**SERVICE SCHEDULE**

**CLOUD COMPUTE – INFRASTRUCTURE AS A SERVICE (“IAAS”)**

**CUSTOMER** (“**Custome**r”): enter cUSTOMER name here

This Cloud Compute-Infrastructure as a Service (“IAAS”) Service Schedule (“**Service Schedule**”) shall be governed by and subject to the applicable Master Service Agreement (“**MSA**”) between the Customer and Allstream Business Inc. and/or Allstream Business US, LLC. through its subsidiaries (“**Allstream**”). If the Customer has not executed an MSA then this Service Schedule shall be governed by the terms and conditions of Allstream’s standard MSA as posted on www.allstream.com incorporated herein by this reference and available upon request. Capitalized terms not defined herein will have the meaning ascribed to them in the MSA. Allstream and Customer may be referred to herein as a “Party” and collectively as the “Parties.”

This Service Schedule contains detailed information relating to the provisioning of communications services (“**Services**”) as purchased by Customer from time to time by way of an Allstream approved Service Order.

Unless otherwise defined in this Service Schedule, capitalized terms have the meaning ascribed thereto in the Agreement. Notwithstanding anything in this Service Schedule, nothing shall be deemed to limit in any way the Limitations of Liability provisions contained in Allstream’s Terms of Service.

Allstream will notify Customer via email that Customer’s use of the Services can commence, and Allstream will provide credentials to log into Customer’s cloud environment (“In Service Date”).

Within the sixty (60) day period after the In Service Date, Customer may terminate the Enterprise Cloud Services Order, without penalty, by providing Allstream with fifteen (15) days prior written notice. Such termination shall be effective no later than sixty (60) days from the In Service Date (the “Termination Date”). Customer shall be liable for payment of all monthly fees (“Monthly Fees”) for the period, on a pro rata basis, from the In Service Date until the Termination Date. Customer may not exercise this termination right if Customer has purchased: a) Service Access Point (SAP) Advanced Monitoring Services: Cloud; b) SAP Infrastructure Services: Cloud; or c) SAP Production Services: Cloud.

1. **Services**
	1. **Cloud Resource Pool Services**

Allstream will provide the following in connection with the number of virtual machines (“VMs”) identified in the Service Order.

* The quantity of virtual Central Processing Units (the “**vCPUs**”), Random Access Memory (RAM) and storage (collectively, “**Committed Cloud Resource Pool**”), identified in the Service Order Form;
* The use of additional vCPUs, RAM and storage (“**Flex Resource Pool**”), not to exceed 100% of the Committed Cloud Resource Pool, upon request pursuant to the Customer request guidelines located in the Services Guide in the Customer Portal; Load balancer infrastructure, configuration, implementation, configuration changes, patch management and installation, availability monitoring, incident management and problem resolution; and
* Managed firewall services and redundant firewall infrastructure, configuration, implementation, configuration changes, patch management and installation, availability monitoring, 10 site-to-site virtual private network (VPN) tunnels, creation of backup-and-restore firewall rules, incident management and problem resolution.

Customer may order additional Services for each of the committed cloud resource pool (“Committed Cloud Ressource Pool”) and the flex resource pool (“Flex Resource Pool”) which Allstream will provide at the rates identified in the pricing addenda to the Service Order.

Customer may allocate and reallocate the VMs, vCPUs, RAM and storage quantities to one (1) or more virtual data centers at its discretion so long as the total quantity of each does not exceed the amount identified on the Service Order, provided that no additional labour or costs are incurred by Allstream.

Flex Resource Pool Services are billed in minimum one (1) month increments beginning on the first day of use until Customer requests termination of the Flex Resource Pool Services.  Unless otherwise specified in the Service Order Form, the rate charged for Flex usage will be at a 40% premium over the rate for Committed Services.

With respect to firewall infrastructure:

* Customer may request Allstream support for client VPN services of Customer-licensed client VPN software;
* Customer is responsible for software management and configuration of Customer-managed VPN site-to-site end-point(s);
* Allstream does not monitor VPN persistence.

Allstream maintains exclusive control of system administration security (e.g., administrator or root) level access for firewall and load balancing infrastructure.

* 1. **Managed Internet Access Services: Cloud**

Allstream will provide the amount of bandwidth specified Service Order and, for Allstream-provided internet protocol (IP) addresses, will provide the following in accordance with the Customer-completed design requirements form:

* IP Address registration;
* Registered Autonomous System Number (ASN) (only applicable for Customers who require border gateway protocol (BGP) (peering);
* Monthly report of bandwidth utilization;
* Up to five (5) Domain Naming System (DNS) changes with up to ten (10) records per change per month, for Customer-registered domain names; and
* Domain name administration services for up to ten (10) primary and/or secondary Customer domain(s).

Allstream assigns IP addresses in accordance with the requirements of the American Registry for Internet Numbers (ARIN) and Réseaux IP Européens (RIPE). If Customer has significant IP requirements (for example, in excess of 1,000 public IP addresses), Allstream may require that Customer contact ARIN directly to register the IP addresses.

IP addresses assigned from Allstream are non-portable. Network space allocated to Customer by Allstream must be returned to Allstream in the event the Managed Internet Access Services are terminated or cancelled.

* 1. **Operating System Management Services: Cloud**

Allstream will provide the following for the number of VMs identified on Service Order: Initial operating system build, agent installation (if applicable) and operating system level backups in accordance with the Customer-completed design requirements form;

* Operating system configuration changes upon Customer request;
* Management of system administration security access (e.g., root or administrator access);
* Installation of antivirus software on Windows operating system servers;
* Administration of up to ten (10) Active Directory (“Active Directory”) and/or Lightweight Directory Access Protocol (LDAP) accounts;
* Monitoring operating system patch alerts and providing Customer notification of such patches;
* Execution of daily backup schedules, retention of backup data for four (4) weeks, weekly off-site rotation of media, file restore from media upon Customer request; and modification(s) to the backup schedule upon Customer request, one (1) initial data restoration test;
* Operating system problem resolution and incident management;
* Monitoring of availability & thresholds identified in Customer-completed design requirements form and Customer notification if Allstream detects non-responsiveness or exceeded thresholds.

This Service does not include the definition or the implementation of any database backup and/or restoration methodology.

For all VMs receiving pperating system management services: cloud (“Operating System Management Services: Cloud”), Customer will:

* Provide verification of licenses and necessary license keys applicable to Customer-provided software prior to service provision by Allstream;
* Provide Allstream system administration security (e.g., administrator or root) level access for each VM and, if Customer retains system administration security level access, permit such access to be traced by Allstream; and
* Obtain and maintain 24 hours a day 7 days a week (“24x7”) maintenance agreements with the software vendor for Customer-provided software and notify the software vendor that the wholesale provider of the Services may act as Customer’s agent for the purposes of the software maintenance agreements. This information will be provided by Allstream as applicable.

Customer system administration access to firewall and load balancing infrastructure is not permitted.

* 1. **Secondary Site Failover Services**

Allstream provides failover of the Cloud Services to a secondary site (“**Secondary Site**”) if the primary Allstream site located at 1800 Argentia Road, Mississauga, ON L5N 3S7 (“**Primary Site**”) becomes unavailable in Allstream’s reasonable discretion (“**Failover Event**”). The service includes:

Up to two (2) Customer tests of the Secondary Site Failover Services per twelve (12) month period following the Service Commencement Date.

Allstream will notify the Customer as soon as reasonably possible after a Failover Event of its occurrence. Following a Failover Event, Allstream will notify Customer when the Primary Site is available and schedule with Customer the transfer of Customer data and applications back to the Primary Site no later than fourteen (14) days following the Customer’s receipt of the Allstream notice of availability.

Customer tests of the Failover Services must be scheduled at least thirty (30) days in advance pursuant to the request guidelines located in the Services Guide in the Customer Portal.

Secondary Site Failover Services are provided only where the Cloud Services are available.

**1.5**  **Geographic Load Balancing Services: Cloud**

Allstream will provide the following for the number of load balancers identified on the Service Order located in multiple facilities of the wholesale provider, in accordance with the Customer-completed design requirements form:

* Load balancer configuration, implementation and Customer-requested configuration changes;
* Installation of Customer-provided and maintained Secure Sockets Layer (SSL) certificates;
* Up to five (5) DNS entries;
* Load balancer availability monitoring;
* Load balancer problem resolution and incident management; and
* Allstream retains exclusive control of administrator security passwords and IDs (Customer may request a copy of device configuration data).

**1.6 Host Intrusion Detection Services: Cloud (“IDS”)**

Allstream will provide the following for the number of VMs identified on the Service Order:

* Installation and configuration of IDS infrastructure in accordance with the Customer-completed design requirements form;
* Configuration of IDS rules, including fine tuning of rules during thirty (30) day period following initial configuration and implementation of Customer-requested changes to IDS rules;
* Automatic implementation of new attack signatures as made available by vendor of IDS software;
* 24 hours a day,7 days a week,65 days a year (“24x7x365”) intrusion monitoring and notification to Customer of detected alerts based upon manufacturer and Customer-approved settings; and
* Retention of IDS logs for ninety (90) days.

Customer administrative access to Allstream devices used to provide IDS is not permitted. Customer may request a hardcopy or electronic copy of device configuration data.

**1.7** **Managed Database Services: Cloud**

Allstream will provide the following for the number of hosts identified on the Service Order:

* Initial database installation, configuration and connectivity validation in accordance with the Customer-completed design requirements form;
* Database configuration changes, table compaction or reorganization upon Customer request;
* Database software patch maintenance, up to one (1) point release upgrade per twelve (12) month period, each upon Customer request and approval;
* Definition and implementation of any database backup and/or restoration methodology;
* Database problem resolution and incident management and exclusive control of database startup and shutdown execution upon Customer approval;
* Management of database security access; and
* Monitoring of availability & thresholds identified in Customer-completed design requirements form and Customer notification if Allstream detects non-responsiveness or exceeded thresholds.

Except as set forth below, Managed Database Services: Cloud (“Managed Database Services: Cloud”)are subject to the Operating System Management Services: Cloud - General conditions as set out in this Schedule.

Database logs are monitored for alert and critical level conditions and are not manually reviewed unless a problem occurs.

**1.8** **Software Licensing Services**

Allstream will provide the following for the number and type of software packages identified on the Service Order:

* Installation and configuration of the software;
* Customer access to the software vendor for maintenance and support through Allstream’s maintenance agreement covering the software packages.

Customer will comply with the hird party vendor licensing terms and conditions applicable to the software package.

Upon termination of the Software Licensing Services for any reason, Customer will de-install and immediately discontinue all use of the software provided under Software Licensing Services.

**1.9 Managed Citrix Services: Cloud**

Allstream will provide the following for the number of hosts and instances identified on the Service Order in accordance with the Customer-completed design requirements form:

* Initial installation of citrix (“Citrix”), Citrix database instance for Citrix data dtore (”Citrix Data Store”), concurrent user connection (Concurrent User Connection”), Microsoft® Terminal Services and default Microsoft® and universal Citrix print driver;
* Configuration of Citrix farms (“Farms”) and sub farms “Sub Famrs”), including Citrix load balancing and failover parameters;
* Citrix and database instance for Citrix Data Store configuration and connectivity validation;
* Publish Customer-approved and Citrix-certified applications;
* Citrix software patch maintenance, up to one (1) point release upgrade per twelve (12) month period, each upon Customer request and approval;
* Assistance with resolution of detected Citrix software failures; and
* Citrix configuration changes upon Customer request.

Customer will procure and maintain Citrix “Subscription Advantage” software maintenance for Customer-provided Citrix software.

Managed citrix services (“Managed Citrix Services”) do not include:

* End user account administration, management or trouble-shooting;
* Management or support for anonymous or shared Citrix accounts; or
* Management of domain controllers installed on the same server as the Citrix application.

**1.10** **Managed Microsoft® Exchange Services: Cloud**

Allstream will provide the following for the number of instances identified on the Service Order:

* Initial exchange (“Exchange”) and related anti-virus, SPAM and content filtering software installation and configuration in accordance with the Customer-completed design requirements form;
* Exchange configuration changes upon Customer request;
* Customer notification of critical security Exchange patches;
* Implement Exchange software patches upon Customer approval and request;
* Exchange problem resolution and incident management; and
* Monitor Exchange service and mail store availability, record log errors and notify Customer if Allstream detects non-responsiveness, errors or exceeded thresholds.

Customer will:

* Provide a valid and registered top-level domain name and support for linking multiplex (MX) records and DNS; and
* Manage end user account creation, administration and support.

Except as set forth below, managed exchange services: cloud (‘Managed Exchange Services”) are subject to the Operating System Management Services: Cloud - General conditions as set out in this Schedule.

**1.11** **BlackBerry® Enterprise Server Services: Cloud**

Allstream will provide the following for the number of BlackBerry® Enterprise Server Accounts (“**Accounts**”) hosted on the VMs, each identified on the Service Order:

* Remote provisioning of Accounts based on the Customer-completed design requirements form;
* Re-provisioning of existing Accounts to reset passwords or associate with new mobile devices; and
* Routing email between Customer’s Exchange environment managed by Allstream and those Customer-selected mobile devices associated with email addresses hosted in such environment.

Customer will:

* Provide Allstream with information necessary for provisioning of the Service, including personal identification (“PIN”) number’s associated with the mobile devices;
* Purchase and provide maintenance for all handheld BlackBerry® mobile devices;
* Contract with a mobile services carrier supporting the transport of email using the BlackBerry® network;
* License, install and maintain BlackBerry® desktop software on Customer equipment; and
* Comply with the Third Party vendor licensing terms and conditions applicable to the software package.

Remote provisioning of Accounts may result in interruption of the Hosted BlackBerry® Services for up to twenty-four (24) hours.

All application functional testing and validation is the responsibility of the Customer.

**1.12** **SAP Advanced Monitoring Services: Cloud**

Allstream will provide the following for the number of SAP Concurrent Users and SAP monitored landscapes, each as identified on the Service Order:

* Monitoring and reporting of SAP system use information;
* Monitoring of Customer-established thresholds and notifying Customer when thresholds are exceeded;
* Reporting of Customer-identified SAP system capacity and consumption performance metrics; and
* Customer notification of Customer-identified critical batch jobs.

**1.13** **SAP Infrastructure Services: Cloud**

Allstream will provide the following for the number of SAP database and application server VMs identified on the Service Order:

* Management of SAP print spool and queue-based on Customer-provided SAP print requirements and driver standards;
* Customer-requested configuration changes of operating systems and SAP file systems;
* SAP system and language installations;
* Storage Area Network (SAN) configuration management for SAP VMs; and
* SAP Database backup including definition and implementation of SAP database backup and restoration methodology.

Customer will:

* Manage SAP printer output requests, media handling and port clearing; and
* Coordinate and review with Allstream Customer-desired SAP changes prior to such changes being performed.

1.14 ***SAP Production Services: Cloud***

Allstream will provide the following for the number of SAP landscapes identified on the Service Order:

* Processing and documenting of Customer-requested and approved SAP Transports;
* Performance tuning recommendations, requirements and subsequent implementation upon Customer approval;
* Installation of SAP application;
* Database version upgrades as identified on the Service Order;
* Application of Customer-approved SAP patches into Customer-identified production or non-production environments; and
* Connectivity to SAP Operations Support Systems (OSS) via Customer ID and troubleshooting of detected SAP application failures.

Customer will:

* Manage SAP application system security, including SAP access and user IDs;
* Manage SAP printer output requests, media handling and port clearing;
* Manage all application functional testing and validation; and
* Create and manage batch job execution schedules and batch job restart requirements.

Managed SAP Services do not include application functional support level responsibilities or services.

SAP Production Services do not include:

* Resolution of issues caused by software or applications not managed by Allstream; or
* Application security policy definition, creation or enforcement.

**1.15** **SAP Flex Labour Services: Cloud**

Allstream will provide the number of eight (8) hour blocks per month identified in the Service Order which are used to support the scope of work described in the accompanying project agreement.

1. **Service Conditions**
	1. Monitoring is conducted at five (5) minute intervals. Customer notification is triggered by two (2) consecutive negative polling responses.
	2. Monitoring detects only positive or negative Internet Control Message Protocol (ICMP)/Simple Network Management Protocol (SNMP) responses from direct Network Interface Card (NIC) polling and does not detect SNMP traps. Monitored devices may generate false-positive alerts that are caused by network congestion or application activity.
	3. The monitoring components of the Cloud Services may require a monitoring agent be installed on the operating system. Customer will install the agent and vendor-required upgrades or updates, unless the operating system is managed by Allstream.
	4. In the event there is more than one instance or partition of an operating system or application running on a monitored device, then the Allstream monitoring “unit” is per instance instead of per VM.
	5. Allstream’s standard daily backup window begins at 6:00 PM in the time zone where the servers are located (at the Primary Site) and ends at 6:00 AM in the same time zone the following day. Allstream cannot guarantee that backups will be completed within scheduled backup window(s) or that data restoration will occur within a defined period of time as both are dependent on the quantity of data to transfer and network bandwidth availability.
	6. Cloud Services do not include support for configurations or architectures that are not supported or recommended by the applicable vendor.
	7. Database licenses are provided by Customer unless included on the Service Order under Software Licensing Services as set out in the Service Order Form.
	8. Allstream does not guarantee a time to fix Customer-provided software. Allstream will engage and manage vendors in accordance with the terms of the underlying maintenance agreement and is not responsible for vendor failures.
	9. Allstream will provide technical support, problem resolution and change management in accordance with the support and change management policy located in the Services Guide in the Customer Portal.
	10. Upon the expiration/cancellation of the Services for any reason, Customer will delete or migrate all Customer data resident on Allstream systems or equipment within thirty (30) days of service expiration/cancellation. To the extent that Customer fails to do so, Allstream will delete all such Customer data and software.

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