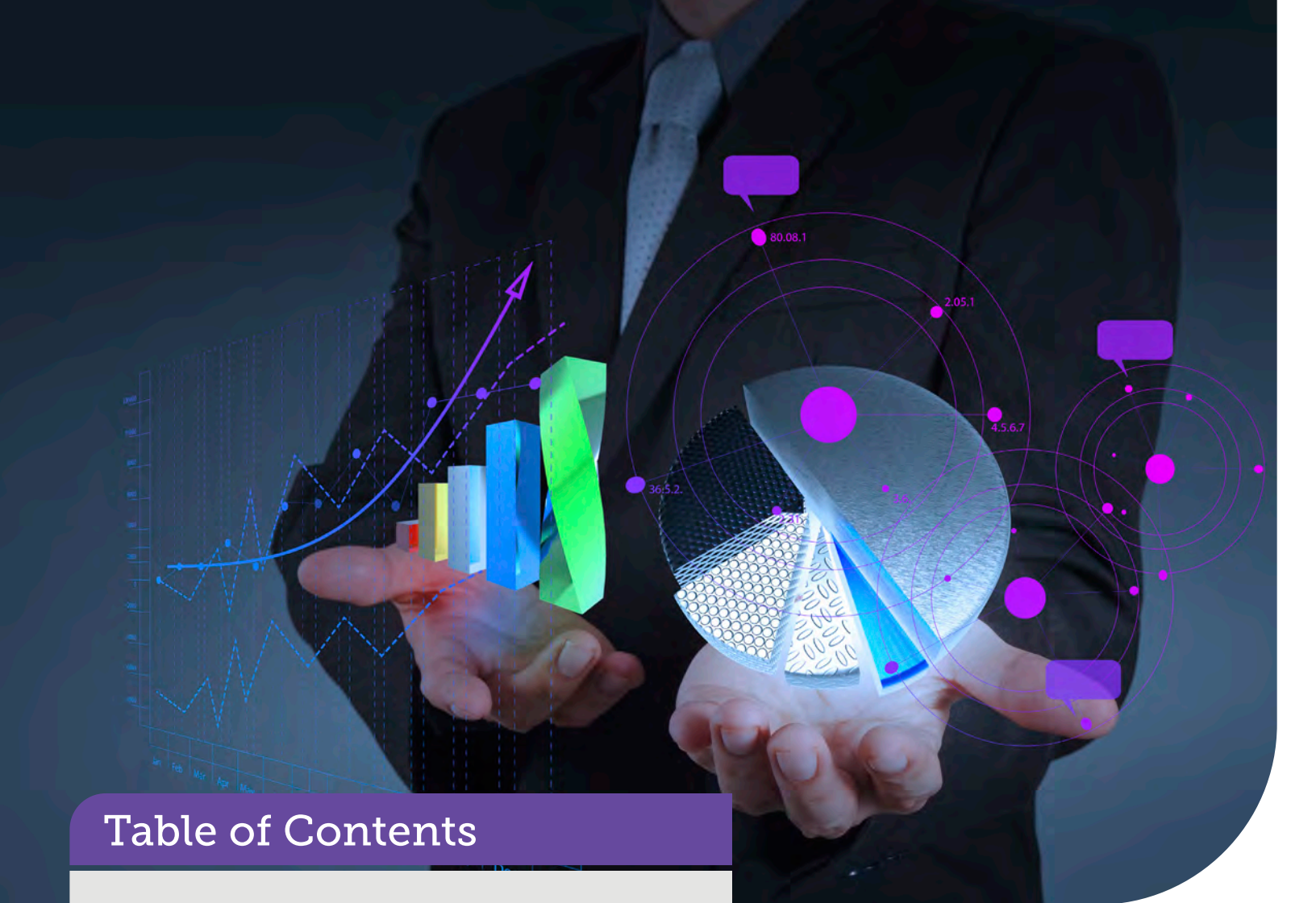




**keeptech**technology  
access | manage | protect

**Expert Solutions:**  
Added Value Beyond Just Service



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# Today's Storage Challenges

Within a 'data-centric' enterprise, core operational capabilities become business critical issues, ejected from the relative comfort zone of daily IT operations. Tying data manipulation and information extraction to organizational success or failure requires critical necessities such as:

- 1 Seamless data protection and integrity
- 2 Elastic and agile data management
- 3 Tight integration with data processing
- 4 Cost-effective capital and operational models

Data moves quickly these days. Downtime is not an option, and inefficient architectures are not practical given current data velocity. The challenges will only grow as data ingest rates increase. Enterprises are yearning for breakthrough technologies brought forward by expert solutions providers that deliver real value and solve today's issues while still supporting future scalability.

## Expert Solution Consultation

Keeper Technology (KeeperTech) is a versatile strategic IT partner that helps organizations navigate between business needs and technology solutions to advance and support the mission, balance costs and reduce risks. We leverage our team of highly certified engineers and architects that use proven methodologies to design and implement innovative solutions. Founded in 2005, Keeper Technology is a Virginia-based small business and systems integrator helping to solve today's most challenging data storage and processing issues. Keeper Technology offers unique big data storage platforms in order ensure reliable and agile data access, management, and protection.

From the start, our team actively engages with the customer to truly listen to and discover their pressing concerns and objectives. Once engaged, these talented engineers set out to analyze and optimize customer operations in order to better architect, configure, test, and install unique working solutions. We scout the storage marketplace, then thoroughly vet the best of breed and/or tap into our product arsenal to deploy a custom solution that meets customer needs. Whether what is desired is high performance, deep archive, increased IOPS or infinite scalability, Keeper goes the extra mile to pull the solution together.



If a product does not exist currently in the marketplace that will adequately meet the customer's requirements, Keeper takes the lead to actually develop a unique product set from the ground up. This was the case with our KeeperSAFE storage appliance

where we tightly integrated open-source software defined storage, a Keeper developed universal operating system using single pane of glass GUI together with fully vetted commodity hardware. Also, in answer to a customer request, we initiated development on a data analytics engine for identifying insider threats resulting from internal emails. As KeeperTech has grown, we have remained focused on our core mission to provide hyper-converged data storage and data management solutions to answer pressing customer demands.

KeeperTech has decades of experience assisting a wide variety of customers with the architecture, deployment, and support of high-performance data storage and data management systems. The KeeperTech team is available to assist at any point in the customer decision process.

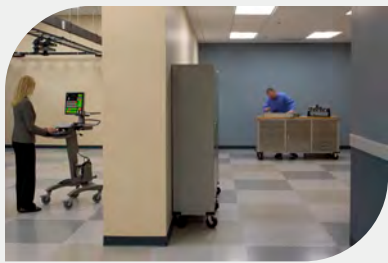
# Customer Integration Center



KeeperTech fully integrates and tests the turnkey solutions we sell and support in our Ashburn, Virginia Integration Center. Traditionally, drop-shipping components from various manufacturers directly to a customer site places the burden on the customer's engineering team to account for and assemble all of the individual components. This piecemeal process causes delays and frustrations for customer personnel. With a fully equipped warehouse, clean room, integration center and lab space, KeeperTech's approach is to ensure that the fully configured system functions as a solution before arriving at the customer's data center. This streamlines the on-site integration into the existing environment and minimizes surprises.

As an extension to our integration center capabilities, KeeperTech offers "Lab as a Service" as an augmentation to customer facilities. Our on-premise secured facility is designed

to mimic our typical customer infrastructure as full stack representation of a production environment including compute, extensive networking, and petabytes of storage. Such an environment allows our customers to cut the proof-of-concept time from months to weeks or even to days. This also allows these customers to mitigate the risk associated with running a purely production environment. KeeperTech understands the challenges, both logistically and economically, for customers to setup, staff, and maintain an unclassified architecture in addition to the production environment. Having the capability to "Test and Perfect" processes, procedures, upgrades, and technology insertions outside of production should not be a luxury.



## Installation

The installation process adopted by KeeperTech has evolved from lessons learned in prior component installations. We have provided

design, acquisition, and installation of computer storage solutions for many years and during this time have developed the necessary communication and tracking systems to ensure the installation process runs smoothly.










Customer application integration and system tuning is entirely dependent upon the customer requirements. We have customer mission programs that place our systems immediately into service and others that incorporate broader system integration tasks over a number of months. Keeper's engagement with this type of deployment can vary from full time on-site to remote phone support.

KeeperTech will work with a designated customer representative to coordinate delivery locations and schedules, provide trained personnel responsible for the unpacking and installation of hardware components and certified engineers to handle configuration of all hardware and software components. We will ensure a smooth, professional installation that is cognizant of your site requirements while being as efficient as possible.

Per each customer order, our bespoke solutions are pre-configured in the KeeperTech Integration Center in Ashburn, Virginia. Pre-configuration tasks include loading the operating environment, hardware integration and test, software load and configuration, as well as standard system access hardening.

**KeeperTech's hands on installation process encompasses a number of steps designed to provide a smooth and effective installation and configuration process. These activities may include those explained in figure 1 on the next page.**

FIGURE 1

Step	Where & When	What	Why	How
 <p>Storage Environment Analysis</p>	At Customer site during solution architecture discussions	An analysis of the current environment including CPUs, memory, storage, networking, workflows	To identify under and over utilized resources, identify existing issues and new requirements in order to ensure the final delivered solution satisfies all requirements	Using Keeper's engineering resources we will verify that the stated requirements match the assessment results
 <p>Site Survey</p>	Prior to finalization of solution design	Visual survey to assess all physical aspects of the installation and collect all logistical requirements	To capture requirements for power, space, cooling, rack details, cable types/ lengths, network port info, loading dock and infrastructure	Keeper Team Member's will come prepared to work efficiently and without disruption to worksite or workflow
 <p>Pre Installation Planning</p>	At Keeper HQ after a Customer order is received	Finalize plans to ensure a successful deployment	First method of reporting status back to the customer on equipment procurement, shipment dates and timelines	A series of conference calls to capture details such as locations, dates, times, personnel, contact info and expectations
 <p>Delivery Coordination</p>	Two weeks preceding delivery and installation	Coordination of the shipping, handling and receiving and unboxing of components to be installed	To ensure the safe handling and timely delivery of products ordered and verify that Customer spaces are ready to receive the solution	Carefully tracking all goods from KeeperTech's Integration Center to the Customer's logistics center, and finally to the data-center floor
 <p>Installation</p>	At the Customer site after all components are successfully delivered	Keeper's expert team install all hardware in accordance with customer approved procedural guidelines	To properly prepare the equipment for a successful integration	Racking of all system hardware, internal cabling and prep work for integration into site environment
 <p>Integration and Configuration of Hardware Components</p>	At Customer site after all components have been installed	Keeper's team will integrate and configure the hardware components with the Customer's infrastructure	To ensure the hardware is assembled in accordance with system design and successfully integrated into the Customer environment	The hardware is tied to the Customer's network including Ethernet, FC, power, cooling and checked against specifications
 <p>Software Integration</p>	At Customer site after hardware is tested and is fully operational	Software is integrated with and configured for the Customer's operating environment	To allow full use of the solution	Load OS and configure software to integrate with software environment
 <p>System Integration Testing</p>	At Customer site after integration and before production use	Ensure system is operating properly in the Customer's environment	To transition the solution into Customer production operations	Using built-in and/or external performance benchmarking utilities or other agreed upon mechanisms
 <p>Customer Education</p>	At Customer site after testing is complete to ensure product operability	Provide in-person and make available online training tools that meet the learning requirements recommended to successfully support the products (optimization, configuring, etc.)	To ensure Customer success in using and maintaining their new product set	Demonstration of product features where applicable, a full system function overview and introduction to our software technical support procedures





## Support Philosophy

KeeperTech's Support and Maintenance philosophy builds upon our close partnership with our customers by ensuring that we design customer-centric models that are adaptable to a variety of situations and needs. This approach has allowed KeeperTech to support large, distributed environments with a US based team. Also, as necessary, we willingly reach out to global vendor support teams and receive assistance from local vendor supplied customer technical teams. KeeperTech is able to provide cleared resources as required.

## Support Availability

Keeper offers US-based support accessible 24 hours a day x 7 days a week (by phone, web and email) and can provide a dedicated account subject matter expert (SME) as necessary, as well as a clearly defined escalation and resolution process. All support activities are initiated on a 24-hour basis through the KeeperTech Technical Support Center via dedicated telephone, email, or web portal. All calls are assessed, and an initial response will be made by a KeeperTech engineer within 4 hours, but more typically we respond with a 1-hour call-back. The first call will be used to define the issue and provide a resolution whenever possible.

When a resolution cannot be accomplished in the first call, the next steps will be detailed, and if on-site support is necessary, the phone engineer will dispatch a local resource.

Software and diagnostic assistance are performed over the phone, and when allowed by customer site security procedures, through virtual private network connections to customer environments. If we determine that a failed component is degrading system operations, we will dispatch the appropriate personnel to site to replace the failed component.



# Onsite Support Response

If a technical problem cannot be corrected through phone support, KeeperTech and partner engineers are available to travel to your location. While on-site, the field service engineer will diagnose the problem, implement a temporary workaround when appropriate, and identify the steps needed for final resolution. Field service engineers are also available to install replacement parts, and to perform scheduled and preventive maintenance.

KeeperTech offers customizable support that can be tailored to meet the needs of high activity informational technology environments. These support offerings address special needs related to coverage, response levels, spare parts, priority call handling, assigned call managers and other services.

**Table 1 below provides an overview of support offerings.**



**TABLE 1: KEEPERTECH SUPPORT**

Support	Warranty	kCARE Premium
Global Telephone Support	9x5 Local Time	24x7
24/7 Access to Online Support Tools	Yes	Yes
Parts Delivery	NBD	24x7
Latest Software and Firmware Updates	Yes	Yes
U.S. Security Cleared Resources	Available	Available
Service Level Objectives		
Target Response Objective for Remote Technical Support	P1: 4 Hours; P2: NBD; P3: NBD; P4: NBD	P1: 30 Minutes; P2: 2 Hours; P3: 8 Hours; P4: 24 Hours

*Note: No return drives/parts (Dark Site) options are available.*

# Case Escalation and Management

KeeperTech's support response is based upon a mutual assessment of the business impact of the reported technical issue. The more serious the business impact, the higher the assigned priority. In responding to a customer's support request, the following priority levels have been established.

## Priority Level Definitions

Level 1	No access to data (outage)
Level 2	Limited or sporadic access to data (operationally impaired)
Level 3	Data accessible, but High Availability or Management features not online
Level 4	Error indication on equipment

## Case Management

### PRIORITY 1

- There is oversight of cases properly escalated to Priority 1 status on a 24/7 basis by way of KeeperTech CRM notification alerts, augmenting communication of the KeeperTech Technical Support Center.
- Priority 1 case management coverage is provided by the individual providing the primary Support Account Manager services during normal local business hours. Coverage outside of normal local business hours is provided by an after-hours team.

### PRIORITY 2 – PRIORITY 4

- Oversight of Priority 2–Priority 4 case escalations is provided during the performance of Support Account Manager services during the fulfillment location business hours.
- The Support Account Manager services include review of customer cases with the KeeperTech Technical Support Center twice a week as deemed appropriate by KeeperTech best practices to track the status of each case. The customer is expected to follow the standard Technical Support Center escalation processes and best practices.

### PROCESS POSTMORTEMS WILL INCLUDE

*(Only on request from the customer or account team approved by KeeperTech Support):*

- Review of process for the designated case or cases
- Action plan proposal to minimize repeats
- Education of customer on KeeperTech support process

### EXTENDED SERVICE PLANS ARE AVAILABLE



# KeeperTech Network Operations Center (NOC)

KeeperTech provides proactive monitoring of your network 24x7 in our Network Operations Center (NOC). Our 24x7x365, Virginia-based NOC is a call, email, or client portal ticket away at any time, day, or night. With KeeperTech's dedicated team of level I and II technicians, a Customer issue will be treated with an unrivaled sense of ownership and personal attention. In the event of a critical or highly technical issue, our technicians have a direct escalation path to our OEM's certified level II and III engineers.

- Rapid response times and direct escalation path to industry certified engineers to limit losses incurred from downtime
- Continuous access to our client portal ticketing system
- Client portal tickets are initiated or escalated within the time-frame established by the Service Level Agreement (SLA)
- 24x7x365 Network Operations Center monitoring of select devices and services to identify issues as they occur



“Keeper Technology personnel consistently demonstrate high levels of technical and domain-specific knowledge, versatility, objectivity, follow-through and the highest level of integrity.”

– Customer Program Manager



## Storage as a Service

Today's government agencies and businesses must keep up with rapidly advancing technologies, while being cost efficient, and simplifying operations. As a strategic partner, KeeperTech helps address these challenges head-on by providing Customers managed service professionals to leverage their extensive management best practices.

### ***KeeperTech's Storage as a Service Highlights:***

- Provides ongoing monitoring, provisioning, and reporting of storage systems, enabling customers to make strategic decisions and help improve systems performance, uptime, and optimization.
- Provides turn-key reports detailing system health, insights on capacity activity and trends, performance, and resource monitoring, as well as email notification on system issues.
- Provides predefined service-level driven, proactive monitoring and management.
- Provides coordinated planning, scheduling, execution, management, and change management activities.



## Training and Documentation

The nature of clustered systems with a variety of options shows that they tend to be more complex than your run of the mill storage array, but the benefit is they are immensely more scalable, flexible, and tunable to an unpredictable set of changing requirements. Likewise, customers vary greatly in their KAS (Knowledge, Abilities, & Skills), and the sophistication of the infrastructure.

It is more important to KeeperTech that customers become knowledgeable users that are capable of managing, interacting with, and integrating our solution architecture into their environment and workflow than handing out lots of “Certified User” certificates. It is also far more cost effective for customers to have a working knowledge of the solution in their environment, know how it integrates and augments their workflow, than to receive a generic certification course that may or may not be related to their situation.

As such, the training bundled with every installation environment is tailored to the individual customer, focuses on their business and workflow, and begins at an appropriate skill level of those in attendance. Our training is on-site and led by the senior engineer deploying the integrated solution. Beyond the initial training event, the KeeperTech support team is available to assist our customers with ongoing customization and integration questions.



# Expert Team

KeeperTech showcases top notch engineering talent with many having more than 15 years in the Data Storage and Management field. A typical “Keeper Engineer” is passionate about solving complex data challenges using the latest innovative technology. They often rotate to many different customers, depending on the need, or severity of the customer concern. Keeper team members build invaluable relationships with our clients to understand their requirements and advise on system design and build to optimize application performance. In addition to providing strategic level support, Team Keeper provides hands on guidance and management. We often are responsible for managing, monitoring, and troubleshooting our client’s infrastructure and networks providing daily operations

support to systems architectures such as capacity management, performance monitoring, provisioning, and network systems connectivity. We believe our engineers are an invaluable resource to each individual customer by providing hands on support while offering independent points of view when issues occur, thereby leading the team to solve our clients’ complex problems timely.



## Solutionators

Ultimately with Keeper Technology, you will find a collaborative team that prides ourselves on our abilities to listen to our customers and leverage what we know in order to design, build, deploy, and demonstrate innovative technology products and integrated solutions. Our team does not walk away once a product is installed: We make ourselves available when and where needed as per customer demands. Once up and running, Keeper solutions provide a secure, available and protected ecosystem to connect users and applications to data in order to quickly translate that data into information. Our Customer’s call us Keepers and we call ourselves’ “Solutionators.”

**keeper**technology

21740 Beaumeade Circle  
Suite 150  
Ashburn, VA 20147

P [571] 333 2725  
F [703] 738 7231

[solutions@keepertech.com](mailto:solutions@keepertech.com)  
[www.keepertech.com](http://www.keepertech.com)



# keeper**technology**

access | manage | protect



keeper**technology** | 21740 Beaumeade Circle | Suite 150 | Ashburn, VA 20147  
P [571] 333 2725 | F [703] 738 7231 | [solutions@keepertech.com](mailto:solutions@keepertech.com) | [www.keepertech.com](http://www.keepertech.com)

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