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## **SOFTLAYER TECHNOLOGIES, INC.**

### **SOC 3 SYSTRUST FOR SERVICE ORGANIZATIONS REPORT**

#### **SYSTEM DESCRIPTION OF THE PLATFORM SERVICES RELEVANT TO SECURITY AND AVAILABILITY**



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## REPORT OF INDEPENDENT ACCOUNTANTS

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To the Management of SoftLayer Technologies, Inc.:

### Scope

We have examined management's assertion that SoftLayer Technologies, Inc. (SoftLayer) during the period November 1, 2013, through October 31, 2014, maintained effective controls over the Platform Services (described in the attached system/service description) to provide reasonable assurance that:

- the system as defined, was protected against unauthorized access (both physical and logical); and
- the system as defined, was available for operation and use as committed or agreed;

based on the criteria for security and availability set forth in the AICPA's TSP Section 100, *Trust Services Principles, Criteria, and Illustrations for Security, Availability, Processing Integrity, Confidentiality, and Privacy*.

### Service Organization's Responsibilities

This assertion is the responsibility of SoftLayer's management.

### Service Auditor's Responsibilities

Our responsibility is to express an opinion on management's assertion based on our examination. Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants and, accordingly, included (1) obtaining an understanding of SoftLayer's relevant system security and availability controls; (2) testing and evaluating the operating effectiveness of the controls; and (3) performing such other procedures as we considered necessary in the circumstances. We believe that our examination provides a reasonable basis for our opinion.

### Inherent Limitations

Because of inherent limitations in controls, errors or fraud may occur and not be detected. Furthermore, the projection of any conclusions, based on our findings, to future periods is subject to the risk that the validity of such conclusions may be altered because of changes made to the system or controls, the failure to make needed changes to the system or controls, or deterioration in the degree of effectiveness of the controls.

### Opinion

In our opinion, SoftLayer's management's assertion referred to above is fairly stated, in all material respects, based on the AICPA Trust Services Criteria for security and availability.

*Weaver and Tidwell, L.L.P.*

Weaver and Tidwell, L.L.P.

Dallas, Texas

February 5, 2015

**MANAGEMENT'S ASSERTION REGARDING THE EFFECTIVENESS OF ITS CONTROLS OVER THE  
PLATFORM SERVICES BASED ON THE AICPA TRUST PRINCIPLES AND CRITERIA FOR  
SECURITY AND AVAILABILITY**

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SoftLayer Technologies, Inc. (SoftLayer) provides its Platform Services as described in the attached system/services description. The Management of SoftLayer maintained effective controls over the security and availability of its Platform Services system to provide reasonable assurance that:

the system was protected against unauthorized access (both physical and logical);  
the system was available for operation and use as committed and agreed;

during the period November 1, 2013 through October 31, 2014, based on the criteria for security and availability principles set forth in the AICPA's TSP Section 100, *Trust Services Principles, Criteria, and Illustrations for Security, Availability, Processing Integrity, Confidentiality, and Privacy*.

Our Description of SoftLayer Systems Platform Services summarizes those aspects of the system covered by our assertion.

Subservice organizations are utilized in the fulfillment of Platform Services. Control activities performed by subservice organizations were included within the scope of this examination.

## **DESCRIPTION OF SOFTLAYER TECHNOLOGIES, INC.'S PLATFORM SERVICES**

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Headquartered in Dallas, Texas, SoftLayer provides on-demand cloud infrastructure as a service through its Platform Services. SoftLayer lets customers create bare metal, virtual server, or hybrid computing environments, leveraging global data centers and points of presence (PoP).

SoftLayer was acquired by International Business Machines Corporation (IBM) in June, 2013. Certain processes and personnel are in the process of being transferred to IBM but as it relates to the delivery of Platform Services, SoftLayer remained operationally independent for the reporting period with the exception of Human Resource services. Human Resource services have been transferred to IBM, which include the recruiting, onboarding process for U.S. based employees, employee handbook process, and performance evaluations, and off-boarding. The controls described in this report continued to operate without interruption throughout the reporting period.

SoftLayer provides Platform Services for 22 million websites, serving more than 21,000 customers across 140+ countries with approximately 40 percent located outside the United States. Operations are conducted from 17 data centers (as of October 31, 2014), located in the following cities which in total contains more than 250,000 servers housed in raised-floor space with expansion capabilities.

### **U.S. Locations**

- Dallas, Texas (6)
- Houston, Texas (1)
- Seattle, Washington (1)
- San Jose, California (1)
- Washington, DC (2)

### **Locations Outside of the U.S.**

- Amsterdam, Netherlands (1)
- London, England (1)
- Singapore (1)
- Toronto, Canada (1)
- Hong Kong (1)
- Melbourne, Australia (1)

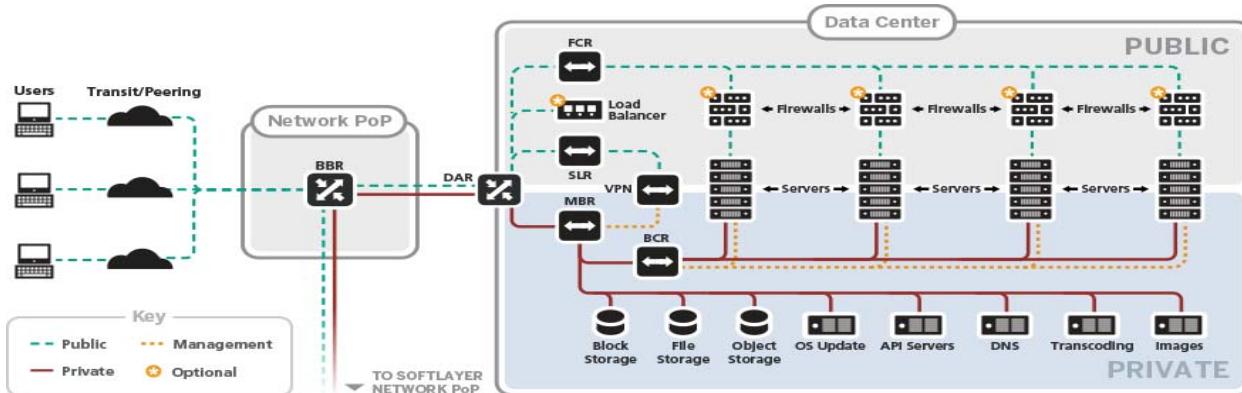
The primary Network Operations Center (NOC) is based in Houston, Texas, and is redundant with a NOC in Dallas, Texas. Through the NOC, SoftLayer provides 24 hours per day monitoring to support all of the data centers. The NOC utilizes a variety of tools in combination to monitor, mitigate, and resolve potential issues. Each data center also has its own local Data Center Control Room (DCR), which is used to monitor and resolve potential issues locally.

SoftLayer automates its customer interactions via its Customer Portal and most server support activities using an open Application Programming Interface (API). SoftLayer empowers enterprises of any size with control, security, scalability, and ease-of-management. Proprietary offerings include the industry's first "Network-Within-A-Network" topology for true out-of-band access, providing remote access to all management options.

### **Global Network**

SoftLayer's global network offers more than 2,000 gigabits per second of bandwidth (Gbps) of connectivity between data centers and networks. These locations each have multiple 10 Gbps transit connections as well as peering links to additional service providers and access networks. 22 geographically diverse PoPs provide seamless, direct, private and high speed access to the backbone network. Every upstream network port is multiple 10 Gbps connections, and every rack is terminated with two 10 Gbps connections to the public Internet and two 10 Gbps connections to SoftLayer's private network.

The SoftLayer production network delivers added scalability and control because of its unique topology as a "network of networks". Public, private, and management traffic travel across separate network interfaces, segregating and securing traffic while streamlining management functions. See *Figure 1* for a diagram of the "Network-Within-A-Network" topology and further discussions below on the different networks: public, private, and management.



**Figure 1: SoftLayer's “Network-Within-A-Network” Topology**

### Public Network

Every data center and network PoP has multiple 10 Gbps connections to top-tier transit and peering network carriers. Network traffic from anywhere in the world will connect to the closest network PoP, and it will travel directly across the network to its data center, minimizing the number of network hops and handoffs between providers. Inside the data center, SoftLayer offers up to 10 Gbps to individual servers to meet even the most demanding network-intensive workloads.

### Private Network

All SoftLayer data centers and PoPs are connected by SoftLayer's private network backbone. This private network is separate from the public network, and it provides a seamless connection to customer's servers (bare metal or virtual) in SoftLayer data centers around the world. Data can be moved between servers through the private network and customers can utilize various services, such as the update and patch servers, software repositories, and backend services without interfering with public network traffic.

### Management Network

In addition to the public and private networks, each SoftLayer server is connected to an out-of-band management network. This management network, accessible via VPN, allows access to each server independently of its CPU, and regardless of its firmware and operating system for maintenance and administration purposes. The customer can perform OS reloads, power-cycle the server, or use the Intelligent Platform Management Interface (IPMI) connection to watch the server boot up as though the customer was standing in the data center with a keyboard, monitor, and mouse physically connected.

### Network Design for Availability and IMS Impact on Customers' Environments

Based on the configuration of SoftLayer's “Network-Within-A-Network”, with 3 network interfaces; if an outage occurs at a data center on the public network, the traffic will be routed and can traverse through the other established networks to provide continued availability of the server, by routing traffic to another data center and then utilizing the other networks to reach the server.

Also, based on SoftLayer's design of the environment, IMS is connected to the customers' bare metal and virtual servers; however, any IMS outage that may occur will not have an impact on the customer's environments. IMS is set up separately from the customers' environments, such that public and private traffic will still route even if IMS becomes unavailable.

SoftLayer provides native IPv6 support for its publicly available services eliminating the need to tunnel to carry IPv6 over IPv4 networks, which in turn means that the networks are not limited by the diminishing pool of IPv4 addresses.

### **SoftLayer Services Not Included in the Scope of the Report**

SoftLayer provides services to the Federal government and Department of Defense (DoD) via the FedRAMP and Defense Information Systems Agency (DISA)/ DoD programs in two data centers (DAL08 and WDC03) dedicated to federal agencies and DoD agencies. A separate instance of IMS (FedIMS) provides provisioning functionality and infrastructure management. The data center facilities are included within the scope of the report, however, other aspects of the services including the FedIMS system and its processes, are not included within the scope of this report.

SoftLayer also provides co-location services, security protection services, encryption certificates, virtualization services (network, security, server, and storage), managed hosting solutions, backup and storage solutions. The accompanying description includes only those controls directly impacting SoftLayer's Platform Services and customers' hosting environments utilizing SoftLayer's Platform Services, and does not include controls over other services. SoftLayer also provides enterprise-class tools to help mitigate potential security risks and ensure availability. Tools provided by SoftLayer include, but are not limited to, load balancing, intrusion detection and prevention, standard and dedicated hardware firewalls, anti-virus, anti-spyware, anti-malware, VeriSign® and GeoTrust® SSL Certificates. Weaver and Tidwell, L.L.P.'s (Weaver's) examination did not extend to controls of SoftLayer's other services and tools.

## **BOUNDARIES OF PLATFORM SERVICES**

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The purpose of this section is to describe the scope of Platform Services and how it relates to the various services provided by SoftLayer. SoftLayer's Platform provides infrastructure as a service for customers with bare metal servers, or a hybrid environment that encompasses bare metal servers and virtual servers. Future references to customers' environments refers to customers' bare metal, virtual servers, or hybrid set ups that include both bare metal and virtual servers. The SoftLayer Platform is a modular platform that leverages a proprietary automated provisioning system using bare metal servers, virtual servers, storage, and networking services to integrate and provide highly-scalable private and hybrid Infrastructure as a Service (IaaS). SoftLayer's Platform Services include the activities that are performed by SoftLayer for these customers, the physical and environmental security of the hardware, the network, the logical access restrictions, and customer support. Many of the activities for SoftLayer's bare metal or virtual server are the same, and as such, the processes and controls that are included within the scope of this report are the same; and where there are differences in execution of the control, such notations are referenced.

### **Data Center Facilities**

Each data center building may contain multiple server rooms (SR), which are designated as separate areas of the data center, whether separated by a cage or through a room enclosure. All facilities are secured from public access and protected collectively by redundancy in power, cooling, fire suppression, network connectivity and security. Each server room is typically made up of one pod (the initial go live date and modernization status of the server room determines whether it follows a pod structure or a legacy structure). Each pod is built to the same specifications to support up to 5,000 servers. Leveraging this standardization across all geographic locations, SoftLayer optimizes key data center performance variables including: space, power, network, personnel, and internal infrastructure.

SoftLayer provides Platform Services out of 17 locations, as of October 31, 2014 and uses multiple telecom service providers for backbone connectivity and multiple co-location management providers for data center facility management.

For purposes of this report, SoftLayer provides Platform Services to customers from the locations in *Table 1*.

Facility	Physical Address
DAL01	1950 Stemmons, Dallas, TX
DAL02	1333 North Stemmons, Dallas, TX
DAL05	4849 Alpha Road, Dallas, TX
DAL06	1333 North Stemmons, Dallas, TX
DAL07	1700 Summit Avenue, Plano, TX
DAL08	900 Quality Way, Richardson, TX
HOU02	855 Greens Parkway, Houston, TX
SJC01	3105 Alfred Street, Santa Clara, CA
WDC01	4030 Lafayette, Chantilly, VA
WDC01	4050 Lafayette, Chantilly, VA
WDC03	43940 Digital Loudoun Plaza (Bldg G), Ashburn, VA
SEA01	3355 South 120th Place, Tukwila, WA
SEA01	3355 South 120th Place, Tukwila, WA
AMS01	Paul van Vlissingenstraat 16, 1096 BK, Amsterdam, Netherlands
HKG01	33 Chun Choi St., Tseung Kwan O Industrial Estate, New Territories, Hong Kong
LON02	Fountain Court, Cox Lane, Chessington, Surrey KT9 1SJ, United Kingdom
MEL01	72 Radnor Drive, Deer Park Melbourne, Australia
SNG01	29A International Business Park, Jurong East, Singapore
TOR01	371 Gough Rd, Markham Ontario

**Table 1: In-scope SoftLayer Data Center Facilities as of October 31, 2014**

During the reporting period, the following data centers and/or server rooms went live:

- HKG01 – SR01: June 2, 2014
- LON02 – SR01: July, 2014
- MEL01 – SR01: October 6, 2014
- TOR01 – SR01: August 12, 2014
- WDC03 – SR01: September 11, 2014
- DAL08 – SR01: July, 2014
- SNG01 – SR03: August, 2014

Note: LON01 and WDC02 are PoPs, which accounts for the gap in the numbering sequence.

### Production Network

The production network encompasses the public network, the private network, and the management network described above. Master Backend Routers (MBR) are the most critical network devices for managing the security and availability of the production network. Redundant Master Backend Routers are installed in each data center as part of the production network infrastructure. The outage of an MBR has the potential to impact server provisioning, access to backend services such as storage, OS updates, and customer VPN access. Significant changes made to these devices have the potential to affect both security and availability of the Platform Services provided by SoftLayer.

Other network devices exist within the production network, such as the Frontend Customer Router, the Backend Customer Router, and the production network switches. These devices have not been included within this assessment based on management's determination that failures of these network devices would have a much lower impact on the security and availability of the production network. This system description does not include the SoftLayer Corporate network. Internal boundaries are established through dedicated VLANs (Virtual Local Area Networks) to protect the customer/production network from the corporate network.

## IMS

Internal Management System (IMS) is an internally developed customer relationship management (CRM) system used to track customers' hardware and services. It is based on SoftLayer's robust Open API Library and allows customers to fully manage their environments through 180 discrete services, and 100 other automated functions. Management capabilities include system and network management, account management, ordering and deployment, and customer support. The system has two components: IMS, as viewed by internal employees, and the Customer Portal, as available to users of SoftLayer's Platform Services. The Customer Portal allows customers to:

- Create and manage tickets for incident response and resolution
- Review account information
- View information and some configuration data regarding their purchased solutions
- Perform functions such as OS reloads, and access RescueLayer
- Maintain firewall and DNS configurations that affect their bare metal servers
- Purchase or upgrade services which initiates the automated provisioning process for new systems

SoftLayer personnel also have access to IMS to set up and configure purchased solutions, assist in troubleshooting technical issues, and responding to customer requests. Ticket queues are predefined in IMS, and as ticket requests are received and prioritized, the tickets are routed to the specified team to resolve.