Service Description

Enterprise Bare Metal

Last Updated: July 13, 2021

V.4.3

Location of Data Center at which the Service is to be Provided	Affiliate or Subsidiary
United States or Any Other Country Not Listed in this Table	Cyxtera Communications, LLC
Canada	Cyxtera Communications Canada, Inc.
United Kingdom	Cyxtera Technology UK Limited
Japan	Cyxtera Japan, Ltd.
Singapore	Cyxtera Singapore Pte. Ltd.
Hong Kong or China	Cyxtera – Colocation Entity Limited
Germany	Cyxtera Germany GmbH
Australia	Cyxtera Australia Pty. Ltd.
Netherlands	Cyxtera Netherlands B.V.

Cyxtera Data Centers, Inc.
2333 Ponce De Leon Blvd., Suite 900
Coral Gables, Florida 33134
www.cyxtera.com

Contents

1. Introduction

Enterprise Bare Metal servers are custom or preconfigured servers, racked and cabled in Cyxtera data centers waiting to be deployed by customers. Each server is a separate isolated unit, dedicated to only a single customer.

Designed to meet a broad range of workload needs, our menu of on-demand compute options currently includes HPE, Fujitsu and NVIDIA Bare Metal servers. A select number of the HPE and Fujitsu servers are VMware and Nutanix hyperconverged infrastructure (HCI) node compliant. A variety of configurations with varying numbers of cores, quantities of RAM, and type and number of storage drives are available.

Native Intelligent Platform Management Interface "IPMI" level access means customers maintain complete control of the entire stack, from the motherboard on up while Cyxtera maintains the hardware as well as all the colocation, network, and facilities elements necessary to deliver the infrastructure. Customers are free to choose the architecture and hypervisor or OS that best fit their needs. Seamless network integration via a Digital Exchange Port ensures customers' new servers operate as if they're part of their existing colocation environment.

Enterprise Bare Metal servers include:

- The data center space and power for the Cyxtera EBM racks.
- The core network and top of rack switches, managed by Cyxtera, with customers managing network configurations through the Command Center web console or API
- Compute and local storage hardware platform
- Hardware repair, maintenance, and support w/ OEM
- 24x7 data center operations
- Nutanix Acropolis Pro and Prism Starter software licenses (for applicable Nutanix nodes)
- VMware ESXi software licenses

Cyxtera's Digital Exchange is a powerful platform that delivers a programmable, software-defined data center network. This massively scalable fabric enables customers to seamlessly extend existing VLANs to connect within our facilities, across a metro region, to cloud on-ramps, and an ecosystem of providers. It is also how customers can provision and connect dedicated infrastructure on-demand – from cabinets to bare metal servers and HCI nodes, all pre-configured, easy to deploy and scale via the Cyxtera Portal "the Portal" or our easy-to-use API. The Digital Exchange platform utilizes its intelligent network design to deliver services to customer colocation environments via a Digital Exchange Port. Through this single, redundant dual hand-off connection, customers can establish secure logical Layer 2 connections to all Digital Exchange network and data center services from colocation cabinets or cages. This includes access to select ecosystem providers who are also connected to the platform. The Digital Exchange Port provides access to IP Connect and Digital Cross Connects, among other services.

Key Terms

- **Enterprise Bare Metal Sever:** single tenant, dedicated self-contained server that combines compute (CPU cores), memory (RAM), and storage (hard disk drive and/or solid-state disk) into a pre-

configured unit. A group of servers can be associated to create a cluster when using a hypervisor for virtualization.

- **Network:** user-defined Virtual Local Area Network (VLAN) that can be configured for use solely within the compute network to connect Enterprise Bare Metal servers and users' colocation environments or other Cyxtera services, and/or solely between other Cyxtera services.

1.1 Optional High Security Environment

Many clients have special security requirements that exceed industry norms to comply with internal mandates as well as governmental regulations. These clients require efficient, effective, and interconnected services wrapped within a highly secure environment to provide robust protection mechanisms that add extra layers of stringent security measures that are continuously monitored and certified.

Cyxtera supports this mission to secure those environments through specialized processes, systems and procedures set within a physically separate and self-contained environment. To meet the objectives of government agencies and other institutions need for heightened security precautions Cyxtera has created a high security domain which is governed by the FedRAMP program.

To help organizations meet heightened security objectives, Cyxtera has employed the FedRAMP processes and procedures which provides a standardized approach to security assessment, authorization, and continuous monitoring. Cyxtera has adopted this rich set of 421 security controls to provide the heightened level of security mandated by government agencies and other enterprise's needs.

Enterprise Bare Metal and CXD network offerings within the High Security environment are similar in function to those available commercially with the added benefit of the United States Government developed security controls implemented and monitored through the FedRAMP program at the high impact level for our CXD Federal Edition offering. CXD Federal Edition

2 Product Description

2.1 Enterprise Bare Metal Server Types

Enterprise Bare Metal servers contain high density CPU and memory which includes:

- **CPU/Processor** each server has one to two sockets with Intel Xeon or AMD processor(s), ranging from 8 to 32 cores per socket, for a minimum of 8 and maximum of 64 cores per server. The processor speeds range from 2.1GHz to 3.4GHz.

- **Memory** each server includes multiple modules of DDR4 RAM, with capacity ranging from 32GB to 1TB.

- **Storage** Enterprise Bare Metal servers are inclusive of local, directly attached software defined storage. Storage is delivered via SSD and HDD storage drives, and all servers are either:

  - **Hybrid** servers containing a combination of both SSD and HDD storage drives. The

SSD storage serves as a staging area for the filesystem journal, handling bursts of random writes, coalescing them and sequentially draining them to the extent store (HDD). This provides higher write I/O performance, especially for random I/O workloads.

- **All Flash** servers containing only SSD storage drives.

- **Off Board Storage** is available through Cyxtera's Marketplace with partners that provide off board storage with the functionality of enterprise storage in a fully managed cloud model or optional on-premises devices.

Cyxtera has partnered with best of breed technology providers to deliver Enterprise Bare Metal servers. There are multiple HPE, Fujitsu and NVIDIA server types available for provisioning from the Enterprise Bare Metal catalog. Cyxtera may add, change, or remove available server types at any time. Sample server configurations are as follows:

HPE Servers (All DC Locations)

Sample Enterprise Bare Metal Server Configurations		Capacity					Configuration Highlights	
Product Name	Server Description	No. Cores	CPU Speed (GHz)	RAM (GB)	HDD (TB)	SSD (TB)	HCI-Ready (Nutanix & VMware)	Workload Affinity
HPX0	HPE DL160 Gen 10 – Intel Silver 4208 (Single Proc)	8	2.1	96	2	0.2		General Purpose, Cost Optimized
HPX1	HPE DL325 Gen 10 Plus – AMD 7302P (Single Proc)	16	3	128	2	0.2		General Purpose, Cost Optimized
HPX2	HPE DL360 (Hybrid) – Intel Silver 4208	16	2.1	384	8	3.8	X	General Purpose, Balanced (Cost/Performance), Resiliency Optimized
HPX3	HPE DL360 (Hybrid) – Intel Silver 4214	24	2.2	768	8	3.8	X	General Purpose, Balanced (Cost/Performance), Resiliency Optimized
HPX4	HPE DL360 (Hybrid) – Intel Silver 4214	24	2.2	768	4	1.4		General Purpose, Balanced (Cost/Performance)
HPX5	HPE DL360 (All Flash) – Intel Gold 6246	24	3.3	768	-	11.5	X	DBMS and Analytics, Performance Optimized, Resiliency Optimization
HPX6	HPE DL385 G10 Plus - AMD 7302	32	3	512	4	1.9		Video, Gaming, Performance Optimized
HPX7	HPE DL380 (Hybrid) – Intel Gold 5218	32	2.3	768	48	3.8	X	DBMS, File Server, Storage Density, Performance Optimized, Resiliency Optimized
HPX8	HPE DL385 G10 Plus - AMD 7502	64	2.5	1,024	4	1.9		VM Density, VDI, DBMS and Analytics, Web Serving, Performance Optimized
HPX9	HPE DL20 G10 (All Flash) - Intel E-2278G (Single Proc)	8	3.4	32	-	0.7		General Purpose, Cost/Performance Optimized

Table 1 – HPE Preconfigured servers with HCI Ready

Fujitsu Servers (UK and EMEA only)

Sample Enterprise Bare Metal Server Configurations		Capacity					Configuration Highlights	
Product Name	Server Description	No. Cores	CPU Speed (GHz)	RAM (GB)	HDD (TB)	SSD (TB)	HCI-Ready (Nutanix & VMware)	Workload Affinity
FJX0	FJX RX2530 M5 – Intel Silver 4208 (Single Proc)	8	2.1	96	2	0.2		General Purpose, Cost Optimized
FJX1	FJX GX2460 M1 (Hybrid) – AMD EPYC 7252	16	3.1	128	2	1		General Purpose, Cost Optimized
FJX2	FJX RX2530 M5 (Hybrid) – Intel Silver 4208	16	2.1	384	8	3.8	X	General Purpose, Balanced (Cost/Performance), Resiliency Optimized
FJX3	FJX RX2530 M5 (Hybrid) – Intel Silver 4214	24	2.2	768	8	3.8	X	General Purpose, Balanced (Cost/Performance), Resiliency Optimized
FJX4	FJX RX2530 M5 (Hybrid) – Intel Silver 4214	24	2.2	768	4	1.4		General Purpose, Balanced (Cost/Performance)
FJX5	FJX RX2540 M5 (All Flash) – Intel Gold 6246	24	3.3	768	-	11.5	X	DBMS and Analytics, Performance Optimized, Resiliency Optimization
FJX6	FJX GX2460 M1 (Hybrid) - AMD 7302	32	3	512	4	2		Video, Gaming, Performance Optimized
FJX7	FJX RX2540 M5 (Hybrid) – Intel Gold 5218	32	2.3	768	48	3.8	X	DBMS, File Server, Storage Density, Performance Optimized, Resiliency Optimized
FJX8	FJX GX2460 M1 (Hybrid) - AMD 7502	64	2.5	1,024	4	3		VM Density, VDI, DBMS and Analytics, Web Serving, Performance Optimized
FJX9	(All Flash) - Intel E-2278G (Single Proc)	8	3.4	32	-	0.7		General Purpose, Cost/Performance Optimized

Table 2 – Fujitsu Preconfigured servers with HCI Ready

NVIDIA DGX A100 Server (All DC Locations)

Sample Enterprise Bare Metal Server Configurations		Capacity				Configuration Highlights
Product Name	Server Description	No. Cores	CPU Speed (GHz)	RAM (GB)	NVME (TB)	SSD (TB)	Workload Affinity
DGX A100	DGX A100 SYSTEM 8X 40GB GPUS SYST AMD Rome 7742	128	2.25	1024	19.2	-	AI workloads—from analytics to training to inference.

Table 3 – NVIDIA DGXA100 Server

2.2   Custom Configured Servers

Custom Configured Enterprise Bare Metal servers allows the customer to customize the server to match their workload. The customer can request the processor as either Intel or AMD and custom configure components such as the RAM, Storage, GPU, and Network. Custom EBMs will have a longer lead time on delivery. Custom configured servers require a minimum 3-year term commitment.

2.3   Networking

Networks are user-defined Virtual Local Area Networks (VLAN). Networks may be created and assigned at the time of Enterprise Bare Metal server ordering and provisioning. Additional new networks and management of existing networks can be executed from the Command Center or API for common use cases such as configuration and Enterprise Baer Metal server(s) network assignment.

Networks can be used for, but not limited to, use cases such as:

- Local networks for communication between Enterprise Bare Metal servers within a cluster, or communication between clusters of Enterprise Bare Metal servers.

- Communication between a cluster of Enterprise Bare Metal servers and the public Internet through the IP Connect service.

- Communication between a cluster of Enterprise Bare Metal servers and a colocation space and power environment via a CXD Unified Services Port.

Enterprise Bare Metal servers each contain a total of two available 10Gb ports that may be configured for use on desired user-defined networks.

Customers will also have access to each Enterprise Bare Metal's Intelligent Platform Management Interface (IPMI) for management and monitoring of each Enterprise Bare Metal Server

2.4   Hypervisors and Operating Systems

Cyxtera will provide installation of a subset of supported hypervisors that may be deployed onto the customer's Enterprise Bare Metal servers during the provisioning process. The deployment and use of these hypervisors will be subject to any Third-Party T&Cs as applicable. Cyxtera provided hypervisor options are defined below.

Hypervisors that are provided by Cyxtera and infrequently used, out-of-date, or no longer supported may be removed at any time.

2.4.1 Cyxtera-Provided Hypervisors

- VMware ESXi
- Nutanix AHV

2.4.2 Supported Hypervisors

- Microsoft Hyper-V
- OpenStack

- None – bare metal
- After initial deployment customers may install the hypervisor of their choice

2.4.3 Customer Installed Hypervisors and Operating Systems

Customers are responsible for deploying and configuring any additional hypervisors or operating systems not supported within the Cyxtera Enterprise Bare Metal product offer. There are two methods to installing operating systems on Bare Metal Servers with no hypervisor or operating system. The customer deployment of self-provided hypervisor or operating system software may be installed from a PXE Server or booting from an ISO via the included IPMI device.

2.4.4 Supported Operating Systems and Hypervisors

Cyxtera does not provide operating systems on the Enterprise Bare Metal servers. The following tables indicates those operating systems that have been certified by the server vendors from which Cyxtera procures hardware.
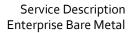
Nutanix AHV

Product Name	License Description
NAOSPC	Nutanix AOS Pro License Entitlement – Per Core
NAOSPT	Nutanix AOS Pro License Entitlement – Per Flash TiB
NPRPN	Nutanix Prism Pro License Entitlement – Per Node

Table 4 Nutanix Add-On Licensing

HPE Preconfigured Servers Operating Systems and Hypervisor Support

Product Name	Server Description	ClearVM 64	ClearOS BizEd	Citrix XenServer	Citrix HyperV	Oracle Linux	Oracle VM	Canonical Ubuntu	Suse SLES12	Suse SLES15	RHEL	VMware ESXi	MS Windows
HPX0	HPE DL160 Gen 10 – Intel Silver 4208 (Single Proc)								SP4		6.9 1,3, 7.3 1,2,3 8.0 1,3		WS2012 R2, WS2016, WS2019
HPX1	HPE DL325 Gen 10 Plus – AMD 7302P (Single Proc)		7		8.1, 8.2			20.04 LTS (5.4.0)	SP4	SP1	7.4 1,2, 8.0 1,2		WS2016, WS2019
HPX2	HPE DL360 (Hybrid) – Intel Silver 4208	X	7	7.1, 7.4, 7.5, 7.6	8.0, 8.1,8.2	6, 7	X	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP3	Initial Rls	6.9 1,3, 7.3 1,2,3 8.0 1,3	6.5-6.5U3, 6.7-6.7U3, 7.0-7.0U2	WS2012 R2, WS2016, WS2019
HPX3	HPE DL360 (Hybrid) – Intel Silver 4214	X	7	7.1, 7.4, 7.5, 7.6	8.0, 8.1,8.2	6, 7	X	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP3	Initial Rls	6.9 1,3, 7.3 1,2,3 8.0 1,3	6.5-6.5U3, 6.7-6.7U3, 7.0-7.0U2	WS2012 R2, WS2016, WS2019
HPX4	HPE DL360 (Hybrid) – Intel Silver 4214	X	7	7.1, 7.4, 7.5, 7.6	8.0, 8.1,8.2	6, 7	X	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP3	Initial Rls	6.9 1,3, 7.3 1,2,3 8.0 1,3		WS2012 R2, WS2016, WS2019
HPX5	HPE DL360 (All Flash) – Intel Gold 6246	X	7	7.1, 7.4, 7.5, 7.6	8.0, 8.1,8.2	6, 7	X	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP3	Initial Rls	6.9 1,3, 7.3 1,2,3 8.0 1,3	6.5-6.5U3, 6.7-6.7U3, 7.0-7.0U2	WS2012 R2, WS2016, WS2019
HPX6	HPE DL385 G10 Plus - AMD 7302		7	7.1, 7.4, 7.5, 7.6	8.1, 9.8			18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP4	SP1	7.4 1,2, 8.0 1,2		WS2016, WS2019
HPX7	HPE DL380 (Hybrid) – Intel Gold 5218	X	7	7.1, 7.4, 7.5, 7.6	8.0, 8.1,8.2	6, 7	X	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP3	Initial Rls	6.9 1,3, 7.3 1,2,3 8.0 1,3	6.5-6.5U3, 6.7-6.7U3, 7.0-7.0U2	WS2012 R2, WS2016, WS2019
HPX8	HPE DL385 G10 Plus - AMD 7502		7	7.1, 7.4, 7.5, 7.6	8.1, 8.2			18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP4	SP1	7.4 1,2, 8.0 1,2		WS2016, WS2019
HPX9	HPE DL20 G10 (All Flash) - Intel E-2278G (Single Proc)	X	7							Initial Rls	7.5 1,2 8.0 1,2	6.5 U2', U3 6.7, 6.7U1, U2, U3, 7.0, 7.0 U1,U2	WS2016, WS2020

Table 5 – Source https://techlibrary.hpe.com Supported 3rd party operating systems and hypervisors.

Fujitsu Preconfigured Servers (not available in the high security environment) Operating Systems and Hypervisor Support

Product Name	Server Description	Citrix XenServer	Citrix HyperV	Oracle Linux	Oracle VM	Canonical Ubuntu	Suse SLES12	Suse SLES15	RHEL	VMware ESXi	MS Windows
FJX0	FJX RX2530 M5 – Intel Silver 4208 (Single Proc)	7.1	8.0, 8.1,8.2	7.6,8 8.0,2,3	3, 3.4		SP4,5	Sp1,2	7.6,7,8, 98,1,2,3 ,4	6.5U3, 6.7U1,2,3, 7.0,U1,U2	WS2016, WS2019
FJX1	FJX GX2460 M1 (Hybrid) – AMD EPYC 7252							SP1	8.2,3,4	6.7U3, 7.0,U1,U2	WS2016
FJX2	FJX RX2530 M5 (Hybrid) – Intel Silver 4208	7.1	8.0, 8.1,8.2	7.6,8 8.0,2,3	3, 3.4	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP4,5	Sp1,2	7.6,7,8, 98,1,2,3 ,4	6.5U3, 6.7U1,2,3, 7.0,U1,U2	WS2016, WS2019
FJX3	FJX RX2530 M5 (Hybrid) – Intel Silver 4214	7.1	8.0, 8.1,8.2	7.6,8 8.0,2,3	3, 3.4	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP4,5	Sp1,2	7.6,7,8, 98,1,2,3 ,4	6.5U3, 6.7U1,2,3, 7.0,U1,U2	WS2016, WS2019
FJX4	FJX RX2530 M5 (Hybrid) – Intel Silver 4214	7.1	8.0, 8.1,8.2	7.6,8 8.0,2,3	3, 3.4	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP4,5	Sp1,2	7.6,7,8, 98,1,2,3 ,4	6.5U3, 6.7U1,2,3, 7.0,U1,U2	WS2016, WS2019
FJX5	FJX RX2540 M5 (All Flash) – Intel Gold 6246	7.1	8.0, 8.1,8.2	7.7,8,9 8.0,3,3	3, 3.4	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP4,5	Sp1,2	7.6,7,8, 98,1,2,3 ,4	6.5U3, 6.7U1,2,3, 7.0,U1,U2	WS2016, WS2019
FJX6	FJX GX2460 M1 (Hybrid) - AMD 7302							SP1	8.2,3,4	6.7U3, 7.0,U1,U2	WS2016
FJX7	FJX RX2540 M5 (Hybrid) – Intel Gold 5218	7.1, 7.4, 7.5, 7.6	8.0, 8.1,8.2	7.7,8,9 8.0,3,3	3, 3.4	18.04 LTS (4.15.0) 20.04 LTS (5.4.0)	SP4,5	Sp1,2	7.6,7,8, 98,1,2,3 ,4	6.5U3, 6.7U1,2,3, 7.0,U1,U2	WS2016, WS2019
FJX8	FJX GX2460 M1 (Hybrid) - AMD 7502							SP1	8.2,3,4	6.7U3, 7.0,U1,U2	WS2016
FJX9	(All Flash) - Intel E-2278G (Single Proc)										

Table 6 Source: *https://www.fujitsu.com/fts/products/computing/servers/primergy/os/* Supported 3rd party operating systems and hypervisors.

2.5 Cluster

When ordering a server cluster with Nutanix Hypervisor there is a minimum order of three Enterprise Bare Metal servers required for any new cluster. Once the minimum 3 server cluster has been provisioned, additional servers may be added with a minimum quantity of one. Enterprise Bare Metal servers may be grouped into a cluster to allow the sharing of compute, storage, and network resources within a single pool. Enterprise Bare Metal servers may be clustered by Cyxtera at the customer's request at the time of Enterprise Bare Metal server(s) ordering and provisioning. Customers can also add or remove server or nodes from a cluster at any time.

3 Portal, Tools & APIs

3.1 Self-Service Administrative Tools

The Service includes access to three self-service tools:

- **Cyxtera Customer Portal** provides access to subscription status, integrating navigation, viewing, and management of all Cyxtera products, entitlements, and customer support under a single account.

- **Command Center** is the primary tool for access, consumption, and management of CXD enabled products purchased from Cyxtera, including Enterprise Bare Metal server's management and configuration of network services.

- **Nutanix Prism** provides a web console for access and management of Enterprise Bare Metal servers infrastructure resources, including sites, clusters, Enterprise Bare Metal servers, hypervisor, virtual machines, and associated resources, as well as resource monitoring.

Cyxtera will provide users with access to Application Programming Interfaces (API) for programmatic resource management. Cyxtera API Document https://cyxtera.readme.io/reference#getting-started-with-your-api

- **Cyxtera APIs** allow the customer to create scripts that run system administration commands against the customer's resources, such as Enterprise Bare Metal servers and networks, equivalent to those actions that can be taken from the Command Center.

- **Nutanix APIs** allow the customer to create scripts that run system administration commands against the customer Nutanix resources, including Enterprise Bare Metal clusters, hypervisor, virtual machines and associated resources, equivalent to those actions that can be taken from within the Nutanix Prism portal.

3.2   Connectivity

Connection to Enterprise Bare Metal

There are a few methods for establishing connectivity to Enterprise Bare Metal servers:

- **IP Connect** a Cyxtera-delivered blended Internet bandwidth service comprised of multiple top tiers, upstream IP Transit providers, allowing connectivity from outside the data center where the Enterprise Bare Metal servers reside. The service provides a high availability, 'always on' connection to the Internet to which customers can connect at speeds ranging from 10Mbps to 5Gbps with optional bursting beyond the committed information rate purchased up to 10Gbps. IP addresses are provided by Cyxtera and routed via Static Route or Border Gateway Protocol (BGP). Two licenses of _AppGate SDP_ are provided to Enterprise Bare Metal customers for connectivity over IP Connect, or customers may also create their own virtual appliance to provide VPN for connectivity over IP Connect.

- [Digital Exchange Port](#) a physical network connection deployed to a colocation customer's cage or cabinet, across which one or more layer 2 networks can be stretched connecting the customer colocation environment to the customer Enterprise Bare Metal servers within the same data center where the Enterprise Bare Metal servers reside.

3.3   Availability

Enterprise Bare Metal servers are available in those Data Centers that have Cyxtera's CXD Platform. For additional services refer to the Appendix for the Product Availability Matrix.

Data Center Locations by Region & Metro		
Region	Metro	Data Center
UK Central	LHR	LHR1
EMEA	AMS/FRA	AMS1/FRA2
Canada	TOR	YYZ1&2
USA - Mid East	IAD	IAD1
USA - South East	ATL	ATL1
USA - North Central	ORD	ORD2
USA - North East	EWR / BOS	EWR1 & 2, BOS1
USA - South Central	DFW	DFW1
USA - South West	PHX	PHX1 & 2
USA - North West Coast	SFO, LAX	SFO2, LAX3
USA - West Central	DEN	DEN1&2

Table 7 Server Locations

4 Service Delivery and Support

The following outlines Cyxtera's roles and responsibilities in the service delivery of Enterprise Bare Metal servers. While specific roles and responsibilities have also been identified as being owned by the customer, any roles or responsibilities not contained in this document are either not provided with the Service or assumed to be the customer responsibility.

4.1 Provisioning

Cyxtera will provide the following provisioning Services:

- Granting CXD Command Center access to administrative users using default administrator privileges and system preferences.

- Implementation of physical Enterprise Bare Metal servers with initial IP address, IPMI address, and any associated network configuration.

- Deploying initial hypervisor onto physical Enterprise Bare Metal servers when applicable. Customers also have the option to deploy their choice of Linux or Windows operating systems.

The customer will be responsible for the following provisioning:

- Configuring applicable BIOS and server configurations for the selected operating systems, hypervisors, networks, and VMs.

- Installing and configuring any additional custom or third-party hypervisors, operating systems, and applications on deployed physical Enterprise Bare Metal servers and VMs.

4.2 Support

Cyxtera will provide or broker support for problems that the customer reports as well as selected additional Services to assist with adoption of Enterprise Bare Metal servers. Support may be provided

in any country in which Cyxtera or its agents maintain facilities. To the extent a customer provides its information and/or data in connection with support, we will handle the customer's information and/or data in any such country in accordance with the applicable service agreement, Cyxtera   policies and all applicable laws.

Customers and their authorized representatives can access the data center and their colocation space on a 24/7 basis. Individuals granted permanent or temporary access will have unescorted access to the assigned colocation space dependent upon local conditions. This access does not extend to the physical gear and or Enterprise Bare Metal servers not installed in the customer's colocation space.

4.3   Data Recovery

Cyxtera will provide the following Services with respect to data recovery:

- Data protection, such as routine backups, for the Enterprise Bare Metal management infrastructure, including top-layer management applications and user-management interfaces owned and operated by Cyxtera.

- Data and infrastructure restoration for the Cyxtera management infrastructure, including top-layer management application and user-management interfaces owned and operated by Cyxtera.

The customer will be responsible for the following services with respect to data recovery:

- The customer should architect their Enterprise Bare Metal environment with the same N+1, N+2, etc. redundancy with whatever risk tolerance level they would architect as if they were deploying their hardware – as this is not a cloud environment where we abstract the backend infrastructure that provides a guaranteed amount of resource.

- Data protection, such as routine backups, for the data and content accessed or stored on Enterprise Bare Metal servers, virtual machines, configuration settings, etc.

- Data, content, physical Enterprise Bare Metal, virtual machine, and configuration restorations for assets accessed or stored in the customer Cyxtera account.

4.4   Monitoring

Cyxtera will provide the following Services with respect to monitoring:

- Monitoring the Enterprise Bare Metal server management infrastructure, infrastructure networks, top-layer management applications and user-management interfaces.

The customer is responsible for the following with respect to monitoring:

- Monitoring the assets deployed or managed within the customer Enterprise Bare Metal server environment, including, but not limited to physical Enterprise Bare Metal servers, hypervisors, virtual machines, operating systems, applications, specific network configurations, operating system or application vulnerabilities, etc.

4.5 Incident and Problem Management

Cyxtera will provide incident and problem management Services (e.g., detection, severity classification, recording, escalation, and return to service) pertaining to:

- Infrastructure over which Cyxtera has direct, administrative, and/or physical access and control, such as Cyxtera data center, physical Enterprise Bare Metal servers, management servers, and network devices.

- Service software over which Cyxtera has direct administrative access and control, such as the Cyxtera Customer portal, Command Center, and other Cyxtera-owned APIs and applications that Cyxtera uses in delivery of the Service.

The customer is responsible for incident and problem management (e.g., detection, severity classification, recording, escalation, and return to service) pertaining to:

- User-deployed and configured assets such as hypervisors, virtual machines, operating systems, custom developed or third-party applications, network configuration settings, and user accounts.

- Hypervisor and operating system administration including the hypervisor and operating system itself or any features or components contained within it.

- Performance of deployed hypervisors, virtual machines, custom or third-party applications, customer databases, operating systems, or other assets deployed and administered by the customer.

4.6 Security

The end-to-end security of Enterprise Bare Metal servers is shared between Cyxtera, the customer. Cyxtera will provide security for the aspects of the Service over which it has sole physical, logical, and administrative level control. The customer is responsible for the aspects of the Service over which they have administrative level access or control. The primary areas of responsibility between Cyxtera and *the* customer are outlined below.

Cyxtera will use commercially reasonable efforts to provide:

- **Physical Security:** Cyxtera will protect the data centers, cages, and cabinets housing the Enterprise Bare Metal servers from physical security breaches.

- **Information Security:** Cyxtera will protect the information systems used to deliver the Service for which it has sole administrative level control.

- **Network Security:** Cyxtera will protect the networks containing its information systems up to the point where the customer has some control, permission, or access to modify their networks.

- **Security Monitoring:** Cyxtera will monitor for security events involving the underlying infrastructure hardware, networks, and information systems used in the delivery of the Service for which it has sole administrative level control over. This responsibility stops at any point where the customer has some control, permission, or access to modify an aspect of the Service.

- **Patching & Vulnerability Management:** Cyxtera will maintain the systems it uses to deliver the Service, including the application of patches it deems critical for its target management systems. Cyxtera will perform routine vulnerability scans to surface critical risk areas for the systems it uses to deliver the Service. Critical vulnerabilities will be addressed in a timely manner.

The customer should address:

- **Information Security:** The customer is responsible for ensuring adequate protection of the information systems, data, content, or applications that the customer deploy and/or access on the Service. This includes, but is not limited to, any level of patching, security fixes, data, data encryption, access controls, roles and permissions granted to internal, external, or third-party users, etc.

- **Network Security:** The customer is responsible for the security of the networks over which the customer has administrative level control. This includes, but is not limited to, maintaining effective firewall rules, exposing communication ports that are only necessary to conduct business, locking down promiscuous access, etc.

- **Security Monitoring:** The customer are responsible for the detection, classification, and remediation of all security events that are isolated with the customer's account, associated with Enterprise Bare Metal servers, hypervisor, virtual machines, operating systems, applications, data, or content, surfaced through vulnerability scanning tools, or required for a compliance or certification program in which the customer are required to participate, and which are not serviced under another Cyxtera security program.

5 Business Operations

This section summarizes processes for ordering the customer's Enterprise Bare Metal servers.

5.1 New Orders

Enterprise Bare Metal Ordering

- Orders for Enterprise Bare Metal servers can be initiated via Service Order or the Command Center/API. Orders for Enterprise Bare Metal servers are inclusive of:

    1. Data center space and power

    2. Core network and top of rack switches

    3. Compute and storage hardware platform

    4. Nutanix Acropolis Pro and Prism Starter software licenses (With ordered Nutanix Hypervisor)

    5. Hardware and software maintenance (With ordered Nutanix Hypervisor)

    6. 24 x7 data center operations and support

- Enterprise Bare Metal servers can be ordered for 1,2,3 and 5-year terms billed monthly. For legacy servers if inventory is available can be ordered on a month to month term. Cancellation

of a 1, 2,3 and 5-year term prior to the completion of the term, the customer will be responsible for the remaining balance of the term and will be billed accordingly.

- There is a minimum order of 3 Enterprise Bare Metal servers for any new Nutanix HCI node cluster. There is a minimum order of 1 Enterprise Bare Metal servers for any existing Nutanix HCI node cluster. All HPE Bare Metal servers are sold on a per server basis.

- There is a minimum commitment of 3-year term for all custom EBM or Nutanix License orders.

- Request for expedited installation of Enterprise Bare Metal servers can only be approved by Cyxtera's Service Delivery team. Upon receipt of such a request, Cyxtera's Service Delivery Team will take various factors into account when considering whether or not to approve such request, including, but not limited to, products and services being purchased in the order, scope and scale of the installation of the services being purchased in the order, current Cyxtera workload and/or projects already in flight at the data center, customer's existing environment and procurement lead-times. An expedite fee may apply. Contact your Cyxtera Account Representative to inquire about an expedite request.

- During server reclaim the disk drive wiping is in accordance with NIST 800-88. Clear guidelines to erase customer data using either vendor integrated tools, i.e., HPE Secure erase, or third-party software if no integrated method is available.

6 Service Level Objectives

Cyxtera does not provide SLAs around the availability of the hardware (the customer should architect their Enterprise Bare Metal environment with the same N+1, N+2, etc. redundancy with whatever risk tolerance level they would architect as if they were deploying their hardware – as this is not a cloud environment where we abstract the backend infrastructure that provides a guaranteed amount of resource – the customer has full control), we are ultimately responsible for replacing any failed gear with next business day SLO, once notified by the customer (or once we identify it). Service level objectives outlined in the Appendix section document Cyxtera Extensible Data Center (CXD) Platform Services Service Level Agreement.

7 Appendix

Included below are links to additional documentation that are related to Enterprise Bare Metal service.

- [Acceptable Use Policy](#)

- [CXD Terms and Conditions](#)

- [Cyxtera Customer Guide](#)

- [Cyxtera Customer Support Portal](#)

- [Cyxtera Extensible Data Center (CXD) Platform Services Service Level Agreement](#)

- [Cyxtera Extensible Data Center (CXD) Platform Services Service Schedule](#)

- [Cyxtera Extensible Data Center (CXD) Platform Command Center Terms and Conditions](#)

- [Product Availability Matrix](#)