

## Cloud service provider disclosure

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

Cloud Service Provider Contact Information
Company name: Tata Communications International Pte Ltd Primary address: 35 Tai Seng street, #06-01, Singapore 534103 Web address: <a href="http://www.tatacommunications.com/">http://www.tatacommunications.com/</a> Contact name: Shaji Firoz Contact number: +65-66326989
Certification Body Contact Information
Company name: TÜV SÜD PSB Pte Ltd Web address: <a href="http://www.tuv-sud-psb.sg">http://www.tuv-sud-psb.sg</a> Contact name: CHAY-LEE, Swee Gee Contact email: <a href="mailto:swee-gee.chay@tuv-sud-psb.sg">swee-gee.chay@tuv-sud-psb.sg</a>
Cloud Service Provider Background
Overview of service offering: <p>Tata Communications' Cloud suite is a flexible, cost-effective cloud computing solution that lets customers instantly provision virtual machines, storage and network infrastructure on a pay-as-you-go basis with flexible payment options, security, guaranteed service levels and 24/7 technical support. Tata Communications Cloud suite comprises of IZO™ Private Cloud &amp; IZO™ Cloud Storage, Virtual Private Data Center its flagship services that are made available to its customers through a self-service web portal, which acts as a single-pane-of-glass, for all IT resources deployed by the customer.</p>
Service model: <input checked="" type="checkbox"/> Virtual machine instances owned by the user <input checked="" type="checkbox"/> Network facilities <input checked="" type="checkbox"/> Compliance with applicable standards
Deployment model: <input checked="" type="checkbox"/> Private cloud <input type="checkbox"/> Community cloud <input checked="" type="checkbox"/> Hybrid cloud <input type="checkbox"/> Public cloud

Tier:			
<input type="checkbox"/> Level 1 <input checked="" type="checkbox"/> Level 2 <input type="checkbox"/> Level 3			
No.	Criteria	Description	Remarks
Legal and Compliance			
1.	Right to audit	<p>The user has the right to audit:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Virtual machine instances owned by the user</li> <li><input checked="" type="checkbox"/> Network facilities</li> <li><input checked="" type="checkbox"/> Compliance with applicable standards</li> <li><input checked="" type="checkbox"/> Technical controls</li> <li><input type="checkbox"/> Policies and governance</li> <li><input checked="" type="checkbox"/> Data centre facilities</li> <li><input type="checkbox"/> Others _____</li> <li><input type="checkbox"/> None</li> </ul> <p>Regulators recognised by Singapore law have the right to audit:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Virtual machine instances owned by the user</li> <li><input type="checkbox"/> Network facilities</li> <li><input type="checkbox"/> Compliance with applicable standards</li> <li><input type="checkbox"/> Technical controls</li> <li><input type="checkbox"/> Policies and governance</li> <li><input checked="" type="checkbox"/> Data centre facilities</li> <li><input type="checkbox"/> Others _____</li> <li><input type="checkbox"/> None</li> </ul>	<p>Customers can perform their own compliance audit on their virtual infrastructure (servers, network, storage, etc.).</p> <p>Customer can request one audit per calendar year limited to Tata communication cloud services and with a minimum of 15 days advanced notice.</p> <p>Any information, document, reports are available under Tata Communications terms of non-disclosure agreement.</p> <p>If customer wants 3rd party to perform audits customer to ensure 3rd party signs Tata Communications terms of non-disclosure agreement. Any additional audits would be on chargeable basis and on discretion of Tata Communications.</p> <p>Penetration Test, and Vulnerability scanning reports are provided to auditors upon request as part of audit requirements. Reports are provided with proper justification, investigation. All reports, documents are available under the terms of non-disclosure agreement.</p>

		<p>Audit / assessment reports that can be made available on request:</p> <p><input checked="" type="checkbox"/> Penetration test</p> <p><input type="checkbox"/> Threat and vulnerability risk assessment</p> <p><input checked="" type="checkbox"/> Vulnerability scan</p> <p><input type="checkbox"/> Audit reports (e.g. Statement on Standards for Attestation Engagements (SSAE) No. 16, Reporting on Controls at a Service Organisation)</p>	<p>Customers who would like to conduct Penetration test / Vulnerability Assessment of their Application / public facing interfaces can perform such testing at their end with prior approval from Tata Communications and based on agreed Tata Communication MSA. Requests for Scan / penetration testing should be submitted with a minimum of 15 days advanced notice.</p>
2.	Compliance	<p>The following guidelines / standards / regulations are adhered to:</p> <p><input checked="" type="checkbox"/> Singapore Personal Data Protection Act</p> <p><input checked="" type="checkbox"/> ISO / IEC 27001</p> <p><input type="checkbox"/> ISO 9000</p> <p><input checked="" type="checkbox"/> ISO / IEC 20000</p> <p><input checked="" type="checkbox"/> CSA Open Certification Framework</p> <p><input checked="" type="checkbox"/> PCI-DSS</p> <p><input type="checkbox"/> Others _____</p>	<p>Tata Communications is certified for ISO/IEC 27001:2013, ISO/IEC 20000:2011 for its Managed Hosting and Security Services and undergoes independent assessments on an annual basis. CSA Self assessment - Consensus Assessments Initiative questionnaire (CAIQ) v3.0.1 - <a href="https://cloudsecurityalliance.org/star-registrant/tata-communications/">https://cloudsecurityalliance.org/star-registrant/tata-communications/</a></p> <p>PCI-DSS is under progress</p>
<b>Data Control</b>			
3.	Data ownership	<p>All data on the cloud service is owned by the cloud user except for: Configuration files and log data related to cloud infrastructure platform.</p> <p>The cloud User retains the ownership on the derived data or attributes of cloud usage except for the following:</p> <p><input type="checkbox"/> Advertising or marketing</p> <p><input checked="" type="checkbox"/> Statistics analysis on usage</p> <p><input type="checkbox"/> Others _____</p>	
4.	Data retention	<p>Data deleted by the user is retained as follows:</p> <p><input type="checkbox"/> Minimum data retention period is: _____</p> <p><input checked="" type="checkbox"/> Maximum data retention period is: 7 Days</p>	<p>Tata Communications provide customers with the ability to delete their data. Customers may extract and/or delete</p>

		<p><input type="checkbox"/> Deleted immediately</p> <p>Log data is retained for a period of:</p> <p><input checked="" type="checkbox"/> Minimum data retention period as follows: 3 months</p> <p><input checked="" type="checkbox"/> Maximum data retention period is: 1 year</p> <p><input type="checkbox"/> Not retained</p> <p>User data is retained for a period of:</p> <p><input type="checkbox"/> Minimum data retention period is: _____</p> <p><input checked="" type="checkbox"/> Maximum data retention period is: 7 days</p> <p><input type="checkbox"/> Not retained</p> <p>The following types of data are available for download by the cloud user:</p> <p><input type="checkbox"/> Log data</p> <p><input type="checkbox"/> Other _____</p>	<p>their data at any time.</p> <p>On log data retention, this varies based on type of logs.</p> <p>Logs controlled by the user are retained for whatever period the user sets. Cloud platform logs are retained for 3 months.</p> <p>Logs detail are only specific to Cloud infrastructure.</p> <p>Log data for customer owned virtual servers is the responsibility of the customer.</p> <p>Customer is responsible for transfer/delete backup of data and this may be carried out within 15 days of termination coming into effect and hence retained for 15 days maximum.</p>
5.	Data sovereignty	<p>The primary data locations are:</p> <p><input checked="" type="checkbox"/> Singapore</p> <p><input type="checkbox"/> Asia Pacific _____</p> <p><input type="checkbox"/> Europe _____</p> <p><input type="checkbox"/> United States</p> <p><input type="checkbox"/> Other _____</p> <p>The backup data locations are:</p> <p><input checked="" type="checkbox"/> Singapore</p> <p><input type="checkbox"/> Asia Pacific _____</p> <p><input type="checkbox"/> Europe _____</p> <p><input type="checkbox"/> United States</p> <p><input type="checkbox"/> Other _____</p> <p>No. of countries in which data centres are operated: 5 (five)</p> <p>The user's data stored in the cloud environment will never leave the locations specified in item 5:</p>	<p>Tata Communications provides customers with the flexibility to restrict connections based on IP Address, Certificate Based authentication and other connection filters.</p> <p>Tata Communications provides its customers to choose the data center where their infrastructure should be hosted. Customers can choose their data locations and their data will stay within that location they specify.</p> <p>Five Countries are: US, UK, India, Singapore &amp; Hong Kong</p>

		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Yes, except as required by law <input type="checkbox"/> Yes, except as noted: required by the customer <input type="checkbox"/> No <p>User's consent is required prior to transferring data to a location not specified in item 5 or a third party:</p> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Yes, except as required by law <input type="checkbox"/> Yes, except as noted: _____ <input type="checkbox"/> No <p><i>Note: Cloud users are responsible for determining the impact of data protection and data sovereignty laws on the locations where data is stored. In addition, users 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></p>	Data will not be moved across data centers /geographies without the consent of the customer.
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	<p>The committed network uptime is:</p> <input checked="" type="checkbox"/> 99.9% <input type="checkbox"/> Varies according to price plan <p>The committed system uptime is:</p> <input checked="" type="checkbox"/> 99.9% <input type="checkbox"/> Varies according to price plan <p>The cloud environment has the following single points of failure:</p> <input type="checkbox"/> _____ <input checked="" type="checkbox"/> none	<p>Customer network is excluded and are advised to have redundant links.</p> <p>Customer are encouraged to have backup/recovery and opt for different Data Center as part of solution.</p> <p>For detailed service level and uptime commitments please refer to Service schedule.</p> <p>Based on the customer requirement Uptime committed can be increased.</p>
8.	BCP / DR	<input checked="" type="checkbox"/> Disaster recovery protection	Tata Communications Offers cloud services from Multiple data

		<input checked="" type="checkbox"/> Backup and restore service <input checked="" type="checkbox"/> User selectable backup plans <input checked="" type="checkbox"/> Escrow arrangements <input type="checkbox"/> No BCP / DR is available <input type="checkbox"/> RPO _____ <input type="checkbox"/> RTO _____ <input checked="" type="checkbox"/> Others, please specify: DR is an optional service and RTO & RPO are defined as per the Customer requirements	Center locations across the globe.  DR is an optional service which Customers have the flexibility to choose any of the data center locations depending on their Business Continuity requirements and RTO/RPO.  Based on customer's requirement, Tata Communications can design and incorporate solutions to support their RTO/RPO.
9.	Liability	The following terms are available for the users on failure of the provider to meet the service commitment:  <input checked="" type="checkbox"/> Network failure Liability: Service Credit  <input checked="" type="checkbox"/> Infrastructure failure Liability: Service Credit  <input checked="" type="checkbox"/> Virtual machine instance failure Liability: Service Credit  <input type="checkbox"/> Migrations Liability: _____  <input checked="" type="checkbox"/> Unscheduled downtime Liability: Service Credit  <input type="checkbox"/> Database failure Liability: _____  <input type="checkbox"/> Monitoring failure Liability: _____	Service credits would be based on service schedule/SLA agreed.
Service Support			
10.	Change management	The Cloud Service Provider has established the following for changes, migrations, downtime, and other potential interruptions to cloud services:  <input checked="" type="checkbox"/> Communication plan and procedures for proactive notification	

		<input checked="" type="checkbox"/> Assistance in migration to new services when legacy solutions are discontinued <input checked="" type="checkbox"/> Ability to remain on old versions for a defined time period <input checked="" type="checkbox"/> Ability to choose timing of impact	
11.	Self-service provisioning and management portal	Provide self-service provisioning and management portal for users to manage cloud services: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe the functions of the self-service provisioning and management portal provided: <input checked="" type="checkbox"/> Allow role-based access control (RBAC) <input checked="" type="checkbox"/> Manage resource pools (e.g. VMs, storage, and network) and service templates <input checked="" type="checkbox"/> Track and manage the lifecycle of each service <input checked="" type="checkbox"/> Track consumption of services <input type="checkbox"/> Others: _____ _____	Only applicable for IZO Private cloud customer.  For VPDC self-service portal is not provided.
12.	Incident and problem management	Delivery mode of support: <input checked="" type="checkbox"/> Access via email <input checked="" type="checkbox"/> Access via portal <input checked="" type="checkbox"/> Access via phone support <input checked="" type="checkbox"/> Direct access to support engineers Availability of support: <input checked="" type="checkbox"/> 24 x 7 <input type="checkbox"/> During office hours support, please specify the hours of operations: _____ <input type="checkbox"/> After office hours support, please specify the hours of operations: _____ Service response time: _____ The following are available to users upon request: <input type="checkbox"/> Permanent access to audit records of customer instances <input checked="" type="checkbox"/> Incident management assistance	

		<p>Incident response time: Based on severity of incident</p> <p>Mean time to repair on detection of faults: Based on severity of incident</p>	
13.	Billing	<p>The following billing modes are available (please elaborate granularity of charges and measurement):</p> <p><input checked="" type="checkbox"/> Pay per usage _day &amp; month_ (up to per day/month for compute/storage for IaaS)</p> <p><input checked="" type="checkbox"/> Fixed pricing _____ (up to yearly/monthly/daily)</p> <p><input type="checkbox"/> Other pricing model _____</p> <p><input type="checkbox"/> Not disclosed</p> <p><input checked="" type="checkbox"/> Available billing history: 12 Months</p>	
14.	Data portability	<p>Importable VM formats: VmWare, HyperVisor, KVM</p> <p>Downloadable formats: _____</p> <p>Supported operating systems: _____</p> <p>Language versions of supported operating systems: Windows, All versions of Linux</p> <p>Supported database formats: MSSQL, MySQL</p> <p>API:</p> <p><input type="checkbox"/> Common _____</p> <p><input type="checkbox"/> Customised _____</p> <p>Upon service termination, data is available through:</p> <p><input type="checkbox"/> Physical media</p> <p><input checked="" type="checkbox"/> Standard methods as described above</p> <p><input type="checkbox"/> Other methods _____ _____</p>	Media to be provided by customer
15.	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>	



		<hr/> <hr/> Public access speed (shared bandwidth) in Mbps: 1024 <hr/>	
16.	User management	<input checked="" type="checkbox"/> Identity management <input checked="" type="checkbox"/> Role based access control <input type="checkbox"/> Federated access model <input checked="" type="checkbox"/> Integration with Identity management solutions <input type="checkbox"/> Others _____	Identity and Role based management for IZO private cloud is available for self-service portal for cloud administration. Identity management can be of choice of customer and integration to self-service portal is allowed through APIs.  Choice of identity management for User management for the provisioned VM server is the responsibility of the customer and is based on customer solution.
17.	Lifecycle	The cloud user may select the following for service upgrades and changes:  <input checked="" type="checkbox"/> Automatic provisioning  <input checked="" type="checkbox"/> User customisable provisioning	
Security Configurations			
18.	Security configuration enforcement checks	Security configuration enforcement checks are performed: <input checked="" type="checkbox"/> Manually <input type="checkbox"/> Using automated tools  How often are enforcement checks being performed to ensure all security configurations are applied? One time upon initial configuration	Hypervisor and Management network supporting the delivery of service to customers is monitored for vulnerabilities.  Security configuration of the customer's Guest OS/application is in the responsibility of the customer
19.	Multi-tenancy	<input type="checkbox"/> Distinct physical hosts <input type="checkbox"/> Distinct physical network infrastructure <input checked="" type="checkbox"/> Virtual instance grouping <input checked="" type="checkbox"/> User definable security domains <input checked="" type="checkbox"/> User customisable firewall <input checked="" type="checkbox"/> User definable access policies	Tata Communications provide dedicated private and virtual multi-tenant cloud environment and solution.
Service Elasticity			

20.	Capacity elasticity	<p>The following capacity elasticity options are available:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Programmatic interface to scale up or down</li> <li><input type="checkbox"/> Mean time to start and end new virtual instances _____</li> <li><input type="checkbox"/> Alerts to be sent for unusual high usage</li> <li><input type="checkbox"/> Minimum performance during peak periods _____</li> <li><input type="checkbox"/> Minimum duration to scale up computing resources _____</li> <li><input type="checkbox"/> Minimum additional capacity guaranteed per account _____ (number of cores and GB memory)</li> </ul>	
21.	Network resiliency and elasticity	<p>The following network resiliency and elasticity options are available:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Redundant Internet connectivity links</li> <li><input type="checkbox"/> Redundant Internal connectivity</li> <li><input checked="" type="checkbox"/> Selectable bandwidth up to 1024 Mbps</li> <li><input checked="" type="checkbox"/> Maximum usable IPs _____</li> <li><input type="checkbox"/> Load balancing ports _____</li> <li><input type="checkbox"/> Load balancing protocols _____</li> <li><input checked="" type="checkbox"/> Anti-DDOS protection systems or services</li> <li><input type="checkbox"/> Defence-in-depth mechanisms, please specify: _____ _____</li> <li><input checked="" type="checkbox"/> Network traffic isolation, please specify: Each customer has a separate Firewall Instance which is isolated by VLAN.</li> <li><input type="checkbox"/> Shared or dedicated bandwidth, please specify: _____ Based on customer requirements</li> <li><input type="checkbox"/> QoS traffic control services</li> <li><input type="checkbox"/> Alerts to be sent for unusual high usage</li> <li><input checked="" type="checkbox"/> Minimum performance during peak periods: committed Bandwidth</li> <li><input type="checkbox"/> Minimum period to scale up network throughput _____</li> </ul>	<p>Customer have choice of taking more bandwidths.</p> <p>By default one IP per Virtual Machine. Based on customer requirements, more IPs can be provided.</p>
22.	Storage redundancy and elasticity	<p>The following storage redundancy and elasticity options are available:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Redundant storage connectivity links within each data centre</li> </ul>	

	<ul style="list-style-type: none"><li><input type="checkbox"/> Redundant storage connectivity links between data centres belonging to the same cloud</li><li><input checked="" type="checkbox"/> Storage traffic isolation, please specify: Volume level isolation for each customer _____</li><li><input checked="" type="checkbox"/> Shared or dedicated storage network bandwidth, please specify: Shared</li><li><input type="checkbox"/> Quality of service storage traffic control services</li><li><input type="checkbox"/> Maximum storage capacity for entire cloud, please specify: _____</li><li><input checked="" type="checkbox"/> Maximum storage capacity for single user, please specify: Depends upon customer requirement</li><li><input checked="" type="checkbox"/> Maximum expandable storage, please specify: Depends upon customer requirement</li><li><input type="checkbox"/> Alerts to be sent for unusual high usage</li><li><input type="checkbox"/> Minimum storage I / O performance during peak periods _____</li><li><input type="checkbox"/> Minimum period to scale up storage I / O throughput _____</li></ul>	
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