



# ROI CASE STUDIES

## HIGHLIGHTS

**Goal:** For McKim & Creed to speed up the sharing of engineering and surveying CAD files, drawings and documents among 17 offices in three states, increase collaboration, and speed up Web applications, without buying extra bandwidth or additional servers.

**Solution:** Riverbed Steelhead WAN Accelerators (also sold as HP StorageWorks Enterprise File Service [EFS] WAN Accelerator)

**Results:** A cumulative, projected five-year net benefit of \$263,238, driven by increased productivity, bandwidth savings, and avoiding having to buy and maintain new servers. An ROI of 1082% and a payback period of six months. Employees in separate offices can collaborate on projects and share files with almost the same speed as if they were located in the same building.

## CUSTOMER PROFILE

**McKim & Creed, P.A.**

www.mckimcreed.com

Founded in 1978, McKim and Creed is a full service engineering, surveying and mapping, and planning services firm.

**Headquarters:** Wilmington, North Carolina

**Industry:** Engineering

**Employees:** 400

## Engineering Firm Speeds Up File Access, Increases Productivity, Gains Over \$260,000 in Benefits with WAN Accelerator

The engineers and surveyors at McKim & Creed share large CAD drawings and documents among 17 offices in three states. This allows staff, regardless of physical location, to collaborate on projects. The firm faced problems with sharing those documents — it could take several minutes for a single file to load across the network from a remote office. This had a serious negative impact on staff productivity. Web-based applications also took a long time to load in remote offices. The firm was considering spending a considerable amount of money on extra bandwidth and additional servers to solve the problem. Instead, it turned to Riverbed Steelhead WAN Accelerators (also sold as HP StorageWorks Enterprise File Service [EFS] WAN Accelerators) to solve the problem. Large files now load in seconds, email moves faster between offices, Web applications can be accessed more quickly, and staff has become more productive. McKim & Creed will realize a cumulative, projected five-year net benefit of \$263,238 from the project, driven by increased productivity, bandwidth savings, and avoiding having to buy and maintain new servers. The project will yield an ROI of 1082% and has a payback period of six months.

### Benefits

OBJECTIVE	BENEFITS ACHIEVED
Speed up the sharing of documents between offices	Large drawings that previously took several minutes to load from one office to another now open in seconds.
Improve productivity by allowing surveyors and engineers from different offices to collaborate on the same projects	Because large drawings and documents can be easily shared among remote offices, surveyors and engineers across the firm can more easily collaborate on the same projects, leading to productivity gains.
Reduce bandwidth costs	By buying WAN accelerators rather than additional bandwidth, McKim & Creed will save a projected, cumulative \$48,000 over five years in bandwidth costs.
Improve the performance of Web-based applications	McKim & Creed's Web-based applications, hosted in its main office, can be accessed from its 16 other offices at nearly the same speed as if employees were in the main office.
Reduce IT administrative overhead costs	By purchasing WAN accelerators, McKim & Creed did not have to buy a file server for one of its remote office locations, and can centrally manage its infrastructure, leading to a projected, cumulative \$93,400 in savings over five years in reduced IT administrative costs.

“We had to solve the problems we were having sharing files and collaborating between offices — it was taking too long to access files and applications between offices, and it was hurting our productivity.”

Craig Mathews  
Chief Technology Officer  
McKim & Creed

### About McKim & Creed

McKim & Creed, an award-winning engineering, surveying, mapping and planning firm founded in 1978, has seventeen offices in Florida, Virginia, and North Carolina. It has nearly 400 employees, and a ratio of one IT staff member to 100 employees, which is less than half of the industry average.

McKim & Creed has been ranked by the Engineering News-Record as one of the top 200 environmental firms and one of the top 500 design firms in the United States. The firm has also been ranked as one of the top 100 architecture/engineering/construction firms by Public Works magazine, and was named one of the top 75 engineering and architecture firms in the Southeast by Southeast Construction.

### The Challenge: Speed Up Document Access Between Offices and Improve Web-Based Application Performance

McKim & Creed has been growing rapidly over the last several years, adding more than 100 people to its staff between 2004 and 2005 (a 30% growth rate). For maximum efficiency, staff members in different offices work on projects together. To do that, employees share files across the office Wide Area Network (WAN). These files range from simple email messages, to Excel and Access documents, to CAD and PDF files. The files, especially aerial photograph files, can be quite large, and are not uncommonly 50 megabytes or more.

But with nearly 400 employees spread out among 17 offices in three states, document sharing caused problems. It took a long time to share files over the WAN. A large document, such as a 10-megabyte CAD file, could take many minutes to open. This led to significant lost productivity while employees waited to open files or receive email.

In addition, McKim & Creed has Web-based applications hosted in its main office, such as its accounting application, that need to be accessed over the WAN from other offices. Employees who had to access Web-based applications experienced slowdowns when they tried to open the application or access its files.

McKim & Creed was considering buying additional bandwidth for its WAN links, and servers for each of its smaller offices, as a way to solve the problem.

### Driving the Need for a New Solution

McKim & Creed was looking for a solution that would do the following:

- **Speed up file access between offices.** It was taking far too long for employees to share files between offices — several minutes for a single CAD drawing. The company needed to speed up file access to increase collaboration and improve productivity.
- **Improve the performance of Web-based applications.** Employees outside the main office were experiencing sometimes drastic slowdowns when they used Web-based applications, such as the firm’s primary accounting application. McKim & Creed wanted to improve application performance.

- **Minimize bandwidth costs.** McKim & Creed preferred a solution that would allow it to minimize bandwidth costs. It did not want to spend the significant amount of money it would cost to buy extra T1 lines.
- **Minimize IT administration costs.** McKim & Creed has a very efficient IT department, with a ratio of one IT staff member to 100 employees, less than half of the industry average. It did not want to have to buy extra servers to put in branch offices, because that would require a substantial amount of extra IT administration time, and higher IT costs.

### McKim & Creed Chooses the WAN Accelerator

McKim & Creed purchased four Riverbed Steelhead WAN Accelerators (also sold as HP StorageWorks Enterprise File Service [EFS] WAN Accelerators) to solve its problems, rather than purchasing extra bandwidth and extra servers. By using the solution, the company did not have to pay extra fees every month for bandwidth, and did not sustain extra IT administrative overhead that new servers would require, such as performing tape backups, updating service packs, and maintaining and troubleshooting servers.

The core technology in Riverbed's Steelhead appliances forms the basis for the HP StorageWorks Enterprise File Service (EFS) WAN Accelerator, marketed through HP's direct sales force and worldwide system of resellers, integrators and other technology partners.

The HP StorageWorks EFS WAN Accelerator is a simple, transparent appliance solution that accelerates applications on WANs by up to 100 times. The solution is built on the industry-standard HP ProLiant server platform and can be easily integrated into any enterprise network and installed in less than ten minutes.

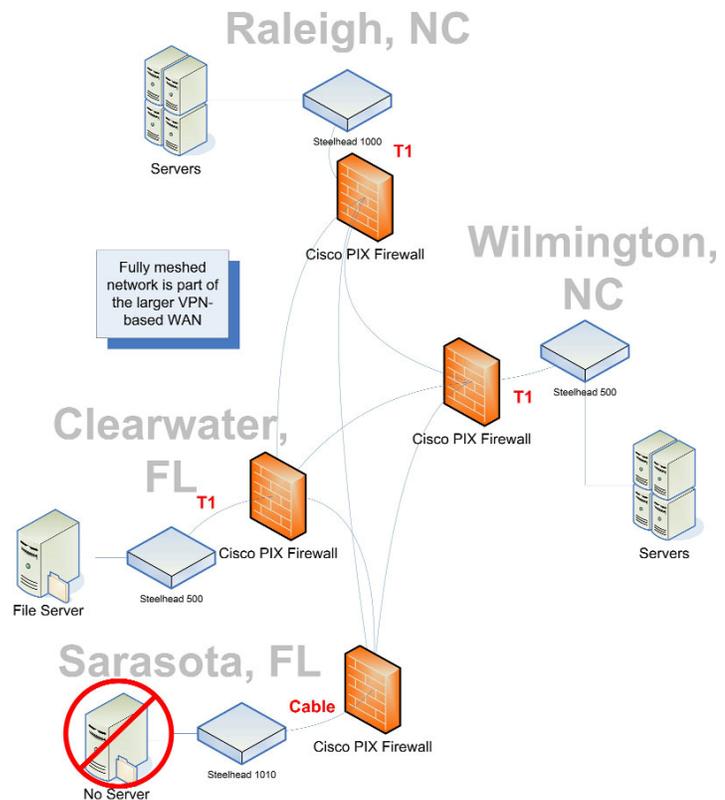
The WAN accelerator addresses all the key factors that slow application performance over WANs: high latency, limited bandwidth, and "chatty" transport and application protocols. It accelerates TCP-based applications on WANs by up to 100 times, and simultaneously expands bandwidth ten-fold, allowing geographically dispersed teams to run applications from central servers and share large documents as if they were all working in the same office. Such dramatic improvements in WAN performance enable CIOs to consolidate remote file servers and other infrastructure into centralized data centers where information can be managed more safely and easily. With the WAN accelerators, companies can realize the benefits of consolidation — improved data security and compliance, and reduced operational costs — without sacrificing the performance their remote users demand.

“The WAN accelerator was a perfect fit for the problems we were having. We didn't have to buy extra T1 lines or new servers, and were able to solve our problems without having to add IT staff. It's also extremely easy to deploy — it was up and running in two minutes.”

Craig Mathews  
Chief Technology Officer  
McKim & Creed

### An Inside Look at McKim & Creed's Use of the WAN Accelerator

McKim & Creed uses four Riverbed Steelhead WAN Accelerators (also sold as HP StorageWorks Enterprise File Service [EFS] WAN Accelerators) in four offices to speed up access to applications and files across its VPN-based WAN.



### The Bottom Line for McKim & Creed

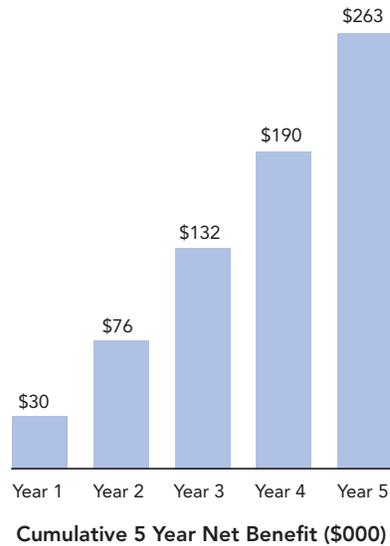
A detailed analysis of the implementation shows that McKim & Creed will gain a projected, cumulative five-year net benefit of \$263,238 from the solution, driven by increased productivity, bandwidth savings, and avoiding having to buy and maintain new servers. The solution will have an ROI of 1082%, and has a payback period of six months.

The biggest savings will be in increased productivity because employees can open files more quickly between offices, leading to more productive hours during the day and better collaboration between employees and offices. Additionally, employees will be able to use Web-based applications more efficiently. The total productivity savings over five years is a projected \$342,772.

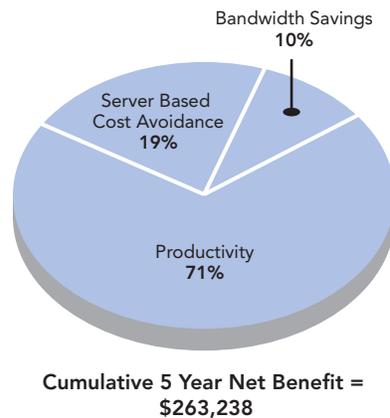
Employees can now open files in a matter of seconds rather than minutes. Email containing attachments moves much more quickly from office to office as well. Collaboration has been significantly improved, because it is now much easier for employees from different offices to work on the same documents and projects. Additionally, the remote accounting staff can use the Web-based

application without any delays; they can access it at nearly the same speed as if they were in the main office. The WAN accelerators also have sped up access to McKim & Creed's Citrix-based CRM application.

■ McKim & Creed's bottom line for the project: A cumulative, projected five-year net benefit of \$263,238, driven by increased productivity, bandwidth savings, and avoiding having to buy and maintain new servers. An ROI of 1082% and a payback period of six months.



Because files can be accessed so quickly across the WAN, McKim & Creed avoided having to buy an extra file server, and can centrally manage its infrastructure, which will lead to a projected \$93,400 in savings over five years. The savings is made up of avoided IT administrative costs. If McKim & Creed had bought the extra server, it would have had to perform tape backups, troubleshoot and maintain the server, and perform a wide variety of administrative tasks, such as patching, adding virus protection, and installing software. The WAN accelerators do not require that kind of IT administrative overhead. Additionally, the WAN accelerators allow McKim & Creed to maintain central control over its infrastructure, without servers and IT staff dispersed among many offices. Because of this, McKim & Creed can significantly increase the size of its staff, without having to grow its IT staff.



McKim & Creed will also save a projected \$48,000 over five years in bandwidth costs. The WAN accelerator has been able to speed up file transfers and accessing Web-based applications, and so there is no need for extra bandwidth. McKim & Creed found that the WAN accelerator’s caching, compression and other technologies have sped up WAN access so much that it has plenty of room for growth.

5 YEAR ANALYSIS							
<b>Project Summary</b>							
ROI	1082%						
Payback Period (in months)	6						
Cumulative Net Value	\$263,238						
<b>Project Costs (000)</b>							
	<b>Start Up</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Total</b>
Hardware	\$26	\$11	\$22	\$22	\$33	\$33	\$149
Support		\$5	\$8	\$13	\$18	\$25	\$71
<b>TOTAL PROJECT COSTS</b>	<b>\$26</b>	<b>\$17</b>	<b>\$30</b>	<b>\$35</b>	<b>\$51</b>	<b>\$59</b>	<b>\$220</b>
<b>Benefits (000)</b>							
	<b>Start Up</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Total</b>
Bandwidth Savings		\$9	\$9	\$9	\$9	\$9	\$48
Productivity		\$41	\$52	\$65	\$81	\$101	\$342
Server Based Cost Avoidance		\$22	\$14	\$16	\$18	\$20	\$93
<b>TOTAL BENEFITS</b>	<b>\$74</b>	<b>\$76</b>	<b>\$91</b>	<b>\$109</b>	<b>\$131</b>	<b>\$484</b>	
<b>Financial Analysis (000)</b>							
		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	
Net Value	-\$26	\$56	\$46	\$56	\$58	\$72	
Cumulative Net Value	-\$26	\$30	\$76	\$132	\$190	\$263	
Net Present Value	\$215,452						
Payback Period (in months)	6						
ROI	1082%						
Internal Rate of Return	203%						

**ROI** (return on investment) percentage return expected over a specified period of time. ROI is the total benefit minus the total costs in years 1-5 divided by the startup costs. The ROI metric is good for assessing the net value benefit of the project relative to the initial investment.

**NPV** (net present value) represents the cumulative present value of the expected return of a project over a specified period of time minus the initial costs of the project. This dollar figure provides visibility on the actual value of a project, taking into consideration the time value of money - the ongoing benefit of a project in today’s dollars. NPV tells you the magnitude of the project and if the project generates a profit.

**Payback Period** (or breakeven) is timeframe it takes for the project to yield a positive cumulative cash flow. Payback period is a key measurement of risk but does not take into account cash flows after the payback period.

ROI, NPV and Payback should be used in conjunction to understand the rate, size and timing of the return.

**Net Value** is the benefit delivered to the organization for the investment made in the project. Net Value is calculated by taking the total benefit minus the project costs.

**IRR** (Internal Rate of Return) is the implied rate of return of an investment assuming complete reinvestment of cash flows. It is the percentage rate by which you have to discount the benefits until the point that they equal all the costs. IRR is calculated as the discount rate necessary to drive the NPV to zero.

### McKim & Creed Looks to the Future

With the WAN accelerators in place, McKim & Creed can continue growing its staff and adding new offices without having to buy extra bandwidth, new servers, or add to its IT staff. Because of the effectiveness of the WAN accelerators, the company can increase its size without having to add new IT staff members. It recently acquired a company of 30, and will not have to add to its IT staff to serve them.

It has been so pleased with the performance of the WAN accelerators, that it is buying a fifth one, and if it expands to more offices, may buy additional ones in the future.

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#### About Hewlett-Packard Company, StorageWorks Division

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