		tiempo que demore la reparación, sin ningún costo para la institución.

Firma:
Aclaración: César Romeo Acosta Formoso
En calidad de: Director

Cesar Acosta
Director
ITCS S.A.

Marcelino Recalde 861 c/ Sgto. Gauto - BIBLIOTECA ALBERDI, Asunción
Teléfono: (021) 726 8222 – email: [illegible] – [illegible]

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Interfaz	El equipo ofertado deberá contar como mínimo con. 8 puertos FC de 10Gb/s, 4(cuatro) porcada controladora. Y se deben incluir al menos 4 Transceivers para conexión.	**Exigido**	El equipo ofertado cuenta con: 8 puertos FC de 16Gb/s, 4 (cuatro) por cada controladora. Y se incluyen 4 Transceivers para conexión.
Gestión	Deberá contar con administración basada en navegador web y CLI (Comman line interface) y debe ser compatible con el servidor ofertado en el item N° 1. Deberá contar con capacidad de replicac ón remota.	**Exigido**	Cuenta con administración basada en navegador web y CLI (Comman line interface) y es compatible con el servidor ofertado en el item N° 1. Cuenta con capacidad de replicación remota
S.O. Soportados	Microsoft Windows Server 2022 Microsoft Windows Server 2019 Microsoft Windows Server 2016 VMware. Red Hat Linux SuSE SLES Linux	**Exigido**	Soporta los sistemas operativos Microsoft Windows Server 2022 Microsoft Windows Server 2019 Microsoft Windows Server 2016 VMware. Red Hat Linux SuSE SLES Linux
Almacenamiento	El almacenamiento deberá contar con capacidad de virtualización para que el volumen determinado pueda dividirse en todos los ejes.	**Exigido.**	El almacenamiento cuenta con capacidad de virtualización para que el volumen determinado pueda dividirse en todos los ejes
Instalación y puesta en marcha	El oferente se encargará de la instalación y puesta en funcionamiento del equipo ofertado. El oferente deberá instalar el equipo en un Rack proveído por la convocante y deberán prever todo lo necesario para la correcta instalación y el buen funcionamiento de este.	**Exigido**	**ITCS S.A** se encargará de la instalación y puesta en funcionamiento del equipo ofertado. **ITCS S.A** instalara el equipo en un Rack proveído por la convocante y preverá todo lo necesario para la correcta instalación y el buen funcionamiento de este.
Garantía (Escrita)	36 meses con soporte de atención de hardware, mano de obra y repuestos incluyendo traslado de los equipos de la oficina del cliente al proveedor y viceversa a cargo del proveedor. Plazo de atención al reclamo no mayor a 4 (cuatro) horas. Si la solución demandara más de 5 (cinco) días hábiles, el proveedor deberá notificar por escrito el motivo de la demora y proveer un equipo en reemplazo, durante el tiempo que demore la reparación; sin ningún costo para la institución.	**Exigido**	Se incluye soporte de hardware por 36 meses, mano de obra y repuestos incluyendo traslado de los equipos de la oficina del cliente al proveedor y viceversa a cargo de **ITCS S.A** Plazo de atención al reclamo no mayor a 4 (cuatro) horas. Si la solución demandara más de 5 (cinco) días hábiles, **ITCS S.A** notificará por escrito el motivo de la demora y proveer un equipo en reemplazo, durante el

Cesar Ramírez
Director
ITCS S.A.

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Garantía	36 meses con soporte de atención de hardware, mano de obra y repuestos incluyendo traslado de los equipos de la oficina del cliente al proveedor y viceversa a cargo del proveedor. **Plazo** de atención al reclamo no mayor a 4 (cuatro) horas. Si la solución demandara más de 5 (cinco) días hábiles, el proveedor deberá notificar por escrito el motivo de la demora y proveer un equipo en reemplazo, durante el tiempo que demore la reparación; sin ningún costo para la institución	**Exigido**	Se incluye 36 meses con soporte de atención de hardware, mano de obra y repuestos incluyendo traslado de los equipos de la oficina del cliente al proveedor y viceversa a cargo de **ITCS S.A**. Plazo de atención al reclamo no mayor a 4 (cuatro) horas. Si la solución demandara más de 5 (cinco) días hábiles, **ITCS S.A** notificara por escrito el motivo de la demora y proveer un equipo en reemplazo, durante el tiempo que demore la reparación; sin ningún costo para la institución.

ITEM N° 2: SERVIDOR DE ALMACENAMIENTO (STORAGE)			**Lo ofertado Cumple de la siguiente manera**
Origen	**EEUU**	**Exigido**	
Marca	**HPE**	**Exigido**	
Modelo	**MSA 2060**	**Exigido**	
Cantidad	**1** (UNO)	**Exigido**	
Memoria Caché	12 GB o superior en total para cada controladora	**Exigido**	Memoria Cache de 12GB por cada controladora
Controladoras	2 (dos)	**Exigido**	Cuenta con 2 controladoras
RAID Soportado	0, 1, 5, 6 y 10	**Exigido**	0,1,5,6 y 10
Drive Chasis	El equipo ofertado deberá tener la capacidad de Soportar discos de distintas tecnologías tales como: HDD, SSD, SAS. Deberá soportar discos de 2.5"	**Exigido**	Soporta discos de distintas tecnologías tales como: HDD, SSD, SAS. Soporta discos de 2.5".
Capacidad	Inicial. 39 TB o superior en configuración híbrida: 80% SAS Mecánico y 20% SAS SSD, configurado en modo Storage Tiering. Con capacidad de crecimiento a futuro de 800TB configurados en RAID 6 o superior	**Exigido**	Cuenta con 39 TB en configuración híbrida: 80% SAS Mecánico y 20% SAS SSD, configurado en modo Storage Tiering configurados en RAID 6. Con capacidad de crecimiento a futuro de 1800TB (superior)
Crecimiento	El equipo ofertado deberá soportar la ampliación a futuro en cuanto a capacidad de discos. La capacidad de crecimiento en discos debe ser como mínimo 230 discos para los discos de tecnología HDD, SSD, SAS	**Exigido**	El equipo ofertado soporta la ampliación a futuro en cuanto a capacidad de discos. La capacidad de crecimiento es mayor a 230 discos para los discos de tecnología HDD, SSD, SAS.

Cesar Acosta
Director
ITCS S.A.

			Broadcom BCM57412 Ethernet 10Gb 2-port.
	Interfaz de Administración: Debe poseer una interfaz Ethernet exclusiva para conectar a redes de administración y ser capaz de recibir comandos de tipo IPMI	Exigido	Interfaz de Administración. Posee una Interfaz Ethernet exclusiva para conectar a redes de administración y ser capaz de recibir comandos de tipo IPMI.
Slots de expansión	Debe soportar tecnología PCI-Express 4.0 con 2 slots PCIe mínimamente.	Exigido	Soporta tecnología PCI-Express 4.0 con 2 slots PCIe
Fuente de alimentación	Fuente redundante, incluyendo cables de poder.	Exigido	Cuenta con fuente redundante, incluyendo cables de poder.
	Voltaje	110-220	Fuente de alimentación 110-220V
	Frecuencia en Hertz 50/60	Exigido	Frecuencia en Hertz 50/60Hz
Predicción de Fallas	El servidor cotizado deberá contar con capacidad para predicción automática de fallas, para cubrir elementos críticos de la solución como ser ventiladores, procesadores, unidades de disco y memorias, etc. Se deberá incluir todas las Licencias Necesarias para la administración.	Exigido	El Servidor HPE DL 380 Gen 10 Plus Cuenta con capacidad para predicción automática de fallas, para cubrir elementos críticos de la solución como ser ventiladores, procesadores, unidades de disco y memorias, etc. Se incluyen todas las Licencias Necesarias para la administración.
Sistema Operativo	Microsoft Server Datacenter 2022 en español, instalado y configurado con activación para la totalidad de cores del servidor.	Exigido	Microsoft Windows Server Datacenter 2022 en español instalado, configurado con activación para la totalidad de cores del servidor.
Instalación y puesta en marcha.	El oferente tendrá a su cargo realizar la instalación y configuración del equipo entregado, así como también la migración de las máquinas virtuales que la convocante requiera.	Exigido	ITCS S.A realizara la instalación y configuración del equipo entregado, así como también la migración de las maquinas virtuales que la convocante requiera
	Accesorios: El kit de montaje del servidor en el Rack y accesorios será proveído por la empresa	Exigido	se incluye el kit de montaje en rack y accesorios a ser proveído por ITCS S.A.

Cesar [illegible]
Director
ITCS S.A.

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FORMULARIO DE DATOS GARANTIZADOS

ID No.: 434707

A: Corte Suprema de Justicia (CSJ)

ESPECIFICACIONES TÉCNICAS MÍNIMAS			Lo ofertado cumple de la siguiente manera
ITEM N° 1: SERVIDOR DE ALTA DISPONIBILIDAD			
Cantidad	1 (uno)	Exigido	
Marca/Modelo	DL380 GEN 10 Plus	Exigido	
Factor de forma	Rackeable máximo 2U rack	Exigido	Rackeable de 2U
Procesador	Cantidad de procesadores	2	2 Procesadores Intel Xeon-Silver 4316.
	Cantidad de núcleos por procesador	20	20 Cores por procesador
	Arquitectura de Bus en bits	64	Arquitectura de 64 bits
	Frecuencia básica	2,30 GHz.	Frecuencia base de 2,3 Ghz.
	Capacidad del caché	30MB	30MB de cache.
Memoria RAM	1TB DDR4 3200 MT/s RDIMM instalado	1TB	1TB de RAM instalada 3200MT/s RDIMM
Unidad de Disco	Sistema Operativo en RAID 1 con discos SAS. Capacidad de almacenamiento para Sistema Operativo	480 GB	Sistema Operativo en RAID 1 con discos SAS de 900 GB. (superior) Capacidad de almacenamiento para Sistema Operativo
Interfaces I/O Integrados	Consola de Administración REMOTA: Deberá contar con consola de administración remota que debe permitir, conectarse vía LAN a la consola de video del servidor, permitir el montaje de medios de instalación en formato ISO por la LAN).	Exigido	Consola de Administración REMOTA. Cuenta con consola de administración remota que permite, conectarse vía LAN a la consola de video del servidor, permite el montaje de medios de instalación en formato ISO por la LAN).
	Puertos frontales mínimos. 1 USB 3.0 1 de video Puertos posteriores mínimos. 1 de video 2 USB 3.0	Exigido	Cuenta con Puertos frontales: 1 USB 3.0 1 de video DisplayPort Cuenta con Puertos posteriores: 1 de video VGA 2 USB 3.0
	Ethernet 1Gbps	4	Cuenta con 4 puertos Ethernet de 1Gbps Intel I350-T4 Ethernet 1Gb 4-port.
	Ethernet 10Gbps	2	Cuenta con 2 puertos Ethernet de 10Gbps

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ANEXO F

Cesar Acosta
Director
ATCS S.A.

Summary of Changes

Date	Version History	Action	Description of Change
02-Oct-2023	Version 14	Changed	Overview and Configuration Information Section were updated Added MSA 2060 SFF Flash Bundle array models and SSD 6-Pack Drive Bundle options.
07-Aug-2023	Version 13	Changed	Overview, Standard Features, Configuration information and Technical Specifications sections were updated Updated array models, technical specifications, and certifications.
19-Jun-2023	Version 12	Changed	Overview, Standard Features, Service and Support, Configuration information and Technical Specifications sections were updated Added NEBS certification details, support for Veeam, and other general updates.
06-Feb-2023	Version 11	Changed	Overview and Standard Features sections were updated HPE GreenLake for Backup and Recovery content added.
05-Dec-2022	Version 10	Changed	Overview, Standard Features, Configuration information and Technical Specifications sections were updated Added 20TB HDD, 20TB HDD six-pack, and 7.68TB SSD drive options; Added HPE MSA 25Gb SFP28 SR 4-pack iSCSI Transceivers.
06-Sep-2022	Version 9	Changed	Overview, Standard Features, Configuration information and Technical Specifications sections were updated Added MSA 2060 Storage Array and MSA 2060 Drive Enclosure SKU additions for Lot9 2023 compliance.
06-Jun-2022	Version 8	Changed	Added TAA-compliant Storage Array models with further details on TAA compliance and other general updates
04-Oct-2021	Version 7	Changed	Service and Support section was updated
02-Aug-2021	Version 6	Changed	Updated array performance data.
06-Jul-2021	Version 5	Changed	Added 10GBase-T models and other updates.
06-Apr-2021	Version 4	Changed	Added 18TB HDD option, updated OS support, updated temperature and humidity specifications
18-Jan-2021	Version 3	Changed	Added power supply details, temperature and humidity ranges, system certifications and other textual updates
16-Nov-2020	Version 2	Changed	Updated content on SFPs, added Acoustic/Shock/Vibe specifications, and updated HDD and SSD content.
08-Sep-2020	Version 1	New	New QuickSpecs.

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Director
HCS S.A.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less

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Technical Specifications

Sequential Reads MB/s[1]	8,400	12,100	5,500	8,700	8,400	12,100
Sequential Writes MB/s[1]	4,000	5,300	3,700	4,400	4,000	5,300
MSA 2060 RAID 5 Performance Results						
Random Reads IOPs	48,100	354,800	41,300	284,100	48,000	364,800
Random Writes IOPs	15,500	69,300	15,600	66,300	15,600	69,800
Random Mix 60/40 IOPs	27,300	128,600	27,200	121,500	27,100	130,300
Sequential Reads MB/s[1]	8,000	11,800	5,400	8,700	8,000	11,800
Sequential Writes MB/s[1]	5,800	6,700	4,500	4,500	5,800	6,700
MSA 2060 RAID 6 Performance Results						
Random Reads IOPs	48,900	350,300	42,000	284,000	48,800	358,900
Random Writes IOPs	12,000	59,300	12,000	57,000	12,000	59,600
Random Mix 60/40 IOPs	20,300	113,800	20,300	107,800	20,300	115,300
Sequential Reads MB/s[1]	8,000	12,100	5,500	8,700	8,000	12,100
Sequential Writes MB/s[1]	5,700	6,300	4,300	4,400	5,700	6,300
MSA 2060 MSA-DP+ Performance Results						
Random Reads IOPs	48,600	338,300	41,800	281,900	48,600	347,700
Random Writes IOPs	11,700	59,200	11,800	56,900	11,800	59,600
Random Mix 60/40 IOPs	20,300	113,200	20,300	107,500	20,300	114,400
Sequential Reads MB/s[1]	8,000	12,100	5,400	8,700	8,000	12,100
Sequential Writes MB/s[1]	5,400	6,300	4,300	4,400	5,400	6,300

Notes:

[illegible] the number of [illegible] overall performance. [illegible] comparison. [illegible] array configuration with [illegible] and pools and controllers. [illegible] results shown for the HPE MSA [illegible] designed to give a conservative reference point for comparison.

- All performance numbers were captured using dual controller configurations.
- All performance numbers were captured using four volumes per pool.

o Sequential tests (MB/s) are based on 256K block sizes and random tests (IOPS) are based on 8K block sizes. For sequential workloads with a queue depth greater than 1, each simultaneous stream is targeted to operate on a separate LBA range. Other types of sequential workloads that target overlap LBA ranges may achieve higher results. Results cannot be extrapolated with a single host.

o Fibre Channel results were measured using 16 Gb FC Host Bus Adapters. SAS results were measured using 12 Gb SAS Host Bus Adapters. 10 GbE iSCSI results were measured using 10GbE iSCSI Host Bus Adapters. Hosts were directly attached to the HPE MSA 2060 array. MSA 2060 iSCSI performance numbers increased from SFP and BASE-T based controllers.

o RAID 1 Solid State Drive random read and mixed results: 4 SSDs, 2 SSDs per disk group, 1 disk group per pool.

o RAID 10 Solid State Drive random write results: 8 SSDs, 4 SSDs per disk group, 1 disk group per pool.

o RAID 10 Solid State Drive sequential results: 20 SSDs, 10 SSDs per disk group, 1 disk group per pool.

o RAID 10 Hard Disk Drive sequential results: 96 10K HDDs, 12 drives per disk group, 4 disk groups per pool.

o RAID 10 Hard Disk Drive random results: 240 10K HDD, 10 drives per disk group, 12 disk groups per pool.

Cesar [illegible]
Director
GCC S.A.

Technical Specifications

- [8]RAID 5 Solid State Drive random results: 6 SSDs, 3 SSDs per disk group, 1 disk group per pool
- [9]RAID 5 Solid State Drive sequential results: 18 SSDs, 9 SSDs per disk group, 1 disk group per pool.
- [10]RAID 5 Hard Disk Drive sequential results: 90 10K HDD, 9 drives per disk group, 5 disk groups per pool
- [11]RAID 5 Hard Disk Drive random results: 234 10K HDD, 9 drives per disk group, 13 disk groups per pool.
- [12]RAID 6 Solid State Drive random results: 8 SSDs, 4 SSDs per disk group, 1 disk group per pool
- [13]RAID 6 Solid State Drive sequential results: 20 SSDs, 10 SSDs per disk group, 1 disk group per pool
- [14]RAID 6 Hard Disk Drive sequential results: 80 10K HDD, 10 drives per disk group, 4 disk groups per pool
- [15]RAID 6 Hard Disk Drive random results: 240 10K HDD, 10 drives per disk group, 12 disk groups per pool
- [16]MSA-DP+ Solid State Drive results: 24 SSDs, 12 SSDs per disk group, 1 disk group per pool.
- [17]MSA-DP+ Hard Disk Drive sequential results: 96 10K HDD, 12 drives per disk group, 4 disk groups per pool
- [18]MSA-DP+ Hard Disk Drive random results: 240 10K HDD, 30 drives per disk group, 4 disk groups per pool

Environment-friendly Products and Approach End-of-life Management and Recycling

Hewlett Packard Enterprise offers **end-of-life product return, trade-in, and recycling programs,** in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Cesar Valencia
Director
ACG S.A.

Technical Specifications

Power Supply Details

2U Flex 580W PSU 80+ Gold

Input Voltage Range (V rms)	100-240		
Frequency Range (Hz)	50-60		
Nominal Input Voltage	115	208	230
Maximum Output Wattage Rating (W)	584	584	584
Nominal Input Current (Arms)	5.7	3.2	2.8
Maximum Input Wattage Rating (W)	652	645	644
Maximum Rated VA (VA)	653	661	650
Efficiency (%/100)	0.896	0.905	0.907
Power Factor	0.999	0.976	0.991
Leakage Current (mA)	<0.8		
Maximum Inrush Current (A peak)	45		
Maximum Inrush Current Duration (ms)	40		
Maximum British Thermal Unit Rating (BTU-hr)	2224.233	2201.382	2196.286

2U Flex 580W PSU 80+ Platinum

Input Voltage Range (V rms)	100-240		
Frequency Range (Hz)	50-60		
Nominal Input Voltage	115	208	230
Maximum Output Wattage Rating (W)	584	584	584
Nominal Input Current (Arms)	5.56	3.06	2.77
Maximum Input Wattage Rating (W)	639.4	635.5	630
Maximum Rated VA (VA)	640.3	636.1	625.2
Efficiency (%/100)	0.913	0.919	0.935
Power Factor	0.999	0.999	0.999
Leakage Current (mA)	<0.8		
Maximum Inrush Current (A peak)	45		
Maximum Inrush Current Duration (ms)	40		
Maximum British Thermal Unit Rating (BTU-hr)	2180.4	2167.0	2148.3

MSA 2060 Regulatory Information

Safety

- UL/CSA 62368-1 (USA/Canada)
- EN 62368-1 (European Union)
- IEC 60950-1 (International)
- EU Regulation 2019/424 (Lot 9)

Power

Electromagnetic Compatibility

- VCCI Class A (Japan)
- FCC Class A (USA)
- ICES-003 Class A (Canada)
- EN55032 : (European Union Class A); CISPR 32 (International Class A)
- EN61000-3-2 : (Harmonics) (European Union)
- EN61000-3-3 : (Flicker) (European Union)
- EN 55035 (European Union, Immunity, Class A); CISPR 24 (International Immunity, Class A)
- AS/NZS CISPR 32, Class A (Australia, New Zealand)
- CNS 13438 Taiwan, Class A (Taiwan)
- KN32 Class A (Emissions Class A); KN35 (Immunity) (S Korea)

RoHS and WEEE

- RoHS-6/6
- China RoHS
- WEEE

Country Approvals

- United States, Australia/New Zealand, Canada, European Union, Japan, South Korea,Taiwan

Cesar
Director
ICCS S.A.

Technical Specifications

TAA Compliance (for Storage Array and Drive Enclosure with TAA Compliance)	• MSA 2060 Storage Arrays: COO Mexico • MSA 2060 Disk Enclosures: COO USA

MSA 2060 Benchmark Performance Results

The performance figures provided here are for reference as many variables exist between array configurations, workloads, drive types, disk group setup parameters and host system setup. Hewlett Packard Enterprise has traditionally published a set of end-to-end MSA performance specifications that are fed into HPE Sizer tools which are based on conservative real-world configurations. For consistency, the MSA performance numbers have been documented in both Benchmark and End-to-End Performance tables. These numbers are subject to change without notice

HPE MSA 2060 Benchmark Performance Results

Benchmark Performance Results[1]	HPE MSA 2060 (with SSDs)
IOPS	
Random Reads [2]	395,000
Random Writes [3]	161,500
Sequential [4]	
Segmented Sequential Reads [5]	13.1 GB/s
Segmented Sequential Writes [6]	7.3 GB/s

Notes:

- [1]Performance results were generated using internal HPE test tools. Number and type of applications, drive type and number of drives, operating system used, and the number of hosts will affect overall performance. This table is provided strictly as a test-lab comparison.
- [2]Dual controller configuration, four SSDs, RAID 1, two SSDs per disk group, one disk groups per pool, four volumes per pool, block size: 8k, 16Gb FC direct connect to array
- [3]Dual controller configuration, 20 SSDs, RAID 10, ten SSDs per disk group, one disk groups per pool, four volumes per pool, block size: 8k, 16Gb FC direct connect to array
- [4]Sequential performance numbers were generated using segmented sequential workloads. For segmented sequential workloads with a queue depth greater than 1, each sequential stream is targeted to operate on a separate LBA range. Other types of sequential workloads that target specific LBA ranges may achieve higher results.
- [5]Dual controller configuration, 20 SSDs, RAID 10, ten SSDs per disk group, 1 disk group per pool, four volumes per pool, 256k block size, 16Gb FC direct connect to array
- [6]Dual controller configuration, 18 SSDs, RAID 5, nine SSDs per disk group, 1 disk group per pool, four volumes per pool, 256k block size, 16Gb FC direct connect to array.

Cesar Mosta
Director
HPCS S.A.

MSA 2060 End-to-End Performance Figures

Storage Model	MSA 2060 FC		MSA 2060 iSCSI		MSA 2060 SAS	
Host Protocol	16Gb FC[2]		10GbE iSCSI[2]		12Gb SAS[2]	
Drive Technology	HDD	SSD	HDD	SSD	HDD	SSD
MSA 2060 RAID1 / RAID 10 Performance Results[1,2,3,4]						
Random Reads IOPs	49,900	366,000	43,400	303,400	49,900	375,300
Random Writes IOPs	31,600	149,000	31,600	138,600	31,700	150,500
Random Mix 60/40 IOPs	40,100	245,800	39,800	220,600	40,100	249,800

Configuration Information

Description	SKU
Aruba 25G SFP28 to SFP28 5m Direct Attach Copper Cable	JL489A
HPE 100Gb QSFP28 to 4x25Gb SFP28 3m Direct Attach Copper Cable	845416-B21
HPE X240 QSFP28 4xSFP28 3m Direct Attach Copper Cable	JL283A
Active Optical Cables	
Aruba 25G SFP28 to SFP28 3m Active Optical Cable	R0M44A
Aruba 25G SFP28 to SFP28 7m Active Optical Cable	R0M45A
Aruba 25G SFP28 to SFP28 15m Active Optical Cable	R0Z21A
HPE QSFP28 to 4x25Gb SFP28 7m Active Optical Cable	845420-B21
HPE QSFP28 to 4x25Gb SFP28 15m Active Optical Cable	845424-B21

SAS Infrastructure

Mini SAS HD to Mini SAS Cables

HPE 1.0m External Mini SAS High Density to Mini SAS Cable	716189-B21
HPE 2.0m External Mini SAS High Density to Mini SAS Cable	716191-B21
HPE 4.0m External Mini SAS High Density to Mini SAS Cable	716193-B21

Notes:

These cables are used to connect the c-Class 6Gb StackSystem SAS switch to MSA 2060 SAS Storage system.

These are not used for connecting the MSA 2060 to a drive enclosure.

Mini SAS HD to Mini SAS HD Cables

HPE External 1.0m (3ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716195-B21
HPE External 2.0m (6ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716197-B21
HPE External 4.0m (13ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716199-B21

Notes:

These cables are used to connect the DL and ML Gen10 12Gb SAS Servers to MSA 2060 SAS Storage system.

The 1.0m and 2.0m Mini-SAS HD to Mini-SAS HD cables can also be used for connecting a MSA 2060 SAS controller to a SFF or LFF drive enclosure.

Step 6: Software

HPE MSA 2060 Advanced Data Services LTU	R2C33A
HPE MSA 2060 Advanced Data Services E-LTU	R2C33AAE

Notes:

The Advanced Data Services Suite includes a Performance Tiering LTU, A/2 Snapshot Software LTU and the Remote Snap Software LTU.

Configurations which have a mixture of both SSDs and HDDs within the same system that are being configured for performance tiering (including SSD Read Cache) will require the Advanced Data Services (ADS) suite LTU.

Configurations with all SSDs or with a SSD Read Cache extent do not require an ADS license on the MSA2060 array.

Visit HPE Complete on HPE.com for information on Zerto Virtual Replication and Arcserve Arcserve software that is supported on the MSA 1060/2060/2062 Storage.

Director
ITCS S.A.

Technical Specifications

MSA 2060 Technical Specifications	
Power requirements	
Input Power Requirements (typical-running I/O) SFF/LFF arrays	120VAC 3.07A, 293-361 W; 220VAC 1.58A,289-352W
Max Input Power	100-240 VAC, 50/60 Hz., 4.39-2.17A; 48-60 VDC 10.4A/8.3A
Heat Dissipation	1766 BTU/hr
Temperature and Humidity Ranges	
Operating Temperature	ASHRAE A3 5°C to 40°C. -12°C DP & 8 to 24°C DP (Derate maximum allowable dry-bulb temperature 1°C/175m above 900m)
Shipping Temperature	-40°F to 158°F (-40°C to 70°C)
Operating Humidity	Up to 85% RH
Non-Operating Humidity	Up to 90% RH @ 30°C
Physical	
Height	3.5 in (8.9 cm)
Depth (Back of chassis ear to controller latch)	20.0 in (50.8 cm)
Depth (Front of chassis ear to back of cable bend)	26.4 in (66.9 cm)
Width (Chassis only)	17.5 in (44.5 cm)
Width (Chassis with bezel ear caps)	19.0 in (48.3 cm)
Weight LFF Enclosure	
Chassis empty	11 lb (5 kg)
Controller enclosure (fully populated with FRUs and disks)	71 lb (32 kg)
Expansion enclosure (fully populated with FRUs and disks)	62 lb (28 kg)
Weight SFF Enclosure	
Chassis empty	11 lb (5 kg)
Controller enclosure (fully populated with FRUs and disks)	66 lb (30 kg)
Expansion enclosure (fully populated with FRUs and disks)	55 lb (25 kg)
Acoustic Ratings	
Sound Power	A weighted sound power LWAd - 8.3 B
Sound Pressure	A weighted sound pressure LpAm - 74dBA
Shock and Vibration	
Shock, Operational	5G, 11 ms
Shock, Non-Operational	15G, 10ms
Vibration, Operational	5-500Hz, 0.18 Grms
Vibration, Non-Operational	x-axis (5-300Hz) 0.8 Grms z-axis (5-300Hz) 1.2 Grms
Altitude	
Altitude, operating	3000m (10,000 feet)
Altitude, non-operating	12,192m (40,000 feet)

Cesar Acosta
Director
TICS S.A.

Configuration Information

Security Option

HPE Bezel Lock Kit	875519-B21

DC Power Option

Description	SKU
HPE MSA 2060 764W -48VDC Hot Plug Power Supply Kit	R0Q90A

Notes:

An MSA 2060 array enclosure and drive enclosures come standard with 2 AC power supplies.

If DC power is desired, then two DC power supplies must be selected on the array enclosure and all drive enclosures.

DC Power Supplies can be ordered with factory integration or with field integration. With factory integrated orders, the AC power supplies will not be shipped.

One (1) 48VDC 2.5M power cord is included with each R0Q90A kit.

Required for use in NEBS compliant MSA Gen6 configuration.

Power Cords

Description	SKU
HPE C13 - C14 WW 250V 10Amp 2.0m Jumper Cord	A0K02A
HPE C13-NEMA 6-15P 10A/250V 3.6m Black Power Cord	A0N33A
HPE C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
HPE C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord	AF557A
HPE C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord	AF558A
HPE C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord	AF560A
HPE C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord	AF561A
HPE C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord	AF562A
HPE C13 - SI-32 IL 250V 10Amp 1.83m Power Cord	AF564A
HPE C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
HPE C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
HPE C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
HPE C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
HPE C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord	AF569A
HPE C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
HPE C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	AF572A
HPE C13 - C14 WW 250V 10Amp Flint Gray 2.0m Jumper Cord	AF573A
HPE C13 - NBR-14136 BR 250V 10Amp 1.83m Power Cord	AF591A
HPE C13-C14 IN 250V 10Amp 2m Black Jumper Cord	R1C65A

Notes:

Two PDU cables ship standard with all AC-powered enclosures.

The power cords may be used by customers that desire to plug their base array and/or drive enclosures into a wall circuit or PDU.

Cesar Acosta
Director
ITCS S.A.

Configuration Information

Step 5: Choose Cables for Host Connection

Fibre Channel Infrastructure

PremierFLexOM4 type cables

Description	SKU
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 2m Cable	QK733A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 5m Cable	QK734A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 15m Cable	QK735A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 30m Cable	QK736A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 50m Cable	QK737A

OM3 Fibre FC to LC cables

HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A

10GbE Infrastructure

Direct Attach Copper Cables

Aruba 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281D
Aruba 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283D
Aruba 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285D
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HPE FlexNetwork X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A

25GbE Infrastructure

Direct Attach Copper Cables

Aruba 25G SFP28 to SFP28 3m Direct Attach Copper Cable	JL488A

Cesar Acosta
Director
RCG S.A.

Configuration Information

SFF HDDs

Description	SKU
HPE MSA 900GB SAS 12G Enterprise 15K SFF (2.5in) M2 3yr Wty HDD	R0Q53A
HPE MSA 600GB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty HDD	R0Q54A
HPE MSA 1.2TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty HDD	R0Q55A
HPE MSA 1.8TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty HDD	R0Q56A
HPE MSA 2.4TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty HDD	R0Q57A

Notes: MSA 1.2TB, 1.8TB and 2.4TB 10K SFF HDD options are certified for use in NEBS certified MSA Gen6 configurations.

LFF HDDs

HPE MSA 6TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty HDD	R0Q58A
HPE MSA 8TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty HDD	R0Q59A
HPE MSA 10TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty HDD	R0Q60A
HPE MSA 12TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty HDD	R0Q61A
HPE MSA 14TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty HDD	R0Q62A
HPE MSA 16TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty HDD	R3U72A
HPE MSA 18TB SAS 12G Midline 7.2K LFF M2 1-year Warranty HDD	R7L70A
HPE MSA 20TB SAS 12G Midline 7.2K LFF M2 1-year Warranty HDD	S0F32A

SFF SSDs

HPE MSA 960GB SAS 12G Read Intensive SFF (2.5in) M2 3yr Wty SSD	R0Q46A
HPE MSA 1.92TB SAS 12G Read Intensive SFF (2.5in) M2 3yr Wty SSD	R0Q47A
HPE MSA 3.84TB SAS 12G Read Intensive SFF (2.5in) M2 3yr Wty SSD	R3R30A
HPE MSA 7.68TB SAS 12G Read Intensive SFF (2.5in) M2 3-year Warranty SSD	S0F31A

Notes: MSA 960GB, 1.92TB, and 3.84TB SSD options are certified for use in NEBS certified MSA Gen6 configurations.

LFF SSDs

HPE MSA 1.92TB SAS 12G Read Intensive LFF (3.5in) M2 3yr Wty SSD	R0Q49A

SFF SSD 6-Pack Bundles

HPE MSA 5.8TB SAS 12G Read Intensive SFF (2.5in) M2 3-year Warranty 6-pack SSD Bundle	S2E43A

Notes: Contains 6 x MSA 960GB SAS 12G Read Intensive SFF (2.5in) M2 [illegible]

HPE MSA 11.5TB SAS 12G Read Intensive SFF (2.5in) M2 3-year Warranty 6-pack SSD Bundle	S2E44A

Notes: Contains 6 x MSA 1.92TB SAS 12G Read Intensive SFF (2.5in) M2 [illegible]

HPE MSA 23TB SAS 12G Read Intensive SFF (2.5in) M2 3-year Warranty 6-pack SSD Bundle	S2E45A

Notes: Contains 6 x MSA 3.84TB SAS 12G Read Intensive SFF (2.5in) M2 [illegible]

Cesar Acosta
Director
PCG S.A.

Self-Encrypting (SED) SSDs

HPE MSA 960GB SAS 12G Read Intensive SFF (2.5in) M2 3yr Wty FIPS Encrypted TAA-compliant SSD	R0R52A
HPE MSA 1.92TB SAS 12G Read Intensive SFF (2.5in) M2 3yr Wty FIPS Encrypted TAA-compliant SSD	R0R53A

Configuration Information

Description	SKU
HPE MSA 1.92TB SAS 12G Read Intensive LFF (3.5in) M2 3yr Wty FIPS Encrypted TAA-compliant SSD	R0R55A

Notes:

- All drives within the MSA 2060 array must be self-encrypting drives to enable the encryption feature. SEDs can be used in a non-SED configuration.
- All MSA SEDs are FIPS 140-2 validated self encrypting drives
- All MSA SEDS have been certified by the U.S. National Institute of Standards and Technology (NIST) and Canadian Communications Security Establishment (CSE) as meeting the Level 2 security requirements for cryptographic modules as defined in the FIPS 140-2 Publication
- All SED drives are TAA compliant. However this does not apply to the TAA compliance for the array or the end to configuration. If array TAA compliance is required, please select the appropriate MSA Gen6 TAA compliant array model

Step 4: Options

Drive Enclosures

Description	SKU
HPE MSA 2060 SAS 12G 2U 12-disk LFF Drive Enclosure	R0Q39B
HPE MSA 2060 SAS 12G 2U 24-disk SFF Drive Enclosure	R0Q40B

Notes:

- Each drive enclosure includes a single rack mount kit and two 0.5m MiniSAS HD to MiniSAS HD cables.
- Add up to nine additional drive enclosures to each MSA 2060 array model
  MSA 2060 LFF Drive Enclosure can be connected to either the MSA 2060 SFF or LFF Storage systems.
- MSA 2060 SFF Drive Enclosure can be connected to either the MSA 2060 SFF or LFF Storage systems
- TAA-compliant Drive Enclosures are available as an option for TAA compliant storage array models. They must be configured with the storage array at the time of purchase and are only available as a CTO option.
- SFF TAA-compliant Drive Enclosure models include (1) HPE MSA 1.4TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty FE 6-pack TAA-compliant HDD Bundle the LFF TAA-compliant Drive Enclosure model includes (1) HPE MSA 7.2TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty FE 6 pack TAA-compliant HDD Bundle

- When adding additional storage capacity to a TAA compliant Disk Enclosure model, you may only select SED/TAA drive options - See "Step 3: Select Your Drives" section for available SED/TAA drive options

- All SKUs ending in "B" include the new 94% efficient power supply that meets EU Lot9 power efficiency requirements
- The HPE MSA 2060 SFF Drive Enclosure R0Q40A/R0Q40B, is compliant with NEBS criteria for GR-63-Core (Issue 5) and GR-1089-Core (Issue 7). See "Step 3" and "Step 4" for NEBS supported drive and power supply options or refer to "NEBS Certification" section for further details

Drive Enclosure Cables

HPE External 1.0m (3ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716195-B21
HPE External 2.0m (6ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716197-B21

Notes: When connecting a MSA 2060 controller to a drive enclosure if a longer cable is needed.

Configuration Information

HPE MSA 16Gb Short Wave Fibre Channel SFP+ 4-pack Transceiver	C8R24B
HPE MSA 10Gb Short Range iSCSI SFP+ 4-pack Transceiver	C8R25B
HPE MSA 25Gb SFP28 Short Range 4-pack iSCSI Transceiver	S0K91A

Notes:

MSA 2060 Storage Systems do not ship with SFP's

Each MSA 2060 Storage Systems can be configured with [illegible] or eight SFP's

MSA SFPs are for use with MSA 2060 FC or iSCSI Storage Systems

MSA 2060 SAS Storage Systems do not require SFP modules

Minimum of one SFP transceiver 4 pack is required for Fibre Channel models

MSA 2060 10GbE iSCSI configurations can use Direct Attach Copper (DAC) cables instead of SFPs

Both MSA 2060 10GbE iSCSI array models (LFF and SFF) can support both 10Gb or 25Gb transceivers in the same array

iSCSI models require either an SFP 4 pack of transceivers (C8R25B or S0K91A) or a DAC cable option

Controller host ports are recommended to be configured identically

Cannot mix FC transceivers with iSCSI transceivers on the same Storage System.

Step 3: Select Your Drives

- MSA Gen 6 HDDs and SSDs are for use with MSA Gen 6 Storage Systems only.
- MSA Gen 6 HDDs and SSDs are not compatible with prior generation MSA Storage Systems
- Prior Generation of MSA HDDs and SSDs are not compatible with MSA Gen 6 Storage Systems.
- Customers can mix SSD, Enterprise SAS, and SAS Midline (MDL) drives in the same array enclosure or drive enclosure
- Configurations which have a mixture of both SSDs and HDDs within the same system that are being configured for performance tiering (excluding SSD Read Cache), will require the Advanced Data Service (ADS) Suite LTU.
- Configurations with all SSDs or with a SSD Read Cache extension do not require an ADS license on the MSA2060 array.
- SFF SSD 6-Pack Bundle options may only be configured with MSA 2060 SFF Flash Bundle arrays models.

SFF HDD 6-Pack Bundles

Select MSA SFF HDD options are available to purchase in bundles that include 6 drives. Purchasing MSA drives in bundles typically provides a lower purchase price than purchasing them individually. Check with your HPE sales representative or channel partner for further details.

HPE MSA 5.4TB SAS 12G Enterprise 15K SFF (2.5in) M2 3yr Wty 6-pack HDD Bundle	R0Q64A

Notes: Contains 6 x MSA 5.4TB 12G SAS 15K SFF Enterprise HDDs (R0Q64A). Contact [illegible]

HPE MSA 7.2TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty 6-pack HDD Bundle	R0Q65A

Notes: Contains 6 x MSA 7.2TB 12G SAS 10K SFF Enterprise HDDs (R0Q65A). [illegible] for use in NEBS certified MSA Gen6 configurations.

HPE MSA 10.8TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty 6-pack HDD Bundle	R0Q66A

Notes: Contains 6 x MSA 10.8TB 12G SAS 10K SFF Enterprise HDDs (R0Q66A). Contact [illegible] for use in NEBS certified MSA Gen6 configurations.

HPE MSA 14.4TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty 6-pack HDD Bundle	R0Q67A

Notes: Contains 6 x MSA 14.4TB 12G SAS 10K SFF Enterprise HDDs (R0Q67A). Contact [illegible] for use in NEBS certified MSA Gen6 configurations.

Cesar [illegible]
[illegible] S.A.

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Configuration Information

LFF HDD 6-Pack Bundles

Select MSA LFF HDD options are available to purchase in bundles that include 6 drives. Purchasing MSA drives in bundles typically provides a lower purchase price than purchasing them individually. Check with your HPE sales representative or channel partner for further details.

Description	SKU
HPE MSA 48TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty 6-pack HDD Bundle	R0Q69A
Notes: Contains 6 x MSA 8TB 12G SAS 7.2K LFF Midline HDDs (R0Q59A)	
HPE MSA 60TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty 6-pack HDD Bundle	R0Q70A
Notes: Contains 6 x MSA 10TB 12G SAS 7.2K LFF Midline HDDs (R0Q60A)	
HPE MSA 72TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty 6-pack HDD Bundle	R0Q71A
Notes: Contains 6 x MSA 12TB 12G SAS 7.2K LFF Midline HDDs (R0Q61A)	
HPE MSA 84TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty 6-pack HDD Bundle	R0Q72A
Notes: Contains 6 x MSA 14TB 12G SAS 7.2K LFF Midline HDDs (R0Q62A)	
HPE MSA 96TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty 6-pack HDD Bundle	R3U73A
Notes: Contains 6 x MSA 16TB 12G SAS 7.2K LFF Midline HDDs (R3U72A)	
HPE MSA 108TB SAS 12G Midline 7.2K LFF M2 1-year Warranty 6-pack HDD Bundle	R7L71A
Notes: Contains 6 x MSA 18TB 12G SAS 7.2K LFF Midline HDDs (R7L70A)	
HPE MSA 120TB SAS 12G Midline 7.2K LFF M2 1-year Warranty 6-pack HDD Bundle	S0F33A
Notes: Contains 6 x MSA 20TB 12G SAS 7.2K LFF Midline HDDs (S0F32A)	

Self-Encrypting HDD 6-Pack Bundles

MSA Self-Encrypting (SED) HDD options are available to purchase in bundles that include 6 drives. Purchasing MSA drives
in bundles typically provides a lower purchase price than purchasing them individually. Check with your HPE sales representative or channel partner for further details.

HPE MSA 5.4TB SAS 12G Enterprise 15K SFF (2.5in) M2 3yr Wty FE 6-pack TAA-compliant HDD Bundle	R0R44A
Notes: Contains 6 x MSA 900GB 12G SAS 15K SFF FE HDDs	
HPE MSA 14.4TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty FE 6-pack TAA-compliant HDD Bundle	R0R47A
Notes: Contains 6 x MSA 2.4TB 12G SAS 10K SFF FE HDDs	
HPE MSA 72TB SAS 12G Midline 7.2K LFF (3.5in) M2 1yr Wty FE 6-pack TAA-compliant HDD Bundle	R0R50A
Notes: Contains 6 x MSA 12TB 12G SAS 7.2K LFF FE HDDs	

Notes:

All drives within the MSA 2000 array must be self encrypting drives to enable the encryption feature.

- SEDs can be used in a non-SED configuration.
- All MSA SEDs are FIPS 140-2 validated self-encrypting drives.

All MSA SEDs have been certified by the U.S. National Institute of Standards and Technology (NIST) and Canadian Communications Security Establishment (CSE) as meeting the Level 2 security requirements for cryptographic modules as defined in the FIPS 140-2 Publication.

All SED drives are TAA compliant. However, this does not apply to the TAA compliance for the array or the entire configuration. If array TAA compliance is required, please select the appropriate MSA Confi TAA-compliant array model.

Cesar Acosta
Director
HPS E.A.

Service and Support

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers.

Learn more at the **HPE Support Center**.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.

For more information: **http://www.hpe.com/services**

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Cesar Arosta
Director
ITOS S.A.

Configuration Information

Step 1: MSA 2060 Base Configurations

MSA 2060 Storage Systems

Description	SKU
HPE MSA 2060 16Gb Fibre Channel LFF Storage	R0Q73B
HPE MSA 2060 16Gb Fibre Channel LFF TAA-compliant Storage	R9G39B
HPE MSA 2060 16Gb Fibre Channel SFF Storage	R0Q74B
HPE MSA 2060 16Gb Fibre Channel SFF TAA-compliant Storage	R9G38B
HPE MSA 2060 10GbE iSCSI LFF Storage	R0Q75B
HPE MSA 2060 10GbE iSCSI SFF Storage	R0Q76B
HPE MSA 2060 10GbE iSCSI SFF TAA-compliant Storage	R9G40B
HPE MSA 2060 12Gb SAS LFF Storage	R0Q77B
HPE MSA 2060 12Gb SAS SFF Storage	R0Q78B
HPE MSA 2060 12Gb SAS SFF TAA-compliant Storage	R9G41B
HPE MSA 2060 10GBASE-T iSCSI LFF Storage	R7J72B
HPE MSA 2060 10GBASE-T iSCSI SFF Storage	R7J73B
HPE MSA 2060 16Gb Fibre Channel SFF 12TB Flash Bundle	S2E37B
HPE MSA 2060 10GbE iSCSI SFF 12TB Flash Bundle	S2E38B
HPE MSA 2060 16Gb Fibre Channel SFF 23TB Flash Bundle	S2E39B
HPE MSA 2060 10GbE iSCSI SFF 23TB Flash Bundle	S2E40B
HPE MSA 2060 16Gb Fibre Channel SFF 46TB Flash Bundle	S2E41B
HPE MSA 2060 10GbE iSCSI SFF 46TB Flash Bundle	S2E42B

Notes:

- Includes an SFF or LFF Array Chassis depending on model, two MSA 2060 controllers, two AC power supplies, two 1.5m PDU cords (IEC C14), and one rack-mount kit.
- SFPs are not included in the base MSA 2060 Storage systems.

There are no converged protocol models with the MSA 2060 Storage systems - you must select the appropriate Fibre Channel, iSCSI, or SAS array model.

- SFF TAA-compliant array models include (1) HPE MSA 14.4TB SAS 12G Enterprise 10K SFF (2.5in) M2 3yr Wty FE 6-pack TAA-compliant HDD Bundle; the LFF TAA-compliant array model includes (1) HPE MSA 72TB SAS 12G Midline 7.2K LFF (3.5in) M2 3yr Wty FE 6-pack TAA-compliant HDD Bundle

- When adding additional storage capacity to a TAA-compliant array model, you may only select SED/TAA drive options - see "Step 3: Select Your Drives" section for available SED/TAA drive options.

All SKUs ending in "B" include the new 94% efficient power supply that meets EU Lot9 power efficiency requirements.

- HPE MSA 2060 models R0Q74A/R0Q74B and R0Q76A/R0Q78B are compliant with NEBS criteria for GR-63-Core (Issue 5) and GR-1089-Core (Issue 7). See "Step 3" and "Step 4" for NEBS supported drive and power supply options or refer to "NEBS Certification" section for further details.

All MSA Flash Bundle models include a single MSA 2060 SFF Storage array, either 16Gb FC or 10GbE iSCSI, and twelve (12) integrated SSDs. Additional single or 6-pack drive options may be added directly to the array or via an MSA 2060 Drive Enclosure option. All drive options are supported except SED/TAA compliant drives.

Cesar Acosta
Director
ICS S.A.

Step 2: Select Your SFP+ Module

Description	SKU

Warranty

- MSA Storage Systems carry a 3 year limited warranty, parts only exchange, normal business hours, next business day response.
- MSA Enterprise SAS (15K and 10K RPM) SFF HDDs carry a 3 year limited warranty, parts only exchange, normal business hours, next business day response.
- MSA Midline SAS (7.2K RPM) LFF HDDs carry a 1 year limited warranty, parts only exchange, normal business hours, next business day response
- MSA SSDs carry a 3 year limited warranty, parts only exchange, normal business hours, next business day response. MSA 2060 SSD warranty includes unconditional replacement in case of drive failure, media wear-out, or both.
- The MSA 2060 has been designed with customer self-repairable parts to minimize repair time and provide greater flexibility in performing defective parts replacement.

Please refer to Hewlett Packard Enterprise limited warranty Statement and parts replacement instructions for further details.

HPE Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Services.** We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE **Advisory Services,** focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Services specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are-the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world..

Get Faster time to market
Save on TCO, align costs to business
Scale quickly, meet unpredictable demand
Simplify IT operations across your data centers and clouds

Managed services to run your IT operations

HPE Managed Services provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

Free up resources with Operational Services from HPE

HPE delivers services for IT by using proven best practices as well as automation and methodologies that have been tested and refined by HPE experts and artificial intelligence through thousands of deployments globally. Choose from the recommended services for customers purchasing from Hewlett Packard Enterprise or an authorized reseller. Services are quoted using Hewlett Packard Enterprise order configuration tools.

Cesar Acosta
Director
ITCS S.A.

Recommended Services

HPE Tech Care.

HPE Tech Care Services is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better.

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Service and Support

HPE Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time.

Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.
Visit the **HPE Tech Care Services** website for more information.
HPE Complete Care
HPE Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

Visit the **HPE Complete Care Services** website for more information.

Related Services

HPE Hardware Installation

Provides for the basic hardware installation of HPE branded servers, HPE storage including the MSA 2060 devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

HPE Installation and Startup Service

Provides for the installation and startup of HPE technology including BladeSystems, c-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

HPE Factory Express for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.
Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, as well as the HPE MSA Storage, HPE Primera Storage, HPE 3PAR Storage, HPE XP Storage, rackable tape libraries and configurable network switches.

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book a class today and learn how to get the most from your technology investment.
http://www.hpe.com/ww/learn

Cesar Agosta
Director
MCS S.A.

Standard Features

Ordering, configuring and installing Zerto is simple. Zerto is licensed by number of Virtual Machines that are being protected or moved. For mobility use cases, order the appropriate number of migration licenses needed. For replication use cases, order the appropriate quantity of Zerto Virtual Replication licenses using a combination of the tiered licenses plus the corresponding maintenance part numbers. The license is independent of source and target array size, type or capacity being replicated. See the HPE Zerto QuickSpecs for a complete list of part numbers. A corresponding MSA Advanced Data Services LTU is not required for data replication when using Zerto Virtual Replication. An MSA Advanced Data Services LTU would be required if deploying MSA array-based replication.
Zerto installs as a virtual machine under VMware or Hyper-V or in the Cloud as a VM in AWS and Azure in minutes Zerto does not install any components in the guest operating system and does not depend on any specific configuration of the storage or use MSA array or VMware snapshots to replicate and recover applications.
Review the **HPE Zerto quickspec** for more information.

HPE Complete - Arxscan

Arxscan is an HPE Complete Partner delivering innovative software that drives value through unique enterprise data center monitoring and reporting. Arxscan provides infrastructure monitoring for Storage, Network, Servers and Applications. Arxscan is fully supported on the HPE MSA 1060, 2060 and 2062 storage arrays, and is available for purchase directly from Hewlett Packard Enterprise. Arxscan's intuitive dashboard delivers an unprecedented view of how organizations store, distribute and protect their data, providing relevant views around device quality and performance metrics. Benefits include:

- Remote delivery from any location to any location worldwide.
- Supports all HPE arrays, storage OEM product lines, SAN switch and server OS platforms without agents.
- Quickly installed in under two hours in SMB, midrange or enterprise customer environments.
- Presents views that are business operations and infrastructure/system operations centric.
- Creates global collaborative touch points for all users of local and remote data center resources.
- One Stop Shop - ability to purchase complete solutions from HPE that include both HPE products and best-in-class third party branded products, all on a single HPE purchase order.

For more information please refer to **HPE Complete** on **HPE.com**

HPE MSA Health Check Tool

MSA Health Check is a cloud-based tool that provides users insight into the general health of their MSA array. The tool uses a powerful rules-based analytics engine which can predict failures before they happen. The MSA Health Check tool performs a full sweep of analytics and checking thousands of data points from sensors inside the MSA array. The analytics engine will pick up common failure signatures and check against MSA best practices producing a simple, easy to digest PDF report with status and suggested courses of action to correct anything found in the scan. The tool is free of charge to HPE MSA customers. The MSA Health Check tool is supported across all current MSA 1060/2060/2062 arrays as well as the prior three generations of arrays (MSA P2000 G3, MSA 1040/2040/2042 and MSA 1050/2050/2052).
The tool is available immediately at: **http://www.hpe.com/storage/MSAHealthCheck**.
For more information on how to use HPE MSA Health Check, please review the **HPE MSA Health Check User Guide**.

Cesar Acosta
Director
ITCS S.A.

Standard Features

HPE GreenLake for Backup and Recovery

HPE GreenLake for Backup and Recovery is a hybrid cloud data protection service delivered through the Data Services Cloud Console (DSCC) application on the HPE GreenLake edge-to-cloud platform. It protects on-premises VMware infrastructure and AWS cloud resources through a unified management console. HPE GreenLake for Backup and Recovery uses prebuilt and customizable global protection policies to enable automated data protection and create consistent immutable recovery points.
HPE GreenLake for Backup and Recovery provides access to hybrid cloud data protection for virtual machines located on HPE MSA storage through on-premises rapid data recovery and cost-effective long-term retention in the cloud. HPE GreenLake for Backup and Recovery makes protection of your on-premises and cloud-native assets easy with global policy-based automation, secure encryption, and backup data immutability. HPE GreenLake for Backup and Recovery utilizes efficient data protection technologies with built-in data reduction enabling predictable consumption-based billing for cost savings across the hybrid cloud. To learn more about the features and benefits of using this SaaS-based data protection solution, go to **HPE GreenLake for Backup and Recovery** on **HPE.com**.
To experience the simplicity and efficiency of HPE GreenLake for Backup and Recovery with your HPE MSA Storage, HPE GreenLake now offers a 90-day free trial with no further obligations. See how easy it is to protect your on-premises HPE VM volumes in just a few simple steps. Visit "**Try HPE GreenLake for Backup and Recovery - Free**" to request your free 90-trial of HPE GreenLake for Backup and Recovery.

TAA Compliance

HPE MSA Gen6 offers multiple TAA-compliant Sloarge Array models. While offering the same base features as all other non-TAA models, MSA Gen6TAA-compliant Storage Arrays also include a bundled 6-pack of SED/TAA HDDs - see the "Step 1: MSA 2060 Base Configurations" section for further details. Additional storage capacity can be added to the Storage Array by selecting from HPE MSA's portfolio of SED/TAA compliant drives - see the "Step 3: Select Your Drives" section for further details on available drive options.
Additionally, MSA Gen6 customers can also add up to (9) TAA-compliant MSA 2060 LFF or SFF Drive Enclosures to each Storage Array. Each TAA-compliant Drive Enclosure must be added at the time of initial configuration via HPE CTO integration services. TAA-compliant MSA 2060 Drive Enclosures also include a bundled 6-pack of SED/TAA HDDs - see the "Step 4: Options" section for further details. Additional storage capacity can be added to each Drive Enclosure by selecting from HPE MSA's portfolio of SED/TAA compliant drives - see the "Step 3: Select Your Drives" section for further details on available drive options.

ENERGY STAR Certification

The HPE MSA 2060 SAN Storage systems are ENERGY STAR certified. ENERGY STAR certified products are energy efficient which result in cost savings via reduced energy consumption and regulatory rebates. Please refer to the US EPA website for details on ENERGY STAR certification criteria and process. MSA 2060 ENERGY STAR Certification is listed on the EPA website.

NEBS Certification

When used in conjunction with specific Storage SFF SAS drives and the MSA 2060 764W -48VDC Hot Plug Power Supply Kit (R0Q90A), the HPE MSA 2060 16Gb FC SFF Storage (R0Q74A/R0Q74B) and MSA 2060 12Gb SAS SFF Storage (R0Q78A/R0Q78B) arrays are certified compliant with GR-63-Core (Issue 5) and GR-1089-Core (Issue 7) NEBS criteria. NEBS Certified DC-Power Storage systems are designed for network equipment providers (NEPs) and communication service providers. All NEBS compliant MSA 2060 Storage systems support configurations with up to 9 compliant 2060 SFF Drive Enclosures (R0Q40A/R0Q40B) for a maximum of 240 SFF HDDs or SSDs

Cesar Acosta
Director
HCS S.A.

Standard Features

any MSA through the Active Directory.
- Uses an LDAP implementation to authenticate users with a Windows Active Directory.
- The MSA CLI and SMU will allow the configuration of new LDAP users groups into the MSA security scheme (manage vs monitor users, interface restrictions Web/CLI/FTP).
- Ability to authenticate Local or LDAP users.

I/O Workload Functionality

A beneficial user interface element called "I/O Workload" is included in the MSA web browser (SMU v4). The MSA array controllers keep track of a substantial amount of data pertaining to the I/O dynamics at a logical page level (4MB chunks). From this data, it is possible to provide some visibility to what percent of I/O's are being processed by what percent of the overall array's capacity across a 7 day timeline. While some workloads have "transient" data access patterns, many workloads have steady access patterns on small portions of the array's capacity. This produces "hot" pages in the array which remain hot a large amount of the array's uptime. Users would see substantial benefits if these pages could be served from the fastest media in the array (ideally SSDs). As has been described in the MSA's tiering functionality, the MSA array's tiering engine will work to position the hottest pages on the fastest media at any given time. The new I/O Workload graph will show a line labeled Capacity and a line plot for each selected workload percentage (100%, 80%, or Other% value). Below are two examples of user scenarios where the I/O Workload Graph might be useful and how to utilize the data the graph provides

- New User or SSD Installation.
- Once the MSA array is installed and has had workloads running against it for a week's time, the I/O Workload data will give a representation of what Capacity is servicing 100% of I/O and 80% of I/O. Users may select a custom % value if desired. In a new installation or in an installation with no SSD tier installed, the 80% line is a reasonable starting point for an SSD tier. Based on SSD RAID settings, customers can then calculate a good starting point with regard to SSD tier sizing based on that week's workload. While not a hard fast rule, it is a good starting point. These values should also be compared to the Best Practices "rule of thumb" which suggest that 5-15% of the array's capacity should be SSDs for tiered solutions.
- Users with existing SSD tiering or read caching installed and running.
- For arrays running with SSDs installed (tiered or read cache), the I/O Workload graph will have a dotted line which shows the installed SSD capacity. The I/O Workload graphs can be checked periodically to see where the 80% I/O line is with regard to the SSD capacity line. While there are no hard and fast rules which indicate good/bad situations, users can use the graph with other system performance tools to better understand specific dynamics of their installation and the normal dynamics of a system in the day-to-day activities for a specific environment.

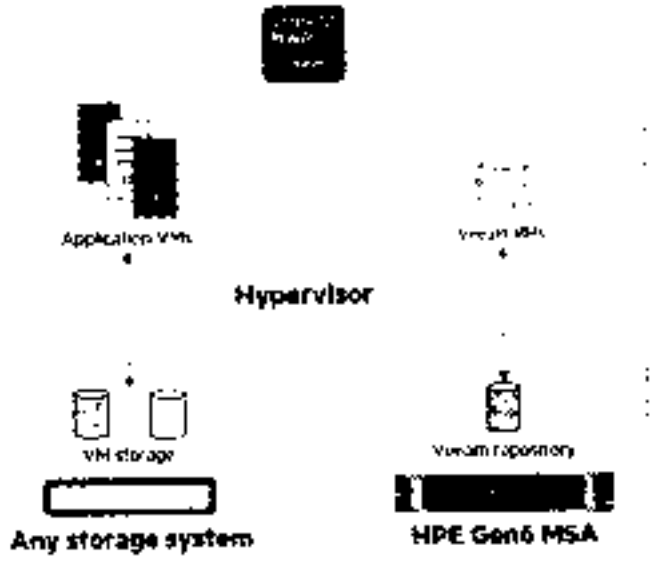
Interpreting the I/O Workload graphs allow users to strike a balance between the SSD costs versus performance benefits. For example, some customers may be willing to have a couple of days where peak usage is far above the SSD capacity line as it may be acceptable to have slower performance as the system uses HDDs for a larger percentage of the workload I/O. This may be perfectly acceptable for systems sized to optimize $/TB due to budget constraints. Other users may want to optimize the system such that a sizeable percentage of daily I/O have the opportunity to reside on SSD media (sized to 80% or 90%). When combined with other performance monitoring tools, the new I/O Workload function gives users some representation as to how the workloads and the MSA are working together in a user's real-world environment.

Protect your data with HPE MSA Storage and Veeam Backup & Replication

Together, HPE and Veeam help you safeguard your data to ensure it's always on, always protected and that your enterprise can rapidly and easily recover should a situation arise - from human error to a malicious attack. And now, HPE MSA Storage is certified as a Backup Repository to provide seamless protection and Instant VM Recovery. Veeam Backup & Replication provides a single management console to orchestrate the protection of virtual servers, physical machines and cloud-based workloads. Due to the extraordinary

Standard Features

ratio of cost to capacity and performance offered by HPE MSA Storage. Veeam Back & Replication with HPE MSA Storage makes the perfect solution to modernize your backup strategy and protect your data from disaster.



Key features of Veeam Backup and Replication:

- Image-level VM backups: Create application-consistent backups with advanced application-aware processing.
- Higher data availability with efficient movement of backup copies offsite for disaster recovery
- Unify management of protection of physical and cloud environments
- Scale-out Backup Repository: Create a single virtual pool of backup storage to which backups can be assigned, offering the freedom to easily extend backup storage capacity.
- SureBackup: Automatically test and verify every backup and every VM for recoverability.
- Image-based VM replication with WAN acceleration: Get backups off site up to 50x faster than non-accelerated traffic and save bandwidth for offsite for disaster recovery (DR).
- Direct Storage Access: Perform vSphere backups faster and with reduced impact by backing up via Direct SAN Access and Direct NFS Access.
- Instant VM Recovery: Restore access to a failed VM in less than two minutes while the full restore is executed in parallel.
- Native tape support: Store entire VM backups or individual files on HPE StoreEver with direct restore from tape.
- SureReplica. Automatically test and verify every VM replica for recoverability.

For more details on Veeam Backup & Replication see the **Veeam Backup & Replication** web pages.

HPE Zerto

HPE MSA Storage users can leverage HPE Zerto Virtual Replication to replicate applications and data from one MSA array to another MSA array. Popular use cases include departmental MSA storage replicated to enterprise storage, enterprise storage replicated into MSA array, or protect MSA workloads into the cloud. Zerto operates on the hypervisor level and includes orchestration and automation built-in to enable faster recovery of workloads (RTO in minutes) at much lower Recovery Point Objective (RPO of seconds) available through other data protection tools like backup. Zerto is also a workload mobility tool and allow IT to confidently move workloads and data across heterogeneous storage or cloud.

Cesar
Director
S.A.

snapshots on the primary volume, minimizing the amount of data to be transferred.

- MSA Remote Snap replication technology provides the ability to accomplish key data management and protection capabilities. First, because Remote Snap uses snapshots as the underlying technology create multiple local recovery points which can be used for such tasks as to complement daily backups; second, replication provides the ability to access data in a remote site which could be used for dispersed operations; and third but definitely not least important replication allows for business continuance in the event of a failure on the primary site.
- In order to perform a replication, a snapshot of the volume to be replicated is taken, creating a point-in-time image of the data. This point-in-time image is compared to the point-in-time image taken during the previous replication and the changes are then replicated to the destination volume by copying the data represented by the snapshot via a transport medium such as TCP/IP (iSCSI) or Fibre Channel. The amount of data transferred is minimized though the use of snapshots whenever possible.
- Storage based asynchronous snapshot replication.
- Support of both Ethernet and Fibre Channel interconnects provides flexible options to the application environments.

- Snapshot based replication technology means only changed data will be replicated to alternate site.
- Many to 1 replication (up to 4 nodes) - primary use case is to replicate from "many" branch offices to the home office for the purpose of backing up data from the branches.
- Advanced scheduler provides several options to IT administrators for business continuance.
- Flexible architecture allows remote replication between MSA 2060 and MSA 2062 or MSA 1060 arrays using the virtual storage architecture and licensed for Remote Snap with the Advanced Data Services LTU.
- Snapshot based replication enables both local and remote recovery depending on the need. Snapshot replication isolates problems to a specific point in time which can be selected by the administrator. Additionally snapshot replication supports longer distance replication.
- Multiple relationships provide greater storage flexibility and utilization.
- Fast application recovery with minimal or no transaction loss.
- Creation of disaster tolerant copies of your critical business data.
- No-single-point-of-failure solution to increase the availability of your data.
- With the improved disaster recovery features of the MSA 1060, MSA 2060 and MSA 2062, you can failover to the secondary / remote volume or volume group, map the secondary volume or volume group for access, then, when the primary array has recovered, failback to the primary volume or volume group, with the option to incorporate changes made to the secondary volume or volume group back to the primary volume or volume group.
- Another improvement in Remote Snap with the MSA 1060, MSA 2060 and MSA 2062 is the ability to reverse the direction of the replication set

Notes: One Advanced Data Services Suite License per array is required for replication, for example, if you are using MSA array to performing replication from Primary System to Remote System, you will need a total of 2 licenses

HPE OneView for VMware vCenter

HPE OneView for VMware vCenter is a component within the HPE OneView plug-in for vCenter. It enables vSphere administrators to quickly obtain context-aware information and manage supported HPE storage devices like the MSA in their VMware vSphere environment directly from within vCenter. This plug-in operates independently of the core HPE OneView product and does not require a license to use. By providing a clear relationship between VM's, datastores and storage, the VMware administrator's productivity increases, as does the ability to ensure quality of service. Roles for administrators can be defined on an individual basis, providing the ability to apply specific permissions for both view and control functions.

HPE OneView for VMware vCenter supports mixed array environments including MSA Storage, and other HPE Storage systems including Primara Storage, 3PAR Storage, Nimble Storage, and StoreOnce.

Cesar Tobar
Director
HCS S.A.

Standard Features

When deployed with MSA Storage, HPE OneView provides the following:

- Active Management functionality for the MSA Storage:
  - Create/Expand/Delete a Datastore
  - Create a Virtual Machine from a template
- Monitors the health and status of the MSA Storage
- Displays LUN / volume connections from VMs and ESX servers to the arrays and provides the location and attributes of the MSA array within the SAN.
- Identifies what storage features are available to allow administrators to match the features available on the MSA array to their requirements.
- Provide a cluster-level view of the storage
- HPE OneView for VMware vCenter is downloadable from **MSC** (My Software Center).

HPE OneView for System Center

HPE OneView for Microsoft System Center provides a comprehensive integration of HPE Storage, HPE Servers, HPE Blade System and HPE Virtual Connect with Microsoft System Center. HPE OneView for System Center enables management and monitoring of HPE MSA Storage running in Microsoft environment with a single pane-of-glass view to events/alerts, capacity and health dashboards and detailed virtual infrastructure information. It provides seamless integration with Microsoft System Center Operations Manager (SCOM) enabling predefined discovery and monitoring policies, event processing rules and topology views for HPE Storage including the MSA Storage Systems.
When deployed with the MSA 2060 array, HPE OneView for System Center provides the following:

- Monitors the health, events and alerts for the MSA 2060 - virtual pools, and volumes
- Provides topology information for VMs provisioned on the MSA Storage array

HPE OneView for System Center is downloadable at no charge from **MSC** (My Software Center).

vStorage API for Array Integration (VAAI)

The vStorage API for Array Integration (VAAI) is one of the storage application programming interface (API) sets in vSphere. VAAI is an API storage partners can leverage to enhance performance of virtual machine (VM) management operations by delegating these operations to the storage array. With hardware offload, ESX/ESXi hosts perform certain operations faster and consume less server CPU and memory resources, and also storage port and storage fabric bandwidth. VAAI includes high performance and scalable VM data path primitives.
Storage Hardware Primitives for VAAI

- Full Copy or Hardware Assisted Move
- Block Zeroing or Hardware Assisted Zeroing
- Hardware Assisted Locking or Atomic Test and Set (ATS)
- UNMAP reclaims space that is no longer on a thinly provisioned VMFS v

LDAP Support

LDAP (Lightweight Directory Access Protocol) is an industry standard application protocol for accessing and maintaining distributed directory information services over an IP network. LDAP provides the ability to authenticate MSA users with a central directory.

- Domain or Directory Credentials are not stored on the MSA for authentication - avoids a security issue.
- Once user groups are configured on all MSAs in your organization, users can be authenticated on

Standard Features

Web Browser Support

The MSA 2060 arrays come integrated with a new web browser (SMU v4) and CLI based software for storage and RAID management, setup, configuration, and troubleshooting. The MSA 2060 management supports Microsoft Internet Explorer, Mozilla Firefox, and Google Chrome.

Hot Plug Expansion and Replacement Support

All MSA 2060 models support hot plug expansion and replacement of redundant controllers, drives, fans, power supplies, and I/O modules for simple, fast installation and maintenance. Hot add expansion of drive enclosures is also supported.

HPE Server Compatibility

The MSA 2060 supports most HPE ProLiant, BladeSystems and Integrity servers including

- HPE ProLiant DL, ML Servers
- HPE c-Class Blade Servers
- Integrity servers, IA64
- Compatibility must be confirmed at: **http://www.hpe.com/storage/spock**

  Notes: Depends on protocol

3rd Party Server Support

The MSA 2060 supports most multi-vendor industry standard Intel and AMD based (x86) servers. Hewlett Packard Enterprise requires the Third-Party Server to be logged and listed on the Microsoft Windows Server Catalog.

- Hewlett Packard Enterprise recommends that the Third-Party Server Vendor is an active member of TSANet. Refer to the TSANet website for details: **http://www.tsanet.com**
- Non-HPE servers will generally be supported if the HPE storage stack is used. This includes supported HPE branded HBAs and drivers, and supported FC switches.

OS Support

Refer to the Hewlett Packard Enterprise support statements for complete current OS version support: **http://www.hpe.com/storage/spock**

- Microsoft Windows Server 2022
- Microsoft Windows Server 2019
- Microsoft Windows Server 2016
- VMware vSphere
- Red Hat Enterprise Linux
- SuSE SLES Linux
- Oracle Linux
- Citrix Hypervisor
- HP-UX

  Notes: [illegible]

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Standard Features

Advanced Data Services Suite

The HPE MSA Advanced Data Services Suite can be purchased as an option on the MSA 2060 Storage systems.

The optional Advanced Data Services Suite includes the following functionality:

- Performance Tiering
- 512 Snapshots and Volume Copy
- Remote Snap functionality

Performance Tiering and Archive Tiering

Disk tiers are comprised of aggregating 1 or more Disk Groups of similar physical disks. The MSA 2060 supports 3 distinct tiers:

- A Performance tier with SSDs
- A Standard SAS tier with Enterprise SAS HDDs
- An Archive tier utilizing Midline SAS HDDs.

The MSA 2060 supports sub-LUN tiering and automated data movement between tiers. The MSA 2060 automated tiering engine moves data between available tiers based on the access characteristics of that data. Frequently accessed "pages" will migrate to the highest available tier delivering maximum I/O's to the application.

Configurations which have a mixture of both SSDs and HDDs within the same system being used as a capacity tier (excluding SSD Read Cache), will require the Advanced Data Service Suite LTU. This rule applies to the system level and therefore the license is required regardless of whether the drives are configured for auto-tiering within the same pool. Configurations with all SSDs or SSD Read Cache extension do not require a license on the MSA2060 array.

Snapshot and Volume Copy

- All MSA 2060 arrays come standard with 64 snaps.
- A 512 Snapshot license is available as an option on the MSA 2060.
- Snapshots create up to 512 point-in-time copies of data.
- Volume Copies create up to 128 point-in-time copies of data.
- Volume copies become standard volumes when they are complete.
- Recovery is instant - revert data from any previous Snapshot or Volume Copy.
- Backup 'snapped' data to disk, virtual tape, or physical tape without a backup window.
- If telephone support and software updates are desired for bundled software functionalities like 64 snapshots and volume copy software, a combination HW + SW support care pack must be purchased.
- Hewlett Packard Enterprise does not provide warranty assistance for software products included with our base hardware products. Support is available with either the SupportPlus or SupportPlus24 Service options. The hardware warranty component of these services is accounted for in the pricing of the SP and SP24 Service options.

Cesar Rios
Director
MSA

Remote Snap

HPE MSA Remote Snap Software is array based functionality that provides remote replication on the HPE MSA 2060 array products. MSA Remote Snap is a form of asynchronous replication which consists of replication of block-level data from a volume on a local system to a volume on a second independent system. This second system may be co-located with the first system or may be located at a remote site.

- MSA Remote Snaps are used to determine the data to be replicated using the differences in

Standard Features

Optional Drive Enclosures

MSA 2060 LFF Drive Enclosure

This 2U enclosure is designed to support twelve HPE Storage LFF drives and accepts MSA dual-ported 12Gb SSD, Enterprise SAS, or SAS Midline hard drives. The pre-configured MSA 2060 LFF Drive Enclosure has two I/O modules and supports the MSA 2060 Storage systems.

- The MSA 2060 LFF Drive Enclosure can be attached to the MSA 2060 LFF or SFF Storage systems.
- Each MSA 2060 LFF Drive Enclosure ships standard with two .5m mini-SAS HD to mini-SAS HD cables for connection to the MSA 2060 array expansion port or existing drive enclosure cascade port.
- LFF and/or SFF drive enclosures can be mixed up to the maximum of nine drive enclosures

HPE MSA 2060 SFF Drive Enclosure

This 2U enclosure is designed to support twenty four HPE Storage SFF drive and accepts MSA dual ported 12Gb SSD, Enterprise SAS, or SAS Midline hard drives. The pre-configured MSA 2060 SFF Drive Enclosure has two I/O modules and supports the MSA 2060 Storage systems.

- The MSA 2060 SFF Drive Enclosure can be attached to the MSA 2060 LFF or SFF Storage systems.
- Each MSA 2060 SFF Drive Enclosure ships standard with a two .5m mini-SAS HD to mini-SAS HD cables for connection to the MSA 2060 array expansion port or existing drive enclosure cascade port.
- LFF and/or SFF drive enclosures can be mixed up to the maximum of nine drive enclosures.

Scalability

- LFF configurations can scale up to 240TB per drive enclosure, expandable to 2.4PB with the addition of a maximum of nine MSA 2060 LFF Drive Enclosures.
- SFF configurations can scale up to 184.32TB per drive enclosure, expandable to 1843.2TB with the addition of a maximum of nine MSA 2060 SFF Drive Enclosures.

Disk Group

A Disk Group is a collection of disks in a given redundancy mode (RAID 1, 5, 6, 10, MSA-DP+). Disk Group RAID level and size can be created based on performance and/or capacity requirements. Multiple Disk Groups can be allocated into a Storage Pool for use with the Virtual Storage features.

LUNs

The MSA 2060 arrays support 512 volumes and up to 512 snapshots in a system. All of these volumes can be mapped to LUNs. Maximum LUN sizes up to 140TB. Thin Provisioning allows the user to create the LUNs independent of the physical storage.

Storage Pools

Storage Pools are comprised of one or more Disk Groups. A volume's data on a given LUN can now span all disk drives in a pool. When capacity is added to a system, users will benefit from the performance of all spindles in that pool.

The MSA 2060 supports large, flexible Volumes with sizes up to 128TiB and facilitates seamless capacity expansion. As pools are expanded data automatically reflows to balance capacity utilization on all drives.

Director
ITCS S.A.

Standard Features

RAID 0, 1, 5, 6, 10, MSA-DP+

The MSA 2060 features several important additional RAID levels. MSA-DP+ offers improved performance, availability, and very fast rebuild times compared to traditional parity RAID by utilizing erasure coding technology. MSA-DP+ includes distributed spare capacity (default is equal to 2x the largest drive), and does not use traditional spare drives. RAID 6 allocates two sets of parity data across drives and allows simultaneous write operations. It can withstand two simultaneous drive failures without downtime or data loss. RAID 10 is mirroring and striping without parity and allows large Disk Groups to be created with high performance and mirroring for fault tolerance. RAID 5 combines the block striping and parity. Because data and parity are striped across all of the disks, no single disk is a bottleneck. Striping also allows users to reconstruct data in case of a disk failure. RAID 0 (Striping) is supported for Read Cache only.

MSA-DP+

MSA-DP+ is a new RAID-based data protection level introduced with the 6th Generation MSA Storage Systems that:

- Maximizes flexibility
- Provides built-in spare capacity
- Optimizes performance due to the elimination of idle spares
- Allows for very fast rebuilds, large storage pools, and simplified expansion

If a disk fails in an MSA-DP+ disk group, and the failed disk is replaced with a new disk in the same slot, the replacement disk will be added to the disk group automatically. All disks in an MSA-DP+ disk group must be the same type (enterprise SAS, for example), but can have different capacities, provided the range of difference does not exceed a factor of two. For example, mixing a 600GB disk and a 1.2TB disk is acceptable; but mixing a 6TB disk and a 16TB disk is not recommended. It is conceivable that a sizeable difference between mixed disk capacities (ratio greater than two) could prevent consuming space on disks due to insufficient distributed space required to support striping.

All disks in an MSA-DP+ disk group are used to hold user data, but not all disks will be used by each page of data. To increase fault tolerance, any available capacity on disks can be allocated as spare for reconstruction purposes. When new data is added, new disks are added, or the system recognizes that data is not distributed across disks in a balanced way, the system moves the data to maintain balance across the disk group. Spare drives are not used by MSA-DP+ disk groups since the RAID design provides built-in spare capacity that is spread across all disks in the disk group. In the case of a disk failure, data will be redistributed to many disks in the disk group, allowing for quick rebuilds and minimal disruption to I/O. The system will automatically default to a target spare capacity that is the sum of the largest two disks in the MSA-DP+ disk group, which is large enough to fully recover fault tolerance after loss of any two disks in the disk group. The actual spare capacity value can change depending on the current available spare capacity in the disk group. Spare capacity is determined by the system as disks are added to a disk group, or when disk groups are created, expanded or rebalanced.

Notes:

HPE recommends not mixing disks if the ratio of the largest disk to the smallest disk is greater than two.

For more information on MSA-DP+ refer to the HPE MSA 1050/2050/2060/2062 Storage Management Guide.

Configuration and Management Tools

- Management access, out-of-band, Storage Management Utility (SMU) V4, CLI.
- Interface Types: USB 100/1000 Ethernet.
- Protocols Supported SNMP, SMI-S, SSH, SMTP, FTP, SFTP, HTTP, HTTPS, Telnet

Standard Features

Maximum number of hosts	512
Maximum number of initiators	1024
Customer self-installable	Yes
Customer self-repairable	Yes
Customer self-upgradeable	Yes
Health Check analytics	Yes
Energy Star Certified	Yes

All MSA 2060 models offer a common set of valuable features

Chassis

- 12 drive bay LFF or 24 drive bay SFF 2U base arrays, depending on model
- 12 drive bay LFF or 24 drive bay SFF 2U expansion enclosures, depending on model
- 12Gb SAS disk expansion protocol
- New next-generation drive carriers
- New optional locking bezel

Storage Controllers

- Dual hot-swappable active/active controllers
- 4 host ports per controller, 8 host ports per array
- 8/16Gb Fibre Channel, 10/25GbE iSCSI, 10GBase-T and 12Gb SAS protocol support
- Auto negotiation
- New next-generation RAID offload ASIC and Processor
- 24GB system cache
- 12Gb SAS expansion ports
- Battery-free cache backup with super capacitors and compact flash

Expansion Capacity

- Maximum expansion of 9 drive enclosures (either LFF and/or SFF)
- Maximum of 240 SFF or 120 LFF drives
- Maximum of 1843.2TB SFF / 2.4PB LFF raw capacity

Storage Services

- Virtual Storage
  - Up to two pools (1PB each)
  - Automated tiering v2.0
  - SSD read cache extension
  - Thin Provisioning
  - Volume Copy
  - Snapshot capability (64 snaps standard, 512 optional snapshot per array)
- Virtual Storage Disk Groups can be spanned across multiple enclosures.
- Virtual Storage RAID levels supported: 1, 5, 6, 10, MSA-DP+
- New disk group type (MSA-DP+):
  - Integrated sparing
  - Fast rebuilds
  - Improved sequential performance
  - Incremental disk group expansion

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Standard Features

Management

- New redundant web based interface (SMU v4)
- HPE MSA Health Check
- New RESTful interface
- CLI
- Firmware Update Server - automatically receive notification of new firmware availability
- Non-disruptive on-line controller code upgrade. Requires Multi-pathing software
- Arxscan Arxview remote monitoring via HPE Complete

Data Protection

- Self-encrypting (SED) SSDs and HDDs
- SED drives FIPS 140-2 Level 2 certified
- Remote Snapshot (Array-based asynchronous replication)
- VMware Site Recovery Manager
- HPE Zerto Virtual Replication
- Optional locking bezel

Product Technology

Storage Controllers

- The MSA 2060 FC controllers with 8/16Gb FC host connectivity.
- The MSA 2060 ISCSI controllers with 10/25GbE iSCSI host connectivity.
- The MSA 2060 iSCSI controllers with 10GBase-T iSCSI host connectivity
- The MSA 2060 SAS controllers with 12Gb SAS host connectivity.
- No converged SAN controllers with MSA 2060 models.
- Dual controller active/active (dual pool) design. System can be configured as active/passive (single pool).
- Controllers contain next generation RAID offload ASIC and CPU.
- 24GB System cache
- 12Gb SAS expansion ports.

Notes: The MSA 2060 does not support single controller configurations. Single-controller support is provided only when a controller fails over to its partner controller.

Modular Chassis

- New chassis design with the MSA array and drive enclosures.
- 2U rack height 12 LFF or 24 SFF drive bays, depending on model.
- 12G SAS Midplane.
- Next generation drive modules.
- New locking bezel kit for added security.

Available Drives

The MSA 2060 Storage Systems support a wide variety of MSA 3.5-inch LFF drives, and MSA 2.5-inch SFF drives.

- Solid-State Drives (SSDs) deliver the highest levels of performance and reliability.
- Enterprise-class SAS hard disk drives (10K/15K RPM) offer a balance of performance, capacity, and cost while delivering enterprise grade reliability.
- Midline SAS hard disk drives (7.2K RPM) are optimized to provide the best ratio of capacity to cost.

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Overview

MSA 2060 TAA-compliant Storage Models

Description	SKU
HPE MSA 2060 16Gb Fibre Channel SFF TAA-compliant Storage	R9G38B
HPE MSA 2060 16Gb Fibre Channel LFF TAA-compliant Storage	R9G39B
HPE MSA 2060 10GbE iSCSI SFF TAA-compliant Storage	R9G40B
HPE MSA 2060 12Gb SAS SFF TAA-compliant Storage	R9G41B

Notes:

- Includes an SFF or LFF Array Chassis (depending on model), two MSA 2 hot controllers, two AC power supplies, two 1.5m PDU cords (IEC C14 connectors) and rack mounts.
- SFF TAA compliant array models include (1) HPE MSA 1.4TB SAS 10G Enterprise 10K SFF (2.5in) 10K 3yr Wty FF-series TAA-compliant HDD. Similarly, the LFF TAA-compliant array models include (1) HPE MSA 2TB SAS 12G Midline 7.2K LFF (3.5in) MF 1yr Wty FF-series TAA-compliant HDD. Similarly
- SFF array models include (1) HPE MSA Storage Systems All MSA 2060 Fibre Channel and 10GbE iSCSI array models must use the appropriate Gen5 SFP option. Please review "Configuration Information" section for further details.

All SKUs ending in "B" include the new 94% efficient power supply for meets EU Lot 9 power efficiency requirements.

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Standard Features

HPE MSA 2060 Storage	
Array	
Access Type	Block
Form Factor	2U, SFF or LFF
Number of controllers per array	2
Number of host ports per array	8
FC host connectivity	8/16Gb
iSCSI host connectivity	10/25GbE, 10GBase-T
SAS host connectivity	12Gb
Cache, per array	
Max Read cache per array	8TB
Data (read/write) cache + system memory per array	24GB
Pool Capacity	Two Pools with 1 PB each
RAID Levels supported:	RAID 0[1],1, 5, 6, 10, MSA-DP+ Notes: [1]Read Cache Only
Enclosures	
Expansion Drive Enclosures	0-9 enclosures
LFF/SFF array/enclosure mixing	Supported
Maximum number of drives per array enclosure	24 SFF or 12 LFF
Maximum number of drives per drive enclosure	24 SFF or 12 LFF
Drive enclosure interface type	12Gb SAS
Drives	
Maximum total HDDs per array	240 SFF / 120 LFF
Maximum total SSDs per array	240 SFF / 120 LFF
Max raw capacity per array enclosure	184.32TB SFF / 240TB LFF
Max raw capacity per drive enclosure	184.32TB SFF / 240TB LFF
Max raw capacity per array	1843.2TB (All SFF) / 2.4 PB (All LFF)
Drive Capacities	
SFF SSDs	960GB, 1.92TB, 3.84TB, 7.68TB
LFF SSD	1.92TB
SFF HDDs	15K: 900GB 10K: 600GB, 1.2TB, 1.8TB, 2.4TB
LFF HDDs	7.2K: 6TB, 8TB, 10TB, 12TB, 14TB, 16TB, 18TB, 20TB
Self-Encrypting SSDs	SFF: 960GB, 1.92TB LFF: 1.92TB
Self-Encrypting HDDs	SFF: 900GB, 2.4TB LFF: 12TB
Notes: So c in 6 Pack bundles only	
Software Features	
Thin Technologies	Thin Provisioning, Space Reclamation, Thin Rebuild
Tiering	Performance Tier, Standard Tier, Archive Tier
Replication	Snapshots (512), Volume Copy, Remote Snaps
Quality of Service	Virtual Tier Affinity
Additional Features	
Maximum number of volumes	512
Maximum number of snapshots	512

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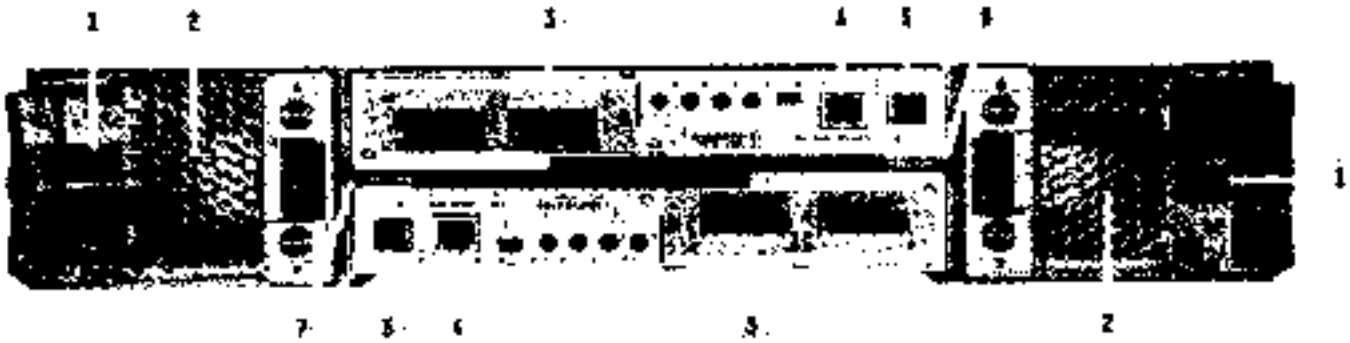
Director
ACC S.A.

Overview

HPE MSA 2060 Storage Array

The HPE MSA 2060 is a flash-ready hybrid storage system designed to deliver hands-free, affordable application acceleration for small and remote office deployments. Don't let the low cost fool you. It gives you the combination of simplicity, flexibility, and advanced features you may not expect in an entry-priced array. Start small and scale as needed with any combination of solid state drives (SSDs), high-performance Enterprise SAS HDDs, or lower-cost Midline SAS HDDs. With the ability to deliver up to 395,000 IOPS, the new MSA 2060 is up to 80% faster than its prior generation with ample horsepower for even the most demanding workloads.

HPE MSA 2060 Storage



HPE MSA 2060 Storage

Item	Description		
1.	Power Switch	5	12Gb SAS expansion port
2.	Redundant Power and Cooling Module (AC or DC)	6	Controller A (Inverted)
3.	Host connection ports (8/16Gb FC, 10/25GbE iSCSI, 10GBase-T iSCSI, or 12Gb SAS depending on model)	7.	Controller B
4	Ethernet management port		

Overview

What's New

MSA Flash Bundle arrays models that combine an MSA 2060 16Gb FC or 10GbE iSCSI array with 12 MSA SSD drives (960GB, 1.92TB, or 3.84TB) to create a simpler path toward low-cost, high-performance entry-level shared storage.

MSA SSD 6-pack drive bundles that provide cost-effective storage capacity expansion for MSA 2060 Flash Bundles.

HPE MSA Storage certification as a Backup Repository to provide seamless protection and Instant VM Recovery with Veeam Backup and Replication

MSA 2060 Storage Models

Description	SKU
HPE MSA 2060 16Gb Fibre Channel LFF Storage	R0Q73B
HPE MSA 2060 16Gb Fibre Channel SFF Storage	R0Q74B
HPE MSA 2060 10GbE iSCSI LFF Storage	R0Q75B
HPE MSA 2060 10GbE iSCSI SFF Storage	R0Q76B
HPE MSA 2060 12Gb SAS LFF Storage	R0Q77B
HPE MSA 2060 12Gb SAS SFF Storage	R0Q78B
HPE MSA 2060 10GBASE-T iSCSI LFF Storage	R7J72B
HPE MSA 2060 10GBASE-T iSCSI SFF Storage	R7J73B
HPE MSA 2060 16Gb Fibre Channel SFF 12TB Flash Bundle	S2E37B
HPE MSA 2060 10GbE iSCSI SFF 12TB Flash Bundle	S2E38B
HPE MSA 2060 16Gb Fibre Channel SFF 23TB Flash Bundle	S2E39B
HPE MSA 2060 10GbE iSCSI SFF 23TB Flash Bundle	S2E40B
HPE MSA 2060 16Gb Fibre Channel SFF 46TB Flash Bundle	S2E41B
HPE MSA 2060 10GbE iSCSI SFF 46TB Flash Bundle	S2E42B

Notes:

- Includes an SFF or LFF Array Chassis depending on model, two MSA 2060 controllers, two AC power supplies, two 1.5m PDU cords (IEC C14), one rack-mount kit.

  SFPs are not included in the base Storage Systems. All MSA 2060 Fibre Channel and 10GbE iSCSI array models must use the appropriate Gen6 SFP option - please review "Configuration Information" section for further details

- All SKUs ending in "B" include the new 94 % efficient power supply that meets EU Lot9 power efficiency requirements

- Each MSA 2060 Flash Bundle model includes an MSA 2060 SFF Storage array and twelve (12) integrated SSDs.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less

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Emissions Classification (EMC) - Regulatory Information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

HPE Smart Array

For latest information on **HPE Smart Array Gen10 Controllers for HPE ProLiant DL, ML and Apollo Servers** please refer to their QuickSpecs (E208i-a,E208i-p,E208e-p,P408i-a,P408i-p,P408e-p,P816i-a)

Environment-friendly Products and Approach End-of-life Management and Recycling

Hewlett Packard Enterprise offers **end-of-life product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Cesar Acosta
Director
ITCS S.A.

Summary of Changes

Date	Version History	Action	Description of Change
05-Sep-2023	Version 23	Changed	Core Options and Technical Specifications sections were updated.
10-Jul-2023	Version 22	Changed	Core Options sections was updated.
05-Jun-2023	Version 21	Changed	Standard Features and Core Options sections were updated.
01-May-2023	Version 20	Changed	Optional Features and Additional Options sections were updated.
06-Mar-2023	Version 19	Changed	Standard Features, Core Options, and Additional Options sections were updated. Obsolete SKUs were removed.
05-Dec-2022	Version 18	Changed	Standard Features, Core Options, and Additional Options sections were updated. Obsolete SKUs were removed.
07-Nov-2022	Version 17	Changed	Optional Features, Core Options, and Additional Options sections were updated. Obsolete SKUs were removed.
06-Sep-2022	Version 16	Changed	Core Options, Configuration Information and Additional Options sections were updated Obsolete SKUs were removed
01-Aug-2022	Version 15	Changed	Core Options. Configuration Information and Additional Options sections were updated.
05-Jul-2022	Version 14	Changed	Core Options, Memory and Additional Options sections were updated. Obsolete SKUs were removed.
13-Jun-2022	Version 13	Changed	Standard Features, Configuration Information and Core Options sections were updated. Obsolete SKUs were removed.
16-May-2022	Version 12	Changed	Core Options and Additional Options sections were updated. Obsolete SKUs were removed.
07-Apr-2022	Version 11	Changed	Core Options section was updated. Obsolete SKU was removed.
21-Mar-2022	Version 10	Changed	Overview,Pre-Configured Models and Additional Options sections were updated.
07-Feb-2022	Version 9	Changed	Core Options and Additional Options sections were updated. Obsolete SKUs were removed.
06-Dec-2021	Version 8	Changed	Core Options and Additional Options sections were updated. Obsolete SKUs were removed.
01-Nov-2021	Version 7	Changed	Overview. Standard Features, Core Options, Service and Support and Additional Options sections were updated.
07-Sep-2021	Version 6	Changed	Overview, Standard Features, Configuration Information. Core Options and Technical Specifications sections were updated.
23-Aug-2021	Version 5	Changed	Overview, Standard Features, Configuration Information, Core Options and Technical Specifications sections were updated
06-Jul-2021	Version 4	Changed	Standard Features,Pre-Configured Models, Configuration Information, Core Options, Additional Options, Memory and Technical Specifications sections were updated.
07-Jun-2021	Version 3	Changed	Overview, Standard Features. Pre-Configured Models, Core Options and Additional Options sections were updated.
10-May-2021	Version 2	Changed	Standard Features, Configuration Information and Core Options sections were updated.
06-Apr-2021	Version 1	New	New QuickSpecs

Cesar Acosta
Director
HPE S.A.

Technical Specifications

- **Operating**
  8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
- **Non-operating**
  5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Power Supply Output (per power supply)

Rated Steady-State Power

- For 1800W-2200W: 1800W(at 200 VAC), 1900W(at 208 VAC), 2000W(at 220 VAC), 2100W(at 230VAC), 2200W(at 240VAC)
- For 1600W Power Supply: 1600W (at 240 VAC), 1600W (at 240 VDC) for China only
- For 800W (Titanium) Power Supply: 800W (at 200 VAC), 800W (at 240 VAC), 800W (at 240 VDC) for China only
- For 800W (Platinum) Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VDC) input for China only
- For 800W (Universal) Power Supply: 800W (at 200 VAC), 800W (at 277 VAC)
- For 800W (-48VDC) Power Supply: 800W (at -40 Vdc), 800W (at -72Vdc)

Maximum Peak Power

- For 1800W-2200W Power Supply: 1800W(at 200 VAC), 1900W(at 208 VAC), 2000W(at 220 VAC), 2100W(at 230VAC), 2200W(at 240VAC)
- For 1600W Power Supply: 1600W (at 240 VAC), 1600W (at 240 VDC) for China only
- For 800W (Titanium) Power Supply: 800W (at 200 VAC), 800W (at 240 VAC), 800W (at 240 VDC) for China only
- For 800W (Platinum) Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VDC) input for China only
- For 800W (Universal) Power Supply: 800W (at 200 VAC), 800W (at 277 VAC)
- For 800W (-48VDC) Power Supply: 800W (at -40 Vdc), 800W (at -72Vdc)

System Inlet Temperature

- **Standard Operating Temperature**
  10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

  System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).

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- **Extended Ambient Operating Temperature**
  For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:
  http://www.hpe.com/servers/ashrae

  For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every

Technical Specifications

410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:
http://www.hpe.com/servers/ashrae

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

- **Non-operating**
  -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).

Altitude

- **Operating**
  3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
- **Non-operating**
  9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Acoustic Noise

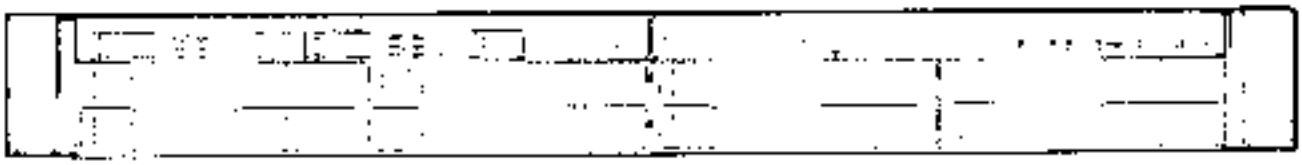
Listed are the declared A-Weighted sound power levels (L_{WAd}) and declared average bystander position A-Weighted sound pressure levels (L_{pAm}) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. Please have your HPE representative provide information from the HPE EMESC website for further technical details regarding the configurations listed below.

Acoustic Noise	
Idle	
LWAd	4.8 B Entry
	4.4 B Base
	4.6 B Perf
LpAm	37 dBA Entry
	31 dBA Base
	31 dBA Perf
Operating	
LWAd	4.8 B Entry
	4.4 B Base
	4.6 B Perf
LpAm	37 dBA Entry
	31 dBA Base
	31 dBA Perf

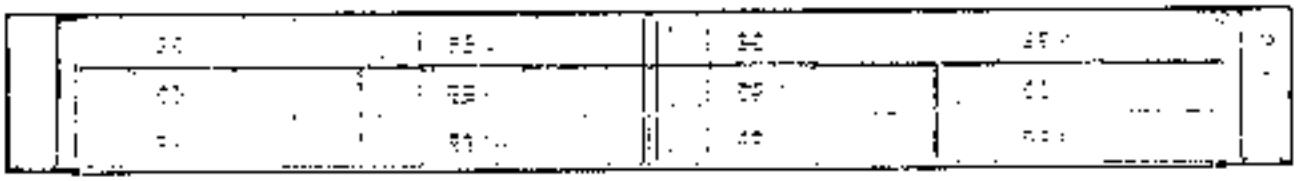
Cesar Acosta
Director
ITCS S.A.

Notes:

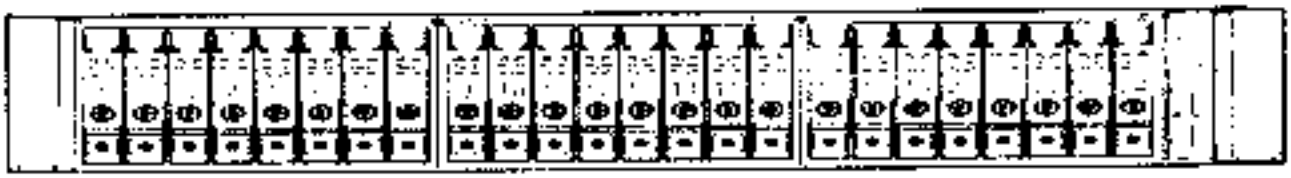
- Acoustics levels presented here are generated by the best configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.
- Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.
- The Listed sound levels apply to standard shipping configurations. Additional options may result in

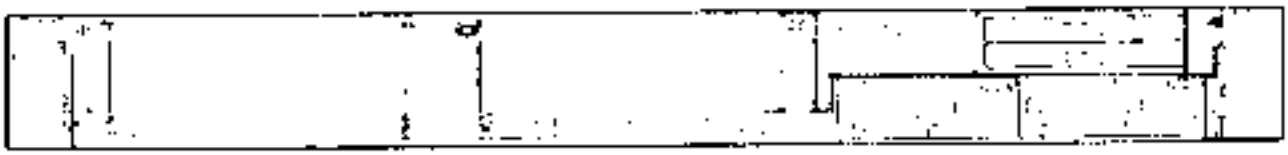


8LFF chassis with Universal media bay and optional 2SFF and optical drive shown



12 LFF chassis





24 SFF + rear 2 SFF drives

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Director
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Technical Specifications

System Unit
Dimensions

- **SFF Drives:**
  8.75 x 44.54 x 71. cm / 3.44 x 17.54 x 28 in
- **LFF Drives:**
  8.75 x 44.54 x 74.9 cm / 3.44 x 17.54 x 29.5 in

Weight (approximate)

- **Maximum:** 8 SFF hard drives (no rear drives), 2x processors, 2x power supplies, 1x Smart Array, 2x Risers installed)
  - **Maximum:**
    28.77 kg / 63.43 lbs
  - **Minimum:**
    16.12 kg /35.54 lbs
- **Maximum:** 12 LFF hard drives (no rear drives), 2x processors, 2x power supplies, 1x Smart Array, 2x Risers installed)
  - **Maximum:**
    33.99 kg / 74.94 lbs
  - **Minimum:**
    22.48 kg / 49.56 lbs

Input Requirements (per power supply)
Rated Line Voltage

- For 1800W-2200W (Titanium) Power Supply: 200-240 VAC
- For 1600W (Platinum) Power Supply: 200-240 VAC
- For 800W (Titanium) Power Supply: 200-240 VAC
- For 800W (Platinum) Power Supply. 100-240 VAC
- For 800W (Universal) Power Supply: 200-277 VAC
- For 800W (-48VDC) Power Supply: -40 Vdc to -72 Vdc

BTU Rating
Maximum

- For 1800W-2200W Power Supply: 6497 BTU/hr (at 200 VAC), 6868 BTU/hr (at 208 VAC), 7230 BTU/hr (at 220 VAC), 7596 BTU/hr (at 230VAC), 7962 BTU/hr (at 240VAC)
- For 1600W Power Supply: 5918 BTU/hr (at 200 VAC), 5888 BTU/hr (at 220 VAC), 5884 BTU/hr (at 240 VAC)
- For 800W (Titanium) Power Supply: 2905 BTU/hr (at 200 VAC), 2899 BTU/hr (at 220 VAC). 2893 BTU/hr (at 240 VAC)
- For 800W (Platium) Power Supply 3067 BTU/hr (at 100 VAC), 2958 BTU/hr (at 200 VAC), 2949 BTU/hr (at 240 VAC)
- For 800W (Universal) Power Supply: 2964 BTU/hr (at 200 VAC). 2951 BTU/hr (at 230 VAC). 2936 BTU/hr (at 277 VAC)
- For 800W-(48Vdc) Power Supply: 2983 BTU/hr (at -40 Vdc), 2951 BTU/hr (at -48Vdc), 2912 BTU/hr (at -72Vdc)

Relative Humidity (non-condensing)

Memory

- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- When two processors are installed, balance the DIMMs across the two processors.
- White DIMM slots denote the first slot to be populated in a channel.
- Mixing of DIMM types (UDIMM, RDIMM, and LRDIMM) is not supported.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, and the number and model of installed processors qualified on the platform.
- For details on the HPE Server Memory Options Population Rules, visit: **https://www.hpe.com/docs/intel-population-rules-Gen10plus**
- To realize the performance memory capabilities listed in this document, HPE DDR4 Smart Memory is required.
- For additional information, please see the **HPE DDR4 Smart Memory QuickSpecs**.

Registered DIMM (RDIMM)

HPE SKU P/N	P07525-B21	P06029-B21	P06031-B21	P40007-B21
SKU Description	HPE 8GB (1x8GB) Single Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	HPE 16GB (1x16GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	HPE 16GB (1x16GB) Dual Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	HPE 32GB (1x32GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit
DIMM Capacity	8GB	16GB	16GB	32GB
DIMM Rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Single Rank (1R)
Voltage	1.2 V	1.2 V	1.2 V	1.2 V
DRAM Depth [bit]	1G	2G	1G	2G
DRAM Width [bit]	x8	x4	x8	x4
DRAM Density	8Gb	8Gb	8Gb	8Gb
CAS Latency	22-22-22	22-22-22	22-22-22	22-22-22
DIMM Native Speed	3200 MT/s	3200 MT/s	3200 MT/s	3200 MT/s

HPE SKU P/N	P06033-B21	P06035-B21
SKU Description	HPE 32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	HPE 64GB (1x64GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit
DIMM Capacity	32GB	64GB
DIMM Rank	Dual Rank (2R)	Dual Rank (2R)
Voltage	1.2 V	1.2 V
DRAM Depth [bit]	1G	2G
DRAM Width [bit]	x8	x4
DRAM Density	8Gb	8Gb
CAS Latency	22-22-22	22-22-22
DIMM Native Speed	3200 MT/s	3200 MT/s

Notes: The maximum memory speed is a function of the memory type, memory configuration, and processor model.

[illegible] DIMMs [illegible] 3 per channel. Using odd quantity of DIMMs in configurations will cause memory [illegible] and may negatively impact system performance. For details see the HPE Server Memory Speed Table: **https://www.hpe.com/docs/memory-speed-table**

Cesar Acosta
Director
ITCS S.A.

Memory

Load Reduced DIMM (LRDIMM)

HPE SKU P/N	P06037-B21	P06039-B21
SKU Description	HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit
DIMM Capacity	128GB	256GB
DIMM Rank	Quad Rank (4R)	Octal Rank (8R)
Voltage	1.2 V	1.2 V
DRAM Depth [bit]	2G	2G
DRAM Width [bit]	x4	x4
DRAM Density	8Gb	8Gb
CAS Latency	22-22-22	22-22-22
DIMM Native Speed	3200 MT/s	3200 MT/s

Notes: The maximum memory speed is a function of the memory type, memory configuration, and processor model. Also, DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance.

For details on the HPE Server Memory speed, visit: **https://www.hpe.com/docs/memory-speed-table**

DDR4 memory options part number decoder

Notes:

Capacity references are rounded to the common gigabyte (GB) values

- 8GB = 8,192 MB
- 16GB = 16,384 MB
- 32GB = 32,768 MB
- 64GB = 65,536 MB
- 128GB = 131,072 MB
- 256GB = 262,144 MB
- 512GB = 524,288 MB

For more information on memory, please see the Memory Quickspecs: **HPE DDR4 Smart Memory**

Memory Speed Table for HPE ProLiantDL380 Gen 10 Plus

For details on the HPE Server Memory speed, please visit: **https://www.hpe.com/docs/memory-speed-table**

Cesar Acosta
Director
DCS S.A.

Additional Options

Notes: Does not replace CMA (P22020-B21).

HPE DL38X Gen10 Plus 2U Cable Management Arm for Rail Kit	P22020-B21

HPE USB and SD Options

Notes: In vSphere 7.0, VMware made changes that impact the use of an SD Card/USB memory as a standalone boot device and will be removed support for these options on 7.x. SD Card/USB media can still be used as a standalone boot option for ESXi 7.x releases via published Customer Advisory **Usage of SD Card/USB Devices As Standalone Boot Devices Has Changed Due to System Storage Changes For VMware ESXi 7.0 (Or Later)**

For any major release beyond VMware ESXi 7.x, VMware will require M.2 or another local persistent device as the standalone boot option.

HPE Enterprise Mainstream Flash Media Kits for Memory Cards

HPE 32GB microSD RAID 1 USB Boot Drive	P21868-B21

HPE Support Services

Tech Care

HPE 3 Year Tech Care Essential Proliant DL380 Gen10+ Service	HY4Z5E
HPE 3 Year Tech Care Essential wDMR Proliant DL380 Gen10+ Service	HY4Z6E
HPE 5 Year Tech Care Essential Proliant DL380 Gen10+ Service	HY5B9E
HPE 5 Year Tech Care Essential wDMR Proliant DL380 Gen10+ Service	HY5C0E

Notes: For a full listing of support services available for this server, please visit **http://www.hpe.com/services**.

Cesar Acosta
Director
ITCG S.A.

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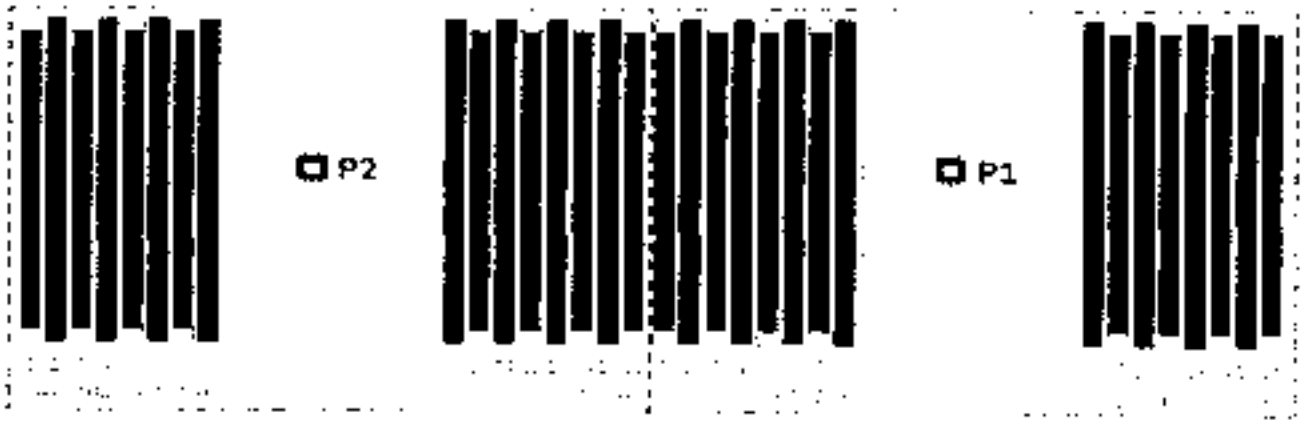
Memory

Memory Population guidelines



HPE ProLiant DL380 Gen10 Plus

HPE ProLiant Gen10 Plus 16 slot per CPU DIMM population order

DIMM population order

DIMM slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 DIMM														14		
2 DIMMs			3											14		
4 DIMMs			3				7			10				14		
6 DIMMs	1		3				7			10				14		16
8 DIMMs[2,3]	1		3		5		7			10		12		14		16
12 DIMMs	1	2	3	4			7	8	9	10			13	14	15	16
12 DIMMs[1,2,3]	1		3	4	5		7	8	9	10		12	13	14		16
16 DIMMs[2,3]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Notes:

DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance

Omitted DIMM rounds/socket not qualified by Intel

[1] Required by Sub-NUMA Cluster (SNC) configurations. Must be ordered with 12 DIMM SNC2 FIO Enable Kit (P26933-B21).

[2] Support Hemi (hemisphere mode)

[3] Support Software Guard Extensions (SGX)

Cesar Acosta
Director
Ventas S.A.

General Memory Population Rules and Guidelines:

- DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two-processor system, only half of the DIMM slots are available.

Additional Options

P26962-B21 HPE DL380 Gen10+ 2U 8SFF x4 NVMe U.2 Kit

Essential RAID Controllers

HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804394-B21
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21

Software RAID Controllers

Intel Virtual RAID on CPU Premium FIO Software for HPE	R7J57A
INT VROC FIO DL360/380 G10+ w/INT SSD	R7J58A

HPE Cable Options

HPE DL38X Gen10 Plus Rear Serial Cable Kit	P14606-B21
HPE DL38X Gen10 Plus 8NVMe CPU1/2 Cable Kit	P22829-B21
HPE Gen10 Plus Chassis Intrusion Detection Kit	P14604-B21
HPE ProLiant DL300 Gen10 Plus 2U x4 Tri-Mode Cable Kit	P36202-B21
HPE ProLiant DL300 Gen10 Plus 2U x2 Tri-Mode Cable Kit	P36203-B21
HPE DL380 SFF Smart Array HBA H200/P400 Series SAS Cable Kit	786092-B21
HPE ProLiant DL38X Gen10 Plus OCP to 2NVMe Adapter Kit	P27094-B21

Optional Upgrades

HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	P01366-B21
HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit	P02377-B21

Notes: [illegible] Smart Array [illegible] is required with performance RAID controllers.

HPE Tape Backup

For the complete range of tape drives, autoloaders, libraries and media see: **https://www.hpe.com/us/en/storage/storeever-tape-storage.html** For hardware and software compatibility of Hewlett Packard Enterprise tape backup products **http://www.hpe.com/storage/BURAcompatibility**

HPE Storage Options

Emulex Fibre Channel HBAs

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter	Q0L13A
HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter	Q0L14A
HPE SN1610E 32Gb 1-port Fibre Channel Host Bus Adapter	R2J62A
HPE SN1610E 32Gb 2-port Fibre Channel Host Bus Adapter	R2J63A
HPE SN1700E 64Gb 1-port Fibre Channel Host Bus Adapter	R7N77A
HPE SN1700E 64Gb 2-port Fibre Channel Host Bus Adapter	R7N78A

QLogic Fibre Channel HBAs

HPE SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A

Cesar Acosta
Director
TCS S.A.

Additional Options

HPE SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter	R2E08A
HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter	R2E09A

HPE Racks

- Please see the **HPE Advanced Series Racks** QuickSpecs for information on additional racks options and rack specifications.
- Please see the **HPE Enterprise Series Racks QuickSpecs** for information on additional racks options and rack specifications.
- Please see the **HPE Standard Series Racks QuickSpecs** for information on additional racks options and rack specifications.

HPE Power Distribution Units (PDUs)

- Please see the **HPE Basic Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.
- Please see the **HPE Metered Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications. Please see the **HPE Intelligent Power Distribution Unit (PDU)** QuickSpecs for information on these products and their specifications.
- Please see the **HPE Metered and Switched Power Distribution Units (PDU)** QuickSpecs for information on these products and their specifications.

HPE Uninterruptible Power Systems (UPS)

- To learn more, please visit the **HPE Uninterruptible Power Systems (UPS)** web page.
- Please see the **HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs** for information on these products and their specifications
- Please see the **HPE Line Interactive Single Phase UPS QuickSpecs** for information on these products and their specifications.

HPE Rack Options

Please see the **HPE KVM Switches web page** for information on these products and their specifications.

Easy Install Rail Kits

Easy Install rail kits contain telescoping rails which allow for in-rack serviceability.

To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative.

Notes: Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

HPE DL38X Gen10 Plus 2U SFF Easy Install Rail Kit	P22018-B21
Notes: Does not include CMA (P22020-B21)	
HPE DL38X Gen10 Plus 2U LFF Easy Install Rail Kit	P22019-B21

Cesar Acosta
Director
Ingrs S.A.

Additional Options

MegaRAID tools cannot be used to script and configure SmartRAID controllers

Broadcom MegaRAID MR416i-a x16 Lanes 4GB Cache NVMe/SAS 12G Controller for HPE Gen10 Plus P26279-B21

Notes:

Supported on following drive cages:

- P28[illegible] - HPE DL38X Gen10+ 25SFF x1 Tri-Mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 25SFF x1 Tri-mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x1 Tri-mode U.3 Kit
- P[illegible] - HPE DL38X Gen10+ 8SFF x1 Tri-Mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 Tri-mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 Tri-Mode U.3 Kit
- P[illegible] - HPE DL38X Gen10+ 2U 8SFF x4 Tri-Mode U.3 Kit
- P[illegible] - HPE DL38X Gen10+ 2U 8SFF x4 Tri-Mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 25SFF SAS/SATA BC Kit
- P[illegible] - HPE DL380 Gen10+ 2U 25SFF x4 Tri-Mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 25SFF x4 Tri-mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 Tri-mode U.3 Kit
- P[illegible] - HPE DL38X Gen10+ 8SFF x4 Tri-Mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 M.2 Midplane Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 Tri-mode U.3 Kit
- P[illegible] - HPE DL38X Gen10+ 2U 4LFF Pri/2 Rsr UBM2 Tri-mode
- P[illegible] - HPE DL38X Gen10+ 2U LFF Tri-Mode UBM2 Tri-mode
- P[illegible] - HPE DL38X Gen10+ 4LFF SAS/SATA LP Kit
- P[illegible] - HPE DL380 Gen10+ 2U 25SFF SAS/SATA BC Kit

MegaRAID tools cannot be used to script and configure SmartRAID controllers

Broadcom MegaRAID MR416i-p x16 Lanes 4GB Cache NVMe/SAS 12G Controller for HPE Gen10 Plus P06367-B21

Notes:

Supported on following drive cages:

- P28[illegible] - HPE DL38X Gen10+ 25SFF x4 Tri-Mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 25SFF x4 Tri-mode U.3 Kit
- P27[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 Tri-mode U.3 Kit
- P[illegible] - HPE DL38X Gen10+ 8SFF x4 Tri-Mode U.3 Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 M.2 Midplane Kit
- P[illegible] - HPE DL380 Gen10+ 2U 8SFF x4 Tri-mode U.3 Kit
- P[illegible] - HPE DL38X Gen10+ 2U 4LFF Pri/2 Rsr UBM2 Tri-mode
- P[illegible] - HPE DL38X Gen10+ 2U LFF Tri-Mode UBM2 Tri-mode
- P[illegible] - HPE DL38X Gen10+ 4LFF SAS/SATA LP Kit
- P[illegible] - HPE DL380 Gen10+ 2U 25SFF SAS/SATA BC Kit

Cesar Acosta
DIRECTOR
ITCS S.A.

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Additional Options

- P55696-B21 - HPE DL380 G10+ 2SFF SAS/SATA Pri/Sec Kit
- P55698-B21 - HPE DL380 Gen10+ 2SFF SAS/SATA BC Kit
- P55516-B21 - HPE DL300 Gen10+ 2U 8SFF SAS/SATA BC Kit
- Default Cages 8SFF SAS/SATA drive cages that come standard on the CTO server

MegaRAID tools cannot be used to script and configure SmartRAID controllers

Microchip SmartRAID SR416i-a x16 Lanes 4GB Cache NVMe/SAS 24G Controller for HPE Gen10 Plus P12688-B21

Notes:

Supports the following drive cages:

- P26922-B21 - HPE DL38X Gen10+ 2SFF x4Tri-Mode U.3 Kit
- P26924-B21 - HPE DL300 Gen10+ 2U 2SFF x4Tmode U.3 Kit
- P27194-B21 - HPE DL300 Gen10+ 2U 8SFF x1Tmode U.3 Kit
- P27193-B21 - HPE DL38X Gen10+ 8SFF x1Tri Mode U.3 Kit
- P26931-B21 - HPE DL300 Gen10+ 2U 8SFF x4Tmode U.3 Kit
- P55518-B21 - HPE DL38X G10+ 2LFFPnl P Rsr UBM2-Trimod
- P55519-B21 - HPE DL38X G10+ 2LFFTerRse UBM2-Trimod
- P55703-B21 - HPE DL38X Gen10+ 4LFF SAS/SATA LP Kit
- P55699-B21 - HPE DL300 Gen10+ 2U 2SFF SAS/SATA BC Kit
- P55696-B21 - HPE DL380 G10+ 2SFF SAS/SATA Pri/Sec Kit
- P55698-B21 - HPE DL380 Gen10+ 2SFF SAS/SATA BC Kit
- P55516-B21 - HPE DL300 Gen10+ 2U 8SFF SAS/SATA BC Kit
- Default Cages 8SFF SAS/SATA drive cages that come standard on the CTO server

Microchip SmartRAID SR932i-p x32 Lanes 8GB Wide Cache NVMe/SAS 24G Controller for HPE Gen10 Plus P04220-B21

Notes:

- Requires x16 riser slot
  MegaRAID tools cannot be used to script and configure SmartRAID controllers
- Supports the following drive cages:

- P26922-B21 - HPE DL38X Gen10+ 2SFF x4Tri-Mode U.3 Kit
- P26924-B21 - HPE DL300 Gen10+ 2U 2SFF x4Tmode U.3 Kit
- P27194-B21 - HPE DL300 Gen10+ 2U 8SFF x1Tmode U.3 Kit
- P27193-B21 - HPE DL38X Gen10+ 8SFF x1Tri Mode U.3 Kit
- P39769-B21 - HPE DL380 G10+ 2U 8SFF x4TM Midplane Kit
- P26931-B21 - HPE DL300 Gen10+ 2U 8SFF x4Tmode U.3 Kit

Cesar Mendoza
Director
PCS S.A.

Additional Options

HPE Boot Controllers

HPE NS204i-p x2 Lanes NVMe PCIe3 x8 OS Boot Device — P12965-B21

Notes: [illegible]

HPE Smart Array Controllers

The Gen10 controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10 Smart Array controllers visit the https://www.hpe.com/psnow/doc/a00047736enw

P 4 0 8 i - a

Class
- P = Performance RAID Controller
- E = Essential RAID Controller
- S = Software RAID

Series
- 200 = $
- 400 = $$
- 800 = $$$

SAS Lanes

Port Type
- i = Internal Ports
- e = External Ports
- ie = Internal & External

Controller Type
- a = Type a modular controller
- b = Type b modular controller
- c = Type c modular controller
- m = Mezzanine controller
- p = PCIe plug-in controller

HPE Flexible Smart Array Performance RAID Controllers

Notes:

All performance RAID controllers are supported by the HPE Smart Storage Administrator (HPE SSA) [illegible] HPE Smart Storage Battery (P01366-B21) [illegible] supported [illegible] [illegible] [illegible]

[illegible]

HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4GB Cache/SmartCache) 12G SAS Modular Controller — 804338-B21

Notes:

Includes SmartCache license

The P816i-a cable steps up to the 12LFF chassis only (868705-B21).

HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller — 804331-B21

HPE Flexible Smart Array Essential Controllers

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller — 804326-B21

Performance RAID Controllers

Notes: All performance RAID controllers are supported by the HPE Smart Storage Administrator (HPE SSA) [illegible] or HPE Smart Storage Battery (P01366-B21) [illegible] supported [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller — 830824-B21

HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller — 804405-B21

HPE Tri-Mode Controllers

Broadcom MegaRAID MR216i-a x16 Lanes without Cache NVMe/SAS 12G Controller for HPE Gen10 Plus — P26325-B21

Notes:

Supports [illegible]

[illegible] HPE DL380X Gen10+ 2SFF [illegible] Model U.2 Kit

Cesar Acosta
Director
ICS S.A.

Additional Options

- P26924-B21 - HPE DL300 Gen10+ 2U 2SFF x4Tmode U.3 Kit
- P27194-B21 - HPE DL300 Gen10+ 2U 8SFF x1Tmode U.3 Kit
- P27193-B21 - HPE DL38X Gen10+ 8SFF x1Tri-Mode U.3 Kit
- P26931-B21 - HPE DL300 Gen10+ 2U 8SFF x4Tmode U.3 Kit
- P55518-B21 - HPE DL38X G10+ 2LFFPnLP Rsr UBM2-Trimod
- P55519-B21 - HPE DL38X G10+ 2LFF TerRse UBM2-Trimod
- P55700-B21 - HPE DL38X Gen10+ 4LFF SAS/SATA LP Kit
- P55699-B21 - HPE DL300 Gen10+ 2U 2SFF SAS/SATA BC Kit
- P55696-B21 - HPE DL380 Gen10+ 2SFF SAS/SATA Pri/Sec Kit
- P55698-B21 - HPE DL380 Gen10+ 2SFF SAS/SATA BC Kit
- P55516-B21 - HPE DL300 Gen10+ 2U 8SFF SAS/SATA BC Kit
- Default Cages 8SFF SAS/SATA drive cages that come standard on the CTO server
- MegaRAID tools cannot be used to script and configure SmartRAID controllers

Broadcom MegaRAID MR216i-p x16 Lanes without Cache NVMe/SAS 12G Controller for HPE Gen10 Plus **P26324-B21**

Notes:

- Supports the following drive cages

- P26922-B21 - HPE DL38X Gen10+ 2SFF x4Tri-Mode U.3 Kit
- P26924-B21 - HPE DL300 Gen10+ 2U 2SFF x4Tmode U.3 Kit
- P27194-B21 - HPE DL300 Gen10+ 2U 8SFF x1Tmode U.3 Kit
- P27193-B21 - HPE DL38X Gen10+ 8SFF x1Tri-Mode U.3 Kit
- P39789-B21 - HPE DL300 Gen10+ 2U 8SFF x4TM Midplane Kit
- P26931-B21 - HPE DL300 Gen10+ 2U 8SFF x4Tmode U.3 Kit
- P55518-B21 - HPE DL38X G10+ 2LFFPnLP Rsr UBM2-Trimod
- P55519-B21 - HPE DL38X G10+ 2LFF TerRse UBM2-Trimod
- P55700-B21 - HPE DL38X Gen10+ 4LFF SAS/SATA LP Kit
- P55699-B21 - HPE DL300 Gen10+ 2U 2SFF SAS/SATA BC Kit
- P55696-B21 - HPE DL380 Gen10+ 2SFF SAS/SATA Pri/Sec Kit
- P55698-B21 - HPE DL380 Gen10+ 2SFF SAS/SATA BC Kit
- P55516-B21 - HPE DL300 Gen10+ 2U 8SFF SAS/SATA BC Kit
- Default Cages 8SFF SAS/SATA drive cages that come standard on the CTO server

Cesar Acosta
Director
ACS S.A.

Additional Options

Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an HPE approved configurator. Contact your local sales representative for additional information.

Embedded Management

HPE iLO Common Password FIO Setting

HPE iLO Common Password FIO Setting	P08040-B21

Notes:

[illegible]

HPE iLO Advanced

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21
HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features	512487-B21
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE
HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features	BD505A
HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features	BD506A
HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features	BD507A

HPE Converged Infrastructure Management Software

HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE

Notes: [illegible] The HPE OneView Media Kit can be ordered [illegible] **downloaded**.

Software as a Service Management

HPE GreenLake for Compute Ops Management

HPE GreenLake for Compute Ops Management Enhanced 3-year Upfront ProLiant SaaS	R7A11AAE

Additional Options

HPE GreenLake for Compute Ops Management Enhanced 1-year Upfront ProLiant SaaS	R7A10AAE
HPE GreenLake for Compute Ops Management Enhanced 5-year Upfront ProLiant SaaS	R7A12AAE

Notes: [illegible] HPE GreenLake for Compute Ops Management [illegible] hardware [illegible] SKU within ASO order.

HPE GreenLake for Compute Ops Management Base SaaS	R6Z73AAE

Cesar Acosta
Director
ITCS S.A.

Additional Options

HPE Security

HPE Trusted Supply Chain for HPE ProLiant — P36394-B21

Notes:

HPE Trusted Supply Chain (P36394-B21) is an optional security upgrade intended for agencies and regulated industries needing enhanced security and compliance needs. Applying this option to a DL380 Gen10 Plus CTO server ensures it is built in the USA in a secured facility by vetted HPE personnel assigned to the manufacturing processes. A multitude of checkpoints/inspections for malicious microcode and counterfeit parts are performed throughout the server build, and additional safeguards are put in place against cyber-exploits throughout the server lifecycle. The HPE ProLiant DL380 Gen10 Plus Server is re-branded as a HPE ProLiant DL380T Gen10 Plus to denote the HPE Trusted Supply Chain security enhancements. The DL380T Gen10 Plus is Trade Agreement Act (TAA) compliant. Learn more at **http://www.hpe.com/security**

- This option requires the selection of HPE Gen10 Plus Intrusion Detection Kit (P14604-B21-B21)
- This option requires the selection of either HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features (9D505A) or HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features (512485-B21)
- This option is limited to stand-alone DL380 Gen10 Plus CTO servers only. The HPE Trusted Supply Chain configuration will not be available if the server is ordered as factory integrated into a rack
- One instance of the following Firmware License to Use is required per order (not per server): R6X95AAE

  - HPE Trusted Supply Chain E-LTU

- Logistics delivery specs and services are available and selectable within Next Gen Quoter

This option cannot be selected with TAA instruction SKU for TAA CTO Models

HPE iLO Common Password FIO Setting — P08040-B21

Notes:

Replaces iLO default randomized password by an HPE defined common password. HPE highly recommends changing this password immediately after the initial onboarding process

Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

HPE Gen10 2U Bezel Kit — 867809-B21

HPE Bezel Lock Kit — 875519-B21

Notes: Requires the bezel kit

HPE Gen10 Plus Chassis Intrusion Detection Kit — P14604-B21

Notes: This provides a physical connection from the chassis board and fixed and detects any physical intrusion into the chassis, providing security during the entire supply chain process of shipping, receiving, distribution, and operation

HPE Trusted Platform Module 2.0 Gen10 Plus Black Rivets Kit — P13771-B21

Notes: HPE Trusted Platform Module 2.0 option works with Gen10 Plus servers in UEFI Mode not Legacy Mode. It is not compatible with earlier generation HPE ProLiant Gen9 variants.

HPE Gen10 TPM 1.2 FIO Setting — 872108-B21

Notes: This is a FIO setting to allow the TPM 2.0 module to operate in a TPM 1.2 mode

Core Options

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

NVIDIA A40 48GB PCIe Non-CEC Accelerator for HPE — R9S37C

Notes:

Requires High Performance Fan Kit (P14906-B21)

System memory should be 2x GPU memory

Requires HPE ProLiant DL380 Gen10 Plus High Performance Heat Sink Kit (P27696-B21)

Requires HPE DL38X Gen10 Plus Maximum Performance Fan Kit (P14906-B21)

Requires HPE DL38X Gen10 PRI SEC w/o Retainer Kit (P36771-B21) if only one processor

[illegible]

Requires HPE DL38X Gen10 Tri-win Retainer Kit (P36774-B21) if heavy cable is used

Maximum Qty: 3

A Maximum of 6 NVMe Drives allowed when any quantity GPU is selected. All NVMe Drives selected must be below 15W

8 NVMe Drives supported with this Graphics Option. Power consumption limitation while selecting Drives and Drive Cages

NVIDIA A100 80GB PCIe Non-CEC Accelerator for HPE — R9P49C

Notes:

Requires High Performance Fan Kit (P14906-B21)

System memory should be 2x GPU memory

Requires HPE ProLiant DL38X Gen10 Plus High Performance Heat Sink Kit (P27696-B21)

Requires HPE DL38X Gen10 Plus Maximum Performance Fan Kit (P14906-B21)

Requires HPE DL38X Gen10 PRI SEC w/o Retainer Kit (P36771-B21)

Requires HPE DL38X Gen10 Tri-win Retainer Kit (P36774-B21) if heavy cable is used

Max = 2

A Maximum of 6 NVMe Drives allowed when any quantity GPU is selected. All NVMe Drives selected must be below 15W

8 NVMe Drives supported with this Graphics Option. Power consumption limitation while selecting Drives and Drive Cages

HPE ProLiant DL300 Gen10 Plus GPU 2x 8-pin Cable Kit	P39100-B21
HPE ProLiant DL300 Gen10 Plus GPU 8-pin Keyed Cable Kit	P39102-B21
HPE ProLiant DL380 Gen10 Plus 8-pin/12-pin 2-way Power Cable Kit for NVIDIA H100 GPU	P59212-B21
HPE ProLiant DL380 Gen10 Plus 8-pin/12-pin 3-way Power Cable Kit for NVIDIA H100 GPU	P61423-B21

GPU Information

Cesar [illegible]
Director
ITSS S.A.

Core Options

HPE DL380 Gen10 Plus Configuration

Part number	Card	Qty supp.	PCIe	8/16 SFF[3]	24 SFF[3] (Or 8 SSF/16 SFF if >1 SFF is NVMe storage	8LFF[3] w/ Power Switch	12LFF[3]
R9P49C[1,2,8]	NVIDIA A100 80GB PCIe NonCEC Accelerator	2	Gen 4	25C	Not supported	20C	Not supported
R6B53C[1,2,6]	NVIDIA A100 40GB PCIe Computational Accelerator for HPE	3	Gen 4	30C	20C (not recommended support)	25C	20C
R7E31C[1,2,6]	NVIDIA A40 48GB PCIe Graphics Accelerator for HPE	2	Gen 4	25C	20C (not recommended support)	22C	Not supported
R9S37C[1,2,6]	NVIDIA A40 48GB PCIe Non-CEC Accelerator for HPE	3	Gen 4	25C	20C (not recommended support)	22C	Not supported
R7G39C[1,2,6]	NVIDIA A30 24GB PCIe Accelerator for HPE	3	Gen 4	30C	30C	30C	30C
R7G40C[1,2,4]	NVIDIA A10 24GB PCIe Accelerator for HPE	5	Gen 4	25C	15C (not supported)	25C	15C (Not supported)
R9H23C[1,2,5]	NVIDIA A2 16GB PCIe NonCEC Accelerator	8	Gen 4	35C (>30C may throttle)	35C (>30C may throttle)	35C (>30C may throttle)	20C
R0W29C[1,2,5]	HPE NVIDIA Tesla T4 16GB Module	8	Gen 3	35C (>30C may throttle)	35C (>30C may throttle)	35C (>30C may throttle)	25C

Notes:

[1] Requires High Performance Fan Kit (P14608-B21)

[2] Supported on CPUs with 270W TDP or below.

[3] Temperatures shown in column are for ambient temperature in degrees Celsius.

[4] Requires DL300 Gen10 Plus GPU 2x8p Cable Kit (P39101-B21)

[5] Could observe sub-optimal performance if installed in x8 slot

[6] Requires HPE DL300 Gen10 Plus GPU 8p Keyed Cable Kit (P39102-B21)

[7] System memory should be 2x GPU memory.

[8] There is no Energy Star certification with Graphic cards.

Cesar Acosta
Director
HCS S.A.

Core Options

- P14592-B21 - HPE DL380 Gen10+ 2x16 Slot LP FIO Kit
- P27110-B21 - HPE DL380 Gen10+ 2x x16 SlimSAS Prim Kit

[illegible] Secondary Riser must be selected

Primary Riser

- P14598-B21 - HPE DL380 Gen10+ 2x16 Slot 2-3 FIO Kit
- P14592-B21 - HPE DL380 Gen10+ 2x16 Slot 1-2 FIO Kit
- P27110-B21 - HPE DL380 Gen10+ 2x x16 SlimSAS Prim Kit

Secondary Riser

- P14604-B21 - HPE DL380 Gen10+ 2x16 Slot 2-3 SEC Riser Kit
- P14590-B21 - HPE DL380 Gen10+ 2x16 Slot 1-2 SEC Riser Kit
- P27115-B21 - HPE DL380 Gen10+ 2x x16 SlimSAS Sec Kit

If Qty 1 of HPE GPU is selected then no other PCIe cards can be populated on the Primary Riser. The "PCIe Card Capacity Limits" must account for this limitation

If Qty 2 of HPE GPU is selected then no other PCIe cards can be populated on Primary and Secondary Risers. The "PCIe Card Capacity Limits" must account for this limitation

If Qty 1 of H100 GPU is selected then HPE DL380 Gen10+ 2x Cpu Kit NVIDIA H100 (P50212-B21) must be selected.

If Qty 2 of H100 GPU is selected then HPE DL380 Gen10+ 2x Cpu Kit NVIDIA H100 (P50212-B21) must be selected.

If Qty 2 GPU is selected then Drives (NVMe/SAS/SATA) above 11TB cannot be selected

If Qty 1 GPU is selected then no rear drive cage can be selected

NVIDIA T4 16GB Computational Accelerator for HPE — R0W29C

Notes:

If more than one GPU is selected, the GPU SKU numbers must match. Mix and match GPUs is not allowed.

System memory should be 2x GPU memory.

This option requires the High Performance Fans Kit (P24608-B21) to be selected

This option is being considered for 8 12_FF Model-X or 24SFF Model-X. This rule does not apply to these models already come standard with the High Performance Fans

This option requires the selection of the High Performance Heatsink (P27095-B21)

Max of 3 NVMe Drives allowed for selection with this Graphics Option (All NVMe Drives selected must be below 11TB)

If NVMe Drives is selected with this Graphics Option then it can be populated in front cage only. Please consider this limitation while selecting Drives and Drive Cage

This Graphics option and SAS/SATA Drives cannot be ordered together

Graphics option and 100Gb or above PCIe Network Interface Card (P10180-B21 Cavium) cannot be ordered together.

Cesar [illegible]
Director
ITC S.A.

Core Options

Could observe sub-optimal performance if installed in x8 slot

NVIDIA A16 64GB PCIe Non-CEC Accelerator for HPE R8T26C

Notes:

Max = 3

- This GPU requires Pwr Cable Kit (P39102-B21) to also be selected
- This option requires the Max Performance Fan Kit (P14608-B21) to be selected
- This option requires the selection of the High Performance Heatsink (P27095-B21)
- Max of 8 NVMe Drives allowed for selection with this Graphics Option (All NVMe Drives selected must be below 11W)
- This Graphics option and SAS4 Drives cannot be selected together
- If Qty 1 of this GPU is selected then Qty 1 of PRI/SEC w/o Retainer Kit (P38771-B21) must be selected
- Graphics Option and 40Gb or above PCIe Networking/ Infiniband/ Smart IO (HW) Cards cannot be selected together
- This option cannot be selected with 12LFF Model X

NVIDIA A10 24GB PCIe Non-CEC Accelerator for HPE R9W59C

Notes:

Max = 5

- This option requires the Max Performance Fan Kit (P14608-B21) to be selected
- This option requires the selection of the High Performance Heatsink (P27095-B21)
- This option cannot be selected with 24SFF Model X and 12LFF Model X
- Max of 8 NVMe Drives allowed for selection with this Graphics Option (All NVMe Drives selected must be below 11W).
- This Graphics option and SAS4 Drives cannot be selected together.
- This option requires Power Cable Kit P39100-B21
- Graphics Option and 40Gb or above PCIe Networking/ Infiniband/ Smart IO (HW) Cards cannot be selected together.
- If Qty 1 or 2 of this GPU is selected and can be populated in primary riser then PRI/SEC w/o Retainer Kit (P38771-B21) need not be selected

NVIDIA A30 PCIe Non-CEC Accelerator for HPE R9S38C

Notes:

Max = 3

- This GPU requires Pwr Cable Kit (P39102-B21) to also be selected
- This option requires the Max Performance Fan Kit (P14608-B21) to be selected.
- This option requires the selection of the High Performance Heatsink (P27095-B21)
- Max of 8 NVMe Drives allowed for selection with this Graphics Option (All NVMe Drives selected must be below 11W).
- This Graphics option and SAS4 Drives cannot be selected together
- If Qty 1 of this GPU is selected then Qty 1 of PRI/SEC w/o Retainer Kit (P38771-B21) must be selected.
- Graphics Option and 40Gb or above PCIe Networking/ Infiniband/ Smart IO (HW) Cards cannot be selected together

NVIDIA A2 16GB PCIe Non-CEC Accelerator for HPE R9H23C

Notes:

- Requires HPE DL38X Gen10+ PRI/SEC w/o Retainer Kit (P38771-B21)
- Requires HPE DL38X Gen10+ Tier w/o Retainer Kit (P38774-B21) if tertiary riser is selected
- This option requires the High Performance Fan Kit (P14608-B21) to be selected.
- This option requires the High Performance Heat sink (P27095-B21)
- System memory should be 2x GPU memory.

Core Options

Part number	Description	Primary	Secondary	Tertiary	Top slot	Middle Slot	Bottom slot	Ports	Drive count
P27092-B21	HPE DL380 G10+ 4p SlimSAS Prim Riser Kit	O	N	N	-	-	-	4	8
P27093-B21	HPE DL380 Gen10 Plus 2p SlimSAS Tertiary Kit	N	N	O	-	-	-	2	4
P35416-B21	HPE DL380 Gen10 Plus 3p x8 SlimSAS Sec Kit	N	O	N	-	x8	-	3	6
P35417-B21	HPE DL380 G10+ 4p SlimSAS Sec Riser Kit	N	O	N	-	-	-	4	8
P38771-B21	HPE DL38X Gen10 Plus PRI/SEC wo Retainer Kit	O	O	N	-	-	-	-	-
P38774-B21	HPE DL38X Gen10 Plus Ter wo Retainer Kit	N	O	O	-	-	-	-	-
P14575-B21	HPE DL38X Gen10 Plus Prim NEBS Riser Kit	O	O	N	x8	x8	x8	-	-
P14577-B21	HPE DL38X Gen10 Plus Tertiary NEBS Riser Kit	N	O	O	x16	-	-	-	-
P25903-B21	HPE DL38X Gen10 Plus 2LFF Low Profile Secondary Riser Kit	N	O	N	-	-	-	-	-
P14580-B21	HPE ProLiant DL38X Gen10 Plus 2LFF Tertiary Riser Cage Kit	N	N	O	-	-	-	-	-

Notes:

[illegible] Optional; N = not supported or sold/connectivity not present

[illegible] is included on all slots would observe sub-optimal performance

[illegible] ProLiant DL Gen10 Plus server users please read

https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00043229enw

HPE Power Supplies

European Union Erp Lot 9 Regulation

Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies. 94% for multi-output and 96% for single-output. HPE Flexible Slot power supplies are single-output, and part numbers 865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements.

HPE is on target to fulfil compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy requests with the current power supplies by the set deadline.

865438-B21

HPE 800W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit

Notes: [illegible]

865434-B21

HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit

Notes: [illegible]

865428-B21

HPE 800W Flex Slot Universal Hot Plug Low Halogen Power Supply Kit

Notes: [illegible]

P38995-B21

HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit

Notes: [illegible]

Cesar Acosta
Director
IPCS S.A.

Core Options

HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit P03178-B21
Notes: Flex Slot Titanium power supplies support power efficiency of up to 96% and include a standard C-14 power inlet connector

HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit P44712-B21
Notes: Flex Slot Titanium power supplies support power efficiency of up to 96% and are EU Lot 9 compliant

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit P38997-B21
Notes: Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14 power inlet connector that can support HPE Power Discovery Services (blue connector).

HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit P17023-B21
Notes: Flex Slot -48VDC power supplies support power efficiency of up to 94%

HPE 1600W -48VDC Power Cable Lug Kit P36877-B21

HPE Cooling Options

HPE ProLiant DL300 Gen10 Plus 2U Standard Fan Kit P37042-B21
HPE DL38X Gen10 Plus Maximum Performance Fan Kit P14608-B21

Notes:
This kit is required for specific **Ambient temperature environments**.
High Performance fan kit consists of 6 fans, these will need to replace all the standard fans in the unit, and fill all 6 fan cages.
The 12 LFF and 24 SFF models (including field upgrades to 24 SFF) will already include 6 High Performance fan kits
The High Performance fan kit is needed to support certain ASHRAE operating environments
For elevated ambient temperature support please see
http://www.hpe.com/servers/ashrae

HPE ProLiant DL380 Gen10 Plus Standard Heat Sink Kit P37034-B21
HPE ProLiant DL380 Gen10 Plus High Performance Heat Sink Kit P27095-B21
Notes: High performance heat sink required for processors with a TDP equal or greater than 150W.

HPE Computation and Graphics Accelerators

NVIDIA H100 80GB PCIe Accelerator for HPE R9S41C

Notes:

Max = 2

- Mixing of different GPU types is not allowed

- Requires the Max Performance Fan Kit (P14608-B21) to be selected.

- Requires the selection of the High Performance Heatsink (P27095-B21)

NVIDIA H100 SAS4 Drives cannot be selected together

- NVIDIA H100 and 400Gb or above PCIe Networking/ Infiniband/ Smart IO (HW) Cards cannot be selected together
- If Qty1 of H100 GPU is selected then any one of below Primary Riser must be selected

  o P14599-B21 HPE DL38X Gen10+ 2x16 Slot 2/3 FIO Kit

Cesar Acosta
Director
ATCO S.A.

Core Options

Notes:

The Primary Riser supplied by default in the chassis is a x8 FH, Flex x16 LP FL and x8 FH [illegible]

[illegible] second processor is required

[illegible] installed on x8 slots could observe sub-optimal performance

HPE ProLiant DL380 Gen10 Plus x8/x16/x8 Primary FIO Riser Kit	P37038-B21
HPE DL38X Gen10 Plus x8/x16/x8 Secondary Riser Kit	P14587-B21

Notes:

Requires selection of a 2nd processor

[illegible] installed on x8 slots could observe sub-optimal performance

HPE DL38X Gen10 Plus x8/x8 Tertiary Riser Kit	P14581-B21

Notes

Requires selection of a 2nd processor

[illegible] installed on x8 slots could observe sub-optimal performance.

HPE DL38X Gen10 Plus x16 Tertiary Riser Kit	P14588-B21

Notes: Requires selection of a 2nd processor

HPE DL38X Gen10 Plus x16/x16 Slot 1/2 Secondary Riser Kit	P14589-B21

Notes: Requires selection of a 2nd processor

HPE DL38X Gen10 Plus x16/x16 Slot 2/3 Secondary Riser Kit	P14590-B21

Notes: Requires selection of a 2nd processor

HPE DL38X Gen10 Plus x16/x16 Slot 1/2 FIO Riser Kit	P14592-B21
HPE DL38X Gen10 Plus x16/x16 Slot 2/3 FIO Riser Kit	P14599-B21
HPE DL38X Gen10 Plus Slot1 x16 Adder for Slot2/3 Riser Kit	P14600-B21

Notes: Requires selection of a 2nd processor

HPE ProLiant DL380 Gen10 Plus 2-port 4NVMe x16 SlimSAS Secondary Riser Kit	P27089-B21

Notes: Requires selection of a 2nd processor

HPE ProLiant DL380 Gen10 Plus 2-port 4NVMe x16 SlimSAS Primary Riser Kit	P27090-B21
HPE ProLiant DL380 Gen10 Plus 3-port 6NVMe x8 SlimSAS Primary Riser Kit	P27091-B21

Notes: [illegible] installed on x8 slots could observe sub-optimal performance

HPE ProLiant DL380 Gen10 Plus 4-port 8NVMe SlimSAS Primary Riser Kit	P27092-B21
HPE ProLiant DL380 Gen10 Plus 2-port 4NVMe SlimSAS Tertiary Riser Kit	P27093-B21

Notes: [illegible]

HPE ProLiant DL380 Gen10 Plus 3-port 6NVMe x8 SlimSAS Secondary Riser Kit	P35416-B21

Notes:

[illegible]

[illegible]

HPE ProLiant DL380 Gen10 Plus 4-port 8NVMe SlimSAS Secondary Riser Kit	P35417-B21

Notes: [illegible]

HPE DL385 Gen10 Plus Primary/Secondary Riser Cage without Retainer Clip	P38771-B21
HPE DL385 Gen10 Plus Tertiary Riser Cage without Retainer Clip	P38774-B21
HPE DL38X Gen10 Plus Primary NEBS-compliant Riser Kit	P14575-B21

Notes: [illegible]

HPE DL38X Gen10 Plus Tertiary NEBS-compliant Riser Kit	P14677-B21

Notes: [illegible]

HPE DL38X Gen10 Plus x8/x16/x8 Secondary Riser Kit	P14587-B21

Cesar Acosta
Director
ITCS S.A.

Core Options

Notes:

Requires selection of a 2nd processor

- x16 cards installed on x8 slots could observe sub-optimal performance

Risers

Riser Information*

Part number	Description	Riser position			Bus width (Gen4 lanes)			NVMe Direct Connect	
		Primary	Secondary	Tertiary	Top slot	Middle Slot	Bottom slot	Ports	Drive count
N/A	This is the default riser in the chassis	D	N	N	x8	x16	x8	-	-
P37038-B21	HPE DL380 Gen10 Plus x8/x16/x8 Prim FIO Kit	O	N	N	x8	x16	x8	-	-
P14587-B21	HPE DL38X Gen10 Plus x8/x16/x8 Sec Riser Kit	O	O	N	x8	x16	x8	-	-
P14581-B21	HPE DL38X Gen10 Plus 2x8 Tertiary Riser Kit	N	N	O	x8	x8	-	-	-
P14588-B21	HPE DL38X Gen10 Plus x16 Tertiary Riser Kit	N	N	O	x16	-	-	-	-
P14589-B21	HPE DL38X Gen10 Plus 2x16 Slot 1/2 Riser Kit	O	O	N	x16	x16	-	-	-
P14590-B21	HPE DL38X Gen10 Plus 2x16 Slot 2/3 Riser Kit	O	O	N	-	x16	x16	-	-
P14592-B21	HPE DL38X Gen10 Plus 2x16 Slot 1/2 FIO Kit	O	N	N	x16	x16	-	-	-
P14599-B21	HPE DL38X Gen10 Plus 2x16 Slot 2/3 FIO Kit	O	N	N	-	x16	x16	-	-
P14600-B21	HPE DL38X Gen10 Plus Slot1 x16 Slot2/3 Kit	O	O	N	x16	-	-	-	-
P27089-B21	HPE DL380 Gen10 Plus 2p x16 SlimSAS Sec Kit	N	O	N	-	x16	-	2	4
P27090-B21	HPE DL380 Gen10 Plus 2p x16 SlimSAS Prim Kit	O	N	N	-	x16	-	2	4
P27091-B21	HPE DL380 Gen10 Plus 3p x8 SlimSAS Prim Kit	O	N	N	-	x8	-	3	6

Cesar Arrieta
Director
Ices S.A.

Core Options

2. These cards are not supported with mid-tray drive cages for both LFF/SFF chassis.

3. Required to use Max Performance Fan Kit

4. Only supported on 1/2/4/5/7 PCIe slots, not supported in slots 3, and 6.

5. Could observe sub-optimal performance if installed in x8 slot.

Notes:

[illegible] AOC cables causes a 3 degree Celsius drop in ambient temperature requirements (25C - 3C = 22C). No support for P11324-B21 when ambient temperature is less 20C. List of V2 AOC cables

[illegible]	HPE IB HDR 200Gb QSFP56 3m AOC
[illegible]	HPE IB HDR 200Gb QSFP56 5m AOC
[illegible]	HPE IB HDR 200Gb QSFP56 10m AOC
[illegible]	HPE IB HDR 200Gb QSFP56 1m AOC
[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC
[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC

HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter — 829335-B21

Notes:

[illegible]

HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter — P23665-B21

Notes:

[illegible] sub-optimal performance if installed in x8 slot

[illegible]

HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter — P23666-B21

Recommended Ambient Temparate

System Config	P23665-B21	P23666-B21
8LFF	30C	30C
24SFF	30C	30C
16SFF	30C	30C
8LFF	30C	30C

Other Restrictions

6. These cards ar note supported with 12LFF CTO config.

3. These cards are not supported with mid-tray drive cages for both LFF/SFF chassis.

7. Required to use Max Performance Fan Kit

4. Only supported on 1/2/4/5/7 PCIe slots, not supported in slots 3, and 6.

9. Could observe sub-optimal performance if installed in x8 slot.

Notes:

Using V2 AOC cables causes a 5 degree Celsius drop in ambient temperature requirements (30C - 3C = 27C). No support for P23665-B21 and P23666-B21 when ambient temperature is less 20C. List of V2 [illegible]

Cesar Acosta
Director
ITCG S.A.

Core Options

AOC cables

o P28169-B21	HPE IB HDR 200Gb QSFP56 3m AOC
o P28169-B22	HPE IB HDR 200Gb QSFP56 5m AOC
o P28169-B23	HPE IB HDR 200Gb QSFP56 10m AOC
o P28169-B24	HPE IB HDR 200Gb QSFP56 15m AOC
o P28169-B25	HPE IB HDR 200Gb QSFP56 20m AOC
o P28169-B26	HPE IB HDR 200Gb QSFP56 30m AOC

HPE Smart IO

Pensando Distributed Services Card (DSC)

Pensando Distributed Services Platform DSC-25 Enterprise 10/25Gb 2-port SFP28 Card	**P26966-B21**

Notes:

- Legacy FIO Mode (758959-B22) not supported with this option on Networking Choice (NC) Configure-to-Order (CTO) chassis. To continue with the combined selection of this networking option and Legacy FIO Mode on NC CTO chassis, an additional networking option (stand up NIC or Flex slot LOM) without the Legacy FIO mode restriction must be selected.
- DSC card must be installed in slot 1 when configured with Pensando for HPE iLO Adaptive LOM module (P26969-B21)
- Each card instance requires one RTU license of Silver or Platinum software. In case of more than one adapter, RTU licenses do not need to be of the same part number
- One 3yr/4yr/5yr Silver or 3yr/4yr/5yr Platinum software license must be purchased for every DSC-25 card/adapter in a server
- 1yr Silver, 1yr Platinum software licenses are reserved for renewals only

DSP Silver Software Licenses

Pensando Distributed Services Platform Enterprise 1-year Renewal Subscription 24x7 Support E-RTU	**R6A06AAE**
Pensando Distributed Services Platform Enterprise 3-year Subscription 24x7 Support E-RTU	**R6A07AAE**
Pensando Distributed Services Platform Enterprise 4-year Subscription 24x7 Support E-RTU	**R6F68AAE**
Pensando Distributed Services Platform Enterprise 5-year Subscription 24x7 Support E-RTU	**R6A08AAE**

DSP Platinum Software Licenses

Pensando Distributed Services Platform Enterprise Pro 1-year Renewal Subscription 24x7 Support E-RTU	**R6A09AAE**
Pensando Distributed Services Platform Enterprise Pro 3-year Subscription 24x7 Support E-RTU	**R6A10AAE**
Pensando Distributed Services Platform Enterprise Pro 4-year Subscription 24x7 Support E-RTU	**R6F69AAE**
Pensando Distributed Services Platform Enterprise Pro 5-year Subscription 24x7 Support E-RTU	**R6A11AAE**

HPE I/O Expansion Options

Cesar Acosta
Director
TCS S.A.

Core Options

HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adaptor	P31323-B21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter	P31348-B21

Recommended System Ambient Temperature

System Config	DIMM Capacity	P31323-B21	P31348-B21
8LFF (SAS/SATA)	64GB	20C[1]	20C[1]
16SFF (SAS/SATA)	64GB	25C	25C
8SFF (SAS/SATA)	64GB	25C	25C
8SFF (NVMe)	64GB	20C[1]	20C[1]
16SFF (SAS/SATA)	128GB	20C[1]	20C[1]
8SFF (SAS/SATA)	128GB	20C[1]	20C[1]

Other Restrictions

2. These cards are not supported with 12LFF/24SFF CTO config.

2. These cards are not supported with mid-tray drive cages for both LFF/SFF chassis.

3. Required to use Max Performance Fan Kit

4. Not supported with DIMMs with more than 128GB

5. Not supported with CPUs more than 240W

6. Only supported on 1/2/4/5/7 PCIe slots, not supported in slots 3, and 6.

7. Could observe sub-optimal performance if installed in x8 slot.

Notes:

[illegible]

[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC
[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC
[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC
[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC
[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC
[illegible]	HPE IB HDR 200Gb QSFP56 [illegible] AOC

HPE InfiniBand NDR200 1-port OSFP PCIe5 x16 MCX75310AAS-HEAT Adapter	P45642-B21

Recommended Ambient Temparate

System Config	Qty per server	P45642-B21 HPE InfiniBand NDR200 + AOC cable
8SFF	1	25C
16SFF	1	25C
24SFF	1	25C
8LFF	1	25C
12LFF	1	25C

Other Restrictions

Cesar Acosta
Director
ICS S.A.

Core Options

This card is not supported with mid-tray drive cages for both LFF/SFF chassis.

Required to use Max Performance Fan Kit

Only supported on 1/2/4/5/7 PCIe slots, not supported in slots 3, and 6.

Could observe sub-optimal performance if installed in x8 slot.

HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 MCX653105A-HDAT Adapter — P23664-B21

Recommended Ambient Temperate System Config	P23664-B21
8SFF	30C
24SFF	30C
16SFF	30C
8LFF	30C

Other Restrictions

These cards ar note supported with 12LFF CTO config.

These cards are not supported with mid-tray drive cages for both LFF/SFF chassis.

Required to use Max Performance Fan Kit

Only supported on 1/2/4/5/7 PCIe slots, not supported in slots 3, and 6.

Could observe sub-optimal performance if installed in x8 slot.

Notes:

- Using V2 AOC cables causes a 3 degree Celsius drop in ambient temperature requirements (30C - 3C = 27C). No support for P23664-B21 when ambient temperature is below 20C. List of V2 AOC cables.

  - P28169-B21 HPE IB HDR 200Gb QSFP56 3m AOC
  - P28169-B22 HPE IB HDR 200Gb QSFP56 5m AOC
  - P28169-B23 HPE IB HDR 200Gb QSFP56 10m AOC
  - P28169-B24 HPE IB HDR 200Gb QSFP56 15m AOC
  - P28169-B25 HPE IB HDR 200Gb QSFP56 20m AOC
  - P28169-B26 HPE IB HDR 200Gb QSFP56 30m AOC

HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adaptor — P31324-B21

Recommended System Ambient Temperature System Config	P31324-B21
8LFF	25C
24SFF	25C
16SFF	30C
8SFF	30C

Other Restrictions

These cards are not supported with 12LFF CTO config.

Cesar Acosta
Director
MCS S.A.

Core Options

Notes: [illegible]

Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P26264-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P26262-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P08443-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P08458-B21

Notes: [illegible]

Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P42044-B21
Mellanox MCX512F-ACHT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P13188-B21

Notes: [illegible]

Marvell QL41232HLCU Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P22702-B21
Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P21109-B21

100 Gigabit Ethernet Adapters

HPE NV60100M 100Gb 2-port Storage Offload Adapter	R6M41A
HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter	P31246-B21

Notes:

[illegible]

[illegible]

Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21

Recommended System Ambient Temperature

System Config	P31246-B21	P25960-B21
8LFF	25C	25C
24SFF	25C	25C
16SFF	30C	30C
8SFF	30C	30C

Other Restrictions

1. These cards are not supported with 12LFF CTO config.
2. These cards are not supported with mid-tray drive cages for both LFF/SFF chassis.
3. Required to use Max Performance Fan Kit
4. Only supported on 1/2/4/5/7 PCIe slots. not supported in slots 3, and 6.

Notes:

[illegible]

Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P21112-B21

Notes:

[illegible]

[illegible]

Cosar Accounts
Director
ITCS S.r.l.

200 Gigabit Ethernet Adapters

Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE	P10180-B21

Core Options

Recommended Ambient Temparate	
System Config	P10180-B21
8LFF	23C
24SFF	23C
16SFF	30C
8LFF	30C

Other Restrictions

These cards ar note supported with 12LFF CTO config.

These cards are not supported with mid-tray drive cages for both LFF/SFF chassis.

Required to use Max Performance Fan Kit

Only supported on 1/2/4/5/7 PCIe slots, not supported in slots 3, and 6.

200 Gigabit Slingshot Adapters

HPE Slingshot SA210S Ethernet 200Gb 1-port PCIe NIC — R4K46A

Notes:

This option requires the selection of Max Performance Fan Kit (P14608-B21)

- This option cannot be selected with 12LFF Model X
- Max = 3

Can only be selected or configured for a Cray Shasta Solutions or Rogue Solutions. Not configurable for Non-Cray or Non-Rogue Solutions

OCP 3.0 Adapters

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P51181-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10097-B21
Marvell QL41132HQRJ Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10103-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P26256-B21
Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P28778-B21
Marvell QL41132HQCU Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P08452-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21
Mellanox MCX562A-ACAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10112-B21

Notes. Adapter operates in either x8 or x16 mode. If x16 is desired, must select The HPE ProLiant DL300 Gen10 Plus OCP x16 Enablement Kit (P36661-B21)

Marvell QL41232HQCU Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10118-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21

Notes:

Requires selection of HPE DL300 Gen10+ OCP x16 enablement Kit (P36661-B21).

This option requires the selection of Max Performance Fan Kit (P14608-B21).

- This option cannot be selected with 12LFF Model X and 24SFF Model X

This option cannot be selected if 4LFF Midtray (P26819-B21/ P55700-B21) or 8SFF x4 Mid Tray (P27189-B21) or 8SFF U.3 x4 Mid Tray (P39769-B21) is selected.

OCP 3.0 Enablement

HPE ProLiant DL300 Gen10 Plus OCP x16 Enablement Kit — P36661-B21

HPE InfiniBand

Core Options

HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65023-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50233-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.2 P5620 SSD	P51463-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47840-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65015-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50230-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.2 P5620 SSD	P51461-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47839-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65007-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50227-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.2 P5620 SSD	P51459-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47838-B21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P64999-B21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47837-B21
Mixed Use - NVMe - SFF - FIPS Solid State Drives	
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41405-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41404-B21
Read Intensive - NVMe - SFF - FIPS Solid State Drives	
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41403-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC Self-encrypting FIPS U.3 CM6 SSD	P41402-B21

Notes

- With CMK FIPS drives: If any of the NVMe SED drives is selected, then a Boot Array NVMe Trigger or Smart Array ARDC or NVMe Adapter [illegible] controller must be selected.
- SFF Tri-mode backplane connections supported [illegible] Gen10 Plus Server. [illegible] Gen10 Plus supported.
- With CMK FIPS drives: supported MR Series Tri-Mode Controllers:
  - ? P26279-B21 - Broadcom MR416i-a Controller for HPE Gen10 Plus
  - ? P26207-B21 - Broadcom MR416i-p Controller for HPE Gen10 Plus
  - ? P26276-B21 - Broadcom MR216i-a Controller for HPE Gen10 Plus
  - ? P26205-B21 - Broadcom MR216i-p Controller for HPE Gen10 Plus
- With Direct Attach SED drives:
  - ? TPM2.0 is required for Local Key Management. Keys will be encrypted locally by TPM and securely locally.
  - ? LKO Advanced required for Remote Key Management. Keys is stored in remote key manager.
- With CMK controller + SED drives:

Cesar Acosta
Director
ITCS S.A.

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Core Options

- ? TPM is not required for Local Key Management as Key is stored in controller
- ? LO Adv is required for Remote Key Management. Key is stored in remote key manager.

Hard Drive Blank Kits

HPE Gen9 LFF HDD Spade Blank Kit	807878-B21
HPE Small Form Factor Hard Drive Blank Kit	666987-B21
Hard Drive Kits	
HPE DL38X Gen10 Plus 2LFF Low Profile Secondary Riser Kit	P25903-B21
HPE ProLiant DL38X Gen10 Plus 2SFF x4 Tri-Mode 24G U.3 BC Front/Tertiary Drive Cage Kit	P26922-B21
HPE ProLiant DL300 Gen10 Plus 2U 2SFF x4 Tri-Mode 24G U.3 BC Side-by-Side Drive Cage Kit	P26924-B21
HPE ProLiant DL300 Gen10 Plus 2U 8SFF SAS/SATA 12G BC Front Bay 1/2 Drive Cage Kit	P26930-B21
HPE ProLiant DL300 Gen10 Plus 2U 8SFF x4 Tri-Mode 24G U.3 BC Front Drive Cage Kit	P26931-B21
HPE ProLiant DL300 Gen10 Plus 2U 8SFF x4 NVMe 16G U.2 BC Front Drive Cage Kit	P26932-B21
HPE ProLiant DL300 Gen10 Plus 2U 8SFF x1 Tri-Mode 24G U.3 BC Front Drive Cage Kit	P27194-B21
HPE ProLiant DL38X Gen10 Plus 2LFF Primary Riser Cage Kit	P14579-B21
HPE ProLiant DL38X Gen10 Plus 2LFF Tertiary Riser Cage Kit	P14580-B21
HPE DL38X Gen10 Plus Universal Media Bay Kit	P14609-B21
HPE ProLiant DL38X Gen10 Plus 4LFF SAS/SATA 12G LP Midplane Drive Cage Kit	P26919-B21
HPE ProLiant DL380 Gen10 Plus 2SFF SAS/SATA 12G BC x16 Slot 3 Primary/Secondary Riser Kit	P26920-B21
HPE ProLiant DL380 Gen10 Plus 2SFF SAS/SATA 12G BC Front/Tertiary Stackable Drive Cage Kit	P26923-B21
HPE ProLiant DL300 Gen10 Plus 2U 2SFF SAS/SATA 12G BC Side-by-Side Drive Cage Kit	P26925-B21
HPE ProLiant DL38X Gen10 Plus 8SFF x1 Tri-Mode 24G U.3 BC Midplane Drive Cage Kit	P27193-B21
HPE ProLiant DL300 Gen10 Plus 2U 8SFF x4 Tri-Mode 24G U.3 BC Midplane Drive Cage Kit	P39769-B21

HPE Networking

1 Gigabit Ethernet adapters

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P51178-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P21106-B21

10 Gigabit Ethernet adapters

Notes: Unless otherwise noted, one of the below 10Gb networking adapters below can be selected as the primary networking choice when configuring a Networking Choice (NC) Configure-to-Order (CTO) chassis. The DL380 Gen10 NC CTO chassis does not come with embedded networking, hence the requirement to configure with either a FlexibleLOM or select PCIe networking adapter

Marvell QL41134HLCU Ethernet 10Gb 4-port SFP+ Adapter for HPE	P10094-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE	P26253-B21
Marvell QL41132HLRJ Ethernet 10Gb 2-port BASE-T Adapter for HPE	P08437-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P26259-B21
Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P28787-B21
Marvell QL41132HLCU Ethernet 10Gb 2-port SFP+ Adapter for HPE	P21933-B21

25 Gigabit Ethernet adapters

Cesar Acosta
Director
Atos S.A.

Core Options

HPE 2TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861691-B21
HPE 1TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861686-B21

SSD Selection

For SSD selection guidance, please visit https://ssd.hpe.com/

Read Intensive - 24G SAS - SFF - Solid State Drives

HPE 3.84TB SAS 24G Read Intensive SFF BC Self-encrypting FIPS PM6 SSD	P41398-B21
HPE 7.68TB SAS 24G Read Intensive SFF BC Self-encrypting FIPS PM6 SSD	P41399-B21

Notes:

- For non-SED SAS drives, 24G SAS speeds require U.3 backplane [illegible] choice of either SR416i-a or SR416ie-p Tri-Mode controller. Otherwise downshift to 12G SAS.
- For SED SAS drives, SED capability requires choice of either MR416i-a, MR416i-p, MR416ie-a or MR416ie-p Tri-Mode controller and will run at 12G speeds.

Read Intensive - 12G SAS - SFF - Solid State Drives

HPE 15.36TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49045-B21
HPE 7.68TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40509-B21
HPE 7.68TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49041-B21
HPE 3.84TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40508-B21
HPE 3.84TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49035-B21
HPE 1.92TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40507-B21
HPE 1.92TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49031-B21
HPE 960GB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40506-B21
HPE 960GB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49029-B21

Notes: For non-SED SAS drives, 24G SAS speeds require U.3 backplane [illegible] choice of either SR416i-a or SR416ie-p Tri-Mode controller. Otherwise downshift to 12G SAS.

Mixed Use - 24G SAS - SFF - Solid State Drives

HPE 800GB SAS 24G Mixed Use SFF BC Self-encrypting FIPS PM6 SSD	P41400-B21
HPE 1.6TB SAS 24G Mixed Use SFF BC Self-encrypting FIPS PM6 SSD	P41401-B21

Notes:

- For non-SED SAS drives, 24G SAS speeds require U.3 backplane [illegible] choice of either SR416i-a or SR416ie-p Tri-Mode controller. Otherwise downshift to 12G SAS.
- For SED SAS drives, SED capability requires choice of either MR416i-a, MR416i-p, MR416ie-a or MR416ie-p Tri-Mode controller and will run at 12G speeds.

Mixed Use - 12G SAS - SFF - Solid State Drives

HPE 6.4TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49057-B21
HPE 3.84TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40512-B21
HPE 3.2TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49053-B21
HPE 1.92TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40511-B21
HPE 1.6TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49049-B21
HPE 960GB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40510-B21
HPE 800GB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49047-B21

Very Read Optimized - 6G SATA - SFF - Solid State Drives

HPE 7.68TB SATA 6G Very Read Optimized SFF BC 5400 SSD	P58228-B21

Read Intensive - 6G SATA - SFF - Solid State Drives

HPE 7.68TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40501-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40500-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC PM893 SSD	P44010-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Self-encrypting 5400P SSD	P58240-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40499-B21

Cesar Acosta
Director
DCS S.A.

Core Options

HPE 1.92TB SATA 6G Read Intensive SFF BC PM893 SSD	P44009-B21
HPE 480GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40497-B21
HPE 480GB SATA 6G Read Intensive SFF BC PM893 SSD	P44007-B21
HPE 960GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40498-B21
HPE 960GB SATA 6G Read Intensive SFF BC PM893 SSD	P44008-B21
HPE 240GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40496-B21
Mixed Use - 6G SATA - SFF - Solid State Drives	
HPE 3.84TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40505-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Self-encrypting 5400M SSD	P58248-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40504-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC PM897 SSD	P44013-B21
HPE 960GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40503-B21
HPE 960GB SATA 6G Mixed Use SFF BC PM897 SSD	P44012-B21
HPE 480GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40502-B21
HPE 480GB SATA 6G Mixed Use SFF BC S4620 SSD	P47324-B21
HPE 480GB SATA 6G Mixed Use SFF BC PM897 SSD	P44011-B21
Read Intensive - 12G SAS - LFF -Solid State Drives	
HPE 7.68TB SAS 24G Read Intensive LFF LPC Multi Vendor SSD	P49040-B21
Mixed Use - 12G SAS - LFF -Solid State Drives	
HPE 960GB SAS 12G Mixed Use LFF LPC Value SAS Multi Vendor SSD	P37009-B21
Very Read Optimized - 6G SATA - LFF - Solid State Drives	
HPE 7.68TB SATA 6G Very Read Optimized LFF LPC 5400 SSD	P58232-B21
Read Intensive - 6G SATA - LFF - Solid State Drives	
HPE 960GB SATA 6G Read Intensive LFF LPC Multi Vendor SSD	P47808-B21
Read Intensive - NVMe - SFF - Solid State Drives	
HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50224-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64848-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50222-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47847-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.2 P5520 SSD	P51457-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64846-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50219-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47846-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.2 P5520 SSD	P51455-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64844-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50216-B21
HPE 1.9TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47845-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.2 P5520 SSD	P51453-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64842-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47844-B21
Mixed Use - NVMe - SFF - Solid State Drives	

Cesar Mora

Core Options

Best product availability is limited to US, Canada, and Latin America at this time.

Notes: Maximum memory capacity and speed per processor is dependent on processor model selection or [illegible] DIMMs need to be selected in even quantities. Using 1 in quantity of DIMMs in [illegible] memory to be unbalanced, and may require a [illegible] performance.

HPE DDR4 Memory

Registered DIMMs (RDIMMs)

HPE 16GB (1x16GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06029-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06031-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06033-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06035-B21
HPE 8GB (1x8GB) Single Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P07525-B21
HPE 32GB (1x32GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P40007-B21

Load Reduced DIMMs (LRDIMMs)

HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P06037-B21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit	P06039-B21

Intel Optane Persistent Memory for HPE

Intel Optane 128GB persistent memory 200 Series for HPE	P23532-B21
Intel Optane 512GB persistent memory 200 Series for HPE	P23538-B21

HPE DDR-4 Blank Kit

HPE DDR4 DIMM Blank Kit	P07818-B21

HPE Optical Drives

HPE 9.5mm SATA DVD-ROM Optical Drive	726536-B21

Notes: HPE DL38X Gen10 Plus Universal Media Bay Kit (P14609-B21) is required for this [illegible] SFF model. No support in 12 LFF or 24 SFF models.

HPE 9.5mm SATA DVD-RW Optical Drive	726537-B21

Notes: HPE DL38X Gen10 Plus Universal Media Bay Kit (P14609-B21) is required for this [illegible] SFF model. No support in 12 LFF or 24 SFF models.

HPE Mobile USB DVD-RW Optical Drive	701498-B21

Notes: This is only supported on USB 3.0 ports.

Media Bay Kits

HPE DL38X Gen10 Plus Universal Media Bay Kit	P14609-B21

Notes:

- The HPE DL38X Gen10 Plus Universal Media Bay Kit provides front D-sub video port and 2xUSB 2.0. It is supported for 8x SFF front drives or 2 NVMe front drives. Does not provide ODD support. Not hot-swappable and can only be located in Pos 1 in either an 8 SFF or 8/16 SFF model.
- [illegible]

Cesar [illegible]
Director
[illegible] S.A.

HPE Hard Disk Drives

Mission Critical - 12G SAS - SFF Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Self-encrypting FIPS HDD	P28618-B21

Core Options

HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Self-encrypting FIPS HDD	P28622-B21
Enterprise - 12G SAS - SFF Drives	
HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P28352-B21
HPE 1.8TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P53562-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P28586-B21
HPE 1TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty HDD	P53563-B21
HPE 600GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P53560-B21
HPE 600GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P53561-B21
HPE 300GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P28028-B21
HPE 300GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P40430-B21
Midline - 12G SAS - SFF Drives	
HPE 2TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty 512e HDD	P28505-B21
HPE 900GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P40432-B21
Midline - 6G SATA - SFF Drives	
HPE 2TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty 512e HDD	P28500-B21
HPE 1TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty HDD	P28610-B21
Midline - 12G SAS - LFF Drives	
HPE 20TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53553-B21
HPE 18TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37669-B21
HPE 16TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23608-B21
HPE 14TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	P09155-B21
HPE 12TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881781-B21
HPE 10TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD	P53556-B21
HPE 8TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834031-B21
HPE 6TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861746-B21
HPE 4TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833928-B21
HPE 2TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833926-B21
Midline - 6G SATA - LFF Drives	
HPE 20TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53554-B21
HPE 18TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37678-B21
HPE 16TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23449-B21
HPE 14TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	P09165-B21
HPE 12TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881787-B21
HPE 10TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD	P53557-B21
HPE 8TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834028-B21
HPE 6TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861742-B21
HPE 4TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861683-B21

Core Options

- 8SFF U.3 x1 Kit (P27193-B21)
- 8SFF U.2 x4 Kit (P39769-B21)

[illegible] below 12W only [illegible] drives [illegible]

Mixing of Drives (SAS/ SATA/ NVMe) is allowed on U.3 drive cage [illegible] with Tri-Mode Controllers

Not Tray [illegible] Processors above 165W

HPE ProLiant DL300 Gen10 Plus 2U 8SFF x4 Tri-Mode 24G U.3 BC Midplane Drive Cage Kit	P39769-B21

Notes:

This option requires the selection of High Performance Fan Kit (P14606-B21).

This option is being configured on a 12LFF Model X or 24SFF Model X, [illegible] supplies these models already come standard with the High Performance Fans

This option is standard. NO Full Length (FL) PCIe cards can be supported

Can be used only with 8SFF Model X and 24SFF Model X.

Mixing of Drives (SAS/ SATA/ NVMe) is allowed on U.3 drive cage [illegible] with Tri-Mode Controllers

Not Tray [illegible] Processors above 165W

Supports 8 SAS/SATA SFF drives in Box 1 or 2 to a max of 24 SFF SAS/SATA local

HPE ProLiant DL380 Gen10 Plus High Performance Heat Sink Kit	P27095-B21

Notes:

Required for GPU installations

Required for processors with TDP equal to or greater than 150W

This option cannot be ordered if any of the below Drive cages is ordered

- P39769-B21 - HPE DL380 Gen10 Plus U.2 Midplay Kit
- P27193-B21 - HPE DL38X Gen10 Plus 8SFF x1 Tri-Mode U.3 Kit
- P39769-B21 - HPE DL380 Gen10 2U 8SFF x4 U.2 Midplane

HPE DL38X Gen10 Plus Maximum Performance Fan Kit	P14608-B21

Notes:

This kit is required for specific **Ambient temperature environments**

This kit is required for certain GPUs configurations

This [illegible] NVMe [illegible]

[illegible]

[illegible]

HPE DL38X Gen10 Plus Rear Serial Cable Kit	P14606-B21
HPE ProLiant DL380 Gen10 Plus SFF Systems Insight Display Kit	P27096-B21

HPE Processors

Processor Option Kits

3rd Generation Intel Xeon-Platinum

Notes

[illegible]

[illegible]

[illegible]

Intel Xeon-Platinum 8352Y 2.2GHz 32-core 205W Processor for HPE	P36929-B21
Intel Xeon-Platinum 8358 2.6GHz 32-core 250W Processor for HPE	P36938-B21
Intel Xeon-Platinum 8360Y 2.4GHz 36-core 250W Processor for HPE	P36939-B21

Cesar Xenato
Director
ITCS S.A.

Core Options

Intel Xeon-Platinum 8368 2.4GHz 38-core 270W Processor for HPE	P36940-B21
Intel Xeon-Platinum 8380 2.3GHz 40-core 270W Processor for HPE	P36941-B21
Intel Xeon-Platinum 8358P 2.6GHz 32-core 240W Processor for HPE	P37598-B21
Intel Xeon-Platinum 8352V 2.1GHz 36-core 195W Processor for HPE	P37599-B21
Intel Xeon-Platinum 8351N 2.4GHz 36-core 225W Processor for HPE	P37602-B21

Notes: 8351N is single socket capable even though not being a "U" processor. No dual socket support

Intel Xeon-Platinum 8352S 2.2GHz 32-core 205W Processor for HPE	P37613-B21
Intel Xeon-Platinum 8362 2.8GHz 32-core 265W Processor for HPE	P45418-B21

Notes:
- Requires High Performance Heatsink (P27095-B21), Fans (P14602-B21) and DIMM blanks kit (P07818-B21)
- Does not support Intel Speed Select Technology - Base Frequency (SST-BF).

Intel Xeon-Platinum 8352M 2.3GHz 32-core 185W Processor for HPE	P45414-B21

Notes:
- 32/28/24 cores would result in 2.3/2.4/2.6 GHz operating points 185W/185W/185W TDPs.
- Requires High Performance Heatsink (P26479-B21).
- DIMM blanks kit (P07818-B21) recommended as enhance cooling.
- Does not support Intel Speed Select Technology - Base Frequency (SST-BF)

3rd Generation Intel Xeon-Gold

Notes:
- Processors do not ship with heatsinks. These must be ordered separately
- Field upgrades from 1st generation processors (x1xx) and 2nd generation processors (x2xx) to 3rd generation processors (x3xx) not supported
- All SKUs below ship with processor only. Adequate fans and heatsinks must be selected

Intel Xeon-Gold 6330 2.0GHz 28-core 205W Processor for HPE	P36927-B21
Intel Xeon-Gold 6338 2.0GHz 32-core 205W Processor for HPE	P36928-B21
Intel Xeon-Gold 6346 3.1GHz 16-core 205W Processor for HPE	P36934-B21
Intel Xeon-Gold 6354 3.0GHz 18-core 205W Processor for HPE	P36935-B21
Intel Xeon-Gold 6348 2.6GHz 28-core 235W Processor for HPE	P36937-B21
Intel Xeon-Gold 6338N 2.2GHz 32-core 185W Processor for HPE	P37603-B21
Intel Xeon-Gold 6330N 2.2GHz 28-core 165W Processor for HPE	P37604-B21
Intel Xeon-Gold 6314U 2.3GHz 32-core 205W Processor for HPE	P37610-B21

Notes: Single socket capable, no dual socket support.

3rd Generation Intel Xeon-Silver

Notes:
- Processors do not ship with heatsinks. These must be ordered separately
- Field upgrades from 1st generation processors (x1xx) and 2nd generation processors (x2xx) to 3rd generation processors (x3xx) not supported
- All SKUs below ship with processor only. Adequate fans and heatsinks must be selected

Intel Xeon-Silver 4316 2.3GHz 20-core 150W Processor for HPE	P36923-B21
Intel Xeon-Silver 4314 2.4GHz 16-core 135W Processor for HPE	P36922-B21
Intel Xeon-Silver 4310 2.1GHz 12-core 120W Processor for HPE	P36921-B21
Intel Xeon-Silver 4309Y 2.8GHz 8-core 105W Processor for HPE	P36920-B21

Cesar Alosta
Director
HCS S.A.

Memory Selection

To streamline the configuration process for HPE ProLiant Gen10 Plus servers and to provide the best product availability, HPE recommends memory from the list located here.
https://www.hpe.com/us/en/servers/memory.html.

Core Options

- (Max Qty 2 of the 8SFF U.2 Prem Kit (P26930-B21) OR 8SFF U.2 Prem Kit (P26930-B21) OR 8SFF U.3 Base Kit (P27194-B21) ordered. then the Universal Media Bay (P14609-B21) can be selected only if DL38x Gen10 Plus Rear Removal Special Item (870763-B21) is selected)
- Does not support HPE DL380 Gen10 2U x8x2 Tri-Mode Cbl Kit (P26930-B21) and the two slots is unavailable.

HPE ProLiant DL300 Gen10 Plus 2U 8SFF x1 Tri-Mode 24G U.3 BC Front Drive Cage Kit — P27194-B21

Notes:

- Can be ordered only with 8SFF Model X.
- (Max Qty=3 of the 8SFF U.2 Prem Kit (P26930-B21) OR 8SFF U.2 Prem Kit (P26930-B21) OR 8SFF U.3 Base Kit (P27194-B21) is selected then
  - DL38x Gen10 Plus Rear Removal Special Item (870763-B21) must be selected
  - Universal Media Bay (P14609-B21) CAN NOT be selected
- (Max Qty=2 of the 8SFF U.3 Prem Kit (P26931-B21) OR 8SFF U.2 Prem Kit (P26932-B21) OR 8SFF U.3 Base Kit (P27191-B21) ordered. then the Universal Media Bay (P14609-B21) can be selected only if DL38x Gen10 Plus Rear Removal Special Item (870763-B21) is selected)
- Requires a single Tri-Mode Cable Kit (P26930-B21) for U.2 connectivity.
- Storage Controller SAS, SATA, NVMe is ordered for U.2 connectivity. Tri-Mode Controller.

HPE ProLiant DL38X Gen10 Plus 2LFF Primary Riser Cage Kit — P14579-B21

Notes:

- Can be ordered only with DL38X Model X and DL38X Model X.
- This option is a pre-configured Riser assembly and will be installed in Primary Riser location.
- Max Qty 1 PRIMARY Riser is allowed per server.

HPE ProLiant DL38X Gen10 Plus 2LFF Tertiary Riser Cage Kit — P14580-B21

Notes:

- Can be ordered only with DL38X Model X and DL38X Model X.
- Secondary Riser is MANDATORY before Tertiary Riser is ordered.
- HPE DL38X Gen10 Plus 2LFF LP Sec Riser Kit (P25903-B21) and HPE DL38X Gen10 Plus 2LFF Tertiary Riser Kit (P14580-B21) cannot be ordered together.
- This option is pre-configured into a Riser assembly and will be installed in the Secondary Riser location.
- Since this option is part of the Riser assembly it must be classified as Secondary Riser and Max Qty 1 Secondary Riser is allowed per server.
- Requires selection of Standard Processor.

HPE DL38X Gen10 Plus 2LFF Low Profile Secondary Riser Kit — P25903-B21

Notes:

- Can be ordered only with DL38X Model X and DL38X Model X.
- HPE DL38X Gen10 Plus 2LFF LP Sec Riser Kit (P25903-B21) and HPE DL38X Gen10 Plus 2LFF Tertiary Riser Kit (P14580-B21) cannot be ordered together.
- This option is pre-configured into a Riser assembly and will be installed in the Secondary Riser location.
- Since this option is part of the Riser assembly it must be classified as Secondary Riser and Max Qty 1 Secondary Riser is allowed per server.
- Requires selection of Standard Processor.

Cesar Castro
Director
IPCS S.A.

HPE ProLiant DL38X Gen10 Plus 4LFF SAS/SATA 12G LP Midplane Drive Cage Kit — P26919-B21

Core Options

Notes:

Can be selected only with 8LFF Model-X and 12LFF Model-X.

- This option requires the selection of High Performance Fan Kit (P14608-B21).

If this option is being configured into a 12LFF Model-X or 24SFF Model-X, this rule does not apply as these models already come standard with the High Performance Fans

- If this option is selected, NO "Full Length" (FL) PCIe cards can be supported
- Max of 1 Mid tray allowed per server for selection

  - 4LFF Midtray Kit (P26919-B21)
  - 8SFF U.3 x1 Mid Tray (P27193-B21)
  - 8SFF U.3 x4 Mid Tray (P39709-B21)

- Mid Tray cannot be selected with Processors above 165W.

HPE ProLiant DL380 Gen10 Plus 2SFF SAS/SATA 12G BC x16 Slot 3 Primary/Secondary Riser Kit P26920-B21

Notes:

- This option requires the selection of High Performance Fan Kit (P14608-B21).

If this option is being configured into a 12LFF Model-X or 24SFF Model-X, this rule does not apply as these models already come standard with the High Performance Fans

If Qty 1 is selected then it can be installed into the Primary Riser location or the Secondary Riser location. If other Primary Riser is selected along with it then it will be considered as Secondary Riser and vice-versa (Max of 1 Primary Riser per Server and Max of 1 Secondary Riser per Server)

- If Qty 2 are selected then it will be installed into both Primary Riser and Secondary Riser location. No other Primary Riser and Secondary Riser are allowed
- If this Qty1 of this option is selected along with other Primary Riser (i.e. if it is selected as Secondary Riser) or Qty2 of this option is selected then

  - Tertiary Riser cannot be selected (Except Tertiary 2P NVMe Riser (P27093-B21))
  - Second Processor must be selected

HPE ProLiant DL380 Gen10 Plus 2SFF SAS/SATA 12G BC Front/Tertiary Stackable Drive Cage Kit P26923-B21

HPE ProLiant DL380 Gen10 Plus 2U 2SFF SAS/SATA 12G BC Side-by-Side Drive Cage Kit P26925-B21

Notes:

- Can be selected only with 8LFF Model-X

This option requires the selection of High Performance Fan Kit (P14608-B21).

If this option is being configured into a 12LFF Model-X or 24SFF Model-X, this rule does not apply as these models already come standard with the High Performance Fans

- HPE DL380 Gen10 Plus 2SFF U.3 SAS Kit (P26924-B21) and HPE DL380 Gen10 Plus 2SFF SAS HDD Kit (P26925-B21) cannot be selected together.

HPE ProLiant DL38X Gen10 Plus 8SFF x1 Tri-Mode 24G U.3 BC Midplane Drive Cage Kit P27193-B21

Notes:

- This option requires the selection of High Performance Fan Kit (P14608-B21).

If this option is being configured into a 12LFF Model-X or 24SFF Model-X, this rule does not apply as these models already come standard with the High Performance Fans.

If this option is selected, NO "Full Length" (FL) PCIe cards can be supported

Max of 1 Mid tray allowed per server for selection

  - 4LFF Midtray Kit (P26919-B21)

Cesar Arbota
Director
MCS S.A.

Core Options

support (Not included) and can only be located in Box 1 in either a 8 SFF or 8 LFF SFF model

The 4 x 3.5" media bay can only be used in a SFF model option only

HPE ProLiant DL380 Gen10 Plus 2SFF SAS/SATA Primary Secondary Drive Cage Kit P55696-B21

Notes:

2SFF Front Drive Cage (Primary/Secondary Rear position)

Drive Cage Capacity - MAX 2 SFF SAS/SATA drives

Requires a Tri-Mode Controller (P44460-B21)

Max = 2

Requires selection of Max Performance Fan Kit (P44460-B21)

Requires a/c power supply and redundant controller

Rear drives must be rated at 1.8V

HPE ProLiant DL380 Gen10 Plus 2SFF SAS/SATA BC Drive Cage Kit P55698-B21

Notes:

2SFF Drive Cage (Front/Rear)

Drive Cage Capacity - MAX 2 SFF SAS/SATA drives

Max = 2 for the 2SFF Model

Max = 0 for the 8SFF Model

[illegible]

Requires selection of Maximum Performance Fan Kit (P44460-B21) [illegible]

Requires a/c power supply and redundant controller

Rear drives must be rated at 1.8V

HPE ProLiant DL3xx Gen10 Plus 2U 2SFF SAS/SATA BC Drive Cage Kit P55699-B21

Notes:

2SFF rear hot-plug Drive Cage

Can only be selected on 8LFF Model X

Max = 1

Requires selection of Maximum Performance Fan Kit (P44460-B21)

Requires selection of a Tri-Mode controller

HPE ProLiant DL38x Gen10 Plus 4LFF SAS/SATA LP Drive Cage Kit P55700-B21

Notes:

4LFF Mid Tray

Drive Cage Capacity - MAX 4 LFF SAS/SATA drives

Can only be selected with 8LFF or 8LFF Model X

Max = 1

Requires selection of Maximum Performance Fan Kit (P44460-B21)

No rear hot-plug drives can be supported

Requires selection of a Tri-Mode controller

Cannot be selected with processors above 165W

HPE ProLiant DL38x Gen10 Plus 8SFF SAS/SATA to Tri-Mode Controller Backplane Kit P55516-B21

Notes:

8SFF Front Drive Cage

Drive Cage Capacity - MAX 8 SFF SAS/SATA drives

Can only be selected with 8SFF Model X

Max = 1

Requires selection of a Tri-Mode controller

Cesar Acosta
Director
TCS S.A.

122.

Core Options

HPE ProLiant DL38x Gen10 Plus 2LFF UBM to Tri-Mode LP Primary Riser Backplane Kit P55518-B21

Notes:

2LFF Rear Cage (Primary Riser Position)

- Drive Cage Capacity - MAX=2 LFF SAS/SATA drives

Can only be selected with 8LFF or 12LFF Model-X

Max = 1

- Requires selection of tri-mode controller

- Can only be selected with 8SFF Model-X

Max = 1

- Requires selection of tri-mode controller.

HPE ProLiant DL38x Gen10 Plus 2LFF UBM to Tri-Mode LP Tertiary Riser Backplane Kit P55519-B21

Notes:

- 2LFF Rear Cage (Tertiary Riser Position)

- Drive Cage Capacity - MAX=2 LFF SAS/SATA drives

- Includes (Slot 7) 1x16 PCIe FH/FL Slot (Electrically x16)

- Can only be selected with 8LFF or 12LFF Model-X

Max = 1

- Secondary riser can not be selected if this option is selected

- Requires selection of second processor.

Requires selection of tri-mode controller

HPE ProLiant DL38X Gen10 Plus 2SFF x4 Tri-Mode 24G U.3 BC Front/Tertiary Drive Cage Kit P26922-B21

Notes:

Mixing of Drives (SAS/ SATA/ NVMe) is allowed on U.3 drive cage if selected along with Tri Mode Controllers

Can be installed into the Tertiary Riser location along with HPE DL38X Gen10 Plus AROC to NVMe Adapter Kit (P14602-B21)

HPE ProLiant DL300 Gen10 Plus 2U 2SFF x4 Tri-Mode 24G U.3 BC Side-by-Side Drive Cage Kit P26924-B21

Notes:

Can be selected only with 8LFF Model-X.

- This option requires the selection of High Performance Fan Kit (P14600-B21)

- HPE DL380 Gen10 Plus 2SFF U.3 SbS Kit (P26924-B21) and HPE DL380 Gen10 Plus 2SFF SbS HDD Kit (P26925-B21) cannot be selected together.

- This option can be selected only if any one of the condition is met

  o Tri Mode Controller must be selected (Refer Controller category for details)

  o AROC to NVMe (P14602-B21) must be selected

HPE ProLiant DL300 Gen10 Plus 2U 8SFF SAS/SATA 12G BC Front Bay 1/2 Drive Cage Kit P26930-B21

HPE ProLiant DL300 Gen10 Plus 2U 8SFF x4 Tri-Mode 24G U.3 BC Front Drive Cage Kit P26931-B21

HPE ProLiant DL300 Gen10 Plus 2U 8SFF x4 NVMe 16G U.2 BC Front Drive Cage Kit P26932-B21

Notes:

- Can be selected only with 8SFF Model-X.

- If Max Qty=2 of the 8SFF U.3Premi Kit (P26921-B21) OR 8SFF U.2Premi Kit (P26932-B21) OR 8SFF U.3 Basic Kit (P27194-B21) is selected then

  o DL38x Gen10 Plus Box3 Removal Special Instr (673763-B21) must be selected

  o Universal Media Bay (P14629-B21) CAN NOT be selected

Cesar Acosta
Director
HPE S.A.

Configuration Information

HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView including 3yr 24x7 Support Track 1-server LTU	E5Y36A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support Bundle Track 1-server LTU	E5Y44A
HPE OneView Upgrade from Insight Management including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y45AAE

vSAN ReadyNode

- 3, 6, 8 or 16 node vSAN Clusters (3 node minimum)
- HW is optimized for vSAN
- VMware vSAN Advanced LTU bundled

Notes: [illegible]

Step 4: Choose additional options for Factory Integration from Core and Additional Options sections below

Cyntia Acosta
Director
ITCS S.A.

Core Options

Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an HPE approved configurator. Contact your local sales representative for additional information.

HPE Unique Options

HPE ProLiant DL38x 8SFF SAS/SATA Tri-Mode Cable Kit — P55467-B21

Notes:

- Used to support 8SFF SAS/SATA UBM2 to tri-mode controller(AROC/PCIe) on Box 1,2,3
  If Tmode Cable Kits (P55467-B21 and P55860-B21) are not selected then default cage will occupy all Embedded SATA ports.

HPE ProLiant DL38x Gen10 Plus 2SFF SAS/SATA Tri-Mode Cable Kit — P55469-B21

Notes:

- Used to support 2SFF front stackable drive cage UBM2 to tri-mode controllers(AROC/PCIe) on Box 1

HPE ProLiant DL38x LFF SAS/SATA Tri-Mode Cable Kit — P58900-B21

Notes:

- Qty 1 is used to support 8LFF SAS/SATA UBM2 to tri-mode controller(AROC/PCIe).
- Qty 1 + Qty 1 P55860-B21 HPE ProLiant DL38x Gen10 Plus 4LFF SAS/SATA Tri-Mode Cable Kit is required to support 12LFF SAS/SATA UBM2 to tri-mode controller(AROC/PCIe).

HPE ProLiant DL38x Gen10 Plus 4LFF SAS/SATA Tri-Mode Cable Kit — P55860-B21

Notes:

- Used to support 4LFF SAS/SATA UBM2 to tri-mode controllers(AROC/PCIe) on Box 1,2
  If Tmode Cable Kits (P55467-B21 and P55860-B21) are not selected then default cage will occupy all Embedded SATA ports

HPE ProLiant DL38x Gen10 Plus 2SFF Rear Tri-Mode Cable Kit — P55471-B21

Notes:

- Used to support rear 2SFF SAS/SATA UBM2 to tri-mode controllers(AROC/PCIe)

HPE ProLiant DL38x Gen10 Plus 2SFF SAS/SATA Tri-Mode Cable Kit — P55469-B21

Notes:

Used to support front stackable 2SFF SAS/SATA UBM2 to tri-mode controllers(AROC/PCIe).

HPE DL38X Gen10 Plus Universal Media Bay Kit — P14609-B21

HPE DL38X Gen10 Plus AROC to NVMe Adapter Kit — P14602-B21

Notes: Used to support upto 16 NVMe drives with Modular Controller (AROC)

HPE ProLiant DL300 Gen10 Plus 2U Standard Fan Kit — P37042-B21

HPE DL38X Gen10 Plus Maximum Performance Fan Kit — P14608-B21

Notes:

- Can be selected only with 8SFF Model X and 8LFF Model X
  For elevated ambient temperature support please see:
  http://www.hpe.com/servers/ashrae
- Max Performance fan kit consists of 6 fans, these will need to replace all the standard fans in the unit, and fill all 6 fan cages
  The 12 LFF and 24 SFF models (including field upgrades to 24 SFF) will already include 6 Max Performance fans
- Fans are redundant

HPE DL38X Gen10 Plus Universal Media Bay Kit — P14609-B21

Notes:

- The HPE DL380 Gen10 Plus Universal Media bay provides front Display Port and 2x USB 2.0, plus support for 2x SFF front drives or 2 NVME front drives (user required) and ODD

Cesar Acosta
Director
IICS S.A.

Configuration Information

- Qty 1 of HPE DL380X Gen10 Plus Maximum Performance Fan Kit (P24608-B21)
- Qty 2 of HPE DL380 Gen10 Plus 8SFF U.3 Backplane Kit (P26931-B21) or Qty 2 of HPE DL380 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)

HPE ProLiant DL380 Gen10 Plus 12NVMe 2P Balanced FIO Bundle Kit P20619-B21

Notes:

- This option is selected from following items must be selected in the order:
  - Qty 1 of HPE DL380X Gen10 Plus Plus Mid-Mid CPU 1/2 Ctrl Kit (P24610-B21)
  - Qty 1 of HPE DL380 Gen10 Plus Plus 8SFF NVMe Sec Rsr (P24617-B21)
  - Qty 1 of HPE DL380 Gen10 Plus 2 port 25GbE Ten Rsr (P24610-B21)
  - Qty 1 of HPE DL380X Gen10 Plus Maximum Perf Fan Kit (P24608-B21)
  - Qty 2 of HPE DL380 Gen10 Plus 8SFF U.3 Backplane Kit (P26931-B21) or Qty 2 of HPE DL380 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)
  - Qty 1 of HPE ProLiant DL380 Gen10 Plus 12NVMe 2P Differential I/O Balanced FIO Bundle Kit (P35572-B21)

Requires selection of Second Processor

HPE 12 DIMM SNC2 Hemi SGX FIO Enablement Kit P26933-B21

Notes: Can be selected only if 1P = 12 DIMMs or 12P = 24 DIMMs
For supported 8DIMM, 12DIMM and 16DIMM memory population rules for PMX processor, refer to the guide: **Server Memory and Persistent Memory population rules for HPE Gen10 Plus servers with 3rd Gen Intel Xeon Scalable processors**.

HPE ProLiant DL380 Gen10 Plus 24NVMe Differential I/O Balanced FIO Bundle Kit P35570-B21

Notes:

- This option is selected from following items must be selected in the order:
  - Qty 1 of HPE DL380 Gen10 Plus x16 2pt 8SFF NVMe Sec Rsr (P27989-B21)
  - Qty 1 of HPE DL380X Gen10 Plus High Perf Fan Kit (P24609-B21)
  - Qty 1 of HPE DL380 Gen10 Plus 8SFF U.3 Backplane Kit (P26931-B21) or Qty 1 of HPE DL380 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)
  - Qty 1 of 24NVMe 2P Diff FIO Kit (P35571-B21)

Requires selection of Second Processor

HPE ProLiant DL380 Gen10 Plus 12NVMe 2P Differential I/O Balanced FIO Bundle Kit P35571-B21

Notes:

- This option is selected from following items must be selected in the order:
  - Qty 1 of HPE DL380X Gen10 Plus 8NVMe CPU 1/2 Ctrl Kit (P22919-B21)
  - Qty 2 of HPE DL380 Gen10 Plus 4pt 8SFF NVMe Sec Rsr (P35417-B21)
  - Qty 1 of HPE DL380X Gen10 Plus High Perf Fan Kit (P14606-B21)
  - Qty 2 of HPE DL380 Gen10 Plus 8SFF U.3 Backplane Kit (P26931-B21) or Qty 2 of HPE DL380 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)

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ITCS S.A.

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- Qty 1 of 12NVMe 1P Diff I/O FIO Kit (P35572-B21)

Requires selection of second Processor

HPE ProLiant DL380 Gen10 Plus 12NVMe 1P Differential I/O Balanced FIO Bundle Kit P35572-B21

Notes:
If this option is selected then following items must be selected in the config:

- Qty 1 of HPE DL38X Gen10 Plus 8NVMe CPU1/2 Cbl Kit (P22829-B21)
- Qty 1 of HPE DL380 Gen10 Plus 4p1 8SFF NVMe Pri Rsr (P27092-B21)
- Qty 1 of HPE DL38X Gen10 Plus High Perf Fan Kit (P14608-B21)
- Qty 2 of HPE DL380 Gen10 Plus 8SFF U.3Prem Kit (P26931-B21) or Qty 2 of HPE DL380 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)

HPE FIO No Smart Storage Battery P06141-B21

HPE DL38X Gen10 8 SFF Front Cage Removal FIO Option 873763-B21

Notes:
This is a factory integrated only option
- Will remove the Primary 8SFF cage in Box 3 of the 8SFF and replace with a Box blank

HPE DL38X Gen10 Plus Primary Riser Removal FIO Option

Notes:
This is a factory integrated only option
Will remove the Primary shipping PCIe riser.

HPE Legacy FIO Mode Setting 758959-B22

Notes: UEFI is the default, this F-O part can be used for CTO to enable Legacy mode

HPE Smart Memory Fast Fault Tolerance FIO Setting 875293-B21

Notes: Fast Fault Tolerance is a feature in Gen10 Plus server memory that enables the system to boot with full memory performance while monitoring for DRAM device failures.

HPE Server Identity FIO Setting P41905-B21

Notes: Initial Device Identity (IDevID) certificates are part of a Zero Trust Architecture. This SKU instructs factory to provision IDevID on HPE iLO.

HPE ProLiant Platform Certificate and IDevID iLO FIO Setting P42104-B21

Notes:
Directs HPE manufacturing site to create, digitally sign and store a platform certificate on the server
- Requires HPE Trusted Platform Module (TPM).

HPE Converged Infrastructure Management Software

HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A
HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A
HPE OneView Standard 1yr 9x5 Support Flexible Quantity E-RTU	K6F98AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView Including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView Upgrade from Insight Management 3yr 24x7 Support 1-server LTU	F6Q91A

Cesar Acosta Director Ventas S.A.

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HPE RAID 0 Drive 1 FIO Setting 339777-B21

Notes:

- If Embedded SATA controller (with SR100i Software) (P28417-B21) is the primary controller, then RAID 0 levels are allowed.
- If P408i-a E208i-p is the primary controller, then RAID 0, 1, 5 levels are allowed.
- If E208i-a MR216i-p is the primary controller, then RAID 0, 1 levels are allowed.
- RAID is supported on NVMe drives without Tri-Mode controllers (see SR100i model and software) and RAID 0, 1 levels are allowed.

HPE RAID 1 Drive 1 FIO Setting 339778-B21

Notes:

- If Embedded SATA controller (with SR100i Software) (P28417-B21) is the primary controller, then RAID 0, 1 levels are allowed.
- If E208i-a E208i-p is the primary controller, then RAID 0, 1, 5 levels are allowed.
- If E208i-a MR216i-p is the primary controller, then RAID 0, 1 levels are allowed.
- RAID is supported on NVMe drives without Tri-Mode controllers (see SR100i model and software) and RAID 0, 1 levels are allowed.

HPE RAID 5 Drive 1 FIO Setting 339779-B21

Notes:

- If Embedded SATA controller (with SR100i Software) (P28417-B21) is the primary controller, then RAID 0, 1, 5 are allowed.
- If E208i-a E208i-p is the primary controller, then RAID 0, 1, 5 levels are allowed.

HPE Raid 5 w/SP Drive 1 FIO Setting 339780-B21

HPE RAID FIO Advanced Data Guarding Option 339781-B21

HPE Customer Defined RAID Setting Service 389692-B21

Notes:

- A customer Raid Configuration must be supplied. Please contact your sales rep for more information. This Customer Defined Configuration should include all details about the customer RAID configuration. This includes drive part #s and quantities, RAID levels, or stripe widths, drives per span, hot spares, and quantities. RAID levels or stripe widths must be appropriate for each RAID level and the properties of the drives being used. (RAID 0 requires 1 drive, RAID 1 requires 2 drives, etc).
- Requirements to order this RAID FIO P/N over other RAID settings if customer has mixed controller configurations (e.g., E208, P408, or P816 + Tri-Mode OR Tri-Mode + SR100i) OR E208, P408, or P816 + VROC SR100i

HPE ProLiant DL380 Gen10 Plus 8NVMe Balanced FIO Bundle Kit P37046-B21

Notes:

- If this option is selected then following items must be selected in the config:
  - Qty 1 of HPE DL380 Gen10 Plus 8NVMe UPI 2 CPU Kit (P37266-B21)
  - Qty 1 of HPE DL380 Gen10 Plus Maximum Performance Fan Kit (P37603-B21)
  - Qty 1 of HPE DL380 Gen10 Plus 8SFF U.3 Backplane Kit (P25630-B21) or Qty 1 of HPE DL380 Gen10 Plus 24 SFF Front NVMe U.2 Kit (P26932-B21)

Requires selection of Second Processor

HPE ProLiant DL380 Gen10 Plus 24NVMe Balanced FIO Bundle Kit P19359-B21

Notes:

- If this option is selected then following items must be selected in the config:

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o Qty 1 of HPE DL38X Gen10 Plus 8NVMe CPU1-2 Cbl Kit (P22829-B21)

o Qty 1 of HPE DL380 Gen10 Plus x16 2pt 4SFF NVMe Pri Rsr (P27090-B21)

o Qty 1 of HPE DL380 Gen10 Plus x16 2pt 4SFF NVMe Sec Rsr (P27089-B21)

o Qty 1 of HPE DL380 Gen10 Plus 2-port 4SFF Ter Rsr (P27093-B21)

o Qty 1 of HPE DL38X Gen10 Plus ARCC NVMe Adpt Kit (P14602-B21)

o Qty 1 of HPE DL380 Gen10 OCP NVMe Adpt Kit (P27094-B21)

o Qty 1 of HPE DL38X Gen10 Plus Maximum Performance Fan Kit (P14608-B21)

o Qty 3 of HPE DL380 Gen10 Plus 8SFF U.3Prem Kit (P26931-B21) or Qty 3 of HPE DL300 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)

- Requires selection of second Processor
DL38x Gen10 Plus Box3 Removal Special Instr (873763-B21) must be selected along with this option

HPE ProLiant DL380 Gen10 Plus 8NVMe 1P Balanced FIO Bundle Kit **P20616-B21**

Notes:

- If this option is selected then following items must be selected in the config:

o Qty 1 of HPE DL380 Gen10 Plus x16 2pt 4SFF NVMe Pri Rsr (P27090-B21)

o Qty 1 of HPE DL38X Gen10 Plus Maximum Performance Fan Kit (P14608-B21)

o Qty 1 of HPE DL380 Gen10 Plus 8SFF U.3Prem Kit (P26931-B21) or Qty 1 of HPE DL300 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)

HPE ProLiant DL380 Gen10 Plus 8NVMe 2P Balanced FIO Bundle Kit **P20617-B21**

Notes:

- If this option is selected then following items must be selected in the config:

o Qty 1 of HPE DL380 Gen10 Plus x16 2pt 4SFF NVMe Sec Rsr (P27089-B21)

o Qty 1 of HPE DL38X Gen10 Plus Maximum Performance Fan Kit (P14608-B21)

o Qty 1 of HPE DL380 Gen10 Plus 8SFF U.3Prem Kit (P26931-B21) or Qty 1 of HPE DL300 Gen10 Plus 2U 8SFF x4 NVMe U.2 Kit (P26932-B21)

o Qty 1 of 8NVMe 1P Bal FIO Kit (P20616-B21)

Requires selection of Second Processor

HPE ProLiant DL380 Gen10 Plus 12NVMe 1P Balanced FIO Bundle Kit **P20618-B21**

Notes:

- If this option is selected then following items must be selected in the config:

o Qty 1 of HPE DL38X Gen10 Plus 8NVMe CPU1-2 Cbl Kit (P22829-B21)

o Qty 1 of HPE DL380 Gen10 Plus x16 2pt 4SFF NVMe Pri Rsr (P27090-B21)

o Qty 1 of HPE DL38X Gen10 Plus ARCC NVMe Adpt Kit (P14602-B21)

o Qty 1 of HPE DL380 Gen10 OCP NVMe Adpt Kit (P27094-B21)

Cesar Acosta
Director
TECS S.A.

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HPE DDR4 DIMM Blank Kit	P07818-B21

Notes: Qty 1 of DIMM Blank Kit (P07818-B21) Required only when configuration includes the installation of Intel Optane (P26919-B21 or P27190-B21 or P30769-B21) persistent memory module(s) less than 12

Step 2c: Choose Power Supplies

Select one or two power supplies from below.

Notes: Using only 2 different power supplies is NOT allowed.

HPE Flex Slot Power Supplies

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38997-B21
HPE 800W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit	865438-B21
HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit	P17023-B21
HPE 1600W -48VDC Power Cable Lug Kit	P36877-B21
HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit	P03178-B21
HPE 800W Flex Slot Universal Hot Plug Low Halogen Power Supply Kit	865428-B21
HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38995-B21
HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit	865434-B21

Notes:

- Note: For redundancy, it is minimum (2) power supplies.
- 1200W Power supplies only support high line voltage (200VAC to 240VAC).
- For assisting a power supply selection it is highly recommended to utilize HPE Power Advisor to help determine the right size power supply for your server configuration. The HPE Power Advisor is located at:
  http://www.hpe.com/info/hppoweradvisor.
- All power supplies in a server should match. Mixing Power Supplies is not supported.
- HPE Power Cables shipped with an IEC-IEC power cord used for connecting to Power Distribution Units (PDUs). View **HPE power cords** for a full list of optional power cords.
- Beginning January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies: 94% for multi-output and 96% for single output. HPE Flexible Slot Power Supplies (multi-output), part numbers 865438-B21, P03178-B21, and P38271-B21 are 94% efficient, thus meeting requirements. HPE is not forced to life-cycle-out products ahead of time and will be evaluating these requirements as we move to refresh products with the current power supplies by the set deadline.

Step 3: Choose Additional Factory Integratable Options

One of the following from each list may be selected if desired at time of factory integration.

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HPE Security Options

HPE iLO Common Password FIO Setting	P08040-B21

Notes:

- Enabling iLO Common Password by an HPE confirms common password. HPE highly recommends changing this password immediately after the unit is released to

Configuration Information

process
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

HPE Trusted Platform Module 2.0 Gen10 Plus Black Rivets Kit P13771-B21

Notes:
- This option to be defaulted for all CTO Servers. However option can be deselected
- The TPM 2.0 Gen10 Option is compatible with the following Operating Systems:
  - TPM 1.2 Mode
  - Windows Server 2012 R2
  - Redhat RHEL 6.9, RHEL 7.0 and later
  - SUSE SLES 12 SP2, SLES 15 GA and newer
  - VMware vSphere 6.0U3, 6.5U1, 6.5U2, 6.5U3, 6.7, 6.7U1, 6.7U2 and 6.7U3
  - In TPM 2.0 Mode
  - Windows Server 2016 and Windows Server 2019
  - Redhat RHEL 7.2, RHEL 8.0, and later
  - SUSE SLES 12 SP2, SLES 15 GA and newer
  - VMware vSphere 6.7, 6.7U1, 6.7U2, 6.7U3, 7.0U1 and newer

HPE Server Security Optimized Service for HPE ProLiant (R9S59A) is an optional security upgrade intended for agencies and regulated industries with enhanced security and compliance needs. Applying this option to a DL3XX Gen10/Gen10 Plus CTO server ensures it is hardened by turning on advanced safeguards in place against cyber-exploits throughout the server lifecycle. An iLO Advanced License required for High Security Mode and compatible intrusion detection device option kits are prerequisites for the full optimization service.

Factory Instructions and Server Settings

HPE SR100i Gen10 Plus FIO Software RAID P28417-B21

Notes:
- The Legacy Mode Setting and HPE SR100i Gen10 Plus FIO SW CAN NOT be selected together.
- NVMe Trigger and SR100i (P28417-B21) cannot be selected together
- SR100i (P28417-B21) and VROC SKUs (R7J57A/ R7J58A) CAN NOT be selected together
- SR100i can support max 2 NVMe drives. To enable 2NVMe support with SR100i below conditions must be met
  - o Tertiary 2port Slimline Riser (P27093-B21) OR AROC to NVMe adapter (P14692-B21) must be selected
  - o Or 2SFF x4Tri-Mode U.3 Kit (P28922-B21) OR 2SFF x4 Tri-mode SbS U.3 Kit (P28924-B21) must be selected
- If NVMe support is enabled on SR100i then below NVMe drives cannot be selected. However if there are any U.3 cage or U.2 NVMe Drive cage which are enabled to have NVMe drives then below drives can be selected however quantities to be restricted only to these drive cages
- CM6 in drive description
- CD6 in drive description
- P4xxx in drive description

Cesar Acosta
Director
ITCS S.A.

HPE 200GB Logical Size FIO Setting 436007-B21

Notes: This option is not required and is only selectable if a RAID level has been selected

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[illegible]

Processors with TDP equal to or greater than 150W require High Performance Heatsinks [illegible]

[illegible] Server maximum memory speed.

[illegible] unless otherwise noted

Intel Xeon-Silver 4316 2.3GHz 20-core 150W Processor for HPE	P36923-B21
Intel Xeon-Silver 4314 2.4GHz 16-core 135W Processor for HPE	P36922-B21
Intel Xeon-Silver 4310 2.1GHz 12-core 120W Processor for HPE	P36921-B21
Intel Xeon-Silver 4309Y 2.8GHz 8-core 105W Processor for HPE	P36920-B21

Step 2b: Choose Memory Options

Please select one or more memory from below.

For new Gen10 Plus memory population rule whitepaper and optimal memory performance guidelines, please go to:

HPE Memory Population Rules

For details on the HPE Server Memory Options Population Rules, please go to:

https://www.hpe.com/docs/intel-population-rules-Gen10plus

For Gen10 Plus memory speed table, please go to: **https://www.hpe.com/docs/memory-speed-table**

Notes:

[illegible]

[illegible] Memory capacity is based on the server family [illegible] product model

DDR4-3200 Memory Kits are only supported with 3rd Generation Intel Xeon Scalable Series Processors

Memory compatibility may vary or be limited within a specific server family depending upon the specific configuration being requested. Because each server environment and requirement can vary, memory compatibility is based not only upon the server family, but may also be affected by the amount and type of additional hardware options related within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for a server model or family and yet occasionally not be supported with limited configurations within that server family.

Please consult with HPE or your QuickSpecs or your HPE representative if you have any questions regarding memory compatibility with a specific HPE server configuration.

Registered DIMMs (RDIMMs)

HPE 16GB (1x16GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06029-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06031-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06033-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P06035-B21
HPE 8GB (1x8GB) Single Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P07525-B21
HPE 32GB (1x32GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P40007-B21

Notes:

[illegible]

[illegible]

Cesar [illegible]
Director
ITCS S.A.

Configuration Information

- Mixing of LRDIMM and RDIMM is not supported
- Mixing of 3DS memory and non-3DS memory is not supported

Load Reduced DIMMs (LRDIMMs)

HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P06037-B21
HPE 256GB (1x256GB) Octal Rank x4 DDR4-3200 CAS-26-22-22 Load Reduced 3DS Smart Memory Kit	P06039-B21

HPE Persistent Memory (Intel Optane)

Intel Optane 128GB persistent memory 200 Series for HPE	P23532-B21
Intel Optane 512GB persistent memory 200 Series for HPE	P23538-B21

Notes:

- A maximum of 6 Intel Optane Persistent Memory for HPE supported with 1P 3rd Generation Intel Xeon Processors
- A maximum of 16 Intel Optane Persistent Memory for HPE supported with 2P 3rd Generation Intel Xeon Processors
- Intel Optane persistent memory 200 Series for HPE supported with select 3rd Generation Intel Xeon Scalable series processors ONLY (63xx 63xx/53xx) and can only be mixed with either RDIMMs or LRDIMMs.
- Mixing of different capacity Persistent memory is not allowed. Only one Persistent Memory kit capacity is allowed per server configuration. Cannot be selected with any single rank x8 DDR4 3200AA memory kit (i.e 1Rx8 PC4-3200AA R or L)
- This option requires the selection of Maximum Performance Fan Kit (P14606-B21). This note does not apply to 12LFF Model-X or 24SFF Model-X.
- Cannot be selected with HPE 800W FS 48VDC Hot Plug LH Pwr Sply Kit and HPE 1600W FS - 48VDC Hot Plug PS Kit.
- Intel Optane Persistent Memory for HPE (PMEM) require either an RDIMM or LRDIMM to be configured. The number of RDIMMs or LRDIMMs required is based on the processor configuration and number of Intel Optane Persistent Memory for HPE (PMEM) selected

  - For 1P Configuration

    - Qty. 1 PMEM requires Qty.= 6 or 8 RDIMMs or LRDIMMs
    - Qty. 2 PMEM requires Qty = 12 RDIMMs or LRDIMMs
    - Qty. 4 PMEM requires Qty = 4 or 8 RDIMMs or LRDIMMs
    - Qty. 8 PMEM requires Qty.= 8 RDIMMs or LRDIMMs

  - For 2P Configuration:

    - Qty. 2 PMEM requires Qty = 12 or 16 RDIMMs or LRDIMMs
    - Qty. 4 PMEM requires Qty = 24 RDIMMs or LRDIMMs
    - Qty. 8 PMEM requires Qty.= 8 or 16 RDIMMs or LRDIMMs
    - Qty. 16 PMEM requires Qty = 16 RDIMMs or LRDIMMs

Oscar Acosta
Director
OGS S.A.

- Additional Intel Optane Persistent Memory for HPE(PMEM) cannot be selected beyond the provided configurations above
- Additional HPE Smart Memory kits (RDIMM or LRDIMM) cannot be selected beyond the provided configurations above
- DDR4 DIMMs must be of same type capacity and rank when combining with Intel Optane persistent memory.
- Additional information for Intel Optane Persistent Memory for HPE (PMEM) can be found at **https://www.hpe.com/psnow/doc/a00067733enw?jumpid=in_lit-psnow-red**

Memory Blank Kit

Configuration Information

HPE offers multiple Trade Agreement Act (TAA) compliant configurations to meet the needs of US Federal Government customers. These products are either manufactured or substantially transformed in the United States. TAA compliance is only provided when HPE options are included as part of the factory integrated content (CTO).

All CTO servers are factory Smart Choice configured.

CTO Server	8 SFF CTO Chassis	24 SFF CTO Chassis	8 LFF CTO Chassis	12 LFF CTO Chassis
Included Drive Cage	8 SFF SAS/SATA	3x 8 SFF SAS/SATA	8 LFF + UMB	12 LFF Chassis
Universal Media Bay	1 Optional	Not available	1 Included	Not available
ODD	1 Optional with UMB	Not available	1 Optional	Not available
8 SFF Drive Cage	Up to 2 Optional	Not available	Not available	Not available
8 NVME/SAS Bay	Up to 3 Optional	Not available	Not available	Not available
8 NVME Cage	Up to 3 Optional	Not available	Not available	Not available
2 SFF SAS/SATA (Front)	1 Optional with UMB	Not available	1 Optional	Not available
2 SFF SAS/SATA (Rear)	1 Optional	1 Optional	1 Optional	1 Optional
2 NVMe (Front)	1 Optional with UMB	Not available	1 Optional	Not available
4 LFF Mid-plane	Not available	Not available	1 Optional	1 Optional

Notes: [illegible]

Step 2: Choose Required Options

Please select up to two processors required below.

Notes:

[illegible]

Step 2a: Choose Processors

Processor Option Kits (Required Processor)

3rd Generation Intel Xeon-Platinum

Notes:

[illegible]

Cesar [illegible]
Director
ICCSA

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Intel Xeon-Platinum 8352Y 2.2GHz 32-core 205W Processor for HPE	P36929-B21
Intel Xeon-Platinum 8358 2.6GHz 32-core 250W Processor for HPE	P36938-B21
Intel Xeon-Platinum 8360Y 2.4GHz 36-core 250W Processor for HPE	P36939-B21
Intel Xeon-Platinum 8368 2.4GHz 38-core 270W Processor for HPE	P36940-B21
Intel Xeon-Platinum 8380 2.3GHz 40-core 270W Processor for HPE	P36941-B21
Intel Xeon-Platinum 8358P 2.6GHz 32-core 240W Processor for HPE	P37598-B21
Intel Xeon-Platinum 8352V 2.1GHz 36-core 195W Processor for HPE	P37599-B21
Intel Xeon-Platinum 8351N 2.4GHz 36-core 225W Processor for HPE	P37602-B21
Notes: 8351N is single socket capable even though not being a "U" processor. No dual socket support.	
Intel Xeon-Platinum 8352S 2.2GHz 32-core 205W Processor for HPE	P37613-B21
Intel Xeon-Platinum 8362 2.8GHz 32-core 265W Processor for HPE	P45418-B21
Notes: Requires High Performance Heatsink (P26479-B21), Fans (P26477-B21) and DIMM blanks kit (P07816-B21).	
Intel Xeon-Platinum 8352M 2.3GHz 32-core 185W Processor for HPE	P45414-B21
3rd Generation Intel Xeon-Gold	
Notes: Processors do not ship with heatsinks, these must be ordered separately. Field upgrades from 1st generation processors (x1xx) or 2nd generation processors (x2xx) to 3rd generation processors (x3xx) not supported	
Intel Xeon-Gold 6330 2.0GHz 28-core 205W Processor for HPE	P36927-B21
Intel Xeon-Gold 6338 2.0GHz 32-core 205W Processor for HPE	P36928-B21
Intel Xeon-Gold 6346 3.1GHz 16-core 205W Processor for HPE	P36934-B21
Intel Xeon-Gold 6354 3.0GHz 18-core 205W Processor for HPE	P36935-B21
Intel Xeon-Gold 6348 2.6GHz 28-core 235W Processor for HPE	P36937-B21
Intel Xeon-Gold 6338N 2.2GHz 32-core 185W Processor for HPE	P37603-B21
Intel Xeon-Gold 6330N 2.2GHz 28-core 165W Processor for HPE	P37604-B21
Intel Xeon-Gold 6342 2.8GHz 24-core 230W Processor for HPE	P36936-B21
Intel Xeon-Gold 6336Y 2.4GHz 24-core 185W Processor for HPE	P36926-B21
Intel Xeon-Gold 6334 3.6GHz 8-core 165W Processor for HPE	P36933-B21
Intel Xeon-Gold 6326 2.9GHz 16-core 185W Processor for HPE	P36932-B21
Intel Xeon-Gold 6314U 2.3GHz 32-core 205W Processor for HPE	P37610-B21
Notes: Single socket capable, no dual socket support.	
Intel Xeon-Gold 6312U 2.4GHz 24-core 185W Processor for HPE	P37611-B21
Notes: Single socket capable, no dual socket support.	
Intel Xeon-Gold 5320 2.2GHz 26-core 185W Processor for HPE	P36925-B21
Intel Xeon-Gold 5318Y 2.1GHz 24-core 165W Processor for HPE	P36924-B21
Intel Xeon-Gold 5318S 2.1GHz 24-core 165W Processor for HPE	P37612-B21
Intel Xeon-Gold 5318N 2.1GHz 24-core 150W Processor for HPE	P37605-B21
Intel Xeon-Gold 5317 3.0GHz 12-core 150W Processor for HPE	P36931-B21
Intel Xeon-Gold 5315Y 3.2GHz 8-core 140W Processor for HPE	P36930-B21
3rd Generation Intel Xeon-Silver	

Notes:

– Processors do not ship with heatsinks, these must be ordered separately

All SKUs below ship with processor only. Adequate fans and heatsinks (standard or high

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Pre-Configured Models

Country Code Key

- B21 = Worldwide
- 291 = Japan
- AA1 = PRC

Notes:

UEFI is the standard default for all Pre-configured models

4309Y 8/8/8 cores would result in 2.8/2.6/2.3 GHz operating points at 105W/95W/85W TDPs

SKU Number	P43354-AA1	P43356-AA1
Model Name	HPE ProLiant DL380 Gen10 Plus 4309Y 2.6GHz 8-core 1P 32GB-R P816i-a NC I350-T4 12LFF 800W PS Server	HPE ProLiant DL380 Gen10 Plus 4314 2.4GHz 16-core 1P 32GB-R P408i-a NC I350-T4 8SFF 800W PS Server
Chassis	12LFF	8SFF
Backplane	4LFF UBM SAS LP Backplane	8SFF SAS/SATA BC Backplane
Processor	4309Y (8-Core, 2.8 GHz, 105W)[1]	4314 (16-Core, 2.4 GHz, 135W)
Number of Processors	One processor with standard heatsink	One processor with standard heatsink
Memory	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)
Network Controller	Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE Notes: Not included in ordering	Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE Notes: Not included in ordering
Storage Controller	P816i-a/4GB with Smart Storage Battery	P408i-a/2GB with Smart Storage Battery
Hard Drive	None included	None included
Optical Drive	Not included (Optical Drive options available)	Not included (Optical Drive options available)
PCIe Slots	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8
Power Supply	1x 800W	1x 800W
Fans	6 - Standard	4 - Standard
Management	HPE iLO 5	HPE iLO 5
Security	Notes: Disabled on AA1 SKUs	
Rail Kit	Easy Install w/ CMA	
Form Factor	2U Rack	
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.	

Country Code Key

- B21 = Worldwide
- 291 = Japan
- AA1 = PRC

Notes: UEFI is the standard default for all Pre-configured models

Cesar Acosta
Director
ITCS S.A.

nfiguration Information

his section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid onfigurations are ordered. Hewlett Packard Enterprise recommends the use of an HPE approved onfigurator. Contact your local sales representative for information on configurable product offerings and quirements.

- Factory Integrated Models must start with a CTO Server.
- FIO indicates that this option is only available as a factory installable option.
- All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
- Some options may not be integrated at the factory. Contact your local sales representative for additional information.

tep 1: Base Configuration (choose one (1) of the following four (4) configurable server models from e tables below)

he below (4) CTO server models denoted with "NC" in the SKU description, provide flexibility in the etworking choice and require a network adapter from the "HPE Networking" section be selected.

Networking Choice CTO Server Models	HPE ProLiant DL380 Gen10 Plus 8LFF NC CTO Server	HPE ProLiant DL380 Gen10 Plus 12LFF NC CTO Server	HPE ProLiant DL380 Gen10 Plus 8SFF NC CTO Server	HPE ProLiant DL380 Gen10 Plus 24SFF NC CTO Server
SKU Number	P05175-B21	P05174-B21	P05172-B21	P05173-B21
TAA SKU*	P05175-B21#GTA	P05174-B21#GTA	P05172-B21#GTA	P05173-B21#GTA
HPE Trusted Supply Chain	P36394-B21 - Optional			
Processor	Not included as standard	Not included as standard	Not included as standard	Not included as standard
DIMM Slots	32-DIMM slots	32-DIMM slots	32-DIMM slots	32-DIMM slots
Storage Controller	Embedded SW RAID with 14 SATA ports (12-ports accessible), choice of HPE modular Smart Array and PCIe plug-in controller			
PCIe	Three standard in primary riser			
Drive Cage - included	8 LFF	12 LFF	8 SFF	24 SFF
Network Controller	Choice of either OCP 3.0 or select stand-up network adapters for primary networking selection plus additional/optional stand-up network adapters Notes: No embedded network ip			
Fans	6-Standard	6-Performance	4-Standard	6-Performance
Management	HPE iLO with Intelligent Provisioning (standard), iLO Advanced and OneView (optional)			
USB	1x 3.0 standard plus iLo front service port	None as standard	1x 3.0 standard plus iLo front service port	1x 3.0 standard plus iLo front service port

lotes:

Network Choice (NC) server models require a networking selection of a network adapters in the "HPE Networking" section

HPE Trusted Supply Chain (P36394-B21) is an optional security upgrade intended for agencies and regulated industries needing enhanced security and compliance needs. Applying this option to a DL380 Gen10 Plus CTO server ensures it is built in the USA in a secured facility by vetted HPE personnel assigned to the manufacturing processes. A multitude of checkpoints/inspections for invasions microscope and component [illegible] are performed throughout the server build and additional safeguards are put in place [illegible] throughout the server lifecycle. The HPE ProLiant DL380 Gen10 Plus Server is [illegible] HPE ProLiant DL380T Gen10 Plus to denote the HPE Trusted Supply Chain security [illegible]. The DL380T is Trade Agreement Act (TAA) compliant. See "HPE Security" section within this document for more data and learn more at **http://www.hpe.com/security**

Pre-Configured Models

	SFP+ OCP3 Adapter for HPE Notes: No embedded networking	SFP+ OCP3 Adapter for HPE Notes: No embedded networking	SFP+ OCP3 Adapter for HPE Notes: No embedded networking
Storage Controller	MR416i-p/4GB with Smart Storage Battery	MR416i-p/4GB with Smart Storage Battery	MR416i-p/4GB with Smart Storage Battery
Hard Drive	None included	None included	None included
Optical Drive	Not included (Optical Drive options available)	Not included (Optical Drive options available)	Not included (Optical Drive options available)
PCIe Slots	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8
Power Supply	1x 800W Titanium	1x 800W Titanium	1x 800W Titanium
Fans	6 - Maximum Performance	6 - Maximum Performance	6 - Maximum Performance
Management	HPE iLO 5	HPE iLO 5	HPE iLO 5
Security	Notes: Disabled on AAT SKUs		
Rail Kit	Easy Install w/ CMA		
Form Factor	2U Rack		
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.		

SKU Number	P55278-421	P55277-421
Model Name	HPE ProLiant DL380 Gen10 Plus 4309Y 2.8GHz 8-core 1P 32GB-R MR416i-p NC 8SFF 800W PS EU Server	HPE ProLiant DL380 Gen10 Plus 4309Y 2.8GHz 8-core 1P 32GB-R S100i NC 8SFF 800W PS EU Server
Chassis	8SFF	8SFF
Backplane	8SFF x1 Tri-Mode 24G U.3 BC	8SFF SAS/SATA BC
Processor	4309 (8-Core, 2.8 GHz, 105W)[2]	4309 (8-Core, 2.8 GHz, 105W)[2]
Number of Processors	One processor with standard heatsink	One processor with standard heatsink
Memory	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)
Network Controller	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking
Storage Controller	MR416i-p/4GB with Smart Storage Battery	HPE SR100i Gen10 Plus FIO Software RAID/VROC SATA[3]
Hard Drive	None included	None included
Optical Drive	Not included (Optical Drive options available)	Not included (Optical Drive options available)
PCIe Slots	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8
Power Supply	1x 800W Titanium	1x 800W Titanium
Fans	6 - Maximum Performance	4 - Standard
Management	HPE iLO 5	HPE iLO 5
Security	Notes: Disabled on AAT SKUs	
Rail Kit	Easy Install w/ CMA	
Form Factor	2U Rack	

Cesar Acosta
Director
ITGS S.A.

Notes:

Pre-Configured Models

UEFI is the standard default for all Pre-configured models
- 6315Y 8/64 cores would result in 3.2/3.2/3.4 GHz operating points at 140W/125W/115W TDPs
- 4309Y 8/8/8 cores would result in 2.8/2.6/2.8 GHz operating points at 105W/95W/85W TDPs.
- HPE SR100i Gen10 Plus FIO Software RAID by default. VROC SATA is available and can be enabled in RBSU.

Country Code Key
- B21 = Worldwide
- 291 = Japan
- 421 = European Union
- AA1 = PRC

Notes:
- The -B21 WW SKU is to be ordered in all countries other than Japan or PRC.
- The -421 SKU is to be ordered in European Union countries for Lot 9 compliance

China Specific Models

SKU Number	P43350-AA1	P43351-AA1	P43353-AA1
Model Name	HPE ProLiant DL380 Gen10 Plus 4309Y 2.6GHz 8-core 1P 32GB-R P408i-a NC I350-T4 8SFF 800W PS Server	HPE ProLiant DL380 Gen10 Plus 4310 2.1GHz 12-core 1P 32GB-R P408i-a NC I350-T4 8SFF 800W PS Server	HPE ProLiant DL380 Gen10 Plus 4316 2.3GHz 20-core 1P 32GB-R P408i-a NC I350-T4 8SFF 800W PS Server
Chassis	8SFF	8SFF	8SFF
Backplane	8SFF SAS/SATA BC Backplane	8SFF SAS/SATA BC Backplane	8SFF SAS/SATA BC Backplane
Processor	4309Y (8-Core, 2.8 GHz, 105W)	4310 (12-Core, 2.1 GHz, 120W)	4316 (20-Core, 2.3 GHz, 150W)
Number of Processors	One processor with standard heatsink	One processor with standard heatsink	One processor with high performance heatsink
Memory	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)
Network Controller	Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE Notes: No embedded networking	Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE Notes: No embedded networking	Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE Notes: No embedded networking
Storage Controller	P408i-a/2GB with Smart Storage Battery	P408i-a/2GB with Smart Storage Battery	P408i-a/2GB with Smart Storage Battery
Hard Drive	None included	None included	None included
Optical Drive	Not included (Optical Drive options available)	Not included (Optical Drive options available)	Not included (Optical Drive options available)
PCIe Slots	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8
Power Supply	1x 800W	1x 800W	1x 800W
Fans	4 - Standard	4 - Standard	4 - Standard
Management	HPE iLO 5	HPE iLO 5	HPE iLO 5
Security	Notes: Default on AA1 SKUs		
Rail Kit	Easy Install w/ CMA		
Form Factor	2U Rack		
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.		

Pre-Configured Models

SKU Number	P55248-B21 P55246-291	P55247-B21 P55247-291	P55246-B21 P55246-291
Model Name	HPE ProLiant DL380 Gen10 Plus 5315Y 3.2GHz 8-core 1P 32GB-R MR416i-p NC 8SFF 800W PS Server	HPE ProLiant DL380 Gen10 Plus 4314 2.4GHz 16-core 1P 32GB-R MR416i-p NC 8SFF 800W PS Server	HPE ProLiant DL380 Gen10 Plus 4310 2.1GHz 12-core 1P 32GB-R MR416i-p NC 8SFF 800W PS Server
Chassis	8SFF	8SFF	8SFF
Backplane	8SFF x1 Tri-Mode 24G U.3 BC	8SFF x1 Tri-Mode 24G U.3 BC	8SFF x1 Tri-Mode 24G U.3 BC
Processor	5315Y (8-Core, 3.2 GHz, 140W)	4314 (16-Core, 2.4 GHz, 135W)	4310 (12-Core, 2.1 GHz, 120W)
Number of Processors	One processor with standard heatsink	One processor with standard heatsink	One processor with standard heatsink
Memory	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)
Network Controller	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking
Storage Controller	MR416i-p/4GB with Smart Storage Battery	MR416i-p/4GB with Smart Storage Battery	MR416i-p/4GB with Smart Storage Battery
Hard Drive	None included	None included	None included
Optical Drive	Not included (Optical Drive options available)	Not included (Optical Drive options available)	Not included (Optical Drive options available)
PCIe Slots	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8
Power Supply	1x 800W	1x 800W	1x 800W
Fans	6 - Maximum Performance	6 - Maximum Performance	6 - Maximum Performance
Management	HPE iLO 5	HPE iLO 5	HPE iLO 5
Security	Notes: Disabled on AA1 SKUs		
Rail Kit	Easy Install w/ CMA		
Form Factor	2U Rack		
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.		

Director
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Pre-Configured Models

SKU Number	P55245-B21 P55245-291	P55244-B21 P55244-291
Model Name	HPE ProLiant DL380 Gen10 Plus 4309Y 2.8GHz 8-core 1P 32GB-R MR416i-p NC 8SFF 800W PS Server	HPE ProLiant DL380 Gen10 Plus 4309Y 2.8GHz 8-core 1P 32GB-R S100i NC 8SFF 800W PS Server
Chassis	8SFF	8SFF
Backplane	8SFF x1 Tri-Mode 24G U.3 BC	8SFF SAS/SATA BC
Processor	4309 (8-Core, 2.8 GHz, 105W)[2]	4309 (8-Core, 2.8 GHz, 105W)[2]
Number of Processors	One processor with standard heatsink	One processor with standard heatsink
Memory	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)
Network Controller	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking
Storage Controller	MR416i-p/4GB with Smart Storage Battery	HPE SR100i Gen10 Plus FIO Software RAID/VROC SATA[3]
Hard Drive	None included	None included
Optical Drive	Not included (Optical Drive options available)	Not included (Optical Drive options available)
PCIe Slots	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8
Power Supply	1x 800W	1x 800W
Fans	6 - Maximum Performance	4 - Standard
Management	HPE iLO 5	HPE iLO 5
Security	Notes: Disabled on AA1 SKUs	
Rail Kit	Easy Install w/ CMA	
Form Factor	2U Rack	
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.	

SKU Number	P55281-421	P55280-421	P55279-421
Model Name	HPE ProLiant DL380 Gen10 Plus 5315Y 3.2GHz 8-core 1P 32GB-R MR416i-p NC 8SFF 800W PS EU Server	HPE ProLiant DL380 Gen10 Plus 4314 2.4GHz 16-core 1P 32GB-R MR416i-p NC 8SFF 800W PS EU Server	HPE ProLiant DL380 Gen10 Plus 4310 2.1GHz 12-core 1P 32GB-R MR416i-p NC 8SFF 800W PS EU Server
Chassis	8SFF	8SFF	8SFF
Backplane	8SFF x1 Tri-Mode 24G U.3 BC	8SFF x1 Tri-Mode 24G U.3 BC	8SFF x1 Tri-Mode 24G U.3 BC
Processor	5315Y (8-Core, 3.2 GHz, 140W)[1]	4314 (16-Core, 2.4 GHz, 135W)	4310 (12-Core, 2.1 GHz, 120W)
Number of Processors	One processor with standard heatsink	One processor with standard heatsink	One processor with high performance heatsink
Memory	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)
Network Controller	Broadcom BCM57412 Ethernet 10Gb 2-port	Broadcom BCM57412 Ethernet 10Gb 2-port	Broadcom BCM57412 Ethernet 10Gb 2-port

Service and Support

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.

Learn more **http://www.hpe.com/support/hpesc**.

The HPE Support Center Mobile App' allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty. HPE Support Service or HPE contractual support agreement
Notes: "HPE Support Center Mobile App is subject to local availability

For more information: **http://www.hpe.com/services**.
Notes: HPE ProLiant DL380 Gen10 Plus Server is covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support **here**.

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.
The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Cesar Acosta
Director
ITCS S.A.

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Pre-Configured Models

- Pre-Configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs
- Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
- If you desire a custom configuration please see the "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies: 94% for multi-output and 96% for single-output. HPE Flexible Slot power supplies are single-output, and part numbers 865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements.

HPE is on target to fulfill compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy requests with the current power supplies by the set deadline
https://www.hpe.com/us/en/about/environment/msds-specs-more/erp-lot9-servers.html

Worldwide Models.

SKU Number	P43357-B21 P43357-291	P43358-B21 P43358-291
Model Name	HPE ProLiant DL380 Gen10 Plus 5315Y 3.2GHz 8-core 1P 32GB-R P408i-a NC BCM57412 8SFF 800W PS Server	HPE ProLiant DL380 Gen10 Plus 4314 2.4GHz 16-core 1P 32GB-R P408i-a NC BCM57412 8SFF 800W PS Server
Chassis	8SFF	8SFF
Processor	5315Y (8-Core, 3.2 GHz, 140W)[1]	4314 (16-Core, 2.4 GHz, 135W)
Number of Processors	One processor with standard heatsink	One processor with standard heatsink
Memory	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)	32 GB RDIMM 2R 3200 MT/s (1x 32 GB)
Network Controller	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE Notes: No embedded networking
Storage Controller	P408i-a/2GB with Smart Storage Battery	P408i-a/2GB with Smart Storage Battery
Hard Drive	None included	None included
Optical Drive	Not included (Optical Drive options available)	Not included (Optical Drive options available)
PCIe Slots	3 PCIe: x8/x16/x8	3 PCIe: x8/x16/x8
Power Supply	1x 800W	1x 800W
Fans	4 - Standard	4 - Standard
Management	HPE iLO 5	HPE iLO 5
Security	TPM (Trusted Platform Module) Notes: Disabled on AA1 SKUs	
Rail Kit	Easy Install w/ CMA	
Form Factor	2U Rack	
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.	

Cesar Acosta
Director
ITCS S.A.

HPE Pointnext - Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are-the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations

HPE GreenLake Management Services provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

Recommended Services

HPE Pointnext Tech Care.

HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.

https://www.hpe.com/services/techcare

HPE Pointnext Complete Care

HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

Cesar Achstin
Director
ITCS S.A.

Service and Support

Other related Services

HPE Server Hardware Installation

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=5981-9356enw

HPE Installation and Startup Service

Provides for the installation of your HPE hardware according to product specifications including options. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also includes the installation of one supported operating system type (Windows® or Linux).

DC for Hyperscale

Complete Care for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high volume homogenous infrastructure and resilient architecture can take advantage of this environment support tailored to their operating model.

HPE Factory Express for Servers and storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

HPE Service Credits

HPE Service Credits offers flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment.
http://www.hpe.com/ww/learn

Cesar Acosta
Director
ITCS S.A.

Server Management

HPE iLO Advanced

HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality.

HPE GreenLake for Compute Ops Management

HPE is intelligently transforming compute management with an intuitive cloud operating experience through HPE GreenLake cloud platform to streamline and secure operations from edge-to-cloud. Automated key lifecycle tasks, for onboarding, updating, managing, and monitoring HPE servers, brings agility and greater efficiencies to wherever compute devices reside via a unified single browser-based interface. Manage single locations or multiple, distributed sites. Keep tens to thousands of servers secure with batch policy controls and automated updates.

Compute Ops Management is cloud-native software that is continually updated with new services, features, patches, and fixes. The management application resides in the HPE GreenLake cloud platform (access via **https://console.greenlake.hpe.com**) and leverages the HPE GreenLake architecture, security, and unified operations.

For a complete list of software as-a-service subscription SKUs and more information, visit the HPE GreenLake for Compute Ops Management QuickSpecs:
https://www.hpe.com/psnow/doc/a50004263enw

For information on supported HPE servers, the complete list can be found here:
https://www.hpe.com/info/com-supported-servers

HPE OneView Advanced

HPE OneView brings a new level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It provides full-featured licenses which can be purchased for managing Gen8, Gen9 and Gen10 servers

To learn more visit **http://www.hpe.com/info/oneview**.

HPE InfoSight for Servers

HPE InfoSight for Servers combines the cloud-based machine learning of InfoSight with the health and performance monitoring of Active Health System (AHS) and iLO to optimize performance and predict and prevent problems. The end result is an intelligent environment that modernizes IT operations and enhances the support experience by predicting and preventing the infrastructure issues that lead to application disruptions, wasted IT staff time and missed business opportunities.
Learn more at **https://www.hpe.com/servers/infosight**

Cesar Acosta
Director
ITCS S.A.

HPE Insight Cluster Management Utility (CMU)

HPE Insight Cluster Management Utility is a HyperScale management framework that includes software for the centralized provisioning, management and monitoring of nodes and infrastructure.

Optional Features

One Config Simple (SCE)

SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact Hewlett Packard Enterprise Customer Business Center or an Authorized Partner for assistance. **https://h22174.www2.hpe.com/SimplifiedConfig/Welcome#**

Rack and Power Infrastructure

The story may end with servers, but it starts with the foundation that makes compute go - and business grow. We've reinvented our entire portfolio of rack and power products to make IT infrastructure more secure, more practical, and more efficient. In other words, we've created a stronger, smarter, and simpler infrastructure to help you get the most out of your IT equipment. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management and system access.

HPE G2 Advanced and Enterprise Racks are perfect for the server room or today's modern data center with enhanced airflow and thermal management, flexible cable management, and a 10 year Warranty to support higher density computing.

HPE G2 PDUs offer reliable power in flexible form factors that operate at temperatures up to 60°C, include color-coded outlets and load segments and a low-profile design for optimal access to the rack and support for dense rack environments.

HPE Uninterruptible Power Systems are cost-effective power protection for any type workload. Some UPSs include options for remote management and extended runtime modules so you're critical dense data center is covered in power outages.
HPE KVM Solutions include a console and switches designed to work with your server and IT equipment reliably. We've got a cost-effective KVM switch for your first rack and multiple connection IP switches with remote management and security capabilities to keep your data center rack up and running.

Learn more about HPE Racks, KVM, PDUs and UPSs at **HPE Rack and Power Infrastructure**.

Cesar Acosta
Director
ITCS S.A.

Standard Features

Intelligent Provisioning
Hassle free server and OS provisioning for 1 or more servers with Intelligent Provisioning.
Learn more at **http://www.hpe.com/servers/intelligentprovisioning**

iLO RESTful API
iLO RESTful API is Redfish API conformance and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards. Learn more at **http://www.hpe.com/info/restfulapi**

Server Utilities

Active Health System
The HPE Active Health System (AHS) is an essential component of the iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Learn more at **http://www.hpe.com/servers/ahs**.

Active Health System Viewer

Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations, to learn more visit: **http://www.hpe.com/servers/ahsv**.

Smart Update

Keep your servers up to date with the HPE Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP).

iLO Amplifier Pack

Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9 and Gen10 HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities.

Learn more at **http://www.hpe.com/servers/iLOamplifierpack**.

HPE iLO Mobile Application
Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: **http://www.hpe.com/info/ilo/mobileapp**.

RESTful Interface Tool
RESTful Interface tool (iLOREST) is a single scripting tool to provision using iLO RESTful API to discover and deploy servers at scale. Learn more at **http://www.hpe.com/info/resttool**

Scripting Tools
Provision one to many servers using your own scripts to discover and deploy with Scripting Tool (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at **http://www.hpe.com/servers/powershell**.

Cesar Acosta
Director
ITCS S.A.

HPE OneView Standard
HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without

Standard Features

additional fees. It can monitor multiple HPE server generations. The user interface is similar to the HPE OneView Advanced version, but the software-defined functionality is not available. Learn more at http://www.hpe.com/info/oneview

HPE Systems Insight Manager (HPE SIM)

Ideal for environments already using HPE SIM, it allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers. Also provides you with basic support for non-HPE servers. HPE SIM also integrates with Smart Update Manager to provide quick and seamless firmware updates. Learn more at http://www.hpe.com/info/hpesim.

Security

- UEFI Secure Boot and Secure Start support
- Tamper-free updates - components digitally signed and verified
- Immutable Silicon Root of Trust
- Ability to rollback firmware
- FIPS 140-2 validation
- Secure erase of NAND/User data
- Common Criteria certification
- TPM (Trusted Platform Module) 1.2 option
- Configurable for PCI DSS compliance
- TPM (Trusted Platform Module) 2.0 option
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Bezel Locking Kit option
- Support for Commercial National Security Algorithms (CNSA)
- Chassis Intrusion detection option
- Secure Recovery - recover critical firmware to known good state on detection of compromised firmware

Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

Notes: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories. 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part. 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

https://www.hpe.com/us/en/search-results.html?page=1&q=servers%20warranty&autocomplete=0

Cesar Acosta
Director
ITCS S.A.

Standard Features

- Oracle Linux and Oracle VM
- Citrix

Notes: For more information on Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server:

https://www.hpe.com/us/en/servers/server-operating-systems.html

HPE Server UEFI/Legacy ROM

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen10 servers have a UEFI Class 2 implementation and support both UEFI Mode (default) and Legacy BIOS Mode.

Notes: The UEFI System Utilities tool is analogous to the HPE ROM Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit http://www.hpe.com/servers/uefi

UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:

- Secure Boot and Secure Start enable for enhanced security
- Embedded UEFI Shell
- Operating system specific functionality
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
- Support for > 2.2 TB (using GPT) boot drives
- PXE boot support for IPv6 networks
- USB 3.0 Stack
- Workload Profiles for simple performance optimization

UEFI Boot Mode only:

- TPM 2.0 Support
- iSCSI Software Initiator Support
- NVMe Boot Support
- HTTP/HTTPs Boot support as a PXE alternative.
- Platform Trust Technology (PTT) can be enabled.
- Boot support for option cards that only support a UEFI option ROM

Notes:

For UEFI Boot Mode, boot environment and OS installations should be configured properly to support UEFI.

UEFI F9 Setting (7B99-B22) can be selected to configure the system in Legacy mode as the factory for your HPE ProLiant Gen10 Plus Server.

Industry Standard Compliance

- ACPI 6.3 Compliant
- PCIe 4.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- VGA/Display Port

Cesar Acosta
Director
UFCS S.A.

Standard Features

Notes: This support is on the optional Universal Media Bay.

- USB 3.0 Compliant (internal)
- USB 2.0 Compliant (external ports via SUV)
  Notes: This support is on the optional Universal Media Bay

- Energy Star
- SMBIOS 3.2
- Redfish API
- IPMI 2.0
- Secure Digital 4.0
- TPM 1.20 and 2.0 Support
- Advanced Encryption Standard (AES)
- Triple Data Encrytion Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
- Active Directory v1.0
- ASHRAE A3/A4
  Notes: For additional technical, thermal details regarding ambient temperature, humidity, and feature support, please visit **http://www.hpe.com/servers/ashrae**

- European Union Erp Lot 9 Regulation
  Notes:

  Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, or Switzerland must include more efficient AC power supplies: 94% for multi-output and 96% for single-output. HPE Flexible Slot power supplies are single-output and part numbers 865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements.

  HPE is on target to fulfill compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy requests with the current power supplies by the set deadline.

  Please visit **https://www.hpe.com/us/en/about/environment/msds-specs-more.html** for more information regarding HPE Lot 9 conformance.

- UEFI (Unified Extensible Firmware Interface Forum) 2.6
  Notes: UEFI is the default for the DL380 Gen10 Plus. Legacy mode can be selected in the field or as a CTO option (758959-B21). Some configuration restrictions apply.

Embedded Management

HPE Integrated Lights-Out (HPE iLO)

Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO.

Learn more at **http://www.hpe.com/info/ilo**.

Cesar Alosta
Director
ARCS S.A.

UEFI

Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI).
Learn more at **http://www.hpe.com/servers/uefi**.

Standard Features

review the power requirements for your selected system, please use the **HPE Power Advisor Tool**.

For information on power specifications and technical content visit **HPE Server power supplies**

Storage Controllers

The Gen10 Plus controller naming framework has been updated to simplify identification as depicted below.

For a more detailed breakout of the available Gen10 Plus Smart Array controllers visit the sites:

HPE Smart Array Gen10 Plus MegaRAID Controllers Data Sheet Or **HPE Smart Array Gen10 Plus SmartRAID Controllers Data Sheet**

One of the following depending on model

Software RAID

- **HPE Smart Storage SR100i Gen10 Plus SW RAID**

  Notes:

  HPE Smart Array SR100i SR Gen10 SW RAID [illegible] support [illegible] CTO [illegible] part 758[illegible]1322.

  HPE Smart Array SR100i SR Gen10 SW RAID is [illegible] and must be [illegible]

  [illegible] SATA [illegible] only 12 [illegible]

  The SR100i supports Windows only

  Supports up to 2 NVMe drives [illegible]

  - Does not support OMI (ODP P4xxx, and P8 [illegible]x NVMe drives

  - For Linux users, HPE offers a solution that uses [illegible] software to create a two-disk RAID 1 boot volume. For more information visit **https://downloads.linux.hpe.com/SDR/project/lsrrb/**

- **Intel® Virtual RAID on CPU (Intel® VROC)**

Notes: Requires selection of Second Processor

Essential RAID Controller

- HPE Smart Array E208i-a SR Gen10 Controller
- HPE Smart Array E208i-p SR Gen10 Controller
- HPE Smart Array E208e-p SR Gen10 Controller

Performance RAID Controller

- HPE Smart Array P408i-a SR Gen10 Controller
- HPE Smart Array P408i-p SR Gen10 Controller
- HPE Smart Array P408e-p SR Gen10 Controller
- HPE Smart Array P816i-a SR Gen10 Controller

  Notes:

  - Performance RAID Controllers require the HPE Smart Hybrid Capacitor (P02377-B21) or the HPE Smart Storage Battery (P01366-B21) which are sold separately

  For additional details, please see **https://www.hpe.com/psnow/doc/a00047736enw?jumpId=in_hpesitesearch**

Tri-Mode Controller

Cesar Acosta
Director
MCS S.A.

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Standard Features

- HPE MR416i-p Gen10 Plus Controller
- HPE MR416i-a Gen10 Plus 12G Controller
- HPE MR216i-p Gen10 Plus 12G Controller
- HPE MR216i-a Gen10 Plus 12G Controller
- HPE SR932i-p Gen10 Plus Controller[1]
  Notes:
  - PE8Cxx NVMe drives are not supported
  - [1]Requires x16 riser slot
- HPE SR416i-a Gen10 Plus Controller
  Notes: PE8Cxx NVMe drives are not supported

Interfaces

Serial	Optional, rear
Display Port	1 optional front display port via Universal Media Bay
VGA Port	1 standard, rear for all chassis. 1 Optional front display port (Via Universal Media Bay) Notes: Both ports are not active simultaneously.
Network Ports	None standard. Choice of OCP networking card or stand-up networking card required. BTO models will come pre-selected with a primary OCP networking card.
HPE iLO Remote Management Network Port	1 Gb Dedicated, rear
Front iLO Service Port	1 standard (Not available on 12 LFF chassis or when SID is ordered, note iLO dongle required. Hewlett Packard Enterprise recommends the HPE USB to Ethernet Adapter (part number Q7Y55A).)
Micro SD Slot	Optional via HPE 32GB microSD RAID1 USB Boot Device Notes: The Micro SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.
USB 3.0	Up to 5 total: 1 front, 2 rear, 2 internal (secure), 2 optional USB 2.0 front via Universal Media Bay, or standard on 8LFF chassis
SID (Systems Insight Display)	Optional Notes: Not shipping as standard. Available as a CTO option or as a field upgrade (P27006-B21).

Operating Systems and Virtualization Software Support for ProLiant Servers

- See **HPE Servers Support & Certification Matrices**
  - **Microsoft Windows Server**
  - **VMware ESXi**
  - **Red Hat Enterprise Linux (RHEL)**
  - **SUSE Linux Enterprise Server (SLES)**
  - **Canonical Ubuntu**

Cesar Ayala
Director
MCS S.A.

Standard Features

Secondary Riser3

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
4	NA	NA	NA	NA	NA
4	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 2
5	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 2
6	PCIe 4.0	X16	X16	Full-height,half-length slot	Proc 2

Notes: 1 Default Slot4 on the Secondary Riser3 is empty and not available for [illegible] in conjunction with the Secondary Riser3 to add additional x16 PCIe [illegible] slot4

Tertiary Riser:

Notes:

Bus Width indicates the number of physical slot lanes connected to the connector

There are 2 types of risers supported on Tertiary Slot

x16 cards installed on x8 slots cannot observe full optimal performance.

Tertiary Riser1

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
7	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 2
8	NA	NA	NA	NA	NA

Tertiary Riser2

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
7	PCIe 4.0	X8	X16	Full-height,full-length slot	Proc 2
8	PCIe 4.0	X8	X16	Full-height,full-length slot	Proc 2

Graphics

Integrated Video Standard

- Video modes up to 1920 x 1200@60Hz (32 bpp)
- 16MB Video Memory

HPE iLO 5 on system management memory

- 32 MB Flash
- 4 Gbit DDR 3 with ECC protection

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Maximum Internal Storage

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Standard Features

Drive	Capacity	Configuration
Hot Plug SFF SAS HDD	397.8 TB	24+2 x 15.3 TB* (with optional rear SFF drive cage)
Hot Plug SFF SATA HDD	291.84 TB	24+8+6 x 7.68 TB (with optional SFF drive cage)
Hot Plug LFF SAS HDD	360 TB	12+4+4 x 18 TB (with optional mid -tray and rear LFF primary riser drive cage, plus rear LFF tertiary riser drive cage)
Hot Plug LFF SATA HDD	360 TB	12+4+4 x 18 TB (with optional mid -tray and rear LFF primary riser drive cage, plus rear LFF tertiary riser drive cage)
Hot Plug SFF NVMe PCIe SSD	385.92 TB	24 x 15.36TB + 8 x 1.92TB<12W + 2 x 960GB<10W

Notes: *LFF drives are also supported

Internal Storage Devices

One of the following depending on model

- **Optical Drive**

  Ships standard in Performance Models

  Optional: DVD-ROM, DVD-RW

- **Hard Drives**

  None ship standard

Power Supply

- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit

  Notes:

  - Available in 94% and 96% efficiency
    Also available in -48VDC and 277VAC/380VDC power inputs

- HPE 1000W Flex Slot Titanium Hot Plug Power Supply
  Notes: Available in 96% efficiency.

- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit

  Notes:

  - Available in 94% and 96% efficiency
    Also available in -48VDC and 277VAC/380VDC power inputs

Certificado Conforme ITES S.A.

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Gen10 Plus Performance Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

The standard 6-foot IEC C-13/C-14 jumper cord (A0K02A) is included with each standard AC power supply option kit. If a different power cord is required, please check the **ProLiant Power Cables** web page.

Standard Features

Type	HPE DDR4 Smart Memory, Registered (RDIMM)
DIMM Slots Available	32 16 DIMM slots per processor, 8channels per processor, 2 DIMMs per channel
Maximum capacity	8.0 TB
(LRDIMM) Maximum capacity	32 x 256 GB LRDIMM @ 3200 MT/s 2.0 TB
(RDIMM) Maximum capacity	32 x 64 GB RDIMM @ 3200 MT/s 8.0 TB
(Intel Optane Persistent Memory for HPE)	16 X 512 GB Memory Modules

Notes: The maximum memory speed is limited by the processor selection. Also, DIMMs need to be populated in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance.

Expansion Slots

Primary Riser

Notes:

- Bus width indicates the number of physical electrical lanes running to the connector.
- There are 3 types of risers supported on Primary Slot.
- x16 cards installed on x8 slots could observe sub-optimal performance.

Primary Riser1

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
1	PCIe 4.0	X8	X16	Full-height,full-length slot	Proc 1
2	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 1
3	PCIe 4.0	X8	X16	Full-height,half-length slot	Proc 1

Primary Riser2

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
1	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 1
2	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 1
3	NA	NA	NA	NA	NA

Director
ICS S.A.

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Standard Features

Primary Riser3

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
1 **	NA	NA	NA	NA	NA
1	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 1
2	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 1
3	PCIe 4.0	X16	X16	Full-height,half-length slot	Proc 1

Notes: ** Default Slot1 on the Primary Riser3 is empty and not available It requires P14606-B21 in conjunction with the Primary Riser3 to add additional x16 PCIe Gen4 in slot1

Secondary Riser:

Notes:

- Bus Width Indicates the number of physical electrical lanes running to the connector.

There are 3 types of risers support on Secondary Slot
- x16 cards installed on x8 slots could observe sub-optimal performance.

Secondary Riser1

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
4	PCIe 4.0	X8	X16	Full-height,full-length slot	Proc 2
5	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 2
6	PCIe 4.0	X8	X16	Full-height,half-length slot	Proc 2

Secondary Riser2

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
4	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 2
5	PCIe 4.0	X16	X16	Full-height,full-length slot	Proc 2
6	NA	NA	NA	NA	NA

Cesar Acosta
Director
ITCS S.A.

Standard Features

Gold 6334 Processor	3.6 GHz	8	18 MB	165W	3 @ 11.2 GT/s	3200 MT/s	64GB
Gold 6314U Processor[2]	2.3 GHz	32	48 MB	205W	N/A	3200 MT/s	64GB
Gold 6312U Processor[2]	2.4 GHz	24	36 MB	185W	N/A	3200 MT/s	64GB

Notes:

Processors do not ship with heatsinks. These must be ordered separately

- Processors with TDP equal to or greater than 150W require High Performance Heatsink (P27095-B21)
- 8 Channel DDR4 @ 3200 MT/s (lower DDR4 speed may be used in sequent optimized processors i.e. Cloud, NFV, etc)

DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance

Support for Intel Optane Persistent Memory 200 Series (enabling up to 6TB memory per socket does not work with SGX)

2 socket capable: 3 UPI @ 11.2 GT/s

64 lanes PCIe 4.0, Advanced RAS Features, Advanced RAS, AVX-512 2 FMA, TME-MT 64 keys.

Dropman and basic frequency rating only applicable for NFV workloads. Other workloads may see throttling

- Single socket capable: no dual socket support

3rd Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	SGX Enclave size
Gold 5320 Processor	2.2 GHz	26	39 MB	185W	3 @ 11.2 GT/s	2933 MT/s	64GB
Gold 5318Y Processor	2.1 GHz[3] 1.9GHz[4] 2.0GHz[5]	24[3] 24 22	36 MB	165W[3] 150W[4] 150W[5]	3 @ 11.2 GT/s	2933 MT/s	64GB
Gold 5318S Processor[1]	2.1 GHz[3] 1.9GHz 2.0GHz	24[3] 24 22	36 MB	165W[3] 150W 150W	3 @ 11.2 GT/s	2933 MT/s	512GB
Gold 5318N Processor[1,2]	2.1 GHz[3] 2.0GHz	24[3] 20	36 MB	150W[3] 135W	3 @ 11.2 GT/s	2667 MT/s	64GB
Gold 5317 Processor	3.0 GHz	12	18 MB	150W	3 @ 11.2 GT/s	2933 MT/s	64GB
Gold 5315Y Processor	3.2 GHz[3] 3.2GHz 3.4GHz	8[3] 6 4	12 MB	140W[3] 125W 115W	3 @ 11.2 GT/s	2933 MT/s	64GB

Notes:

Processors do not ship with heatsinks. These must be ordered separately.

- Processors with TDP equal to or greater than 150W require High Performance Heatsink (P27095-B21)
- 8-channel DDR4 @ 2933 MT/s (lower DDR4 speed may be used in sequent optimized processors i.e. NFV, etc)
- DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance
- Support for Intel Optane Persistent Memory 200 Series, enabling up to 6TB memory per socket does not work with SGX)

2 sockets capable: 3 UPI @ 11.2 GT/s

- Advanced RAS, AVX-512 2 FMA, SGX 64GB, TME-MT 64 keys
- [1]Supports Intel® Speed Select Performance Profile (SST-P), even though not listed in "Y" processor

Cesar Acosta
Director
ITCS S.A.

Standard Features

- [2]Deterministic base frequency mode only applicable for NFV workloads. Other workloads may see throttling.
- [1]Default Speed Select Performance Profile value
- [4] Speed Select 2nd configuration profile
- Speed Select 3rd configuration profile

3rd Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	SGX Enclave size
Silver 4316 Processor	2.3 GHz	20	30 MB	150W	2 @ 10.4 GT/s	2667 MT/s	8GB
Silver 4314 Processor[1]	2.4 GHz	16	24 MB	135W	2 @ 10.4 GT/s	2667 MT/s	8GB
Silver 4310 Processor	2.1 GHz	12	18 MB	120W	2 @ 10.4 GT/s	2667 MT/s	8GB
Silver 4309Y Processor	2.8 GHz[2] 2.6GHz 2.3GHz	8[2] 8 8	12 MB	105W[3] 95W 85W	2 @ 10.4 GT/s	2667 MT/s	8GB

Notes:

Processors do not ship with heatsinks, these must be ordered separately

- Processors with TDP equal to or greater than 150W require High Performance Heatsink (P27095-B21)
- 8-channel DDR4 @ 2667 MT/s
- DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance.
- 2 sockets capable. 2 UPI @ 10.4 GT/s.

Standard RAS, AVX 512 2 FMA, SGX 8GB, TME-MT 64 keys

[1]Supports Intel Optane Persistent Memory 200 Series, enabling up to 6TB memory per socket (does not work with SGX).

- [2]Default Speed Select Performance Profile value.

Chipset

Intel C621A Chipset

Notes: For more information regarding Intel® chipsets, please see the following URL

https://www.intel.com/content/www/us/en/products/chipsets/server-chipsets.html

On System Management Chipset

HPE iLO 5 ASIC

Read and learn more in the **iLO QuickSpecs**.

Memory

One of the following depending on model.

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Director
KFS S.A.

Standard Features

Processors - Up to 2 of the following depending on model.
The 2nd digit of the processor model number "x3xx" is used to denote the processor generation (i.e. 3=3rd generation Intel Scalable Series Processors)
Notes: Field upgrades from 1st generation processors (x1xx) and 2nd generation processors (x2xx) not supported.
"U" processors (i.e. 6300U) only supported in single-socket configurations
Processors with TDP equal to or greater than 150W require High Performance Heatsink (P27045-B21)
For more information regarding Intel Xeon processors, please see the following
http://www.intel.com/xeon.
This table covers the public Intel offering only.

Intel Xeon processors

Processor Suffix	Description	Offering
N	NFV Optimized	Targeted at Network Function Virtualization (NFV) workloads. Intel® SST-BF improves performance by directing base frequency to high priority/bottleneck cores. Other workloads may see throttling, more details to be provided in upcoming documentation
S	Search Optimized	Optimized base frequency to address 'search' workloads. Other workloads may see throttling, more details to be provided in upcoming documentation.
U	1 Socket Optimized	Focused on single socket (1P) configurations, delivering performance at competitive price points. Does not support two socket (2P) arrangements.
V	VM Optimized	Fosters enhanced VM density, allowing to support more/largervirtual machines per host.
Y	Speed Select	Intel® SST-PP increases base frequency when fewer cores are enabled. Allows greater flexibility, deployment options and platform longevity.

Notes: More than 1.5 TB memory per socket requires memory higher than 128 GB capacity. Also DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance.

3rd Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI	DDR4	SGX Enclave size
Platinum 8352Y Processor	2.2GHz	32	48	205W	3 @ 11.2 GT/s	3200 MT/s	64GB
Platinum 8358 Processor	2.6GHz	32	48	250W	3 @ 11.2 GT/s	3200 MT/s	64GB
Platinum 8360Y Processor	2.4GHz	36	54	250W	3 @ 11.2 GT/s	3200 MT/s	64GB
Platinum 8368 Processor	2.4GHz	38	57	270W	3 @ 11.2 GT/s	3200 MT/s	512GB
Platinum 8380 Processor	2.3GHz	40	60	270W	3 @ 11.2 GT/s	3200 MT/s	512GB
Platinum 8362 Processor	2.8 GHz	32	48 MB	265W	3 @ 11.2 GT/s	3200 MT/s	64GB
Platinum 8358P Processor	2.6GHz	32	48	240W	3 @ 11.2 GT/s	3200 MT/s	8GB

Cesar Arosta
Director
TCS S.A.

Standard Features

Platinum 8352V Processor[1,2]	2.1GHz	36	54	195W	3 @ 11.2 GT/s	3200 MT/s	8GB
Platinum 8351N Processor[1]	2.4GHz	36	54	225W	3 @ 11.2 GT/s	3200 MT/s	64GB
Platinum 8352S Processor[2]	2.2GHz	32	48	205W	3 @ 11.2 GT/s	3200 MT/s	512GB
Platinum 8352M Processor[2,3]	2.3 GHz 2.4 GHz 2.6 GHz	32 28 24	48 MB	185W[4] 185W 185W	3 @ 11.2 GT/s	3200 MT/s	64GB

Notes:

- Processors do not ship with heatsinks, these must be ordered separately.
- Processors with TDP equal to or greater than 150W require High Performance Heatsink (P27095-B21)
- 8-Channel DDR4 @ 3200 MT/s (lower DDR4 speed may be used in segment optimized processors i.e. Cloud, NFV, etc).
- 4 TB max RAM per socket. Support for Intel Optane Persistent Memory 200 Series, enabling up to 6TB memory per socket (does not work with SGX).
- 2 socket capable, 3 UPI, @ 11.2 GT/s
- 64 Features: Advanced RAS (except 8358P), AVX-512 / FMA, TME-MT 64 keys
- Speed Select Performance Profile processors ("Y") default to values in bold.
- [1] Deterministic base frequency rating only applicable to VM workloads. Other workloads may see throttling.
- [2] Supports Intel® Speed Select Performance Profile (SST-P), even though not being a "Y" processor.
- [3] Single socket capable even though not being a "U" processor. No dual socket support
- [4] Does not support Intel Speed Select Technology - Base Frequency (SST-BF)
- [5] Does not support Sub-NUMA 2 (SNC2)
- [6] Default Speed Select Performance Profile value
- DIMMs need to be selected in even quantities. Using odd quantity of DIMMs in configurations will cause memory to be unbalanced and may negatively impact system performance.

3rd Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache (MB)	Power	UPI	DDR4	SGX Enclave size
Gold 6354 Processor	3.0 GHz	18	39 MB	205W	3 @ 11.2 GT/s	3200 MT/s	64GB
Gold 6348 Processor	2.6 GHz	28	42 MB	235W	3 @ 11.2 GT/s	3200 MT/s	64GB
Gold 6346 Processor	3.1 GHz	16	36 MB	205W	3 @ 11.2 GT/s	3200 MT/s	64GB
Gold 6338N Processor[1]	2.2 GHz	32	48 MB	185W	3 @ 11.2 GT/s	2667 MT/s	64GB
Gold 6338 Processor	2.0 GHz	32	48 MB	205W	3 @ 11.2 GT/s	3200 MT/s	64GB
Gold 6330N Processor[1]	2.2 GHz	28	42 MB	165W	3 @ 11.2 GT/s	2667 MT/s	64GB
Gold 6330 Processor	2.0 GHz	28	42 MB	205W	3 @ 11.2 GT/s	2933 MT/s	64GB
Gold 6326 Processor	2.9 GHz	16	24 MB	185W	3 @ 11.2 GT/s	3200 MT/s	64GB
Gold 6342 Processor	2.8 GHz	24	36 MB	230W	3 @ 11.2 GT/s	3200 MT/s	64GB
Gold 6336Y Processor	2.4 GHz 2.9 GHz 4.1 GHz	24 12 8	36 MB	185W 150W 150W	3 @ 11.2 GT/s	3200 MT/s	64GB

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Director
Tax S.

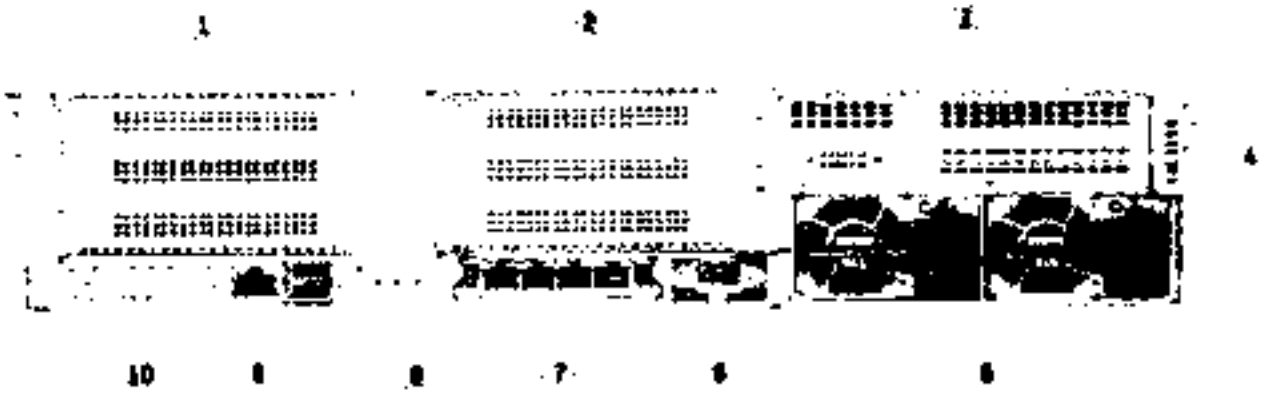
Overview

1. 2 Processors, heatsink showing
2. Hot Plug redundant HPE Flexible Slot Power supplies
3. Second (optional) riser (Requires second CPU)
4. Primary riser
5. Smart Array connector
6. DDR DIMM Slots[1]
7. Hot plug fans (6 single rotor standard)[2]

Notes:

[1] Shown fully populated in 32 slots (16 per processor)

[2] High performance temperature fans optional



Rear View - Standard for all DL380 Gen10 Plus

1. Primary Riser, PCIe 4.0 Slots (Slots 1-3)
2. Secondary Riser, PCIe 4.0 Slots (Slots 4-6)
3. Tertiary Riser (Slots 7-8).
4. Optional serial port
5. Power Supply 1 and 2
6. VGA connector
7. OCP NIC ports (if equipped)[1]
8. USB connectors 3.0 (2)
9. Dedicated ILO Management Port
10. Blank cover, not available for use

Notes: [1] Supports various NICs, up to 200GbE.

What's New

- New Pre-configured SKUs using Broadcom Tri-mode controllers
- New Pre-configured SKU using HPE SR100i Gen10 Plus FIO Software RAID/VROC SATA controller
- HPE NVMe Gen4 High Performance Low Latency Write Intensive SFF BC U.2 P5800X SSD drives
- HPE Slingshot SA210S Ethernet 200Gb 1-port PCIe NIC

Director
TCS S.A.

Overview

Platform Information

Form Factor

- 2U rack

Chassis Types

- 8SFF (SAS/SATA) with optional SFF Universal Media Bay (P14609-B21), 8SFF midtray, and/or up to 6SFF rear drive bay options
- 24SFF bay (SAS/SATA) with optional 8SFF mid tray drives and/or up to 6SFF rear drive bay options to a total 38 SFF drives
- 8LFF with Universal Media Bay (standard), supporting 2SFF front, optional 8SFF mid tray or 4LFF mid tray, and up to 4LFF rear or 6SFF rear drive bay options
- 12LFF with optional 4LFF mid tray and up to 4LFF rear for a total 20LFF drives

Notes:

- The 8SFF chassis can be upgraded to support up to 24SFF (front) with a variety of 8SFF Drive Cages to select from, including 8SFF U.2 NVMe, 8SFF U.3 x4/x2 Tri-mode, 8SFF U.3 (x1 Tri-mode), and 8SFF SAS/SATA. See "Drive Cages" section within this document for options
- The 8SFF chassis comes with an 8SFF SAS/SATA drive bay by default in bay 3. This can be replaced with other 8SFF drive cage options by selecting 8SFF Front Bay 3 Cage/backplane Removal T O Out on (873763-B21) and then selecting a different 8SFF Drive Cage. See "Drive Cages" section within this document for options
- The Universal Media Bay (P14609-B21) is only available as an option for the 8SFF chassis and can only be populated in Bay 1
- The 2 LFF primary and 2LFF secondary rear cages will consume all PCIe slots for the primary and secondary riser respectively
- The 8 LFF chassis cannot be upgraded to 12 LFF front in the field

System Fans

- Standard - fan types included

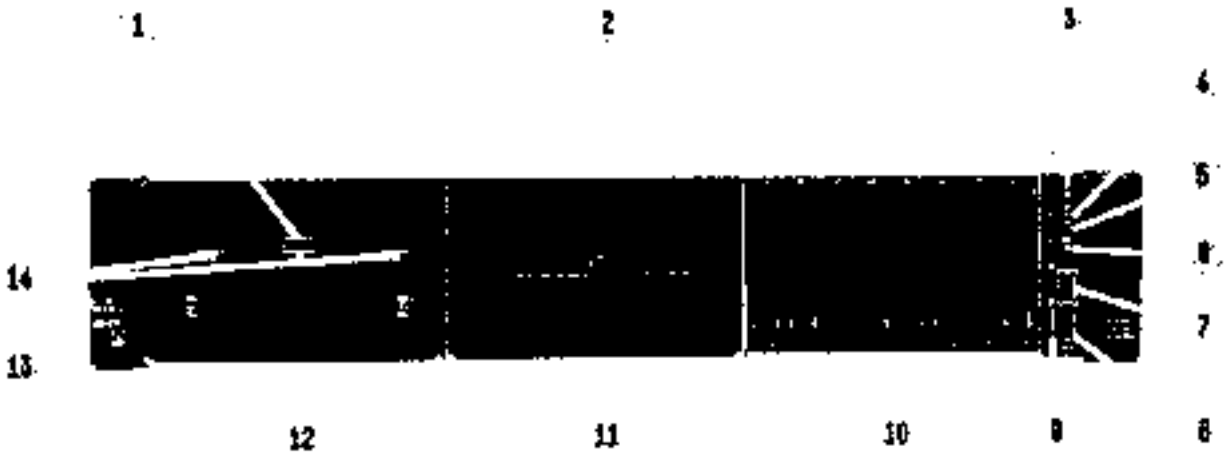
Notes:

- On SFF Chassis only: 1P models ship with 4 standard fans. If a second processor (quantity 2 of CPU) is added, then Qty 1 Standard Fan Kit (P37042-B21) must be selected, which includes the additional 2 standard fans. However if Maximum Performance Fan Kit (P14608-B21) is selected - either for better cooling performance or due to the population of certain options that require it - then Standard Fan Kit (P37042-B21) must not be selected.
- The 12 LFF and 24 SFF chassis ship with 6 performance fans as standard.
- The 8 LFF chassis ships with 6 standard fans as standard. The population of certain options may require up
- The Maximum Performance fan kit (P14608-B21) is available to meet ambient temperature environments.
- In general, the Maximum Performance fan kit is required when rear drives, or >205W Processors SKUs, or Intel Optane Persistent Memory, or High Performance NVMe drives, or certain backplanes are populated. See notes under each option category or each individual option for specifics

Carlos Acosta
Director
ICS S.A.

HPE ProLiant DL380 Gen10 Plus Server

Adaptable for diverse workloads and environments, the secure 2P 2U HPE ProLiant DL380 Gen10 Plus delivers world-class performance with the right balance of expandability and scalability. Designed for supreme versatility and resiliency while being backed by a comprehensive warranty make it ideal for multiple environments from Containers to Cloud to Big Data. Standardize on the industry's most trusted compute platform.



Front View - SFF chassis with optional Universal Media bay shown

1. Optional front display port (Via Universal Media Bay)
2. Quick removal access panel
3. Power On/Standby button and system power LED
4. Health LED
5. NIC status LED
6. UID button/LED
7. iLO Service Port
8. USB 3.0
9. Serial number label pull tab
10. Box 3 - 8 SFF Drive Cage Bay
11. Box 2 - Optional 8 SFF Drive Cage Bay
12. Box 1 - Universal Media Bay (optional):
13. Drive support label
14. Optional USB 2.0 (via Universal Media Bay)

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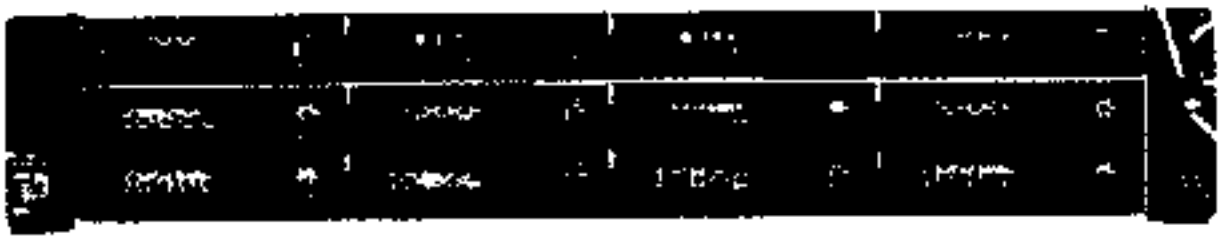
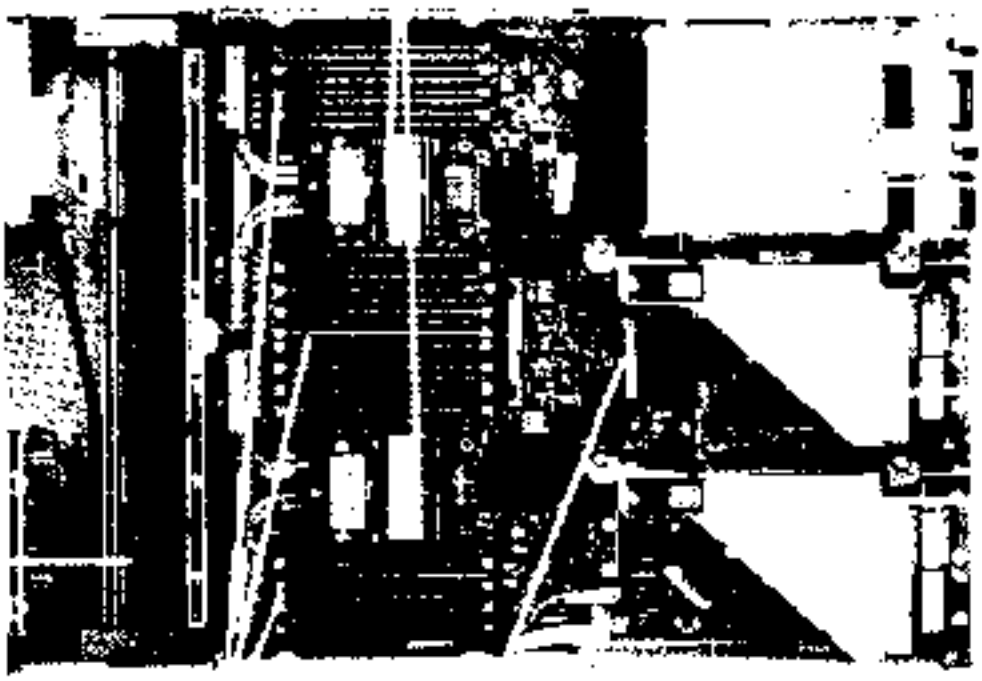
Director
ITCS S.A.



Front View - 12LFF chassis shown

1. Health Status
2. Power On/Standby button and system power LED button
3. NIC Status
4. UID button/LED
5. 12 x LFF media
6. Drive support label
7. Quick removal access panel



Internal View 8SFF chassis

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ANEXO E

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3. acting in the capacity of Notary Public of Florida

4. bears the seal/stamp of Notary Public, State of Florida

Certified

5. at Tallahassee, Florida

6. the Ninth day of October, A.D. 2023

7. by Secretary of State, State of Florida

8. No. 2023-170088

9. Seal/Stamp:

10. Signature:

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Lic. Roque A. Gómez R.
Traductor Público
Matrícula N° 1549

César Arosio
Director
ITCS S.A.

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Teléf. 595 21 448882 - Cel. 595 981 229810
Email: glacil21@gmail.com

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Teléf. 595 21 448882 – Cel.: 595 981 279810
Email: glasil21@gmail.com

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Director
ITCS S.A.

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Telef. 595 21 448882 - Cel.: 595 981 229810
Email: glasa21@gmail.com

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Roque A. Gómez R.
Traductor Público
Matrícula N° 1549

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Telé. 595 21 448882 - Cel.: 595 981 229810
Email: glasil21@gmail.com

César Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
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Hewlett-Packard Japan, G.K. Oficina Sendai 1-6-35. Chuo, Aoba-Ku. Sendai-shi. Miyagi 980-0021 Japon	Provisión de servicio.
Hewlett Packard Japan, G.K. Oficina Tochigi Oyama 2-37-3 Eijkihigashidori, Oyama-shi. Tochigi 323-0022 Japón	Provisión de servicio.
Hewlett Packard Japan, G.K. Oficina Saitama Misato 3-8-1 Misato, Misato-shi, Saitama 341-0024 Japon	Provisión de servicio.
Hewlett Packard Japan, G.K. Oficina Shin-yokohama 3-8-11 Shin-yokohama. Kohoku-Ku. Yokohama-Shi, Kanagawa 222-0033 Japón	Provisión de servicio.

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ESCRIBANO PÚBLICO
REG. N° 195
SARGENTO GALTE 256
1ER. PISO
TEL. 21 16450
Cel. 0981 116 423
mauricioertopan@gmail.com
Asunción - Paraguay

Fecha de Registro Original: 04/04/2008
Fecha de Última Revisión: 24/05/2023

Fecha Efectiva: 05/06/2023
Fecha de Vencimiento: 04/06/2026

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Información y contacto: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel.: +44 345 080 9000. BSI Assurance UK Limited, registrada en Inglaterra con el número 7805321 en 389 Chiswick High Road, London W4 4AL, Reino Unido. Miembro del grupo de empresas BSI.

Bigio Ayala N° 403 esq Caballero – Edificio Guayaki (Planta Baja) – Asunción/Paraguay
Tel.: 595 21 448882 – Cel.: 595 981 229690
Email: glasil21@gmail.com

Roque A. Gómez R.
Traductor Público
Matrícula N° 1549

Cesar Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado - Sworn Translator
N° 1.549 CSJ
Español/Inglés - English/Spanish

Nº de Certificado: FM 534154

Ubicación	Actividades Registradas
Hewlett Packard Enterprise India Private Limited Edificio Nº 02, DLF Cyber Green 4º y 5º Pisos, Torres D y E DLF Cyber City, Fase III Gurgaon Haryana 122 002 India	Provisión de servicio.
PT Hewlett-Packard Berca Servisindo Prudential center Kota Kasablanka 10F Jl. Casablanca Kav 88 Yakarta Selatan Yakarta 12870 Indonesia	Provisión de servicio
Hewlett Packard Japan, G.K Nishi-nihon Sucursal Oficina Torre Shinosaka Trust 3-5-36 Miyahara, Yodogawa-u, Osaka-shi, Osaka 532-0003 Japón	Provisión de servicio
Hewlett Packard Japan, G.K. Oficina Hachioji 4-9-8 Myojincho, Hachioji-shi, Tokio 192-8585 Japón	Provisión de servicio

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SARGENTO GAUTO 155
TEL: 214556
Cel. 0981 116 [illegible]
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Roque A. Gómez R.
Traductor Público
Matrícula Nº 1549

Cesar Acosta
Director
ITCS S.A.

Bajio Ayala N° 403 casi Cabotiero - Edificio Guyaki (Planta Baja) - Asunción/Paraguay
Teléf. 595 21 448882 - Cel.: 595 981 229810
Email: glasil21@gmail.com

Lic. Roque A. Gómez R.
Traductor Público Matriculado – Sworn Translator
Nº 1.549 CSJ
Español/Inglés – English/Spanish

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Ubicación	Actividades Registradas
Hewlett-Packard Australia Pty Ltd. Nivel 1, 185 Fullarton Road Dulwich Adelaide Sudafrica 5065 Australia	Provisión de servicio.
Hewlett-Packard Australia Pty Ltd. Nivel 2 48-50 Smith Street Mall Darwin Territorio Norte 0800 Australia	Provisión de servicio.
Hewlett-Packard Australia Pty Ltd. Nivel 6, 256 Adelaide Terrace Perth Australia Oeste 6000 Australia	Provisión de servicio.
Hewlett-Packard HK SAR Limited 18/F Citiplaza One 1111 King's Road Taikoo Shing Isla de Hong Kong Hong Kong	Provisión de servicio.
Hewlett-Packard Enterprise India Private Limited 24, Salarpuria Arena Salapuria Arena, Adugodi Bangalore Karnataka 560 030 India	Provisión de servicio.

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SARGENTO SALDIVAR
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Cel.: 0981 116 429

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Fecha de Última Revisión: 24/05/2023

Fecha Efectiva: 05/06/2023
Fecha de Vencimiento: 04/06/2026

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Eligio Ayala N° 403 casi Chiriboga – Edificio Guaykí (Planta Baja) – Asunción/Paraguay
Teléf. 595 21 448882 – Cel.: 595 981 229610
Email: glasi21@gmail.com

Lic. Roque A. Gómez R.
Traductor Público
Matrícula Nº 1549 CSJ

César Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado - Sworn Translator
N° 1.549 CSJ
Español/Inglés - English/Spanish

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Ubicación	Actividades Registradas
Hewlett-Packard Singapore (Ventas) Pte Ltd 1 Depot Close N° 17-01 Singapur 109841 Singapur	Provisión de servicio.
Hewlett-Packard Australia Pty Ltd. 353 Burwood Highway Forest Hill Victoria 3131 Australia	Provisión de servicio.
Hewlett-Packard Australia Pty Ltd. 410 Concord Road Rhodes Nueva Gales del Sur 2138 Australia	Provisión de servicio.
Hewlett-Packard Enterprises The Forum – Suite 1, Ground Floor 240-244 Pacific Highway, Charlestown Nueva Gales del Sur 2290 Australia	Provisión de servicio.
Hewlett-Packard Australia Pty Ltd. 11, Lancaster Place, Majura Parkn Canberra Airport Precinct Canberra ACT 2609 Australia	Provisión de servicio.
Hewlett-Packard Australia Pty Ltd. Nivel 1, 318 Turbot Street Brisbane 4000 Queensland Australia	Provisión de servicio

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Cel.: 0981 116 127
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Fecha de Vencimiento: 04/06/2026

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Bajo Ayala N° 403 casi Caballero - Edificio Guayaki (Planta Baja) - Asunción/Paraguay
Teléf. 595 21 443882 - Cel.: 595 981 229600
Email: glasil2@gmail.com

Cesar Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado – Sworn Translator
Nº 1.549 CSJ
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Ubicación	Actividades Registradas
Hewlett Packard Enterprises Romania SRL Fabrica de Glucoza Street Novo Park, Edificio F 11º y 12º pisos – espacio A 2º Distrito. Bucarest Rumania	Provisión de servicio de suministro, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Global delivery Bulgaria Bulgaria Center LOOD BC Kambanite 258 Okolovrasten pat str 11766 Sofia Bulgaria	Provision de servicio de suministro, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Global Delivery Tunisia Tunsia Center S.A.R.L. Technople El Gazala Ariana 2088 Túnez	Provisión de servicio de suministro, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Global Delivery Bulgaria Center LOOD BC Kambanite 258 Okolovrasten pat str Sofia 1766 Bulgaria	Provisión de servicio de suministro, soluciones convergentes y soluciones de centro de datos.
Global E-Business Operations Centre SRL. 5 Fabrica de Glucoza Stree Novo Park, Edificio F 11º y 12º Pisos – Espacio A Segundo Distrito. Bucarest 020331 Rumania	Provisión de servicio de suministro, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Global Delivery Tunisia Center, S.A.R.L. Technopole El Gazala Ariana 2088 Túnez	Provisión de servicio de suministro, soluciones convergentes y soluciones de centro de datos.

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Fecha de Última Revisión: 24/05/2023

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Rigio Ayala Nº 403 casi Caballero – Edificio Guevara (Planta Baja) – Asunción/Paraguay
Teléf. 595 21 446882 – Cel.: 595 981 229810
Email: glaoa21@gmail.com

Lic. Roque A. Gómez R.
Traductor Público
Matrícula Nº 1549 CSJ

Cesar Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
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Ubicación	Actividades Registradas
Hewlett Packard Enterprises CDS Luxemburgo S.a.r.l., 75 Parc d'Activites Capellen L-8303 Capellen Luxemburgo	Provisión de servicio de suministro en el sitio.
Hewlett-Packard CDS France SAS C/O Startway Immeuble Le Crossing, 24-32 boulevard Galliéni, Issy-les-Moulineaux 92130 Francia	Provisión de servicio de suministro en el sitio.
Hewlett-Packard International Trade B.V. King Fahad Road Torre Riyadh Al Faisaliah Riyadh Reino de Arabia Saudita	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Enterprise GlobalSoft Pv Survey Nimern 39 Survey Nimern 39/40 Hewlett Packard Avenue Ciudad KElectronics, Fase II, Hosur Road Bangalore 560100 India	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Customer Delivery Services Italia S.r.l. Via Zoe Fontana, 220 Consorzio Tecnocittá – Piano Terra – Edificio C Roma (RM) 00131 Italia	Provisión de servicio de suministro en el sitio.
Hewlett-Packard Customer Delivery Service, Portugal, Lda. Difício S. Sancho I Rua dos Malhões Quinta Da Torre 2770-071 Paço D'Arcos Portugal	Provisión de servicio de suministro en el sitio.

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Fecha de Ultima Revision: 24/05/2023

Fecha Efectiva: 05/06/2023
Fecha de Vencimiento: 04/06/2026

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Eligio Ayala N° 403 casi Caballero - Edificio Guayaki (Planta Baja) - Asunción/Paraguay
Telef. 595 21 448882 - Cel.: 595 981 229610
Email: glasi21@gmail.com

Cesar Acosta
Director
TICS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado - Sworn Translator
N 1.549 CSJ
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SARGENTO GALARDO 555
PER. PSO
TEL. 2146569
Cel.: 0981 114 123

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Ubicación	Actividades Registradas
Hewlett-Packard Ltd Ground Floor 210 Wahrfedale Road Winnersh Triangle Berkshire RG41 5TP Reino Unido	Provisión de cadena de suministro de víritas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard CDS Limited Ground Floor 210 Whartedale Road Winnersh Triangle RG41 5TP Reino Unido	Provisión de servicio de suministro en el sitio.
Hewlett-Packard CDS BVBA/SPRL Hennesinan 1a B-1831 Diegem Bélgica	Provisión de servicio de suministro en el sitio.
Hewlett Packard CDS Ireland Ltd Desk 32, Edificio 1, Liffey Park Technology Campus, Barnhall Road Leixlip, Co Kildare Irlanda	Provisión de servicio de suministro en el sitio
Hewlett-Packard CDS (Netherlands) BV Pascallaan 70 8218 NJ Lelystad Países Bajos	Provisión de servicio de suministro en el sitio
Hewlett-Packard Customer Delivery Service, Sociedad Limitaca Calle Vicente Aleixandre, N° 1 Parque Empresarial Las Rozas 28232 Las Rozas Madrid España	Provisión de servicio de suministro en el sitio.
Hewlett-Packard CDS GmbH Am Kronberger Hang 8 65824 Schwalbach am Taunus Alemania	Provisión de servicio de suministro en el sitio.

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Fecha de Ultima Revisión: 24/05/2023

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Eligio Ayala N° 403 casi Caballero - Edificio Guayaki (Planta Baja) - Asunción/Paraguay
Teléf. 595 21 446882 - Cel.: 595 981 227980
Email: glaest21@gmail.com

Cesar Acosta
Director
ITCS S.A.

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Ubicación	Actividades Registradas
Hewlett-Packard South Africa (PTY) 12 Autumn Street 2º Piso Ravonia 2128 Sandton Gauteng Sudáfrica	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Servicios España S.L. c/ Vicente Aleixandre, 1 Las Rozas (Madri) C.P. 28230 España	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos
Hewlett-Packard Sverige AB Skottvagen 20 17067 Estocolmo - Solna Suecia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard (Schweiz) GmbH 150 Route du nant D'Avril 1217 Meyrin Suiza Suiza	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Teknoloji Çözümleri Ltd. Sirketi Acikom Plaza, Satay Mahallesi Dr. Adnan Büyükdeniz Cad. N° 4 Kat: 7-8 Ciuraniye Estambul 34768 Turquía	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Middle East FZ-LLC Dubái Internet City Edificio Innovation Hub N° 1, 3º Piso, Dubái 17295 Emiratos Árabes Unidos	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.

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Lic. Roque A. Gómez R.
Traductor Público
Matrícula CSJ N° 1549

Eligio Ayala N° 403 casi Caballero – Edificio Guayaki (Planta Baja) – Asunción/Paraguay
Teléf. 595 21 448662 – Cel.: 595 98 227980
Email: glasit21@gmail.com

Cesar Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado – Sworn Translator
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Ubicación	Actividades Registradas
Hewlett-Packard Italiana S.r.l. Via G. Vittorio, 9 CAP Cernusco sul Naviglio 20063 Italia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hydrus Holding S.C.A. 75 Parc d'Activités L 8308 Capellen Luxemburgo	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Nederland B.V. Stroomlaan 16 Amstelveen, 1181 VX Países Bajos	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Enterprise Szturmowa 2A Warsaw 02-678 Polonia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Portugal Lda Rua dos Malhoes, 4 Edif. D. sancho 1, Quinta Da Fonte, Oeiras, Lisboa 2774 – 528 Paço D'Arcos Portugal	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos
Hewlett Packard Enterprise Slovakia s.r.o Galvaniho 19045/19824/4 Bratislava 82104 Eslovaquia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.

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Lic. Roque A. Gómez R.
Traductor Público
Cód. 1549

Bigio Ayala N° 403 casi Caballero - Edificio Guayaki (Planta Baja) - Asunción/Paraguay
Tel/cel. 595 21 449882 - Cel.: 595 981 229880
Email: gtasi2@gmail.com

Cesar Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado – Sworn Translator
N 1.549 CSJ
Español/Inglés - English/Spanish

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Hydras Holding S.C.A. 75 Parc d'Activités L-8308 Capellen Luxemburgo	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Nederland B.V. Stroombaan 16 Amstelveen, 1181 VX Países Bajos	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Enterprise Sztarnowa 2A Warsaw 02-678 Polonia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Portugal Ltda Rua dos Malhoes, 4 Edif. D. sancho I, Quinta Da Fonte, Oeiras, Lisboa 2774 – 528 Paço D'Arcos Portugal	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Enterprise Slovakia s.r.o Galvaniho 19045/1982104 Bratislava 82104 Eslovaquia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.

Fecha de Registro Original: 04/04/2008
Fecha de Última Revisión: 24/05/2023

Fecha Efectiva: 05/06/2023
Fecha de Vencimiento: 04/06/2026

Este certificado fue emitido electrónicamente y sigue siendo propiedad de BSI y está sujeto a las condiciones del contrato. Un certificado electrónico se puede autenticar online. Las copias impresas se pueden validar en [illegible]

Información y contacto: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel.: +44 345 080 9000 BSI Assurance UK Limited, registrada en Inglaterra con el número 7805321 en 389 Chiswick High Road, Londres W4 4AL, Reino Unido. Miembro del grupo de empresas BSI

Bigio Ayala N° 403 casi Caballero – Edificio Guayaki (Planta Baja) – Asunción (Paraguay)
Telef. 595 21 448882 – Cel.: 595 981 229810
Email: glasi21@gmail.com

Cesar Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado – Sworn Translator
N° 1.549 CSJ
Español/Inglés – English/Spanish

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MAURICIO GERTOPAN ESCRIBANO PUBLICO REG. N° 130 SARGENTO GALVEZ 555 ASU. 2690 TEL.: 21 465512 Cel. 0981 316 972

N° de Certificado: FM 534154

Ubicación:	Actividades Registradas:
Hewlett Packard s.r.o Za Brumlovkou 1559/5 Michle 140 00 Praga 4 República Checa	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos
Hewlett-Packard ApS Engholm Parkej 8 3450 Alered Dinamarca	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard OY Piispankalliontie 17 Espoo Piispa, Finlandia Finlandia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard GmbH Herrenberger Strasse 140 D-71034 Boeblingen Alemania	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Hellas E.P.E 1-3 Tzavella str. 152 31 Halandri Atenas Grecia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Informatikai Kft Alkotás utca 55-61 Budapest 1123 Hungría	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Enterpise Ireland Ltd BldgDGB01 Kildare Inovation Campus Bernhall Road Leixlip Co Kildare W23 Y972 Irlanda	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard Israel Ltd 9 dafna St Ra'anana 4366223 Israel	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.

Fecha de Registro Original: 04/04/2008
Fecha de Última Revisión: 24/05/2023

Fecha Efectiva: 05/06/2023
Fecha de Vencimiento: 04/06/2026

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Eligio Ayala N° 403 casi Caballero – Edificio Guayaki (Planta Baja) – Asunción/Paraguay
Telef. 595 21 449882 – Cel.: 595 981 225980
Email: glass21@gmail.com

Roque A. Gomez R.
Traductor Público

César Acosta
Director
ITCS S.A.

Lic. Roque A. Gómez R.
Traductor Público Matriculado - Sworn Translator
Nº 1,549 CSJ
Español/Inglés - English/Spanish

Nº de Certificado: FM 534154

Ubicación	Actividades Registradas
Hewlett Packard Enterprise Caidas de Chippewa – Depósito 1949 Commerce Parkway Caidas de Chippewa Wisconsin 54729 EE.UU.	Provisión de fabricación
Hewlett Packard Enterprise 165 Dascomb Rd Andover Massachussets 01810 EE.UU.	Provisión de fabricación.
Hewlett-Packard France Immeuble SENSE 4 Rue Paul Lafargue CS 50064 PUTEAUX CEDEX 92815 Francia	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett Packard Caribe B.V. Puerto Rico Operación de Fabricación Carretera 110 Km 28 Boulevard Nº 1 Aguadilla 00605 Puerto Rico	Provisión de fabricación.
Hewlett-Packard International Sàrl 150 Route du nant D Avril 1217 Meyrin Suiza	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos
Hewlett Packard Gesellschaft m.b.H Canettistrasse 5 1100 Viena Austria Austria	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.
Hewlett-Packard BVBA/SPRL Hermeslaan 1a B-1831 Diegem Bélgica	Provisión de cadena de suministro de ventas, soporte de servicio de entrega, soluciones convergentes y soluciones de centro de datos.

Fecha de Registro Original: 04/04/2008
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Información y contacto: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: +44 345 080 9000. BSI Assurance UK Limited, registrada en Inglaterra con el número 7805321 en 389 Chiswick High Road, Londres W4 4AL, Reino Unido. Miembro del grupo de empresas BSI.

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MAURICIO GERTOBAN
TRADUCTOR PÚBLICO
REG. Nº 143
SARGENTO GARTO 555
1ER PISO
TEL: 2146101
CEL: 0981 516.523
mauricio@gertoban.com.py
Asunción - Paraguay

Cesar Acosta
Director Paraguay
ITCS S.A.

Edificio Ayala N° 403 casi Caballero - Edificio Guayaki (Planta Baja) - Asunción Paraguay
Teléf. 595 21 448882 - Cel. 595 981 229800
Email: glad72@gmail.com

Lic. Roque A. Gómez R.
Traductor Público Matriculado – Sworn Translator
N 1.549 CSJ
Español/Inglés – English/Spanish

Nº de Certificado: FM 534154

Ubicación	Actividades Registradas
Hewlett Packard Enterprise 1701 East Mossy Oaks Road Spring Texas 77389 EE.UU.	Provisión de Sede, diseño y desarrollo, almacenamiento y servidor y cadena de suministro.
Hewlett-Packard Enterprise SA de CV Ciudad de México Prolongación Reforma Nº 700 Col. Lomas de Santa Fe Delegación Álvaro Obregón México Ciudad de México C.P. 01210 México	Provisión de servicio.
GSD SC Puerto Rico Operations (PRRO) Road 110 Km. 28 Boulevard Nº 1 Aguadilla 00605 Puerto Rico	Provisión de fabricación.
Hewlett Packard Enterprise Caídas de Chippewa – Ingeniería 1168 Technology Way Caídas de Chippewa Wisconsin 54729 EE.UU.	Provisión de fabricación
Hewlett Packard Enterprise Caídas de Chippewa – Producción 100 North Cashman Drive Caídas de Chippewa Wisconsin 54729 EE.UU.	Provisión de fabricación

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MAURICIO GARTOFAN
ESCRIBANO PÚBLICO
REG. N° 100
SARGENTO GARTO 1ER PISO
TEL: 214 554-7
CEL.: 0981 114 [illegible]
mauriciofgartofan@hotmail.com
Asunción - Paraguay

Fecha de Registro Original: 04/04/2008
Fecha de Última Revisión: 24/05/2023

Fecha Efectiva: 05/06/2023
Fecha de Vencimiento: 04/06/2026

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Información y contacto: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel.: +44 345 080 9000 BSI Assurance UK Limited, registrada en Inglaterra con el número 7805321 en 389 Chiswick High Road, Londres W4 4AL, Reino Unido. Miembro del grupo de empresas BSI.

Lic. Roque A. Gómez R.
Traductor Público

Cesar Acosta
Director
TICS S.A.

Brigo Ayala N° 403 casi Caballero – Edificio Guayaki (Planta Baja) – Asunción/Paraguay
Teléf. 595 21 448882 – Cel.: 595 981 229810
Email: gtasil2@gmail.com

Lic. Roque A. Gómez R.
Traductor Público Matriculado - Sworn Translator
N° 1.549 CSJ
Español/Inglés - English/Spanish

bsi.

Certificado de Registro

SISTEMA DE GESTIÓN DE CALIDAD – ISO 9001:2015

Esto es para certificar que: Hewlett Packard Enterprise
1701 East Mossy Oaks Road
Spring
Texas
77389
EE.UU.

CERTIFICO: La presente copia es reflejo fiel del documento tenido a la vista. CONSTE

MAURICIO GERTOPAN ESCRIBANO PÚBLICO REG. N° 182 SARGENTO GARCIA 955 1ER PISO TEL. 214567 Cel. 0981 116 423 Asunción - Paraguay

Titular del Número de Certificado: FM 534154

y opera un Sistema de Gestión de Calidad que cumple con los requisitos de la Norma ISO 9001:2015 para el siguiente alcance:

Suministro de productos y servicios de Hewlett Packard Enterprise para servicios en la nube, centros de datos, software, redes, supercomputación, almacenamiento y hardware de servidores, y recursos que incluyen diseño y desarrollo, ventas, gestión de la cadena de suministro, fabricación, remanufactura, entrega, instalación y soporte.

Por y en nombre de BSI: *(consta firma)*
Matt Page, Director General de Garantías, RU e Irlanda

Fecha de Registro Original: 04/04/2008
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Información y consulta: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel.: +44 345 080 9000 BSI Assurance UK Limited, registrada en Inglaterra con el número 7805321 en 389 Chiswick High Road, Londres W4 4AL, Reino Unido. Miembro del grupo de empresas BSI.

Cesar Acosta
Director
HCS S.A.

Lic. Roque A. Gomez R.
Traductor Público
Mat. CSJ N° 1549

Eligio Ayala N° 403 casi Caballero - Edificio Guayaki (Planta Baja) - Asunción/Paraguay
Telé. 595 21 448882 - Cel.: 595 981 229910
Email: glast24@gmail.com

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Japan, G.K. 2-2-1 OJIMA, KOTO-KU Tokyo Japan	Provision of supply chain (management of manufacturing).
Hewlett Packard Enterprise Singapore Pte.Ltd. 452 Alexandra Road Singapore 119961 Singapore	Provision of supply chain (management of manufacturing).
Shanghai Hewlett Packard Co Ltd No.799 Naxian Road, Zhang Jiang High-Tech Park Shanghai 201210 China	Provision of supply chain (management of manufacturing).

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MAURICIO GERTOPAN
ESCRIBANO PUBLICO
REG. Nº 181
SARGENTO GAUTO 555
1ER PISO
TEL.: 214656
Cel. 0981 116 121
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04
Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05
Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Enterprise India Private Limited India Private Limited Unit No. 16N & 17 International Business Park Oberoi Garden City,OFF. Western Express Goregaon (East) Mumbai Maharashtra 400 063 India	Provision of service.
Hewlett Packard Japan, G.K. Tama Center Office Tsurumaki Gardens 1-8-3 Tsurumaki, Tama-shi, Tokyo 206-0034 Japan	Provision of service.
Hewlett Packard Japan, G.K. Chubu Branch Office GLOBAL GATE 9th Floor, 4-60-12, Hiraikecho, Nakamura ku, Nagoya-shi Aichi 453-6109 Japan	Provision of service
Enterprise Services New Zealand 51 Princess Street Addington Christchurch Metro Auckland New Zealand	Provision of service
Hewlett-Packard Korea Ltd. 31, Gukjegeumyung-ro 8 gil Yeongdeungpo-gu Seoul 07332 Republic of Korea	Provision of service.

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MAURICIO GERTOSI
ESCRIBANO PÚBLICO
REG. Nº 180
SANGRONIZ GAUTO 356
1er. PISO
TEL.: 2166567
Cel. 0981 115 323
mauricio@notariadoitha.com
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Japan, G.K Hiroshima Office 1 12-16 Hikancho, Higashi-ku, Hiroshima-shi Hiroshima 732-0052 Japan	Provision of service.
Hewlett-Packard (M) Sdn. Bhd. Level 23A, Menara SUEZCAP 2, KL Gateway, No. 2 Jalan Kerinchi, Gerbang Kerinchi Lestari, 50200 Kuala Lumpur, Malaysia	Provision of service.
Hewlett-Packard Philippines Corporation 25th Floor, Twenty-Five Seven McKinley, 25th Street corner 7th Avenue, Bonifacio Global City, Taguig 1630 Philippines	Provision of service.
Hewlett-Packard (Thailand) Ltd. Mitrtown Office Tower, 15th Floor, 944 Rama 4 Road, Wangmai, Pathumwan, Bangkok 10330 Thailand	Provision of service.
HP Vietnam IT Ltd. Unit 1008, 10th Floor Saigon Tower Building 29 Le Duan St Dist 1, HCM City Vietnam	Provision of service.
HP Vietnam IT Ltd. Hanoi Office Unit 801 Tower B - 8th Floor Resco Tower 521 Kim Ma Street, Ba Dinh District Ha Noi City Vietnam	Provision of service

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ESCRIBANO PUBLICO
REG. N° 18
SARMIENTO 645 1° ESS
CAPITAL FED.
TEL. 2148502
CEL. 0351 316 123

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Japan, G.K Atsugi Office 4-9-14 Naka-cho, Atsugi-shi, Kanagawa 243-0018 Japan	Provision of service.
Hewlett Packard Japan, G.K Chiba Makuhari Office 1-3 Nakase, Mihama-ku, Chiba-shi, Chiba 261-8501 Japan	Provision of service.
Hewlett Packard Japan, G.K Fukuoka Office 5-35 Reisenmachi, Hakata-ku, Fukuoka-shi 812-0039 Japan	Provision of service.
Hewlett Packard Japan, G.K Kanazawa Office 3-21 Kamitsutsumi-cho Kanazawa-shi Ishikawa 920-0869 Japan	Provision of service.
Hewlett Packard Japan, G.K Okayama Office 2-5-24 Ekimae-cho, Kita-ku, Okayama-shi Okayama 700-0023 Japan	Provision of service.

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ESCRIBANO PÚBLICO
REG. Nº 150
SANGERTO GAUTO 555
1ER PISO
TEL. 214666
Cel. 0987 116 .23
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04
Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05
Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Japan, G.K Sapporo Office 1-1 Kita 2-jo-Nishi, Chuo-Ku, Sapporo-Shi, Hokkaido 060 0002 Japan	Provision of service.
Hewlett Packard Japan, G.K Sendai Office 1-6-35, Chuo, Aoba-Ku, Sendai-shi, Miyagi 980-0021 Japan	Provision of service.
Hewlett Packard Japan, G.K Tochigi Oyama Office 2-37-3 Ekimigashidori, Oyama-shi, Tochigi 323-0022 Japan	Provision of service.
Hewlett Packard Japan, G.K Saitama Misato Office 3-8-1 Misato, Misato-shi, Saitama 341-0024 Japan	Provision of service.
Hewlett Packard Japan, G.K Shin-yokohama Office 3-8-11 Shin-yokohama, Kohoku-Ku, Yokohama-Shi, Kanagawa 222-0033 Japan	Provision of service.

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ESCRIBANO PUBLICO
REG. N° 181
BARRIENTOS GAUTO 554
1ER PISO
TEL: 514554
CEL. 0981 110 21
ASUNCION - PARAGUAY

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Enterprise India Private Limited Building No. 02, DLF Cyber Green 4th & 5th Floor, Towers D & E DLF Cyber City, Phase III Gurgaon Haryana 122 002 India	Provision of service
PT Hewlett-Packard Berca Servisindo Prudential Center Kota Kasablanka 10F Jl. Casablanca Kav 88 Jakarta Selatan Jakarta 12870 Indonesia	Provision of service.
Hewlett Packard Japan, G.K Nishi-nihon Branch Office Shinosaka Trust Tower 3-5-36 Miyahara, Yodogawa-ku, Osaka-shi, Osaka 532-0003 Japan	Provision of service.
Hewlett Packard Japan, G.K 2-2-1 Ojima, Koto-ku, Tokyo 136-8711 Japan	Provision of service
Hewlett Packard Japan, G.K Hachioji Office 4-9-8 Myojincho, Hachioji-shi, Tokyo 192-8585 Japan	Provision of service.

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Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04
Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05
Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett-Packard Australia Pty Ltd. Level 1, 185 Fullarton Road Dulwich Adelaide South Australia 5065 Australia	Provision of service.
Hewlett-Packard Australia Pty Ltd. Level 1 48-50 Smith Street Mall Darwin Northern Territory 0800 Australia	Provision of service.
Hewlett-Packard Australia Pty Ltd. Level 6, 256 Adelaide Terrace Perth Western Australia 6000 Australia	Provision of service.
Hewlett-Packard HK SAR Limited 18/F Citiplaza One 1111 King's Road Taikoo Shing Hong Kong Island Hong Kong	Provision of service.
Hewlett Packard Enterprise India Private Limited 24, Salarpuria Arena Salarpuria Arena, Adugodi Bangalore Karnataka 560 030 India	Provision of service.

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MAURICIO GERTOPAN ESCRIBANO PUBLICO
REG. N° 160
SARGENTO DAUTO 555
1ER. PISO
TEL.: 2246597
Cel. (595) 116 121
Asunción - Paraguay

Cesar Acosta
Director
ITC5 S.A.

Original Registration Date: 2008-04-04
Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05
Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett-Packard Singapore (Sales) Pte Ltd 1 Depot Close #11-01 Singapore 109841 Singapore	Provision of service.
Hewlett-Packard Australia Pty Ltd. 353 Burwood Highway Forest Hill Victoria 3131 Australia	Provision of service.
Hewlett Packard Australia Pty Ltd. 410 Concord Road Rhodes New South Wales 2138 Australia	Provision of service.
Hewlett-Packard Enterprises The Forum - Suite 1, Ground Floor 240-244 Pacific Highway, Charlestown New South Wales 2290 Australia	Provision of service.
Hewlett-Packard Australia Pty Ltd. 11, Lancaster Place, Majura Park, Canberra Airport Precinct Canberra ACT 2609 Australia	Provision of service.
Hewlett-Packard Australia Pty Ltd. Level 1, 338 Turbot Street Brisbane 4000 Queensland Australia	Provision of service.

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MAURICIO GERTOPAN
ESCRIBANO PUBLICO
ACT. Nº 180
SORGENTO GAUTO 555
1ER PISO
TEL: 3146567
Cel.: 0981 116 123
mauriciogertopan@hotmail.com
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Enterprise Romania SRL Fabrica de Glucoza Street Novo Park, F Building 11th and 12th floors -space A 2nd District, Bucharest 020331 Romania	Provision of service support, converged solutions and datacenter solutions.
Hewlett-Packard Global Delivery Bulgaria Bulgaria Center EOOD BC Kambanite 258 Okolovrasten pat str 11766 Sofia Bulgaria	Provision of service support, converged solutions and datacenter solutions.
Hewlett-Packard Global Delivery Tunisia Tunsia Center S.A.R.L Technopole El Gazala Ariana 2088 Tunisia	Provision of service support, converged solutions and datacenter solutions
Hewlett-Packard Global Delivery Bulgaria Center EOOD BC Kambanite 258 Okolovrasten pat str Sofia 1766 Bulgaria	Provision of service support, converged solutions and datacenter solutions.
Global E-Business Operations Centre SRL 5 Fabrica de Glucoza Stree Novo Park, F Building 11th and 12th Floors -Space A Second District, Bucharest 020331 Romania	Provision of service support, converged solutions and datacenter solutions.
Hewlett Packard Global Delivery Tunisia Center, S.A.R.L. Technopole El Gazala Ariana 2088 Tunisia	Provision of service support, converged solutions and datacenter solutions.

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MAURICIO OERTOPAN
ESCRIBANO PUBLICO
REG. Nº 130
SARGENTO GARTLOS 1ER PISO
TEL. 214556-7
Cel. 0981 118 -33
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Enterprise CDS Luxembourg S.a.r.l. 75 Parc d'Activites Capellen L-8308 Capellen Luxembourg	Provision of service support onsite.
Hewlett-Packard CDS France SAS C/O Startway Immeuble Le Crossing, 24-32 boulevard Galliéni, Issy-les-Moulineaux 92130 France	Provision of service support onsite.
Hewlett-Packard International Trade B.V King Fahad Road Riyadh Al Farsallah Tower Riyadh Kingdom of Saudi Arabia	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett Packard Enterprise GlobalSoft Pv Survey Number 39 Survey Number 39/40 Hewlett Packard Avenue KElectronics City , Phase II ,Hosur Road Bangalore 560100 India	Provision of service support, converged solutions and datacenter solutions.
Hewlett-Packard Customer Delivery Services Italia S.r.l. Via Zoe Fontana, 220 Consorzio Tecnocittà - Piano Terra - Edificio C Roma (RM) 00131 Italy	Provision of service support onsite.
Hewlett-Packard Customer Delivery Services Portugal, Lda. Edifício D.Sancho 1 Rua dos Malhões Quinta Da Fonte 2770 -071 Paço D'Arcos Portugal	Provision of service support onsite.

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MAURICIO GERTOPAN
ESCRIBANO PÚBLICO
REG. Nº 180
SARGENTO GAUTO 458
1ER. PISO
TEL. 2116592
Cel. 0981 114 33
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett-Packard Ltd Ground Floor 210 Wharfedale Road Winnersh Triangle Berkshire RG41 5TP United Kingdom	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard CDS Limited Ground Floor 210 Wharfedale Road Winnersh Triangle RG41 5TP United Kingdom	Provision of service support onsite.
Hewlett-Packard CDS BVBA/SPRL Hermeslaan 1a B-1831 Diegem Belgium	Provision of service support onsite
Hewlett Packard CDS Ireland Ltd Desk 21, Building 1, Liffey Park Technology Campus, Barnhall Road Leixlip, Co Kildare Ireland	Provision of service support onsite.
Hewlett-Packard CDS (Netherlands) BV Pascalkaan 70 8218 NJ Lelystad The Netherlands	Provision of service support onsite.
Hewlett-Packard Customer Delivery Service, Sociedad Limitada Calle Vicente Aleixandre, nº 1 Parque Empresarial Las Rozas 28232 Las Rozas Madrid Spain	Provision of service support onsite.
Hewlett-Packard CDS GmbH Am Kronberger Hang 8 65824 Schwalbach am Taunus Germany	Provision of service support onsite.

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MAURICIO GERTOPAN
ESCRIBANO PUBLICO
REGISTRO 193
SARGENTO GAUTO 355
CAPITAL FEDERAL
TEL. 4346557
CEL. 0351 115 125
mauriciogertopan@hotmail.com
Arquitecto - Perito Judicial

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett-Packard South Africa (PTY) 12 Autumn Street 2nd Floor Rivonia 2128 Sandton Gauteng South Africa	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett Packard Servicios España S.L. c/ Vicente Aleixandre, 1 Las Rozas (Madrid) C.P. 28230 Spain	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions
Hewlett-Packard Sverige AB Slattervagen 20 17067 Stockholm - Solna Sweden	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard (Schweiz) GmbH 150 Route du Nant D'Avril 1217 Meyrin Switzerland Switzerland	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Teknoloji Çözumleri Ltd. Sirketi Akkom Plaza, Saray Mahallesi Dr. Adnan Büyükdeniz Cad. No:4 Kat:7-8 Ümraniye Istanbul 34768 Turkey	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Middle East FZ-LLC Dubai Internet City Innovation Hub Building #1, 3rd Floor, Dubai 17295 United Arab Emirates	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.

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MAURICIO GERTOPA ESCRIBANO PUBLICO
ABOGADO
SARGENTO GAUTO 559
1ER. PISO
TEL. 2145567
Cel.: 0981 114 [illegible]
Asunción - Paraguay

Oscar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett-Packard Italiana S.r.l Via G. di Vittorio, 9 CAP Cernusco sul Naviglio 20063 Italy	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hydrus Holding S.C.A. 75 Parc d'Activités L-8308 Capellen Luxembourg	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett Packard Nederland B.V. Stroomlaan 16 Amstelveen, 1181 VX The Netherlands	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett Packard Enterprise Szturmowa 2A Warsaw 02-678 Poland	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Norge AS Rolfsbuktveien 48 1364 Fornebu Norway	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Portugal Lda Rua dos Malhoes, 4 Edif. D. Sancho 1, Quinta Da Fonte, Oeiras, Lisboa 2774 -528 Paço D' Arcos Portugal	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett Packard Enterprise Slovakia s.r.o Galvaniho 19045/1962104 Bratislava 82104 Slovakia	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.

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MAURICIO GERTOSA
ESCRIBANO PÚBLICO
REG. N° 180
SARGENTO CAYETANO SS
16A PISO
TEL. 2106567
CEL. 0981 114 23
Asunción, Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05 24

Effective Date: 2023-06 05

Expiry Date: 2026-06-04

online

Certificate No: FM 534154

Location	Registered Activities
Hewlett-Packard s.r.o Za Brumlovkou 1559/5 Michle 140 00 Prague 4 Czech Republic	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard ApS Engholm Parkvej 8 3450 Allerød Denmark	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard OY Piispankalliontie 17 Espoo Piispa, Finland Finland	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard GmbH Herrenberger Strasse 140 D-71034 Boeblingen Germany	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Hellas E.P.E 1-3 Tzavella str. 152 31 Halandri Athens Greece	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Informatikai Kft Alkotás utca 55-61 Budapest 1123 Hungary	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett Packard Enterprise Ireland Ltd Bldg DUB01 Kildare Inovation Campus Barnhall Road Leixlip Co Kildare W23 Y972 Ireland	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Israel Ltd 9 Dafna St Ra'anana 4366223 Israel	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.

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MAURICIO GARTOPAN
ESCRIBANO PUBLICO
REG. N° 40
SARGENTO GALTC 865
TEL.: 2148861
Cel. 0981 116 123
mauricio@escribanogartopan.com
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Enterprise Chippewa Falls - Warehouse 1949 Commerce Parkway Chippewa Falls Wisconsin 54729 USA	Provision of manufacturing.
Hewlett Packard Enterprise 165 Dascomb Rd Andover Massachusetts 01810 USA	Provision of manufacturing
Hewlett-Packard France Immeuble SENSE 4 Rue Paul Lafargue CS 50061 PUTEAUX CEDEX 92815 France	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett Packard Caribe B.V. Puerto Rico Manufacturing Operations Road 110 Km. 28 Bldg #1 Aguadilla 00605 Puerto Rico	Provision of manufacturing
Hewlett-Packard International Sàrl 150 Route du Nant D'Avril 1217 Meyrin Switzerland	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard Gesellschaft m.b.H Canettistrasse 5 1100 Vienna Austria Austria	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.
Hewlett-Packard BVBA/SPRL Hermeslaan 1a B-1831 Diegem Belgium	Provision of sales supply chain, delivery service support, converged solutions and datacenter solutions.

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MAURICIO GARTORAN
ESCRIBANO PUBLICO
REG. N° 160
SARGENTO GAUTO 156
1er PISO
TEL.: 214681
Cel.: 0981-136-33
mauriciogartoran@hotmail.com
Asunción - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04

Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05

Expiry Date: 2026-06-04

Certificate No: FM 534154

Location	Registered Activities
Hewlett Packard Enterprise 1701 East Mossy Oaks Road Spring Texas 77389 USA	Provision of Head Quarter, design and development, storage and server and supply chain.
Hewlett-Packard Enterprise SA de CV Mexico City Prolongacion Reforma No. 700 Col. Lomas de Santa Fe Delegacion Alvaro Obregon Mexico Ciudad de México C.P. 01210 Mexico	Provision of service.
GSD SC Puerto Rico Repair Operations (PRRO) Road 110 Km. 28 Bldg #1 Aguadilla 00605 Puerto Rico	Provision of manufacturing.
Hewlett Packard Enterprise Chippewa Falls - Engineering 1168 Technology Way Chippewa Falls Wisconsin 54729 USA	Provision of manufacturing.
Hewlett Packard Enterprise Chippewa Falls - Production 100 North Cashman Drive Chippewa Falls Wisconsin 54729 USA	Provision of manufacturing.

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MAURICIO BACHTOLD CESBARRO PUJOL
FEGA N° 130
SARGENTO GAUTO 555
CEP. 2500
TEL. 2146567
Cel. 0981 145 123
Itauguá - Paraguay

Cesar Acosta
Director
ITCS S.A.

Original Registration Date: 2008-04-04
Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05
Expiry Date: 2026-06-04

bsi.

Certificate of Registration

QUALITY MANAGEMENT SYSTEM – ISO 9001:2015

This is to certify that:

Hewlett Packard Enterprise
1701 East Mossy Oaks Road
Spring
Texas
77389
USA

CERTIFICO: La presente copia es reflejo fiel del documento que tengo a la vista. CONSTE

MAURICIO BERTORAN ESCRIBANO PUBLICO REG. N° 161 SARGENTO GAUTO 555 TEK. 1050 TEL. 2146540 Cel. 0981 114 123

Holds Certificate Number: FM 534154

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

Provision of Hewlett Packard Enterprise products and services for cloud service, data center, software, networking, supercomputing, storage and server hardware, and resources including design and development, sales, supply chain management, manufacturing, remanufacturing, delivery, installation and support.

For and on behalf of BSI:

Matt Page, Managing Director Assurance - UK & Ireland

Original Registration Date: 2008-04-04
Latest Revision Date: 2023-05-24

Effective Date: 2023-06-05
Expiry Date: 2026-06-04

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César Acosta
Director
ITCS S.A.

ANEXO C

Cesar Acosta
Director
BCS S.A.

038

Nombre del examen	Número de examen	Fecha en la que se aprobó
Managing Microsoft Teams	MS-700	13 jul 2021
Managing Office 365 Identities and Requirements	346	15 dic 2016
Enabling Office 365 Services	347	22 nov 2016
Server Virtualization with Windows Server Hyper-V and System Center Specialist	74-409	29 sept 2015
Advanced Solutions of Microsoft Exchange Server 2013	342	20 sept 2016
Core Solutions of Microsoft Exchange Server 2013	341	23 ago 2016

Módulos completados

Título del módulo	Descripción	Completado el	Duration
Diseño de una solución de almacenamiento de datos para datos relacionales	Los arquitectos de Azure diseñan y recomiendan soluciones de almacenamiento de datos relacionales	10 oct 2023	41 min.
Manage email addresses, lists, and resources	Manage email addresses, lists, and resources	13 jun 2023	40 min.
Manage secure user access in Microsoft 365	Manage secure user access in Microsoft 365	3 abr 2023	58 min.
Implement directory synchronization tools	Implement directory synchronization tools	3 abr 2023	38 min.

Cesar Arias
DIRECTOR
ITES S.A.

Título de la certificación	Número de certificación	Fecha de obtención	Expira el
Microsoft® Certified Solutions Expert: Productivity Charter Member	A2F4E4-J0BA55	15 dic 2016	N/D
Microsoft® Certified Solutions Expert: Messaging	D54P34-E6FFEF	15 dic 2016	N/D
Microsoft® Certified Solutions Associate: Office 365	9T6424-D599C9	15 dic 2016	N/D
Microsoft Specialist: Server Virtualization with Windows Server Hyper-V and System Center	BA252E-8MDDAA	29 sept 2016	N/D
Microsoft Certified Professional	3688U3-EEC883	23 ago 2016	N/D

Exámenes aprobados

Nombre del examen	Número de examen	Fecha en la que se aprobó
Microsoft 365 Mobility and Security	MS-101	31 mar 2023
Configuración y funcionamiento de Microsoft Azure Virtual Desktop	AZ-140	20 ene 2023
Diseño de soluciones de infraestructura de Microsoft Azure	AZ-305	27 oct 2022
Microsoft Azure Administrador	AZ-104	25 oct 2022
Diseño e implementación de soluciones para Redes de Microsoft Azure	AZ-700	8 abr 2022
Microsoft 365 Identity and Services	MS-100	2 feb 2022
Microsoft 365 Messaging	MS-203	23 jul 2021

Cesar Acosta
Director
ITES S.A.

Microsoft Expediente

Nombre legal: Diego Miranda MCID: 13525283

Diego Miranda

Nombre de usuario: DiegoMiranda1315

Número de certificaciones activas

12

Número de exámenes aprobados

13

Número de módulos realizados

251

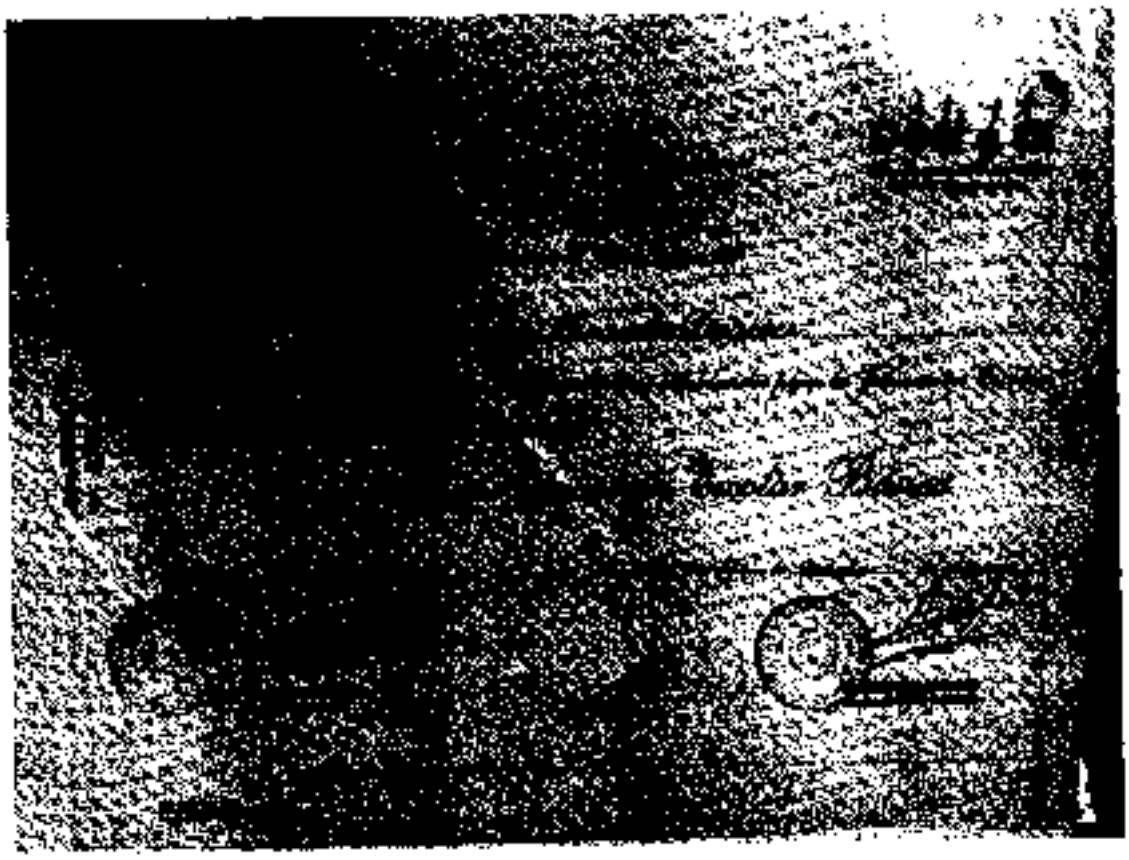
Duración de los módulos completados

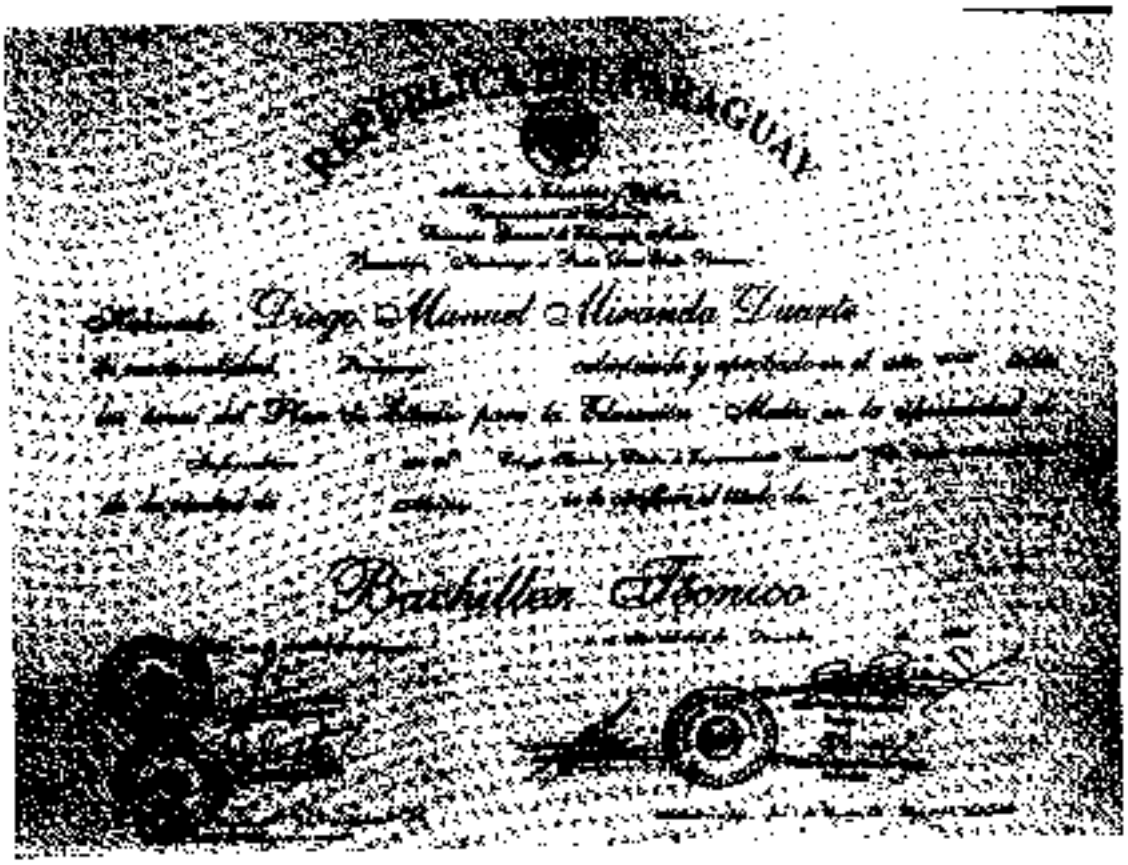
151 h 5 min.

Certificaciones activas

Título de la certificación	Número de certificación	Fecha de obtención	Expira el
Microsoft Certified: Azure Virtual Desktop Specialty	F4DAB0-B5O9BA	20 ene 2023	20 ene 2024
Microsoft 365 Certified: Administrator Expert	2F4F46-3763A9	31 mar 2023	31 mar 2024
Microsoft Certified: Azure Network Engineer Associate	5470B4-B01ABK	8 abr 2022	8 abr 2024
Microsoft 365 Certified: Teams Administrator Associate	A9M563-09544F	13 jul 2021	13 jul 2024
Microsoft 365 Certified: administrador asociado de mensajería	CBE0AA-5A4E0Q	23 jul 2021	23 jul 2024
Microsoft Certified: Azure Administrator Associate	7H46C4-E048F9	25 oct 2022	25 oct 2024
Microsoft Certified: arquitecto de soluciones experto de Azure	D53R4C-B515A4	27 oct 2022	27 oct 2024

César Acosta
Director
ITC5 S.A.





Copia Fiel del Original
ITOS S.A.

BrightStar S.A.
Febrero 2010 a Agosto 2015
- Soporte técnico en hardware, software y redes (switch, wireless, redes)

Formación academica y honores recibidos:	1996-1998. **Colegio Técnico Nacional de Asunción** Asuncion-Paraguay • **Técnico en Electrónica** 1999. Ingresante a la Universidad Nacional de Asunción a la Carrera de Análisis de Sistemas Informáticos – Entre los primeros 30 Lugares
Manejo de idiomas.	• Dominio oral y escrito del **inglés (a nivel técnico) y castellano**, aprendido por medio de lectura de libros técnicos y cursos autodidactas
Adiestramiento especializado:	• **Operador Avanzado en ambiente Windows** Junio, 2000. Centro De Informatica Aplicada. Asunción-Paraguay • **Certificado de Redes** Abril, 2005. Colegio Tecnico Nacional (CEPAE), Asunción-Paraguay
Herramientas tecnológicas	Manejo de Herramientas de Estaciones de Trabajo y Servidores, switch, routers firewalls, proxy's, antivirus, software de backup, herramientas de resolución de problemas
Referencias personales:	Srta. Claudia Moringo Teléfono: 0971 332911 Emilio Torrado Telefono: 0981108861

Cesar Acosta
Director
ITCS S.A.

Diego Manuel Miranda Duarte. Móvil: +595992283514 E-mail: dmiranda@itcs.com.py

CV – Diego Manuel Miranda Duarte

Movil. +595992283514 E-mail dmiranda@itcs.com.py
Cedula de Identidad: 3.258.222

Actualizado al 1 de Octubre de 2015

Experiencia profesional.

Marzo 2000 a Julio 2002 **Ferreteria San Diego.**

Ayudante

Febrero 2003 a Agosto 1999. **Cyber Pirata**, Asunción-Paraguay.

Administrador-Técnico

Junio 2004 a Julio 2004 Pre-pasantia **Diviserv S.A.**, Asunción-Paraguay

Técnico de Impresoras HP

- Ensamble de impresoras
- Mantenimiento deskjet,laser, plotters
- Soporte técnico

Junio 2005 a Enero 2006. **Banco Central Del Paraguay**, Asunción-Paraguay

Departamento Técnico

- Soporte a usuarios y equipos
- Redes

Enero 2006 a Julio 2008. Banco **Central Del Paraguay**, Asuncion-Paraguay

Departamento Técnico

- Soporte técnico en hardware, software y redes (switch, wireles, redes)

Julio 2008 hasta la fecha. **ITCS S.A.** Asunción-Paraguay

Soporte Técnico

Trabajando para las Siguientes empresas:

***TIGO (Trabajo Especifico)**

Julio 2008 a Enero 2009

- Encriptacion de notebooks

***Financiera El Comercio**

febrero 2009 a Febrero 2009

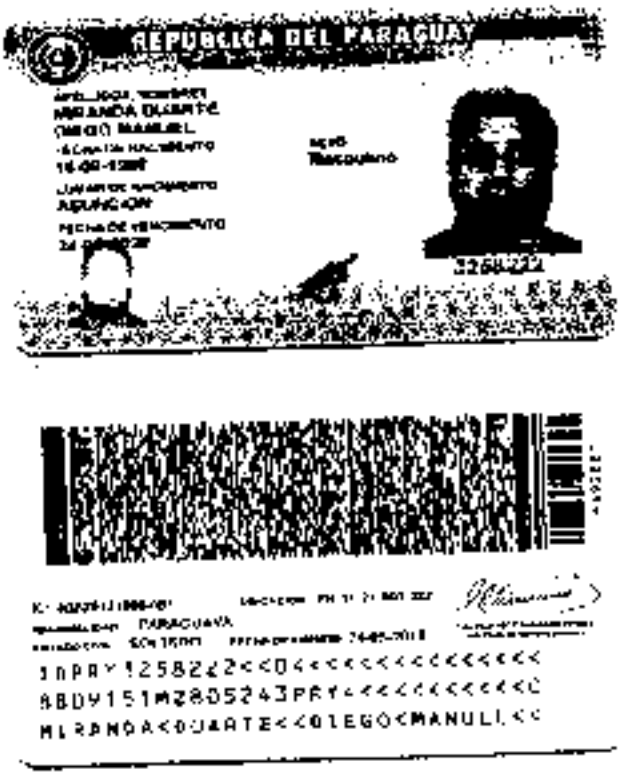
- Soporte técnico en hardware, software y redes (switch, wireles, redes)

***TIGO**

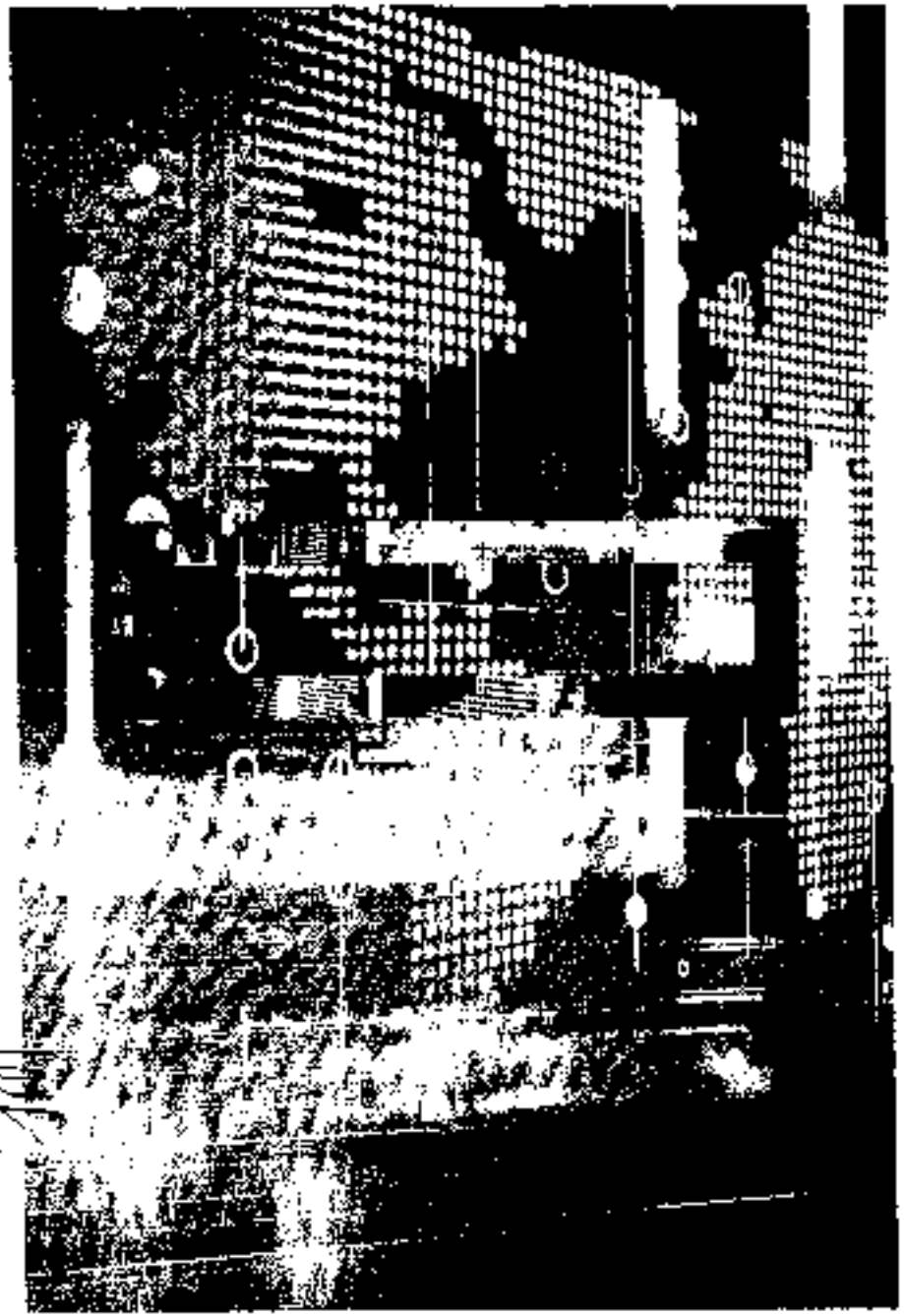
febrero 2009 a Febrero 2010

- Soporte Senior.
- hardware, software y redes (switch, wireles, redes)

Cesar Acosta
Director
ITCS S.A.



Cesar Acosta
Director
ITCS S.A.



Hewlett Packard Enterprise hereby awards

Diego Miranda

the title of

HPE Accredited Technical Professional
Hybrid IT Solutions V2

for the successful completion of the requirements as prescribed by Certification and Learning.

Awarded on September 8, 2022

Frederic Glaser
Director, Worldwide Partner Certifications

Cesar Augusto
Escobar
M.D.S.A.

INSTITUTO DE PREVISION SOCIAL

Delegación Planilla de Salarios

Detalle de Planilla

Nro: [illegible]

Tipo: NOR

Ingreso (a): 21/8/2024

Vencimiento: 1 - 30/08/2024

Cant. Asegur.: 46

Página: [illegible]

Usuario impresión: 1966751

Fecha-Hora: 01/09/2024 10:28:31

Comprobante a Cobrar Nro: 10871245

Empleador

Razón Soc.: INFORMATION TECHNOLOGY CONSULTING SUPPORT SOCIEDAD ANONIMA

RUC: 80045461

Nro Patronal: 0002-IVA-00314

Cod. Empresa: 01464

Ide Asegur	Nro Clic	Asegurado	Salario Basic	Dias	Salario Imponible	Mov
341967	355474	ACOSTA VALDEZ FATIMA ELOISA	7 000 000	30	7 000 000	NORMAL
1701518	4149984	ALONSO ALONSO FRANCISCO JAVIER	5 040 000	30	5 040 000	NORMAL
411551	4171121	AYALA CACERES GUILLERMO	3 500 000	30	3 500 000	NORMAL
1605193	7331329	GALDIONA CAZZOLA CHRISTIAN NATALIO	2 000 373	30	2 000 373	NORMAL
2004730	4116621	BENITEZ DIAPARRO JUAN RAMON	7 000 000	29	7 000 000	REPOSO
1493433	4791667	BENITEZ FLEITAS YENIFER RAMONA	2 314 074	15	2 314 074	ENTRADA
1329825	4541891	BENITEZ JIMENEZ BERTRAN ADALBERTO	3 500 000	30	3 500 000	NORMAL
2599807	4806581	CABRAL GONZALEZ DIEGO FERNANDO	10 550 910	30	10 550 910	NORMAL
380869	1951137	CANTERO GALEANO FREDDY JAVIER	1 340 188	15	1 340 188	SALIDA
1452816	3073101	CARDOZO CACERES RUBEN EDUARDO	5 500 000	30	5 500 000	NORMAL
3486917	6699137	CARDOZO VAUCHER MATHIAS RUBEN	2 709 661	29	2 709 661	REPOSO
1743129	4311186	CUBILLA TORRES CRISANO ALBERTO	3 000 000	30	3 000 000	NORMAL
3539157	3334455	CUEVAS COLMAN CARLOS EZEQUIEL	2 880 313	30	2 880 313	NORMAL
1918834	3442813	DIAZ CESPEDES JORGE DAVID	5 631 758	30	5 631 758	NORMAL
1010197	7559461	DOMINGUEZ CRUZ RODRIGO JOAQUIN	3 504 000	30	3 504 000	NORMAL
2799526	3455716	DUARTE BENITEZ DIANA CAROLINA	3 214 000	30	3 214 000	NORMAL
529216	4914232	ESPINOLA AGUERO MICAELA MONTSERRAT	6 000 000	30	6 000 000	NORMAL
2378418	3188543	ESPINOLA DE MARSAL MARIA CECILIA	3 000 000	15	3 000 000	NORMAL
1182784	4112557	FRETES ALONSO MIGUEL ANGEL	10 500 000	30	10 500 000	NORMAL
3017535	5373252	GALEANO RUIZ JUAN LUIS FELIPE	3 000 000	30	3 000 000	NORMAL
1539106	5371673	GODOY NAVARRO JUAN CARLOS	2 900 000	27	2 900 000	REPOSO
480225	5716514	GODOY RAMIREZ ROBERTO NICOLAS	3 500 000	30	3 500 000	NORMAL
1007484	2359466	GONZALEZ BOLANCHE EDUARDO SAMUEL	15 000 000	30	15 000 000	NORMAL
549225	5164416	LOPEZ RODRIGO FAYO ADRIAN	3 500 000	30	3 500 000	NORMAL
2215804	2201275	MARTINEZ MORA ROMINA FABIOLA	10 200 000	30	10 200 000	NORMAL
1868615	3571430	MARTINEZ VILALBA GUSTAVO DAVID	8 681 219	30	8 681 219	NORMAL
763664	4357069	MEDINA RAMIREZ VICTOR HUGO	5 370 000	30	5 370 000	NORMAL
1071175	4652848	MEZA ARANDA ALBA NOEMI	4 500 000	30	4 500 000	NORMAL
1461424	1255223	MIRANDA DUARTE DIEGO MANUEL	11 400 000	30	11 400 000	NORMAL
2980337	4372267	NUÑEZ CASTILLO ROSAURA LISSETTE	2 900 000	30	2 900 000	NORMAL
1635714	3047767	NUÑEZ MARTINEZ FACUNDO	11 000 000	30	11 000 000	NORMAL
2711193	2558015	PEDROZO GAUTO DAVID DOLARIO	4 000 000	30	4 000 000	NORMAL
3547243	5781164	PERALTA MENDEZ YENI AMALIA	2 880 373	30	2 880 373	NORMAL
2749972	4721424	RAMOS LOPEZ CARLOS RAUL	6 900 427	30	6 900 427	NORMAL
2571172	2374031	RODRIGUEZ BRIZUELA JUAN JOSE	13 168 813	30	13 168 813	NORMAL
1628663	2689234	ROJAS PEDIS CARLOS ARIEL	3 846 154	30	3 846 154	NORMAL
2799797	745020	SAMANIEGO QUIÑONEZ CARLOS GUSTAVO	2 700 000	30	2 700 000	NORMAL
1019031	3321256	SAMUDIO CORONEL JOHAN RAMIRO	7 000 000	30	7 000 000	NORMAL
2129983	3134717	SANABRIA SANCHEZ PABLO FEDERICO	3 680 373	30	3 680 373	NORMAL
1135999	3565124	SAVAGE MORA DAVID MARCIAL	6 840 000	30	6 840 000	NORMAL
133963	2210104	SCHUSSMULLER TREPOWSKI JUAN FERNANDO	6 510 000	30	6 510 000	NORMAL
1278225	5131006	SENCION VILLAMAYOR JONATHAN DAVID	2 880 373	30	2 880 373	NORMAL
3111886	6706174	SIFONTES MALDONADO ALEJANDRO JOSE	8 100 000	30	8 100 000	NORMAL
2145002	1958772	SILVA OJARTE JOSE ANTONIO	12 000 000	30	12 000 000	NORMAL
2700461	5030429	TRUEME LOPEZ NATAS ALEJANDRO	3 800 000	30	3 800 000	NORMAL
1991491	4303769	VASQUEZ RONIFER JAMES BRAYAN	4 200 000	30	4 200 000	NORMAL
1088420	5174663	VILLALBA FARIÑA MARLENE BEATRIZ	2 680 373	30	2 680 373	NORMAL
1656725	4467130	VILLALBA ORTIZ RODRIGO HUMBERTO	1 855 638	15	1 855 638	NORMAL

Cesar Acosta
Director
ICS S.A.

Firma y aclaración de quien recibe

Firma del empleador o representante

Este Planilla no constituye documento de pago, sino resumen de pago del sistema correspondiente. EL PAGO DEL EXTRACTO IMPLICA CONFORMIDAD DEL PRESENTE DETALLE

INSTITUTO DE PREVISION SOCIAL

Declaración Jurada de Salarios

Datos de Planilla

Id: 1455327

Tipo: NOR

Importe: 233 008 459

Período: 008 - SETIEMBRE/2023

Cor. Aporte: 49

Página: 1/1

Usuario Empresa: 1366751

Fecha Hora: 05-10-2023 11:32:39

Correspondiente al Período Nro.

Empresa

Razón Soc.: INFORMATION TECHNOLOGY CONSULTING SUPPORT SOCIEDAD ANONIMA

RUC: [illegible]

Nro. Patronal: 0002-02-07314 Nro Empleo: 21469

Id. Aporte	Nro. Ch.	Asegurado	Salario Real	Días	Salario Imponible	Mov
241907	356474	ACOSTA ANCHUCA FATIMA ELISA	7 000 000	30	7 000 000	NORMAL
1701536	4149959	ALONSO ALONSO FRANCISCO JAVIER	5 840 000	30	5 840 000	NORMAL
417531	4171721	AYALA LACFRES GUILLERMO	3 583 333	29	3 583 333	REPOSO
1495143	2231525	BALBUENA CAZZOLA CHRISTIAN NATALIO	2 690 379	30	2 690 379	NORMAL
2294790	4116027	BENITEZ CHAPARRO JUAN RAMON	7 500 000	30	7 500 000	NORMAL
1467437	4595667	BENITEZ FLEITAS JENIFER RAMONA	3 200 000	30	3 200 000	NORMAL
1269929	4841017	BENITEZ GIMENEZ BERTRAN ADALBERTO	3 500 000	10	3 500 000	NORMAL
2099007	4856541	CABRAL GONZALEZ DIEGO FERNANDO	10 590 110	30	10 590 110	NORMAL
1470916	3673190	CANCOZO CACERES RUBEN EDUARDO	5 316 667	29	5 316 667	REPOSO
3410997	6534112	CARDOZO VALDEZ MATIAS RUBEN	2 800 000	30	2 800 000	NORMAL
1745129	4711108	CUBILA TORRES EFRAIN ALBERTO	1 900 000	30	1 900 000	NORMAL
1533751	5364455	GUEVAS COLMAN CARLOS EZEQUIEL	2 583 333	30	2 583 333	NORMAL
1805854	4440113	DIAZ CESPEDES JORGE DAVID	10 000 000	30	10 000 000	NORMAL
1010930	6604487	DOMINGUEZ ORTIZ FEDERICO JOAQUIN	3 500 000	30	3 500 000	NORMAL
2188326	3405276	DUARTE BENITEZ DIANA CAROLINA	2 966 667	29	2 966 667	REPOSO
325278	4314337	ESPINOLA AGUERO MARIELA MONTSERRAT	6 000 000	30	6 000 000	NORMAL
2322548	3188549	ESPINOLA DE MARGAL MARIA CECILIA	3 800 000	30	3 800 000	NORMAL
224560	1160196	FLORES QUALLEN MIGUEL ANGEL	3 833 333	25	3 833 333	ENTRADA
1165746	4112557	FRETES NUÑEZ MIGUEL ANGEL	18 500 000	30	18 500 000	NORMAL
1917035	5235053	GALEANO RUIZ DIAZ LUIS FELIPE	4 130 000	30	4 130 000	SALIDA
1536100	5171173	GODOY NAVARRO JUAN CARLOS	3 500 000	30	3 500 000	NORMAL
986232	5719804	GODOY RAMIREZ ROBERTO NICOLAS	3 900 000	30	3 900 000	NORMAL
1552484	3184063	GONZALEZ SOLAECHE EDUARDO SAMUEL	15 000 000	30	15 000 000	NORMAL
542715	5164478	LOPEZ DECARO ENTO ADRIAN	3 000 000	30	3 000 000	NORMAL
2015804	2301279	MARTINEZ MORA DONNA FADIOLA	10 000 000	30	10 000 000	NORMAL
1659673	2577436	MARTINEZ VILLALBA LUIS DAVID	3 881 919	30	3 881 919	NORMAL
193964	4257019	MEDINA RUIZ VICTOR HUGO	5 840 000	30	5 840 000	NORMAL
1386257	3437136	MELGAREJO VERA RODRIGO MANUEL	12 362 939	30	12 362 939	ENTRADA
2221195	4862846	MELO ARANDA ALBA HUEMI	4 500 000	30	4 500 000	NORMAL
1412126	5258222	MIRANDA DUARTE DIEGO MANUEL	11 400 000	30	11 400 000	NORMAL
2307087	5222267	NUÑEZ CASTILLO ROSARIA LISSETTE	2 600 000	30	2 600 000	NORMAL
1613734	3527717	NUÑEZ MARTINEZ FAUSTINO	11 000 000	30	11 000 000	NORMAL
2716482	2456612	HEDROZO SANTOS OSVALDO ARIEL	4 000 000	30	4 000 000	NORMAL
1542742	5711164	PERALTA MENDEZ YERI AMELIA	2 867 000	30	2 867 000	NORMAL
2748833	4311429	RAMOS NUÑEZ CARLOS RAUL	6 962 417	30	6 962 417	NORMAL
2525173	5310041	RODRIGUEZ BRITEZ JUAN JOSE	12 257 833	28	12 257 833	SALIDA
1703612	4196244	FLORES FLOR CARLOS ARIEL	3 646 154	30	3 646 154	NORMAL
2784792	747006	SAMANIEGO QUIÑONEZ CARLOS GUSTAVO	2 800 000	28	2 800 000	REPOSO
1034512	1232256	SANJUAN GORONEL OSMAR RAMUNDO	12 000 000	30	12 000 000	NORMAL
3125963	4188612	SAMADOR SANCHEZ PABLO FEDERICO	3 833 333	30	3 833 333	NORMAL
1738999	1868124	SAVALE MENA DAVID MARCIAL	5 840 000	30	5 840 000	NORMAL
1215903	5200154	SCHLESWILK TRESHUMSKI JUAN FERNANDO	6 600 000	30	6 600 000	NORMAL
1019775	5733006	SERVIN VILLANAVO JONATHAN DAVID	2 600 333	30	2 600 333	NORMAL
2111608	4735610	SIFUNTES MALDONADO ALEJANDRO JOSE	3 100 000	30	3 100 000	NORMAL
2545292	1356192	SILVA DUARTE JOSE ANTONIO	13 000 000	30	13 000 000	NORMAL
2415461	5630863	TRUCHE LOPEZ MATIAS ALEJANDRO	4 000 000	30	4 000 000	NORMAL
2191861	4849166	VARGAS ROMERO JAMES BRYAN	4 300 000	30	4 300 000	NORMAL
1084420	3579683	VILLALBA FARINA MARLENE BEATRIZ	2 860 273	30	2 860 273	NORMAL
1084725	3547820	VIERA ORTIZ RODRIGO HUMBERTO	1 855 038	19	1 855 038	NORMAL

[illegible] DEL INFORME [illegible]

Director
ITCS S.A.

Por lo presente [illegible] que [illegible] se ha verificado

[illegible] contenido

Firma del funcionario [illegible]

Recibido por [illegible]

Esta Planilla no [illegible] documento de pago, [illegible] correspondiente. EL PAGO DEL EXTRACTO REPLICA CONFORMADO DEL PRESENTE DETALLE

ANEXO B

Carlos Acosta
Director
ITCS S.A.

Asunción, 23 de febrero de 2023

Nota DA N° 1413

INFORME DE CONFORMIDAD

Dependencia Administradora del Contrato	ABOGACIA DEL TESORO
Fecha de Aprobación	23/02/2023
Proveedor del Servicio	ITCS SA "Adquisición de Equipos de Storage para la Abogacía del Tesoro"
Periodo del Servicio	N/A
Contrato M.H. N°	MH N° 70/2022
Orden de Compra N°	232/2022
Remisión:	
Conformidad	X SI NO
Observación	GS. 278.982.000 (GUARANIES DOSCIENTOS SETENTA Y OCHO MILLONES NOVECIENTOS OCHENTA Y DOS MIL).
Administrador del Contrato:	**Verificado por:**

Firma y Aclaración
Sello de la Dependencia
Lic. Angel Insaurralde
Jefe Dpto. Administrativo
Abogacía del Tesoro

Firma y Aclaración
Tesorero/a
Lic. Carlos Ramos
Dpto. Administrativo
Área Informática
Abogacía del Tesoro

Firma y Aclaración
Director/a
Dirección de Administrativa
Abogacía del Tesoro

Cesar Aco
Director
ITCS S.A.

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Coordinación de la Unidad Operativa de Contratación

CONTRATO MH N° 70/2022
EN EL MARCO DE LA LICITACIÓN POR CONCURSO DE OFERTAS N° 15/2022 "ADQUISICION DE EQUIPOS DE STORAGE PARA LA ABOGACÍA DEL TESORO" - ID 417.828, SUSCRITO CON LA EMPRESA INFORMATION TECHNOLOGY CONSULTING SUPPORT (ITCS S.A.)----------

13. SOLUCIÓN DE CONTROVERSIAS

Cualquier diferencia que surja durante la ejecución de los contratos se dirimirá conforme las reglas establecidas en la legislación aplicable y en las Condiciones Contractuales. ----------

14. ANULACIÓN DE LA ADJUDICACIÓN

Si la Dirección Nacional de Contrataciones Públicas resolviera anular la adjudicación de la contratación debido a la procedencia de una protesta o investigación instaurada en contra del procedimiento, y si dicha nulidad afectara al contrato ya suscrito entre LAS PARTES, el contrato o la parte del mismo que sea afectado por la nulidad quedará automáticamente sin efecto, de pleno derecho, a partir de la comunicación oficial realizada por la DNCP, debiendo asumir LAS PARTES las responsabilidades y obligaciones derivadas de lo ejecutado del contrato. ----------

EN TESTIMONIO de conformidad se suscriben 2 (dos) ejemplares de un mismo tenor y a un solo efecto en la Ciudad de Asunción, República del Paraguay.

Por y en nombre de la contratante

JORGE PEDRO GALEANO ROBLEDO
DIRECTOR ADMINISTRATIVO
MINISTERIO DE HACIENDA

Por y en nombre del proveedor

GABRIEL ESCULIES ARDITI
Presidente
INFORMATION TECHNOLOGY CONSULTING SUPPORT (ITCS S.A.)

Oscar Acosta
Director
ITCS S.A.

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9. ADMINISTRACIÓN DEL CONTRATO

La administración del contrato: Estará a cargo de la Abogacía del Tesoro y tendrán a su cargo la fiscalización permanente del cumplimiento por parte del PROVEEDOR de las obligaciones emergentes de esta contratación.

En caso de que se realice observaciones sobre el servicio o se constate incumplimientos contractuales, el administrador del contrato deberá remitir el informe al Departamento de Monitoreo de Contratos de la CUOC, para su análisis y la aplicación de las sanciones, si correspondiere. Con base a las disposiciones legales establecidas en la Ley N° 2051/03. (Artículos 63, 69, 70 y 72, respectivamente).

10. FORMA Y TÉRMINOS PARA GARANTIZAR EL CUMPLIMIENTO DEL CONTRATO

La garantía para el fiel cumplimiento del contrato se regirá por lo establecido en las Condiciones Contractuales, la cual se presentará a más tardar dentro de los 10 (diez) calendarios siguientes a la firma del contrato.

11. MULTAS

Las multas y otras penalidades que rigen en el presente contrato serán aplicadas conforme con lo establecido en el pliego de bases y condiciones. Superado el monto equivalente a la Garantía de Fiel Cumplimiento de Contrato, la contratante podrá aplicar el procedimiento de rescisión de contratos de conformidad al Artículo 59 inc. c) de la Ley N° 2.051/03 "De Contrataciones Públicas", caso contrario deberá seguir aplicando el monto de las multas que correspondan.

La rescisión del contrato o la aplicación de multas por encima del porcentaje de la Garantía de Cumplimiento del Contrato deberá comunicarse a la DNCP a los fines previstos en el artículo 72 de la Ley N° 2051/03 "De Contrataciones Públicas".

El valor del porcentaje de multas será aplicado sobre la orden de compra o servicio. La aplicación de multas no libera al proveedor de cumplimiento de sus obligaciones contractuales.

12. CAUSALES Y PROCEDIMIENTO PARA SUSPENDER, TERMINAR O RESCINDIR EL CONTRATO

Las causales y el procedimiento para suspender temporalmente, dar por terminado en forma anticipada o rescindir el contrato, son las establecidas en la Ley N° 2.051/03, y en las Condiciones Contractuales del pliego de bases y condiciones.

Jorge Galeano Robledo
Director Administrativo

Tel.: +595 21 414 000 - 493 630
www.hacienda.gov.py

Cesar Acosta
Director
ITCS S.A.

CONTRATO MH Nº 70/2022

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para la aplicación de las sanciones correspondientes y su remisión a la Dirección Nacional de Contrataciones Públicas, a los efectos establecidos en el Art. 72 del mismo cuerpo legal.

Reajuste de precios:

El pedido reajuste podrá solicitarlo el proveedor y será analizado por la contratante.

La formula y el procedimiento para el reajuste serán los siguientes: Siempre y cuando la variación del IPC publicado por el BCP haya sufrido una variación igual o mayor al quince por ciento (15%) referente a la fecha de apertura de ofertas:

$$Pr = P \times \frac{IPC1}{IPCo}$$

Dónde:

Pr: Precio Reajustado.

P: Precio adjudicado.

IPC1: Índice de precios al Consumidor publicado por el Banco Central del Paraguay, correspondiente al mes de la provisión del servicio.

IPCo: Índice de precios al consumidor publicado por el Banco Central de Paraguay, correspondiente al mes de la adjudicación.

En caso de que el Proveedor se halle atrasado con respecto al plazo de entrega, no se reconocerá reajuste de precios por variación del Índice de Precios al Consumidor.

El proveedor presentará las facturas de reajuste en forma independiente y simultáneamente con las facturas específicas de los trabajos realizados.

El reajuste será aplicado a aquella parte del servicio pendiente de ejecución luego de la variación de precios.

7. **VIGENCIA DEL CONTRATO**

Este contrato tendrá de vigencia desde la suscripción del mismo por las partes y hasta el cumplimiento total de las obligaciones.

8. **PLAZO, LUGAR Y CONDICIONES DE LA PROVISIÓN DE BIENES/SERVICIOS**

Los bienes/servicios deberán ser entregados y/o prestados dentro de los plazos establecidos en el Pliego de Bases y Condiciones.

Jorge Galeano Robledo
Director Administrativo

Director
ITCS S.A.

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CONTRATO MEF N° 70/2022
EN EL MARCO DE LA LICITACIÓN POR CONCURSO DE OFERTAS N° 15/2022 "ADQUISICIÓN DE EQUIPOS DE STORAGE PARA LA ABOGACÍA DEL TESORO" - ID 417828, SUSCRITO CON LA EMPRESA INFORMATION TECHNOLOGY CONSULTING SUPPORT (ITCS S.A.)

disposiciones legales de la República del Paraguay. Asimismo, independientemente de estas retenciones impositivas, se aplicará una Retención sobre el monto de las facturas pagadas, deducidos los impuestos reflejados en las mismas en concepto de Contribución de conformidad a lo dispuesto en el Art. 41 de la Ley 2051/03 De Contrataciones Públicas, y conforme lo dispone la reglamentación vigente.

COMPROMISOS DEL PROVEEDOR Y CONTRATANTE:

EL PROVEEDOR será responsable del pago de todos los impuestos y otros tributos o gravamenes sin excepción alguna.

De conformidad a las disposiciones del Decreto N° 7781/2006, del 30 de junio de 2006 y modificatoria, en las contrataciones con Organismos de la Administración Central, el PROVEEDOR deberá habilitar su respectiva cuenta corriente o caja de ahorro en un Banco de plaza y comunicar a la Contratante para que ésta gestione ante la Dirección General del Tesoro Público, la habilitación en el Sistema de Tesorería (SIFE).

El monto correspondiente de la factura será acreditado dentro del plazo previsto en la cuenta habilitada de EL PROVEEDOR, en un Banco de plaza, vía transferencia bancaria.

La Contratante efectuará los pagos, dentro del plazo establecido en este apartado, sin exceder sesenta (60) días después de la presentación de una factura por el PROVEEDOR, y después de que la contratante la haya aceptado. Dicha aceptación o rechazo, deberá darse a más tardar en quince (15) días posteriores a su presentación.

La presentación deficiente, incompleta o extemporánea de las facturas y los demás documentos que deban acompañarla, requeridos para su cobro, por causas imputables al proveedor, eximirá a la Contratante de eventuales responsabilidades derivadas del retraso de los pagos en caso de no contar con plan financiero para realizar los pagos como consecuencia de la presentación deficiente, incompleta o tardío de dichas facturas.

La Contratante no será responsable ni incurrirá en mora en el pago de las obligaciones derivadas de la ejecución contractual, en el caso de que el Proveedor/Contratista no presente la solicitud de pago con las facturas para el cobro con sus respectivos documentos anexos debidamente completados **dentro de los quince (15) días computados desde la recepción de la conformidad emitida por el Administrador del Contrato**; y que dicho retraso en la presentación ocasione el vencimiento de la cuota mensual de gasto asignada para comprometer el pago por parte de Tesorería General. Los pagos correspondientes estarán supeditados a una nueva asignación de cuota de gastos, según disponibilidad.

La Dirección Administrativa a través de la Coordinación de la Unidad Operativa de Contratación podrá solicitar documentación de hechos presumiblemente constitutivos de infracciones o incumplimientos

Jorge Galeano Robledo
Director Administrativo

Tel.: (595 21 448 0101 - 493 6300
www.hacienda.gov.py

Cesar Jonst
Director
ITCS S.A.

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EN EL MARCO DE LA LICITACIÓN POR CONCURSO DE OFERTAS Nº 15/2022 "ADQUISICIÓN DE EQUIPOS DE STORAGE PARA LA ABOGACÍA DEL TESORO" - ID 417.828, SUSCRITO CON LA EMPRESA INFORMATION TECHNOLOGY CONSULTING SUPPORT (ITCS S.A.)

El monto total del presente contrato es de G. 278.982.000 (guaraníes doscientos setenta y ocho millones novecientos ochenta y dos mil) incluido el Impuesto al Valor Agregado (IVA) y todos los gravámenes correspondientes.

El proveedor se compromete a proveer los bienes/servicios a la contratante y a subsanar los defectos de estos de conformidad a las disposiciones del contrato.

La contratante se compromete a pagar al proveedor como contrapartida del suministro de los bienes y servicios, la subsanación de sus defectos, el precio del contrato o las sumas que resulten pagaderas de conformidad con lo dispuesto en las Condiciones Contractuales.

CONDICIONES DE PAGO

El PROVEEDOR presentará la solicitud de pago a través de la Dirección Administrativa por escrito, y adjuntará a dicha solicitud.

- Nota de solicitud de pago.
- Nota de remisión/acta de recepción/ con la conformidad respecto de los bienes/servicios que fueron entregados/prestados; a entera satisfacción de la contratante, emitido por el administrador del contrato y/o los responsables designados para el efecto, con el Vº Bº del responsable de la Dirección administradora del contrato.
- La factura con timbrado vigente, la cual deberá expresar claramente por separado el Impuesto al Valor Agregado (IVA) de conformidad con las disposiciones tributarias aplicables, asimismo deberán estar debidamente llenadas con los siguientes datos: Ministerio de Hacienda R.U.C.80024627-6, descripción del servicio, número de contrato, número de orden de compra, modalidad del contrato, ej.: CD, LCO, LPN o CE. En ningún caso el valor total facturado podrá exceder el valor adjudicado o las adendas aprobadas.
- Orden de Compra/servicio;
- REPSE (Registro de Prestadores de Servicios) todos los que son prestadores de servicios.
- Certificado de Cumplimiento Tributario;
- Constancia de Cumplimiento con la Seguridad Social;
- Formulario de informe de servicios personales (FIS);
- Formulario de Identificación de Personal (FIP).

En caso de facturas emitidas a través de sistemas informáticos de pre impresión de facturas, que no permitan la consignación de dichos datos, los mismos podrán ser completados en el reverso de la factura, precedidas de la inscripción Lease. Del monto total facturado, serán pasibles las retenciones correspondientes al Impuesto a la Renta y al Impuesto al Valor Agregado, según lo establecido por las

Jorge Galeano Robledo
Director Administrativo

Tel.: +595 21 449 010 / 493 630
www.hacienda.gov.py

Cesar Arosti
Director
ITCS S.A.

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EN EL MARCO DE LA LICITACIÓN POR CONCURSO DE OFERTAS Nº 15/2022 "ADQUISICIÓN DE EQUIPOS DE STORAGE PARA LA ABOGACÍA DEL TESORO" - ID 417.828, SUSCRITO CON LA EMPRESA INFORMATION TECHNOLOGY CONSULTING SUPPORT (ITCS S.A.)

3. DOCUMENTOS ADICIONALES DEL CONTRATO

Los documentos adicionales del contrato son: La **garantía de cumplimiento de contrato que adoptará alguna de las siguientes formas:** Garantía bancaria emitida por un banco establecido en la República del Paraguay o Póliza de seguros emitida por una Compañía autorizada a operar y emitir pólizas de seguros de caución en la República del Paraguay.

4. IDENTIFICACIÓN DEL CRÉDITO PRESUPUESTARIO PARA CUBRIR EL COMPROMISO DERIVADO DEL CONTRATO

El crédito presupuestario para cubrir el compromiso derivado del presente contrato esta previsto conforme al Certificado de Disponibilidad Presupuestaria vinculado al Programa Anual de Contrataciones (PAC) con el ID Nº 417.828.

5. PROCEDIMIENTO DE CONTRATACIÓN

El contrato es el resultado del procedimiento de la **LICITACION POR CONCURSO DE OFERTAS Nº 15/2022 – "ADQUISICIÓN DE EQUIPOS DE STORAGE PARA LA ABOGACÍA DEL TESORO" - ID 417.828**, convocado por el Ministerio de Hacienda. La adjudicación fue realizada según **Resolución MH/DA Nº 334 del 24 de noviembre de 2022.**

6. PRECIO UNITARIO Y EL IMPORTE TOTAL A PAGAR POR LOS BIENES y/o SERVICIOS.

El precio ofertado por el proveedor y más abajo detallado, comprende todo gravamen y cualquier otro gasto en que incurra EL PROVEEDOR en la ejecución del contrato. Queda entendido que estan incluidos asi mismo, los gastos generales y las utilidades, asi como los imprevistos y cualquier otro costo necesario conforme a lo previsto en este contrato.

Item	Descripción del bien	Unidad de Medida	Cantidad	Marca	Procedencia	Precio Unitario IVA Incluido	Precio Total
1	ADQUISICION DE EQUIPOS PARA SISTEMAS DE ALMACENAMIENTO STORAGE	UNIDAD	1	SYNOLOGY	CHINA	278.982.000	278.982.000
					PRECIO TOTAL		278.982.000

Jorge Galeano Rebledo
Director Administrativo

Tel.: (595 21) 449 011 - 413 630
www.hacienda.gov.py

Cesar Alonso
Director
ITCS S.A.

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En la ciudad de Asunción, Capital de la República del Paraguay a los 6 días del mes de diciembre del año dos mil veintidos, el **MINISTERIO DE HACIENDA**, en adelante **LA CONTRATANTE**, representado en este Acto por el Señor **DIRECTOR ADMINISTRATIVO, LIC. JORGE PEDRO GALEANO ROBLEDO**, paraguayo, con Cedula de Identidad Civil Nº 564.232, calidad que acredita con la exhibición del testimonio del Decreto del Poder Ejecutivo N° 4711 de fecha 12 de enero de 2021, con domicilio en la calle Chile Nº 252 entre Palma y Presidente Franco - Asunción, por una parte, y por la otra, la empresa **INFORMATION TECHNOLOGY CONSULTING SUPPORT (ITCS S.A.)**, en adelante denominada **EL PROVEEDOR**, domiciliado en las calles Marcelino Nouz Nº 861 c/ Sgto. Giauto, cuenta con número telefónico (021) 728.8222, correo electrónico licitaciones@itcs.com.py; representada para este acto por el Señor **GABRIEL ESCUDIES ARDITI**, con Cedula de Identidad Nº 1.566.791, la empresa cuenta con Registro Único de Contribuyentes (RUC) Nº 80046953-4, y convienen en celebrar el presente Contrato, sujeto a las Cláusulas y Condiciones que más abajo se establecen.-----

1. OBJETO DEL CONTRATO

Constituye el objeto del presente Contrato, establecer las obligaciones y los derechos de las partes contratantes con relación a la **LICITACIÓN POR CONCURSO DE OFERTAS N° 15/2022 – "ADQUISICIÓN DE EQUIPOS DE STORAGE PARA LA ABOGACÍA DEL TESORO" – ID 417.828**, conforme se detallan en las Especificaciones Técnicas que se encuentran en el Pliego. En caso de existir discordancia entre las especificaciones del objeto descriptas en el Catálogo de la DNCP y las del Pliego, prevalecerán éstas últimas.-- ----------

2. DOCUMENTOS INTEGRANTES DEL CONTRATO

Los documentos contractuales firmados por las partes y que forman parte integral del contrato son los siguientes:

a) Contrato;
b) El Pliego de Bases y Condiciones y sus adendas o modificaciones;
c) Los datos cargados en el SICP;
d) La oferta del proveedor;
e) La resolución de adjudicación del contrato emitida por la contratante y su respectiva notificación.

Los documentos que forman parte del contrato deberán considerarse mutuamente explicativos; en caso de contradicción o discrepancia entre los mismos, la prioridad se dará en el orden enunciado anteriormente ----------

Jorge Galeano Robledo
Director Administrativo

Tel. +595 21 449 010 - 493 650
www.hacienda.gov.py

Cesar Acosta
Director
ITCS S.A.

MOTENONDEHA
Ministerio de
DEFENSA NACIONAL

■ TETÃ REKUAI
■ GOBIERNO NACIONAL

Paraguay de la gente

ACTA DE ENTREGA Nº 60/2021

BIENES PATRIMONIALES

En la ciudad de Asunción capital de la República del Paraguay a los [illegible] días del mes de noviembre del año dos mil veintiuno se procede a la entrega de ***"SERVIDOR, FIREWALL Y LICENCIA"****, por parte del* ***Ministerio de Defensa Nacional – Dirección General de Administración y Finanzas – Dirección de Coordinación - Suministro a la Dirección General DIGETICS****, conforme a la* ***Orden de Compra Nº 154/2021****, Nota de Remisión Nº 0004019*

El Ministerio de Defensa Nacional–Dirección General de Administración y Finanzas - Dirección de Coordinación - Suministro, *entrega a la* ***Dirección General DIGETICS,*** *lo siguiente:*

Descripción	Cant	Unidad de Medida	Precio Unitario IVA Incluido	Precio Total IVA Incluido
Servidor, firewall y Licencia (Conforme a las especificaciones técnicas detalladas en el Pliego de Bases y Condiciones)	1	Unidad	98.623.000	98.623.000
			TOTAL	**98.623.000**

El acto se lleva a cabo con las formalidades de práctica, procediendo a suscribir la presente acta, en cinco ejemplares de un mismo tenor, por el Ministerio de Defensa Nacional-Dirección General de Administración y Finanzas - Suministro el S.P. ***Nelson Miguel Rodas Avalos****, por la* ***Dirección General DIGETICS*** *el* ***GRAL DIV Héctor Alcides Grau Dominguez****, por la Dirección de Coordinación DGAF, el* ***Cap. Int. Juan Manuel Chena Ruiz****, por la Unidad de Control Interno, el Lic.* ***Pedro Portillo****, por Patrimonio el S.P.* ***Carmelo Antonio Rolón Romero.***

Entregue Conforme
S.P. Nelson Miguel Rodas Avalos
Suministro

Recibí Conforme
Gral. Div. Héctor Alcides Grau Dominguez
Director General DIGETICS/MDN

Cap. Int. Juan Manuel Chena
Dirección de Coordinación DGAF

Lic. Pedro Portillo
Unidad de Control Interno

S.P. Carmelo Antonio Rolón Romero
Por Patrimonio

Cesar Acosta
Director
DCB S.A.

12. MULTAS.

Las multas y otras penalidades que rigen en el presente contrato serán aplicadas conforme con lo establecido en las Condiciones Contractuales de la presente carta de invitación. Llegado al monto equivalente a la Garantía de Fiel Cumplimiento de Contrato, la Contratante podrá aplicar el procedimiento de rescisión de contratos de conformidad al Artículo 59 inc. c) de la Ley N° 2.051/2.003 "De Contrataciones Públicas", caso contrario deberá seguir aplicando el monto de las multas que correspondan.

La rescisión del contrato o la aplicación de multas por encima del porcentaje de la Garantía de Cumplimiento del Contrato deberá comunicarse a la DNCP a los fines previstos en el artículo 72 de la Ley N° 2.051/2.003 "De Contrataciones Públicas", modificado por Ley N° 6.716/2.021

13. CAUSALES Y PROCEDIMIENTOS PARA SUSPENDER, TERMINAR O RESCINDIR.

Las causales y el procedimiento para suspender temporalmente, dar por terminado en forma anticipada o rescindir el contrato, son las establecidas en la Ley N° 2.051/2.003 y en las condiciones contractuales de la presente carta de invitación.

14. SOLUCIÓN DE CONTROVERSIAS.

Cualquier diferencia que surja durante la ejecución del contrato se dirimirá conforme a las reglas establecidas en la legislación aplicable y en las condiciones contractuales.

15. ANULACIÓN DE LA ADJUDICACIÓN.

Si la Dirección Nacional de Contrataciones Públicas resolviera anular la adjudicación de la Contratación debido a la procedencia de una protesta o investigación instaurada en contra del procedimiento, y si dicha nulidad afectara al contrato ya suscrito entre LAS PARTES, el Contrato o la parte del mismo que sea afectada por la nulidad, quedará automáticamente sin efecto de pleno derecho, a partir de la comunicación oficial realizada por la DNCP, debiendo asumir LAS PARTES las responsabilidades y obligaciones derivadas de lo ejecutado del contrato.

16. SUSCRIPCIÓN.

En prueba de conformidad se suscriben 2 (dos) ejemplares de un mismo tenor y a un solo efecto en la Ciudad de Asunción, República del Paraguay, a los 26 días del mes de Octubre de 2.021.

CÉSAR R. ACOSTA FORMOSO
REPRESENTANTE LEGAL ITCS S.A.
C.I.C. N° 1.298.115
Contratista

GRAL (R) BERNARDINO SOTO ESTIGARRIBIA
MINISTRO
C.I.C. N° 412.151
Contratante

Cesar Acosta
Director
ITCS S.A.

Cesar Acosta
Director
ITCS S.A.

6. PRECIO UNITARIO Y EL IMPORTE TOTAL A PAGAR POR LOS BIENES Y/O SERVICIOS.

Ítem	Descripción	Marca	Procedencia	Unidad de Medida	Cantidad	Precio Unitario (IVA Incluido)	Precio Total (IVA Incluido)
1	Servidor, firewall y licencia (conforme a las especificaciones técnicas detalladas en el Pliego de Bases y Condiciones)	Microsoft	EE.UU	Unidad	1	98.623.000	98.623.000
PRECIO TOTAL (IVA INCLUIDO)							98.623.000

El monto total del presente contrato asciende a la suma de Gs. 98.623.000 (guaraníes noventa y ocho millones seiscientos veinte y tres mil) IVA Incluido.

El Proveedor se compromete a proveer los Bienes a la Contratante y a subsanar los defectos de éstos de conformidad a las disposiciones del Contrato.

La Contratante se compromete a pagar al Proveedor como contrapartida del suministro de los bienes y servicios y la subsanación de sus defectos, el Precio del Contrato o las sumas que resulten pagaderas de conformidad con lo dispuesto en esta carta de invitación.

7. VIGENCIA DEL CONTRATO.

El plazo de vigencia de este Contrato es hasta el cumplimiento total de las obligaciones.

8. PLAZO, LUGAR Y CONDICIONES DE LA PROVISIÓN DE BIENES Y/O SERVICIOS.

Los bienes y/o servicios deberán ser entregados y/o prestados dentro de los plazos establecidos en el Cronograma de Entregas de la Carta de Invitación

9. ADMINISTRACIÓN DEL CONTRATO.

La administración del contrato estará a cargo de la Direccion General de Tecnologias de Información y Comunicación

10. FORMA Y TÉRMINOS PARA GARANTIZAR EL CUMPLIMIENTO DEL CONTRATO.

La garantía para el fiel cumplimiento del contrato se regirá por lo establecido en las Condiciones Contractuales de la presente carta de invitación, la cual se presentará a más tardar dentro de los diez (10) días calendarios siguientes a la firma del contrato.

11. CONSTANCIA DE PRESENTACIÓN DE DECLARACIÓN JURADA.

El adjudicado deberá en el plazo de quince (15) días calendario desde la firma del presente contrato, presentar ante el administrador de contrato, la constancia o constancias de presentación de la Declaración Jurada de bienes y rentas, activos y pasivos ante la Contraloría General de la República, de todos los sujetos obligados en el marco de la Ley N° 6.355/19

En el mismo plazo indicado en el párrafo anterior, se deberá remitir a la convocante la actualización de la mencionada declaración jurada, una vez finalizada la ejecución del presente contrato.

César Acosta
Director
ITCS S.A.

MINISTERIO DE DEFENSA NACIONAL

■ TETÃ REKUÁI
■ GOBIERNO NACIONAL

Paraguay de la gente

Dirección General de Administración y Finanzas
Dirección de Contratación de Bienes y Servicios

CONTRATO Nº 28/2.021

"ADQUISICIÓN DE SERVIDOR, FIREWALL Y LICENCIA", ADJUDICADO EN EL LLAMADO A CONTRATACIÓN DIRECTA Nº 16/2.021.

Entre el **MINISTERIO DE DEFENSA NACIONAL**, domiciliado en la casa de la Avda. Mcal. López esq. Vicepresidente Sánchez, República del Paraguay, representados para este acto por el Señor Ministro de Defensa Nacional **GRAL EJ (R) BERNARDINO SOTO ESTIGARRIBIA**, con **Cédula de Identidad Civil Nº 412.151**, denominado en adelante el CONTRATANTE, por una parte, y por la otra, la firma **INFORMATION TECHNOLOGY CONSULTING SUPPORT SOCIEDAD ANÓNIMA** con RUC Nº 80046953-4, domiciliado en la casa de las calles Marcelino Noutz 861 c/ Sgto Gauto - Asunción – República del Paraguay, representado para este acto por el Señor **CESAR ROMEO ACOSTA FORMOSO**, con **Cédula de Identidad Civil Nº 3.298.115**, denominado en adelante el CONTRATISTA, denominados en conjunto "LAS PARTES", acuerdan celebrar el presente "CONTRATO", el cual estará sujeto a las siguientes cláusulas y condiciones:

1. OBJETO DEL CONTRATO.

El objeto del contrato es: Adquisición de Servidor, firewall y licencia.

2. DOCUMENTOS INTEGRANTES DEL CONTRATO.

Los documentos contractuales firmados por las partes y que forman parte integral del Contrato son los siguientes:

1. Contrato;
2. La carta de invitación y sus adendas o modificaciones;
3. Los datos cargados en el SICP;
4. La oferta del proveedor;
5. La resolución de adjudicación del contrato emitida por la contratante y su respectiva notificación.

Los documentos que forman parte del contrato deberán considerarse mutuamente explicativos; en caso de contradicción o discrepancia entre los mismos, la prioridad se dará en el orden enunciado anteriormente.

3. DOCUMENTOS ADICIONALES DEL CONTRATO.

Los documentos adicionales del contrato son: *No Aplica.*

4. IDENTIFICACIÓN DEL CRÉDITO PRESUPUESTARIO PARA CUBRIR EL COMPROMISO DERIVADO DEL CONTRATO.

El crédito presupuestario para cubrir el compromiso derivado del presente contrato está previsto conforme al Certificado de Disponibilidad Presupuestaria vinculado al Programa Anual de Contrataciones (PAC) con el ID Nº: 401.547

5. PROCEDIMIENTO DE CONTRATACIÓN.

El contrato es el resultado del procedimiento de Contratación Directa Nº 16/2.021, convocado por la Dirección de Contratación de Bienes y Servicios. La adjudicación fue realizada según acto administrativo Nº 150.

Cesar Acosta
Director
ITCS S.A.

Cesar Acosta
Director

Ministerio de
SALUD PÚBLICA
Y BIENESTAR SOCIAL

GOBIERNO
NACIONAL

Paraguay
de la gente

MINISTERIO DE SALUD PUBLICA Y BIENESTAR SOCIAL	NOTA N° 14/2021 DE RECEPCIÓN DEFINITIVA		FECHA DE RECEPCION	4/1/2021
LUGAR DE ENTREGA: DIRECCION GENERAL DE TECNOLOGIA DE LA INFORMACION Y COMUNICACIÓN		ITCS S.A.		
[redacted]				
1	70	UNIDAD	SERVIDOR MARCA SUPERMICRO MODELO SUPER SERVER 5029P-MTR, RECARGABLE DE 8 BAHIAS 2.5 EN RAC DE 19" PROCEDENCIA EE.UU ESPECIFICACIONES TECNICAS SEGUN CONTRATO CON GARANTIA ESCRITA 3 AÑOS -	37.067.600	2.594.732.000
[redacted]				
3740	18/12/2021			
[redacted]				
463	22/12/2020			

La veracidad de los datos consignados en el presente documento son de expresa responsabilidad de los firmantes y tendrá caracter de DD.JJ., quedara sin validez la falta de firmas o si presenta enmiendas y/o tachaduras -

Director
ITCS S.A.

Luis A. Alvarez Denayr
Director General
Dirección General de Tecnologías de la Información y Comunicación - MSPBS

Ministerio de
SALUD PÚBLICA Y BIENESTAR SOCIAL

GOBIERNO NACIONAL

Paraguay de la gente

DIRECCION GENERAL DE TECNOLOGIAS DE LA INFORMACION Y COMUNICACIÓN

Acta N° 14 de Recepcion Definitiva de Bienes y/o Servicios

En la Ciudad de Asunción Capital de la Republica del Paraguay, se elabora el acta a los **04 dias de Junio del 2021**, en la **DIRECCION GENERAL DE TECNOLOGIA DE LA INFORMACION Y COMUNICACIÓN**, se procede a la recepcion de servicios adjudicados a la Empresa ITCS S.A., correspondiente al LPN /14/2020 "ADQUISICION DE SERVIDORES PARA EL SISTEMA DE INFORMACION EN SALUD (HIS) DEL MSPYBS - ID N° 373059" los cuales se describen en el siguiente cuadro y firman al pie conformes los responsables por parte de la Institución y la Empresa adjudicada.

[redacted]					
1	30	UNIDAD	SERVIDOR MARCA SUPERMICRO, MODELO SUPER SERVER 1029P-MTR, RECARGABLE DE 8 BAHIAS 2.5 EN RACK DE 1U "PROCEDENCIA EEUU" ESPECIFICACIONES TECNICAS SEGÚN CONTRATO - CON GARANTIA ESCRITA 3 AÑOS -	87.067.600	2.594.732.000
[redacted]					
			Cesar Acosta Director ITCS S.A.	Carlos Arias Noguera Jefe Unidad de Gestion Administrativa DGTIC MSPBS	Luis A. Alvarez Penayo Director General Dirección General de Tecnologías
3885	4/6/2021				
[redacted]					
733	20/3/2021				

La veracidad de los datos consignados en el presente documento son de expresa responsabilidad de los firmantes y tendrá carácter de DD.JJ., quedando invalidar la falta de firmas o al presentar enmendadas y/o tachaduras.

Cesar Acosta
Director
ITCS S.A.

Dirección General de Administración y Finanzas
Dirección Operativa de Contrataciones - Departamento de Contratos y Garantías

Original 2

CGC 38.1 (a) (vi)	[illegible] las señaladas en la CGC 35.1,
	[illegible] CGC 15.1 - 15.3
	[illegible]

Cesar Acosta
Director
ITCS S.A

Cesar Acosta
Director
ITCS S.A.

Direccion General de Administracion y Finanzas
Direccion Operativa de Contrataciones - Departamento de Contratos y Garantías

Original 2

CGC 15.1, 15.2, 15.3 Y 15.4	Las formas y condiciones de la Adjudicación del Contrato son las siguientes: [illegible] **Objeto de Gasto 540**, de Presupuesto General de [illegible] para el ejercicio del AÑO 2020 [illegible] Ley de Contrataciones del Estado y su Reglamento y el Pliego de Condiciones Generales de Contratación. **LA CONTRATISTA:** [illegible]
CGC 15.6	En caso de mora de los pagos previstos en la CGC [illegible]
CGC 17.1	[illegible]
CGC 18.1 y 18.2	El valor de la Garantía de Fiel Cumplimiento [illegible] **10% del valor total del contrato** La Garantía de cumplimiento del Contrato [illegible]
CGC 18.5	La devolución de la Garantía de Fiel Cumplimiento de Contrato [illegible] **dentro de los treinta (30) días posteriores** [illegible]
CGC 22.1	[illegible] **NO APLICA**
CGC 24.2	[illegible] **Conforme se indica en la Sección III Suministros requeridos.**
CGC 24	[illegible] **NO APLICA.**
CGC 26	[illegible] **NO APLICA**
CGC 27.1	Las inspecciones y pruebas serán [illegible] **Conforme se indica en la Sección III Especificaciones Técnicas**
CGC 27.2	Las inspecciones y pruebas se realizarán en **conforme a la Sección III Inspecciones y Pruebas.**
CGC 28	[illegible]
CGC 29.3	El período de validez de la Garantía [illegible] **conforme se indica en la Sección III. Suministros Requeridos. Especificaciones Técnicas.**
CGC 29.5	El plazo para [illegible] **03 (días)** [illegible]

Cesar Adolfo
Director
DGSA

CONDICIONES ESPECIALES DEL CONTRATO (CEC)

[illegible]

CGC 4.3 (b)	[illegible] *NO APLICA*
CGC 7	Para notificaciones [illegible] Atención: Sr. Emilio González Aguilera. Director Dirección: AVDA. PETT ROSSI y CONSTITUCIÓN Piso: Oficina DGT 2 Ciudad: Asunción, Paraguay Teléfono: (021) 210 600 Dirección electrónica: [illegible]
CGC 9.6	El mecanismo formal [illegible] [illegible]
CGC 11	Detalle de los documentos [illegible] **NO APLICA** [illegible]
CGC 14	**EL PRECIO DEL CONTRATO ESTARÁ SUJETO A REAJUSTES** **Para Bienes Nacionales** **La formula y el procedimiento para el reajuste serán los siguientes:** [illegible] Pr = P x IPC1 / IPC0 Pr = Precio Reajustado P = Precio [illegible] IPC1 = Indice de Precios al Consumidor [illegible] entrega de suministro IPC0 = Indice de precios al Consumidor [illegible] apertura de ofertas En caso de que el Proveedor [illegible] se reconocerá reajuste de precios por [illegible] dentro contrato. **Para Bienes Importados** [illegible]

Cesar Kebsta
Director
ACCSSA

12. CAUSALES Y PROCEDIMIENTO PARA SUSPENDER TEMPORALMENTE, DAR POR TERMINADO ANTICIPADAMENTE O RESCINDIR EL CONTRATO.

Las causales y el procedimiento para suspender temporalmente, dar por terminado anticipadamente o rescindir el contrato son las establecidas en la Ley N° 2051/03 y en las Condiciones Generales y Específicas de Contratación y CEC.

13. SOLUCIÓN DE CONTROVERSIAS.

Cualquier diferencia que surja durante la ejecución de este Contrato se dirimirá de conformidad a las reglas establecidas en la normativa aplicable y en las Condiciones Generales y Específicas del Contrato.

14. ANULACIÓN DE LA ADJUDICACIÓN.

La Dirección Nacional de Contrataciones Públicas se reserva el derecho de anular la adjudicación de la Contratación en cualquier momento, si se comprueba que la adjudicación se ha logrado por medio de una práctica prohibida o investigación establecida en contra del procedimiento, y es decir, cuando el proceso de selección o parte del mismo que se adjudicado por la mesa quedara automáticamente sin efecto, de pleno derecho, a partir de la comunicación oficial que al efecto realizare la DNCP, debiendo asumir LAS PARTES las responsabilidades y obligaciones contraídas de la ejecución de la misma.

En prueba de conformidad se suscriben 2 (dos) ejemplares de un mismo tenor y a un solo efecto en la Ciudad de Asunción, República del Paraguay, a los 27 días del mes de [illegible] de 2013.

Sr. Cesar Rohao Acosta Formoso
CONTRATISTA

Sr. Emilcal Gonzalez Aguilera
CONTRATANTE

Cesar Acosta
Director
ITCS S.A.

Cesar Acosta
Director
ITCS S.A.

Nro	REGION	TIPO ESTABLECIMIENTO	NOMBRE	[illegible]	[illegible]
[illegible]	[illegible]	Hospital Regional	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Hospital Regional	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Hospital Regional	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Hospital Regional	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

6. VIGENCIA DEL CONTRATO

[illegible]

7. PLAZO, LUGAR Y CONDICIONES DE LA PROVISIÓN DE BIENES.

CONDICIONES DE ENTREGA:

[illegible] a DIRECCIÓN ADMINISTRATIVA – DEPARTAMENTO DE EJECUCIÓN DE CONTRATOS [illegible] Teléfono [illegible] Sub-departamento de la DIRECCIÓN GENERAL DE ADMINISTRACIÓN Y FINANZAS – [illegible] Hs. Hasta las 15.00 Hs.

Plazos de Ejecución

[illegible]

Plazos de Entrega

[illegible] hasta 60 (sesenta) días corridos [illegible]

Lugar de entrega:

[illegible]

Teléf.: 233-222 – Teléf. 225-209 – [illegible] 08.30 Hs. – [illegible] 15.00 Hs.

[illegible]

[illegible]

8. ADMINISTRACIÓN DEL CONTRATO

[illegible] la Dirección General de Tecnologías de la Información y Comunicación [illegible] Contrato.

9. FORMA Y TÉRMINOS PARA GARANTIZAR EL CUMPLIMIENTO DEL CONTRATO

[illegible] Generales y Especiales de Contrato [illegible] presentar [illegible] 10% del [illegible]

10. CONSTANCIA DE PRESENTACIÓN DE DECLARACIÓN JURADA

[illegible] Declaración Jurada [illegible]

[illegible] del presente contrato.

Cesar Acosta
Director
ITCS S.A.

11. MULTAS

[illegible] Contraloría General de la República [illegible] Contrato [illegible] Multas que correspondan.

[illegible] Garantía de [illegible]

Dirección General de Administración y Finanzas
Dirección Operativa de Contrataciones - Departamento de Contratos y Garantías

Original 2

Año	REGIÓN	TIPO ESTABLECIMIENTO	NOMBRE	COORD X	COORD Y
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Dirección General de Administración y Finanzas
Dirección Operativa de Contrataciones - Departamento de Contratos y Garantías

Original 2

ITEM	DESCRIPCIÓN DEL BIEN	ESPECIFICACIONES TECNICAS	CARACTERISTICAS	MINIMO EXIGIDO
			[illegible]	
			[illegible]	
		Autorización de Fabricante	[illegible]	Exigido
		Montaje	[illegible]	Exigido
		Embalaje	[illegible]	Exigido
			[illegible]	Exigido
			[illegible]	Exigido
		Fabricante	[illegible]	Exigido
		Certificaciones	[illegible]	Exigido
			ISO 14001 2016	Opcional
			[illegible]	Exigido
		Garantía	[illegible]	Exigido
		Garantías	[illegible]	Exigido
		Plazo de Entrega	[illegible]	Exigido
		Suministro	[illegible]	Exigido

Cesar Nemesio
Director
ATCS S.A.

ANEXO 1 - STADO DE ESTABLECIMIENTOS

Nro	REGION	TIPO ESTABLECIMIENTO	NOMBRE	COORD X	COORD Y
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ITEM	DESCRIPCIÓN DEL BIEN	ESPECIFICACIONES TÉCNICAS	CARACTERISTICAS	MINIMO EXIGIDO
		Procesador	[illegible]	[illegible]
			[illegible]	[illegible]
		Capacidad de Memoria RAM	[illegible]	[illegible]
		Almacenamiento Interno	[illegible] **Se aceptarán equipos que incorporen una tarjeta PCI de expansión adicional para cumplir con este requisito.**	[illegible]
			[illegible]	[illegible]
			[illegible]	[illegible]
			[illegible]	[illegible]
		Puertos [illegible]	[illegible]	[illegible]
			[illegible]	[illegible]
			[illegible]	[illegible]
		Accesorios	[illegible]	[illegible]
		Fuente de alimentación y Herramienta de administración de consumo eléctrico	[illegible]	[illegible]
			[illegible]	[illegible]
			[illegible]	[illegible]
		Puertos de Fuente	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]
		Soporte Técnico	[illegible]	[illegible]

Cesar [illegible]
Director
UCS S.R.L.

Dirección General de Administración y Finanzas
Dirección Operativa de Contrataciones - Departamento de Contratos y Garantías

Original 2

CONTRATO N° 502/2020

LPN N° 14/2020 ADQUISICION DE SERVIDORES PARA EL SISTEMA DE INFORMACION EN SALUD (HIS) DEL MINISTERIO DE SALUD PUBLICA Y BIENESTAR SOCIAL - ID N° 373.059

ENTRE EL MINISTERIO DE SALUD PÚBLICA Y BIENESTAR SOCIAL Y LA FIRMA ITCS S.A.

Entre el MINISTERIO DE SALUD PUBLICA Y BIENESTAR SOCIAL, [illegible] de la República de Paraguay, representado para este acto por el **Sr. Emidal Gonzalez Aguayera**, con Cédula de identidad N° 3.057.449, Director General de la Dirección General de Tecnología de Información y Comunicaciones, designado por Resolución S.G. N° 423 de fecha 27 de agosto de 2019, facultado a suscribir el presente Contrato por Resolución DGAF N° 1157, de fecha 9 de diciembre de 2020, denominado en adelante el **CONTRATANTE**, por una parte, y por la otra la Firma **ITCS S.A.**, **RUC 80049953-4**, con domicilio en Mariscal Francisco Solano López 857 e Iglesias y Luis de Granada, de la Ciudad de Asunción, República del Paraguay, representada para este acto por el **Sr. Cesar Romeo Acosta Formoso**, con Cédula de Identidad N° 3.206.115, según Poder [illegible], denominada en adelante el **CONTRATISTA**, [illegible] en adelante en forma conjunta las **PARTES**, [illegible] celebrar el presente Contrato para la ADQUISICION DE SERVIDORES PARA EL SISTEMA DE INFORMACION EN SALUD (HIS) DEL MINISTERIO DE SALUD PUBLICA Y BIENESTAR SOCIAL, [illegible] sujeto a las siguientes cláusulas y condiciones:

1. OBJETO

ADQUISICION DE SERVIDORES PARA EL SISTEMA DE INFORMACION EN SALUD (HIS) DEL MINISTERIO DE SALUD PUBLICA Y BIENESTAR SOCIAL.

2. DOCUMENTOS INTEGRANTES DEL CONTRATO.

Los documentos contractuales que forman parte integral del Contrato [illegible]:

a) Contrato;
b) Pliego de Bases y Condiciones y sus Adendas modificatorias;
c) Oferta de ITCS S.A.;
d) Garantía de Cumplimiento de Contrato [illegible];
e) [illegible]

Los documentos que forman parte del Contrato deberán considerarse [illegible] de origen, la primacía se dará en el orden establecido en el presente Contrato, [illegible] Pliego de Bases y Condiciones [illegible] documento de aclaración [illegible].

3. IDENTIFICACIÓN DEL CRÉDITO PRESUPUESTARIO PARA CUBRIR EL COMPROMISO DERIVADO DEL CONTRATO

El crédito presupuestario para cubrir el compromiso derivado de [illegible] Contrato está previsto en el Presupuesto de [illegible] Programa Anual de Contrataciones [illegible] ID N° 373.059.

[illegible] Dirección General de Administración Presupuestaria.

4. PROCEDIMIENTO DE CONTRATACIÓN

El presente Contrato es el resultado del procedimiento de LICITACION PUBLICA [illegible] ADQUISICION DE SERVIDORES PARA EL SISTEMA DE INFORMACION EN SALUD (HIS) DEL MINISTERIO DE SALUD PUBLICA Y BIENESTAR SOCIAL, [illegible] Resolución [illegible] de fecha [illegible] de diciembre de 2020.

5. PRECIO UNITARIO Y EL IMPORTE TOTAL A PAGAR POR LOS BIENES

El precio total a pagar por los bienes, conforme a la Resolución de Adjudicación y a la Oferta presentada, asciende a la suma de **Gs. 2.594.732.000** (guaraníes dos mil quinientos noventa y cuatro millones setecientos treinta y dos mil) [illegible]

Item	Descripción	Unidad de Medida	Presentación	Marca	Procedencia	Cantidad	Precio Unitario (IVA INCLUIDO)	Monto Total (IVA INCLUIDO)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				MONTO TOTAL				2.594.732.000

Cesar Acosta
Director
ITCS S.A.

ESPECIFICACIONES TÉCNICAS

ITEM	DESCRIPCION DEL BIEN	ESPECIFICACIONES TECNICAS	CARACTERISTICAS	MINIMO EXIGIDO
[illegible]	SERVIDOR	Marca	[illegible]	[illegible]
		Fabricante	[illegible]	[illegible]
		Modelo y Número de Parte	[illegible]	[illegible]
		Procedencia	Estados Unidos	[illegible]
		Características	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]

ITCS

Asunción, 13 de octubre de 2023

Señores
CORTE SUPREMA DE JUSTICIA
Atte.: Unidad Operativa de Contrataciones
Presente

Por este medio, nos dirigimos a ustedes, en el marco del llamado a la **LCO PAC Nº 68/2023 "ADQUISICIÓN DE SERVIDORES DE ALMACENAMIENTO Y ALTA DISPONIBILIDAD PARA EL REGISTRO DE AUTOMOTORES – AD REFERENDUM – SBE - ID Nº 434707"** a fin de detallar las Copias de Contratos y/o facturas de manera a dar cumplimiento a lo estipulado en la Experiencia requerida:

"Copias de contratos ejecutados y/o facturas de ventas relacionados a la PROVISIÓN DE SERVIDORES Y/O STORAGES que podrán corresponder tanto a empresas públicas como privadas, acompañados de las documentaciones que avalen el cumplimiento satisfactorio. Dichos contratos deberán corresponder al periodo comprendido entre los últimos 3 (tres) años 2020, 2021 y 2022 y deberá ser como mínimo el 50% (cincuenta por ciento) del monto total ofertado. Se aclara que no es no es necesario contar con un contrato por año."

DETALLE DE FACTURAS / CONTRATOS AÑOS 2020 – 2021 - 2022

CONTRATO/FACTURA	CLIENTE	AÑO	MONTO
CONTRATO Nº 502/2020	MINISTERIO DE SALUD PUBLICA Y BIENESTAR SOCIAL	2020	2.594.732.000
CONTRATO Nº 28/2021	MINISTERIO DE DEFENSA NACIONAL	2021	98.623.000
CONTRATO Nº 70/2022	MINISTERIO DE HACIENDA	2022	278.982.000
			2.972.337.000

Puja Inicial: Gs. 649.666.667
Experiencia de Contratos y/o facturas: Gs. 2.972.337.000

- ITCS S.A cuenta con facturas y/o contratos superiores al 50 % del monto total de la oferta en PROVISIÓN DE SERVIDORES Y/O STORAGES, cumpliendo con lo exigido en el PBC.

Sin otro particular, les saludo atentamente,

César Romeo Acosta Formoso
Director – ITCS S.A.
Cesar Acosta
Director
ITCS S.A.

ANEXO A

Cesar Acosta
Director
UCS S.A.

ITCS

4- Autorización del fabricante en idioma español o debidamente traducido por traductor publico matriculado, para representantes, distribuidores y sub - distribuidores de los productos ofrecidos.

R: ANEXO D: Se adjunta Carta Apostillada de la Autorización del Fabricante HPE a favor de ITCS S.A. debidamente autenticada.

5- Catalogo de los Bienes ofertados.

R: ANEXO E: Se adjunta catalogo de los bienes ofertados.

6- Especificaciones técnicas debidamente firmadas.

R: ANEXO F: Se adjunta Planilla de EE.TT. debidamente firmadas.

Sin otro particular, les saludo atentamente,

César Romeo Acosta Formoso
Director – ITCS S.A.

Cesar Acosta
Director
ITCS S.A.

CORTE SUPREMA DE JUSTICIA
COMITÉ DE EVALUACIÓN DE OFERTAS
MESA DE ENTRADA
23 OCT. 2013
Firma:
Aclaración:

Marcelino Ninuz 861 c/ Sgto. Gauto (BLOQUE A) B° Jara, Asunción
Teléfono: 021 228 8222 email: [illegible] - www.[illegible]

iTCS
INFORMATION TECHNOLOGY
CONSULTING & SUPPORT

Asunción, 25 de octubre de 2023

Señor
Abg. Mirko Duré Rolon, Coordinador
Comité de Evaluación de Ofertas
CORTE SUPREMA DE JUSTICIA
Presente

Ref.: Respuesta NCEO Nº 892/2023

Por este medio, nos dirigimos a ustedes, en el marco del llamado a la **LICITACION POR CONCURSO DE OFERTA PAC N° 68/2023 "ADQUISICIÓN DE SERVIDORES DE ALMACENAMIENTO Y ALTA DISPONIBILIDAD PARA EL REGISTRO DE AUTOMOTORES – AD REFERENDUM – SBE - ID Nº 434707"** para dar retorno a la solicitud de las siguientes documentaciones:

A continuación, detallamos los puntos observados:

1- Copias de contratos ejecutados y/o facturas de ventas relacionados a la PROVISIÓN DE SERVIDORES Y/O STORAGES que podrán corresponder tanto a empresas públicas como privadas, acompañados de las documentaciones que avalen el cumplimiento satisfactorio. Dichos contratos deberán corresponder al periodo comprendido entre los últimos 3 (tres) años 2020, 2021 y 2022 y deberá ser como mínimo el 50% (cincuenta por ciento) del monto total ofertado. Se aclara que no es no es necesario contar con un contrato por año.

R: ANEXO A: Se adjunta nota dirigida a la Convocante en donde se detalla el cumplimiento con la experiencia requerida, acompañado con los Contratos ejecutados con su respectivo cumplimiento satisfactorio de los últimos 3 (tres) años 2020, 2021 y 2022, lo cual es superior al 50% (cincuenta por ciento) del monto total ofertado.

2- Planilla de Instituto de Previsión Social correspondiente al mes anterior vencido a la fecha de la etapa competitiva en donde figure el técnico solicitado que deberá formar parte del plantel de la empresa y se deberá acompañar la siguiente documentación: A- Curriculum Vitae acompañado de todos los documentos respaldatorios que avalen la formación profesional. B- Certificado de capacitación en la marca ofertada. C Copia de cédula de identidad.

R: ANEXO B: Se adjunta *Planilla de Instituto de Previsión Social* correspondiente al mes anterior vencido a la fecha de la etapa competitiva acompañado de las documentaciones citadas en los incisos A, B Y C.

3- Certificación ISO 9001:2015 de Gestión de Calidad o similar de los equipos ofertados en español o debidamente traducido por traductor publico matriculado.

R: ANEXO C: Se adjunta Certificación ISO 9001:2015 de Gestión de Calidad de los equipos ofertados acompañado con la traducción por traductor publico matriculado.

Cesar Mesta
Director
ITCS S.A.

ITCS
INTERNATIONAL TECHNOLOGY CONSULTING SERVICES

Asunción, 25 de octubre de 2023

Señor
Abg. Mirko Duré Rolon, Coordinador
Comité de Evaluación de Ofertas
CORTE SUPREMA DE JUSTICIA

Presente Ref.: Desglose de precio

Por este medio, nos dirigimos a ustedes, en el marco del llamado a la LICITACION POR CONCURSO DE OFERTA PAC N° 68/2023 "ADQUISICIÓN DE SERVIDORES DE ALMACENAMIENTO Y ALTA DISPONIBILIDAD PARA EL REGISTRO DE AUTOMOTORES – AD REFERENDUM – SBE – ID Nº 434707" para dar retorno a vuestra solicitud y detallar el desglose de precio:

Ítems del llamado ADQUISICIÓN DE SERVIDORES DE ALMACENAMIENTO Y ALTA DISPONIBILIDAD PARA LA DIRECCION DEL REGISTRO DE AUTOMOTORES - AD REFERENDUM - S.B.E con ID: 434707							
Item	Código Catálogo	Descripción del Bien	Costo	Gastos (Operativos, Administrativos, Financieros, etc.	Utilidad antes del Impuesto	Impuesto	Precio Unitario Ofertado (sumatoria de las 4 columnas anteriores)
1	43211501-001	SERVIDOR DE ALTA DISPONIBILIDAD	178.532.100	6.617.300	33.224.600	22.041.000	220.410.000
2	43211501-001	SERVIDOR DE ALMACENAMIENTO (STORAGE)	202.167.900	7.487.700	14.975.400	24.959.000	249.590.000

JUSTIFICACIONES

Costo: El Costo de los equipos incluye: El costo en origen (fábrica de HPE), Logística a Asunción, tramites aduaneros con la respectiva liberación por parte de la ADUANA
Gastos (Operativos, Administrativos, Financieros, Etc.): Los gastos incluyen: Pago al personal de la empresa, gastos documentales, logística de entrega, instalación de los equipos, soporte técnico por el periodo de garantía y el financiamiento de los equipos hasta el pago total de los equipos.
Utilidad antes del Impuesto: Utilidad prevista por los trabajos a ser realizados.
Impuesto: Impuesto que contempla el 10% conforme a la Legislación vigente.
Precio Unitario Ofertado (Sumatoria de las 4 columnas anteriores): Sumatoria total de las columnas anteriores.

Sin otro particular, les saludo atentamente,

Cesar Romeo Acosta Formoso
Director - ITCS S.A.
Cesar Acosta
Director
ITCS S.A.

Mariscal Nostra 861 c/ Sgto. Gauto (HOOQUE A) Dr. Jara, Asunción
Teléfono. 021 728 8222 – email: licitaciones@itcs.com.py – www.itcs.com.py

INFORMATION TECHNOLOGY
CONSULTING & SUPPORT

Asunción, 25 de octubre de 2023

Señor
Abg. Mirko Duré Rolon, Coordinador
Comité de Evaluación de Ofertas
CORTE SUPREMA DE JUSTICIA
Presente

Ref.: Respuesta NCEO Nº 894/2023

Por este medio, nos dirigimos a ustedes, en el marco del llamado a la **LICITACION POR CONCURSO DE OFERTA PAC N° 68/2023 "ADQUISICIÓN DE SERVIDORES DE ALMACENAMIENTO Y ALTA DISPONIBILIDAD PARA EL REGISTRO DE AUTOMOTORES – AD REFERENDUM – SBE - ID Nº 434707"** para dar retorno a la solicitud de las siguientes documentaciones.

A continuación, detallamos los puntos observados:

1- Se solicita la aclaración de precio unitario de los items ofertados.

R: Se adjunta nota dirigida a la Convocante en donde se detalla el desglose de precios de los ítems 1 y 2.

Sin otro particular, les saludo atentamente,

César Romeo Acosta Formoso
Director – ITCS S.A.

Cesar Acosta
Director
ITCS S.A.

CORTE SUPREMA DE JUSTICIA
COMITÉ DE EVALUACIÓN DE OFERTAS
MESA DE ENTRADA
25 OCT. 2023
Firma: Cecilia Martinez
Aclaración: Corte Suprema de Justicia

Mariscal López 661 c/ Sgto. Gaona (BLOQUE A) B° Jara, Asunción
Teléfono: 021 728 8222 - email: [illegible] - www.itcs.com.py