

Cloud service provider disclosure (MTCS SS584:2020)

The form is to be completed for each cloud service provided. For questions not applicable or not disclosed, indicate accordingly in the remarks.

Date of Disclosure: 05 May 2022

Applicable cloud service(s): VMware Cloud on AWS

Cloud Service Provider Contact Information

Company name: VMware

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MTCS Certificate Number MTCS 766376

Company Chop No stamp Company Representative Signature: 

Certification Body Contact Information

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Company Chop:  Lead Auditor Signature: 

Cloud Service Provider Background

Overview of service offering:

VMware Cloud on AWS brings VMware's enterprise class Software Defined Data Center software to the AWS cloud, and enables customers to run production application across VMware vSphere based environments, with optimized access to AWS services utilizing AWS bare metal infrastructure.

Service model:

- Virtual machine instances owned by the cloud service customer
- Network facilities
- Compliance with applicable standards

Deployment model:

- Private cloud
- Community cloud
- Hybrid cloud
- Public cloud

Tier:

- Level 1
- Level 2
- Level 3

No.	Criteria	Description	Remarks
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Legal and Compliance

1.	Right to audit	<p>The cloud service customer has the right to audit:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Virtual machine instances owned by the cloud service customer <input type="checkbox"/> Network facilities <input checked="" type="checkbox"/> Compliance with applicable standards <input type="checkbox"/> Technical controls <input checked="" type="checkbox"/> Policies and governance <input type="checkbox"/> Data centre facilities <input type="checkbox"/> Others _____ <input type="checkbox"/> None <p>Regulators recognised by Singapore law have the right to audit:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Virtual machine instances owned by the cloud service customer <input type="checkbox"/> Network facilities <input checked="" type="checkbox"/> Compliance with applicable standards <input type="checkbox"/> Technical controls <input checked="" type="checkbox"/> Policies and governance 	<p>VMware Cloud on AWS operates on a shared responsibility model where VMware is responsible for security of the software systems that deliver the service and customer is responsible for security of the content deployed onto the platform and AWS is responsible for physical security of the data center facilities. VMware Cloud on AWS compliance certifications are published online on our Trust Center. Customers can also request the detailed audit reports such as SOC2 by requesting via one of the Account Representatives</p>
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		<input type="checkbox"/> Data centre facilities <input type="checkbox"/> Others _____ <input type="checkbox"/> None Audit / assessment reports that can be made available on request: <input checked="" type="checkbox"/> Penetration test <input type="checkbox"/> Threat and vulnerability risk assessment <input type="checkbox"/> Vulnerability scan <input checked="" type="checkbox"/> Audit reports (e.g. Statement on Standards for Attestation Engagements (SSAE) No. 16, Reporting on Controls at a Service Organisation)	
2.	Compliance	The following guidelines / standards / regulations are adhered to: <input checked="" type="checkbox"/> Singapore Personal Data Protection Act <input checked="" type="checkbox"/> ISO / IEC 27001 <input type="checkbox"/> ISO 9000 <input type="checkbox"/> ISO / IEC 20000 <input checked="" type="checkbox"/> CSA Open Certification Framework <input checked="" type="checkbox"/> PCI-DSS <input type="checkbox"/> Others <u>OSPAR, SOC2, IRAP</u>	See VMware Cloud on AWS Trust Center for latest compliance certifications https://www.vmware.com/products/trust-center.html
Data Control			
3.	Data ownership	All data on the cloud service is owned by the cloud service customer except for: <u>Derived data used for service operations purposes.</u> The cloud service customer retains the ownership on the derived data or attributes of cloud usage except for the following: <input type="checkbox"/> Advertising or marketing <input checked="" type="checkbox"/> Statistics analysis on usage <input type="checkbox"/> Others _____	VMware Cloud on AWS collects data such as Configuration Data, Feature Usage Data, Performance Data, Service Logs, Security Logs, Support and Survey Data. For further information see https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vmc-on-aws-privacy.pdf
4.	Data retention	Data deleted by the cloud service customer is retained as follows: <input type="checkbox"/> Minimum data retention period is: _____ <input type="checkbox"/> Maximum data retention period is: _____	The data collected as part of SDDC audit logs are retained for five (5) years and log events that exceed

		<input checked="" type="checkbox"/> Deleted immediately Log data is retained for a period of: <input type="checkbox"/> Minimum data retention period is as follows: <u>See remarks</u> <input checked="" type="checkbox"/> Maximum data retention period is: <u>See remarks</u> <input type="checkbox"/> Not retained Cloud service customer data is retained for a period of: <input checked="" type="checkbox"/> Minimum data retention period is: <u>see response</u> under Remarks <input checked="" type="checkbox"/> Maximum data retention period is: <u>see response</u> under Remarks <input type="checkbox"/> Not retained The following types of data are available for download by the cloud service customer: <input type="checkbox"/> Log data <input checked="" type="checkbox"/> Others _____	the five (5) year life cycle are automatically purged. Customers can retain the data for the duration the service in line with Service Agreement and Terms of Service. As part of shared responsibility model, customers are responsible for backing up their data.
5.	Data sovereignty	The primary data locations are: <input checked="" type="checkbox"/> Singapore <input checked="" type="checkbox"/> Asia Pacific _____ <input checked="" type="checkbox"/> Europe _____ <input checked="" type="checkbox"/> United States <input type="checkbox"/> Others _____ The backup data locations are: <input checked="" type="checkbox"/> Singapore <input checked="" type="checkbox"/> Asia Pacific _____ <input checked="" type="checkbox"/> Europe _____ <input checked="" type="checkbox"/> United States <input type="checkbox"/> Others _____ No. of countries in which data centres are operated: <u>18</u> The cloud service customer's data stored in the cloud environment will never leave the locations specified in item 5: <input type="checkbox"/> Yes	VMware Cloud on AWS stores Customer data inside of a geographic region chosen by the customer when they deploy a Software Defined Datacenter (SDDC). Customer data will not be relocated, replicated, archived, or copied without the explicit request or actions of the customer administrator.

		<input checked="" type="checkbox"/> Yes, except as required by law <input checked="" type="checkbox"/> Yes, except as noted: <u>Please see response under Remarks</u> <input type="checkbox"/> No Cloud service customer's consent is required prior to transferring data to a location not specified in item 5 or a third party: <input type="checkbox"/> Yes <input type="checkbox"/> Yes, except as required by law <input checked="" type="checkbox"/> Yes, except as noted: <u>Service description and Terms of Service</u> <input type="checkbox"/> No <i>Note: Cloud service customers are responsible for determining the impact of data protection and data sovereignty laws on the locations where data is stored. In addition, cloud service customers should understand the risks associated with relevant laws that may allow for law enforcement or other government access to data in-transit or storage with Cloud Service Providers.</i>	
6.	Non-disclosure	<input checked="" type="checkbox"/> Non-disclosure agreement template can be provided by Cloud Service Provider <input type="checkbox"/> Cloud Service Provider may use customer's NDA (pending legal review)	
Provider Performance			
7.	Availability	The committed network uptime is: <input checked="" type="checkbox"/> _____ 99.9 _____ % <input type="checkbox"/> Varies according to price plan The committed system uptime is: <input checked="" type="checkbox"/> _____ 99.9 _____ % <input type="checkbox"/> Varies according to price plan The cloud environment has the following single points of failure: <input type="checkbox"/> _____ <input checked="" type="checkbox"/> none	For further details regarding availability see VMware Cloud on AWS Service Level Agreement at https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/support/vmw-cloud-aws-service-level-agreement.pdf
8.	3 rd party dependency	Highlight areas of critical dependency for service delivery: VMware Cloud on AWS uses AWS data centers. For details on AWS data centers resiliency and controls see https://aws.amazon.com/compliance/data-center/	

9.	BCP / DR	<input checked="" type="checkbox"/> Disaster recovery protection <input checked="" type="checkbox"/> Backup and restore service <input type="checkbox"/> Cloud service customer selectable backup plans <input type="checkbox"/> Escrow arrangements <input type="checkbox"/> No BCP / DR is available <input type="checkbox"/> RPO _____ <input type="checkbox"/> RTO _____ <input type="checkbox"/> Others, please specify: _____ _____	VMware will provide backup of management infrastructure. Customers are responsible for backup of customer data and configurations created by customers in the SDDC, including virtual machines, content libraries and datastores For details see https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/support/vmw-cloud-aws-service-description.pdf
10.	Liability	The following terms are available for the cloud service customers on failure of the provider to meet the service commitment: <input checked="" type="checkbox"/> Network failure Liability: _____ <input checked="" type="checkbox"/> Infrastructure failure Liability: _____ <input checked="" type="checkbox"/> Virtual machine instance failure Liability: _____ <input type="checkbox"/> Migrations Liability: _____ <input checked="" type="checkbox"/> Unscheduled downtime Liability: _____ <input checked="" type="checkbox"/> Database failure Liability: _____ <input type="checkbox"/> Monitoring failure Liability: _____	Please refer to VMware Cloud on AWS Service Level Agreement for details on service unavailability, SLA events and SLA credits.
11.	Shared responsibility	<input checked="" type="checkbox"/> Communication of shared roles & responsibilities for which CSC needs to implement and manage for use of this cloud service	

		https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/products/vmc-aws/vmware-shared-responsibility-model-overview-vmware-cloud-on-aws.pdf	
Service Support			
12.	Change management	<p>The Cloud Service Provider has established the following for changes, migrations, downtime, and other potential interruptions to cloud services:</p> <p><input checked="" type="checkbox"/> Communication plan and procedures for proactive notification</p> <p><input type="checkbox"/> Assistance in migration to new services when legacy solutions are discontinued</p> <p><input type="checkbox"/> Ability to remain on old versions for a defined time period</p> <p><input checked="" type="checkbox"/> Ability to choose timing of impact</p>	<p>VMware Cloud on AWS SOC2 report provides details on the change management controls. In addition, VMware also follows change management controls as per ISO27001 guidelines.</p>
13.	Self-service provisioning and management portal	<p>Provide self-service provisioning and management portal for cloud service customers to manage cloud services:</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If yes, describe the functions of the self-service provisioning and management portal provided:</p> <p><input checked="" type="checkbox"/> Allow role-based access control (RBAC)</p> <p><input checked="" type="checkbox"/> Manage resource pools (e.g. VMs, storage, and network) and service templates</p> <p><input checked="" type="checkbox"/> Track and manage the lifecycle of each service</p> <p><input checked="" type="checkbox"/> Track consumption of services</p> <p><input checked="" type="checkbox"/> Health monitoring</p> <p><input type="checkbox"/> Others: _____</p> <p>_____</p>	
14.	Incident and problem management	<p>Delivery mode of support:</p> <p><input checked="" type="checkbox"/> Access via email</p> <p><input checked="" type="checkbox"/> Access via portal</p> <p><input checked="" type="checkbox"/> Access via phone support</p> <p><input checked="" type="checkbox"/> Direct access to support engineers</p> <p>Availability of support:</p> <p><input checked="" type="checkbox"/> 24 x 7</p>	

		<p><input type="checkbox"/> During office hours support, please specify the hours of operations: _____</p> <p><input type="checkbox"/> After office hours support, please specify the hours of operations: _____</p> <p>Service response time: _____</p> <p>Notification time of cloud service outage incident: On-going _____</p> <p>Communication channel used for notification of cloud service outage incident: https://status.vmware-services.io/ _____</p> <p>The following are available to cloud service customers upon request:</p> <p><input checked="" type="checkbox"/> Permanent access to audit records of customer instances</p> <p><input checked="" type="checkbox"/> Incident management assistance</p> <p>Incident response time: _____</p> <p>Mean time to repair on detection of faults: _____</p>	
15.	Billing	<p>The following billing modes are available (please elaborate granularity of charges and measurement):</p> <p><input checked="" type="checkbox"/> Pay per usage <u>See Remarks</u> (up to per min/hour/day/month for compute/storage for IaaS/PaaS, and per cloud service customer per hour/day/month/year for SaaS)</p> <p><input checked="" type="checkbox"/> Fixed pricing <u>See Remarks</u> (up to yearly/monthly/daily)</p> <p><input type="checkbox"/> Other pricing model _____</p> <p><input type="checkbox"/> Not disclosed</p> <p><input type="checkbox"/> Available billing history: <u>See Remarks</u> _____ Months</p>	<p>VMware offers customers flexible pricing models. See details on pricing at https://cloud.vmware.com/vmc-aws/pricing</p> <p>Billing information for your organization can be viewed from the Overview page under the Billing menu in VMC console.</p>
16.	Data portability	<p>Importable VM formats: <u>OVA/ OVF</u> _____</p> <p>Downloadable formats: JSON/XML/other open formats (to specify) _____</p> <p>Supported operating systems: _____</p> <p>Language versions of supported operating systems: _____</p> <p>Supported database formats: _____</p> <p>Policy/guide available _____</p>	<p>VMware Cloud on AWS supports wide range of operating systems and VM formats. For more information see https://www.vmware.com/resources/compatibility/pdf/VMware_GOS_Compatibility_Guide.pdf</p>

		<p>API:</p> <p><input type="checkbox"/> Common _____</p> <p><input type="checkbox"/> Customised _____</p> <p>Upon service termination or prolonged outage, data is available through:</p> <p><input type="checkbox"/> Physical media</p> <p><input type="checkbox"/> Standard methods as described above</p> <p><input type="checkbox"/> Other methods _____</p> <p>_____</p>	<p>See vSphere administration guide at https://docs.vmware.com/en/VMware-vSphere/7.0/vsphere-esxi-vcenter-server-703-virtual-machine-admin-guide.pdf?hWord=N4lghgNiBclJIFsAOB7ATgFwARgHZYHkkBTfANQEtMBXSCgLzAwpXwDF0EmtKblsAsmADGACwq5iWAG7DSGYmhABfIA</p>
17.	Interoperability	<p>Use of industry standards and availability of APIs to support interoperability:</p> <p><input type="checkbox"/> Transport supported (e.g. REST based HTTPS/MQTT) _____</p> <p><input type="checkbox"/> Format supported (e.g. JSON/XML) _____</p> <p><input type="checkbox"/> APIs supported _____</p> <p><input type="checkbox"/> Other methods _____</p> <p>_____</p> <p>Guide available _____</p>	<p>See vSphere administration guide at https://docs.vmware.com/en/VMware-vSphere/7.0/vsphere-esxi-vcenter-server-703-virtual-machine-admin-guide.pdf?hWord=N4lghgNiBclJIFsAOB7ATgFwARgHZYHkkBTfANQEtMBXSCgLzAwpXwDF0EmtKblsAsmADGACwq5iWAG7DSGYmhABfIA</p>
18.	Access	<p>Type of access to the service is through:</p> <p><input checked="" type="checkbox"/> Public access</p> <p><input checked="" type="checkbox"/> Private access (e.g. VPN, dedicated link)</p> <p><input type="checkbox"/> IPv6 access is supported</p> <p><input type="checkbox"/> Other access methods _____</p> <p>_____</p> <p>_____</p> <p>Public access speed (shared bandwidth) in Mbps:</p> <p>_____</p>	<p>Customers can access the service through vmc.vmware.com. Each SDDC deployed in a dedicated AWS Virtual Private Cloud (VPC) that is owned by an AWS Account created exclusively for each customer. This allows customers to access services in the AWS account.</p>
19.	User management	<p><input checked="" type="checkbox"/> Identity management</p> <p><input checked="" type="checkbox"/> Role based access control</p> <p><input checked="" type="checkbox"/> Federated access model</p> <p><input checked="" type="checkbox"/> Integration with Identity management solutions</p>	

		<input type="checkbox"/> Others _____	
20.	Lifecycle	<p>The cloud service customer may select the following for service upgrades and changes:</p> <p><input checked="" type="checkbox"/> Automatic provisioning</p> <p><input checked="" type="checkbox"/> Cloud service customer customisable provisioning</p>	
Security Configurations			
21.	Security configuration enforcement checks	<p>Security configuration enforcement checks are performed:</p> <p><input type="checkbox"/> Manually</p> <p><input checked="" type="checkbox"/> Using automated tools</p> <p>How often are enforcement checks being performed to ensure all security configurations are applied?</p> <p>_____</p>	<p>VMC on AWS has automated tools for scanning security configurations globally. As part of shared responsibility model VMware is responsible for security over the platform. Customers are responsible for security of the Content.</p>
22.	Multi-tenancy	<p><input checked="" type="checkbox"/> Distinct physical hosts</p> <p><input checked="" type="checkbox"/> Distinct physical network infrastructure</p> <p><input checked="" type="checkbox"/> Virtual instance grouping</p> <p><input checked="" type="checkbox"/> Cloud service customer definable security domains</p> <p><input checked="" type="checkbox"/> Cloud service customer customisable firewall</p> <p><input checked="" type="checkbox"/> Cloud service customer definable access policies</p>	<p>VMC on AWS allows customers to logically isolate their Content by creating Resource Pools and configuring permissions to control who has access to Content within their own organization</p>
23.	Hybrid cloud provision	<p>Ability to monitor, track, apply and enforce CSC's security & privacy policies on its cloud workloads:</p> <p><input checked="" type="checkbox"/> Data protection and encryption key mgmt. enforcement geolocation-based/resource pools and secure migration of cloud workloads</p> <p><input checked="" type="checkbox"/> Key mgmt. and keystore controlled by CSC</p> <p><input checked="" type="checkbox"/> Persistent data flow segmentation before and after geolocation-based/resource pools secure migration</p> <p><input checked="" type="checkbox"/> Compliance enforcement for regulated workloads between on-premises private and hybrid/public cloud</p> <p><input type="checkbox"/> Others _____</p>	
Service Elasticity			

24.	Capacity elasticity	<p>The following capacity elasticity options are available:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Programmatic interface to scale up or down <input checked="" type="checkbox"/> Mean time to start and end new virtual instances _____ <input checked="" type="checkbox"/> Alerts to be sent for unusual high usage <input type="checkbox"/> Minimum performance during peak periods _____ <input type="checkbox"/> Minimum duration to scale up computing resources _____ <input type="checkbox"/> Minimum additional capacity guaranteed per account _____ (number of cores and GB memory) 	
25.	Network resiliency and elasticity	<p>The following network resiliency and elasticity options are available:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Redundant Internet connectivity links <input checked="" type="checkbox"/> Redundant Internal connectivity <input type="checkbox"/> Selectable bandwidth up to _____ Mbps <input checked="" type="checkbox"/> Maximum usable IPs _____ <input type="checkbox"/> Load balancing ports _____ <input type="checkbox"/> Load balancing protocols _____ <input checked="" type="checkbox"/> Anti-DDOS protection systems or services <input checked="" type="checkbox"/> Defence-in-depth mechanisms, please specify: _____ _____ <input checked="" type="checkbox"/> Network traffic isolation, please specify: _____ _____ <input type="checkbox"/> Shared or dedicated bandwidth, please specify: _____ _____ <input checked="" type="checkbox"/> QoS traffic control services <input checked="" type="checkbox"/> Alerts to be sent for unusual high usage <input type="checkbox"/> Minimum performance during peak periods _____ <input type="checkbox"/> Minimum period to scale up network throughput _____ 	<p>The VMC on AWS console provides details on various configuration options and limits that for SDDCs. For details see https://configmax.esp.vmware.com/guest?vmwareproduct=VMware%20Cloud%20on%20AWS&release=SDDC%201.17&categories=53-0</p>
26.	Storage redundancy and elasticity	<p>The following storage redundancy and elasticity options are available:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Redundant storage connectivity links within each data centre <input checked="" type="checkbox"/> Redundant storage connectivity links between data centres 	<p>VMC on AWS provides dedicated bare metal host per customer that provides isolation and guaranteed bandwidth. See the links below:</p>

		<p>belonging to the same cloud</p> <p><input type="checkbox"/> Storage traffic isolation, please specify: _____ _____</p> <p><input type="checkbox"/> Shared or dedicated storage network bandwidth, please specify: _____ _____</p> <p><input type="checkbox"/> Quality of service storage traffic control services</p> <p><input type="checkbox"/> Maximum storage capacity for entire cloud, please specify: _____ _____</p> <p><input type="checkbox"/> Maximum storage capacity for single cloud service customer, please specify: _____ _____</p> <p><input type="checkbox"/> Maximum expandable storage, please specify: _____ _____</p> <p><input type="checkbox"/> Alerts to be sent for unusual high usage</p> <p><input type="checkbox"/> Minimum storage I / O performance during peak periods _____ _____</p> <p><input type="checkbox"/> Minimum period to scale up storage I / O throughput _____ _____</p>	<p>https://vmc.techzone.vmware.com/vmc-arch/docs/storage/vmc-aws-vsan-architecture#section1</p> <p>https://stephen-barron.com/2021/12/workload-resiliency-and-management-with-stretched-clusters-in-vmware-cloud-on-aws/</p> <p>Storage Capacity The I3 host type is the default host type. I3 hosts have 36 cores, 512GiB RAM, and 10.37TiB raw storage capacity per host.</p> <p>The I3en host type is optimized for data-intensive workloads. I3en hosts have 96 logical cores, 768GiB RAM, and approximately 45.84 TiB raw storage capacity per host. Single-host SDDCs cannot contain the I3en host type. Maximum hosts per cluster (including stretched clusters) 16. Maximum clusters 20</p>
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VMC on AWS_Cloud Service Provider Self-Disclosure Form

Final Audit Report

2022-05-12

Created:	2022-05-12
By:	Moin Nawaz Syed (smoinnawaz@vmware.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAA2hrcdZPPmZ9byWhW2Vkd3RTshxxVrLDi

"VMC on AWS_Cloud Service Provider Self-Disclosure Form" History

-  Document created by Moin Nawaz Syed (smoinnawaz@vmware.com)
2022-05-12 - 8:54:13 AM GMT- IP address: 171.49.225.69
-  Document emailed to Anirudha (Andy) Karandikar (andykarandikar@vmware.com) for signature
2022-05-12 - 8:55:09 AM GMT
-  Email viewed by Anirudha (Andy) Karandikar (andykarandikar@vmware.com)
2022-05-12 - 4:05:42 PM GMT
-  Anirudha (Andy) Karandikar (andykarandikar@vmware.com) entered valid password.
2022-05-12 - 4:05:49 PM GMT
-  Document e-signed by Anirudha (Andy) Karandikar (andykarandikar@vmware.com)
Signature Date: 2022-05-12 - 4:07:09 PM GMT - Time Source: server
-  Agreement completed.
2022-05-12 - 4:07:09 PM GMT