IBM Multicloud Service Description

Ver. 2022-2

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IBM Multicloud Machine Image Toolkit

Service description

Updated: 06.02.2022 Reviewed: 20.10.2020

Item no.	IBM Multicloud Machine Image Toolkit Components	Detailed Description
1.0	IBM Multicloud Machine Image Toolkit Service definition	IBM Multicloud Machine Image Toolkit service provides automatically updated security hardened images for customers to use in their own cloud deployments in their own cloud environments. Images are updated regularly with security patches and hardening improvements as industry standards evolve.
1.1	Supported images	 Ubuntu Server 16.04 LTS Ubuntu Server 18.04 LTS Ubuntu Server 20.04 LTS Red Hat Enterprise Linux 7 Red Hat Enterprise Linux 7.5 Red Hat Enterprise Linux 7.6 Red Hat Enterprise Linux 8 Red Hat Enterprise Linux 8.2 CentOS Linux 7 CentOS Linux 8 Amazon Linux 8 Amazon Linux 2 Amazon Linux 2 (ECS-optimized) Amazon Linux 12 SP5 SUSE Linux 15 SP2 Windows Server 2012 R2 Windows Server 2016 Windows Server 2016 with SQL Server

 Enterprise Windows Server 2016 with SQL Server Standard Windows Server 2019 Windows Server 2019 with SQL Server Enterprise Windows Server 2019 with SQL Server Standard
Azure
 Ubuntu Server 16.04 LTS Ubuntu Server 20.04 LTS Red Hat Enterprise Linux 7 Red Hat Enterprise Linux 8 CentOS Linux 7.8 CentOS Linux 8.2 SUSE Linux 12 SP5 SUSE Linux 15 SP2 Windows Server 2012 R2 Windows Server 2016 Windows Server 2019
Google Cloud Platform
 Ubuntu Server 16.04 LTS Ubuntu Server 20.04 LTS Ubuntu Server 20.04 LTS Windows Server 2012 R2 Windows Server 2016 Windows Server 2019 Red Hat Enterprise Linux 7 Red Hat Enterprise Linux 8 CentOS Linux 7 CentOS Linux 8 SUSE Linux 12 SUSE Linux 15
VMware
 CentOS Linux 7 RedHat Enterprise Linux 7.9 SUSE Linux 12 SP5 SUSE Linux 15 SP2

		 Windows Server 2016 Windows Server 2019 Supported images might change during the term of the agreement due to provider image availability and vendor support.
1.2	Supported hardening	Level 1Level 2
1.3	Baseline flow	 Customer orders a specific OS hardening level (1 or 2) in the service IBM Multicloud Machine Image Toolkit takes the order and builds the image according to the hardening rules and possible customizations IBM Multicloud Machine Image Toolkit makes sure every night the chosen OS is checked for security updates and IBM Multicloud Machine Image Toolkit updates the Image accordingly The images are copied to the customer cloud environment. Customer is notified on new images by cloud corresponding event buses
1.4	Supported Clouds	AWS, Azure, Google Cloud Platform, IBM Cloud, VMware
1.5	Customization	 Agent installations Optionally customization of the hardening available on-demand
1.6	Support hours	Polish Local Business Hours (9-18)
1.7	Security update schedule	 Images are launched on a regular basis to check and install available security updates using package manager. CentOS doesn't have security update metadata available - all updates are installed weekly.
1.8	Feature requests	 New requests are assessed next business day New operating system can be added to service outside of roadmap via service paid and priced separately 150E/h engineering

		time - timeline and ability of providing requested image is assessed by Nordcloud
1.9	Service exceptions reporting	Customer notification of Service Exceptions within One Business day of Occurrence / Delay via email
1.10	Reporting	IBM Multicloud Machine Image Toolkit provides an ability to generate an hardening audit report in JSON format. The report is available in the UI.
2.0	Customer support channels	 Jira Service Desk system E-mail hbi@nordcloud.com
2.1	Customer support availability	 Nordcloud will answer within Next Business Day, within the local business hours.
2.2	Service availability	 Definition: service considered to be available when it is a) delivering updated images as described in section 1.3 with supported OSes from section 1.1. and levels from section 1.2. at least once a month and a customer web interface is available. Service availability is measured separately for web site and for image delivery. Monthly SLA report is available for the Customer on-demand via Customer support
2.3	Service exceptions notifications	Customer notification of Service exceptions within one business day of occurrence.
2.4	Service settings backup	The image is kept in the system for three months. The three month period starts when the newer image was created.
2.5	Service hours	Hardened Base Image web site is available seven days a week, twenty-four hours a day. When images have been delivered to cloud accounts their availability depends on the cloud vendor.
2.6	Service onboarding	 Customer and Nordcloud agree on image source Customer and Nordcloud agree on Hardening Level

		 Customer and Nordcloud agree on additional SW on the base image Customer and Nordcloud agree on hardening customization Customer and Nordcloud agree on the testing of the image Customer and Nordcloud agree on the deployment practises around the image
2.7	Definition of how licenses influencing metrics are measured	OS family is defined as one of: Windows Redhat Centos Ubuntu Amazon Linux SLES Oracle Linux Currently supported versions are listed in section 1.1 The OS family also covers new versions of the same operating system. Cloud is defined to be Amazon Web Services, Azure or Google Cloud Platform or any other cloud defined in section 1.4. Quarter is defined to be Jan-Mar, Apr-June, July-Sep, Oct-Dec.

IBM Multicloud Autopatcher

Service description

Updated: 08.09.2021 Reviewed: 22.06.2020

Item no.	IBM Multicloud Autopatcher Components	Detailed Description
1.0	IBM Multicloud Autopatcher service description	IBM Multicloud Autopatcher is a SaaS service that orchestrates operating system patching leveraging a client installed on target hosts and in accordance to customer defined policies such as patching windows and patching baselines.
1.1	Supported OS families for non-baseline patching	 Windows Linux Ubuntu Amazon Debian RedHat, RHEL OpenSUSE, SLES CentOS
1.2	Supported OS versions for baseline patching	 Windows Server 2008 - 2019, including R2 versions Amazon Linux 2012.03 - 2018.03
1.3	Scheduling patching actions	IBM Multicloud Autopatcher uses plans to orchestrate patching actions. Plans have patching windows defined, from 1h up to 24h long. If the host is available during the window, the software will take the patching action within the window defined.

1.4	AWS SSM Agent	 IBM Multicloud Autopatcher uses AWS SSM to access machines during patching events. To make a host accessible for IBM Multicloud AutoPatcher via SSM you need to install an SSM agent on the machine. If the Customer uses AWS, AP can utilize SSM Agents registered in the Customer's account
1.5	Target Instances (Scope)	 Static Target list (supplied by client) Dynamic Target list obtained via script or tags (Target instances approved by client)
1.6	Access	IBM Multicloud Autopatcher can be accessed using web-based UI, Command Line Interface or API
1.7	Real-time notifications	 Three types of notification channels are supported: Slack Email Pagerduty Different types of notifications can be sent to different channels. The notification groups (which are customizable by the user) are responsible for the configuration of the process.
1.8	Pre & Post Actions	 IBM Multicloud Autopatcher provides an ability to execute some custom user-defined actions (a.k.a hooks) on different stages of the patching process (before/after the whole patching, before/after an individual machine patching). The actual actions to be executed can be implemented as an AWS Lambda or custom webhook. By using hooks the user can do things like: start/stop instances tag instances create snapshots
1.9	Update logs and details	IBM Multicloud Autopatcher uploads the full logs of the update installation process to its S3 bucket and exposes an API to examine them.

1.10	Patching script	By default, IBM Multicloud Autopatcher runs AWS-WindowsInstallUpdates SSM document for patching Windows machines and a shell script with an appropriate command (based on distribution type) for Linux. User can specify the custom update command using Shell script for Linux PowerShell script for Windows
1.11	Reports	 IBM Multicloud Autopatcher provides an ability to generate a patching report which describes what packages were installed, updated, or removed on each machine. The reports can be generated in JSON and PDF formats. Additionally, a report of several patchings (a.k.a bundled report) in PDF format can be generated.
1.12	Dry Run	This option allows the user to run patching without actual update installation - it lists available patches instead.
2.1	Customer support channels	 IBM Multicloud Autopatcher web-based GUI E-mail autopatcher@nordcloud.com
2.2	Customer support availability	Nordcloud will answer within Next Business Day, within the local business hours.
2.3	Service Availability	 Declared Service Availability* is 99.5% "Service Availability" means the percentage of minutes in a month that the key components of the Service are operational (includes GUI, API, and Patching Scheduler). "Service Availability" will not include any minutes of downtime resulting from scheduled maintenance (maximum once a month, no longer than 24h a year), events of force majeure, malicious attacks on the system, issues associated with Customer's computing devices, local area

		networks or internet service provider connections, or Nordcloud's inability to deliver services because of Customer's or acts or omissions. Monthly SLA report is available for the Customer on-demand via Customer support
2.4	Service Exceptions	Customer notification of Service Exceptions within One Business day of Occurrence
2.5	Service Settings Backup	 Customer data, setup, and logs in IBM Multicloud Autopatcher are backed up with 48H RPO, and snapshots are erased after 30 days. Customer settings can be restored from selected RPO snapshot on Customer demand
2.6	Service hours	IBM Multicloud Autopatcher is available seven days a week, twenty-four hours a day
2.7	Service Onboarding	 Customer is able to use IBM Multicloud Autopatcher self-service Nordcloud provides user accounts with different levels (read-only or full-access) for the Customer New accounts are created via Customer support The Customer has access to User Guide and documentation seven days a week, twenty-four hours a day Upon customer request Nordcloud can provide 2h workshop on IBM Multicloud Autopatcher in the form of webinar two times years and during the onboarding phase
2.8	License metrics calculation	Host is a machine of which IBM Multicloud Autopatcher has patched in a given month or has readiness to patch (agent installed and registered to IBM Multicloud Autopatcher) in a given month.

IBM Multicloud Autobackup

Service description

Updated: 08.07.2021

Item no.	IBM Multicloud Autobackup Components	Detailed Description
1.0	IBM Multicloud Autobackup service description	IBM Multicloud Autobackup is a SaaS service which performs back-up operations for cloud resources according to the customer defined schedule. Operations include taking a back-up copy and maintaining, removing data copies according to defined lifecycle and for some resources copying data to different cloud region than its source. IBM Multicloud Autobackup provides a web interface and API for customers to configure the service.
1.1	AWS Supported resource types	 EC2 instances EC2 snapshots contain information about linked EBS volumes (the mounting point of the volume and the volume id), the metadata of the EC2 instance and the list of tags and the list of EBS snapshots (root volume is also included). RDS instances RDS instances backup is done using native manual snapshots mechanism. RDS clusters RDS clusters backup is done using native manual snapshots mechanism. DynamoDB tables DynamoDB backup is implemented using native DynamoDB On-Demand backups and S3 Buckets. S3 buckets IBM Multicloud Autobackup uses AWS cross-region replication to replicate objects stored in S3 buckets. Redshift clusters

		1
		 Redshift backup is done using Redshift built-in (provided by the AWS) manual snapshots mechanism. EFS The EFS snapshots are stored in the AWS backup vault in the protected account. Route 53 Route 53 backup is done with snapshots stored in a special S3 bucket in the protected account and they can be replicated to S3 bucket in the vault account.
1.2	AZURE Supported resource types	 VMs IBM Multicloud Autobackup orchestrates native Azure VMs backup and their RPO.
1.3	Google Cloud Platform Supported resource types	VMs Primary backup is performed by saving metadata about a virtual machine and taking snapshots of all disks attached to the virtual machine. Identifiers of created snapshots are saved alongside with instance metadata.
1.4	Backup RPO	Users can select Recovery Point Objective (RPO) for the resources they want to backup. Based on the selected RPO settings, the IBM Multicloud Autobackup periodically generates lists of backup events describing when, which resources will be backed up. The backup events are generated frequently enough to meet the RPO requirements.
1.5	Snapshot Retention	 The IBM Multicloud Autobackup can automatically remove obsolete snapshots. User can specify for how many days, snapshots should be retained in the cloud accounts. There is also an option to specify a maximum number of snapshots to be retained instead of providing a number of days.

1.6	Snapshot Replication	 For the most types of resources which can be backed up using the IBM Multicloud Autobackup, the snapshots replication is supported **. During the replication process snapshots are copied to the other region or account specified by a user. ** Excluded are Redshift clusters (without replication)
1.7	Access	Web-based UIGraphQL based HTTP API
1.8	Real-time notifications	 IBM Multicloud Autobackup provides real-time notifications for IBM Multicloud Autobackup events such as success or failure Three types of notification channels are supported: Slack Email Pagerduty Different types of notifications can be sent to different channels. The notification groups (which are customizable by the user) are responsible for the configuration of the process.
1.9	Reports	 Reports can be obtained using HTTP based API There is an option to download report from Dashboard level: from current month and last month
2.1	Customer support channels	IBM Multicloud Autobackup web-based GUI E-mail AutoBackup@nordcloud.com
2.2	Customer support availability	Nordcloud will answer within Next Business Day, within the local business hours.
2.3	Service Availability	 Declared Service Availability* is 99.5% "Service Availability" means the percentage of minutes in a month that the key components of the Service are operational (includes GUI, API, and Backup Scheduler). "Service Availability" will not include any minutes of downtime resulting from

		 scheduled maintenance (maximum once a month, no longer than 24h a year), events of force majeure, malicious attacks on the system, issues associated with Customer's computing devices, local area networks or internet service provider connections, or Nordcloud's inability to deliver services because of Customer's or acts or omissions. Monthly SLA report is available for the Customer on-demand via Customer support
2.4	Service Exceptions	Customer notification of Service Exceptions within One Business day of Occurrence
2.5	Service Settings Backup	 Customer data, setup, and logs in IBM Multicloud Autobackup are backed up with 48H RPO, and snapshots are erased after 30 days. Customer settings can be restored from selected RPO snapshot on Customer demand
2.6	Service hours	IBM Multicloud Autobackup is available seven days a week, twenty-four hours a day
2.7	Service Onboarding	 Customer is able to use IBM Multicloud Autobackup self-service Nordcloud provides user accounts with different levels (read-only or full-access) for the Customer New accounts are created via Customer support The Customer has access to User Guide and documentation seven days a week, twenty-four hours a day Upon customer's request, Nordcloud can provide 2h workshop on IBM Multicloud Autobackup in the form of webinar 2 times per year and during the initial onboarding phase

2.8.	License metrics calculation	Protected resource definition: a protected resource is AWS Virtual machine with EBS volume/volumes EBS volume S3 bucket AWS RDS instance/cluster AWS Redshift cluster AWS DynamoDB table AWS EFS filesystem AWS Route 53 Azure Virtual machine Google Cloud Platform Virtual machine 50 protected resources example: 30 S3 buckets and 20 AWS virtual machines with EBS volumes.
		RPO definition. Fees may change based on what is the minimum supported recovery point objective, e.g. how frequently data is protected.

IBM Multicloud Accelerator

Service description

Updated: 09.08.2022

Ver. 2023-3

Item no.	IBM Multicloud Components	Detailed Description
1.0	IBM Multicloud service description	IBM Multicloud Accelerator is a multi-cloud platform that brings transparency and visibility to the cloud usage and related costs across multi-cloud and application landscapes. IBM Multicloud Accelerator provides cost transparency and their accurate allocation to organizational context together with multi-cloud cloud search consolidated in one Cloud Estate.
1.1	AWS resources with increased metadata visibility. IBM Multicloud for AWS supports all resources that appear as line items in AWS Cost and Usage Reports.	 API Gateway ASG AppSync CloudFront DynamoDB EC2 EBS elastic ip instance network interface security group EFS ELB Elasticsearch Lambda RDS cluster instance Redshift Route53 SNS SQS S3 ECS tasks
1.2	AZURE Supported resource types	All resources provided by Azure.
1.3	Google Cloud Platform Supported resources types	 bigquery.googleapis.com/Dataset bigquery.googleapis.com/Table bigtableadmin.googleapis.com/Cluster bigtableadmin.googleapis.com/Instance bigtableadmin.googleapis.com/Table

 cloudfunctions.googleapis.com/Function
compute.googleapis.com/Address
compute.googleapis.com/Autoscaler
compute.googleapis.com/BackendBucket
compute.googleapis.com/BackendService
compute.googleapis.com/Disk
compute.googleapis.com/Firewall
compute.googleapis.com/ForwardingRule
compute.googleapis.com/GlobalAddress
compute.googleapis.com/HealthCheck
compute.googleapis.com/HttpHealthCheck
compute.googleapis.com/HttpsHealthCheck
compute.googleapis.com/Image
compute.googleapis.com/Instance
compute.googleapis.com/InstanceGroup
 compute.googleapis.com/InstanceGroupMan ager
 compute.googleapis.com/InstanceTemplate
compute.googleapis.com/Interconnect
 compute.googleapis.com/InterconnectAttach
ment
compute.googleapis.com/License
compute.googleapis.com/Network
 compute.googleapis.com/Project
 compute.googleapis.com/RegionDisk
compute.googleapis.com/Route
compute.googleapis.com/Router
 compute.googleapis.com/SecurityPolicy
 compute.googleapis.com/Snapshot
 compute.googleapis.com/SslCertificate
compute.googleapis.com/Subnetwork
compute.googleapis.com/TargetHttpProxy
compute.googleapis.com/TargetHttpsProxy /
compute.googleapis.com/TargetInstance /
compute.googleapis.com/TargetPool /
compute.googleapis.com/TargetSslProxy
compute.googleapis.com/TargetTcpProxy
compute.googleapis.com/TargetVpnGateway
compute.googleapis.com/UrlMap
compute.googleapis.com/VpnTunnel compute.googleapis.com/VpnTunnel
container.googleapis.com/Cluster
container.googleapis.com/NodePool
containerregistry.googleapis.com/lmage
 dataproc.googleapis.com/Cluster

		 dataproc.googleapis.com/Job dns.googleapis.com/ManagedZone dns.googleapis.com/Policy k8s.io/Namespace k8s.io/Node k8s.io/Pod k8s.io/Service pubsub.googleapis.com/Subscription pubsub.googleapis.com/Topic spanner.googleapis.com/Database spanner.googleapis.com/Instance sqladmin.googleapis.com/Instance storage.googleapis.com/Bucket vpcaccess.googleapis.com/Connector
1.4	Supported Clouds	AWS, Azure, Google Cloud Platform
1.5	Access	Web-based UIAPIs
1.6	Notifications	 IBM Multicloud provides Cloud Estate scanning notifications available within the UI Audit Trail is available on demand
1.7	Reports	 Reports in the .csv format are available within the UI Reports can be obtained using APIs
1.8	Organization structures	Ability to reflect multiple organization structures and attach resources to them
1.9	Resources grouping	Ability to group resources into environments and environments into applications
1.10	Search	 IBM Multicloud provides fast and accurate search of resources, environments, applications, accounts, business units within

		the IBM Multicloud Accelerator including their metadata
1.11	Advanced cost allocation	 Ability to split costs according to organization structure by defining Discovery rules and Mapping rules
1.12	Advanced application discovery	Ability to map cloud resources to environments based on tags and resource information
1.13	Role Based Access Control	Ability to assign two types of permissions: Full access - all IBM Multicloud functions available and access to all the data Restricted access - access to particular applications, limited rights to the functions of adding and editing data settings
2.0	Customer support channels	 Jira Service Desk system E-mail products@nordcloud.com
2.1	Customer support availability	 Nordcloud will answer within Next Business Day, within the local business hours.
2.2	Service Availability	 Declared Service Availability* is 99.5% "Service Availability" means the percentage of minutes in a month that the key components of the Service are operational (includes GUI, API). "Service Availability will not include any minutes of downtime resulting from scheduled maintenance (maximum once a month, no longer than 24h a year), events of force majeure, malicious attacks on the system, issues associated with Customer's computing devices, local area networks or internet service provider connections, or

		 Nordcloud's inability to deliver services because of Customer's or acts or omissions. Monthly SLA report is available for the Customer on-demand via Customer support
2.3	Service Exceptions	 Customer notification of Service Exceptions within One Business day of Occurrence
2.4	Service hours	 IBM Multicloud is available seven days a week, twenty-four hours a day

IBM Multicloud Support

Updated: 28.02.2023

I. Support Levels

Platinum support

- 15h/month support of a cloud expert/architect
- 2 Business hours reply*
- Dedicated Customer Success Manager
- 5 Monthly touchpoints + consultancy hours with one of our cloud experts

Enterprise support

- 7h/month support of a cloud expert/architect
- 6 Business hours reply*
- Customer Success Manager
- 2 Monthly touchpoints + consultancy hours with one of our cloud experts

Premium support

- 5h/month support of a cloud expert/architect
- 10 Business hours reply*
- Customer Success Manager
- Monthly touchpoints + consultancy hours with one of our cloud experts

Relaxed support

- Self-service support based on documentation
- 16 business hours reply*
- Customer Success Manager
- Issue based supported with Jira only

II. IBM Multicloud Accelerator Onboarding Support (remote)

IBM Multicloud Accelerator Onboarding (included)

Registration and onboarding of the cloud accounts and the billing accounts (max 4h effort). IBM Multicloud value presentation (max 30 min)

IBM Multicloud Delivery Consultancy (mandatory)

Cost allocation discovery (minimum 8h effort)

- o Setting up customized applications and environments in IBM Multicloud
- o Setting up discovery and mapping rules
- o Setting up of business context, budgets and contact persons (optional)

Consultancy and support with best practice approach during the whole process

IBM Multicloud Technical training (recommended)

The training is a deep dive training designed for those who will be using IBM Multicloud in technical roles.

Duration: 4-6 hours Remote only

IBM Multicloud Single sign-on

Installment of the single sign-on (SSO) authentication method that is used inside the company. One SSO credential can access all Klarity services like Core, Autopatcher, Autobackup and Image Factory, if the customer has several. Federated access is a part of this offering.

^{*} Business hours