EQUINIX

SOC 1 REPORT

FOR

AMERICAS DATA CENTER HOSTING AND BRASIL MANAGED SERVICES

A TYPE 2 INDEPENDENT SERVICE AUDITOR'S REPORT ON A DESCRIPTION OF A SERVICE ORGANIZATION'S SYSTEM AND THE SUITABILITY OF THE DESIGN AND OPERATING EFFECTIVENESS OF CONTROLS

FOR THE PERIOD NOVEMBER 1, 2018, TO OCTOBER 31, 2019

PREPARED IN ACCORDANCE WITH THE
AICPA SSAE NO. 18 AND IAASB ISAE 3402 STANDARDS

Attestation and Compliance Services

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Quality, above all.

This report is intended solely for use by the management of Equinix, Inc., its user entities (i.e., customers) that utilized the services covered by this report during the specified time period, and the independent financial statement auditors of those user entities (each referred to herein as a “specified user”).

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SECTION I

INDEPENDENT SERVICE AUDITOR'S REPORT

INDEPENDENT SERVICE AUDITOR'S REPORT

To Equinix, Inc.:

Scope

We have examined Equinix, Inc.'s ("Equinix" or "service organization") description of its Americas Data Center Hosting Services and Brasil Managed Services system throughout the period November 1, 2018, to October 31, 2019 (the "description"), and the suitability of the design and operating effectiveness of controls included in the description to achieve the related control objectives stated in the description, based on criteria identified in "Management's Assertion" in Section 2 (the "assertion"). The controls and control objectives included in the description are those that management of Equinix believes are likely to be relevant to user entities' internal control over financial reporting, and the description does not include those aspects of the Americas Data Center Hosting Services and Brasil Managed Services system that are not likely to be relevant to user entities' internal control over financial reporting.

The description indicates whether certain control objectives specified in the description can be achieved only if complementary user entity controls assumed in the design of Equinix's controls are suitably designed and operating effectively, along with related controls at the service organization. Our examination did not extend to such complementary user entity controls, as applicable, and we have not evaluated the suitability of the design or operating effectiveness of such complementary user entity controls.

Equinix uses a subservice organization for all of the environmental protection controls at the Chicago 4 (CH4) data center facility and all of the physical security controls at the Dallas 10 (DA10) data center facility. The description includes only the control objectives and related controls of Equinix and excludes the control objectives and related controls of the subservice organization. The description also indicates whether certain control objectives specified by Equinix can be achieved only if complementary subservice organization controls assumed in the design of Equinix's controls are suitably designed and operating effectively, along with the related controls at Equinix. Our examination did not extend to controls of the subservice organization, and we have not evaluated the suitability of the design or operating effectiveness of such complementary subservice organization controls.

Service Organization's Responsibilities

In Section 2, Equinix has provided an assertion about the fairness of the presentation of the description and suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description. Equinix is responsible for preparing the description and for the assertion, including the completeness, accuracy, and method of presentation of the description and the assertion, providing the services covered by the description, specifying the control objectives and stating them in the description, identifying the risks that threaten the achievement of the control objectives, selecting the criteria stated in the assertion, and designing, implementing, and documenting controls that are suitably designed and operating effectively to achieve the related control objectives stated in the description.

Service Auditor's Responsibilities

Our responsibility is to express an opinion on the fairness of the presentation of the description and on the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) and International Standard on Assurance Engagements (ISAE) 3402, Assurance Reports on Controls at a Service Organization, issued by the International Auditing and Assurance Standards Board. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether, in all material respects, based on the criteria in management's assertion, the description is fairly presented and the controls were suitably designed and operating effectively to achieve the related control objectives stated in the description throughout the period November 1, 2018, to October 31, 2019. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

An examination of a description of a service organization's system and the suitability of the design and operating effectiveness of controls involves:

- performing procedures to obtain evidence about the fairness of the presentation of the description and the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on the criteria in management's assertion;
- assessing the risks that the description is not fairly presented and that the controls were not suitably designed or operating effectively to achieve the related control objectives stated in the description;
- testing the operating effectiveness of those controls that management considers necessary to provide reasonable assurance that the related control objectives stated in the description were achieved; and
- evaluating the overall presentation of the description, suitability of the control objectives stated in the description, and suitability of the criteria specified by the service organization in its assertion.

Service Auditor's Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Professional Conduct established by the AICPA.

We applied the Statements on Quality Control established by the AICPA and, accordingly, maintain a comprehensive system of quality control.

Inherent Limitations

The description is prepared to meet the common needs of a broad range of user entities and their auditors who audit and report on user entities' financial statements and may not, therefore, include every aspect of the system that each individual user entity may consider important in its own particular environment. Because of their nature, controls at a service organization may not prevent, or detect and correct, all misstatements in providing the data center hosting services. Also, the projection to the future of any evaluation of the fairness of the presentation of the description, or conclusions about the suitability of the design of the controls to achieve the related control objectives, is subject to the risk that controls at a service organization may become ineffective.

Description of Tests of Controls

The specific controls tested and the nature, timing, and results of those tests are listed in Section 4 (the "Testing Matrices").

Opinion

As indicated in the accompanying description of the system, Equinix sold the New York 12 (NY12) data center facility on October 11, 2019. Therefore, any references to controls at the NY12 data center are specific to the facility's dates of operation under Equinix ownership, and during the period November 1, 2018, to October 11, 2019.

In our opinion, in all material respects, based on the criteria described in Equinix's assertion in Section 2,

a. the description fairly presents the Americas Data Center Hosting and Brasil Managed Services system that was designed and implemented throughout the period November 1, 2018, to October 11, 2019 for the NY12 data center facility, and November 1, 2018, to October 31, 2019 for all other in-scope data center facilities described in Section 3 below;

b. the controls related to the control objectives stated in the description were suitably designed to provide reasonable assurance that the control objectives would be achieved if the controls operated effectively throughout the period November 1, 2018, to October 11, 2019 for the NY12 data center facility, and November 1, 2018, to October 31, 2019 for all other in-scope data center facilities described in Section 3 below, and as applicable, subservice organizations and user entities applied the complementary controls assumed in the design of Equinix's controls throughout the period November 1, 2018, to October 31, 2019; and

c. the controls operated effectively to provide reasonable assurance that the control objectives stated in the description were achieved throughout the period November 1, 2018, to October 11, 2019 for the NY12 data center facility, and November 1, 2018, to October 31, 2019 for all other in-scope data center facilities described in Section 3 below, if, as applicable, complementary subservice organization and user entity

controls assumed in the design of Equinix's controls operated effectively throughout the period November 1, 2018, to October 31, 2019 .

Restricted Use

This report, including the description of the tests of controls and results thereof in the Testing Matrices, is intended solely for the information and use of management of Equinix, user entities of Equinix's Americas Data Center Hosting and Brasil Managed Services system during some or all of the period November 1, 2018, to October 31, 2019, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by user entities themselves, when assessing the risks of material misstatement of user entities' financial statements. This report is not intended to be, and should not be, used by anyone other than the specified parties.

Schellman & Company, LLC

Tampa, Florida
December 6, 2019

SECTION 2

MANAGEMENT'S ASSERTION

EQUINIX

MANAGEMENT'S ASSERTION

We have prepared the description of Equinix, Inc.'s ("Equinix") Americas Data Center Hosting and Brasil Managed Services system for the Americas data center facilities throughout the period November 1, 2018, to October 31, 2019 (the "description"), for user entities of the system during some or all of the period November 1, 2018, to October 31, 2019, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by subservice organizations and user entities of the system themselves, when assessing the risks of material misstatement of user entities' financial statements.

Equinix uses a subservice organization for all of the environmental protection controls at the Chicago 4 (CH4) data center facility and all of the physical security controls at the Dallas 10 (DA10) data center facility. The description includes only the control objectives and related controls of Equinix and excludes the control objectives and related controls of the subservice organization. The description also indicates whether certain control objectives specified in the description can be achieved only if complementary subservice organization controls assumed in the design of our controls are suitably designed and operating effectively, along with the related controls. The description does not extend to controls of the subservice organization.

The description indicates whether certain control objectives specified in the description can be achieved only if complementary user entity controls assumed in the design of Equinix's controls are suitably designed and operating effectively, along with related controls at Equinix. The description does not extend to controls of the user entities.

We confirm, to the best of our knowledge and belief, that

a. the description fairly presents the Americas Data Center Hosting and Brasil Managed Services system made available to user entities of the system during some or all of the period November 1, 2018, to October 31, 2019, for the Americas data center facilities as it relates to controls that are likely to be relevant to user entities' internal control over financial reporting. The criteria we used in making this assertion were that the description

    i. presents how the system made available to user entities of the system was designed and implemented to process relevant user entity transactions, including, as applicable:

        (1) the types of services provided including, as appropriate, the classes of transactions processed;

        (2) the procedures, within both automated and manual systems, by which those services are provided, including, as appropriate, procedures by which transactions are initiated, authorized, recorded, processed, corrected as necessary, and transferred to reports and other information prepared for user entities of the system;

        (3) the information used in the performance of the procedures including, if applicable, related accounting records, whether electronic or manual, and supporting information involved in initiating, authorizing, recording, processing, and reporting transactions; this includes the correction of incorrect information and how information is transferred to the reports and other information prepared for user entities;

        (4) how the system captures and addresses significant events and conditions, other than transactions;

        (5) the process used to prepare reports or other information provided for entities;

        (6) services performed by a subservice organization, if any, including whether the carve-out method or the inclusive method has been used in relation to them;

        (7) the specified control objectives and controls designed to achieve those objectives, including as applicable, complementary user entity controls and complementary subservice organization controls assumed in the design of the Equinix's controls; and

(8) other aspects of our control environment, risk assessment process, information, and communication systems (including the related business processes), control activities, and monitoring activities that are relevant to the services provided;

ii. includes relevant details of changes to the Americas Data Center Hosting and Brasil Managed Services system during the period covered by the description; and

iii. does not omit or distort information relevant to the scope of the Americas Data Center Hosting and Brasil Managed Services system, while acknowledging that the description is prepared to meet the common needs of a broad range of user entities of the system and their user auditors, and may not, therefore, include every aspect of the Americas Data Center Hosting and Brasil Managed Services system that each individual user entity of the system and its auditor may consider important in its own particular environment; and

b. the controls related to the control objectives stated in the description were suitably designed and operating effectively throughout the period November 1, 2018, to October 31, 2019, to achieve those control objectives if, as applicable, subservice organizations and user entities applied complementary controls assumed in the design of Equinix's controls throughout the period November 1, 2018, to October 31, 2019. The criteria we used in making this assertion were that

i. the risks that threaten the achievement of the control objectives stated in the description have been identified by management of Equinix;

ii. the controls identified in the description would, if operating effectively, provide reasonable assurance that those risks would not prevent the control objectives stated in the description from being achieved; and

iii. the controls were consistently applied as designed, including whether manual controls were applied by individuals who have the appropriate competence and authority.

As indicated in our description of the system, the New York 12 (NY12) data center facility was sold on October 11, 2019. Therefore, any references to controls at the NY12 data center facility are specific to the facility's dates of operation under Equinix ownership, and during the period November 1, 2018, to October 11, 2019.

Section 3

Description of the System

OVERVIEW OF OPERATIONS

Company Background

Equinix was founded in 1998 and operates International Business Exchange™ (IBX) data centers offering businesses a place to run their operations and exchange information. Equinix's interconnection platform spans 53 markets on five continents and hosts a comprehensive portfolio of digital services and ecosystems that allows customers to securely scale their digital infrastructure wherever opportunity leads. More than 9,800 companies populate Equinix's diverse ecosystems, and all are potential partners or customers.

Description of Services Provided

Colocation Services

Equinix's IBX data centers are customizable to support the unique requirements of their customers' business. The sites offer reliability, redundancy, security, customization, power, and cooling availability to meet the requirements of their customers.

IBX Infrastructure

Each IBX data center utilizes an array of security equipment, techniques, and procedures to control, monitor, and record access to the facility, including customer cage areas. Exterior walls may incorporate additional security measures, such as reinforced concrete, Kevlar bullet board, vapor barriers, or bullet-resistant front doors. Colocation and IBX floor areas have window-less exteriors. In case due to the existing infrastructure there are windows leading to the exterior then they need to be locked from the inside or access controlled. In many of the IBXs, exterior perimeter walls, doors, and windows, and the main interior entry door to the colocation floor, are constructed of materials that afford Underwriters Laboratories, Inc. rated ballistic protection.

All areas of the data center, including cages, are monitored and recorded using closed circuit television (CCTV), and access points are controlled. The CCTV subsystem provides the display, control, digital recording, and playback of live video from cameras throughout the facility. This system is integrated with the alarm monitoring/intrusion detection subsystem, so in the event of an alarm condition, cameras may be called up to record the area where the alarm condition is occurring. Each camera is capable of accelerating digital recording during alarm conditions for better resolution. The alarm monitoring/intrusion detection subsystem monitors the status of various devices associated with the security system, such as alarm contacts, glass breakage detectors, motion detectors, and tamper switches. If the status of any of these devices changes from their secure state, an alarm will be activated and displayed on the security system workstation and recorded on the system server's hard drive.

The IBX data centers are staffed on a 24-hour basis by a professional security staff or operations team, which monitors access points and monitors the electronic security systems. At each IBX, where there is a minimum of two security officers, at least one officer needs to be present to man the security kiosk and any additional officers may perform security walk throughs of the IBX. Doors, including cages, are secured with biometric hand geometry readers or proximity card readers. For shared cages, there are kinetic locks on the cabinets. Security systems have dedicated uninterruptible power supply (UPS) systems and standby emergency power (generator) support.

Other security features and controls may include:

- Control points between exterior and customer equipment
- 90-day video activity storage, and at minimum 30 days
- Weekly cross-IBX security meetings
- Customer self-administration of authority levels for ordering and access
- Segregation of order management (done by customer service and/or sales) and service delivery functions in order to assure no "local agreements"

- Customer privacy policies, including no pictures and customer anonymity
- Facility design, which includes controlled access points, reinforced exterior walls
- Token authentication required for access to enterprise network
- Bullet-resistant protection
- Motion-detection lighting, and automatic lighting that activated in the event of a power outage or disruption including facility emergency exits

Ingress mantraps are in place and administered to help restrict access to IBX facilities to only authorized individuals. The IBX design specifications for the "mantrap" door interlocks mandate that no two adjacent doors may be open at the same time (e.g. the door into the lobby from the outside and the door into the mantrap may not be open at the same time; another example, the door into the mantrap and the door out of the mantrap may not be open at the same time). This is to prevent anyone from bypassing in-place security access procedures (both system and officer driven) when entering or exiting the IBX site.

Equinix uses biometric hand scanners, proximity card readers or a combination thereof to allow authorized users access into the building and through various doors within the facility. Through a combination of hand scan and numeric code or a valid proximity card, users identify themselves to the system and obtain access into certain areas of the IBX based upon the predefined user permissions. Biometric scanners are not required on the collocation side of doors to exit the collocation area into the customer care/common areas. Entry to customer cages from the exterior of the IBX requires access from a minimum of four to five biometric scanners or badge access readers. Cage security is provided through multiple levels of access control: hand geometry readers at the cage entrance, keyed locks at each cage, and if the cabinet is located in a shared-cage environment, the cabinet door includes a self-powered, keypad-activated lock. The lock permits up to 99 authorized entrants. Access histories can be downloaded by Equinix personnel and are available to the customer for auditing purposes through SmartHands. In some areas inside the IBX that are under Equinix control (e.g. battery rooms), proxy card readers are used instead of biometrics for convenience of Equinix personnel.

The LA2 IBX facility was not constructed by Equinix. Size constraints limited the amount of remodeling that could be accomplished, and exceptions were allowed in the redesign. The LA2 facility has one biometric hand scan reader located at the entrance to the site. Instead of a mantrap, security officers electronically unlock the door to the colocation floor once they have verified the customer's identification (ID) and validated their visit. In place of hand scan readers on every cage door, physical keys are provided to customers of this site that are used to access their cages.

Employee Access

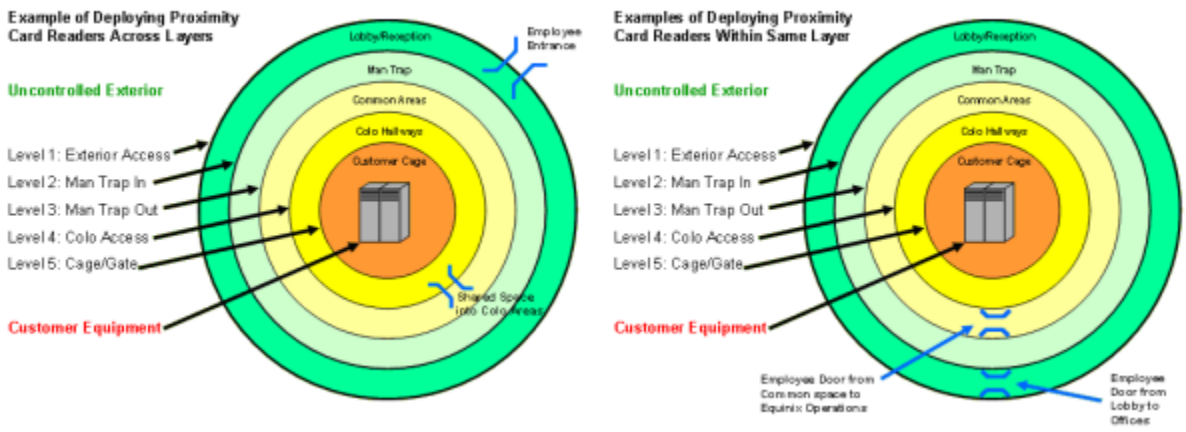
Equinix has documentation in place to outline the requirements related to restricting and controlling access to IBX facilities. The main goal of these security procedures and protocols is the protection of people and of assets belonging to Equinix and its customers. Assets are defined as both property and information. Employees are provided access to the specific IBX locations where they perform their job duties. A Service Request (SR) is created by the Global Service Desk (GSD) upon a request by the hiring manager. It is Equinix company policy to issue ID badges to each Equinix employee and to temporary agency and contractor personnel. These policies apply to employees, trainees, temporary agency workers, and Equinix contractor personnel.

The Siebel ticketing system is a web-based portal that security personnel use to view requests for access, access enrollment authorization, and removal, etc. The data written into the log and notes section of a SR is used to update the status of the SR. Proximity card issuance and biometric profile setup and modification activities are performed by security personnel only upon receipt of an access enrollment requests ticket, which indicates the person is an authorized Equinix employee or contractor.

Personnel authorized to work at an Equinix facility are required to display ID badges when entering or working within an Equinix IBX. Depending on the access privileges, off-site employees may be required to be escorted by authorized personnel while within the facility.

Proximity card readers are installed on doors/gates, which provide access to areas restricted to Equinix employees and/or authorized contractors and do not cross boundaries or security layers established to protect customer equipment. Readers equipped with numeric keypads will be utilized on card reader doors, which cross

a boundary between areas or layers of security separated by biometric hand scan readers. Long-range proximity readers are installed at vehicle access gates at some of the IBX locations, which control access to areas surrounding shipping/receiving doors and/or loading docks.



Temporary use badges are issued by security personnel only upon receipt of written or electronic authorization from Equinix management. A temporary use badge may be issued to an employee in the case their badge is lost or if the employee forgets to bring it to work. Security officers check a government-issued photo ID to verify the identity of persons requesting a sign-out badge. The person checking out the badge is required to return the badge after use when exiting the facility. Issuance of sign-out badges is also documented within an access security form. Security personnel notify Equinix management if any badge is not returned within 24 hours of issuance.

Customer Access

Customers are required to sign a contract and a nondisclosure agreement with Equinix. Customers submit their access requests either through the Equinix Customer Portal (ECP) or the GSD. Authorized customers are provided a unique identifier and password and granted access via specific roles within the Siebel ticketing system. Siebel is the primary database used for maintaining customer contacts and their physical access permissions.

Customer administrators can assign physical access to authorized personnel who have a business purpose and need to gain physical access to an IBX data center. This individual(s) can be an employee or contractor of the customer. All enrollees must present a government-issued photo ID to security upon arrival to complete the Access Enrollment process to create a biometric and proximity card reader access account in the IBX access control system. Only customers with IBX access services permission are allowed to place Work Visits and Tours orders through ECP or GSD after verification. Work visits and tour activities are created in Siebel. The security guards set up the access based on the work visits or tours activities noted within Siebel. Customers accessing the IBX facility are required to display ID badges when entering an Equinix IBX facility.

Certain IBX data centers utilize the “Fast Pass” photo ID program, which serves as an alternative form of identification for customers who visit an IBX facility frequently. The IBX data center managers or their designees are responsible for determining who may be issued a Fast Pass and approving the Fast Pass users. Qualified Fast Pass users are issued either local or national Fast Pass IDs, which are used instead of their government ID. Holding a Fast Pass ID eliminates a number of check-in procedures for the user and expedites their entrance. Fast Pass holders do not need to wait for a sticker badge to be printed, and site security will log their entry for them.

Vendor and Contractor Access

Vendors and contractors follow access procedures similar to those of customers. For an Equinix contractor, a work visit ticket will be created by an employee and the contractor is required to be escorted and is monitored on cameras. In some cases, long-term Equinix contractors are allowed unescorted access to open areas but not to customer cages. If they need to work within a cage, they are escorted by Equinix personnel or security.

Visitor Access

Visitors are screened upon entry to verify their identity. The security guard checks the government issued photo ID, and visitors are required to sign in.

Access Removal

Biometric and proximity card reader access to the IBX-secured areas is removed upon receipt of customer request by security. Access removals are a high priority and must be acted upon within two hours of receiving the notification in Siebel. In order to help ensure tracking and customer notification, the security officer records the completion of access removal activities within a Siebel ticket. ID cards associated with the user are also canceled. In order to maintain accurate history records, individuals are never deleted from an access list and are moved from an active to an inactive status.

ID badge and proximity cards for site staff are surrendered to supervisors or an Equinix point of contact immediately upon termination of employment or upon request from Equinix management.

Security Personnel Formal Training

All security officers are required to complete mandatory security training prior to their full-time assignment at Equinix. Security personnel formal training includes security-specific training that third-party security service provider administers to its officers, as well as Equinix specific training once they are assigned to Equinix. The training comprises a five-day schedule. A summary of the training includes the following:

- Equinix company overview
- Safety training videos and/or classes
- Walkthrough of the IBX and orientation of the various equipment
- Security officer responsibilities, including assigning access and access enrollment procedures
- Security systems walkthrough of access control
- Response to emergencies, including fire alarms, bomb threats, and other natural disasters and evacuation procedures
- Incident reporting
- Site-specific procedures

A checklist record is maintained of the completed training and both the trainer and trainee sign a checklist acknowledging the completion of the training. In addition to the checklist, the trainer administers an exam at the end of 16 hours and a final exam at the end of the 40 hours. The trainee must pass both exams.

The third-party security service provider, in conjunction with Equinix, has developed a “scorecard” program for monitoring the performance of the security officers. The scorecard targets key performance indicators (KPIs) that are focus areas mutually agreed-upon between the third-party security service provider and Equinix. In each category, “tools” have been developed to help manage the improvement process. The use of the scorecard and tools are closely monitored and tracked.

Facility and Environmental Protection

Each IBX facility is built to meet required local building codes. When construction of an IBX facility is completed, local government officials perform inspections before a certificate of occupancy is issued. Significant changes to the IBX facility require permits, and IBX facilities are thus re-inspected for building code compliance. Equinix has comprehensive insurance property coverage for IBX facilities by a licensed property insurer covering assets falling in the category of high risk.

The overriding criteria in the build of Equinix IBX facilities are that critical mechanical and electrical components are designed with adequate redundancy. A loss of any critical equipment will not affect customer loads or environmental conditions. During design, the possibility that a critical system is shut down for maintenance and that a failure of another system component occurs at the same time is considered.

IBX facilities meet applicable state, local and federal regulatory requirements for environmental health and safety, including written emergency response plans, emergency contacts notification, inventory of hazardous chemicals, personal protective equipment, chemical spill kits, and hazard communication/warning signage. Emergency standard operating procedures contain documentation about the emergency procedures that address fires, bombs threats, severe weather, and medical emergencies. Other policies and procedures are in place to help ensure that IBX facilities have a consistent level of facility and environmental protection.

Equinix has a safety program composed of IBX "Safety Teams" and a headquarters-based "Safety Core Team." This safety committee functions as an advisory body which periodically audits the existing program, recommending updates or changes as the need arises. To help ensure the safety of persons in the IBX facilities, Equinix relies on customer, contractor, and visitor cooperation with safety guidelines.

Control and Monitoring Systems

A Building Management System (BMS) is in place at the IBX facilities in scope. The BMS is a control, monitoring and reporting system used to monitor and control the environmental systems and alert IBX staff to potential issues. Engineers routinely use it to review operating conditions, including temperatures, flows, pressures, electrical and mechanical loads, alarms, etc., looking for abnormal conditions. The BMS also provides long-term data storage to assist in troubleshooting, if needed. The facility environmental systems are monitored and managed by these facility engineers who can be reached on a 24-hour basis via cell phone or another telecommunications device.

This BMS system monitors/controls the following:

- Power systems, including critical electrical components, generators, transfer switches, main switchgears, power distribution units (PDUs), automatic static transfer switches (ASTS), and UPS equipment.
- The heating, ventilation, and air-conditioning (HVAC) system, which controls and/or monitors space temperature and humidity within the IBX facilities, space pressurization, HVAC equipment status and performance, and outside air conditions.
- Fire detection and suppression equipment, such as very early smoke detection apparatus (VESDA), double interlock pre-action and detection systems, and zoned gaseous-based fire extinguishing system.
- Leak detection systems.

Experienced technicians perform regular equipment checks and maintenance procedures per defined schedules to help ensure that fire detection and suppression, power management, and HVAC equipment is working properly. In addition, IBX staff performs and logs visual checks of power, environmental, and other system controls, including battery and fuel monitoring systems per defined schedules. Insurance is also in place for such critical equipment.

Fire Detection and Suppression

Equinix IBX facilities are constructed with fire detection and suppression systems that limit potential damage in the event of a fire. Key features of the fire detection and suppression system varies by the IBX location and includes a combination of any of the following:

- Multi-zoned, dry-type, double interlock pre-action fire suppression system
- Laser-based VESDA
- Dual alarms (heat and/or smoke) activation
- Zoned gaseous-based fire extinguishing system

Sprinkler systems in the IBX facilities are implemented with double interlock pre-action and detection systems. The systems are designed such that water does not enter the sprinkler system piping during normal operations. Pre-action detection with intelligent heat detectors are installed in the ceiling of mission critical areas of the IBX facilities. Upon activation of any of these heat detectors, audio-visual alarms (horn and/or strobes) will activate throughout the space. A signal will be sent to a pre-action valve for the affected fire zone. If the temperature in the at-risk area also reaches levels to melt any of the sprinkler head fusible links, water is triggered to enter the sprinkler pipes for the affected areas of the IBX facility.

Fire extinguishers are positioned throughout each IBX facility. Dry chemical or clean agent extinguishers are installed in the mission critical space or adjacent areas where one might reasonably expect a person to carry them into the affected areas during an emergency.

The fire suppression system is monitored on a 24-hour basis by an external alarm monitoring company, which will dispatch the city fire department upon receipt of an alarm. Inside the IBX facilities, software is used for fire detection and monitoring, combined with customized floor plan graphics to illustrate detection devices and fire zones to aid IBX personnel and the fire department in responding to and coordinating fire control activities.

Power Management Utility and Backup Power

Each IBX facility is supplied with high-voltage electrical power from the local utility company. Power enters the facilities from the local utility and is configured at 480 volt, three phases. Where possible, two independent utility sources are in place, originating from independent feeders or substations. Each IBX facility is powered by a dedicated utility step-down transformer for each service. The incoming power is fed into a power system providing diverse power distribution to the cabinet areas.

The incoming service is connected to an ASTS which is also connected to redundant standby diesel generators. Electrical loads are automatically transferred to the standby generators whenever there is a loss of the utility source. The IBX facilities provide a minimum of N+1 redundancy for every IBX power system to help ensure uptime availability to the customers.

The mission critical electrical loads at each IBX facility are sourced by redundant static or rotary UPS systems, which are configured with automatic static bypass and manually operated full maintenance bypass circuits. The primary UPS systems operate as an online power supply. The UPS systems provide conditioned, uninterruptible power to critical electrical loads. Customer critical loads are protected by an alternate UPS through the use of ASTS. Web-based reporting services monitor UPS batteries and provide regular battery-automated reporting analysis to the sites that measures the impedance of each jar in a UPS battery system. Impedance trends are used to monitor the health of each jar and to assist in replacement scheduling. The system is also used to monitor ambient temperature of the battery rooms/cabinets in order to verify proper environmental conditions.

UPS systems prevent power spikes, surges, and brown outs while redundant backup diesel generators provide power to the data center in the event that public utility fails. The electrical system has built-in redundancy to help ensure continuous operation. Where UPS batteries are not used, Equinix utilizes continuous power supply using flywheel technology. Equinix makes use of ASTS in combination with power management modules (PMMs) or PDUs to provide for a physically integrated and electrically redundant system for source selection, isolation, distribution, monitoring, and control of power to internal and customer computer loads.

Equinix has diesel engine generators in place at each IBX facility to provide emergency power. Generators may be located indoors or outdoors depending on site-specific conditions. Base tanks or “day tanks” provide sufficient fuel storage for ensuring generator startup and run until the main fuel tanks are activated. Separately installed main fuel tanks provide a source of fuel to engine generators. There is fuel storage on site sufficient for at least 48 hours of design load operation, unless limited by local authorities. Equinix has contracts with multiple fuel providers for the fuel supply.

HVAC

Each IBX facility is designed with HVAC systems to provide stable airflow for the proper control of temperature and humidity. Air handling is provided by means of several different cooling technologies and deployed as a homogenous design at the IBX facilities. The designs can be chilled water closed-loop systems feeding multiple air-handling units or direct expansion refrigerant-based units. To minimize downtime due to equipment failure, major equipment in the HVAC system is designed with a minimum N+1 redundancy. Current design for new sites calls for N+2 redundancy.

A representative HVAC system at an IBX facility would include the following:

- Condenser pumps
- Centrifugal chillers
- Cooling towers

- Primary chilled water pumps or air-cooled condensers
- Air handling units in the collocation area

Each IBX facility is built with zoned temperature control systems. Equinix maintains multiple air handling units at each IBX facility to verify correct temperature and humidity in critical areas. The air handling units in conjunction with a central HVAC plant work to maintain temperature and humidity levels. The average temperature of the supply air to each zone is maintained between 66 degrees and 74 degrees Fahrenheit. If the temperature or humidity varies outside preset limits, an alarm is generated, and facilities personnel are notified. In some cases, to meet customer needs in high-density equipment areas, the supply air temperature to a region may be lower than 66 degrees.

Leak Detection System

A leak detection system is installed, surrounding the "at-risk" areas within the building that monitors for water. Each IBX facility (except IBX SV5, which does not utilize computer room air conditioning units because this IBX facility has a custom-built in-house cooling plant) defines their "at-risk" areas as may be relevant, per the way each IBX facility is designed. The leak detection system is monitored by the BMS.

Maintenance of Critical Systems

The manager facility operations (MFO) or a site engineer makes regularly scheduled rounds. The rounds made are staggered to help ensure maximum equipment coverage.

Prior to the morning rounds, the site engineer prints out a report from the BMS indicating alarm conditions, colocation area temperature and humidity readings, chiller loads, equipment statuses, and electrical loads from the previous night. During rounds, the data on the report is compared to observed conditions. Where necessary, supplemental equipment log sheets are kept manually.

Equinix maintains its facilities via a comprehensive, coordinated program of preventive and predictive maintenance. Maintenance activities are fully scripted, scheduled, reviewed, and approved by operations and engineering management prior to execution of the work.

Equinix's goal is to provide customers approximately 30 calendar days advance notice of planned preventive maintenance activities on critical facility infrastructure systems (such as UPS systems, batteries, and load-transfer equipment, etc.). When expedited maintenance or repair is required, Equinix provides approximately three to seven days advance notice to customers. When urgent repair is necessary, the advance notice to customers could be from zero to three days, with three days as the target.

Whenever possible, preventive and predictive maintenance activities are planned and performed in a manner that is transparent to customer operations. The redundancy features and design of the Equinix IBX critical infrastructure systems allow performance of preventive maintenance without interruption of critical customer loads.

The IBX operations engineering staff performs routine preventive and predictive maintenance. The Equinix computerized maintenance management system, "Maximo," is used to schedule the work, issue work tickets, track costs, and record maintenance history. "Routine" preventive maintenance includes work, such as lubrication, filter changes, and operational inspections, etc. Predictive maintenance (PdM) includes infrared scans, water treatment systems analysis, eddy current testing, and vibration analysis, etc. Outside contractors will be used for some PdM tasks, as determined by the MFO.

Brasil Managed Services

Brasil's data center sites are customizable to support the unique requirements of their customers' business. The sites offer reliability, redundancy, security, customization, power, and cooling availability to meet the requirements of their customers. The following core services are provided to managed services customers:

- Power availability: power and cooling equipment for colocation areas
- Redundancy: 2N and N+1 redundancy for UPS units, generators, power distribution, and cooling

- Safety: environmental control monitoring and alerts, dry pipe fire suppression system
- Security: 24 hours per day security management and site access
- Service: centralized command and control of standard process and procedures across sites

Within the colocation facilities, cabinet locations feature direct access to the data distribution system to allow quickly deployable interconnections. Equinix personnel can recommend cages and suites to meet specific requirements for physical security and power usage. Private and shared cages are configured with cable distribution systems, dual alternating current (AC) and direct current (DC) power distribution raceways, and anonymous cabinets (individually locked if necessary). Private and shared suites are also available at select locations, providing a fully enclosed, customized area.

Dedicated Servers and Hardware

Within this service offering, Equinix provides equipment in conjunction with the colocation service for its customers. Equinix's provided equipment is hosted on the data center premises, according to the contracts setup with customers.

Connectivity

Equinix's connectivity service offering provides access to the public internet for customer equipment hosted at Equinix Data Centers.

Hosting Management

Hosting Management services consist of providing labor force and specialized resources to run planned or as needed activities pertaining to the operation of servers and network devices of customers hosted at Equinix Data Centers. The Management is divided into two types:

Help Desk

Customer's utilizing this service may open tickets, through the customer portal or help desk, for the Equinix team to provide technical support for installation, operation, change of setup or recovery from failure in servers or network devices hosted by Equinix.

Total Management (Partial Outsourcing)

This service includes help desk and disaster recovery functions. For this service offering, the Equinix team is responsible for the installation, operation, maintenance, security, monitoring and updates to the setup of the hardware, operating system, database and applications of customer equipment. Activities/Changes can be scheduled or run on an as needed basis, through a ticket request that customer will open through Equinix Customer Portal. Based on the ticket received Equinix team will perform related activities/changes and interact with customers through the ticketing system

Dedicated Leader

The dedicated leader service consists of technical and management resources during business hours. Dedicated leader resources perform technical and management functions for the equipment hosted by Equinix.

Initiation, Authorization, Recording, Processing, Correction, and Transferring of Information to Customers

The services that Equinix provides for its clients described in the description of its system and the scope definition below enable Equinix customers to host their production systems at Equinix's data centers. Equinix plays no role in the initiation, authorization, recording, processing, and correction or transferring of information to its clients, outside of the processes, described above, that relate to Equinix's information technology general controls for the data center hosting services.

Customer requests for services are initiated and authorized by user entities by directly contacting the customer support department. Customer requests are recorded and track within the ServiceNow internal ticketing system through resolution. The ticketing system is utilized to document, prioritize, escalate, and resolve problems affecting contracted services. Customer requests are managed according to established service level agreements.

Boundaries of the System

The scope of the review includes the Americas Data Center Hosting Services performed at each of the data center facilities listed below, and the Brasil Managed Services performed at the Rio de Janeiro (RJ1 and RJ2), São Paulo (SP1), Tamboré (SP2), and Santana de Parnaiba (SP3) data center facilities. Additionally, the support and management functions of the Tampa, Florida, field office (TPFO) relevant to the Data Center Hosting Services were included within the scope of the review. The control objectives and related control activities included within the scope of this engagement can be found in Section 4. The Americas Data Center Hosting Services are limited to the Physical and Environmental Security control objectives and related control activities identified in Section 4 of this document. The other control objectives and related control activities provided in Section 4 are for specific to the Brasil Managed Services.

Specifically, the following sites were included within the scope of the review:

Tampa, Florida
- TPFO

Silicon Valley, California
- SV1
- SV2
- SV3
- SV4
- SV5
- SV6
- SV8
- SV10
- SV13
- SV14
- SV15
- SV16
- SV17

Los Angeles, California
- LA1
- LA2
- LA3
- LA4
- LA7

Atlanta, Georgia
- AT1
- AT2
- AT3
- AT4
- AT5

Washington, D.C.
- DC1
- DC2
- DC3
- DC4
- DC5
- DC6
- DC7
- DC8
- DC10
- DC11
- DC12
- DC13
- DC14
- DC97

Toronto, Ontario
- TR1
- TR2

Seattle, Washington
- SE2
- SE3
- SE4

Houston, Texas
- HO1

Boston, Massachusetts
- BO1
- BO2

Dallas, Texas
- DA1
- DA2
- DA3
- DA4
- DA6
- DA7
- DA9
- DA10 (environmental only)

Chicago, Illinois
- CH1
- CH2
- CH3
- CH4 (physical only)
- CH7

Culpeper, Virginia
- CU1
- CU2
- CU3
- CU4

Philadelphia, Pennsylvania
- PH1

Miami, Florida
- MI1
- MI2
- MI3
- MI6

Denver, Colorado
- DE1
- DE2

New York, New York
- NY1
- NY2
- NY4
- NY5
- NY6
- NY7
- NY8
- NY9
- NY11
- NY12 (former)*
- NY13

São Paulo, Brazil
- SP1
- SP2
- SP3
- SP4

Rio De Janeiro, Brazil
- RJ1
- RJ2

Bogotá, Colombia
- BG1

*Equinix no longer owns the New York 12 (NY12) data center facility, after completing its sale to Verizon Communications, Inc. (Verizon) on October 11, 2019, at which time NY12 site operations were fully turned over to Verizon.

Equinix's Americas Data Center Hosting and Brasil Managed Services system environment is an information technology (IT) general control system, and user entities are responsible for the procedures, by which transactions are initiated, authorized, recorded, processed, corrected as necessary, and transferred to reports and other information presented to them; additionally, user entities are responsible for the procedures and controls governing the related accounting records, supporting information, and specific accounts that are used to initiate, authorize, record, process, and report transactions processed within Americas Data Center Hosting and Brasil Managed; this includes the correction of incorrect information and how information is transferred to the reports and other information prepared for those user entities.

Subservice Organizations

Equinix utilizes Digital Realty Trust, Inc. (Digital Realty Trust) for environmental protection controls at the Chicago 4 (CH4) data center facility the physical security controls at the Dallas 10 (DA10) data center facility. Equinix's Data Center Hosting Services system is designed with the assumption that certain controls will be implemented by subservice organizations. Such controls are called complementary subservice organization controls. It is not feasible for all of the control objectives related to Equinix's Data Center Hosting Services system to be solely achieved by Equinix's control activities. Accordingly, subservice organizations, in conjunction with the Data Center Hosting Services system, should establish their own internal controls or procedures to complement those of Equinix.

Complementary Controls at Subservice Organizations

The following complementary subservice organization controls should be implemented by subservice organizations to provide additional assurance that the specified control objectives described within this report are achieved:

Control Activities Expected to be Implemented at Subservice Organization	Related Control Objective
Digital Realty Trust is responsible for ensuring that physical access to the DA10 data center, facility infrastructure platform, and customer footprint(s) is limited to properly authorized individuals.	Physical Security
Digital Realty Trust is responsible for ensuring that the environmental protection controls at the CH4 data center are engineered and monitored to reduce the risk of environmental threats (i.e. power loss, fire, and flooding).	Environmental Security

Significant Changes During the Review Period

On October 11, 2019, Equinix completed the sale of its former New York 12 (NY12) data center facility located in Piscataway, New Jersey, to Verizon. The transaction included the customer deployments associated with the site. NY12 tenants were notified and will continue to operate at the site under Verizon's ownership. No other significant changes to the Data Center Hosting Services system occurred during the review period.

Functional Areas of Operations

Equinix has data centers across North and South America that are manned with employees to support security and reliability to Equinix's customers. The majority of other functions, including IT, finance, legal, marketing, operations, sales, and other administrative functions are centralized at the corporate level, though some of the staff and management work from remote locations.

As Equinix grows over time, positions are added to provide additional management guidance, oversight, and structure. Organizational directory structures are available on Equinix's intranet and are updated frequently for new hires, promotions, or departures. Lines of authority are clearly defined and communicated within the organization.

Equinix's internal leadership focuses on finding new ways to bring innovation, leadership, and quality to support the company's objective to be the interconnection platform for the world's leading businesses. Executive and regional management teams meet regularly to discuss such topics as emerging trends, potential risks to the organization, and potential new strategies. These teams are composed of a cross functional group of executives to prevent domination by only one or two individuals. The global executive team includes the president and chief

executive officer; executive vice president, global operations; chief product officer; chief sales officer; chief technology officer; chief legal and human resources officer; chief strategy and development officer; chief customer and revenue officer; chief financial officer; executive chairman; and senior vice president, chief information officer. Regional managements teams comprised a president, senior vice president of sales, and managing director(s) are in place to oversee the management, strategy, and growth of Equinix in the Americas; Europe, Middle East and Africa (EMEA); and Asia-Pacific (AP).

Each year, the executive team meets for a formal business strategy and planning exercise. These topics are communicated to Equinix employees through all-hands meetings, which are held at least annually, by the executive team.

Infrastructure

The Data Center Hosting Services system includes the physical infrastructure, power, and data connectivity needed to house customer information systems. Equinix also provides certain physical and environmental security mechanisms to safeguard user entities' assets and data from unauthorized access and environmental threats.

A combination of custom developed, externally supported, and wholly purchased applications are utilized to support the Data Center Hosting Services system. The applications are housed on Dell servers and virtual machines (VMs) running Microsoft Windows and Red Hat Enterprise Linux operating systems.

The following provides a summary of systems used in the Data Center Hosting Services system:

- Physical access control systems (products used vary by region / data center) – biometric, proximity card, and/or personal identification number (PIN) reader system (varies by data center facility) used to restrict data center access to only those individuals provisioned with access; the systems are also used to monitor, log, and notify personnel of physical security alarms.
- CCTV systems (products used vary by region / data center) – used for the security monitoring of data centers 24 hours per day; CCTV cameras are positioned throughout the data centers to monitor and track the activity of any person while inside and outside of the data centers.
- BMS (products used vary by region / data center) – used to monitor environmental controls and alert data center personnel to potential issues within the data center, including power management equipment, critical electrical components, HVAC systems, and fire detection and suppression systems.
- Active Directory (Microsoft) – directory service used to manage user accounts, access, and authentication requirements.
- Equinix Customer Portal (ECP) – web-based portal used by customers request access change requests, including visitor access, to the data centers.
- Access tracking systems (GSD and Siebel) – ticket tracking systems used to document, approve, and process access changes, work visits, and other activity related to the data center hosting services.
- Enterprise asset management system (IBM Maximo) – used to inventory and track assets for the IBX data center, as well as to schedule preventive and predictive maintenance work visits, issue work ticket, track costs, and records maintenance history.

As noted above in the 'Subservice Organizations' section, the physical access control systems for DA10, and environmental control systems for CH4 are hosted on infrastructure owned by Digital Realty Trust. The Data Center Hosting Services system is limited to the services and related infrastructure maintained by Equinix and does not include Digital Realty Trust, user entity systems, or the Internet connectivity utilized for accessing user entity environments.

Data Management

Customers are responsible for the data maintained within their environments. Within the scope of the Data Center Hosting Services system, customers can manage and monitor their services, submit new requests, and view the status of open requests by logging into the ECP. In addition, the portal is used to allow customers the ability to manage their accounts and to view when any service delivery impacting maintenance begins and when it is completed.

Internal data sources captured and utilized by Equinix to deliver its data center hosting services, includes, but it not limited to, the following:

- Biometrics, proximity card, and PIN code access history logs, including access history and security alarms
- CCTV recorded footage is maintained for 90 days, and at minimum 30 days
- Alert notifications and monitoring reports generated from the environmental monitoring applications and the BMS
- Incident/issue reports documented via the ticketing systems

CONTROL ENVIRONMENT

The control environment at Equinix is the foundation for the other areas of internal control. It sets the tone of the organization and influences the control consciousness of its personnel. The components of the control environment factors include the integrity and ethical values, management's commitment to competence; its organizational structure; the assignment of authority and responsibility; and the oversight and direction provided by the board of directors and operations management.

Integrity and Ethical Values

The effectiveness of controls cannot rise above the integrity and ethical values of the people who create, administer, and monitor them. Integrity and ethical values are essential elements of Equinix's control environment, affecting the design, administration, and monitoring of other components. Integrity and ethical behavior are the product of Equinix's ethical and behavioral standards, how they are communicated, and how they are reinforced in practices. They include management's actions to remove or reduce incentives and temptations that might prompt personnel to engage in dishonest, illegal, or unethical acts. They also include the communication of Equinix's values and behavioral standards to personnel through policy statements and codes of conduct and by example. Specific control activities that Equinix has implemented in this area are described below.

- Organizational policy statements and codes of conduct are documented and communicate entity values and behavioral standards to personnel.
- The employee policy and procedures manual contains organizational policy statements and codes of conduct to which employees are required to adhere.
- Employees are required to sign an acknowledgment form indicating that they were given access to the employee manual and understand their responsibility for adhering to the policies and procedures contained within the manual.
- Employees are required to sign a confidentiality statement agreeing not to disclose proprietary or confidential information, including client information, to unauthorized parties.
- Background checks are performed for North America employee candidates as a component of the hiring process.

Board of Directors and Audit Committee Oversight

Equinix's control consciousness related to financial performance and reporting is influenced by their board of directors and audit committee. Attributes include the board of directors' and audit committee's independence from management, the experience and stature of its members, the extent of its involvement and scrutiny of activities, the appropriateness of its actions, the degree to which difficult questions are raised and pursued with management, and its interaction with internal and external financial auditors. Specific control activities that Equinix has implemented in this area are described below.

- A board of directors is in place to oversee management activities and the company's financial performance.

  An audit committee is in place to monitor management's compliance with the company's financial objectives, and its legal and regulatory responsibilities.
- Independent external auditors conduct an annual audit of Equinix's financial transactions and statements, which is reported to and reviewed by the audit committee and board of directors.

Organizational Structure and Assignment of Authority and Responsibility

Equinix's organizational structure provides the framework within which its activities for achieving entity-wide objectives are planned, executed, controlled, and monitored. Equinix's management believes that establishing a relevant organizational structure includes considering key areas of authority and responsibility and appropriate lines of reporting. Equinix has developed an organizational structure suited to its needs. This organizational structure is based, in part, on its size and the nature of its activities.

Equinix's assignment of authority and responsibility activities include factors such as how authority and responsibility for operating activities are assigned and how reporting relationships and authorization hierarchies are established. It also includes policies relating to business practices, knowledge and experience of key personnel, and resources provided for carrying out duties.

In addition, it includes policies and communications directed at ensuring that personnel understand the entity's objectives, know how their individual actions interrelate and contribute to those objectives, and recognize how and for what they will be held accountable. Organizational charts are in place to communicate key areas of authority, responsibility, and appropriate lines of reporting to personnel. These charts are communicated to employees and updated as needed.

Commitment to Competence

Equinix management defines competence as the knowledge and skills necessary to accomplish tasks that define employees' roles and responsibilities. Equinix's commitment to competence includes management's consideration of the competence levels for particular jobs and how those levels translate into requisite skills and knowledge. Specific control activities that Equinix has implemented in this area are described below.

- Position requirements are translated into written required skills and knowledge levels based on competence levels for particular jobs.
- Personnel are provided with orientation, hands-on training and supervision to the extent deemed necessary by management.

Accountability

Equinix's management philosophy and operating style encompass a broad range of characteristics. Such characteristics include management's approach to taking and monitoring business risks; management's attitudes and actions toward financial reporting, accounting functions, and personnel. Meetings are held on a monthly basis to discuss operational issues.

Equinix's human resources policies and practices relate to hiring, orientation, training, evaluating, counseling, promoting, compensating, and remedial actions. Specific control activities that Equinix has implemented in this area are described below.

- Documented human resources policies and procedures are maintained to guide human resources personnel during hiring, training, and termination process.
- Pre-hire screening procedures are utilized to include the following:
    - Review of candidate's resume;
    - Interview(s);

    - Skills testing, as applicable;
    - Reference checks; and
    - Background screening (North America).
- Performance evaluations are conducted for employees on an annual basis.
- Mid-year performance evaluations are conducted for employees to help ensure employees are meeting their goals and objectives as outlined during the annual review process.
- Human resources personnel utilize a third-party application to track the completion and receipt of employee evaluations.
- Procedures are in place to help ensure that specific elements of the hiring process are consistently executed.
- Procedures are in place utilized to help ensure that specific elements of the termination process are consistently executed.

Risk Assessment

Management is responsible for identifying the risks that threaten achievement of the control objectives stated in the management's description of the services organizations systems. Management has implemented a process for identifying relevant risks. This process includes estimating the significance of identified risks, assessing the likelihood of their occurrence, and deciding about actions to address them. However, because control objectives relate to risk that controls seek to mitigate, management thoughtfully identified control objectives when designing, implementing, and documenting their system.

Risk Identification

Equinix has considered significant interactions between itself and relevant external parties and risks that could affect the organization's ability to provide reliable services to its user entities. Management and operational teams meet on a regular basis to identify and review risks to the system.

Management considers risks that can arise from both external and internal factors including:

External Factors

- Technological developments that could affect the nature and timing of research and development
- Changing customer needs or expectations that could affect services provided and customer service
- Competition that could alter marketing or service activities
- New legislation and regulation that could force changes in policies and strategies
- Natural catastrophes that could lead to changes in operations or information systems and highlight the need for contingency planning
- Economic changes that could have an impact on management decisions related to financing, capital expenditures and expansion

Internal Factors

- Significant changes in policies, processes, or personnel
- Types of fraud
- Fraud incentives and pressures for employees

- Fraud opportunities
- Employee attitudes and rationalizations for fraud
- A disruption in information systems processing that could adversely affect the entity's operations
- The quality of personnel hired, and methods of training utilized and motivation that could influence the level of control consciousness within the entity
- Changes in management responsibilities
- The nature of the entity's activities, and employee accessibility to assets, that could contribute to misappropriation of resources

The Equinix risk assessment process focuses on supporting management decisions and responding to potential threats by assessing risks and identifying important decision factors. Equinix executive management oversees risk management ownership and accountability. Senior management from different operational areas are involved in risk identification process. Management identifies elements of business risk including threats, vulnerabilities, safeguards, and the likelihood of a threat, to determine the actions to be taken.

Risk Analysis

Risk analysis is an essential process to the entity's success. It includes identification of key business processes where potential exposures of some consequence exist. Once the significance and likelihood of risk have been assessed, management considers how the risk should be managed. This involves judgment based on assumptions about the risk, and reasonable analysis of costs associated with reducing the level of risk. Necessary actions are taken to reduce the significance or likelihood of the risk occurring, and identification of the control activities necessary to mitigate the risk. Management has identified these control activities and documented them in the Control Objectives and Related Control Activities section below. Additionally, management reviews the assessed risk levels on an annual basis and documents the risk assessment in the annual risk program.

Integration with Control Objectives

Along with assessing risks, management has identified and put into effect actions needed to address those risks. In order to address risks, control objectives have been defined for each significant risk area. Control activities are then defined to serve as mechanisms for managing the achievement of those objectives and help ensure that the actions associated with those risks are carried out properly and efficiently.

Control Objectives and Related Control Activities

Selection and Development of Control Activities

Control activities are a part of the process by which Equinix strives to achieve its business objectives. Equinix has applied a risk management approach to the organization in order to select and develop control activities. After relevant risks have been identified and evaluated, control activities are established to meet the overall objectives of the organization.

The establishment of control activities is inclusive of general control activities over technology. The management personnel of Equinix evaluate the relationships between business processes and the use technology to perform those processes to determine the dependencies on technology. The security management processes for the technology, along with other factors, are analyzed to define and establish the necessary control activities to achieve control objectives that include technology.

The establishment of the control activities is enforced by defined policies and procedures that specifically state management's directives for Equinix personnel. The policies serve as the rules that personnel must follow when implementing certain control activities. The procedures are the series of steps the personnel should follow when performing business or technology processes and the control activities that are components of those processes. After the policies, procedures and control activities are all established, each are implemented, monitored, reviewed, and improved when necessary.

Equinix's control objectives and related control activities are included below and also in Section 4 (the "Testing Matrices") of this report.

The description of the service auditor's tests of operating effectiveness and the results of those tests are also presented in the Testing Matrices, adjacent to the service organization's description of control activities. The description of the tests of operating effectiveness and the results of those tests are the responsibility of the service auditor and should be considered information provided by the service auditor.

Physical Security

Control Objective: Control activities provide reasonable assurance that physical access to Equinix locations, facility infrastructure platforms, and customer's footprints(s) is limited to properly authorized individuals.

Each of the Equinix datacenters adhere to structured processes and procedures that ensure user entities technology assets are secure. The data center facilities are manned by on-site technical experts 24 hours per day to help ensure equipment that supports that data center environment is secure. In addition, Equinix employs a training program to help ensure that Equinix data center personnel are trained in data center operations and security.

Equinix data center facilities incorporate multiple physical and operational security features and protocols including the following: biometric fingerprint readers, badge access card, PIN access, and CCTV surveillance with video stored for review for non-repudiation, multifactor authentication systems, and staff trained to maintain physical security policies and controls, perimeter doors that are alarmed and monitored. CCTV surveillance cameras are in place to monitor and record activity at the entrance to and throughout the data center facilities. Video image logs from the video surveillance cameras are maintained for at 90 days, and 30 days at minimum.

There are processes in place at the data centers to log access to the data center by authorized users and employees. Visitors are required to present government issued identification and to be provided with escorted access within the data centers. Access to the colocation areas requires a valid badge access card. Both successful and unsuccessful badge access attempts are tracked in the badge access system. Management provisions badge access privileges as a component of the employee hiring process. Management revokes badge access privileges as a component of the employee termination process. Administrator access within the badge access system is restricted to user accounts accessible by authorized personnel. Physical access reviews are documented and approved on an annual basis by information security personnel. Access to the colocation areas requires a valid badge access card. The exterior walls extend from the floor to the ceiling.

Environmental Security

Control Objective: Control activities provide reasonable assurance that Equinix facilities housing customer equipment and support operations are engineered and monitored to reduce the risk of environmental threats (i.e., power loss, fire, and flooding).

Equinix has implemented and documented policies and procedures to ensure the environmental security of the data centers. Equinix data centers incorporate cooling solutions to ensure consistent temperature and humidity levels for the protection of technology. The data centers are also equipped with raised floor cooling with cold aisle containment. In addition, facility components e.g. power generators and UPS systems throughout the data centers are redundant to provide continuous power in the event of an outage. With this level of redundancy, Equinix performs regular preventative maintenance on the equipment with no impact to the user entities. The generators and UPS systems are each inspected for maintenance by third party vendors and inspection reports are maintained.

The data centers are additionally equipped with fire and smoke detectors which trigger visible and audible alarms in the event of a fire. A BMS is in place to monitor environmental conditions for data center facilities that include temperature and humidity levels. Pre-action dry-pipe water sprinklers or agent-based fire suppression systems

are present at each location along with hand-held fire extinguishers to allow for prompt suppression of fires. Management contracts with third party specialists to inspect the fire detection and suppression systems on an annual basis and the inspection reports are retained as evidence of completion. Facilities personnel inspect the hand-held fire extinguishers on a daily basis along with UPS, air conditioners, power generators, temperature and humidity levels, multiple times per day. Documentation of internal and external inspections is retained. Additionally, management contracts a third-party vendor to inspect the fire extinguishers on an annual basis.

The data centers are equipped with multiple air conditioning units to regulate temperature and humidity. Management contracts with third party vendors to inspect the air conditioning units and the inspection reports are retained as evidence of completion.

The following control objectives and processes are appliable to the Brasil Managed Services performed at the Rio de Janeiro (RJ1 and RJ2), São Paulo (SP1), Tamboré (SP2), and Santana de Parnaiba (SP3) Brasil data center facilities only.

New Customer Implementation

Control Objective: Control activities provide reasonable assurance that new customers are implemented in line with contractual requirements.

New customer implementations for Equinix follow a standard contracting process, which includes proposal, review, and acceptance by both parties. Equinix has documented policies and procedures in place to facilitate implementation of new customers. Within the policies and procedures, responsibilities for each of the technical areas and standard service level definitions are delineated. Contracts executed for customers are specific and have varying service level definitions, according to the agreement(s) executed between Equinix and new customers. The Equinix legal team reviews each contract prior to approval. Items sold after contract signing, are transformed into work orders for commercial and thus automatically routed to the activation team.

Operations system (OS) work orders are documented in ServiceNow defining the internal services, infrastructure services or purchase of resources needed for the new customer implementation project. The management team, analyst, activation coordinator or manager perform a technical analysis of the new implementation project verifying that the products and services are within Equinix's product and company specifications. A technical interview is performed confirming the scope of the project with the customer who has up to 48 hours (2 days) to approve the project scope. After the project scope is confirmed by the customer, the technical analysis is approved, and the project is activated. Once the management team assigns the projects start and end date, a Welcome kit and detailed project plan is e-mailed to the customer. Technical interview documents are documented within ServiceNow throughout the projects entire life-cycle.

Changes to Customer Assets

Control Objective: Control activities provide reasonable assurance that changes to customers' assets are authorized, tested and approved.

Equinix has documented change control policies and procedures to guide personnel in change management practices regarding the changes to existing customer assets and infrastructure software and hardware to ensure that changes are authorized, tested and approved before being implemented in the production environment.

Changes to customer assets typically include changes to communications, configurations, or installation of new devices, which can be initiated internally or by a customer request. When a customer asset change is identified, or a change is requested from a customer, helpdesk personnel document the details within a change request form, to track the changes throughout the change process to ensure that the change control procedures are followed. The change requestor is responsible for populating key fields within a request form, including the impact of the change, change type, brief description, test results, and approvals.

Helpdesk personnel are required to obtain customer authorization for changes to customer assets either by confirming the authorized customer via phone or required written documentation be provided via an e-mail. Change personnel are responsible for ensuring that functional testing is completed for changes prior to implementation into the production environment. Following successful testing, change personnel will obtain verification from testing personnel and update the test results on the change request form to denote that testing has been performed. A change management committee analyzes and approves change request forms by assessing the risks, impacts and back out plans prior to the change implementation.

Backup Management

Control Objective: Control activities provide reasonable assurance that the customers' data and business information is appropriately backed up.

Equinix has documented policies and procedures to communicate backup processes to relevant personnel to ensure systems are backed up in a timely manner and are securely stored. Backup systems are utilized to automate the backup process. These systems are configured to perform daily incremental backups, weekly and monthly full backups of production systems. Data backups are performed on daily, weekly and monthly basis based upon each customer specific requirements.

Operations personnel are responsible for managing the customer shared backup environment. Daily activities include the following:

- Monitor the progress of backup jobs;
- Monitor the availability of infrastructure;
- Guide the network operation center (NOC) in cases of treatment most basic backup errors;
- Treat backup errors;
- Interface with the suppliers for the cases of more advanced backup errors; and
- Advise and support new activations via the self-service portal.

Additionally, operations personnel are responsible for the following:

- Management of hardware and software resources;
- License management;
- Ensuring the availability of the environment;
- Ensuring environmental recovery in case of disaster;
- Monitoring indicators of executions; and
- Management of term support contracts with suppliers.

Operations personnel monitor the success and failure of data backups and are notified of the status of backup job completion via e-mail notifications. Operations personnel then investigate the causes of failures in order to identify if corrective actions need to be taken.

Backup media is stored on-site within secured rooms located within the data center facilities. Operations personnel perform backup restoration tests of backup media on a monthly basis for certain customers to ensure that the media can be restored completely and accurately. Additional data backup restorations are performed when requested by customers.

Issues and Incident Management

Control Objective: Control activities provide reasonable assurance that issues and incidents involving infrastructure and applications are identified, monitored, investigated and resolved in a timely manner.

Incident response and escalation policies and procedures are documented to efficiently and effectively manage incidents impacting the customer infrastructure and applications. A ticketing system is in place in order to document, escalate, and resolve system incidents. When an incident is detected, helpdesk personnel will examine the incident, review the incident alert and document the details in the ticketing system and attempt to troubleshoot the incident. If helpdesk personnel cannot resolve the incident, the ticket is escalated to get the necessary individuals involved to resolve the incident. All status updates related to the incident are logged in the ticketing system.

Issues and incidents can be initiated via client web portal access or via phone calls and directly by helpdesk support personnel. Equinix helpdesk personnel prioritize, and handle customer inquiries and infrastructure issues to ensure that problems identified are responded to in a timely manner. Helpdesk personnel actively monitor the

enterprise tools on a 24 hour per day basis to help ensure the systems are available and operating properly. In the event that a pre-defined severity level is exceeded, an on-screen incident alert is generated, and helpdesk personnel are required to investigate the issue/incident.

Network and System Monitoring

Control Objective: Control activities provide reasonable assurance that infrastructure and systems are monitored and problems are tracked, escalated and resolved in a timely manner.

Equinix has implemented network and system administration policies and procedures to help guide NOC personnel in the monitoring, prioritization, and handling of infrastructure issues to ensure that problems identified are investigated and resolved in a timely manner.

Enterprise monitoring tools are utilized to monitor the health and availability of the overall production environment. The enterprise monitoring tools are in place on the production servers and infrastructure network to monitor for metrics that include the following:

- Zabbix (Central Processing Unit (CPU), memory, disk, availability)
- Wanguard (Intrusion Detection System (IDS))

Management utilizes IDS to monitor the production servers for potential or actual security breaches. The IDS is configured to log pre-defined events, including events originating from the same IP address, events with the same source and destination Internet protocol (IP) address, and events with the same source to multiple destination IP addresses, and repetitive attempts within a certain amount of time. NOC personnel are notified real time via automated e-mails in the event that predefined conditions are triggered. Additionally, NOC personnel review the logs periodically to investigate suspicious activity. In the event that a potential or actual security breach is encountered, NOC personnel work to remediate the breach immediately, and then work to determine the cause of the breach. Once the breach is resolved, NOC personnel log the resolution and remediation activities in a ticket. Equinix utilizes Nessus, to perform internal vulnerability assessments of the production network on an annual basis.

Information Security Management

Control Objective: Controls provide reasonable assurance that the business needs, risk management, physical security, and information security culture are an integral part of a general plan for information security.

Equinix has policies and procedures in place to address aspects of information security that affect the delivery of services to customers. These policies include internet access, physical access, information classification, backup, data retention, and information security. Integrity and ethical values are essential elements of Equinix's control environment, affecting the design, administration, and monitoring of other components. Requirements of employees are also communicated via documented position descriptions which define the skills, responsibilities, and knowledge levels required for particular jobs. Equinix's values and behavioral standards, including information security, are communicated to employees via the internal Equinix portal. Equinix personnel acknowledge that they have read and accept Equinix information security policies by achieving a passing score on the information security policy-based test.

Management ensures information security objectives are consistent with customer, regulatory, and legal requirements by performing a review of information security objectives on an annual basis. Information security committee meetings are performed to review and monitor corrective action initiatives on a quarterly basis.

INFORMATION AND COMMUNICATION SYSTEMS

Relevant Information

Information is necessary for Equinix to carry out internal control responsibilities to support the achievement of its objectives related to the Data Center Hosting Services system. Management obtains or generates and uses

relevant internal and external information sources to support the functioning of internal control from its system used to:

- Maintain customer information, work requests, and work history for the data center sites
- Design and dispatch orders to site operations and maintain information regarding utilized site assets
- Monitor customer service infrastructure
- Schedule and track maintenance on site infrastructure
- Collect, dispatch, and track customer support requests
- Identify on-call engineering resources for incident response and support escalation
- Track and identify customer port assignments
- Manage customer order workflow within operations
- Design site infrastructure layout for customer solutions
- Manage site security access control
- Record and monitor CCTV in each site

Equinix data centers are interconnected by a dedicated data link with multiple internet service providers to facilitate internet access.

Communication

Equinix utilizes both formal and informal methods for corporate-wide communication. Upper management is involved with day-to-day operations and is able to provide personnel with an understanding of their individual roles and responsibilities pertaining to internal controls. Equinix has implemented various methods of communication to help provide assurance that all employees understand their individual roles and responsibilities and that significant events are communicated, and exception reported to an appropriate higher level within the organization. These methods include orientation for new employees, training for all employees, and the use of e-mail messages to communicate time-sensitive information. Management also holds meetings periodic meetings via phone and in person to share information at a business level. Departmental staff meetings are held on a periodic basis to discuss operational issues. Employees are encouraged to communicate to their lead / mentor, supervisor / manager, or senior / executive management.

Equinix has also implemented various methods of communication to help provide assurance that customers understand the roles and responsibilities in providing its data center hosting services and communicating significant events. These methods include periodic meetings with representatives from all customers and the use of e-mail messages and the Equinix customer portal to communicate time-sensitive information.

If incidents are communicated, personnel follow documented incident response plan. For example, if a change in procedure is required, the project manager is advised of the change. Formal procedure changes are distributed to management before they are incorporated into the policy and distributed to relevant parties. All incidents are documented within the ticketing system and tracked by management until resolved.

MONITORING

Monitoring Activities

Management monitors controls to consider whether they are operating as intended and that the controls are modified for changes in conditions. Equinix's management performs monitoring activities to continuously assess the quality of internal control over time. Equinix management is responsible for directing and controlling

operations and for establishing, communicating, and monitoring control activities and procedures. Equinix's management places emphasis on maintaining sound internal controls, as well as, ensuring integrity and ethical values to Equinix personnel.

Ongoing Monitoring

Equinix utilizes third-party assessors to query the customer base across a variety of topics intended to gauge business performance. Internal customer assessments are made at random and are specific to an order, trouble ticket, escalation request, etc. to which the customer was recently serviced. By examining and trending the results, Equinix continually strives to improve the customer experience.

Equinix has implemented a site operations quality control program. This program is a vital element of the day-to-day operations of the Equinix facilities. The program provides a means for senior management to effectively determine the compliance of established Equinix standards at the site level. Additionally, a comprehensive root cause analysis system is utilized to provide senior management in the identification of underlying causes of identified deficiencies and assist in developing proactive resolutions.

Equinix monitors third-party providers and subservice organizations as part of the daily IT business operations.

Separate Evaluations

Equinix understands the importance of established procedures and processes in performing the daily duties demanded by the business. Repeatability is essential to the customer experience being consistent and setting the expectation against established service level agreements. The customer knows fully what to expect and how long to completion no matter the facility or location of the service being requested. Equinix develops, tests, and constantly reviews established processes and procedures. Management conducts monthly reviews of the documentation to validate accuracy and identify areas for streamlining. Each process or procedure is assigned an owner to document accuracy and applicability to the product, service, and business as a whole. Revisions are made to the documents and released using an operations bulletin process. The operations bulletins denote behavioral or process changes and the gains from those changes. Each operations bulletin is logged and filed in the site library.

Internal and External Auditing

Equinix supports many user entities in their efforts to meet the regulatory demands of their industry or governing agency. Equinix has assisted user entities in successfully meeting the requirements of many certifications and regulatory demands, including:

- SOC 1 / ISAE 3402 and SOC 2 Examinations
- ISO 27001:2013
- ISO 9001:2015; ISO 22301:2012
- Environmental Health and Safety Standards
- National Institute of Standards and Technology (NIST) 800-53
- Health Insurance Portability and Accountability Act (HIPAA)
- Payment Card Industry Data Security Standards (PCI DSS)
- Sarbanes-Oxley (SOX)
- Tier III Design and Facility

Monitoring of Subservice Organizations

Equinix's CH4 data center facility is located in the same multi-tenant building as the CH1 and CH2 data center facilities. Facility engineers and security personnel located on-premise at the adjacent CH1 and CH2 data centers are tasked with directly monitoring the CH4 facility and the environmental protection system controls provided by Digital Realty Trust. Equinix personnel perform daily walkthrough visits of facility and monitor facility activity through the use of 24x7 security monitoring and digital surveillance cameras. Equinix operations personnel local to the Dallas metropolitan area are tasked with directly monitoring the DA10 facility and the physical access control services provided by Digital Realty Trust. Monitoring activities performed by Equinix

include periodic user access reviews of the DA10 physical access control system, as well as regular facility walkthrough visits by local IBX managers and facilities engineers. Services provided by Digital Realty Trust are also monitored through phone and e-mail communications, meetings, and the service provider's customer web portals.

Reporting Deficiencies

The nature, timing and extent of deviations or deficiencies identified by the site personnel are logged and input into a site issues database. The database serves to assign ownership of the issue, track progress and report completions as needed to maintain the highest level of performance at the site level.

Corrective actions or changes to established documents or procedures are announced to affected areas by two means of communications. An operations information brief is used to alert operations personnel of new information and announce new initiatives from the company or the operations management team. Should the announcement be significant as to alter existing documentation, processes, procedures, or behavioral aspects of Equinix's daily duties, the operations bulletin is the vehicle for announcement.

Operations bulletins are mandatory for compliance and are often time sensitive. Each operations bulletin contains an effective date and advises of special instruction needed for successful performance.

COMPLEMENTARY CONTROLS AT USER ENTITIES

Equinix's Data Center Hosting Services system is designed with the assumption that certain controls will be implemented by user entities. Such controls are called complementary user entity controls. It is not feasible for all of the control objectives related to Equinix's Data Center Hosting Services system to be solely achieved by Equinix's control activities. Accordingly, user entities, in conjunction with the data center hosting services, should establish their own internal controls or procedures to complement those of Equinix.

The following complementary user entity controls should be implemented by user entities to provide additional assurance that the specified control objectives described within this report are met:

Control Activities Expected to be Implemented at User Entities	Related Control Objective
User entities are expected to implement controls that ensure notifying Equinix of changes made to technical or administrative contact information.	Physical Security
User entities are expected to implement controls that ensure providing and maintaining the facility access list of authorized personnel, vendors and contractors.	
User entities are expected to implement controls that ensure notifying Equinix of on-site visits of employees, vendors, and contractors prior to arrival at the data center.	
User entities are expected to implement controls that ensure adhering to the Equinix physical security and safety procedures.	
User entities are expected to implement controls that ensure informing their vendors of the Equinix security and safety procedures.	
User entities are expected to implement controls that ensure their guests /visitors are escorted, as appropriate, throughout the Equinix facility.	
User entities are expected to implement controls that ensure the security of any keys or badges and confidentiality of any combinations used to access Equinix's facilities.	
User entities are expected to implement controls that ensure their cabinets are locked and their equipment is secured prior to leaving the premises.	

Control Activities Expected to be Implemented at User Entities	Related Control Objective
User entities are expected to implement controls that ensure immediately notifying Equinix of the loss of or damage to equipment.	
User entities are expected to implement controls that ensure insurance of their hardware, software, data and other equipment.	
User entities are expected to implement controls that ensure the development of policies and procedures to protect their systems from unauthorized or unintentional use, modification, addition or deletion.	
User entities are expected to implement controls that ensure their understanding and complying with their contractual obligations to Equinix.	
User entities are responsible for communicating to Equinix the authorization for changes to customer assets prior to implementation.	Changes to Customer Assets
User entities are responsible for immediately notifying Equinix of any actual or suspected information security breaches, including compromised user accounts.	Issues and Incident Management
User entities are responsible for ensuring the confidentiality of any user accounts and passwords assigned to them for use with Equinix's systems.	Information Security

SECTION 4

TESTING MATRICES

TESTS OF OPERATING EFFECTIVENESS AND RESULTS OF TESTS

Scope of Testing

This report on the controls relates to the Americas Data Center Hosting and Brasil Managed Services system provided by Equinix. The scope of the testing was restricted to the Americas Data Center Hosting and Brasil Managed Services system considered to be relevant to the internal control over financial reporting of respective user entities. Schellman & Company, LLC (Schellman) conducted the examination testing over the period November 1, 2018, through October 31, 2019.

Tests of Operating Effectiveness

The tests applied to test the operating effectiveness of controls are listed alongside each of the respective control activities within the Testing Matrices. Such tests were considered necessary to evaluate whether the controls were sufficient to provide reasonable, but not absolute, assurance that the specified control objectives were achieved during the review period. In selecting the tests of controls, Schellman considered various factors including, but not limited to, the following:

- The nature of the control and the frequency with which it operates;
- The control risk mitigated by the control;
- The effectiveness of entity-level controls, especially controls that monitor other controls;
- The degree to which the control relies on the effectiveness of other controls; and
- Whether the control is manually performed or automated.

The types of tests performed with respect to the operational effectiveness of the control activities detailed in this section are briefly described below:

Test Approach	Description
Inquiry	Inquired of relevant personnel with the requisite knowledge and experience regarding the performance and application of the related control activity. This included in-person interviews, telephone calls, e-mails, web-based conferences, or a combination of the preceding.
Observation	Observed the relevant processes or procedures during fieldwork. This included, but was not limited to, witnessing the performance of controls or evidence of control performance with relevant personnel, systems, or locations relevant to the performance of control policies and procedures.
Inspection	Inspected the relevant audit records. This included, but was not limited to, documents, system configurations and settings, or the existence of sampling attributes, such as signatures, approvals, or logged events. In some cases, inspection testing involved tracing events forward to consequent system documentation or processes (e.g. resolution, detailed documentation, alarms, etc.) or vouching backwards for prerequisite events (e.g. approvals, authorizations, etc.).

Sampling

Consistent with American Institute of Certified Public Accountants (AICPA) authoritative literature, Schellman utilizes professional judgment to consider the tolerable deviation rate, the expected deviation rate, the audit risk, the characteristics of the population, and other factors, in order to determine the number of items to be selected in a sample for a particular test. Schellman, in accordance with AICPA authoritative literature, selected samples in such a way that the samples were expected to be representative of the population. This included judgmental selection methods, where applicable, to ensure representative samples were obtained.

System-generated population listings were obtained whenever possible to ensure completeness prior to selecting samples. In some instances, full populations were tested in cases including but not limited to, the uniqueness of the event or low overall population size.

Test Results

The results of each test applied are listed alongside each respective test applied within the Testing Matrices. Test results not deemed as control deviations are noted by the phrase "No exceptions noted." in the test result column of the Testing Matrices. Any phrase other than the aforementioned constitutes a test result that is the result of non-occurrence, a change in the application of the control activity, or a deficiency in the operating effectiveness of the control activity. Testing deviations identified within the Testing Matrices are not necessarily weaknesses in the total system of controls at user entities, as this determination can only be made after consideration of controls in place at user entities, and other factors. Control considerations that should be implemented by user entities in order to complement the control activities and achieve the stated control objective are presented in the "Complementary Controls at User Entities" within Section 3. Control considerations that should be implemented by subservice organizations in order to complement the control activities and achieve the stated control objective are presented in the "Complementary Controls at Subservice Organizations" within Section 3.

PHYSICAL SECURITY

Control Objective Specified by the Service Organization: Control activities provide reasonable assurance that physical access to Equinix IBX locations, facility infrastructure platforms, and customer footprint(s) is limited to properly authorized individuals.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
	Corporate Support		
1.01	Documented physical security standard operating procedures (SOPs) approved by management exist to provide guidance on restricting and controlling access to the data center facilities.	Inspected the physical security policies and procedures to determine that documented physical security SOPs approved by management were in place to provide guidance on restricting and controlling access to the data center facilities.	No exceptions noted.
	Data Center Facilities		
1.02	Procedures exist and are followed to establish and make changes to physical access privileges for employees.	Inquired of the data center managers regarding physical access procedures at each of the data center facilities to determine that procedures were in place and followed to establish and make changes to physical access privileges for employees.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
		Inspected the access request tracking documentation for a sample of employees hired during the review period to determine that procedures existed and were followed to grant physical access privileges for each employee sampled.	No exceptions noted.
		Inspected the access termination tracking documentation for a sample of employees terminated during the review period to determine that procedures existed and were followed to revoke physical access privileges for each employee sampled.	No exceptions noted.
1.03	Procedures exist and are followed to established and make changes to physical access privileges for customers.	Inquired of the data center managers regarding physical access procedures at each of the data center facilities to determine that procedures were in place and followed to establish and make changes to physical access privileges for customers.	No exceptions noted.
		Observed the change tracking documentation for a sample of customer physical access change requests received during the review period to determine that procedures were followed to establish and make changes to physical access privileges for customers to each facility.	No exceptions noted.
1.04	Security personnel review a government issued ID prior to allowing off-site employees, visitors, customers, vendors, and contractors access to the facility.	Inquired of the data center managers regarding physical access procedures at each of the data center facilities to determine that security personnel were required to review a government issued ID prior to allowing off-site employees, visitors, customers, vendors, and contractors access to the facilities.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
		Observed the physical access procedures at the data center facilities to determine that security personnel reviewed a government issues ID prior to allowing off-site employees, visitors, customers, vendors, and contractors access to each facility.	No exceptions noted.
1.05	Visitor access procedures are in place requiring: • Visitor sign into a log upon entry to the facility • Visitors are to be escorted by an authorized employee when accessing the facilities	Inquired of the data center managers regarding visitor access procedures at each of the data center facilities to determine that visitors were required to sign in and be escorted by an authorized employee when accessing the facilities.	No exceptions noted.
		Observed the physical access procedures at the data center facilities to determine that visitors were required sign in and be escorted by an authorized employee when accessing the facilities.	No exceptions noted.
1.06	For facilities that employ onsite security, security personnel undergo a formal training program and their KPIs are reported and reviewed monthly.	Inquired of the data center managers regarding security personnel training procedures at each of the data center facilities to determine that for facilities that employed onsite security, security personnel were required to undergo a formal training program and that their KPIs were required to be reported and reviewed monthly.	No exceptions noted.
		Observed the training completion records for a sample of security personnel hired during the review period to determine that security personnel at data center facilities that employed onsite security, participated in a formal training program during the review period.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
		Inspected the KPI and scorecard summary reports for a sample of months and data center facilities that employed onsite security personnel to determine that security team KPIs were reported and reviewed for each month and facility sampled.	No exceptions noted.
1.07	A proximity card system and / or a biometric reader and PIN are required to restrict access to the facility. Access to the colocation areas requires a valid badge access card.	Observed the physical access control systems in place at the data center facilities to determine that a proximity card system and / or a biometric reader and PIN were in place to restrict access to each facility.	No exceptions noted.
		Observed the colocation area exterior walls to determine that colocation area exterior walls extended from the floor to the ceiling.	No exceptions noted.
1.08	Physical access system logs successful and unsuccessful attempts and logs are maintained for a minimum of six months.	Inquired of the data center managers regarding physical access system logging procedures at each of the data center facilities to determine that physical access system logs successful and unsuccessful attempts and logs were recorded and maintained for a minimum of six months.	No exceptions noted.
		Observed the historical physical access system logs maintained for the data center facilities to determine that physical access system logs successful and unsuccessful attempts and logs were available for at least six months from the date of observation for each facility.	No exceptions noted.
		Inspected the historical physical access control and visitor management systems logs maintained for a sample of data center facilities to determine that physical access system logs were recorded and retained for at least six months from the date of inspections for each facility.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
1.09	Internal and external monitoring of physical activity is performed through the use of 24x7 security monitoring and digital surveillance cameras.	Inquired of the data center managers regarding internal and external monitoring procedures at each of the data center facilities to determine that internal and external monitoring of physical activity was required to be performed through the use of 24x7 security monitoring and digital surveillance cameras.	No exceptions noted.
		Observed the monitoring procedures at the data center facilities to determine that monitoring of physical activity was performed through the use of onsite security monitoring and/or digital surveillance cameras at each facility.	No exceptions noted.
		Inspected the security monitoring shift schedules for a sample of data center facilities and months during the review period to determine that onsite and offsite security personnel were scheduled 24x7 to monitor each facility during each month sampled.	No exceptions noted.
1.10	CCTV surveillance cameras are in place to monitor and record activity at the entrances to and throughout the data center facilities. Surveillance camera logs are recorded and maintained for a minimum of 30 days.	Inquired of the data center managers regarding surveillance camera log retention procedures at each of the data center facilities to determine that CCTV surveillance cameras are in place to monitor and record activity at the entrances to and throughout the data center facilities and surveillance camera footage was recorded and maintained for a minimum of 30 days.	No exceptions noted.
		Observed the historical surveillance camera logs maintained for the data center facilities to determine that surveillance camera footage was available for review at least 30 days from the date of observation for each facility.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
		Inspected the historical surveillance camera logs for a sample of data center facilities to determine that surveillance camera footage was available for review at least 30 days from the date of observation for each facility sampled.	No exceptions noted.
1.11	Access to the colocation areas requires a valid badge access card. Each customer has a defined space within the data center that is physically secured within a locked cage and / or cabinet.	Observed an example employee attempt to access colocation areas to determine that access to the colocation areas required a valid badge access card.	No exceptions noted.
		Observed the colocation space at the data center facilities to determine that customers had defined space within the data center that were physically secured within a locked cage and / or cabinet for each facility.	No exceptions noted.
1.12	Customers are required to sign a contract stating Equinix's security and availability commitments, the associated system requirements and a nondisclosure agreement.	Inspected the executed contracts and nondisclosure agreements for a sample of customers onboarded during the review period to determine that a stating Equinix's security and availability commitments, the associated system requirements and a nondisclosure agreement was in place for each customer sampled.	No exceptions noted.
1.13	The data center floor does not have any windows leading to the exterior of the building. In case due to the existing infrastructure there are windows leading to the exterior then they need to be locked from the inside or access controlled.	Observed the colocation space at the data center facilities to determine that the data center floor did not have any windows leading to the exterior of the building or in the case due to the existing infrastructure there were windows leading to the exterior, those windows were locked from the inside or access controlled for each facility.	No exceptions noted.
1.14	Colocation area exterior walls extend from the floor to the ceiling.	Observed the colocation area exterior walls to determine that colocation area exterior walls extended from the floor to the ceiling.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
1.15	Physical access reviews are documented and approved on a quarterly basis by information security personnel.	Inspected the physical access review policy and a sample of a physical access reviews performed during the review period to determine that physical access reviews were documented and approved by information security personnel on a quarterly basis.	No exceptions noted.

Environmental Security

Control Objective Specified by the Service Organization: Control activities provide reasonable assurance that Equinix facilities housing customer equipment and support operations are engineered and monitored to reduce the risk of environmental threats (i.e., power loss, fire, and flooding).

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
	Corporate Support		
2.01	Documented environmental security SOPs have been approved by management and are in place to help ensure that facilities have a consistent level of facility and environmental protection.	Inspected the environmental security SOPs to determine that environmental security SOPs were approved by management and included guidance regarding facility environmental protection.	No exceptions noted.
	Data Center Facilities		
2.02	Each facility has been inspected by a local government official to ensure building code requirements have been met.	Inquired of the data center managers regarding the building code requirements to determine that each data center facility had been inspected by a local government official to ensure building code requirements had been met.	No exceptions noted.
		Inspected the certificate of occupancy for a sample of data center facilities to determine that a certificate of occupancy was in place evidencing inspection by a local government official for each facility sampled.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
2.03	Each facility is monitored 24x7 by onsite or on call facilities engineers.	Observed the facility monitoring procedures at the data center facilities to determine that each facility was monitored by facilities engineers during standard business hours.	No exceptions noted.
		Observed the data center facility engineer staffing schedules for a sample of data center facilities and months during the review period to determine that onsite or on call facilities engineers were scheduled 24x7 to monitor each facility during each month sampled.	No exceptions noted.
2.04	A BMS is used to monitor the critical facility equipment and alert personnel of any potential issue.	Observed the BMS at the data center facilities to determine that a BMS was in place to monitor the critical facility equipment and alert personnel when potential issues were identified for each facility.	No exceptions noted.
		Inspected the BMS monitoring dashboard and example alert log notifications generated during the review period for a sample of data center facilities to determine that a BMS was used to monitor the critical facility equipment and alert personnel when potential issues were identified for each facility sampled.	No exceptions noted.
2.05	Power management equipment is in place for each facility.	Observed the power management equipment at the data center facilities to determine that power management equipment was in place at each facility.	No exceptions noted.
2.06	Scheduled maintenance procedures are performed to test and confirm the operation of the power management systems.	Observed the power management system maintenance documentation onsite with the assistance of facilities personnel at the data center facilities to determine that scheduled maintenance procedures were performed to test and confirm the operation of the power management systems during the review period at each facility.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
		Inspected the most recent UPS and generator preventative maintenance reports for a sample of data center facilities to determine that scheduled maintenance procedures were performed for the power management systems during the review period for each facility sampled.	No exceptions noted.
2.07	Fire detection and suppression equipment is in place at each facility.	Observed the fire detection and suppression equipment at the data center facilities to determine that fire detection and suppression equipment was in place at each facility.	No exceptions noted.
2.08	Scheduled maintenance procedures are performed to ensure that fire detection and suppression equipment is working properly.	Observed the fire detection and suppression equipment maintenance documentation onsite with the assistance of facilities personnel at the data center facilities to determine that scheduled maintenance procedures were performed to help ensure that fire detection and suppression equipment was working properly during the review period at each facility.	No exceptions noted.
		Inspected the most recent fire detection and suppression equipment preventative maintenance reports for a sample of data center facilities to determine that scheduled maintenance procedures were performed for the fire detection and suppression equipment during the review period for each facility sampled.	No exceptions noted.
2.09	Air conditioning and ventilation equipment is in place at each facility to ensure that humidity levels and the required temperature are maintained.	Inquired of the data center managers regarding the HVAC equipment at the data center facilities to determine that HVAC equipment was in place to ensure that humidity levels and the required temperature were maintained at each facility.	No exceptions noted.
		Observed the HVAC equipment at the data center facilities to determine that air conditioning and ventilation equipment was in place at each facility.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
2.10	Scheduled maintenance procedures are performed to ensure that the HVAC equipment and temperature and water detection sensors are working properly.	Observed the HVAC equipment maintenance documentation onsite with the assistance of facilities personnel at the data center facilities to determine that scheduled maintenance procedures were performed to help ensure that the HVAC equipment and temperature and water detection sensors were working properly during the review period at each facility.	No exceptions noted.
		Inspected the most recent HVAC equipment preventative maintenance reports for a sample of data center facilities to determine that scheduled maintenance procedures were performed for the HVAC equipment during the review period for each IBX facility sampled.	No exceptions noted.
2.11	Insurance is in place for the data center locations and equipment.	Inspected the certificate of property insurance for the data center facilities to determine that the data center locations and equipment were covered under an active insurance policy during the review period.	No exceptions noted.
2.12	Leak detection equipment is in place to help detect water presence where there should be none.	Observed the leak detection equipment at the data center facilities to determine that leak detection equipment was in place near water sources to help detect water presence, where applicable, at each facility.	No exceptions noted.
2.13	Production equipment within the data center facilities are placed on racks to protect infrastructure from localized flooding.	Observed the server racks to determine that production equipment within the data center facilities were placed on racks to protect infrastructure from localized flooding.	No exceptions noted.
2.14	Emergency procedure documentation approved by management that addresses fires, bomb threats, severe weather, and medical emergencies is in place.	Inspected the IBX emergency policies and procedures and the security staff procedures to determine that management approved emergency procedures were in place that addressed fires, bomb threats, severe weather, and medical emergencies.	No exceptions noted.

New Customer Implementation

Control Objective Specified by the Service Organization: Control activities provide reasonable assurance that new customers are implemented in line with contractual requirements.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
3.01	Documented policies and procedures are in place for the implementation of new customers.	Inspected the policies and procedures for the implementation of new customers to determine that documented policies and procedures were in place for the implementation of new customers.	No exceptions noted.
3.02	Service level agreements are formally documented and approved prior to new customer implementations.	Inspected the service level agreements for a sample of new customers implemented during the review period to determine that service level agreements were formally documented and approved prior to new customer implementations for each new customer implementation sampled.	No exceptions noted.
3.03	Work orders are submitted upon contract signature to implement services according to product specifications.	Inquired of the assistant project and program manager regarding work orders to determine that work orders were submitted upon contract signature to implement services according to product specifications.	No exceptions noted.
		Inspected work orders for a sample of new customers implemented during the review period to determine that work orders were submitted upon contract signature to implement services according to product specifications for each new customer implementation sampled.	No exceptions noted.
3.04	Technical interviews are completed and documented within the ticketing system detailing the scope of the implementation.	Inquired of the assistant project and program manager regarding technical reviews to determine that technical interviews were completed and documented within the ticketing system detailing the scope of the implementation.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
		Inspected the technical interview documents for a sample of new clients implemented during the review period to determine that technical interviews were completed and documented within the ticketing system detailing the scope of the implementation for each new customer implementation sampled.	No exceptions noted.
3.05	Customers approve implementation services prior to activation.	Inspected the approvals for a sample of new clients implemented during the review period to determine that customers approved implementation services prior to activation for each new customer implementation sampled.	No exceptions noted.

CHANGES TO CUSTOMER ASSETS

Control Objective Specified by the Service Organization: Control activities provide reasonable assurance that changes to customers' assets are authorized, tested and approved.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
4.01	Documented change control policies and procedures are in place to guide personnel in change management practices including, but not limited to, the following: • Change request • Approval process • Review process • Testing of changes	Inspected policy documentation to determine that documented change control policies and procedures were in place that included the following: • Change request • Approval process • Review process • Testing of changes	No exceptions noted.
4.02	Change management department personnel utilize a helpdesk ticketing system to track, monitor, and report the status of each change ticket.	Inspected the helpdesk ticketing system to determine that change management department personnel utilized a helpdesk ticketing system to track, monitor, and report the status of each change ticket.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
4.03	Management utilizes a standard change request form to document changes to customer assets.	Inspected the change request forms for a sample of changes implemented during the review period to determine that a standard change request form was utilized for each change sampled.	No exceptions noted.
4.04	Helpdesk personnel are required to obtain customer authorization for changes to customer assets prior to implementation.	Inquired of the assistant project and program manager regarding helpdesk requirements to determine that helpdesk personnel were required to obtain customer authorizations for changes to customer assets prior to implementation.	No exceptions noted.
		Inspected the change request forms for a sample of changes implemented during the review period to determine that helpdesk personnel obtained customer authorizations prior to implementation for each change sampled.	No exceptions noted.
4.05	Change personnel perform functional testing for changes to customer assets prior to implementation.	Inspected change request forms for a sample of changes implemented during the review period to determine that change personnel performed functional testing prior to implementation for each change sampled.	No exceptions noted.
4.06	The change management committee approves changes to customer assets prior to implementation.	Inspected the change approval documentation for a sample of changes implemented during the review period to determine that the change management committee approved changes to customer assets prior to implementation for each change sampled.	No exceptions noted.

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Backup Management

Control Objective Specified by the Service Organization: Control activities provide reasonable assurance that the customers' data and business information is appropriately backed up.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
5.01	Documented backup policies and procedures are in place to guide operations personnel in the backup and storage of production data and systems.	Inspected the policy and procedure documentation to determine that documented data backup policies and procedures were in place and addressed the backup and storage of production data and systems.	No exceptions noted.
5.02	Management utilizes an automated backup system to perform scheduled backups of production systems.	Inquired of the data backup team leaders regarding the automated backup system to determine that management utilized an automated backup system to perform scheduled backups of production systems.	No exceptions noted.
		Inspected the automated backup system configurations and software versions to determine that management utilized an automated backup system to perform scheduled backups of production systems.	No exceptions noted.
5.03	The automated backup system is configured to perform incremental backups of production systems on a daily basis and full backups on a weekly basis.	Inspected the automated backup system configurations for a sample of customers and example backup summary logs generated during the review period to determine that the automated backup system was configured to perform incremental backups of production systems on a daily basis and full backups on a weekly basis for each customer sampled.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
5.04	The automated backup systems are configured to notify systems administration personnel via e-mail regarding the status of backup job completion.	Inspected the notification configurations for the automated backup systems and an example e-mail notification generated during the review period to determine that the automated backup systems were configured to notify systems administration personnel via e-mail regarding the status of backup job completion.	No exceptions noted.
5.05	Operations personnel perform restoration of backup data on a monthly basis and upon customer request and document job details in monthly reports.	Inquired of the data backup team leaders regarding data restorations to determine that operations personnel performed restoration of backup data on a monthly basis and upon customer request and documented job details in monthly reports.	No exceptions noted.
		Inspected the data backup restore reports for a sample of months performed during the review period to determine that operations personnel performed restoration of backup data on a monthly basis and upon customer request and documented job details in monthly reports for each month sampled.	No exceptions noted.
5.06	Management maintains on-site backup media within secured areas located within the data center facilities.	Observed the storage of on-site backup media to determine that management maintained on-site backup media within secured areas located within the data center facilities.	No exceptions noted.

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Issues and Incident Management

Control Objective Specified by the Service Organization: Control activities provide reasonable assurance that issues and incidents involving infrastructure and applications are identified, monitored, investigated and resolved in a timely manner.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
6.01	Documented issue and incident policies and procedures are in place to guide personnel in issue and incident practices that include, but are not limited to, the following: • Infrastructure • Network • Application	Inspected the issue and incident policies and procedures to determine that documented issue and incident policies and procedures were in place that included the following: • Infrastructure • Network • Application	No exceptions noted.
6.02	Helpdesk support personnel utilize a helpdesk ticketing system to identify, manage and track issues and incidents for response and resolution.	Inquired of the assistant project and program manager regarding the helpdesk ticketing system to determine that helpdesk support personnel utilized a helpdesk ticketing system to identify, manage and track customer inquiries and issues for response and resolution.	No exceptions noted.
		Inspected the helpdesk ticketing system and a sample of tickets generated during the review period to determine that a helpdesk ticketing system was utilized to manage and track issues and incidents for response and resolution.	No exceptions noted.

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Network and System Monitoring

Control Objective Specified by the Service Organization: Control activities provide reasonable assurance that infrastructure and systems are monitored and problems are tracked, escalated and resolved in a timely manner.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
7.01	Documented network and systems monitoring policies and procedures are in place to help guide NOC personnel in monitoring, prioritization, and handling of customer inquiries and issues that include, but are not limited to, the following: • Enterprise monitoring application procedures • Alarm and alert processes • Outage notification handling	Inspected the policy and procedure documentation to determine that management documented network and systems monitoring policies and procedures were in place to help guide NOC personnel in monitoring, prioritization, and handling of customer inquiries and issues that included the following: • Enterprise monitoring application procedures • Alarm and alert processes • Outage notification handling	No exceptions noted.
7.02	Enterprise monitoring applications are utilized to monitor the performance and availability of production servers and network infrastructure.	Inspected the configurations for the enterprise monitoring applications to determine that enterprise monitoring applications were utilized to monitor the performance and availability of production servers and network infrastructure.	No exceptions noted.
7.03	NOC personnel are available to monitor and address system alerts generated from the monitoring applications 24 hours per day.	Inquired of the assistant project and program manager regarding the monitoring activities of the NOC personnel to determine that NOC personnel were available to monitor and address system alerts generated from the monitoring applications 24 hours per day.	No exceptions noted.
		Inspected the NOC personnel schedule for a sample of months during the review period to determine that NOC personnel were scheduled 24 hours per day for each month sampled.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
7.04	An IDS is utilized to analyze network events for possible or actual network security breaches.	Inspected the IDS documentation and an example IDS log to determine that an IDS was utilized to analyze network events for possible or actual network security breaches.	No exceptions noted.
7.05	NOC personnel monitor the IDS system on a real-time basis to analyze network events for possible or actual network security breaches.	Inquired of the monitoring supervisor regarding the IDS system to determine that NOC personnel monitored the IDS system on a real-time basis to analyze network events for possible or actual network security breaches.	No exceptions noted.
		Inspected the NOC personnel monthly schedule for a sample of months during the review period to determine that NOC personnel monitored the IDS system on a real-time basis to analyze network events for possible or actual network security breaches.	No exceptions noted.
7.06	Internal vulnerability scans of the production environment are performed on an annual basis.	Inspected the most recent vulnerability scan results to determine that an internal vulnerability scan of the production environment was performed during the review period.	No exceptions noted.
7.07	A ticketing system is in place to document, escalate, and resolve system availability issues.	Inspected the ticketing system console and a sample of incident tickets during the review period to determine that a ticketing system was in place to document, escalate, and resolve system availability issues.	No exceptions noted.
7.08	NOC management personnel meetings are held on a monthly basis to review and resolve any monitoring issues noted.	Inspected the monthly meeting presentation for a sample of months during the review period to determine that NOC management personnel meetings were held for each month sampled.	No exceptions noted.

Information Security Management

Control Objective Specified by the Service Organization: Controls provide reasonable assurance that the business needs, risk management, physical security, and information security culture are an integral part of a general plan for information security.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
8.01	Documented information security policies and procedures are in place to guide personnel in security practices that include, but are not limited to, the following: • Internet access • Physical access • Backup • Information classification • Data retention • Information security	Inspected policy and procedure documentation to determine that documented information security policies and procedures were in place to guide personnel in performing information security practices that included the following: • Internet access • Physical access • Backup • Information classification • Data retention • Information security	No exceptions noted.
8.02	Management communicates information security policy and procedure changes and relevant updates to employees via the internal intranet.	Inspected a screen print of the Equinix intranet site to determine that management communicated information security policy and procedure changes and relevant updates to employees via the internal intranet.	No exceptions noted.
8.03	Organizational charts are in place to communicate the defined key areas of authority, responsibility and lines of reporting to personnel related to the design, development, implementation, operation, maintenance, and monitoring of the system.	Inspected the company organizational charts to determine that organizational charts were in place to communicate the defined key areas of authority, responsibility and lines of reporting to personnel related to the design, development, implementation, operation, maintenance, and monitoring of the system and updated as needed.	No exceptions noted.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
8.04	Documented position descriptions are in place to define the skills, responsibilities, and knowledge levels required for particular jobs.	Inspected the documented position descriptions for a sample of active employment positions to determine that documented position descriptions were in place for each employment position sampled to define the skills and knowledge levels required for the competence levels of particular jobs.	No exceptions noted.
8.05	Employees are required to sign an acknowledgment form indicating that they have been given access to the information security policies and understand their responsibility for adhering to the policies and procedures contained within the policy.	Inspected the acknowledgment form for a sample of employees hired during the review period to determine that each employee sampled signed an acknowledgment form indicating that they had been given access to the information security policies and understood their responsibility for adhering to the policies and procedures contained within the policy.	No exceptions noted.
8.06	Information security personnel perform a review of information security objectives on an annual basis.	Inquired with the assistant project and program manager regarding the information security review to determine that information security personnel performed a review of internal information security objectives on an annual basis.	No exceptions noted.
		Inspected the annual information security review to determine that information security personnel performed a review of internal information security objectives on an annual basis.	No exceptions noted.
8.07	Administrator access within the badge access system is restricted to user accounts accessible by authorized personnel.	Inspected the screen prints of users with administrative privileges to the badge access system to determine that administrator access privileges within the badge access system was restricted to user accounts accessible by authorized personnel.	No exceptions notes.

#	Control Activity Specified by the Service Organization	Test Applied by the Service Auditor	Test Results
8.08	Information security committee meetings are performed to review and monitor corrective action initiatives on a quarterly basis.	Inquired of the assistant project and program manager regarding the information security committee meetings to determine that information security committee meetings were performed to review and monitor corrective action initiatives on a quarterly basis.	No exceptions noted.
		Inspected the information security committee meetings to determine that information security committee meetings were performed to review and monitor corrective action initiatives on a quarterly basis.	No exceptions noted.