

### Overview

### HPE Micro Datacenter



HPE Micro Datacenter is a self-contained single rack modular, software-defined data center optimized to provide the cloud-enabled, hybrid IT environment of the future. It incorporates compute, network, storage, and control automation. It has all the protection you need a data center to have. And it's on wheels. It's a complete, though tiny, enterprise IT data center that enables the flexibility to deploy computing where and when you need it while maintaining the efficiency, security, and control of your corporate data centers.

Micro Datacenter lets service providers expand or enter new geographies and markets without construction delays. And it enables them to provide IaaS on client premises, bringing their hosted cloud benefits to their client's backyard while maintaining the economic benefits of cloud computing.

## Overview

The initial Micro Datacenter utilizes HPE ConvergedSystem solutions, which drives down planning, acquisition, installation, and operations costs. It speeds deployment and streamlines operations by providing factory-integrated, pretested components designed to fit the target workloads.

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### Integrated remote management of IT systems and facilities

Micro Datacenter integrates data center infrastructure management (DCIM) with HPE OneView IT infrastructure management to provide a single management interface with consolidated event management and a converged view of IT components and facilities—from your central operations center. DCIM provides real-time sensing of power and cooling. Sensors detect and report thermal conditions, fire detection and suppression events, physical security, water encroachment, and other conditions. This integrated software-defined facility and software-defined infrastructure management solution simplifies installation and operations in a lights-out environment and enables automated infrastructure provisioning and cloud management.

There are three models of the HPE Micro Datacenter to meet the differing infrastructure needs. The three models share most of the same features but differ in resiliency, usable space rack units (RU) and amount of power capacity. All share the same levels of facilities intelligence, integration and software defined characteristics. The three models are as follows:

- Model 42 – 2N
- Model 42 N
- Model 23 N

The HPE Micro Datacenter models are summarized below:

Model 42 - 2N is our enterprise class resiliency offering

- 2N Power and Cooling infrastructures allowing for concurrent maintainability
- 8kW of Power and Cooling Capacity
- 42 RU EIA 19" universal roller rack enabled cabinet 1200mm depth
- 29 RU of usable space

Model 42 N is our full size non-redundant offering

- Single N non-redundant Power and Cooling infrastructures
- 8kW of Power and Cooling Capacity
- 42 RU EIA 19" universal roller rack enabled cabinet 1200mm depth
- 35 RU of usable space

Model 23 N is our edge offering

- Single N non-redundant Power and Cooling infrastructures
- 4 kW of Power and Cooling Capacity
- 23 RU EIA 19" built in cabinet 1200mm depth
- 16 RU of usable space

## Features

Each Model is available in either 60 hertz (hz) or 50hz single phase power configurations for worldwide power acceptance.

### HPE Factory Express

One of the key features of the HPE Micro Datacenter product line is the ability for IT infrastructures to be factory installed by HPE Factory Express Integration and Lifecycle services. HPE Factory Express Customer Designed Solution Integration Service provides integration with onsite start-up, along with the ability to specify more detailed configurations. The benefits of using Factory Express with the HPE Micro Datacenter is by proving business agility allowing for faster adoption of solutions, mitigating risk of deployments based upon HPE's vast deployment experience and the ability to manage costs by freeing up valuable resources.

### Micro Datacenter Facilities Features

The Micro Datacenter models share many of the same characteristics which are outlined below:

#### Structure

- EIA 19" rack 1200mm depth
- Thermally rated and structurally reinforced
- Manufactured of top, bottom and side thermal insulation panels
- Extremely robust construction
- Protection against water and dust with an elastomeric seal fitted all over the door panel into the door frame
- Fire protection: EI90 minutes (acc. to EN13501) or Energy Efficient insulation
- Castor wheels
- Detachable structure
- Earth-bonding point fitted on the top side of the rack
- Cable gland for data/power, mounted at the bottom of the rack with capacity for 50 UTP cables
- Indoor unit (Outdoor Units available through a customer scope of work)

#### Doors

- Front and back doors swing 180 degree
- Heavy duty steel hinges on the left side of doors
- The door design minimizes potential water and dust entry (NEMA-3R)
- Double metal panel construction with a layer of insulation material in between
- Mechanical lock with 4 locking points to ensure a tight closing, physical security against vandalism and reduced deformation if the door is exposed to very high temperatures

#### Installation and Maintenance

- Structure fully assembled in factory with interior cabling
- The 42 Models are available in Flat Pack for onsite delivery and assembly for restricted access sites
- The 42 Models Structure can be broken down and reassembled on site
- Wood pallet base, protected sides protected with bubble wrap roll and plastic foil
- High resistant steel eyebolts for elevation and transportation of the Micro Datacenter
- Removable side panels for InRow unit maintenance
- Front door for access and back panel for an easy maintenance

## Features

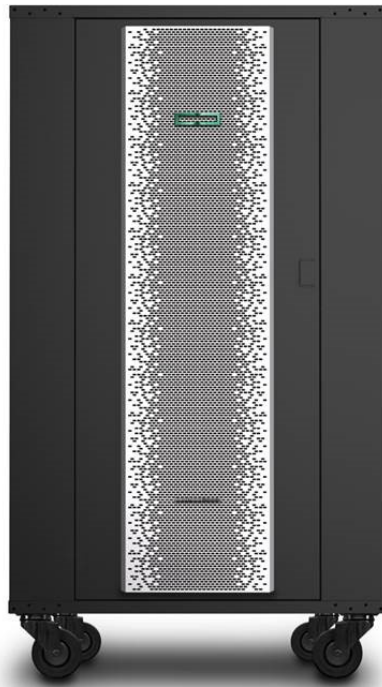
### Facilities Monitoring

- Monitoring unit Netbotz 450 with Temperature, Humidity, Intrusion and Smoke sensors
- External CCTV Camera Pod 160
- 24 Port 10/100/1000 Ethernet Switch
- Data Center Expert Virtual
- Leak Detection rope or sensors
- Struxureware DCIM DCO and DCE with Intel DCM and Capacity Manager Micro Datacenter bundle included with one year maintenance and support contract (entitlement extensions are available)

### Security and Access Control

- Electronic lock and Netbotz rack access handle on front and rear doors with HID proximity cards

Models



Model 42 – 2N Dimensions

External Dimensions	mm.	inches
Width	1,400	55
Depth	1,600	63
Height	2,360	93
	<b>kg.</b>	<b>lbs.</b>
Weight( including cooling unit/UPS)	1,181	2,603

Model 42N Dimensions

External Dimensions	mm.	inches
Width	1,100	43.3
Depth	1,600	63
Height	2,360	93

## Models

	kg.	lbs.
Weight( including cooling unit/UPS)	850	1874

### Model 23N Dimensions

External Dimensions	mm.	inches
Width	820	32.3
Depth	1,448	57
Height*	2,146	84

	kg.	lbs.
Weight( including cooling unit/UPS)	680	1500

**NOTE:**\*Height can vary by country and cooling technology

### Power

- 208 – 240 VAC, 1 Phase, 60hz and 220 - 240VAC, 1 Phase 50/60hz
- Internal power panel with circuit breaker protection
- 2 x Switched, Metered, and Zero U Network Enabled PDU's
- Rack mounted network enabled UPS units with VRLA batteries with 5 minutes of runtime at maximum load
- Maintenance-free sealed leak-proof batteries

### Cooling

- Self-Contained precision DX cooling with external condensers
- InRow cooling units include flooded receiver, external condensers and cable-gland at the bottom of the Micro Datacenter for piping connections
- Installation of external condensers and external piping not included
- Drainage pipe locations are piped out the bottom of the unit requiring a drain for indoor applications

Model 23N Cooling infrastructure is outlined in extended technical specification

## Technical Specifications

### Models 42 – 2N and 42N



#### Cooling

##### InRow Unit

InRow RD Air-Cooled, 200-240V 50 Hz. Model APC ACRD101

Row-based, direct expansion cooling solutions for wiring closets, server rooms, and data centers.

Includes: Installation guide, Operations and maintenance manual

#### Technical Specifications

##### General

Cooling Capacity Options 9.69 kW

Cooling Options Air

Compressor Type Scroll

##### Air Discharge Patterns

Intake Air Rear Return

Refrigerant R410A

Air Flow 2290 CFM

Condensate Pump Capacity 2.60 gal/hour

##### Horizontal

## Technical Specifications

### Input

Nominal Input Voltage	200V, 208V, 230V
Input Power	4400 Watts
Input Frequency	50 Hz
Rack Height	42U

### Communications & Management

Control panel	Multi-function LCD status and control console
Audible Alarm severity	Audible and visible alarms prioritized by severity

### Physical

Maximum Height	1991.00 mm
Maximum Width	300.00 mm
Maximum Depth	1070.00 mm
Net Weight	183.64 kg
Color	Black

### Conformance

Regulatory Approvals	CUL Listed, C-tick, CE, UL Listed
Standard Warranty	1 year (parts only)

### External Condenser

Condenser, 2 Fan, Single Circuit, 2.3MBH  
/1C TD, 400/3/50 FSC Model APC  
ACC75217

Row-based, direct expansion cooling solutions for wiring closets, server rooms, and data centers.



### Technical Specifications

#### General

Air Flow	4275 lps / 9060 CFM
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#### Input

Input Voltage	380V, 400V 3Phase nominal
Input Power	1800 Watts
Input Frequency	50 Hz

#### Physical

Maximum Height	890.00 mm / 35.04"
Maximum Width	1680 mm / 66.14"
Maximum Depth	900mm / 35.44"
Net Weight	89kg / 195.80 lbs

#### Conformance

Regulatory Approvals TUV	
Standard Warranty	1 year (parts only)

#### Power

#### UPS and power distribution



## Technical Specifications

- UPS: APC model SRT8KRMXLI with a power rating of 8kVA / 8kW (occupies the bottom 6U of internal rack mounting space)
- Rack Power Distribution Unit (PDU): 3 x APC model AP8958, switched, 0U, 16A, 230V with
- (7) C13 and (1) C19 outlet
- Power Distribution: Electrical panel (occupies 6U of internal rack mounting space)
- Includes cabling and circuit breaker protection

### SmartUPS

APC Smart- SRT8KRMXLI 6 8000VA RM 230V

APC Smart-UPS On-Line,8000 Watts /8000 VA, Input 230V,400V /Output 230V, Interface Port Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, Smart-Slot, USB, Extended runtime model, Rack Height 6 U

### Output

Output Power Capacity 8000 Watts / 8 kVA Max Configurable

Power 8000 Watts / 8 kVA Nominal Output Voltage 230V

Output Voltage Distortion Less than 2%

Output Frequency

(sync to mains) 50/60 Hz +/- 3

Hz Other Output Voltages 220, 240V

Crest Factor 3 : 1

Topology Double Conversion Online

Waveform Type Sine wave

Output Connections (1) Hard Wire 3-wire (H, N + G)

(6) IEC 320 C13

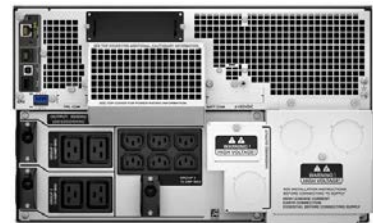


(2) IEC 320 C19



(3) IEC Jumpers

Bypass Internal Bypass (Automatic and Manual)



### Input

Nominal Input Voltage 230V, 400V 3PH

Input Frequency 40 - 70 Hz (auto sensing)

Input Connections Hard Wire 3-wire (1PH + N + G)

Hard Wire 5-wire (3PH + N + G)

Input voltage range for

Main operations 160 – 275 (half load)V Other Input Voltages 220, 240, 380, 415

### Batteries & Runtime

Battery Type Maintenance-free leak-proof sealed Lead-Acid battery with suspended electrolyte

## Technical Specifications

Recharge time 1.50 hour(s)

### Communications & Management

Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, Smart-Slot, USB

Interface Quantity 1

Control panel Multi-function LCD status and control console Audible

Alarm Audible and visible alarms prioritized by severity

Emergency Power Off  
(EPO) Yes

### Surge Protection and Filtering

Surge energy rating 480 Joules

### Environmental

Operating Environment 0 to 40 °C

Operating Relative Humidity 0 – 95% no% Operating

Elevation 0 to 3000 m

Storage Temperature -15 to 45 °C

Storage Elevation 0 - 15000 m

Audible noise 55.00 dBA at 1 meter from surface of unit

Online Thermal Dissipation 1497.00 BTU/hr

Protection Class IP 20

### Conformance

C-tick, CE, CE Mark, EAC, EN 50091-1, EN 50091-2, ENERGY STAR (EU) IEC 60950, IEC 62040-2, IRAM, VDE

## Technical Specifications

### Switched Rack PDU

Model APC AP8641

2 x Rack PDU, 2G, Switched, Zero U, 30A, 208V, (21) C13 & (3) C19

APC Switched Rack Power Distribution Units (PDUs) enable advanced, user-customizable power control and active monitoring. Remote outlet level controls allow power on/off functionality for power recycling to remotely reboot equipment and restrict unauthorized use of individual outlets. Power sequencing delays allow users to define the order in which to power up or down attached equipment. Avoid circuit overload during power recovery and extend uptime of critical equipment by prioritizing the load shedding. Current metering provides real-time remote monitoring of connected loads. Switched Rack PDUs include real power monitoring, a temperature/humidity sensor port, locking IEC receptacles, and low profile circuit breakers. User-defined alarms warn of potential circuit overloads before critical IT failures occur. Users can access, configure, and control Switched Rack PDUs through secure Web, SNMP, or Telnet Interfaces and is complimented by APC Centralized Management platforms using InfraStruxure Central, Capacity Manager and Change Manager.

**Includes: Installation guide, Rack Mounting brackets, Safety guide, Serial configuration cable**

#### Output

Nominal Output Voltage	200V, 208V Maximum Total
Current Draw per Phase	30A
Output Connections	(21) IEC 320 C13
	(3) IEC 320 C19
Overload Protection	Yes



#### Input

Nominal Input Voltage	200V, 208V, 230V
Input Frequency	50/60 Hz
Regulatory Derated Input Current (North America)	30A
Input Connections	IEC 309 32A 2P + E
Acceptable Input Voltage	200-240 VAC
Maximum Input Current per phase	30A

#### Environmental

Operating Environment	23 – 113 °F (-5 - 45 °C)
Operating Relative Humidity	5 to 95%
Operating Elevation	0 – 10000 ft. (0 to 3000 m)
Storage Temperature	-13 – 149 °F (-25 - 65 °C)
Storage Relative Humidity	5 - 95%
Storage Elevation	0 – 50000 ft. (0 - 15000 m)

#### Conformance

Regulatory Approvals CUL Listed, EN 55022 Class A, EN 55024, EN 61000-3-2, EN61000-3-3, FCC Part 15 Class A, ICES-003, PSE, UL Listed, VCCI Class A, VDE

### Model 23N

#### Cooling

Single Top mount DX cooling unit with internal condenser



## Technical Specifications

Includes self-contained internal condenser

Nominal total cooling capacity: 3.8 kW

IT Available cooling capacity: 3.8kW

Drain for condensate required and piping is not included

Includes cabling and circuit breaker protection

*Regional cooling infrastructure subject to change but will maintain the minimum capacity and condenser configuration*

### SmartUPS SRT5KRMXLT-IEC

APC Smart- SRT5KRMXLT - IEC 5000VA RM 230V

APC Smart-UPS On-Line,4250 Watts /5000 VA, Input 160 -275V, Output 208;240V, Interface Port Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, Smart-Slot, USB, Extended runtime model, Rack Height 3 U

#### Output

Output Power Capacity 4250 Watts / 5 kVA Max

Configurable Power 4250 Watts / 5 kVA Nominal Output

Voltage 208V

Output Voltage Distortion Less than 2%

Output Frequency

(sync to mains) 50/60 Hz +/- 3

Hz Other Output Voltages 240V

Crest Factor 3 : 1

Topology Double Conversion Online

Waveform Type Sine wave

Output Connections (4) IEC 320 C13

(4) IEC 320 C19



(2) IEC Jumpers

Bypass Internal Bypass (Automatic and Manual)

#### Input

Nominal Input Voltage 208V

Input Frequency 40 - 70 Hz (auto sensing)

Input Connections NEMA L6-30P



#### Batteries & Runtime

Battery Type Maintenance-free leak-proof sealed Lead-Acid battery with suspended  
 Typical Recharge time 1.50 hour(s)

#### Communications & Management

Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, Smart-Slot, USB

Interface Quantity 1

## Technical Specifications

Control panel	Multi-function LCD status and control console Audible
Alarm	Audible and visible alarms prioritized by severity

### Surge Protection and Filtering

Surge energy rating	480 Joules
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### Environmental

Operating Environment	0 to 40 °C
Operating Relative Humidity	0 – 95% no% Operating
Elevation	0 to 3000 m
Storage Temperature	-15 to 45 °C
Storage Elevation	0 - 15000 m
Audible noise	55.00 dBA at 1 meter from surface of unit
Online Thermal Dissipation	1497.00 BTU/hr
Protection Class	IP 20

### Conformance

C-tick, CE, CE Mark, EAC, EN 50091-1, EN 50091-2, ENERGY STAR (EU) IEC 60950, IEC 62040-2, IRAM, VDE

## Technical Specifications

### Switched Rack PDU

Model APC AP8958NA3

2 x Rack PDU, 2G, Switched, Zero U, 20A, 208V, (7) C13 & (1) C19

APC Switched Rack Power Distribution Units (PDUs) enable advanced, user-customizable power control and active monitoring. Remote outlet level controls allow power on/off functionality for power recycling to remotely reboot equipment and restrict unauthorized use of individual outlets. Power sequencing delays allow users to define the order in which to power up or down attached equipment. Avoid circuit overload during power recovery and extend uptime of critical equipment by prioritizing the load shedding. Current metering provides real-time remote monitoring of connected loads. Switched Rack PDUs include real power monitoring, a temperature/humidity sensor port, locking IEC receptacles, and low profile circuit breakers. User-defined alarms warn of potential circuit overloads before critical IT failures occur. Users can access, configure, and control Switched Rack PDUs through secure Web, SNMP, or Telnet Interfaces and is complimented by APC Centralized Management platforms using InfraStruxure Central, Capacity Manager and Change Manager.

**Includes:** Installation guide, Rack Mounting brackets, Safety guide, Serial configuration cable

### Output

Nominal Output Voltage 200V, 240V Maximum Total Current Draw per Phase 20A

Output Connections (7) IEC 320 C13   
(1) IEC 320 C19 

Overload Protection No

### Input

Nominal Input Voltage 200V, 208V, 230V

Input Frequency 50/60 Hz

Regulatory Derated Input Current (North America) 16A

Input Connections NEMA L6-20P

Acceptable Input Voltage 200-240 VAC

Maximum Input Current per phase 20A

### Environmental

Operating Environment 23 – 113 °F (-5 - 45 °C)

Operating Relative Humidity 5 to 95%

Operating Elevation 0 – 10000 ft. (0 to 3000 m)

Storage Temperature -13 – 149 °F (-25 - 65 °C)

Storage Relative Humidity 5 - 95%

Storage Elevation 0 – 50000 ft. (0 - 15000 m)

### Conformance

Regulatory Approvals CUL Listed, EN 55022 Class A, EN 55024, EN 61000-3-2, EN61000-3-3, FCC Part 15 Class A, ICES-003, PSE, UL Listed, VCCI Class A, VDE



## Universal Technical Specifications

### Cable Glands

One set of ROXTEC tight cable gland is mounted at the bottom of the cabinet.

The cable gland has a free space for mounting blocks for the different sizes of cables and pipes. Additional cable gland for InRow unit piping and drainage mounted at the bottom of the rack.

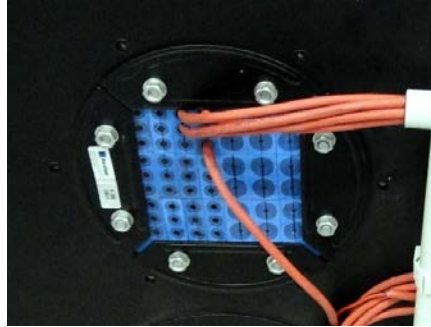
Cable gland performance:

- Fire: Tested for fire integrity and insulation - "Fire Class A" certification
- Smoke: Prevents the passage of smoke and fumes when exposed to fire
- Explosion: Can withstand an explosion up to 23 bar without the seal integrity being exposed
- Pressure: Tested with water and air up to 5 bar
- Sound: Effectively dampens the sound transmission up to 53 db
- Vibration: Capable of withstanding vibration 5-33 Hz without any detrimental effect to the system
- Chemical Resistance: High degree of resistance to a variety of chemicals

## Technical Specifications

- Accelerate heat aging: Heat aging showed little deterioration of hardness, tensile strength or elongation at break
- Gamma radiation: Subjected to 2x10<sup>3</sup> Rads of Gamma Radiation with no detrimental effect
- Rodents: Subjected to rodents for 3 weeks without any sign of deterioration to the seal

### ROXTEC Cable Glands

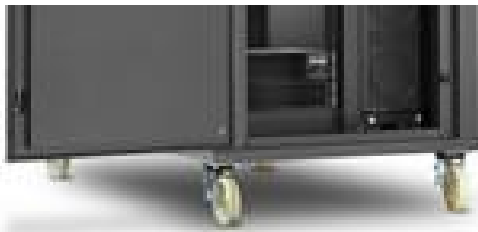


### Environmental Monitoring

- APC Netbotz Rack monitor, Model 450 (Installed beside electrical power distribution panel) with ATS
- Includes the following sensors: temperature, humidity and smoke
- CCTV Camera Pod 160
- Netbotz Spot Fluid Sensors

### Casters

- Addition of four casters which add 8.3" (210mm) to the height of the overall solution. Total height replacing supporting legs 95.67" (2430 mm)



## Technical Specifications

### Keypad Electronic Lock

Key features include:

- Opening via coil and mechanic activation against power failure
- Front door keypad access control integrated in front door with electronic lock
- Keypad is programmable for a maximum of two doors
- Configurable master code - different user codes can be assigned



### Fire Extinguishing System

Flexible detection tubing is attached to the top of the cylinder valve. This tubing is pressurized with Nitrogen to 240PSIG (16.5 bar) maintaining cylinder valve closure. The detection tubing is temperature sensitive and acts as a continuous linear thermal detector that ruptures at designated temperatures. When the tubing ruptures, the cylinder valve is actuated, allowing Novec 1230 fluid to flow through the discharge outlet on the Flex valve, distributing the extinguishing agent through the nozzle(s) into the internal rack.

Features Include:

- Fully self-contained fire detection and suppression system
- Detection and extinguishing right at the source of fire
- through a pressurized detection tube
- Fire extinguishing canister
- Extinguishing agent: Novec 1230





## Warranty

### Warranty

Schneider Electric normal terms and conditions apply. Standard warranty is 1 year.

The standard offer does not include electrical connection from switch board in main building to Micro Datacenter Electric Board. It is the customer's responsibility to make a clear assessment on where the Micro Datacenter will be located

- Ensure that there are no physical obstructions
- Ensure that the floor will withstand the Micro Datacenter's weight
- Choose the appropriate options and calculate the final number of U spaces required

### General Operating Requirements

An HPE engineer will work with the customer to understand the application of the solution and ensure that site is properly configured to accept the Micro Datacenter solutions.

Generally the high level operating environment for the bunker is as follows:

- DX cooling solutions operate from -10 to 45 °C
- For climates exceeding 45 °C HPE recommends a chilled water for cooling
- Other considerations for the site include
- 208v – 240v single phase 100 amp to 96 amp 50hz/60hz service based upon the kW and cooling solution which is properly grounded to earth
- Sewage drain access
- Floor loading to handle 1.5 tons (1360kg) fully loaded with IT hardware, which is level and capable of supporting the entire system
- Structured cabling can be extended into the bottom of the unit
- Seismic considerations **will need to be considered and it is recommended the mdc is tethered to a structural object**

Access and the route to final installation location will need to handle the weight and dimensions of the Micro Datacenter solution.

Space requirements for the mdc solution will need to include proper door swing access.

- HPE Micro Datacenter is not recommended on computer room raised floors since the unit fully loaded with IT will generally exceed most raised floor weights of 1134kg / 2500 lb.
- Other considerations for the site include:
- System air distribution
- Vibration and shock
- Acoustics
- Electromagnetic compatibility

## Summary of Changes

Date	Version History	Action	Description of Change:
28-Nov-2016	Version 1	QS Creation	Document creation



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