



Protecting

service continuity by quickly
resolving network problems



ARSENAL
DIGITAL SOLUTIONS

Apparent Networks



Solution Overview

Customer Profile

Arsenal Digital Solutions offers a suite of on-demand, managed storage services, including data protection, business continuity, disaster recovery, and compliance solutions.

Business Situation

With more than 1,000 customers in 45 data centers in 30 cities worldwide, Arsenal required robust network management and reporting capabilities to help enable delivery of high availability solutions and meet stringent service level agreements.

Solution Description

Arsenal Digital Solutions purchased six Technical Support Edition licenses and two AppCritical Profession Edition licenses.

Benefits

- Speedy problem resolution boosts customer satisfaction and confidence
- Increased efficiency frees up valuable network engineers' time
- Visibility of network path improves operations and expansion planning

Software and Services

- AppCritical Technical Support Edition
- AppCritical Profession Edition
- AppCritical Training

Vertical Industries

Technology

Country/Region

United States

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Executive Summary

Enabling communications service providers to layer managed data protection services on top of their networks has proven to be a successful business model for Arsenal Digital Solutions. With experience managing 24 petabytes of data while annually performing 2.4 million back-ups and 3,500 restores, Arsenal now has play in 45 data centers in 30 cities worldwide.

Depending on both its public and private networks, though, means that Arsenal's service quality can be affected by conditions beyond its control. While this infrastructure is monitored and maintained by top-line network management systems and the experts that run them, faults can still slip through and affect backup performance.

When this happens, Arsenal's engineers face the unenviable task of trying to isolate, identify and remediate the problem.

It was fundamental to Arsenal's continued success that it find better visibility and management into the networks that drive its solutions.

"Arsenal's ability to deliver storage services in accordance with strict SLAs is a core differentiator. The visibility that AppCritical gives us into the networks enables us to resolve issues faster and provide even higher quality service to our customers and partners."

— Josh Schlanger, Director of Global Support & Information Services

This case study explores Arsenal's progressive move to accept responsibility over networks beyond its control. It validates the influence the network has on application performance and proves the value and benefits Arsenal realized as a result of adopting AppCritical into its support organization.

The Problem

Arsenal Digital Solution's pricing strategy is to deliver fully managed, on-demand storage management services in a pay-as-you-go utility model. Basically, revenue builds for every gigabyte stored. Something standing in the way of a successful backup, quite literally strips money from the company.

With revenues, reputation and resources on the hook, these issues are given highest priority. Unfortunately, these can be some of the most difficult to resolve. If the backup fails as a result of an application problem, alerts and error codes within the software usually indicate the cause of the problem. However, if an element outside the application, such as the network, interferes with its performance, then the support team resorts to a Sherlock-Holmes-like investigative process.

When the network is prime suspect, the support engineers have a long-road of problem discovery ahead of them. Networks today are diverse, ever-changing environments that stretch not only across organizations but continents. It is impossible to verify the quality of hundreds or thousands of network paths in a real-time manner - especially when an organization has no administrative rights to those components. Furthermore, keeping all data flows at peak efficiency is critical to the performance of its full operation.

Arsenal needed to deliver unprecedented views into the complex interactions across its customers' and partners' infrastructure to discover the "who, what, when and where" of its application performance. It needed a way to rapidly identify if the problem was within the network and then to address it quickly to preserve storage reliability.

The Need: Protect revenues by assuring customer backups complete on schedule

The strength of Arsenal Digital's revenue stream is directly related to the amount of data it stores for its customers. Basically, the more data it backs up the more money the organization makes. A simple formula; however, there are obstacles that can interfere with the process.

The network, for example, can be to blame for an unsuccessful backup. The transfer of large amounts of data is very taxing on any network environment; the smallest configuration problem can cause performance to grind to a halt. Because these faults may not noticeably impact any other network activity, they are difficult to detect - and harder to prove.

Without up-to-the-minute knowledge of the state of the network, Arsenal is vulnerable to conditions beyond its control.

The Need: Reduce engineer time spent troubleshooting problems

In the event that a backup fails, either through network errors or other issues, Arsenal is faced with the task of determining what exactly went wrong. While it has processes and procedures in place to aid with this identification process, network problems take time to track down, sapping resources.

"When we see a failure in the backup environment the software fault codes indicate if it is because the software is not configured appropriately. But if the network caused the software to fail, we use a Sherlock-Holmes type of deduction to find its location."

— Josh Schlanger, Director of Global Support & Information Services

Arsenal needed to find a solution that had the timeliness, flexibility, and depth necessary to address the issue and decrease the hours spent troubleshooting problems at the network level.



Josh Schlanger

The Need: Improve efficiencies

The success of Arsenal Digital's business model relies on the company's ability to efficiently move data from customer's sites onto storage devices. More than 48 terabytes of data, on average, are transferred daily and execution relies on a streamlined process with the slightest delay or hesitation impacting all other backups in the queue. Conditions that impair or degrade the speed of this transfer directly restrict revenue opportunities, strain the infrastructure and increase business costs.

Arsenal's growing customer base meant the company needed a way to meet its high growth demands and continue to keep customer satisfaction high without a costly expansion of its IT infrastructure.

The Criteria

AppCritical's unique functionality and its ability to test networks beyond the firewall eliminated any need to position it in a bake-off with other products. Therefore, the criteria were focused on the product's ability and the value that it could have within the organization.

Could AppCritical meet current and future needs by:

- i) Identifying if backup failures were caused by the network
- ii) Validating the problem
- iii) Reducing man hours spent troubleshooting problems
- iv) Restoring backup capabilities quickly



Denis Petrov

The Process

Arsenal was given full access to AppCritical and the StandAlone Sequencer through a web-based hosted service. Hands-on evaluation of the software was assigned to Tier 2 Lead Denis Petrov, who ran tests to as many different clients and in as many different support situations as he could.

The Results

Used in about 60 cases, Denis says he was surprised by the results.

“Some of the network issues were surprising to us and the customer. Duplex mismatches were the most common. And then NIC cards; it’s alarming how much they can affect the performance. These are all things that aren’t easy to determine about the network. But the report gives us solid evidence of the problem to give to our customer.”

— Denis Petrov, Tier 2 Lead

The Solution

At the conclusion of the evaluation, Arsenal purchased six AppCritical Technical Support licenses and two AppCritical Professional licenses.

Implementation

With a server already available, the software was easily installed and remote access was assigned to six Tier 2 support engineers. The Professional licenses were installed on the laptops of two field engineers.

Training

Tier 2 lead Denis Petrov and Josh Schlanger, Director of Global Support & Information Services, who had both received four hours of training via Webex in advance of the evaluation, demonstrated the product features to the support engineers who would be using AppCritical. With the software being so self-explanatory and the Help Guides providing more in-depth information, the engineers were quick to learn. Each was given about 20 minutes of one-on-one introduction to the software, basically focusing on how to execute a StandAlone test.

About six months after the deployment, Apparent Networks VP, Network Technologies Fred Klassen visited the Arsenal head office and conducted a full-day of advanced training, focusing on the intricacies of the software as well as delving deeper into understanding the test results.

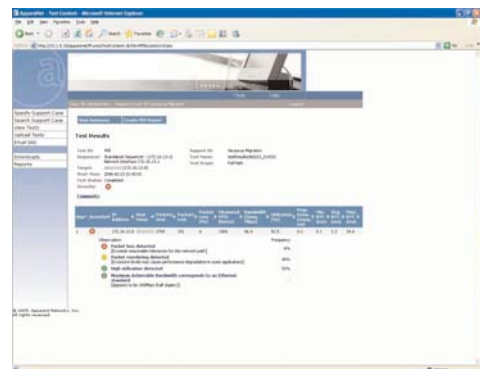
Progress

Arsenal has now been using AppCritical for nearly a year and has seen substantial benefits resulting directly from the adoption of this new technology in its support environment. About 90 percent of the tests are done using the StandAlone Sequencer to test the network beyond Arsenal's domain.

Discussions with six Tier 2 engineers who use AppCritical revealed the benefits that directly impact them on a daily basis. The results were immediate for those people closest to the problems.

Matt Jaquillard, a Tier 2 operations support engineer, says AppCritical provides him with an additional level of knowledge. Matt recalls a case he worked on extensively where there was poor network performance somewhere between Arsenal and its customer. Once he had access to AppCritical, he was able to identify a corrupt router.

Positive Proof:
Clear reporting makes it easier for the technical support engineers to identify if there is a problem or not.





Rob Staab

"We had been checking the standard things, trying to find what was wrong but didn't have any luck. Once it was escalated to me, AppCritical identified where it was right away and when the customer replaced the router everything was fine. AppCritical makes it possible to look at so many different things all at once." — Matt Jaquillard

Derrick Durden, a Tier 2 data storage technician based in Atlanta, says AppCritical's best advantage is when troubleshooting slow-running backups. Durden, who has an associates degree in network administration, finds AppCritical's diagnostics to be more helpful than the trial and error methodology he used to rely on.

"When you're trying to improve long or slow-running backups, the work is based on a lot of assumptions. AppCritical provides concrete information and when it identifies the problem it offers solutions to fix it. My customers take it as gospel." — Derrick Durden

Rob Staab, a field engineer, recalls a time when he used AppCritical to solve a case. In six minutes, AppCritical had identified a bug on an individual ethernet client server that was causing it to react in an unexpected manner.

"AppCritical tracks a whole series of problems with individual manufacturers' products that I couldn't possibly know myself. It validates to the customer where the issue is." — Rob Staab

Edmond Shwayri, a Tier 2 Support Engineer who had only been using AppCritical for two weeks before being interviewed, is already recognizing the value to his role. He works closely with Symantec's NetBackup and is a newly appointed point person for customer facing issues. AppCritical will help him save time by narrowing the focus on a problem. It will also improve communication with the server administrators he works with.



Edmond Shwayri

"It is essential that the network is operating at maximum performance. Poor performance on the drive affects the number of backups we can do. For example, we were running a backup with a throughput of 200K/second. It should be 10 times that. With AppCritical, we can run a quick test of that link and see if there's a problem there that's slowing the backup. The reports provide solid-proof if there's a problem, and allow me to focus on the resolution with the customer." — Edmond Shwayri

Business Benefits

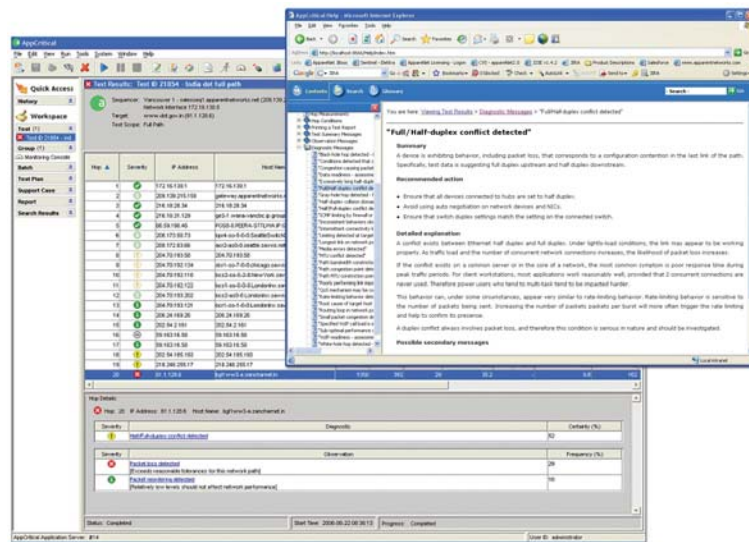
As the leading provider of Storage Management Services, Arsenal Digital Solutions needs to deliver high availability services and meet stringent service level agreements to continue its success.

Impact: Reduced cost of supporting customers

One of the most substantial benefits Arsenal has seen since the adoption of AppCritical is the significant and dramatic cost savings obtained through the actionable diagnostics provided in the software. Previous to adopting AppCritical, the process of identifying the cause of failures was both onerous and time-consuming. It required a combination of luck and detective work. However, with AppCritical's actionable diagnostics and ability to assess networks beyond its control, the Tier 2 team not only quickly knows if the network is to blame for the backup problem, it knows where on the geographically diverse network the problem exists and how to fix it. This real-time knowledge has seen two-week old cases resolved in a few minutes.

Impact: Avoided costly infrastructure improvements

Slow backups have a domino affect across the storage platform. These delays can result in less efficient utilization of resources and overburdened hardware. Operating with a queuing system for backup windows means longer backups result in fewer backups completing in a set timeframe. It's difficult to recover from unexpected delays. With its growing customer base, Arsenal was in a position that it would need to expand infrastructure to keep up with demand. However, with AppCritical eliminating network problems and tightening up backup windows, efficiencies improved on all infrastructure. The result? Application performance improved four-fold without having to incur capital expenditures for additional infrastructure upgrades.



In-depth knowledge:
Supported by an encyclopedia's worth of network knowledge, no problem is too difficult to understand and resolve.

Impact: Improved relations with customers

With Arsenal's managed data protection services relying on networks, it can find itself in a difficult position when a backup fails and the network may be to blame. While all parties involved want to resolve the problem, taking ownership of the situation can be a different story. AppCritical's precise reports give Arsenal the ability to provide concrete proof of the source of the problem, and as a result it has dramatically shifted customer response.

Final Thoughts

With AppCritical, Arsenal discovered new visibility into the infrastructure that directly impacted the quality of its service. Its Tier 2 technicians could troubleshoot networks they had no control over and improve application performance and customer satisfaction. Cost savings were realized by cutting time to resolution in half. Furthermore, a more efficient process, with fewer delays and tighter backup windows, enabled Arsenal to meet its growth demands without adding costly upgrades to its infrastructure. This efficiency will also lead to longer life of its tape drives and other supporting devices, further reducing expenditures.

"It is Arsenal's goal to deliver high-quality storage management services at a competitive price. AppCritical is a valuable part of our ability to do exactly that." - Frank Brick, Chairman and CEO

For more information

If you would like additional information about the AppCritical suite of products or about Apparent Networks Inc., please visit our website at www.apparentnetworks.com, or call 1-800-508-5233.

About Arsenal Digital

Arsenal Digital Solutions is one of the world's largest and most trusted providers of storage management services. With over 900 customers spanning 5 continents, Arsenal centrally manages large, multi-vendor networked storage environments with an industry-leading recovery record. Arsenal is a technology-agnostic service provider of data protection, business continuity, disaster recovery, and compliance solutions. The company delivers a robust suite of services supporting PCs and servers – from data center to remote office to mobile workforce. Our fully-managed services include: Tape- and disk-based data backup and recovery solutions, including offsite data storage and remote data backup; SAN, SAN High Availability, NAS, Replication, and Mirroring solutions; Online data backup, offsite backup and disaster recovery solutions; Bare metal restore - rapid server and OS recovery solutions; Remote monitoring, reporting, and management solutions for customer owned infrastructure; On-demand professional services engagement providing discovery, analysis, remediation and reporting on your data protection environment.

Established in 1998 and with over 24 Petabytes of storage management experience, Arsenal is uniquely qualified to protect your data and make it accessible when and where you need it.

About Apparent Networks Inc.

Apparent Networks, Inc. develops and markets software that provides a unique approach to improving application performance by measuring and diagnosing live converged networks as part of pre-deployment assessment, troubleshooting and continuous real-time monitoring. AppCritical™ provides awareness of the most critical network characteristics needed by voice, video and data applications. It is successfully deployed by technology vendors, managed and professional service providers and enterprises to assure end-user quality of experience. Customers include ACS, Boeing, Fujitsu, Siemens, Nortel, Toshiba, IBM, Symantec, Bell, HP, Network Appliance, McData, TELUS, DHL Systems, the United States Department of Defense, Lockheed Martin, Bank of New York and Electronic Arts. The privately held company has offices in Seattle, WA and Vancouver, Canada.

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