reference/Configure+Request+Class+Routing">https://wiki.ucern.com/display/public/reference/Configure+Request+Class+Routing</a></li><li>2. In SCP enter the following command:<ul style="list-style-type: none"><li>⇒ copy 79 400 -descrip "CPM Script (mPages) Custom" -inst 0 -prop binding=cpmscript_cust_emissary killtime=10</li></ul></li><li>3. Start the new server to verify it runs then change the instance count to 3 after verifying it starts:<ul style="list-style-type: none"><li>⇒ modify 400 -inst 3</li></ul></li><li>4. Skip the request routing steps since those will be done on Sansoro's side.</li></ol></li></ul>

## Environment Considerations (Non-Production / Production)

It is recommended that customers set up standard non-production environment separate from the production environment for the purposes of testing prior to going live in production.

## User Access and Accounts

To provide full support for Emissary and underlying CCL programs, the following access is required:

NOTE: If account request forms are required, please send them to the implementation project manager from Sansoro Health or designee.

1. **Citrix Web Application Access:** Remote access account (e.g. RDP, VPN, VPN Client, etc.) will be required.

Account Type	Environment(s)	Purpose
Create a named Citrix user account for the agreed upon Sansoro user(s) and non-production environment with access to the following Citrix web applications: <ul style="list-style-type: none"><li>• Minimum required published applications:<ul style="list-style-type: none"><li>✓ PowerChart</li><li>✓ DiscernVisualDeveloper</li></ul></li><li>• Example of Cerner URL typically accessed for Citrix published applications: <a href="https://{client_mnemonic}.cernerworks.com/Support/">https://{client_mnemonic}.cernerworks.com/Support/</a></li></ul> <p><u>Note:</u> If Sansoro will be performing the non-prod installation of the CCL scripts, the account must have the ability to include CCL programs with <b>GROUP0</b> in Discern Visual Developer (frontend accounts for <b>GROUP0</b>) or backend CCL.</p> <p><u>Note:</u> If the URL that is being used is not public facing, then a VPN or VPN Client will be required. Additional credentials will be needed.</p>	Non-production	Testing and Support

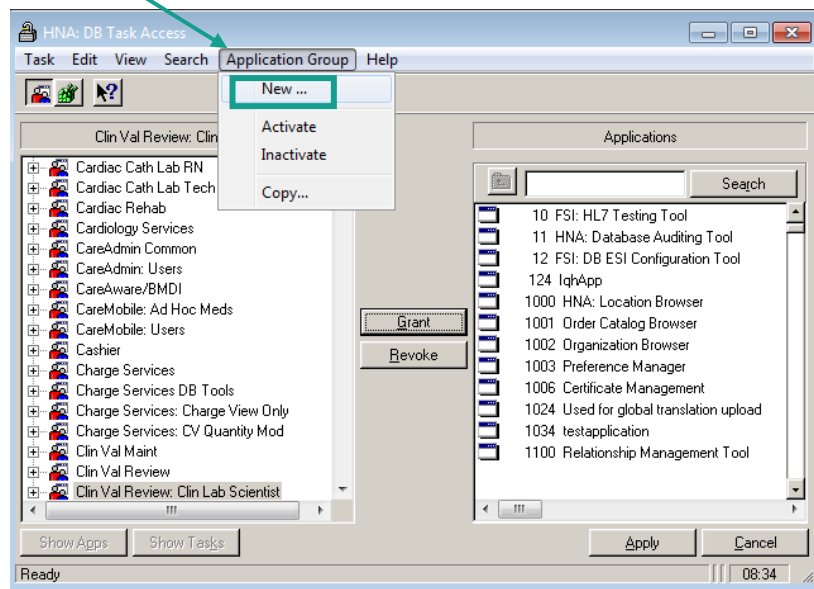
2. **HNAM User Account:** Create new HNAM User Account with a position code (e.g. IT Analyst, Support Analyst, etc.) appropriate for non-production and production support access to Millennium® applications.

Account Type	Environment(s)	Purpose
The following HNAM User Account setup is required for any 3 <sup>rd</sup> party to authenticate and authorize CCL programs through Cerner Discern Web services: <ol style="list-style-type: none"><li>1) TaskAccess.exe</li><li>2) CoreCodeBuilder.exe</li><li>3) HNAUser.exe</li></ol> <p><u>Note:</u> These steps are only required for 3<sup>rd</sup> party systems that will not pass along named user accounts for users already built within HNAUser. Please follow the steps below to set up the HNAM User Account.</p>	- Non-Production - Production	Testing and Support

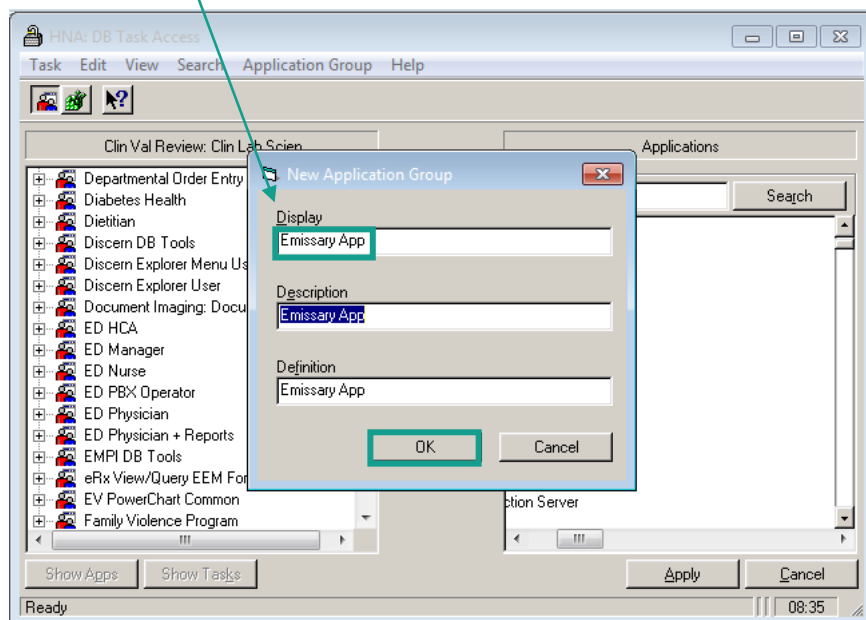
## Account Steps:

### 1. TaskAccess.exe

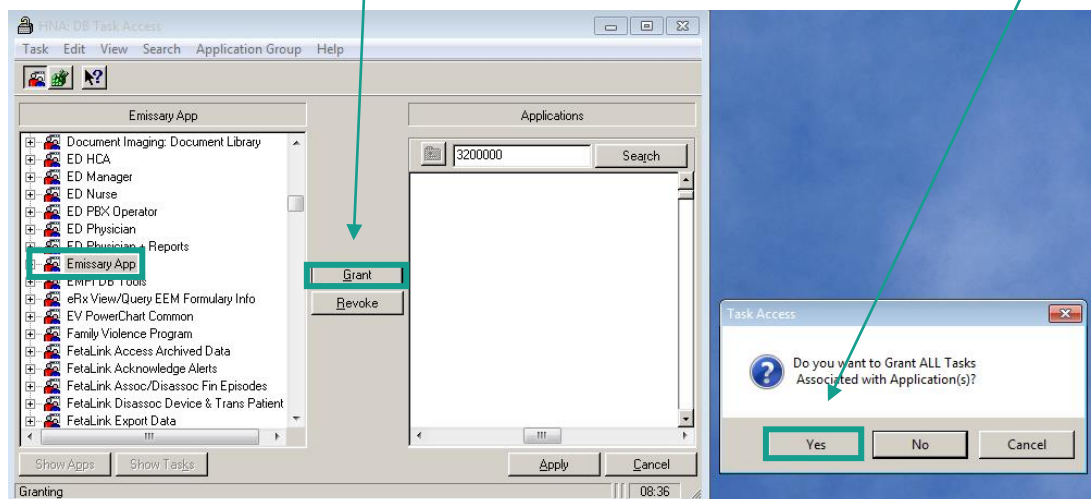
- a) Create a new Application Group:



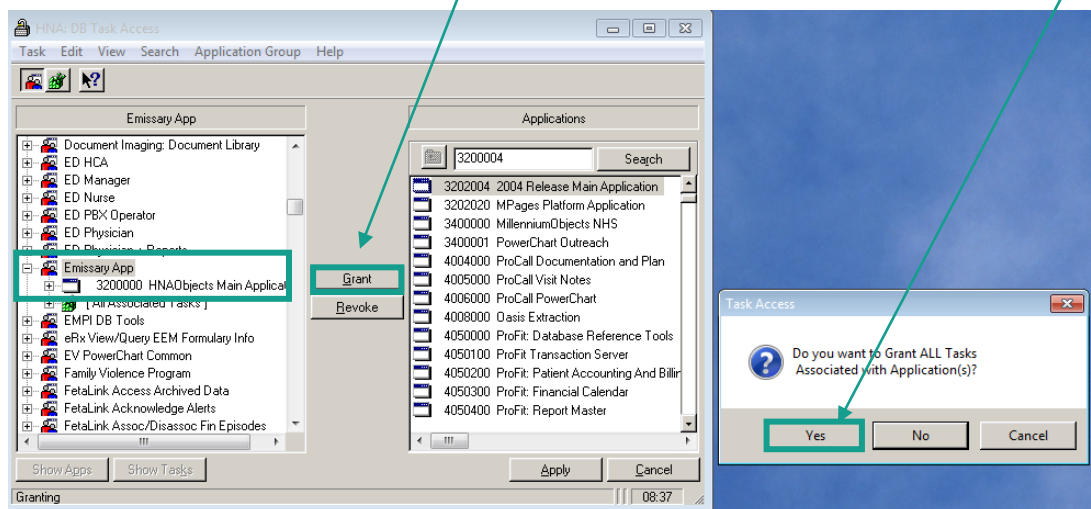
- b) Name the new Application Group: "Emissary App" (if it doesn't already exist), click "OK":



- c) For the **Emissary App**, click “Grant” and the Task Access box will pop up. Then, click “Yes” to Grant ALL Tasks Associated with Application(s):

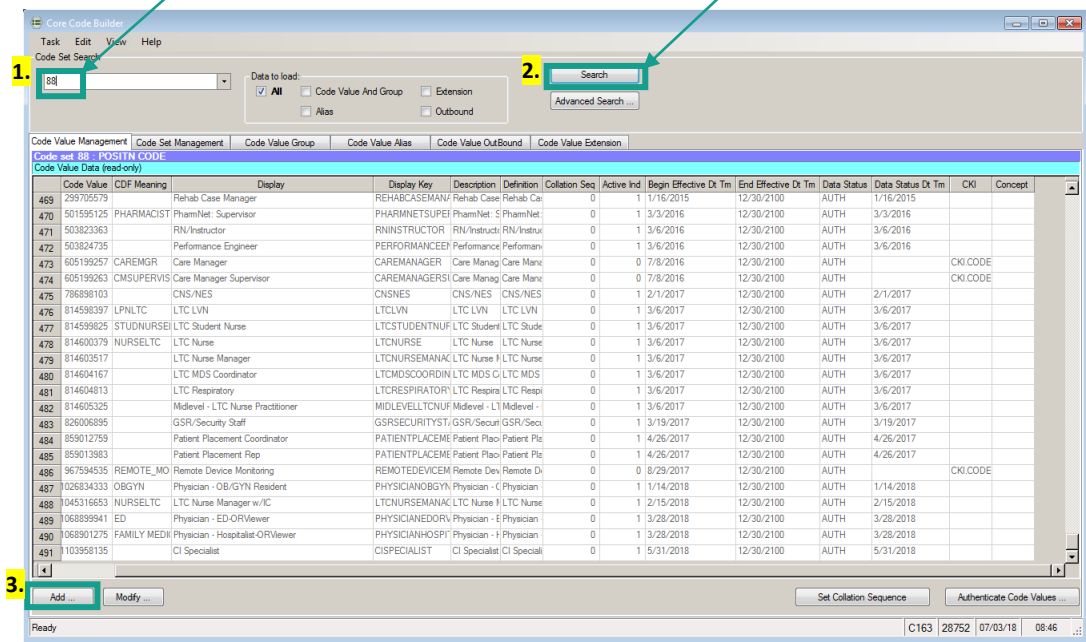


- d) For the **Emissary App**, 320000, click “Grant” and the Task Access box will pop up. Click “Yes” to Grant ALL Tasks Associated with Application(s):

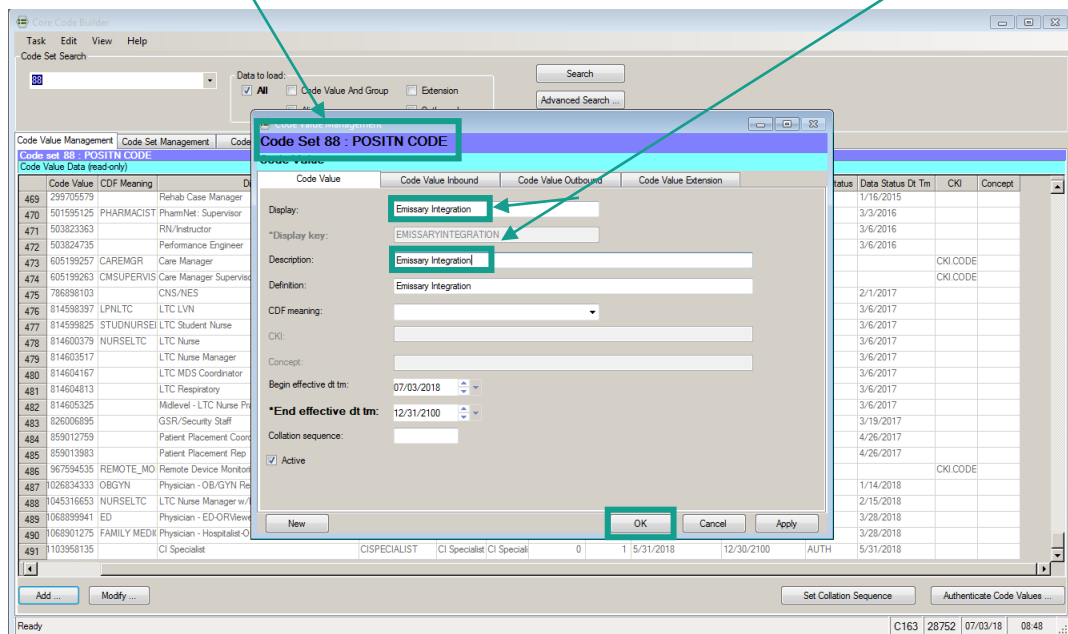


## 2. CoreCodeBuilder.exe

- a) Open the "CoreCodeBuilder.exe":  
Then, enter "88" in the "Code Set Search" text box, click Search. Search for the "Emissary Integration" in the Display Field. If it doesn't already exist, click the "Add" button:



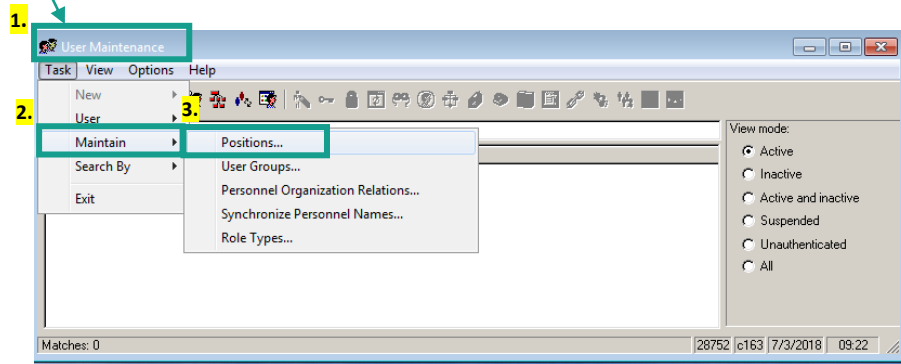
- b) In the "Code Set 88 : POSITN CODE", create a Display and Description of "Emissary Integration" then click "Ok":



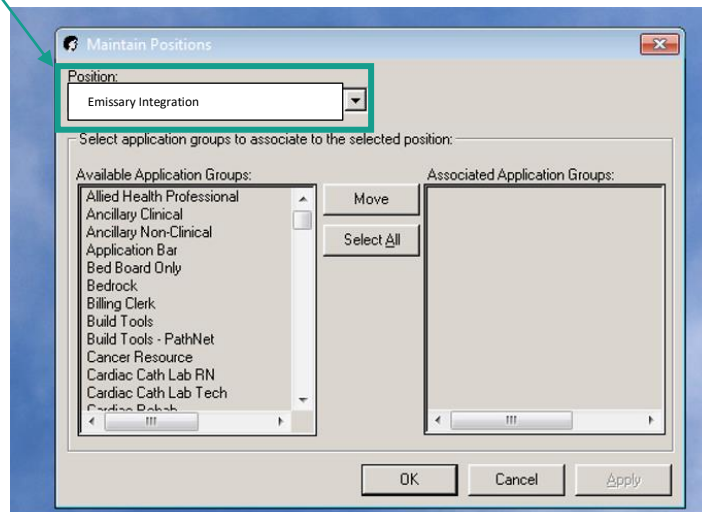


### 3. HNAUser.exe:

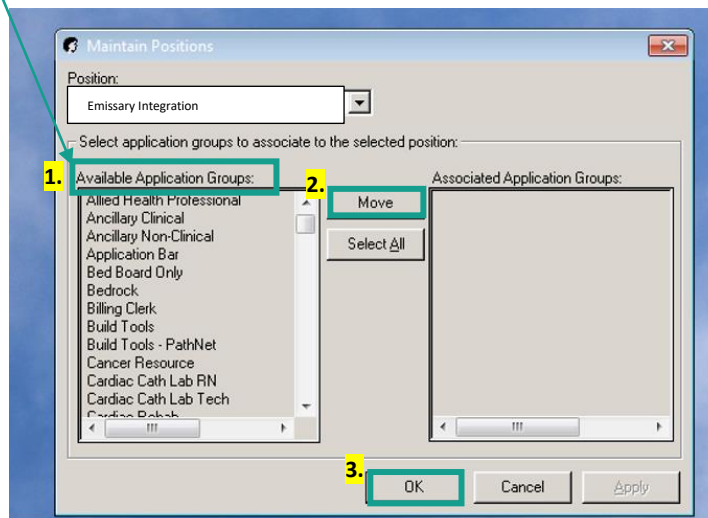
- a) Create a new 3<sup>rd</sup> party user for the application that will integrate through Emissary:  
In the "User Maintenance" window Task in the Toolbar, select "Maintain" and then "Positions":



- b) In the "Maintain Positions" Window, select the position "Emissary Integration" from the Position drop-down menu:



- c) In the "Available Application Groups" window, click the "Emissary App" and "Move" to the "Associated Application Groups", then click "Ok":



d) Add a new User with the following characteristics:

- Username: {3<sup>rd</sup> party Vendor name}
- Last Name: {3<sup>rd</sup> party Vendor name}
- First Name: SYSTEM
- Position: Emissary Integration
- Password: (coordinate and share only with 3<sup>rd</sup> party personnel)
- Privileges: Un-Check most (if not all) of the privileges listed. This will restrict any domain-level privileges unnecessary for the system account.
- Restrictions:
  - ✓ Check: Password may not be changed in privileges/restrictions
  - ✓ Un-Check: Pre-expire password anytime password is set in HNAUser

## Getting Started

### 1) emr\_Cerner.zip file

The Emissary EMR package contains a file called EmissarySettings.json. This is the master file where each EMR connection will be added, configured, and maintained by the Emissary Server Hosting Organization. The custom CCL files that need to be installed will be sent to the designated person(s) at the Health System by either the digital health partner or Sansoro Health.

### 2) Emissary Settings Configuration

For the Emissary integration solution to function, the following information must be provided by the health system to the Emissary Server Hosting Organization (ESHO):

Field name	Req'd	Description
ServerIp	Yes	Host name of Emissary Custom Web Services module server.
ServerPort	Yes	The port configured on the Emissary Middleware server.
BaseUrl	Yes	Sets base URL. Must update localhost IP Example: http://<IP of VIP or ODR server>/discern/<domain>.<site_mnemonic>.cernerasp.com/mpages/reports
HttpTimeout	Yes	Sets timeout for queries, default to 120000 ms, recommend increasing if using population queries or LongRunningServerName
Domain	Yes	Domain name, e.g. p123, b300, m500
LongRunningServerName	No	This is a copy of server 79 with a kill-time of 10 minutes. This will be used for long running discovery calls. Installation instructions have more details.
DocumentDiscoveryEventSetCode	No	By default, the top level of Clinical Documents is used. If a different level is needed, enter a value here. When left blank, points to clinical documentation on codeset 93. If site should differ, update to appropriate value.
LabDiscoveryEventSetCode	No	By default, the top level of Laboratory is used. If a different level is needed, enter a value here. If not, leave blank. When left blank, points to Laboratory on codeset 93. If site should differ, update to appropriate value.
LabResultsEventSetCode	No	By default, the top level of Laboratory is used. If a different level is needed, enter a value here. If not, leave blank.

		When left blank, points to Laboratory on codeset 93. If site should differ, update to appropriate value.
ObservationDiscoveryEventSet Code	No	By default, the top level of All Specialty Sections is used. If a different level is needed, enter a value here. If not, leave blank. When left blank, points to observations on codeset 93. If site should differ, update to appropriate value.
DocumentTempStorageType	No	Only used for POST/PUT Documents. The value here determines if the document binary data is stored temporarily as a file or a custom table. Default value is "2" which is table. Recommend using "2" if NFS Share does not exist. If file storage is required, use "1" and it should be tied to an NFS share.
DocumentTempStorageDirectory	No	Only used when previous option is "1", default is "CCLUSERDIR". Recommended to point to NFS Share, if it exists. If the previous response was the file option, then this would be the directory they want the file temporarily written. Note: this should be an NFS directory.
BinarySize	Yes	By default, the setting of "3500" is used.

### 3) Secure Connectivity

Secure connectivity (e.g., VPN) needs to be established between the Emissary Middleware Server and the Cerner ODR or VIP Server. Please refer to the Architecture Diagram. The Health System should work with whomever is hosting the Emissary server to establish the secure connectivity.

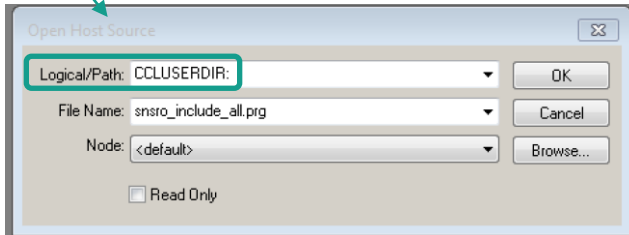
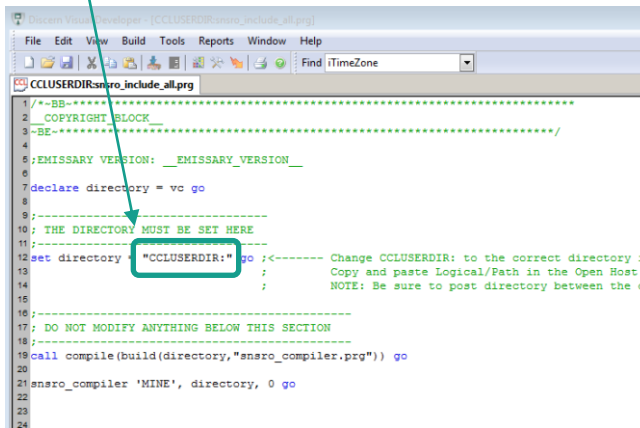
## Installation

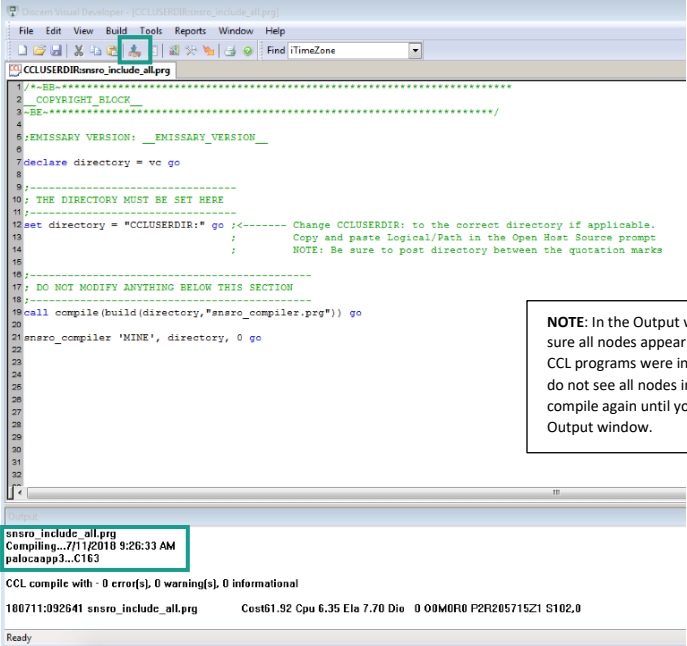
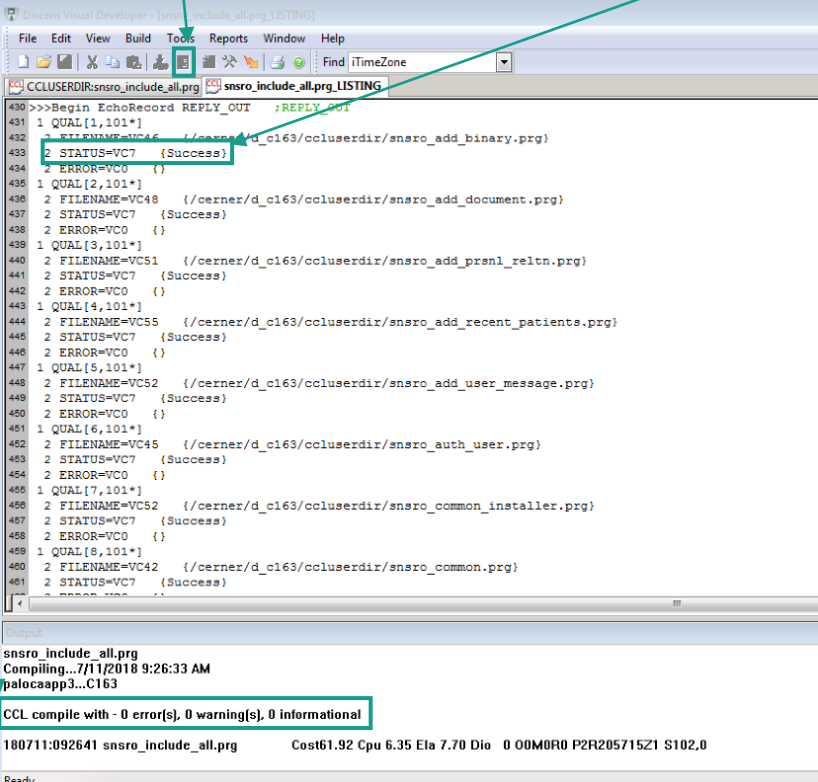
### CCL Installation and Updates:

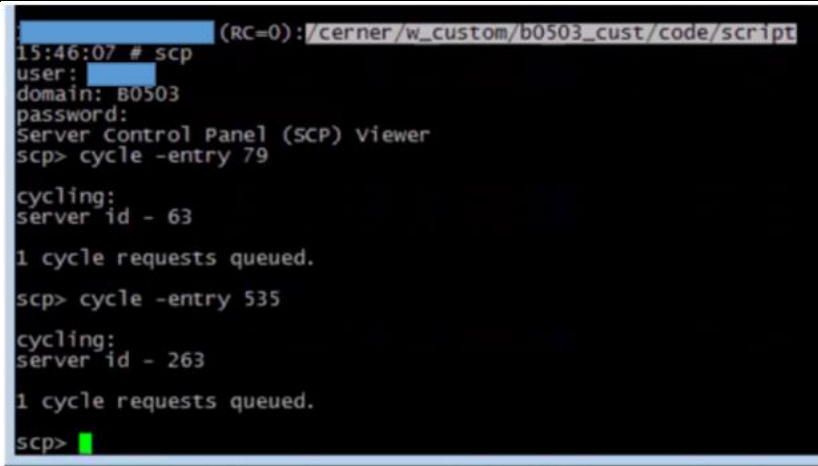
Installation and updates are typically performed by a CCL developer/analyst, but may hold a different title or role depending on organization. The individual performing the installation must have access to copy the files specified below to either the CCLUSERDIR or custom directory. The following steps in pages 12 and 13 will provide the CCL script inclusion process for the Emissary application.

*Note: For subsequent release updates, there is no need to delete anything before installing the updated CCL scripts.*

## Install Steps

Step	Action
1	<p>Unzip the emr_cerner.zip file provided to you and import all the files (*.prg) in an appropriate directory on the backend (e.g. CCLUSERDIR: or some other custom directory like CUST_SCRIPT:).</p> 
2	<p>At the CCL prompt on the backend, or in DVDEV development environment, open the CCLUSERDIR:snsro_include_all.prg program (Note: the screenshot below is for DVDEV). Change the directory to match the "Logical/Path" selected in Step 1 above:</p> 
3	<p>Compile (CTRL+F7), this program will compile all Sansoro CCL programs used by Emissary on all nodes.</p>

	 <p><b>NOTE:</b> In the Output window in DVDEV, make sure all nodes appear for compiling to ensure the CCL programs were installed on all nodes. If you do not see all nodes in the Output window, compile again until you see all nodes listed in the Output window.</p>
4	<p>After compiling, click on the "List" icon. Review the "Status" and ensure all have a "Success" response with "0 error(s)":</p> 
5	<p>Cycle (stop and start) all associated MPages servers 79, 178 (if applicable), 179 (if applicable), and 535 on all nodes.</p>

		 <pre> (RC=0):/cerner/w_custom/b0503_cust/code/script 15:46:07 # scp user: domain: B0503 password: Server Control Panel (SCP) viewer scp&gt; cycle -entry 79  cycling: server id - 63  1 cycle requests queued.  scp&gt; cycle -entry 535  cycling: server id - 263  1 cycle requests queued.  scp&gt; </pre>
6	Test the Emissary GET Versions API call. Once the servers are back online, ensure the dates on the payload matches the install date and the version number matches the Emissary version.	
	<b>Only follow the steps below if the install fails.</b>	
7	<p>If the install fails, check directory permissions and try deleting the .prg files on all nodes and then reloading. Try installation process again.</p> <p>If further assistance is required, please contact Sansoro Customer Support and provide the “Error Message” that would be indicated in <b>Step 4</b> above.</p>	

## Subsequent CCL Update Installation

Each time a new Sansoro Emissary Release Update package is sent, the most recent version of these instructions will be included. Follow the same steps as the initial installation instruction to overwrite the necessary files. There is no need to delete anything before installing the updated CCL Files.

Important Note: Prior to updating the latest Release, please confirm with your Emissary Server Hosting Organization they have updated their Emissary Middleware with the latest version.