

# American Public Human Services Association



## National Electronic Interstate Compact Enterprise



# Modular CMS NEICE\_MCMS2\_State Deployment Architecture

Version 1.1



Effective date: 02/13/2023

## **Modular NEICE CMS System**

### **State Deployment Architecture**

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#### Change Log

Version No.	Date	Author(s)	Change Summary
1.0	07/01/2020	Susmiitaa Linga/Raghu Govindaraj	Initial Release
1.1	02/13/2023	Susmiitaa Linga	Updated the Hardware for Multi-core processor with 2 core minimum.

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## Introduction

The current National Electronic Interstate Compact Enterprise (NEICE) was developed to support the adoption of children across state lines. In the past 3 years, this concept and technology has already demonstrated substantial benefits to the states that are using the system including:

- Reduction in time to process interstate child adoption cases
- Reduction in costs, particularly mailing and postage costs
- Reduction in loss of case documentation thru postal mail
- Inability to quickly look at case status when the case is in process at the receiving state

The current NEICE enterprise is comprised of two distinct components. These are

- NEICE Case Management System. This system is used to create ICPC cases to be sent from the Sending state to the Receiving state.
- NEICE Clearinghouse. This component enables states to share case data in an automated manner thus eliminating the manual process.

Both these components currently reside in the Azure Government Cloud.

The reason for developing the NEICE Case Management System was the fact that many states did not have the capability to process ICPC cases in their current SACWIS/ Child Welfare systems. The NEICE Case Management system is being currently utilized by 13 states.

While the current configuration is working very well for the states, a number of factors make it necessary to look at alternative configurations. Some of these factors are:

- **CCWIS Guidelines and Federal Vision.** The new CCWIS guidelines focus on modularity of functionality and the ability to implement data exchanges that meet national standards. In addition, the Federal Government's vision is to encourage states to process child welfare cases within the state's boundaries and use a system to system data exchange using standards
- **Sustainability.** Since some of the state child welfare agencies are HIPAA Covered Entities, and many states are strengthening their security processes and guidelines, the cost of meeting any of these security processes and guidelines is increasing substantially. This will affect the subscription costs that the states are paying to keep the NEICE enterprise operating
- **Risk Reduction.** The current configuration stores all case data in the cloud. While the cloud is certified to store HIPAA data in a secure manner to minimize risk and APHSA and its partners have added a number of security protections, any alternatives that reduce the risk for a specific state would be beneficial.

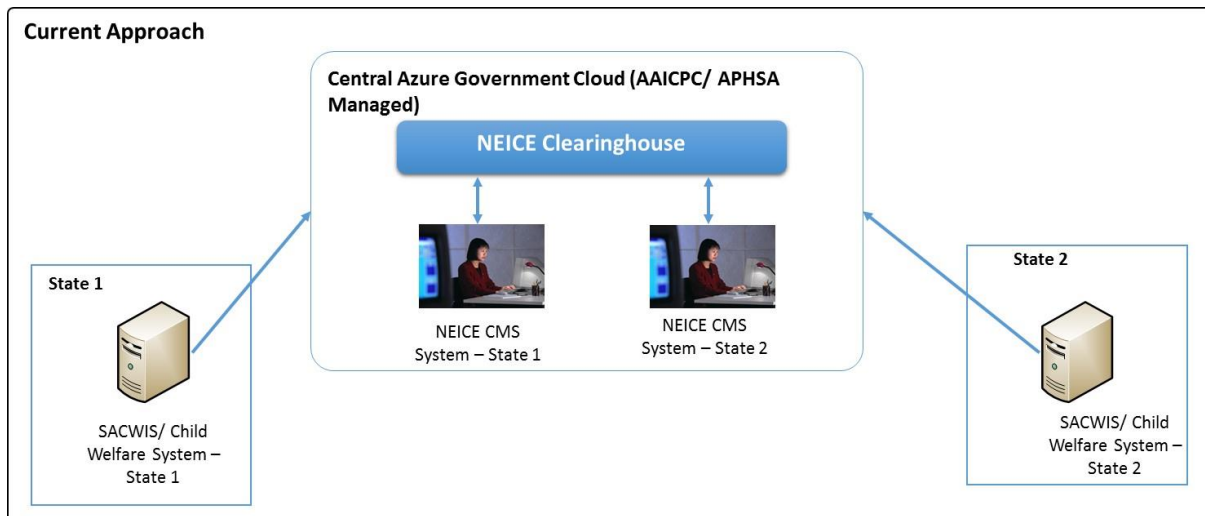
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The Modular NEICE CMS approach address the factors described above, and provides the states with the ability to quickly meet some of the CCWIS guidelines.

### Modular NEICE CMS Concept

The modular NEICE CMS concept is very similar to the current method of operation of the NEICE enterprise except that the NEICE Case Management System is moved from the central Azure Government Cloud to a hosted/cloud environment which is under that state's jurisdiction. This is described in the figures below.



*Figure 1, Current Approach*

Figure 1 describes the approach that is currently utilized for the NEICE enterprise. Each state uses its NEICE CMS to store and process its ICPC cases. The NEICE Clearinghouse will process the cases between the NEICE CMS systems. The NEICE CMS system is also connected to the local SACWIS/Child Welfare systems so that Child and Placement Resource data can be sent in an automated manner to that state's NEICE CMS system.

As is evident, in this approach both the NEICE CMS and the NEICE Clearinghouse is hosted on a Central Azure Government Cloud managed by AAICPC and APHSA.

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Figure 2, Modular NEICE CMS Approach

Figure 2 describes the new approach being proposed, the Modular NEICE CMS approach. In this approach, the primary change is that the NEICE CMS system is moved from the central cloud to the state's environment. There will be no change to the users of the NEICE CMS system. The users continue to use the system to process the ICPC cases.

The primary difference is that the NEICE CMS will then communicate with the NEICE Clearinghouse to exchange case information between the states. In this approach, only the NEICE Clearinghouse will be hosted on the Central Azure Government Cloud.

## How Will This be Implemented?

During the duration of the grant (up to May 31, 2018), all implementations will be covered by the grant. The following activities will be performed to support this implementation:

- APHSA and AAICPC will provide the NEICE CMS system at **no cost** to each state
- The NEICE CMS system being provided will also include the interface to the NEICE Clearinghouse. No state will have to build an interface if they are using the NEICE CMS system
- Tetrus as the technical provider to APHSA and AAICPC will implement the NEICE CMS solution in the state's local environment
- For those states, that are on the Central Azure Government Cloud, Tetrus will migrate the data to the NEICE CMS in the state's environment
- Tetrus will conduct tests to ensure that the NEICE CMS is working and is communicating with the NEICE Clearinghouse

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Each state will be responsible for:

- Identifying a place in the state technical environment where the NEICE CMS can be hosted
- Creating firewall rules to ensure that the communication between the NEICE CMS and the NEICE Clearinghouse is working
- Providing the O/S and potentially the license for the Microsoft SQL server
- Provide remote access to the Tetras technical personnel to enable them to manage the NEICE CMS system

### **Benefits of the Approach**

There are a number of benefits to each state based on this approach. These are:

- Obtain the ICPC module at no cost in support of the CCWIS guidelines.
- Meet CCWIS guidelines for Modularity and for information sharing.
- Enable the states to add additional data elements to support any additional data collection that is specific for their state
- Enable the state to do customized local reporting.
- Enable potential integration with other systems such as Medicaid, etc. using the information-sharing infrastructure.
- Potential integration with state document management systems.
- Reduce the risk of data breaches.
- Support NEICE sustainability and enable the states to avoid cost increases to support the NEICE enterprise.

The next few pages discuss the technical details of the manner in which this concept can be implemented at a local state.

## NEICE State Deployment Architecture

The NEICE CMS application is a web based multi-tier application built using .NET/ASP/C# and Microsoft SQL Server. The system can be deployed on any standard Windows Server or Virtual Machine. In the Modular CMS approach, the NEICE CMS will be deployed within the state environment. This could either be the data center or the state cloud depending on the state's roadmap. The deployment architecture for the NEICE CMS is presented in Figure 3 below. As depicted in this figure, the NEICE CMS module has a multi-tier environment and the interface to the state's SACWIS/ Child Welfare system can be done using multiple options.

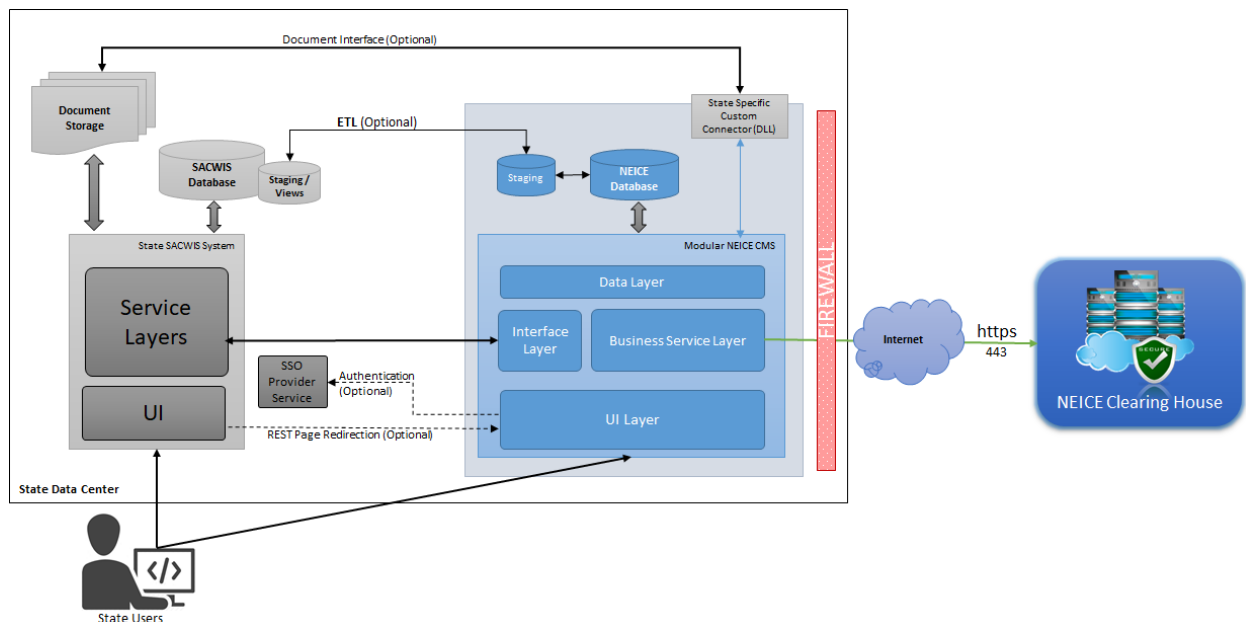


Figure 3 Logical NEICE Deployment Architecture

These options will be discussed with the individual state and the option that best fits the state's needs will be selected.

## Single-Sign on Integration

Many states utilize a single sign-on option for their users to log into multiple systems. This enables the users to remember one single password to sign on to multiple systems. The NEICE CMS module would support a single-sign on option. The NEICE CMS system will integrate with the state's preferred SSO provider using the API and documentation provided by the state to enable the SSO. This is a major advantage for each state because it eliminates the need for separate user management. During deployment, the NEICE deployment team will work with the state to define the user roles and access privileges required for NIECE.

## SACWIS Integration for User screen flow

The NEICE CMS system will support this functionality by exposing some REST objects that can be used to redirect the page to the NEICE CMS along with the data. For example, when creating a new ICPC case the users would like a deep integration with the NEICE CMS. To accomplish this on the child information screen in SACWIS, the state can provide a button on their user interface to create an ICPC case for the child in context. The state SACWIS system can then redirect the user to NEICE CMS system and pass on the security credentials and child information for which an ICPC case needs to be created. With the SSO option described earlier, the user will be redirected to the NEICE CMS with the child information already populated. This enables the user to work seamlessly across the systems without the need to log into another system.

## Data Integration

Data integration between the NEICE CMS and the local SACWIS/ Child Welfare system is a must and is also required as part of the CCWIS guidelines. Data integration between NEICE CMS and local SACWIS/ Child Welfare system can be achieved in multiple ways. NEICE CMS can support data integration using the standard exposed web service API's that are available in NEICE or through exposing staging databases and ETL processes. NEICE CMS will also support data to be posted when the Page redirection is performed from the state system using the REST API's defined in the NEICE CMS.

## Application CSS Customizations

At the current time, there is limited support for the CSS customization of the NEICE CMS system. While the CSS can be provided to enable the state to change color schemes to match the SACWIS/ Child Welfare system color schemes, it is important that during the duration of the grant that any major changes be limited since these make it more difficult for the state to apply enhancements to their system very easily.

## NEICE Operating Environment Requirements

The NEICE CMS system in the CMS Modular approach can be deployed on a standard server or a Virtual Machine. The following are the general hardware and software requirements for the deployment. These will be considered the minimum requirements. This is the hardware and software that will be required to operate the NEICE CMS in the state environment.

### Hardware

- Standard Server or VM
- Multi-core processor (2 core Minimum)
- 32 GB of RAM (16 GB Minimum)
- 5 GB of Free space for Application installation and logs
- Document Storage Space (To be determined Based on the State document consumption)

### Software

- Windows Server 2012 or higher
- .NET 4.8
- IIS
- SQL Server 2016 or higher

## Appendix I: NEICE Modular CMS Firewall Requirements

The NEICE Modular CMS is usually installed behind the state's firewall and would require the following ports opened for the application to communicate with the NEICE Clearinghouse.

All communications from NEICE Modular CMS to the NEICE clearinghouse will only be an outbound communication using the standard HTTP protocol. We recommend the state permit both HTTP and HTTPS traffic to the Clearinghouse in the test mode and only the HTTPS traffic in the production setup.

The states can optionally restrict the outbound access to the NEICE clearinghouse only to the defined URL endpoints for additional security.

### **NEICE Clearinghouse URL and port details for Outbound Firewall Policy**

#### ***Test/Training Environment:***

NEICE Test / Training URL : <https://nch2-test.neice.us>

NEICE Test / Training Ports : 80 and 443

#### ***Production Environment:***

NEICE Production URL : <https://nch2.neice.us>

NEICE Production Ports : 443

## Appendix II: NEICE Modular CMS Roles for SSO integration

The NEICE Modular CMS uses roles mapped to users to provide access to the application. These roles are defined by the user and each user can have one Primary role along with the secondary roles. The primary roles being the County Case Worker or the ICPC Coordinator.

There are six user roles defined in NEICE Modular CMS. All the business roles are progressively expanding roles for e.g. a ICPC Coordinator role has all rights as a County Case Worker along with additional rights for ICPC Coordinator specific features. The only exception to this is the State User Admin role which is defined as an IT role and does not have access to any of the business functionality.

- View Only
- County Case Worker
- ICPC Coordinator
- ICPC Coordinator – Delete
- State User Admin
- Assignment Coordinator

The following section provides the responsibilities and access for each role.

### View Only

NEICE allows a state to create users, such as judicial partners involved with cases, to view ICPC case information. These users may be attorneys, judges, or court staff. Based on this role, the user can log into NEICE to search for and view NEICE children and cases. These users cannot add, modify or delete any information in NEICE.

### County Case Worker

The local Case Worker can create a child and a case using NEICE. The Case Worker can:

- Search for a child in NEICE (including SACWIS children);
- Create a new child in NEICE (if necessary);
- Create a case for the child being processed by that Sending State for placement in a Receiving State;
- Upload documents to the case; and,

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- Send the Case to the ICPC Coordinator for review, approval and transmittal.

### ICPC Coordinator

The ICPC Coordinator plays a key role in processing, approving, and transmitting interstate requests and NEICE cases. The ICPC Coordinator can use NEICE to:

- Search for Children in NEICE (including SACWIS children);
- Create new children for that state;
- Create cases as Sending State;
- Create a child and a Receiving State case based on a request from a non-NEICE state; and,
- Create a new case for an existing child.

If the child is included in the data uploaded into NEICE from the SACWIS, the Coordinator can use that data to create the child in NEICE without re-entering the data.

The ICPC Coordinator can also process cases created by Case Workers in local agencies. The ICPC Coordinator manages the NEICE case for the state and must ensure that the required data is included before transmitting the case to the Receiving State or responding to the request from a Sending State.

### ICPC Coordinator – Delete

This role is an extended-role for an ICPC Coordinator with the authority to delete children and cases when it is necessary. The State User Admin should create a limited number of users with the sub-role ICPC Coordinator – Delete.

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### State User Admin

Each state must have at least one State User Administrator. Depending on the size of the state, we recommend that the state identify additional back-up State User Administrators. The responsibilities of this user are to:

- Manage Users within the state,
- Run statistical reports related to cases and performance, and
- Manage state-specific drop-down lists.

The State User Administrator is responsible for managing security for all users in the state. This is done through User Creation and User Maintenance.

This State User Administrator has access to aggregate data only and does not see case data such as individual children and placement information.

### Assignment Coordinator

Some states will add a Secondary Role of Assignment Coordinator in the Agency. To be eligible for this sub-role, the user must be either a Caseworker or an ICPC Coordinator. At the Local level, the Caseworker Assignment Coordinator will be able to:

- Access all cases for that Agency; and
- Assign cases to users in that Agency.

At the Central Office level, the ICPC Coordinator Assignment Coordinator will be able to:

- Access all cases for that Agency.
- Assign cases to users in that Agency; and
- Assign an Agency from that state to allow access to that case.