UNITRENDS

UNITRENDS & NUTANIX ARCHITECTURE & IMPLEMENTATION GUIDE

ALL-IN-ONE BACKUP AND DISASTER RECOVERY FOR LEADING HYPERCONVERGED INFRASTRUCTURE

INTRODUCTION

Nutanix and Unitrends have jointly integrated their products to deliver hyperconverged infrastructure protected with advanced data backup and disaster recovery capabilities. The result: a fully-protected, easily-managed, compute infrastructure that greatly improves IT efficiency while reducing costs.

This paper will describe the benefits of a Nutanix / Unitrends joint solution, how the integration works, and configuration best practices.

> "Between Unitrends and Nutanix, I have two of the most easily managed solutions there must be."
>
> Walt Lockwood
> Systems Administrator
> BlackLine

For Unitrends Backup virtual appliance deployments, it is also recommended to consult the following resources for your Nutanix AHV implementation:

1. Deployment Guide for Unitrends Backup on Nutanix AHV
2. Deployment Best Practices for Unitrends Backup

BEST-IN-CLASS IN EACH OF THEIR MARKETS

Unitrends and Nutanix are each leaders in their respective markets. Both offer vast flexibility with deep integration into many hypervisors to meet customer-specific needs, namely Nutanix AHV, VMware vSphere, Microsoft Hyper-V, and Citrix Hypervisor (formerly called XenServer). These highly complementary integrations of Unitrends and Nutanix extend each other's strengths to deliver a solution that is greater than the sum of the parts.

UNITRENDS

The keys to a complete protection strategy are that you have data protected in separate, isolated storage locations from your production environment, you can meet retention requirements, and you can recover both locally and in an offsite location in the case of a major outage or data loss event. Unitrends

simplifies all of these requirements into a single workflow. It is the front-line defense against IT downtime. Unitrends offers a complete solution of data backup and recovery appliances with local, remote and cloud-based recovery options. Unitrends backup appliances can directly connect to the cloud to allow users to replicate backups to a highly available Cloud infrastructure for long-term retention and Disaster Recovery as a Service (DRaaS). Unitrends DRaaS White Glove services will quickly restore failed applications, guaranteed by Service Level Agreements (SLAs).

NUTANIX

Nutanix created the concept of a hyperconverged infrastructure. No longer do organizations need to purchase, maintain and service server, storage and networking as separate devices. Nutanix makes an integrated enterprise private-cloud infrastructure invisible without sacrificing the security and control of on-premises infrastructure. Nutanix also has their own hypervisor they supply to their customers for little to no cost. This allows Nutanix users to avoid having to pay for expensive licenses for VMware without sacrificing the benefits of virtualization.

UNITRENDS INTEGRATION WITH NUTANIX AHV

Nutanix and Unitrends worked together to integrate the native virtual machine snapshotting ability of Nutanix AHV with the advanced data protection and recovery capabilities of Unitrends. Unitrends uses Nutanix AHV snapshots as the foundation for backup, replication, archiving and remote recovery in a similar fashion as other hypervisors supported by Nutanix. Backups can be replicated to a secondary Nutanix platform running a Unitrends virtual appliance, a remote Recovery Series hardware backup appliance, or to the Unitrends Cloud.

"With Unitrends and Nutanix, everything is running much more efficiently and with much lower software costs."

Brandon Landreth
IT Manager
SGS Polymer Solutions

Hypervisor integration of this nature simplifies and speeds up protection and recovery without requiring the use of agents inside the virtual machines themselves. Large dynamic virtual environments benefit from the simplicity of adding VMs and knowing they can be easily protected in this fashion. Using this integration, all components of a virtual machine recovery are automated in a single efficient step, as well as the ability to recover files and application objects, such as emails. This is referred to as **hypervisor-level protection**. For Nutanix AHV, specifically, these recoveries can also be automated using the Unitrends RESTful web-based API for advanced recovery workflows.

In some cases, it can be beneficial to protect at the guest-level using an agent inside a few specific VMs. In these cases, you might be optimizing backup footprint by only protecting certain files, folders or applications instead of the entire machine. For Windows VMs running on Nutanix AHV, this guest-level methodology can also add advanced file search and automated recovery testing capabilities without the need for any API development.

All types of Nutanix AHV backups – hypervisor-level and guest-level – can be replicated offsite to another instance of a Unitrends appliance, as well as the white-glove Unitrends Forever Cloud for long-term retention. Supported guest-level backups of Nutanix AHV can also be spun up in the Unitrends Cloud for Disaster Recovery as a Service, which provides automated DR testing services and contractual Service Level Agreements for recovery times.

Unitrends is a member of Nutanix's Elevate Technology Alliance Partner Program. The Unitrends integration with Nutanix AHV has been fully validated by both Unitrends and Nutanix with the Nutanix Ready Integrated AHV certification.

BENEFITS OF NATIVE INTEGRATION WITH NUTANIX AHV

The combination of hyperconverged infrastructure and all-in-one enterprise-grade backup and continuity enables organizations to gain the advantages of fast time to value, lower costs, and increased confidence their applications will recover, whatever happens to the local datacenter. By combining the power and advanced features of Unitrends and Nutanix, IT administrators will gain the following advantages previously available only to traditional server-based enterprise datacenters.

INTEGRATION NATIVELY AVAILABLE WITH ALL UNITRENDS APPLIANCES

Greatly Simplified Infrastructure

The Nutanix platform delivers a full infrastructure stack that integrates compute, storage, networking, and security to host a private cloud. When combined with Unitrends backup appliances you have a complete, easily managed datacenter with a much smaller footprint, consuming less power and cooling, and easier to manage than traditional computing hardware.

Reduced Software Costs

Many organizations report the cost for VMware is the largest single line item in their IT budget. Some VMware users report paying for many VMware features they do not use. By shifting to Nutanix's AHV hypervisor, organizations can eliminate one of their largest costs and lose nothing in performance. With deep integration into Nutanix AHV, enterprises maintain the same level of data protection they would get for their VMware environment.

SLA Policy Automation

SLA Policy Automation (SPA) greatly simplifies the way users define and manage backups. Unitrends users are able define backups in one easy step based on desired policy objectives rather than being required to understand

and make multiple process selections. The feature offers the administrator the choice of defining and scheduling backups based on a specific recovery policy (RPO and location of backups), with SPA automatically defining and managing the steps required to deliver that policy. SPA greatly reduces the effort and confusion required to define backup schedules and dramatically increases the ability to meet data protection and business continuity mandates.

Simple Dashboard User Interfaces

With the Unitrends / Nutanix integration, organizations can run their entire solution with just two dashboards – one for Nutanix to control the servers, storage and networking and one for Unitrends to manage all aspects of backup and recovery. The UIs of both products allow you to see in a single glance the health of the compute infrastructure and set the features and functionality required to support the organization's particular goals.

Integration with Unitrends Cloud

The cloud can provide safe, trustworthy and easily-recoverable storage. Different types of data have different retention schedules – 1 year, 3 years, 7 years or infinite. Unitrends offers tiered retention pricing so you can get critical data off the Nutanix storage for long term protection. You can select the number of years that data must be retained with cloud pricing to match. This white glove service removes the burden and operating costs of retention management to help customers gain complete protection while having the time to focus on their businesses.

Automatic Ransomware Detection

Unitrends appliances have the ability to quickly and automatically identify ransomware activity as part of every backup. Newly developed artificial intelligence runs during every backup, analyzes the randomness and rates of file changes to identify backups infected by ransomware. Upon detection of ransomware activity on the Nutanix platform, email and dashboard alerts are sent immediately to administrators, and all suspected backups flagged with icons to prevent recoveries using infected files.

Centralize Backup and Continuity Across Remote Environments

Backup and recovery tools can now be managed remotely, meaning that organizations no longer need to have IT deployed at every site there is a Nutanix platform. Using its proprietary remote monitoring and management technology, a single Unitrends appliance can manage thousands of remote Unitrends appliances regardless of local IT presence. Appliances in different locations can act as backups for each other so that site-level disasters to Nutanix platforms, such as electrical failures or flood, do not bring down an entire enterprise.

Granular Recovery of Files

With Unitrends appliances, item-level point-in-time granular recovery of files, folders, and application objects from a backup is supported for applications such as SQL, SharePoint and Exchange. The user simply locates the granular elements to restore and copies them to their desired location. You can recover a single lost file rather than having to restore an entire data set, from which the desired file has to be extracted.

BENEFITS OF GUEST-LEVEL PROTECTION

Unitrends and Nutanix continue to work together to enhance recovery capabilities with native Nutanix AHV integration. As a result, you can enjoy the benefits below while protecting at the guest-level.

Disaster Recovery as a Service in the Unitrends Cloud

Unitrends appliances can provide local, remote or cloud recovery of failed applications from the Nutanix platform. DRaaS allows organizations to spin up their Nutanix-based applications in the cloud if their local platforms go down for any reason. Pay for DRaaS protection only for the applications determined to be important and add optional tiered SLAs.

Built-In Automated Recovery Testing

The only way to know if you're capable of recovering from a disaster is to test regularly and see the results. Running locally on the backup appliance or in the cloud, Unitrends Recovery Assurance will automatically test and certify full recovery of the Nutanix environment with no manual involvement from IT staff. Using backup files, the entire infrastructure is recreated on the appliance or in the cloud to ensure that all data and application dependencies are correct. Final reports showing failed recoveries, actual RPOs / RTOs, and any recovery issues are automatically sent to administrators via email.

Compliance Reporting

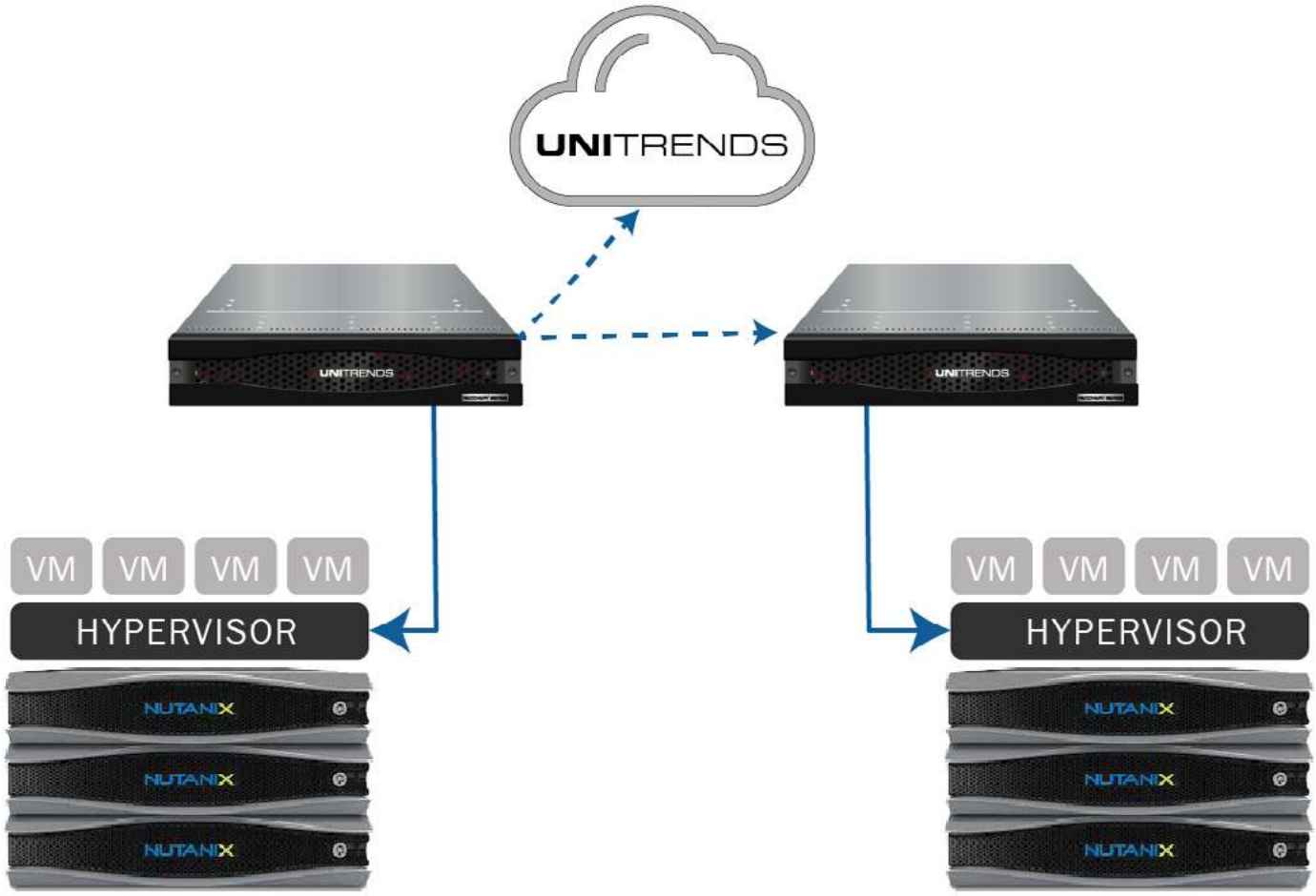
Most companies operate under industry mandates that require protection against loss of data and business functionality. Health care organizations, for example have HIPAA mandates that require not only DR protection, but also that recovery technologies be tested regularly with the results shared with auditors. Sarbanes - Oxley (SOX) compliance is required by all publicly traded companies. SOX mandates that, in addition to requiring corporate officers to take greater responsibility for the accuracy of financial reports, organizations understand the risks that may impact the financial reporting process, including the impact of downtime. Unitrends Recovery Assurance documents that the entire Nutanix / Unitrends infrastructure meets industry recovery mandates.

Software Test and Development Environments

Organizations can ensure that new software versions and patches will not cause performance interruptions by testing them prior to deployment on production Nutanix platforms. Automated provisioning tools can now spin-up and create test sandboxes that are exactly the same as the production Nutanix environment because they are created from the most recent backups. If problems are found, they can be pinpointed and solved. Once all testing is finished, the entire test environment can easily be torn down.

DEPLOYMENT ARCHITECTURE

Nutanix platforms can be protected using either Unitrends Recovery Series hardware or Unitrends Backup virtual appliances. Both Unitrends products deliver all the benefits described above. Below is the configuration architecture that ensures all data protection and recovery features are supported.



Recovery Series appliances provide a simple deployment that automatically separates and isolates backup data from your production environment. The entire solution – backup server, storage, software, security and analytics – is supported with one contact to Unitrends. Predictive analytics drive support time down through self-healing technologies and proactive case creation.

Unitrends Backup virtual appliances allow you to standardize on Nutanix, even for secondary data. Backups can still be sent to remote isolated storage for data separation, as well as efficiently replicated to secondary Nutanix nodes in another location. Virtual appliances allow you to scale backups easily WITHIN your Nutanix infrastructure.

CONFIGURATION DETAILS

Nutanix AHV has native protection from Unitrends. Other hypervisors such as VMware, Citrix XenServer, and Microsoft Hyper-V can also run on Nutanix with native protection from Unitrends. See Unitrends Compatibility and Interoperability Matrix for a complete list of protected hypervisors, operating systems and applications. Unitrends Recovery Series appliances integrate all backup components and access the hypervisor directly for replication and other protection services.

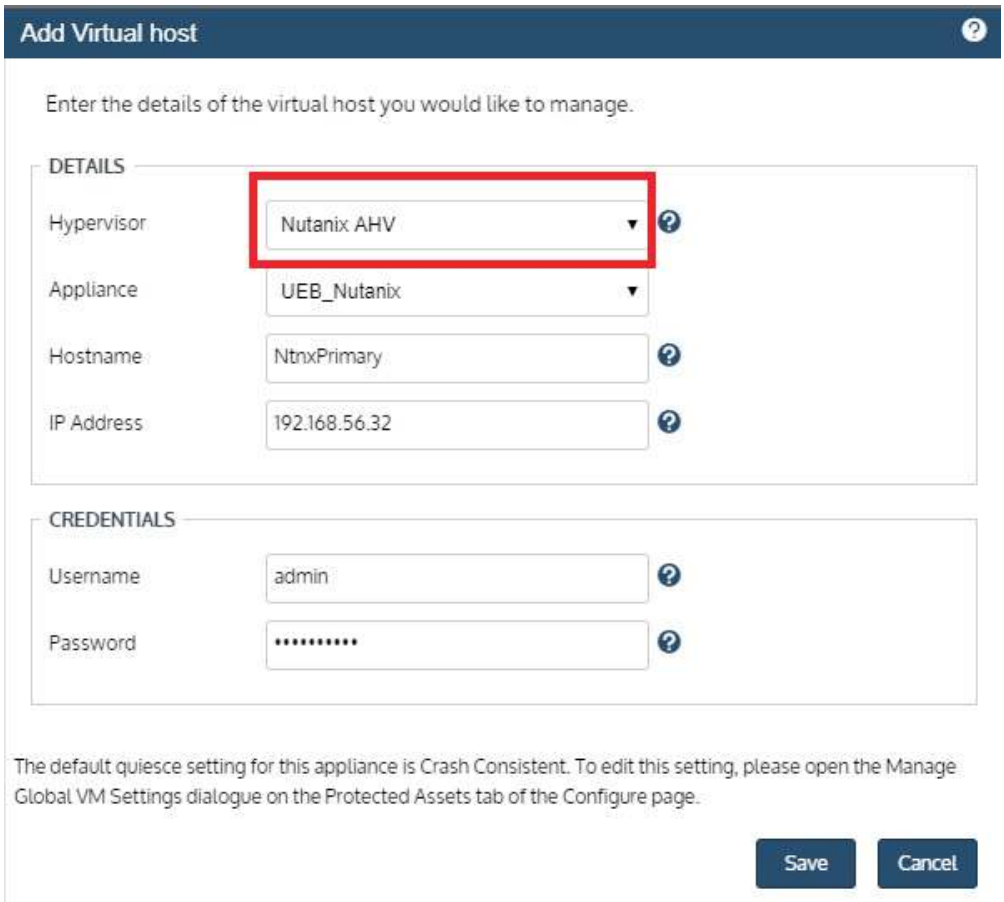
Use Unitrends' WAN-optimization capabilities (deduplication, compression, throttling, transfer hardening, and in-flight and/or at-rest data encryption) to copy backups to a remote Unitrends appliance, another Nutanix platform, or to Unitrends Cloud. Any of these sites provide fast application recovery in the event of a failure at the primary Nutanix location.

CONFIGURING UNITRENDS INTEGRATION FOR NUTANIX AHV

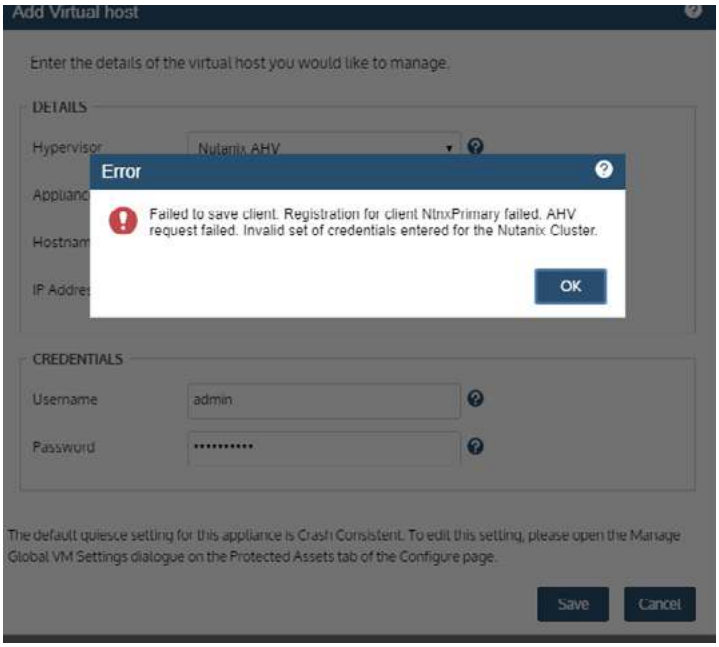
With Unitrends software version 10.2 and later customers are now able to discover, manage, protect and recover their AHV inventory from the Unitrends interface without the use of agents in the guest VMs. Customers register their Nutanix AHV Cluster with appropriate credentials and Unitrends will automatically discover the VMs in the inventory. The AHV VMs will then be available to be protected from the "Protect" page. On the Restore side, customers will be able to select a Nutanix Cluster and a Storage Container and perform single-step Restore procedures to get their VMs back.

As both Unitrends Recovery Series hardware and Unitrends Backup virtual appliances share the same User Interface (UI), the steps below are the same for both products. Screenshots of the configuration process are included to show just how simple the process is to use Unitrends to protect Nutanix AHV implementations.

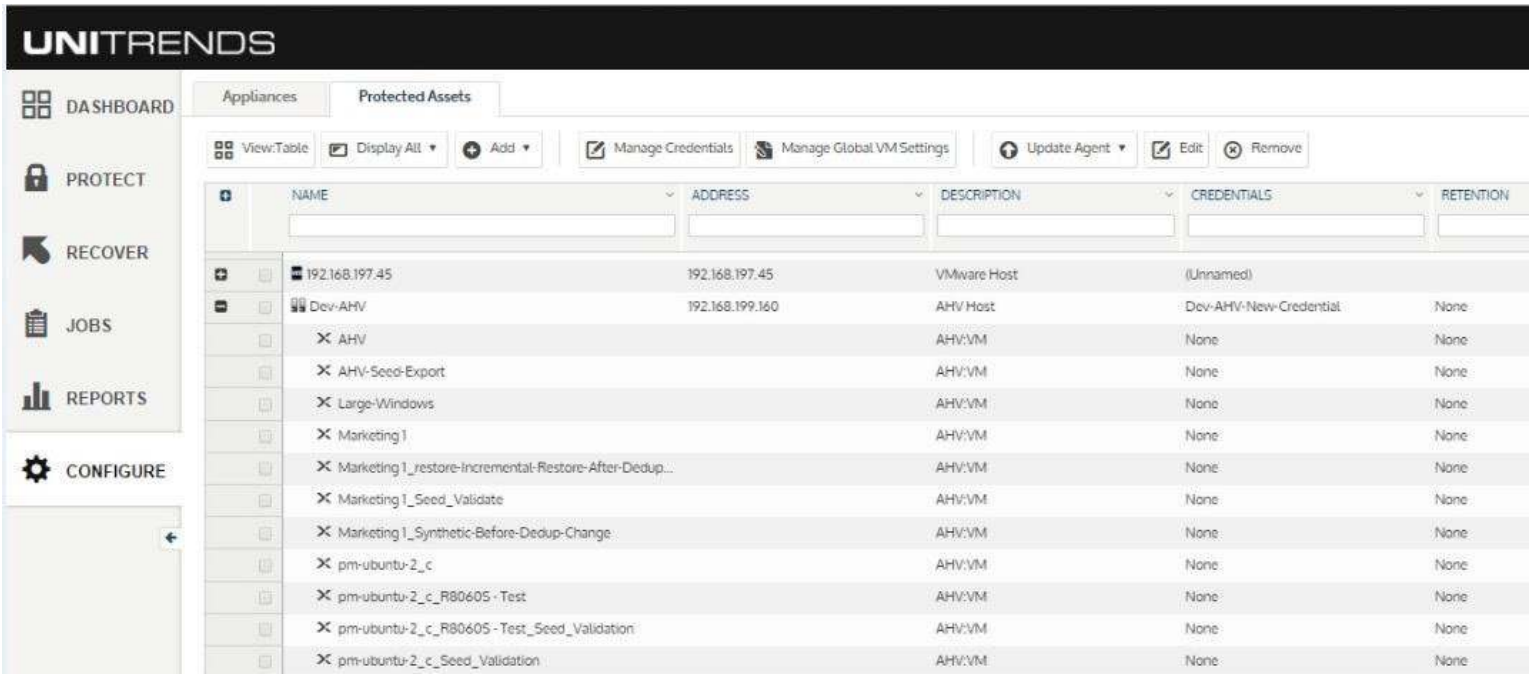
Users begin by adding their Nutanix Cluster to the appliance UI from the "Configure > Protected Assets > Add > Virtual Host". "Nutanix AHV" is now available in the "Hypervisor" dropdown.



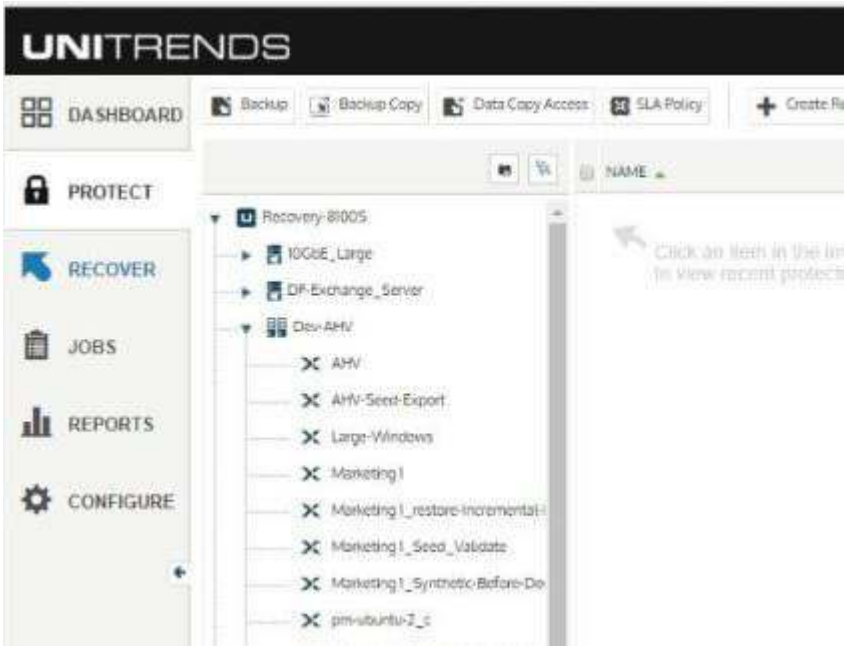
The specific Hostname is added by the user to make identifying specific Nutanix platforms easier. This name is not necessarily the hostname of the Cluster. It is only a client name which will then be used by the Unitrends appliance. The IP address is that of the Nutanix Cluster. The credentials should be administrator credentials (preferred) or a set of credentials with administrator privileges (acceptable). If there is an issue during registration, the user will be shown an appropriate error message like the one below.



When the Nutanix platform has been registered properly the name will appear on the list. Note the ✕ logo to designate Nutanix platforms.



Once the AHV Cluster has been registered to the appliance, the list of VMs that are candidates for backup will be available on the Unitrends “Protect” page.



Users will then select one or more VMs and run an On-Demand job with them or create a schedule to protect selected VMs.

Only Full, Incremental, and Incremental Forever backups are currently supported for Nutanix VMs. Differentials are not supported and will be considered in the future based on customer demand and future snapshot management capabilities with AHV. Today, the process for managing snapshots for differential backups can potentially take twice as much snapshot-related storage on the Nutanix Cluster. Unitrends wants to be as efficient as possible with this precious resource to avoid unwanted Nutanix storage utilization as a result of the backup process.

Backups of the VMs in the AHV Cluster can be performed using 2 techniques –

1. iSCSI/Network mode
2. Hot-add mode

The Network mode is the approach used when the disk/s of the VM being backed up are not directly accessible from the Unitrends appliance. For the network approach, iSCSI session/s will be established from the Unitrends appliance to the Nutanix cluster. This is the primary process Nutanix recommends to backup their VMs when the disks of the VM are not directly accessible.

The hot-add approach is used when the disks of the VM being backed up are directly accessible from the appliance. This approach is only available when a Unitrends Backup virtual appliance is deployed in an AHV Cluster and the VM being backed up exists in the same Cluster. If the VM being backed up exists in a different AHV Cluster, then, the Network mode will automatically be used. In certain scenarios for hot-add, there may be performance impacts, so currently only Network mode will be supported. Hot-add mode may be supported in a future release.

There are also options for application-consistent and crash-consistent Backups for AHV VMs. By default, the AHV VMs will initially inherit the global setting that exists on the Unitrends appliance where the Nutanix Cluster has been registered.

CONCLUSION

Nutanix is an exciting option for enterprise data centers to consolidate the footprint and management requirements for IT infrastructure. This new approach to computing does not reduce the requirement for data protection and application recovery. Unitrends' All-in-One Backup and Disaster Recovery capabilities are extended to offer native integration for all hypervisors running in Nutanix environments, including Nutanix AHV. Following these configuration recommendations will go a long way to reducing the IT organization's workload without sacrificing protection of the corporation's most critical assets - their data.

Now that you have learned about Unitrends and Nutanix, please explore additional educational resources.

GET YOUR FREE TRIAL

Unitrends increases uptime and confidence in a world in which IT professionals must do more with less. Unitrends leverages high-availability hardware and software engineering, cloud economics, enterprise power with consumer-grade design, and customer-obsessed support to natively provide all-in-one enterprise backup and continuity. The result is a "one throat to choke" set of offerings that allow customers to focus on their business rather than backup. Learn more by visiting unitrends.com or follow us on LinkedIn and Twitter @Unitrends.