



## Client



## Challenges

Enable real-time, data-driven decisions among 265 school districts

## Solution

Progress DataDirect Platinum drivers connect state and district systems

## Benefit

20% increase in data transfer

## The “Flashlight” of Data-Driven Education Empowerment

Data is not always the teacher’s friend. Test scores, attendance, and graduation rates can offer a shallow but condemning view of an educational system. If used intelligently, though, data is a valuable tool for school districts to use in improving their education outcomes. This distinction was very much on the minds of the Arkansas Department of Education (ADE) as it decided to increase data transfers between its SIS and the districts from nine times per year to nightly and “on-demand.” ADE collects uncertified data from school districts and aggregates it for reporting purposes.

The ADE was intent on “using data as a flashlight, not a hammer,” as one staffer put it, emphasizing the potential for information to help teachers illuminate problems and solutions rather than “hammering” them and building barriers. ADE wanted to ensure continual data quality improvement and to power data-driven decision making tools, such as classroom dashboards, electronic transcripts and more. The higher-level goal was to empower local districts and the state’s 35,000 educators to do as much as possible to improve the educational experience of nearly half a million children.

The data expansion is part of the ADE goal of improving its educational results. The stakes are high in a largely rural state that has faced educational challenges historically. The “Report Card on American Education” ranks Arkansas as 45th out of the 50 states,<sup>1</sup> while the American Institute of Physics rates Arkansas as “Below Average” in Math and Physics education.<sup>2</sup> These rankings only tell part of the story, of course, but Dr. Tom W. Kimbrell, Arkansas Commission of Education, understands the need to make Arkansas schools better. He said, “To be competitive in the 21st century, Arkansas students must have the skills and knowledge needed to be successful in college and in today’s knowledge-based economy.”

Along with 43 other states, Arkansas participates in the Common Core State Standards Initiative, an effort to improve college and career readiness across the nation. The Common Core creates accountability for the state and increases the need for awareness of district performance data and statewide educational results. Dr. Kimbrell stated, “Access to a college- and career-ready education shouldn’t be determined by a student’s ZIP code. That’s where Common Core comes in.” This is the context in which the ADE sought to improve district and state-level awareness of student performance.

## The Challenge of Moving Data from the Districts to the State

Making data into a force for illumination depended on database drivers in the legacy system. The process required a “pull” of data from student and financial management systems (a transactional Informix database) into a Microsoft SQL-based data warehouse. The processes were developed using Microsoft .NET technologies. Though the system had been capable of handling data pulls from the districts nine times per year, the addition of nightly and on-demand data pulls required significantly more processing capability and essentially swamped the system. The updated

“The Platinum DataDirect Connect drivers eliminated the need for code improvements when re-coding was thought to be the only method to improve processing times.”

Cody Decker

system worked well with pilot school districts, but the built-in database drivers failed to perform once data was pulled from all districts. Furthermore, the built-in drivers were failing with read errors when executed against the full data set.

Organizational and personnel issues also factored into data management at the ADE. The ADE is not an all-powerful entity. It coordinates activities and programs among the local districts. From an IT perspective, each district is independent, with control over its own system choices. Whatever solution the ADE devised, it had to be contained completely within its own systems. They could not expect the districts to purchase or install any software to make the data pulls work better.

## The Progress Solution

One choice that the IT staff at the ADE faced was whether or not to attempt to correct the data-loading problem by modifying application code along with database scripts and tables. After reviewing the situation and researching possible solutions, the team decided to replace the drivers instead. Understanding that drivers could be part of the solution was something

of a revelation for the ADE. “We have not traditionally thought of there being options when it comes to database drivers,” said a member of the programming team. “However, implementation of Progress DataDirect’s ODBC drivers has shown this is an area worth additional research and investigation, particularly

<sup>1</sup> <http://www.alec.org/publications/report-card-on-american-education>

<sup>2</sup> [http://www.huffingtonpost.com/2011/07/11/state-education-rankings-\\_n\\_894528.html](http://www.huffingtonpost.com/2011/07/11/state-education-rankings-_n_894528.html)

when the information system has high data processing requirements. Based on the information system, it's very possible that substitution of the database driver may eliminate the need for code improvements when re-coding is thought to be the only method to improve processing times."

DataDirect Platinum ODBC drivers were tested and recommended by the ADE's information system implementers/developers. They selected DataDirect partly because the product and company had a documented track record of strong performance and the ability to improve the processing time of large data loads. The drivers allow application developers to write, compile, and ship applications without targeting specific database management systems or using embedded SQL. This eliminates the need to recompile the application for each new environment. The ADE could modify the drivers at their end and ensure success without having to make the districts do anything differently. The ADE team was also attracted to Platinum ODBC because it offered a host of new capabilities that suited the ADE mission, including:

- Broadest Coverage, able to be deployed on all major platforms and hardware configurations. Platinum's broad data source support spans cloud, relational, and data warehouses
- Superior Performance through the wire protocol architecture—the foundation for
- market leading data throughput, delivering scalability and capacity from on-premise to cloud platforms
- Resource Efficiency, with Platinum ODBC drivers using a minimal amount of runtime CPU and memory resources
- Codeless Configuration, allowing features and functionality to be added, configured, or tuned for any application without changing code, regardless of runtime or data access model
- "Clean" Spec Implementation that makes Platinum ODBC drivers interchangeable

## The Result

DataDirect's drivers resolved the load errors and delays. The drivers enable successful extract, transform, and load (ETL) processing for the nightly database pulls from the districts. And the whole process worked 20% faster than it had in comparison to the earlier, less frequent cycle

of loading. The gain in performance helped the ADE avoid an investment in additional processing capacity. A reduction in errors during ETL also translated into more efficient management of the entire system. People did not have to spend time and resources redoing data pulls and troubleshooting load errors. The ADE also received recognition by the Data Quality Campaign for meeting nine of the critical action items and ten critical elements in its educational information systems.

"I think it's awesome that the teachers are getting this daily data—instead of nine times a year—so they can help the students more. For example, getting a quick heads-up on attendance issues or grade problems so they can reach out to parents in"

## Moving Ahead

The decision to increase the data pulls and speed up data availability to the districts is part of a broader drive for greater data transparency and data-driven decision making. The data “flashlight” has been lit, but the plan is to make it shine even brighter. The ADE wants to make more detailed educational data to stakeholders and a growing number of external entities that partner in education. The ADE system manages reporting to the Federal government, for example.

As new programs become available to the ADE, the agency wants to have the ability to produce data that can readily qualify districts for funding and then provide accountability once the programs are in place.

For more information please visit:

<http://arkansased.edublogs.org/2011/12/01/arkansas-tops-in-education-data>

[http://blogs.edweek.org/edweek/college\\_bound/2011/12/data\\_quality\\_campaign\\_reports\\_progress\\_but\\_more\\_work\\_to\\_do.html](http://blogs.edweek.org/edweek/college_bound/2011/12/data_quality_campaign_reports_progress_but_more_work_to_do.html)

<http://arkansased.edublogs.org/2010/01/29/arkansas-gets-kudos-for-use-of-data/>

## About Progress

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