



Open-IX Data Center Technical Standards

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The purpose of the Open-IX Data Center Technical Standards document is to establish a recommended standard for Data Centers to support an IXP (as defined by the Open-IX IXP Technical Standards). The standard also provides guidance for acceptable exceptions for pre-existing facilities.

Open Access

It is anticipated that the applicants for approval under this standard will include Building Owners, Meet Me Room Operators, and Data Center Providers. The party applying must have the right to bring any new network provider into the facility and must be willing to do so on a non-discriminatory basis. An Open-IX approved Data Center must also provide non-discriminatory access to any Open-IX approved IXP for a minimum of 12 months after approval subject to available space, power, and cooling.

Definitions

Base Building - Shall designate the fee simple ownership and/or control of the underlying real estate. This entity ultimately controls the right of network entry, but may grant broad and open rights of access to the MMR Operator or Data Center Provider as defined below.

MMR Operator - The entity that controls and operates one or multiple designated Meet Me Rooms (MMRs) in the building. The MMR operator provides the infrastructure and management to support inter-connection of network providers with each other and cross-connection either from network provider to building tenant or amongst building tenants. The MMR may include a variety of media types, including but not limited to: single and multi-mode fiber as well as Cat 5 copper or similar legacy infrastructure.

Data Center Provider - The entity providing space, power, cooling, security, and related services to customers, including the IXP.

IXP - Internet Exchange Provider is the entity operating the Internet Exchange subject to the IXP requirements published under a separate standard.

Facilities-based Network Provider - The entity that controls and maintains a physical fiber path into a building. Multiple providers may lease or share this fiber.



Physical Requirements

REQUIREMENT	STANDARD	REVISED STANDARD	EXCEPTIONS*	REVISED EXCEPTIONS*
Utility Feeds	Minimum two separate utility feeds from separate serving substations.		One or two utility feeds from one substation. (Please see Generator Standard as defined below).	Single Utility Feed
Utility Transformers	2N or N+1 with collector bus.	2n	N with upstream dual fed ATO	
Water Sources	Minimum 2 municipal or 1 municipal plus onsite.	None required if using 100% DX cooling. Minimum 2 municipal or 1 municipal plus onsite storage or 12 hours run time at full data center load	1 municipal.	None required if using 100% DX cooling. 1 municipal water feed with 4 hours onsite storage capacity and two delivery contracts if water based cooling

<p>Network Access</p>	<p>At least two diverse points of underground fiber optic entry with continuity directly to the building or campus from the curb and gutter to the on-site property conduit system serving the Data Center space housing the customers. Building must be operated in a carrier neutral manner and building owner must provide non-discriminatory access to all providers seeking to enter.</p>		<p>No exceptions.</p>	
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<p>Meet Me Room (MMR)</p>	<p>MMR must be secure with access limited to MMR A11:B11 or Data Center provider. Any other parties' access must be logged, escorted and auditable. Pricing must be offered to the OIX exchange and the participants of the exchange for all interconnection types on a fair, reasonable, open, and non-discriminatory basis.</p>		<p>No exceptions.</p>	
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<p>Interconnection Service Delivery</p>	<p>All Interconnection services delivered in a MMR within no greater than 5 business days from order placement so long as adequate existing infrastructure is available.</p>	<p>All Interconnection services delivered or canceled in an MMR within no greater than 5 business days from order placement so long as adequate existing infrastructure is available.</p>	<p>No exceptions.</p>	
<p>Electrical Distribution</p>	<p>A/B distribution from utility hand-off to equipment supporting Data Center.</p>	<p>Delete this section. Covered under UPS and Utility Fees</p>		
<p>Generator</p>	<p>Minimum of N+1 generating capacity for critical load, cooling, and life safety with on-site fuel storage for a minimum 24 hours at full load.</p>		<p>Fuel Storage and hold time may be reduced if physical limitations prevent storage, and a minimum of two supply contracts are in place. N generators may be used if the facility has dual feeds and a history of utility reliability.</p>	

UPS	A&B UPS Systems with separate UPS rooms and distribution.		Single UPS system if critical network gear is powered by an A/B DC plant.	Single UPS system if critical network gear is also powered by an A/B DC plant located in a room physically diverse from the UPS.
Cooling	N+1 Capacity on all cooling systems; water supply capable of at least 24 hours continued operation if water is required in cooling process.	N+1 Capacity on all cooling systems; on site water storage supply capable of at least 24 hours continued operation if water is required in cooling process. A single pipe loop is acceptable with isolation valves to and single component.	N Capacity with appropriate load reduction and/or curtailment procedures.	



<p>Floor Load</p>	<p>150lb psf floor loading in either raised floor or VCT tile environment. Appropriate load distribution to handle fully loaded 42+U racks of Switch/Routers.</p>		<p>As low as 60 psf loading with appropriate equipment installation standards and monitoring.</p>	
<p>Flood Zone</p>	<p>Outside of the FEMA 100 year flood zone.</p>		<p>Within FEMA 100 year flood zone with appropriate mitigation plan to access the facility during an event.</p>	
<p>Seismic Zone</p>	<p>Building must comply with current seismic requirements for zone in which it is located. Racks supporting IXP gear should be seismically isolated and supported.</p>	<p>Building must comply with current seismic requirements for zone in which it is located. Racks supporting critical infrastructure (UPS and switchgear) and IXP gear should be seismically isolated and supported.</p>	<p>Older building that conformed to seismic requirements at the time that it was built and is "grandfathered in". Racks supporting critical infrastructure (UPS and switchgear) and IXP gear should be seismically isolated and supported.</p>	

<p>Extreme Weather Zone</p>	<p>Building must comply with current wind requirements for mission critical structures. Inclusive in this requirement is acceptable wind shear loading on walls and roof structures. All facilities in these zones must have a staff and supply plan in the event a weather related storm could impact the facility.</p>		<p>Older building that conformed to wind requirements at the time that it was built and is "grandfathered in".</p>	<p>Older building that conformed to wind requirements at the time that it was built and is "grandfathered in". All facilities in these zones must have a staff and supply plan in the event a weather related storm could impact the facility.</p>
<p>Adjacent Transportation</p>	<p>Shall not be beneath a final approach path within 2 miles of a major airport.</p>	<p>Shall not be beneath a final approach path within 2 miles of a major airport, no within 1/4 mile of a freight railway</p>	<p>Exceptions for legacy or existing facilities.</p>	

<p>Adjacent Hazards</p>	<p>No high risk occupancies (Refinery, Chemical Plant, Hazardous Manufacturing Facility, etc.) within ¼ mile.</p>		<p>No exceptions.</p>	
<p>Fire Protection</p>	<p>Pre-action or gas suppression in all equipment areas; Central alarm system linked to fire department; Firefighting procedures handbook.</p>		<p>Other fire suppression conforming to code requirements with minimal risk to customer equipment if discharged.</p>	<p>No wet pipe over critical infrastructure and customer gear. Other fire suppression conforming to code requirements with minimal risk to customer equipment if discharged. Central alarm system linked to fire department; Firefighting procedures handbook.</p>

<p>Security</p>	<p>At least dual factor authentication for entrance; network and central systems areas restricted access including anti tailgating devices and security cameras with at least 24 hours of data retention.</p>		<p>No exceptions.</p>	
<p>Building Management System</p>	<p>Building shall have an automation system that monitors and provides alarming for the following:</p> <ul style="list-style-type: none"> ■ Utility Power ■ UPS ■ Generator ■ Cooling Plant ■ Supply Air Temperature ■ Security Cameras 	<p>Building shall have an automation system that monitors and provides alarming for the following:</p> <ul style="list-style-type: none"> ■ Utility Power ■ UPS ■ Generator ■ Cooling Plant ■ Supply Air Temperature ■ Security Cameras 	<p>24 x 7 staffing with appropriate "watch" log.</p>	



MOU Requirements

REQUIREMENT	STANDARD	REVISED STANDARD	EXCEPTIONS*	REVISED EXCEPTIONS*
Customer Advisory Board	Certified Applicants shall establish a customer advisory board that includes at least one member in good standing of Open-IX. Open-IX and Certified Applicant will mutually agree on a member to fulfill such a role on behalf of Open-IX.	Eliminate	No exceptions.	

*with Open-IX Board approval



Service Levels

Service Levels for the following shall be clearly stated as part of the Application process and included in agreements with customers:

- Generator
- UPS
- Cooling
- Cross Connect Delivery
- Electrical Circuit Delivery

Approval/Exceptions/Conditional Approval

Applicants shall submit a summary application noting compliance with requirements. Requested exceptions shall be clearly called out and noted as to whether they are within or outside of the range of acceptable exceptions noted herein.

Applicants must understand that this is primarily a self reporting standard and that it is incumbent upon the provider to be honest and forthcoming in their submissions. The Application will be provided to IXP Operators seeking approval for individual facilities and it is incumbent upon them to conduct their own due diligence and validate capabilities.

The board reserves the right to revoke any approvals based on factually incorrect submissions.

Research, Educational Institutions, and certain "good of the Internet" facilities may be granted blanket waivers based on the approval of the Board.

Revision

This document may be reviewed, revised, and expanded on a quarterly basis.



OPEN-IX OIX-2 Data Center Standards / HIPAA Crosswalk

In the world of Health Information Technology, compliance with the HIPAA regulations is in the forefront for both large and small healthcare organizations. HIPAA compliance means having technical, physical and administrative controls in place to protect the availability, integrity, and confidentiality of patient information.

Data Center operators who service the Healthcare industry must demonstrate compliance with components of HIPAA directly related to their scope of responsibility. This document identifies the Open-IX standards and how they cross over specific aspects of HIPAA they're responsible for.

Customers of OIX-2 certified facilities can utilize this document to understand how the certified operator is addressing HIPAA regulations. In particular, it outlines what specific HIPAA requirements the operator may be responsible for via a Business Associate Agreement (BAA), Contract, or SLA, ensuring scope is appropriately limited.