

Data Management and Retention for Standards Consortia

An Overview

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Data Management Policies for Standards Consortia

The following document provides a brief overview of Kavi Corporation's policies and procedures for information redundancy, backup and restore safeguards of customer and corporate data.

Policy Edict

Kavi Corporation provides a secure, stable and redundant IT environment for our customers' systems and applications. For more than five years we have adhered to a comprehensive, multi-tier customer and corporate data management policy, which ensures superior data protection and integrity.

Maintaining system and application backups provides a means to quickly, safely and securely recover systems, applications and data that has been lost due to system hardware failures, software implementation defects and user errors.

What differentiates Kavi's data management policies from other Web development organizations is our dedication to developing and administering a backup system that is optimized for our customers' unique data backup and recovery needs. Our customers are large organizations managing complex processes and procedures on the Web, and they often need to take steps back to make strategic adjustments to their Web properties (sites).

Philosophy

To best address the unique data protection needs of our customers, Kavi customer and corporate information management policies are guided by a well-established philosophy for ensuring a secure, available and redundant IT environment for our customers. This philosophy consists of seven key components: coverage; frequency; separation; history; testing; security; integrity.

Coverage

The first task in initiating a proper backup strategy is to identify the proper data for backup. Kavi believes that every piece of customer data is mission-critical and must be backed-up. Therefore, we execute full mirror backups on a daily basis to ensure comprehensive customer data protection.

Frequency

Kavi believes that the optimum strategy is to backup as often as possible. Our backup strategy begins by utilizing RAID (Redundant Array of Independent Disks) technology to ensure that all data is stored on multiple drives simultaneously. RAID ensures that if a drive fails, customer data and server uptime will be maintained. Kavi then performs automatic backups every day, week and month for complete data protection.

Separation

If all customer backups were in a single location, they could be subject to a single-point failure. Therefore, it is essential that portions of backups be physically separated from the rest so as to ensure that a single natural or human disaster cannot wipe out all data. Kavi has implemented three distinct layers of offsite backups (described later).

History

Frequent backups alone will not protect our customers' data. We pay attention not only to the frequency of backups, but to their longevity as well. An important element of any backup scheme is the retention of backups from various times in the past. For example, each month, Kavi secures customer backups offsite with a data protection service. The next phase in our data protection strategy will further archive permanent backups at an additional proprietary storage location operated by Kavi.

Testing

The only way to tell if backups are working is to load a backup and see if the data is correctly restored—thereby performing an integrity check on the restored data. Kavi performs partial restorations from both customer mirror sites and tapes as necessary and requested for support reasons. Accessing backups in this manner occurs each month—primarily from the mirror. At this point the integrity of all data is analyzed and tested accordingly.

Security

No organization can guarantee that their headquarters is 100 percent safe from intrusion. However, Kavi is keenly aware that if so much as a single backup file goes missing, a competitor could have obtained an enormous amount of intelligence about our customers and our systems. We have invested significant resources to mitigate both electronic and physical risk, implementing multiple levels of secure access for both physical and electronic storage locations.

Integrity

Our backups can only be as good as the data. If data is corrupt, then that corruption will flow through the backup system until the original data is lost. The greatest danger to customer data is not catastrophic failure, but subtle damage that goes undetected. Thus, it is important not only to backup our customers' data, but also to monitor its integrity. Kavi checksums and verifies backup tapes when they're created. Additionally, our electronic backups are verified when the daily deltas are created.

In Brief: The Data Backup and Recovery Process

The Kavi Data Center executes automated daily, weekly, monthly and archived backups of complete customer data (sites, databases, email, etc.) utilizing full mirroring and off-site backup and archiving. The following explanation outlines the process by which we store and backup customer data.

Customer Site Development Backup

All customer data development begins at Kavi's corporate servers. This includes both Kavi's corporate data servers and a full stack of customer development servers where all customer sites are designed, built and implemented prior to public launch or during incremental maintenance and revision.

Kavi's corporate servers feature an advanced Concurrent Versioning System (CVS), maintaining changes between one source code version and another, storing all the changes in a single file. CVS is especially powerful as it supports group collaboration by merging the files from each programmer involved in the development process. Kavi's CVS changes are released weekly; with each release saved with a unique tag identifier from which we can use to step back indefinitely to previous changes.

Customer Data Center Integrity

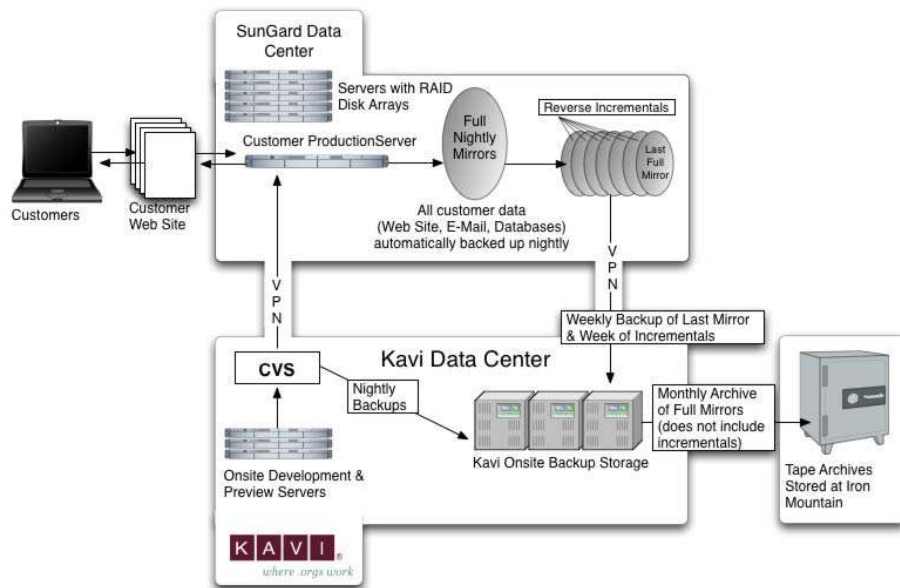
Kavi's customer sites are served and protected by one of the industry's most trusted and respected data centers, SunGard Availability Services. One reason that Kavi chose SunGard is due to their unmatched reputation, with more than 10,000 customers around the world.

SunGard's substantial investment in infrastructure delivers unprecedented dependability and data security. SunGard integrates traditional recovery resources with 25 years of experience and dedicated infrastructure components. Every Kavi customer site is served with RAID technology, ensuring high performance and increased fault tolerance (security against disk failure), and UPS and diesel generators ensure constant operation. SunGard also actively maintains climate control, fire detection and suppression systems, as well as 24/7 physical security. What's more, SunGard's private, protocol-independent telecommunications network connects their entire network of facilities.

As part of Kavi's normal operations, customer backups are made on a daily basis at the SunGard data center to ensure the recoverability of Kavi services and complete (all) customer data. Additionally, Kavi's development servers are also backed-up on a weekly basis.

Six Steps to Secure Customer Data

The following backup procedures are fully automated, ensuring exceptional reliability, consistency and integrity.



Daily

- 1) Each customer site (including all customer information, databases, email, etc.) is fully mirrored at the SunGard data center, every day. Daily snapshots are stored in the form of a reverse differential of the site mirror. Any single file version may be recovered from any of the backup days.
- 2) To further secure these full mirrors, incremental changes are also mirrored and saved daily, ensuring complete customer data recovery.

Weekly

- 3) To ensure the highest level of mirror site protection possible, the weekly mirrors of Kavi customer sites are then mirrored once again to Kavi's corporate data center, offsite from the SunGard data center.
- 4) Kavi creates and stores weekly backup tapes of the daily combination of full mirror and incremental change mirror sites.

Monthly

- 5) Lastly, to protect this vast library of customer mirror sites, a backup tape of each customer site mirror is then archived monthly and stored at a secure offsite storage center.
- 6) Backup tapes are stored in perpetuity.

Notes on Retention and Application Data Management

While Kavi readily maintains backups of all customer systems, applications, sites and site data, damaged or deleted data is most easily recovered if the problem is identified within 60 days. Within this 60-day period, mirrors are still available on disk instead of tape, making the data retrieval process less time consuming and costly. In the case of a system-wide failure, the most data a customer could potentially lose is one day—essentially any changes since the last daily backup.

The Bottom Line: Data Security, Always

Kavi's data management policies are guided by a well-established philosophy for ensuring an available and redundant IT environment for our customers. This philosophy underscores a multi-tiered data management and protection system that delivers comprehensive data protection to Kavi's customers.

Kavi's comprehensive data management policies provide a means to quickly, safely and securely recover systems, applications and data that has been lost due to system hardware failures, software implementation defects and user errors. The Kavi Data Center executes daily, weekly, monthly and archived backups of complete customer data (sites, databases, email, etc.) utilizing full mirroring and off-site backup and archiving. These backup procedures are fully automated, ensuring exceptional reliability, consistency and integrity.

Serving more than 80 organizations, Kavi's products, procedures and policies have been optimized by and for our customers' unique needs, ensuring superior operational performance.