



NORTH CAROLINA DCDPI

RapidIdentity
NCEdCloudIAM 

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In 2010, the North Carolina Department of Public Instruction (NCDPI), with an eye on the growing reality of a web-based K-12 education, allocated a portion of a \$400 million grant to the creation of a broad-based statewide initiative dubbed NC Education Cloud, or simply NCEdCloud.

The primary objective of NCEdCloud? To provide a world-class IT infrastructure as a foundational component of the North Carolina education enterprise. This infrastructure would be available to every one of the state's public school districts, known as Local Education Agencies (LEAs), and charter schools—more than 250 entities.

The Challenge

There were two main barriers to accomplishing this vision. First, the number of applications used by each school left students, faculty, and staff juggling numerous accounts and credentials. On average, students had 4 to 6 accounts, while teachers and administrators had double or triple that amount. Managing these accounts was a challenge, and if not done properly could lead to regulatory and compliance issues. For example, if a student or teacher left and their accounts were not deprovisioned, then these credentials could be used illicitly to gain access to a school's network or sensitive applications.

The lack of a consistent identity and access management (IAM) system also made incorporating new applications into the curriculum an exponential burden for LEAs that lacked an efficient way to create and manage all the necessary user accounts. Without sufficient



IT resources to manually create account credentials and storage folders, reset passwords, close accounts when people leave, this resource burden had quickly become a barrier to cloud adoption.

The Solution

With the NCDPI's plan to consolidate all LEA's access to cloud resources through the centralized NCEdCloud platform, it was clear that these problems had to be solved—and done so in a standardized way that would apply to every participating entity. Thus, the need for an NCEdCloud IAM solution was realized. Because of the scale and scope of this project, the NCDPI laid out specific and challenging requirements for the IAM service that was required:

- **IAM-As-A-Service:**
The state did not want to own or operate any infrastructure for the IAM service. Instead, they would contract with a service provider who would host the IAM service and provide all of the capabilities and functionality specified by the NCDPI.
- **Centralized Control of Identities:**
All of the identities going into the IAM service needed to be centralized and controlled at the state level.
- **Integration with Applications:**
The IAM service provider had to provide integration with these services, such that a single sign-on (SSO) could be used for people to easily access their applications, storage folders, etc.
- **Scalability:**
The IAM service had to be designed to fully support up to 10 million users, including faculty, staff, students, parents, guests, and vendors—an unprecedented scale for the education market, and even uncommon for enterprise industries.
- **Automation:**
The entire process of creating and maintaining digital identities and provisioning/deprovisioning accounts for applications and other resources had to be fully automated.
- **Support:**
The IAM service vendor must provide ongoing administration and support for problem resolution in order to reduce the burden on local LEA IT support staff.

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There was an open bid process for vendors to vie for the NCEdCloud IAM project. Using an unbiased, comprehensive matrix, the bid evaluation team scored the vendors in a number of areas.

One area of particular importance was the proof of concept (PoC). The state gave the vendors millions of records of simulated data that matched the challenges of the real source data. Then, they gave the vendors changes to that data and asked them to run it through their system to see how it works. Of the handful of IAM vendors that made it to the PoC stage, only one company passed the test: Identity Automation.

On the strength of the successful proof of concept, as well as having a supervisor technical solution and implementation plan, Identity Automation led all other vendors on the scoring matrix. Furthermore, Identity Automation had extensive expertise with IAM in the K-12 space. Identity Automation's tools and interface were ready to go "out of the box" for K-12. While the solution offered powerful capabilities on the backend, this complexity was hidden from end-users behind a clean, elegant interface could be put in front of any level of K-12 user.

The Result

NCEdCloud IAM service has been taken a workload, which would have previously overburdened the state and easily turn it into a manageable and automated system. Currently, the NCEdCloud IAM service manages approximately two million active accounts, with nearly three million identities managed over the service's lifetime. In 2018 alone, 208,786 accounts were created and 20,714,205 identities were updated.

NCEdCloud now enables adoption of any cloud services the LEAs want to use in a much quicker, more efficient manner because all of the necessary infrastructure and processes are now in place to facilitate that. The issue of managing identities is no longer a factor. This also has other added benefits, the first being compliance. As rules and regulations are added and evolve over time, they can all now be handled at the centralized state level, instead of the 250 different LEAs having to deal with these changes individually.

Security has also been improved as a result of NCEdCloud. Now, the districts know exactly who has logged in to what system, when they accessed it, and when that account was created. What's more, strong policies keep people out of applications and services they are not authorized to access, which is an important requirement for compliance with the Family Educational Rights and Privacy Act (FERPA).





Perhaps the largest benefit has been the flexibility in the way the system was designed, which has given NCDPI both customization and automation on a massive scale. Having a state-wide solution would normally mean limitations on the ability to customize for specific applications at each LEA. Customization for 250 different LEAs would be too complex, unmanageable, and unsupported. So, to work around this, the LEAs were configured as an extension of the main state system.

The capabilities of the state system are extended down locally, but the local districts still have the autonomy to configure their system how they need it. This provides the best of both worlds—the advantage of the state structure NCDPI wanted, but the customization at the local level, which is needed.

Now five years into the program, NCEdCloud is producing some exceptional results. During 2018:

- **Authentication:**
The NCEdCloud service processed 230,924,492 authentications, the bulk of which occurring during the first three hours of each school day. This equates to more than seven logins every second over the 12 month period.
- **End-User Self-Service:**
Passwords were changed by end-users 2,651,575 times, and there were a total of 296,342 account claims.
- **Single Sign-On:**
The service also provides SSO to 537 applications and dynamically presents more than 2,000 icons to users based on their unique identity.
- **High-Availability:**
As a managed service, NCEdCloud is designed to be highly available and fault tolerant, with 99.9987% uptime for the year.

With K-12 moving to the cloud, NCDPI is now prepared to not only keep pace, but to explore new EdTech trends and resources with virtually no barriers to entry or drain of the districts' time and resources.



IDENTITY
AUTOMATION

FOR MORE INFORMATION CONTACT:

sales@identityautomation.com

877.221.8401

www.identityautomation.com