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CATOR, RUMA & ASSOCIATES, CO.  
CONSULTING MECHANICAL/ELECTRICAL ENGINEERS

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## Highlights

### The Customer Challenge

- IT performance limitations prevented engineering staff from effective use of resources
- Experienced crippling system downtime resulting in unpredictable access to data
- Inefficient data back-up and protection schema strained IT staff resources
- Required scalable and reliable virtualization solution for growing consulting engineering services business

### The Solution: IBM DS3500, System x, and VMware

- Scalability to support 50% annual data growth
  - Provide engineering staff reliable access to data with zero downtime since deployment
  - Gains IT infrastructure to maximize and grow business
  - Delivers fast, reliable IT services to engineering teams
  - Business critical 2D/3D AutoCad/Revit files and applications fully protected and accessible
  - Keeps systems available 24x7 to meet project deadlines
  - Builds private cloud foundation for agility and future scalability
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# Cator, Ruma & Associates

*Consulting Engineering Firm Cator, Ruma & Associates relies on IBM DS3500, System x servers, and VMware as backbone for growing AutoCad, Exchange, and SQL deployment*

## The business of Cator, Ruma & Associates

Founded in 1959 and headquartered in Lakewood, Colorado, Cator, Ruma & Associates provides consulting engineering services for institutional, commercial, industrial, and medical facilities throughout the Western United States. As a premier mechanical, electrical, plumbing, architectural lighting, and information technology firm, Cator, Ruma & Associates' resume of successful projects encompass a diverse range of industry types including healthcare, government, higher education, K-12, laboratory, hospitality, and the private sector. Their client base includes such customers as Exempla Healthcare, The University of Colorado Boulder, Agilent Technologies, The General Services Administration, The Broadmoor Hotel, and Aurora Public Schools. The company employs some 100 people, including a large staff of registered Professional Engineers and LEED AP Professionals.

<http://www.catorruma.com/>

## The challenge: eliminate downtime and improve IT infrastructure scalability

A fast-growing engineering services business and a slow-moving IT infrastructure—it was a dichotomy of realities that brought daily challenges to Jacqui Michael, IT Director at Cator, Ruma & Associates. “Our existing infrastructure was capacity-limited and inflexible, making it increasingly difficult to align IT services with the rapidly expanding needs of our business,” says Michael. “Although we were only one year into a virtualized solution built on previous deployment, we were already running out of capacity. We experienced business-crippling downtime, lived with limited data protection functionality, and made do with minimal management tools. To support anticipated growth, we needed to implement a more flexible, scalable, and supportable solution—and we needed to move quickly to avoid any negative impact to client services and the firm's reputation for excellence.”





*Solution architected and  
deployed by IBM Business  
Partner Atom Creek*

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*“The professionals at  
Atom Creek architected  
an IBM solution that  
has enabled us to focus  
on our core business of  
providing expertise in  
engineering services.  
Our IT services is now  
reliable, predictable, and  
scalable.”*

— Jacqui Michael, IT Director at Cator, Ruma  
& Associates

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## **The business partner: Atom Creek**

To help quantify requirements and architect a reliable, future-proof solution, Michael’s team engaged IBM business partner Atom Creek, an information technology service provider and integrator focused on infrastructure, security, and business continuity solutions for SMB and enterprise customers. Headquartered south of Denver in Englewood, Colorado, Atom Creek serves companies in the Western Mountain states, providing a full complement of IT and managed services, from help desk support to Tier 4 engineering and C-level strategic budgeting and planning resources.

Atom Creek Principal Dave Clipp explains the process at Cator, Ruma & Associates: “We worked with Michael’s IT team to characterize current and future IT needs, aligning requirements with the firm’s business strategies. The goal was to deploy a highly stable, yet agile infrastructure that could meet immediate needs for capacity and uptime, as well as provide a highly extensible foundation to support the company’s IT needs over the long term.”

Atom Creek project services at Cator, Ruma & Associates included:

- High-level auditing of existing network, server, storage, security, and power systems
- Pre-deployment performance and utilization monitoring leveraging Atom Creek’s Fusion Managed Services platform
- Server and storage infrastructure sizing
- Assessment of long-term business and IT requirements
- Budget planning

## **The solution: private cloud foundation built on IBM System x, VMware and IBM System Storage DS3500**

The Cator, Ruma & Associates team evaluated numerous IT infrastructure solutions, including proposals built on Dell, EMC, and IBM technologies. Michael reports that the decision was to build a private cloud foundation on IBM System x servers, the VMware virtualization platform, and an IBM System Storage DS3500 system. Explaining the firm’s selection, Michael cites key advantages in solution reliability, expandability, manageability, value, and support services.

Today, Cator, Ruma & Associates runs its business on the new infrastructure built on two IBM System x3650 M3 2U rack servers with dual six-core Intel® Xeon® 5600 series processors. A direct-attached dual-controller IBM System Storage DS3512 system provides 24TB of near-line SAS capacity.

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*“We were able to provide a cost-effective and virtualized environment based on System x servers, DS3500, and VMware that will scale as the customer grows.”*

— Dave Clipp, Principal at Atom Creek, and  
IBM Authorized Business Partner

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The two VMware vSphere 5-based hosts currently run approximately 15 virtual machines supporting some 100 users and an array of engineering and business applications and environments, including: Microsoft Windows Server 2008 R2, Microsoft SQL Server 2005/2008, Microsoft Exchange Server 2007, and the Autodesk AutoCAD Revit MEP Suite. Veeam Backup & Replication software enables fast backup and recovery of ESXi virtual machines.

### **Designed for always-on IT services: zero downtime**

Since deploying the new infrastructure built on IBM DS3500 storage, the firm has experienced no storage-related downtime. Michael explains the significance: “This infrastructure ensures that we can meet daily and even hourly commitments for distribution of project plans and documentation. Reliable, always-on IT services help our engineering teams consistently achieve critical project milestones and meet client expectations for deliverables.”

### **Architected for business: high performance, capacity for data growth, and value**

The infrastructure built on IBM System x servers and DS3500 storage also delivers essential performance, scalability, and value. Michael continues, “In the old infrastructure as well as several competing architectures, partitioning and expanding storage was extremely difficult. To be sure we could handle increasingly large Exchange and 3D/4D CAD files and expanding application services, overbuying capacity was a costly likelihood.”

“In contrast, the infrastructure built on IBM servers and DS3500 storage makes optimal use of resources and is easily scaled. We were able to right-size for current requirements—including delivering the performance and capacity to run sophisticated business information modeling solutions—with the assurance we could scale as needed to take advantage of advancing engineering technologies and support future business initiatives.”

### **Engineered for growth: extensible private cloud foundation**

Deployed in late 2010, the new infrastructure serves as a highly extensible foundation for delivering IT services via a private cloud. Michael summarizes, “Working with the Atom Creek team, we successfully deployed a highly robust and reliable solution in just under two months. Today that infrastructure is delivering the high availability, performance, and manageability that Cator, Ruma & Associates requires to provide exceptional mechanical and electrical engineering services. Tools like vCenter give us unified management, simplify overall administration, and help further reduce downtime by enabling live migration of virtual machines using vMotion.”

“In the future, as we continue to grow and expand services—for example, we’re currently doing a proof of concept to evaluate delivering Revit on VMware View virtual desktops—the availability of tools for self-provisioning and automation will further enhance our capabilities and extend the value of this infrastructure investment.”

#### **IBM Business Partner**

Atom Creek, LLC  
www.atomcreek.com

#### **Cator, Ruma & Associates IT Infrastructure Products**

- IBM System x3650 M3
- IBM System Storage DS3512

#### **Environment**

- VMware vSphere 5 Essentials Plus
- VMware View 5
- Veeam Backup & Replication
- Microsoft Windows Server 2008 R2
- Microsoft SQL Server 2005/2008
- Microsoft Exchange Server 2007
- Autodesk AutoCAD Revit MEP Suite



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