



# Miami-Dade County builds a highly scalable private cloud analytics platform

*Giving county employees and millions of citizens access to information and analysis via the web*

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## Overview

### The need

Miami-Dade County saw an opportunity to open up government with a large-scale analytics platform that would allow both internal users and citizens to access a wealth of public information via the web.

### The solution

The county deployed IBM Cognos® Business Intelligence in a Linux environment on its existing IBM System z® mainframe platform. Employees and citizens can access reports using a standard web browser.

### The benefit

The solution provides 24/7 access to analytics for key services such as courts, jails and the fire department. Scalable platform provides insight into government for three million citizens across the county.

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Miami-Dade is one of the largest counties in Florida, with a population of three million citizens. It encompasses the city of Miami, one of the state's major tourist destinations, which welcomes more than 38 million visitors each year.

The county's administration provides a wide range of public services, including police, fire, water and sewers, garbage collection, parks, libraries, hospitals and many others.

"The county never sleeps, and our services need to be available 24/7," says Adrienne Di Prima, Strategic Technologies Support Manager at Miami-Dade County. "The fire department, the police and the hospitals need their systems to be online at all times, so the ability to deliver reliable, highly available IT is vital. That's why we've been a user of IBM System z mainframe technologies for so many years."

## Taking advantage of Linux on System z

The county's main transactional systems all run in z/OS® environments on a pair of IBM System z10® Business Class machines. Several years ago, as part of a network upgrade, the IT team also decided to set up a small Linux environment on the mainframe. The initial intention was just to implement some Linux systems that would replace outdated networking hardware, but with the new environment up and running, the county's IT team began considering other applications.



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—Jose Eskert, Senior System Programmer,  
Miami-Dade County

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“We realized that Linux on System z was an extremely cost-effective platform for certain types of applications, especially if they need the rock-solid reliability and availability that the mainframe can offer,” comments Jose Eskert, Senior System Programmer at Miami-Dade County. “IBM z/OS is an extremely stable platform: it’s great to work with an operating system that doesn’t go down. One of the first things that came to mind as an application to run on the mainframe was our business analytics environment, which is based on IBM Cognos software.”

### **The potential for enterprise-wide analytics**

Rosario Fiallos, Enterprise Business Intelligence Architect, adds: “We had a situation where there were a few different Cognos systems that were being used by different departments—some running on small Wintel servers, or even on desktop PCs, and others on Unix servers. But we had big ambitions for Cognos to become a true enterprise system, which meant we needed a much more powerful and scalable infrastructure. Moving to Linux on System z was the perfect option.”

The county wanted to deploy analytics on a much greater scale, not only providing its own employees with seamless access to reporting and analysis tools to help them make better decisions, but also extending access to the county’s three million citizens via its website.

“Up until this project, we had been using Cognos in a niche way—and we had achieved a lot of success with individual areas such as crime analysis—for which we won several national awards,” says Di Prima. “But the move to System z enabled a complete transformation in our ability to deliver analytics on a large scale.”

Miami-Dade upgraded its infrastructure by activating three additional Integrated Facility for Linux (IFL) engines in each of its mainframes, providing ample headroom for the new centralized Cognos environment.

“We are currently running at about 60 percent capacity, so there’s plenty of space for future expansion,” says Di Prima. “And the platform is so scalable that we can continue to upgrade as and when we need more power.”

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## Solution components

### Hardware

- IBM® System z10® Business Class

### Software

- IBM Cognos® Business Intelligence 10
  - IBM WebSphere® Application Server
  - IBM z/OS®
  - IBM z/VM®
  - SUSE Linux Enterprise Server
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*“One of the big advances we’ve made is to provide more transparency about public spending ... Giving people more insight into where their tax money is going helps them understand more about how the county is governed, so they can make more informed decisions at election time.”*

—Adrienne Di Prima, Strategic Technologies  
Support Manager, Miami-Dade County

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## Analytics in a private cloud architecture

The System z architecture enables Miami-Dade to operate a private cloud infrastructure, where new virtual Linux environments can be provisioned almost instantly whenever a new requirement arises.

“System z provides such huge advantages over a distributed server landscape,” says Eskert. “You can create a new Linux system very quickly, without worrying about whether it will affect the performance or stability of your existing systems. You can try things out easily—for example, you can create multiple test environments to see whether you need a one-, two- or three-tier configuration for a new application. You can test different scenarios and ensure that the final production landscape is fully optimized for the workload.”

Di Prima adds: “The other advantage from an infrastructure point of view is that you don’t need to continually purchase new servers, find space for them in the data center, sort out all the cabling and power supplies, and then configure and install the software. It’s all handled in one box, in a matter of minutes—so there are potentially weeks of savings in terms of agility.”

## Enhancing services for employees and citizens

With a solid, flexible, high-performance platform underpinning the Cognos environment, Miami-Dade has been able to build a number of innovative analytic applications for both internal departments and the county’s citizens.

“In some areas, the organization has made significant time savings as a result of the analytics initiative,” says Fiallos. “For example, the justice department used to create a regular management report about inmates of our prisons and jails, which took about a week to put together. Now it’s completely automated and scheduled, so the system creates it and distributes it to the appropriate people without any human intervention at all.”

Other important applications include the HR Warehouse system that enables the County’s Succession Planning, Budgeting and Hiring Trends functions; the “Financial Transparency” which opens the County’s checking account register to the public; and “PowerITDown” which reports statistics on energy conservation in public buildings.

“Citizens can log into our website and view a wide range of key metrics about the county’s performance in areas such as energy efficiency and service levels for the police and fire departments,” says Di Prima. “One of the big advances we’ve made is to provide more transparency about public spending. They can now call up every check the county has written in the last decade. They can even look up my pay-checks if they feel so inclined! Giving people more insight into where their tax money is going helps them understand more about how the county is governed, so they can make more informed decisions at election time.”

### For more information

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