DELL Technologies

Solution Brief

Dell VxRail API

Take VxRail automation to the next level with RESTful APIs

As companies race to keep pace with aggressive growth and the need to modernize IT infrastructures, adopting hyperconverged infrastructure (HCI) in core data centers and across the edge plays a key role in driving these initiatives. With Dell VxRail hyperconverged solution, you can transform your on-premises infrastructure while realizing the same agility and flexibility benefits as the public cloud but with greater control and a lower total cost of ownership.

One of the key differentiators of VxRail is the HCI System Software which is a suite of value-added software elements that extend VMware native capabilities to deliver a seamless and automated operational experience. VxRail HCI System Software includes APIs that enables you to leverage the full power of automation and orchestration services across your data center. This extensibility enables you to build and operate infrastructure with cloud-like scale and agility and streamlines the integration of the infrastructure into your IT environment and processes. Instead of manually managing your environment through the graphical user interface, repeatable operations can be triggered and executed programmatically by software. More and more customers are embracing DevOps and Infrastructure as Code (IaC) models as they need reliable and repeatable processes to configure the underlying infrastructure resources required for applications. IaC leverages APIs to store configurations in code, making it repeatable and greatly reduces errors.

VxRail API

VxRail API is a computing interface using REST for ease of use by VxRail customers and ecosystem partners, who would like to better integrate 3rd party products with VxRail. It is:

- **Simple to use** – Thanks to embedded, interactive web-based documentation, PowerShell and Ansible modules, you can consume the API very easily using a supported web browser, from a familiar command line interface for Windows and VMware vSphere admins or Ansible playbooks.
- **Powerful** – VxRail offers dozens of API functions for essential operations such as automated lifecycle management (LCM), and its capabilities are growing with every new release.
- **Extensible** – This API is designed to complement REST APIs from VMware (e.g. vSphere Automation API, PowerCLI, VMware Cloud Foundation on Dell VxRail API), offering a familiar look and feel and vast capabilities.

Use cases

Our customers and partners are consuming VxRail API in multiple ways. When combined with VMware APIs, your capabilities grow exponentially. There's no requirement for additional software licenses or Internet connectivity – VxRail API will work within your secure internal network. Here are just a few typical examples:

- Remote collection of inventory information – One of the most fundamental tasks when managing remote IT infrastructure is automatically collecting up-to-date inventory information. With VxRail API, you can easily collect all essential information (hardware, installation time, software versions, etc.) and drill down as needed.
- Remote collection of system status and health data, including log bundles – After understanding the remote inventory, a typical task is to check the system status and health information. You can remotely collect log bundles with all necessary log files you're interested in.

- Automated VxRail cluster deployment, expansion or node removal – With VxRail API it's possible to provision a new VxRail cluster, expand it with new nodes or remove the node from the cluster as required. This enables Infrastructure as Code scenarios, especially with Ansible VxRail Modules which support idempotent operations, where multiple identical requests have the same effect as making a single request. Adding and removing VxRail satellite nodes is supported as well.
- Remote, simultaneous execution of LCM upgrades at scale – One of the most differentiating features of VxRail is the automated full stack LCM upgrades. You no longer need to log in to each cluster's UI. Instead, you can execute the upgrades using the API on multiple clusters simultaneously, reducing the required maintenance windows to perform upgrades. You can also integrate this functionality into your existing configuration management tools if needed (e.g. Ansible, Puppet, etc.).
- Managing VxRail clusters and satellite nodes at the edge – With the latest enhancements introduced in VxRail HCI System Software and VxRail API you can easily automate VxRail at the edge – add or remove nodes and perform LCM upgrades.
- Graceful shutdown of the cluster to protect data integrity – Whenever you must deal with a planned or unplanned power outage or other events that require you to quickly shutdown your VxRail environment, you need an agile way to do this. Shutting down should be performed in a certain order and in a coordinated manner to prevent data loss and quickly restart workloads. Our partners – APC and Eaton leverage integration with VxRail API, to deliver graceful shutdown capability of your VxRail environment easily and quickly with their power management software. This can be executed automatically by the UPS device when a power loss is detected.
- VMware vSphere automation, workload provisioning and management – vSphere software is an integral component of VxRail and offers a RESTful vSphere Automation API and PowerCLI module for Microsoft PowerShell. VxRail API was designed in a way to provide a similar look and feel to these interfaces, so you can leverage both to get the best outcomes. You can manage the vSphere software on VxRail clusters, automate workload provisioning using predefined templates and customization specifications, manage VM virtual hardware and more.
- Manage VCF on VxRail SDDC stack – VCF 4.0 on VxRail 7.0 supports VMware Cloud Foundation on VxRail API providing automated management of the VMware SDDC stack on VxRail. Most of the operations that required SDDC Manager UI can now be executed using API. This is an area of extensive development with new capabilities growing over time. VxRail engineering team works closely with VMware's Cloud Foundation engineering team, and some of the VxRail API functions are integrated into SDDC Manager automation workflows.
- Integration with Dell Support – VxRail API also provides capabilities simplifying integration with Dell Support like getting a hyperlink for opening a new Service Request or online chat with Support, accessing the VxRail Support Knowledge Base articles and more.

API documentation and additional quick start resources

Start your VxRail API journey today by exploring available functions and leveraging API integration examples in different scripting and programming languages and frameworks, in the online VxRail API documentation available in the Dell Technologies Developer Portal.

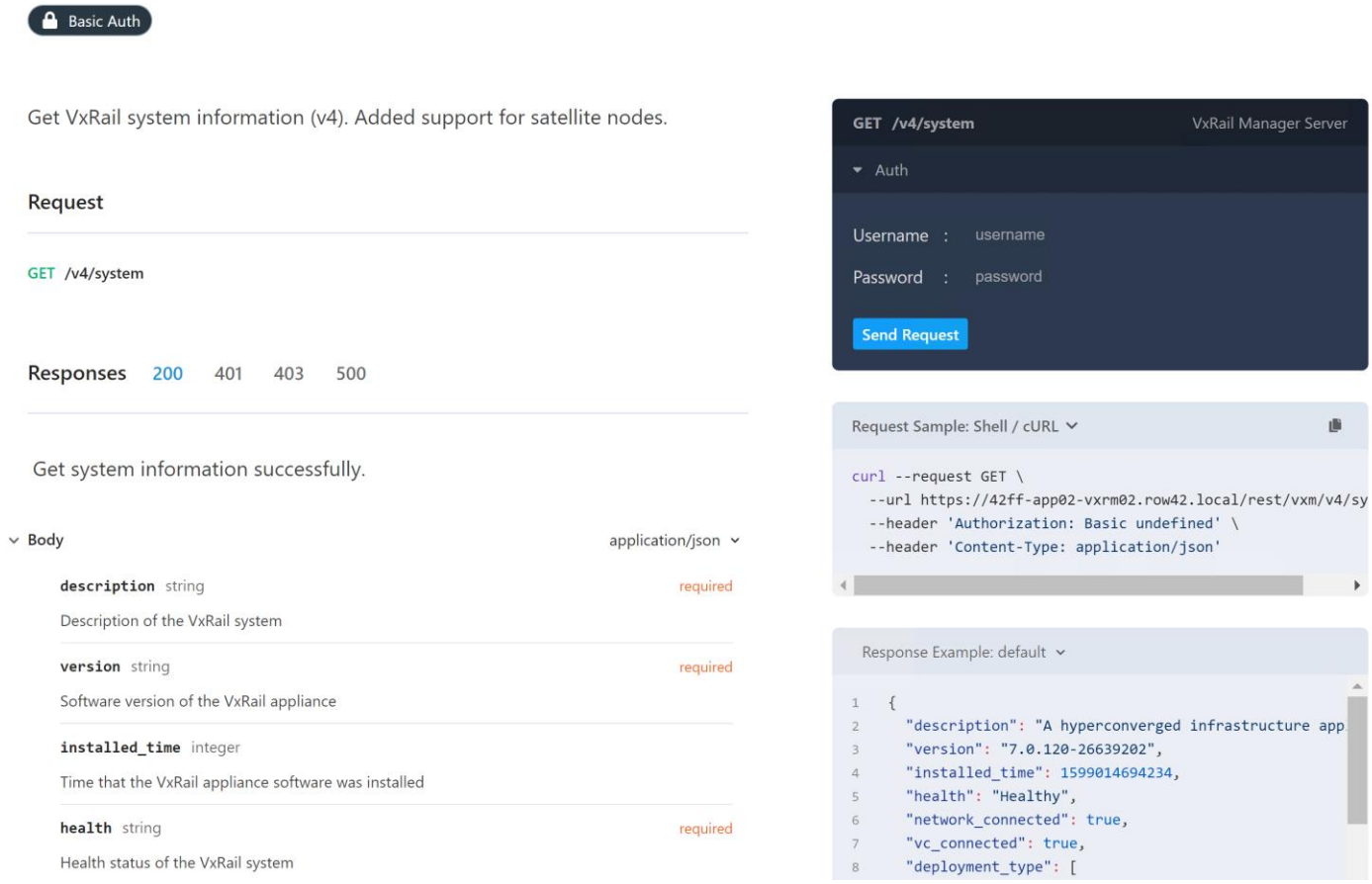
The Ansible Modules for Dell VxRail available on GitHub and Ansible Galaxy allow data center and IT administrators to use Ansible to automate and orchestrate the configuration and management of Dell VxRail. Learn more.

Education Services for API

Instructor Session — Automation with VxRail is a live, interactive training session offered by Dell Technologies Education Services. Hear directly from the VxRail team about new capabilities and what's on the roadmap for VxRail new releases and the latest advancements.

Consulting Services

Need help with integrating VxRail API with your IT environment? Dell Technologies has a portfolio of consulting services that can help you on your API journey. Our engagements utilize an agile project methodology to quickly deliver high value services to help you get the most of VxRail API.



Sample view from the embedded, interactive, web-based documentation.

Summary

VxRail API further simplifies IT operations, fostering operational freedom and a reduction in operating expenses. It is especially helpful for large enterprises and service providers managing large VxRail environments and need to integrate external configuration management and process automation tools. VxRail API is simple to use, powerful and extensible. Its capabilities are available from the automation framework of your choice, giving you total integration flexibility to maximize the benefits of your existing investments. You can automate your processes to save time, reduce errors, and create better use of your assets. As you customize the level of automation to the needs and standards within your organization, you will become more agile in answering the needs of your business.

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