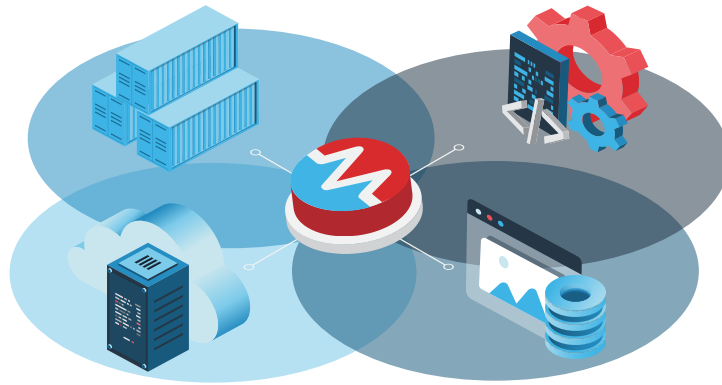


Morpheus 6.0 LTS

What's New

Morpheus 6.0 LTS is the latest long-term support (LTS) release of the Morpheus platform. The following is a list of the major new features and enhancements added in the 6.0 LTS and includes features that were previously only available in the 5.5.x Standard release.

We've organized the guide into areas that map to various Morpheus use cases and product development focus areas.



- **Core Platform:** Features critical to all use cases such as the role-based access model, infrastructure integrations, plugins, dashboards, catalog builder, etc.
- **Hybrid Cloud:** Specific features for on-prem private clouds (VMware, Nutanix, etc.) and public cloud integrations (AWS, Azure, GCP, etc.)
- **Container Management:** Specific features related to containers and Kubernetes including provisioning of Morpheus and third-party or cloud-managed cluster layouts.
- **Automation and IaC:** Features related to implementing lifecycle automation, ad-hoc or scheduled operational workflows, and integration with IaC frameworks like Terraform.
- **Service Management:** Capabilities related to the ongoing management and operation of services including ServiceNow integration, cost management, monitoring, and more.

Resources:

- Release notes and technical documentation available @ <https://docs.morpheusdata.com>.
- Details on the Morpheus plugin framework available @ <https://developer.morpheusdata.com>.
- Plugin downloads and information available @ <https://share.morpheusdata.com>.

Core Platform

MySQL 8 Database Support

MySQL 8 can now be used as the underlying database for the Morpheus platform. Using MySQL 8 enables several performance improvements over MySQL 5.7, additionally MySQL 5.7 will reach its end of life in October 2023.

Object Labels

Organize and filter Morpheus objects (tasks, spec templates, instance types, etc.) using metadata associated with the object. This makes finding objects like tasks and instance types easier especially when there might be several hundred to look through.

IPv6 IP Pools

Morpheus includes a native IP pool management solution that can be used to distribute and manage IP address allocation for provisioned workloads. With this release, IP pools can now be created using IPv6 addresses for IP addressing.

New Default Dashboard

The Morpheus platform includes a dashboard presented to users upon logon that gives them an overview of the Morpheus environment. The default dashboard in the platform has been updated to provide a richer user experience with updated visualizations and additional data.

Instance Detail UI Updates

The UI of the instance details page has been updated with new visualizations for performance metrics, a new costing breakdown section, as well as a software inventory. Additionally, performance metrics can also be viewed at additional levels of granularity up to one month.

Global Agent Log Disable

Disabling global agent logging now prevents the Morpheus agent from shipping logs. Previously, the Morpheus agent would continue to ship logs to the Morpheus server which would then simply be discarded once they reached the server. This helps eliminate potential performance issues in scenarios where the native Morpheus logging is not being used.

Morpheus API Instance Type Layout Option List

Morpheus API option lists are used to provide a list of Morpheus objects such as networks, instances, clouds and more when provisioning workloads. This release adds a new Morpheus API option list type for instance type layouts.

Regex Based Input Validation

Morpheus includes various input types such as text, text area, select list, radio list, and more for gathering user input. This release adds the ability to validate user input for text and text area inputs using regex-based validation.

Instance Price Association

This release of the Morpheus platform adds support for attaching prices to individual instance types or layouts. This provides administrators with the ability to assign the pricing of a resource at a granular level to properly align with the given use case.

Role Based Access Control (RBAC)

Additional Granular RBAC Permissions

New Role Based Access Control (RBAC) permissions have been added to the platform to further tailor the level of access that users are given. The new permissions include the ability to restrict access to

instance level actions such as adding a network adapter, modifying a disk, and more. These updates allow administrators to ensure that users are only granted access to necessary permissions.

RBAC Permission UI/UX Enhancements

Management of role permissions has been simplified in the UI with the introduction of feature permission categories, category level permission settings, as well as the ability to search feature permissions.

Master Level Subtenant Role Management

The Morpheus platform supports multi-tenancy to enable administrators to provide a granular level of segregation for customers or teams. This release of the platform now allows administrators in the master tenant to manage subtenant roles directly from the master tenant without the need to impersonate a user in the subtenant. This simplifies the management of roles and role permissions in a multi-tenanted environment.

Bulk Role Permission API Support

Updating role permissions via the API has been enhanced with the ability to now update multiple role permissions in a single API call. This eliminates the need to make multiple API calls to update multiple role permissions.

Service Catalog

Service Catalog Categories

Catalog items can now be added to categories to allow service catalog users to filter the service catalog using customer defined categories such as database, operating system (Windows, Linux, etc.), and more. This enables users to find what they are looking for much quicker, particularly in environments with catalogs that include dozens of items.

Order History

Users can now view the history of the catalog items they have ordered and re-order items still available for order. The order history replaces the inventory that was shown in previous versions of the platform which was limited to only displaying ordered items that were still active.

Service Catalog Persona Permissions

This release adds support for managing the full lifecycle of instances and apps from within the service catalog persona. This removes the previous limitation in which all the actions that a user may need to manage their workloads could not be performed via the streamlined service catalog persona.

Service Catalog Item Quantity

Multiple copies of a catalog item can now be ordered during the request process. This eliminates the need for users that want to order multiple copies of the same item from needing to input the request data multiple times.

Plugin Framework

Native Integration Plugin Migration

This release includes the migration of the native codeless integrations such as clouds, IPAM, DNS, and more to plugins. The integrations will still be automatically installed with the platform, but their lifecycle is no longer directly coupled to platform releases. This allows for updates and fixes to be made to individual integration without the need to always upgrade the entire platform.

Load Balancer Integration Provider

Develop custom load balancer integrations using the new load balancer integration provider added to the Morpheus plugin framework. This enables integrations to be built for third party or custom developed load balancer solutions currently not supported by the Morpheus platform.

Backup Integration Provider

Develop custom backup integrations using the new backup integration provider added to the Morpheus plugin framework. This enables integrations to be built for third party or custom developed backup solutions currently not supported by the Morpheus platform.

Custom Dashboard Provider

Develop custom dashboards using the new custom dashboard integration provider added to the Morpheus plugin framework. This enables organizations to customize the initial landing page that users see after logging into the Morpheus platform. The page supports complete customization via HTML, CSS, and JavaScript, along with the ability to use widgets from the existing dashboard.

Security

Integration Credential Store Support

The Morpheus Credential Store feature was introduced in the 5.4 version of the platform and enabled administrators to centrally manage credentials for things like clouds, option lists and more. Support has now been added for integrations like IPAM, DNS, ITSM, and more.

HashiCorp Vault Credential Store Integration

HashiCorp Vault is a popular secrets management solution for securely storing credentials such as password, API keys, and more. HashiCorp Vault can now be used as a backend for the credential store feature which enables Morpheus to reference credentials stored in HashiCorp Vault.

CyberArk Conjur Credential Store Integration

CyberArk Conjur is a popular secrets management solution for securely storing credentials such as password, API keys, and more. CyberArk Conjur can now be used as a backend for the credential store feature which enables Morpheus to reference credentials stored in CyberArk Conjur.

Custom API Token Lifetime

This release has added support for creating custom OAuth clients for authenticating to the Morpheus platform in a programmatic fashion. This allows administrators to specify the default lifetime of an API token for new and even existing platform OAuth clients. This is helpful for IT environments that have specific security requirements for how long an API token is valid.

Hybrid Cloud

Zone Pool Groups

Deploy workloads with greater intelligence (round-robin or capacity based) to the dozens of clouds supported by the Morpheus platform. This feature enables multiple Morpheus resource pools to be aggregated into a single zone pool group for distributing workloads across the member zone pools.

Custom Icons

Configure custom icons for cloud integrations to white label the underlying technology offering used to provide cloud services to customers. This is particularly valuable for service providers looking to provide a greater level of white labeling for their cloud services.

Amazon

Orphaned Volume Guidance Recommendations

This release adds support for a new guidance recommendation that displays unattached or orphaned AWS (Amazon Web Services) EBS volumes in AWS clouds that have been added to Morpheus. This helps organizations reduce cloud spend by identifying AWS EBS volumes that are no longer attached to AWS EC2 instances and not needed anymore.

Azure

Agentless Guidance Recommendations

Optimize Azure environments using guidance recommendations that can now be surfaced without the need for installing the Morpheus agent.

Boot Diagnostics Custom Storage Account Support

Azure boot diagnostics is a debugging feature for Azure virtual machines that helps diagnose boot failures. This release of Morpheus adds support for selecting a custom Azure storage account during the provisioning of Azure workloads for storing boot diagnostics data.

Google Cloud

Terraform Mapping

GCP (Google Cloud Platform) Terraform mapping support has been added in this release of the platform. This feature provides a detailed resource mapping of the objects created when provisioning them using the Morpheus Terraform integration.

Custom Machine Type

Google Cloud supports provisioning virtual machines with custom hardware specifications. Morpheus now supports the ability to provision and discover virtual machines using custom machine types.

Public Virtual Machine Image

Getting started with GCP is now even easier with the ability to provision GCP virtual machines using public virtual machine images. When provisioning a new instance through Morpheus, a public image can be selected as the base image.

Nutanix

Nutanix Prism Central Alpha Support

The cloud plugin for Nutanix Prism Central has now reached the alpha phase of development and can be downloaded for evaluation from share.morpheusdata.com. The integration leverages the cloud plugin provider that will enable new cloud integrations to be added to the Morpheus platform.

OpenStack

Manilla File Shares

This release adds support for creating and managing Manilla file shares for OpenStack environments. This enables organizations to provide access to file shares for users in a self-service fashion.

Floating IP Management

Morpheus now supports the ability to manage floating IP addresses natively in the platform. This enables administrators to view floating IP addresses and the workloads that they are associated with.

Terraform Mapping

OpenStack Terraform mapping support has been added in this release of the platform. This feature provides a detailed resource mapping of the objects created when provisioning them using the Morpheus Terraform integration.

Oracle Cloud

Full Tag Sync

Tags are now bi-directionally synchronized between Oracle Cloud and Morpheus. This means that tags created from Morpheus are applied to Oracle Cloud and tags created in Oracle Cloud are synchronized into Morpheus during the next cloud sync.

Container Management

Cluster Approval Policies

Approval policies have been extended to Docker, KVM, and Kubernetes clusters. This enables administrators to require an approval prior to provisioning, modifying, or deleting clusters within the platform.

MKS (Morpheus Kubernetes Service) Cluster Upgrades

Upgrading an MKS cluster can now be done in an automated fashion using either the new upgrade operation in the UI or via the REST API. This helps reduce the operational overhead of managing Kubernetes clusters.

MKS Kubernetes 1.26 Layouts

Support has been added for provisioning MKS Kubernetes clusters running Kubernetes 1.26. This allows organizations to take advantage of the new functionality added in this version of Kubernetes.

Automation and IaC

Granular Task and Workflow RBAC

Automation task and workflow access can now be restricted using new RBAC permissions to grant a role access on a per task or workflow basis. This means that the tasks and workflows that a user sees when executing automation from the instance details page or during provisioning are limited to just those that the user has been granted access to. Additionally, this also allows for teams to create and manage their own automation tasks and workflows within a single tenant.

Automation UX Enhancements

The drop-down select list for automation tasks and workflows in various areas of the Morpheus UI such as executing a task from the instance details page or adding a workflow to an instance during provisioning has been replaced with a type-ahead selector. This feature coupled with the granular automation RBAC helps eliminate the endless scrolling that was previously necessary to find a task or workflow in an environment with dozens of tasks and workflows.

Nested Workflows

An automation workflow can now be added to another automation workflow with the introduction of the Nested Workflow task type. This provides a way to create a base set of automation tasks that can be easily added to new workflows for specific use cases without having to re-add all the base tasks.

Operational Workflow Approvals

Scale self-service automation while maintaining the appropriate guardrails by requiring approval before executing a workflow. Approvals can be processed using the internal Morpheus approval system or via one of the ITSM integrations such as ServiceNow.

Jenkins Automation Task Type

Trigger the execution of a Jenkins job from Morpheus using the new Jenkins automation task type. This enables Morpheus to be integrated into a CI/CD pipeline as part of a broader orchestration process. The Jenkins task type is added by installing the Jenkins plugin available at share.morpheusdata.com.

Automation Retry

Easily retry failed automation tasks using the new task retry feature added in this release. This is particularly useful for automation workflows that include several tasks, as once the failing task is fixed, the workflow will continue and execute the subsequent tasks in the workflow.

Automation Task Multi-Tenancy

Automation tasks from the master tenant can now be shared with subtenants using the new visibility setting for automation tasks. This functionality has been available for automation workflows in previous versions of the Morpheus platform.

Provisioning Workflow Pricing Phase

A new phase has been added to provisioning workflows that allows a workload price to be generated on the fly using an automation task. The price generated using the automation task will override the existing price associated with the attached service plan.

Dynamic Automation Targets

Execute ad-hoc and scheduled automation against workloads based upon target metadata such as labels. This enables automation to be run against a group of instances such as production Linux servers, all Windows database servers, or any other classification your organization has defined. This is extremely powerful for patch management, security automation, and maintenance operation use cases.

Workflow Cancellation

Automation workflows now support the ability to cancel an actively running workflow. This stops the execution of the workflow once the currently running task has completed and prevents any subsequent tasks from executing.

IT Service Management (ITSM)

ServiceNow OAuth 2.0 Authentication

The ServiceNow integration now supports the use of OAuth 2.0 for authenticating Morpheus to the ServiceNow instance. This provides another authentication method for organizations that prefer not to use username and password authentication for security reasons.

ServiceNow Approval Additional Metadata

Morpheus supports using ServiceNow as an approval engine to benefit from the investment many organizations have made in developing approval workflows in ServiceNow. This feature enables additional metadata (custom options) for the requested resource (instance, app, etc.) to be passed to the ServiceNow approval workflow. This enables the approval workflow to use this additional information about the requested resource as a data point for determining whether and how the request is approved.

ServiceNow Catalog Instance Metadata Correlation

Instances provisioned using the Morpheus ServiceNow catalog integration now include the RITM number from ServiceNow on the instance in Morpheus. This helps correlate provisioned instances with the initial request for tracking and automation purposes.

ServiceNow Incident Correlation

Morpheus incidents now tie the incident to the Configuration Item (CI) in the CMDB (Configuration Management Database) if the ServiceNow integration is set as the CMDB for the workload. This provides better tracking of incidents and allows administrators to correlate the event to a managed asset.