Configuration Guide
R@ck'n Roll
&
Rack to build

Bull
NovaScale Universal

Reference
86 A2 21EV 00

Table of contents

Important Notices :

This guide is not contractual. Rack components may be modified, replaced, or suppressed.

Refer to **R@ck'n Roll and Rack-To-Build Installation and Service Guide** (86 A1 17FA 01) for additional information.

1. Bull 42U RACK SYSTEM

Three Rack frames to comply with customer needs :

1. A robust 42U[1] reinforced rack frame allowing transport from the Bull factory to the customer site, with all components mounted, that is the foundation of the Bull **R@ck'n Roll** and Storeway offers.

2. A 42U[1] screwed structure for the **Rack To Build** Offer dedicated to the customers that make their own integration on site, and allowing a maximum load at customer site. The structure is transported empty on the customer site.

3. A **Basic** 42U rack frame for integration on-site and dedicated to light infrastructures. The structure is transported empty on the customer site; on-site, it accepts a limited load.

   Important Notice : This rack model is just mentioned here but not described in this Configuration Guide.

Factory Integrated Model
1200Kg Static
840Kg transportable

Customer Installable Model
1000Kg Static
Moving loaded on castors in the computer room

Customer Installable Model
600Kg Static Basic for "light" infrastructures

RCKH403-1142
RCKH405-1142

RCKH404-1142
RCKH406-1142

RCKH407-1142

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1 The two 42 rack frames share the same design

1.1. Rack technical specifications

Physical Specification		
	Rack'n Roll	**Rack to Build**
Mounting Capacity	42U	42U
Size (HxWxD) (physical)	2020x600x1100	2020x600x1100
Weight Empty (physical)	167Kg	167Kg
Weight Empty (packing)	182Kg (With Pallet)	
Max Load	840Kg transportable, 1000Kg on castors, 1200Kg on feet	Non transportable, 800Kg on castors, 1000Kg on feet
Cabinet Features		
Front Door	Bull Design	Bull Design
Locking *Reversible* *Perforation* *Color*	*Yes, with key* *Yes* *63,00%* *Black*	*Yes, with key* *Yes* *63,00%* *Black*
Back Door		
Locking *Reversible* *Perforation* *Color*	*Yes, with key* *Yes* *78,00%* *Black*	*Yes, with key* *Yes* *78,00%* *Black*
Side Panel		
Locking *Color*	*Quick fastening* *Black*	*Quick fastening* *Black*
Top Panel		
Cable Access Holes *Color*	*Yes* *Black*	*Yes* *Black*
Base frame		
Castors *Feet*	*Strong castors* *Strong feet*	*Strong castors* *Strong feet*
Vertical mounting strips	2 front, 2 rear, with U positionning labelling	2 front, 2 rear, with U positionning labelling
Front	*9.5mm square holes*	*9.5mm square holes*
Rear	*9.5mm square holes, with 2x 3 zero U slots for PDUs*	*9.5mm square holes, with 2x 3 zero U slots for PDUs*
Cabinet Accessories		
Front Fillers	1U and 3U kits, black with quick fastening included 1U filler MI : **RKAH006-B000** 3U filler MI : **RKAH007-B000**	

Front Stabilizers	Option MI : **RKAH009-0000**	
Trays	Option Factory installable MI : **DRWH005-0000** On-Site installable MI : **DRWH005-000C**	
Bolts and nuts	20x M5 Bolts , 9.5mm square holes cage nuts & washer kit in option MI : **RKAH005-A000**	
Power Distribution Unit		
PDU Type	Optional PDU 32A or 63A see page 13	Optional PDU 32A or 63A see page 13
Zero-U Slide-slot for PDUs	Total 6	Total 6
Cooling		
Type	From front to rear; cold door in option	From front to rear; cold door in option
Customization		
Logo	Bull NovaScale Logo	Bull NovaScale Logo
Cabinet Color	Black	Black
Shipping		
Packing	With rails	Wood

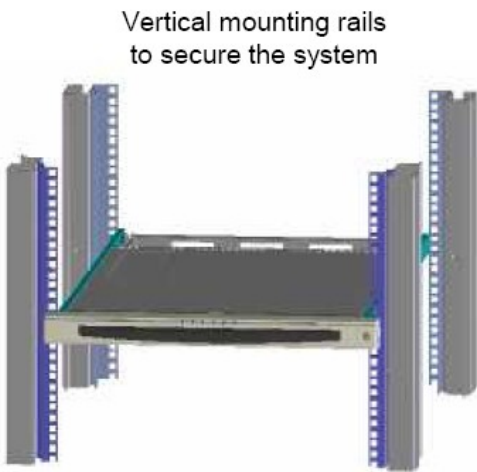| Regulatory & Safety		
Regulatory compliance	CE, CE1 297, EIA 310-E, EN 60-950	CE, CE1 297, EIA 310-E, EN 60-950
Shock and vibration	French testing laboratory (LNE) test proving transportabilty until 840Kg	
Warranty		
Standard warranty	3 years on site at Day + 1 Warranty extension Bull option	

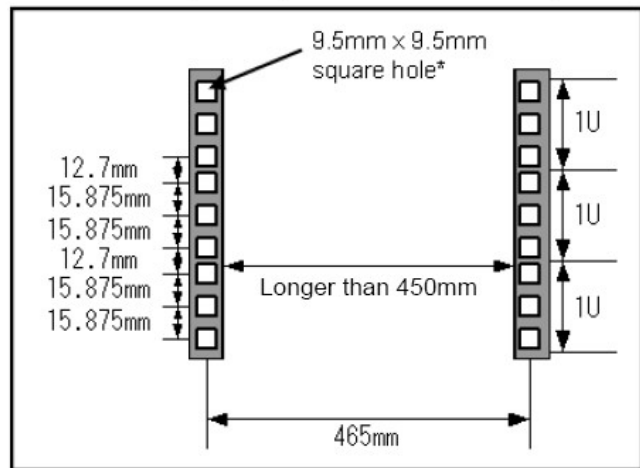## 1.2. Rack characteristics Top View
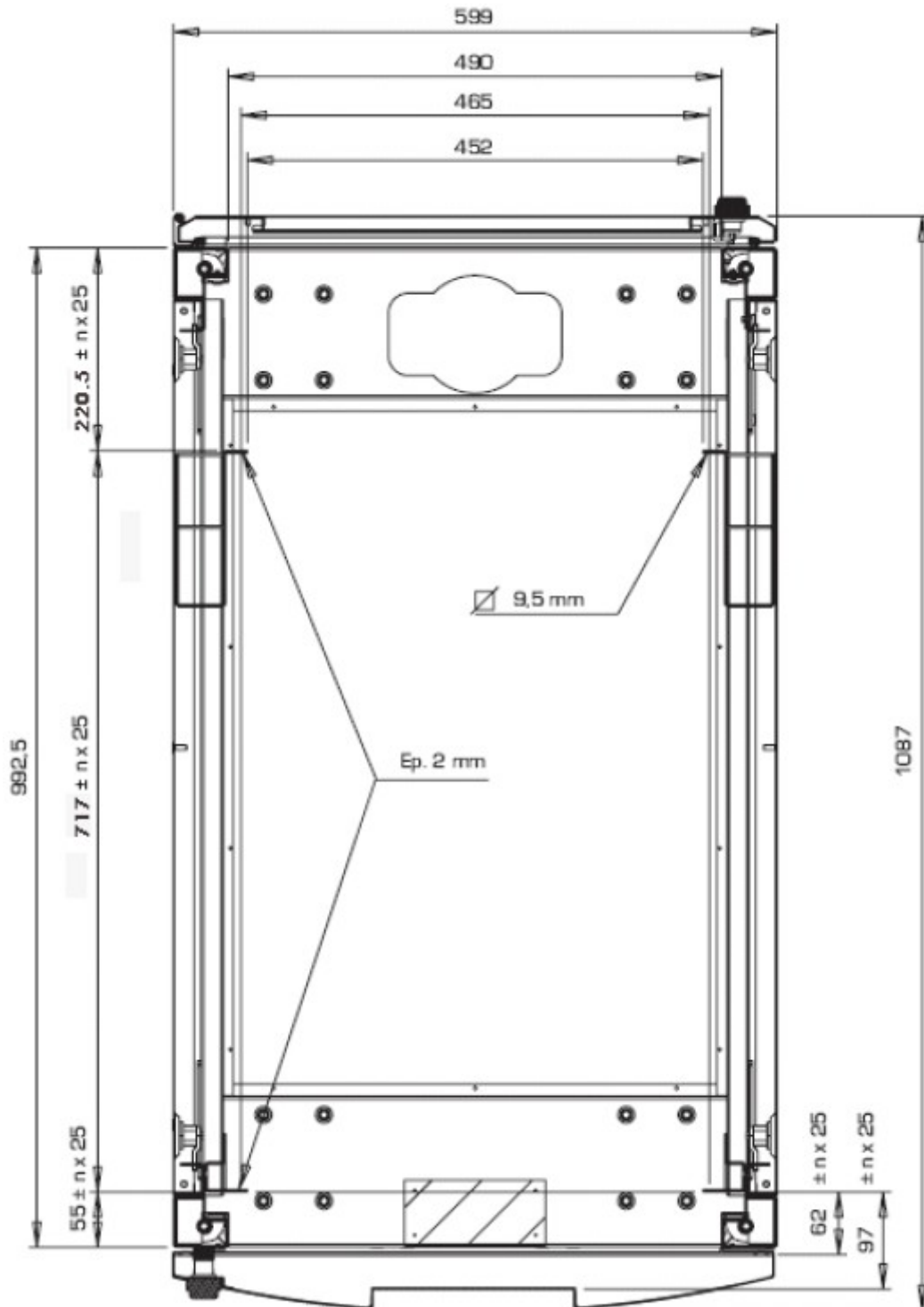
1.3. Rack mounting

1. Standard EIA 19-inch rack cabinet

2. Perforations are provided for cooling both on the front and rear doors.
   (For proper ventilation, rack cabinet is provided with perforations of 67% square holes on rear doors and 78% Honeycomb on front door.)

3. Vertical mounting rails are provided both on the front and rear sides of your cabinet to
   Secure the system. The rails must have the form and hole sizes required as below.

   (The rails are often described as "mount angles".)

Vertical mounting rails to secure the system

Front mounting holes (same for the rear side)

9.5mm x 9.5mm square hole*

12.7mm
15.875mm
15.875mm
12.7mm
15.875mm
15.875mm

1U

1U

Longer than 450mm

1U

465mm

a)   R410-E1 rack mounting kit

Each rack mount kit contains the following:

- Outer rail slide assembly (2) - letter "A" on the picture below.

- Inner rail slide (2) - letter "B" on the picture below.

- Rail safety stop (one each on inner slides) - letter "C" on the picture below.

- Outer slide rail screws (8 #10-32 x 1/2), inner slide rail screws (8 #6-32 x 1/4), and rack screws (2 #10-32 x 3/4) - letter "D" on the picture below.
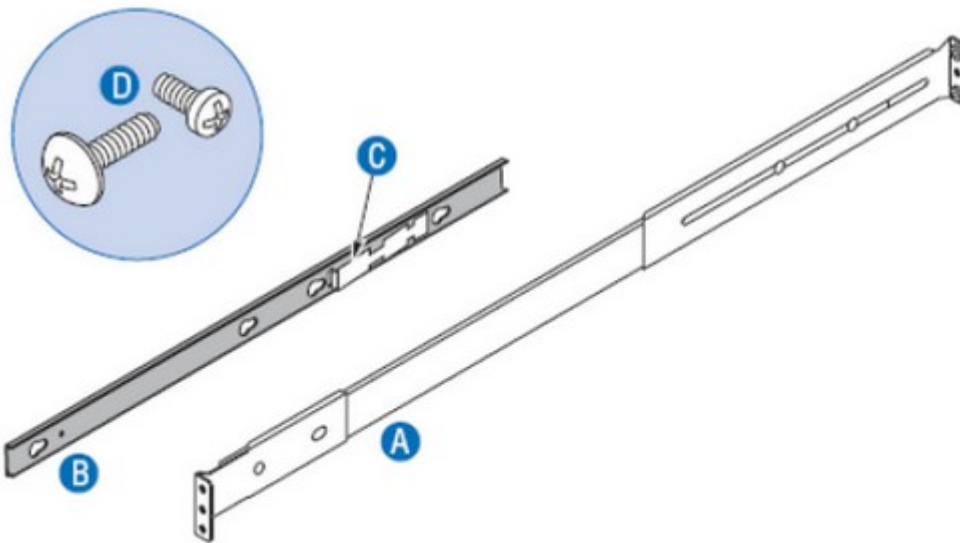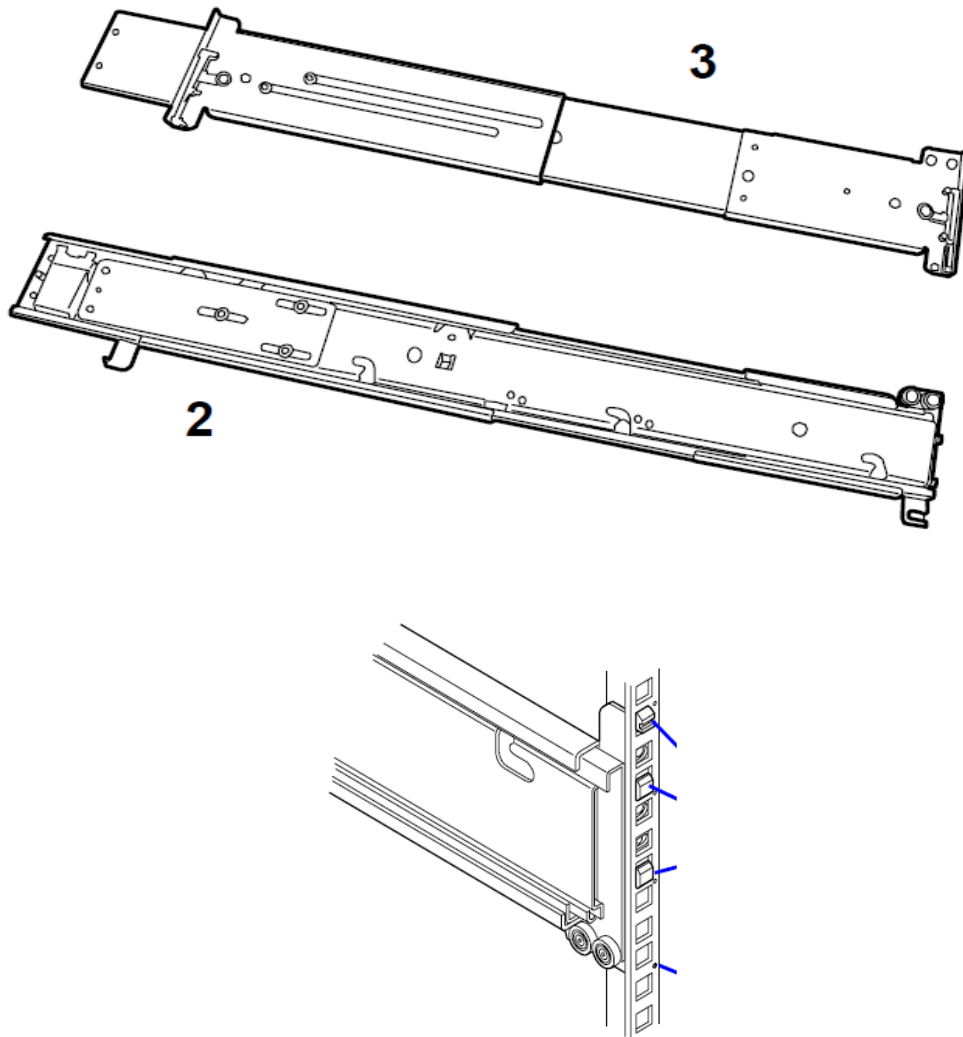

Rack Mount Kit Contents

b)   R440-E1 and R460-E1 rack mounting kits

Removable part allowing mounting in square or round holes
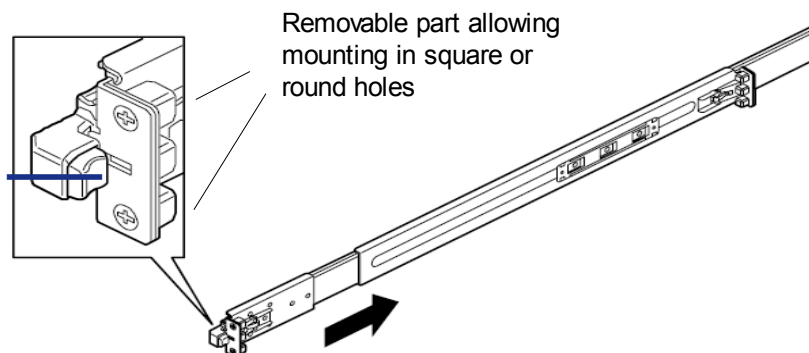
c)   R480-E1 rack mounting kit

1.4. Rack packing for delivery

Two types of packing are available, according to shipping conditions:

1. **Standard packing**, for short-distance deliveries.

2. **Reinforced packing**, for long-distance deliveries.

Standard Packing

Reinforced packing
RKAH015-0000

2. PDU (Power Distribution Units)

2.1. Outlets and Inlets description

Needed cable[2] for PDU :

C13/C14 power cable – 1m	Factory installable : **CBLH017-1010** On-Site installable : **CBLH017-1010**
C13/C14 power cable – 2.5 m	Factory installable : **CBLH018-1025** On-Site installable : **CBLH018-1025**
C19/C20 power cable – 2.5 m	Factory installable : **CBLH019-1010** On-Site installable : **CBLH019-1010**

Warning : All PDU are provided without connection cables

2.2. PDU Breakers management

PDUs will be introduced in the next section, but it is important to understand first that PDUs are not monolithic sources of power.

Elements (servers, KVM, Switches, …) can be connected to PDU outlets and the total power consumed by those elements must not exceed the max power delivered by PDU (32 Amper or 64 Amper).

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2   *Compulsory between element and PDU*

But this is not the only restriction involved in the process of connection.

All PDUs are equiped with BREAKERS which control individually a set of Outlets according to the type of PDU.

Various configuration of breakers exists on the market.
Some controls only one outlet, other many outlets (2, 3 4 …)
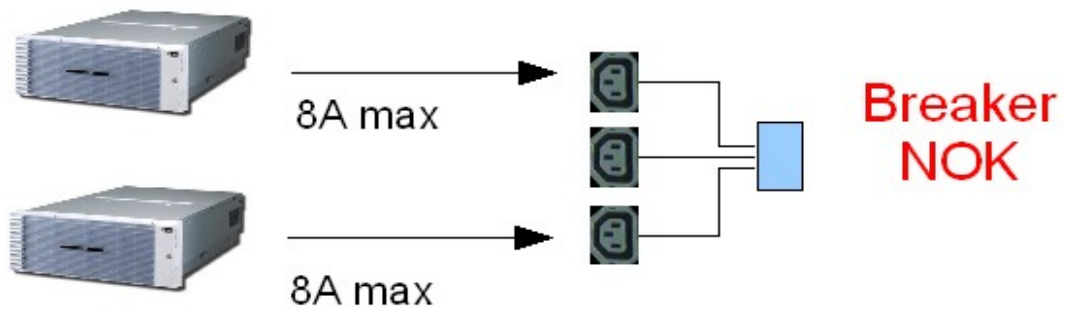
Consider on sample of
PDU-Breaker :

9A Breaker
Controlling
3 x C13 outlets
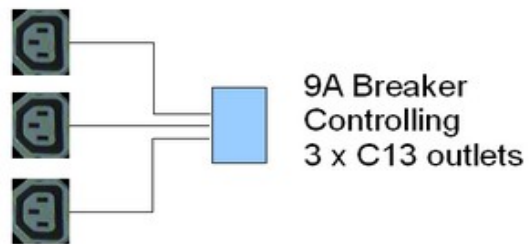
This one controls that the max power consumed on the three C13 oulets doesn't exceed 9 Amper.

Example 1 : A valid connection

8A max

Breaker
OK

Example 2 : An invalid connection

8A max

8A max

Breaker
NOK

Solution : In example 2 a valid solution would be either to connect Element on another PDU or connect Element on an other 3xC13 set of outlet, controlled by another 9A-PDU-Breaker

2.3. *Minimizing cable length in Rack connections*

When looking at the rear of Element, Inlets are not always on the same side.

When element is inserted in Rack it is important to manage connection in order to minimize power cable length. For cost reason but also to avoid cable tangling in the rack.

Example 1 : **An optimal connection**

Example 2 :   **A bad connection**

Remark : What we name here Bad Connection doesn't mean that the connection is wrong. It only means that it is not optimal and if there are a lot of such connections in a Rack, it will lead to an important usage of long cables and a greater complexity to insert them cleanly and efficiently in Rack.
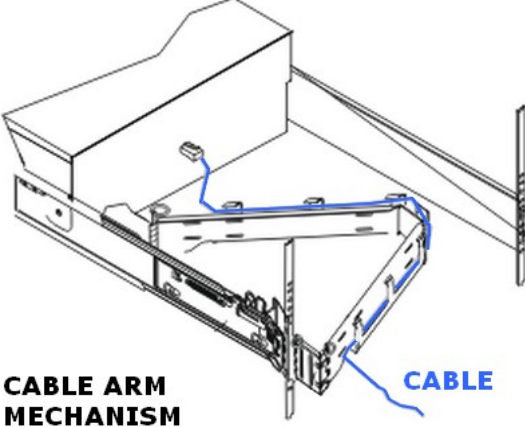
But sometime, due to PDU-Breakers constraints and redundancy, dad connection cannot

be avoided.

2.4. Usage of Cable Arm in Rack
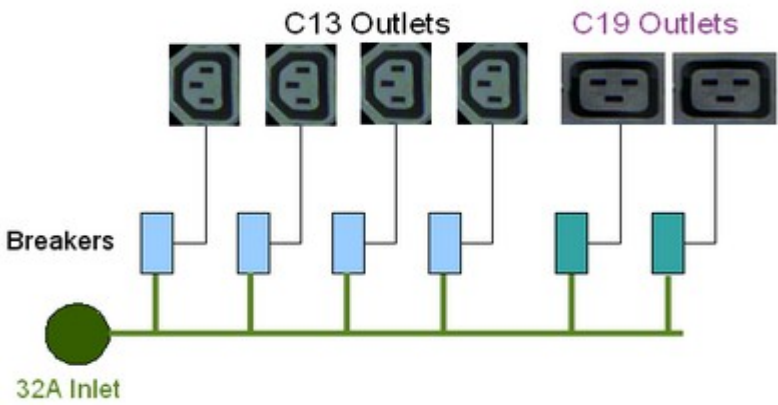
Servers can be ordered with a **Cable Arm Kit** . This feature allows server drawer movement after connection in Rack, it is easier for server maintenance.

When Cable Arm option is activated, only the **2.5m** following cables are compatible with the option

C13/C14 power cable – 2.5 m	Factory installable : CBLH018-1025 On-Site installable : CBLH018-1025
C19/C20 power cable – 2.5 m	Factory installable : CBLH019-1010 On-Site installable : CBLH019-1010
CABLE ARM MECHANISM CABLE	**R410-E1 :** *With sliding rails* Factory installable : -- On-Site installable : AZA-1110-00-00 **R440-E1 :** *One Touch Rails compatible only* **R460-E1** *: One Touch Rails compatible only* Factory installable : MCHCBLARMX99903 On-Site installable : AZA-4033-00-00 **R480-E1** *:* Factory installable : MCHCBLARMX99902 On-Site installable : AZA-4040-00-00

2.5. Bull PDU offer description

a) PDU : 4 x C13 – 2 x C19

General view		Rack properties	
	Factory installable : **PDUH005-M600** On-Site installable : **PDUH005-M60C** C13 outlet : 4 9A Breaker (Type C) : 4 C19 outlet : 2 14,5A Breaker (Type C) : 2 Max power : 32A 2,5 m 32A cable male plug Cables needed : **CBLH017-1010 / CBLH018-1025** **CBLH019-1010**	42U	
		1U	Horizontal
		0U	Vertical

b)   PDU : 7 x C13

General view	Factory installable : **PDUH006-M700** On-Site installable : **PDUH006-M70C** C13 outlet : 7 9A Breaker (Type C) : 7 Max power : 32A 2,5 m 32A cable male plug Cables needed : **CBLH017-1010 / CBLH018-1025**	Rack properties

Rack properties		
42U		
1U	Horizontal	
0U	Vertical	

C13 Outlets

Breakers

32A Inlet
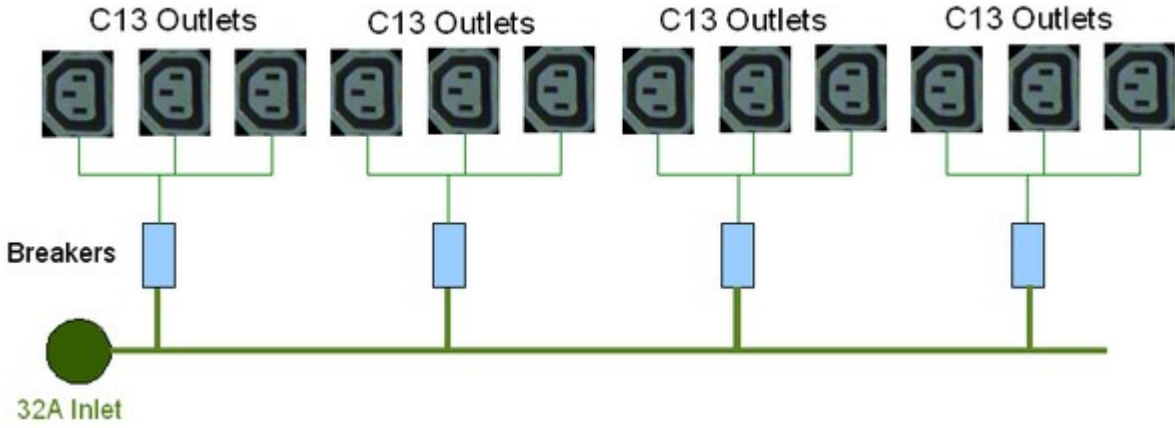
c) PDU : 2 x C13 – 4 x C19

General view	Factory installable : **PDUH007-M600** On-Site installable : **PDUH007-M60C** C13 outlet : 2 9A Breaker (Type C) : 2 C19 outlet : 4 14,5A Breaker (Type C) : 4 Max power : 63A 2,5 m 63A cable male plug Cables needed : **CBLH017-1010 / CBLH018-1025** **CBLH019-1010**	**Rack properties**

Rack properties		
42U		
1U	Horizontal	
0U	Vertical	

C13 Outlets   C19 Outlets

Breakers

63A Inlet

d)   PDU : 12 x C13

General view	Factory installable :	Rack properties

Factory installable :
PDUH008-M120
On-Site installable :
PDUH0008-M12C

C13 outlet : 12
9A Breaker (Type C) : 4

Max power : 32A
2,5 m 32A cable male plug

Cables needed :
CBLH017-1010 / CBLH018-1025

Rack properties

42U		
1U	Horizontal	
0U	Vertical	

e)   General information about SLAVE PDU

Slave – PDU are mainly useful to extend UPS compabilities.
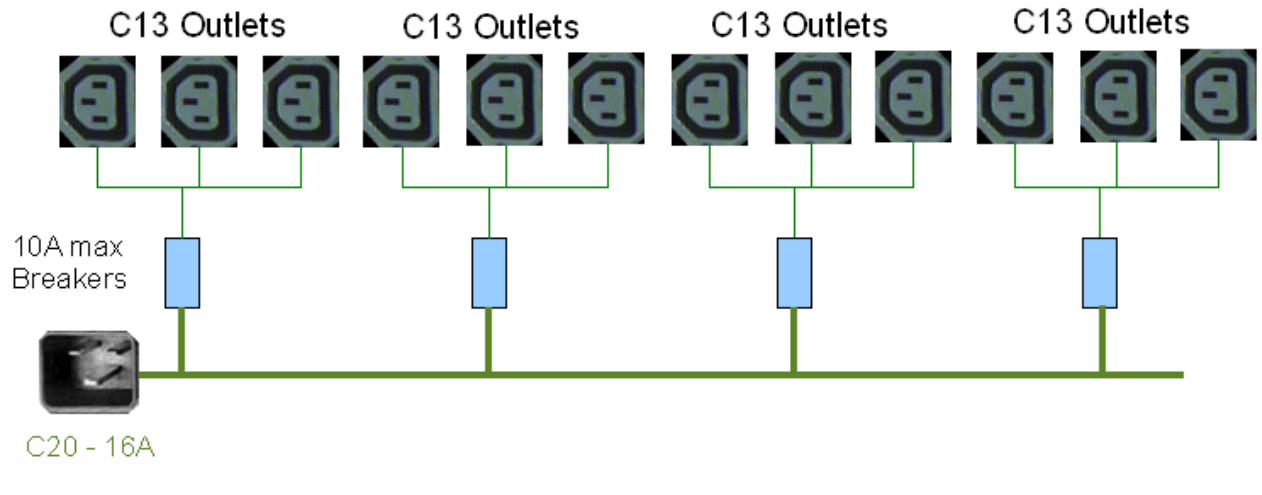
Usually UPS provide a set of power outlets (C13 and C19) which can be used to connect servers, switches, KVM …

By connecting SLAVE-PDU it is possible to extend the number of Outlets and convert the outlet type (ex : C19 to C13).

Typical configuration :

f) SLAVE PDU : 12 x C13

| General view		Rack properties		
	Factory installable : **ENS-12C13-16-01** On-Site installable : **ENS-12C13-16-01** C13 outlet : 12 9A Breaker (Type C) : 4 Max power : 16A no protection 3 m 16A cable C19/C20 Cables needed : **CBLH017-1010 / CBLH018-1025**	42U		
		1U	Horizontal	
		0U	Vertical	

g)   SLAVE PDU : 6 x C13

General view		Rack properties	

General view

Factory installable :
   ENS-6C13-16-01
On-Site installable :
   ENS-6C13-16-01

C13 outlet : 6
9A Breaker (Type C) : 2

Max power : 16A no protection
3 m 16A cable C19/C20

Cables needed :
CBLH017-1010 / CBLH018-1025

Rack properties

42U		
1U	Horizontal	
0U	Vertical	

C13 Outlets   C13 Outlets

10A max Breakers

C20 - 16A

3. Rack installation rules : 42U
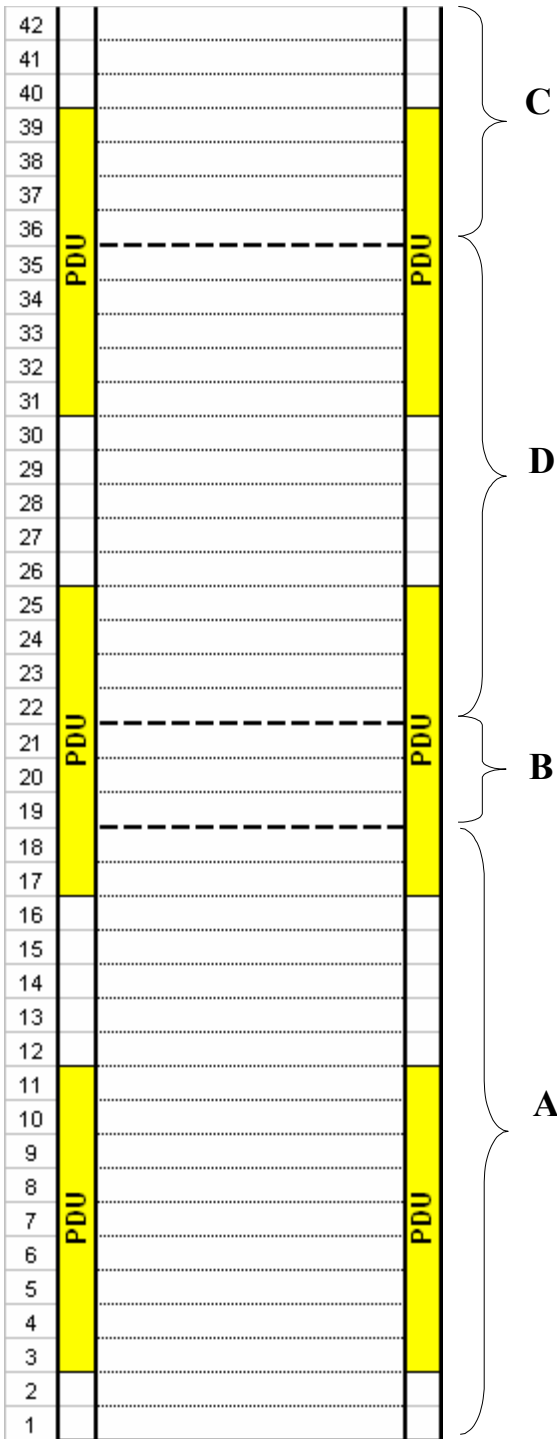
Rack allocation process	42 U
Step 1 Install heavy elements in the lower part of the Rack : **Area A**	Area A 1U to 18U
Step 2 If KVM-Switch and/or KVM-LCD, install them in **Area B**	Area B 19U to 21U
Step 3 Install light element in upper part of the Rack : Area C	Area C 36U to 42U
Step 4 Install remaining element in Area D	Area D 22U to 35U
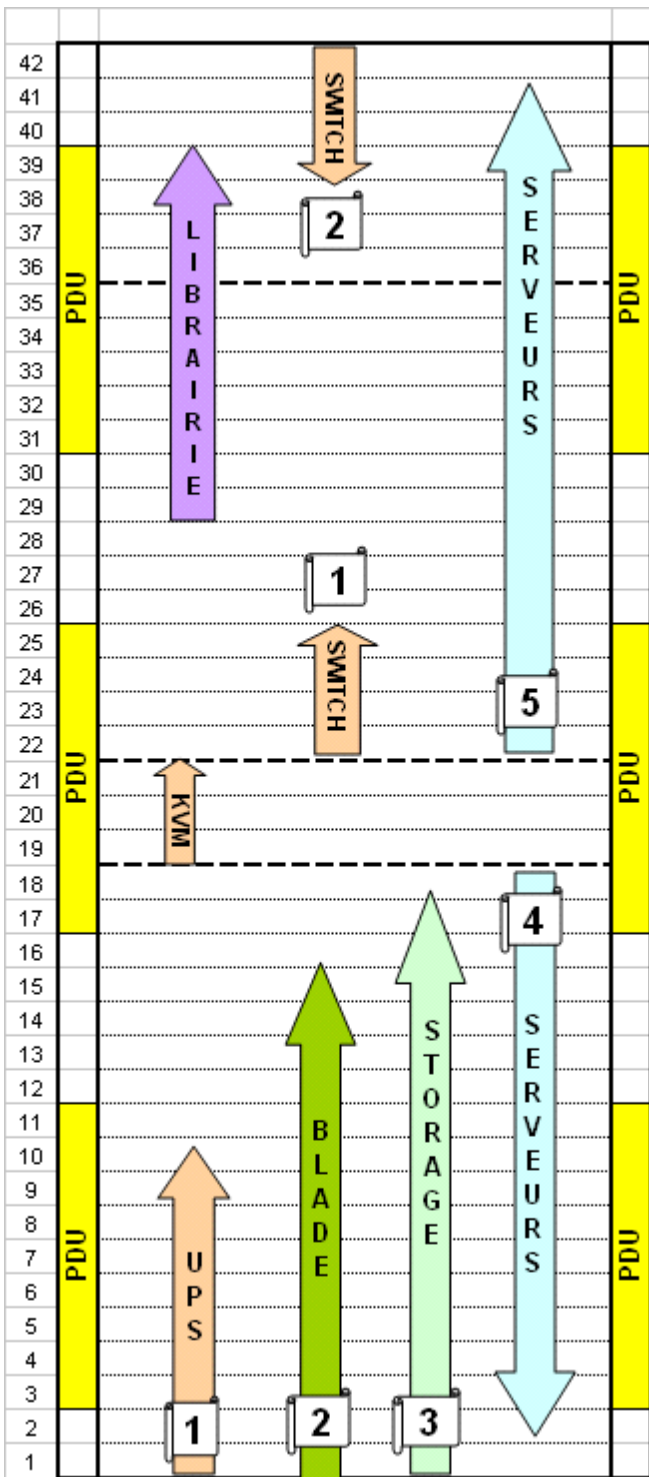
N Indicates Priority

1 Elements priority 1 or 2:

Prio 1 : **Smart-UPS**
UPS must be set up from U1, upward

Prio 2 : Blade Chassis
Must be set up from U1, upward or above UPS if any.

Prio 1 or 2 : Ethernet and Fiber Switches
Best location for Switches is either between U22 and U25, or between U42 and U39 in the 42U Rack

Prio 1 or 2 : Libraries
They must be set up from U29 to U39

Prio 1 or 2 : KVM-Switch and KVM-LCD
They must be set up between U19 and U21 in the 42U Rack and between U18 and U19 in the U19 Rack.
KVM-Switch and KVM-LCD must be set up contiguously in the Rack.

Elements priority 3 :

Storage elements (CX, FDA, …)
Set up from U1, upward or above UPS, Blade Chassis if any.

Elements priority 4 & 5 :

General rules for servers
Start setting up servers from U18 and downward.
Go on setting up from U22 and upward.

Warning : Never set up server in U42 (because of DVD device usage)

Prio 4 : 4U-Servers (R480E1, …) Must be set up in the lower part of the Rack.

Prio 4 or 5 : 1U-Servers (R410E1, R440E1 …) rather set up above 4U-Servers or 2U-Servers, as a stiff element is the best configuration.

Prio 4 or 5 : 2U-Servers (R460E1, …) must be set up above 4U-Servers.

4. Power redundancy aspect

Some Elements such as Servers, for instance, accept a double Power Supply and then need a double connection to PDU. There are five possible types of redundancy in a Rack.
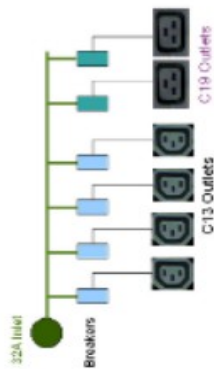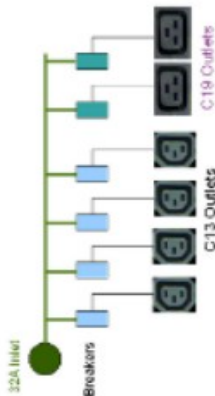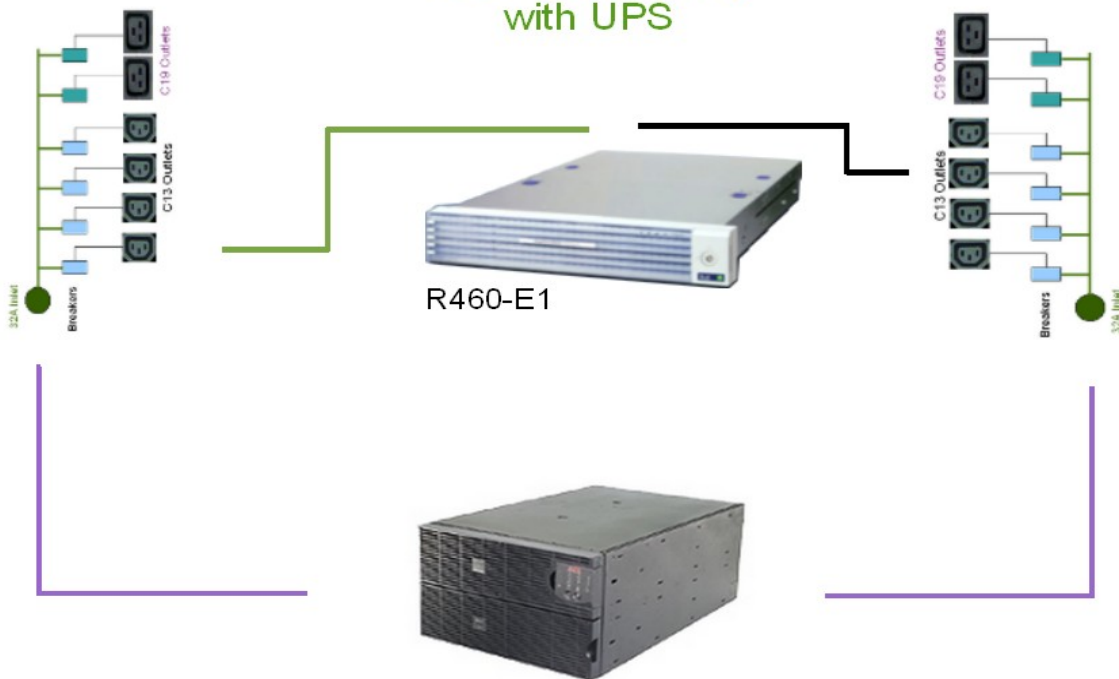

Server redundancy : Element has a double Power Supply and all its Inlets are connected to one or many PDU.

PDU redundancy
Strongly recommended
configuration

R460-E1

PDU redundancy : Element has a double Power Supply and all its Inlets are connected. The second Power Supply is not connected to the same PDU as the first one.

PDU redundancy
with UPS

R460-E1

UPSH009 : SURT10000RMXLi

PDU redundancy with UPS : Same as PDU redundancy but an UPS preserves from general electric defaults with a time-limited battery.

Full redundancy with Double-UPS

R460-E1

UPSH009 : SURT10000RMXLi
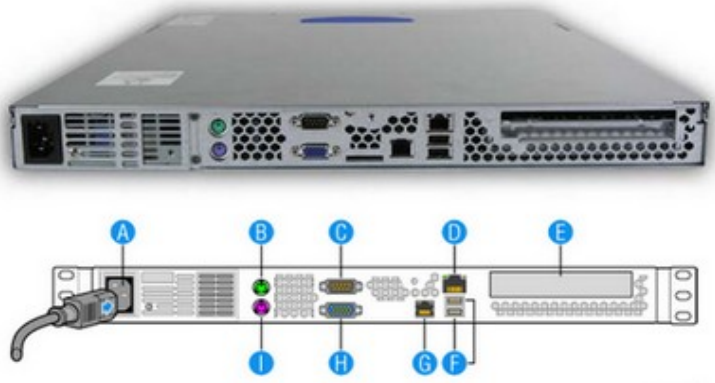
Full Redundancy : Same as PDU redundancy but two UPS preserve from general electric defaults with a time-limited battery, defaults on UPS itself are covered. Configuration is full-redundant

5. Bull NovaScale Servers

5.1. NovaScale R410 E1

Front view	Rack to Build :	Rack properties

Rack to Build :
Factory installable :
–
On-Site installable :
BASBR410E19901

Rack'n Roll
Factory installable :
BASBR410E1BR01
On-Site installable :
--

Max Power : 370 VA
350 W
1195 BTU/hr

Rack properties

42U		
1U	Horizontal	

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	C13	Left

Cx = Normal inlet
RCx = Redundant Inlet

Rear View

A AC power connector
Connect the power cord to this socket.
B Mouse Port
Connect the mouse included with the system.
C Serial Port A
Connect any peripheral with a serial interface.
D Network Interface Card (NIC) 1
Connect the system to a LAN allowing the following transfer speeds: 1000BASE-T/ 100BASE-TX/10BASE-T.
E PCI Add-in card slot
Additional ports are available if an optional card is installed.
F USB Ports
Connect any peripherals with an USB interface.
G Network Interface Card (NIC) 2
Connect the system to a LAN allowing the following transfer speeds: 1000BASE-T/ 100BASE-TX/10BASE-T.
H Video
Connect a compatible monitor.
I Keyboard
Connect the keyboard included with the system.

Rack Configuration Guide
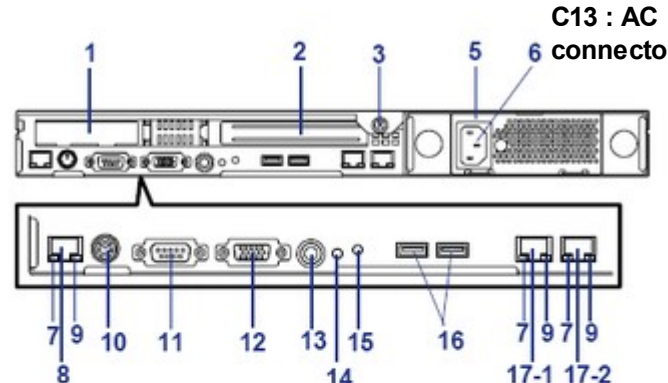
5.2. NovaScale R440 E1
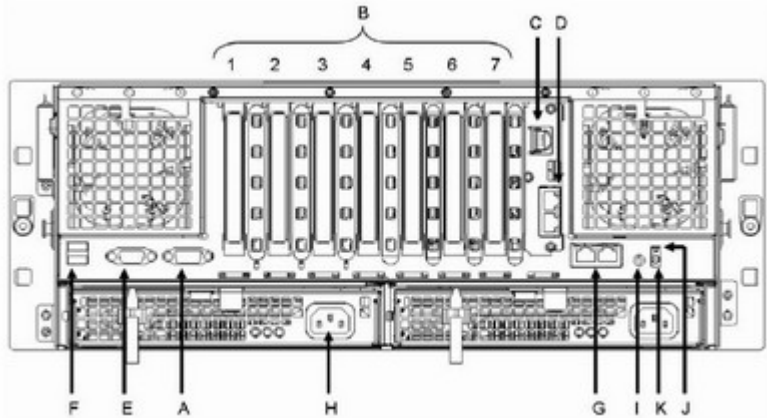
<table>
<tr>
<td align="center">Front view</td>
<td>
Rack to Build :
Factory installable :
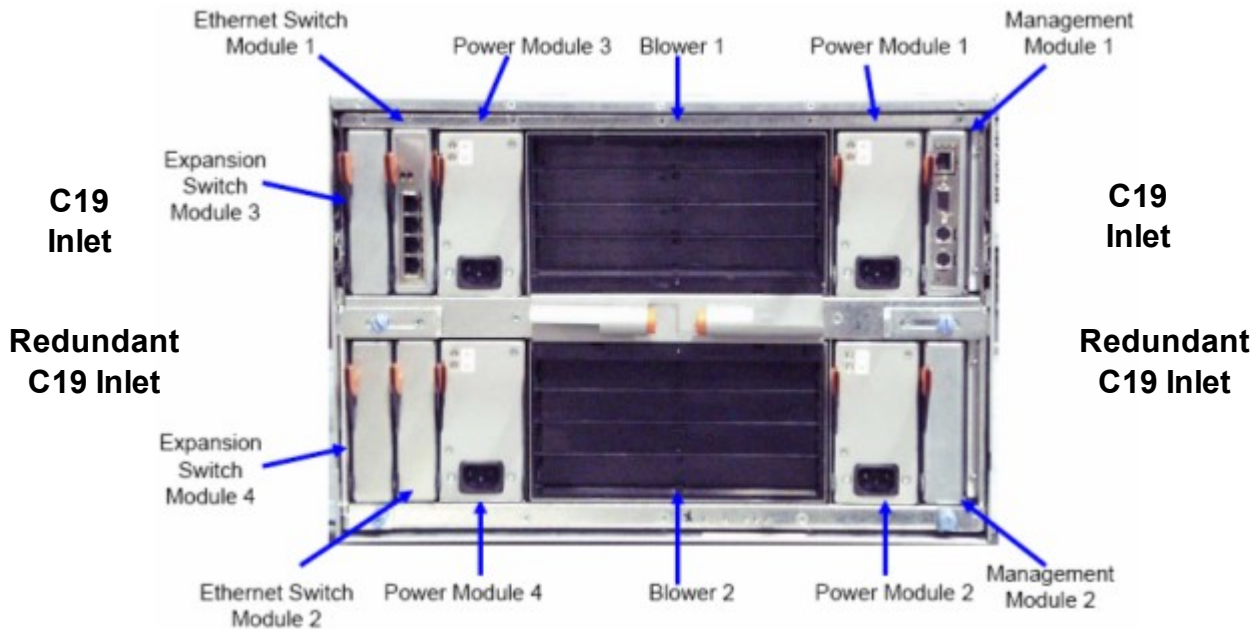   BASBR440E1990x (1,2,3)
On-Site installable :
   BASBR440E1990x (1,2,3)

Rack'n Roll
Factory installable :
   BASBR410E1BR0x (1,2,3)
On-Site installable :
   --

Max Power : 660 VA
             650 W
             2219 BTU/hr
</td>
<td>

Rack properties

42U		
1U	Horizontal	

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	C13	Right
1	RC13	Right

C13 = Normal inlet C13
RC13 = Redundant Inlet C13

</td>
</tr>
</table>

Rear View

Non-redundant power supply model

C13 : AC connector

Redundant Power Supply

Redundant power supply model
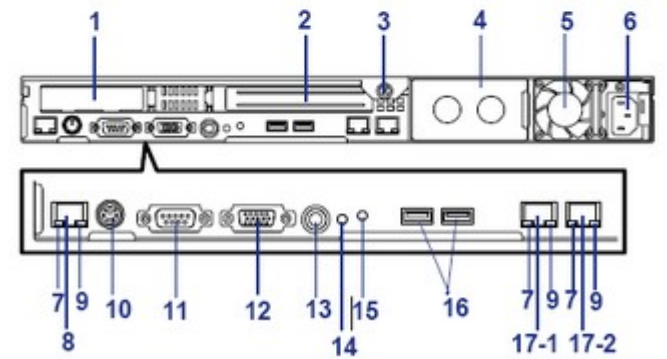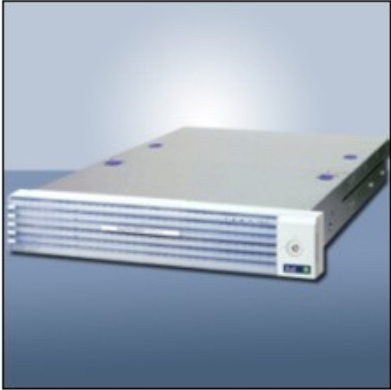
Figure 6: Rear View

5.3. NovaScale R460 E1

Front view	**Rack to Build :** Factory installable : **BASBR460E1990x (1,2)** On-Site installable : **BASBR460E1990x (1,2)** **Rack'n Roll** Factory installable : **BASBR460E1BR0x (1,2)** On-Site installable : -- Max Power : 760 VA 750 W 2561 BTU/	**Rack properties**

Rack properties

42U		
2U	Horizontal	

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	C13	Right
1	RC13	Right

C13 = Normal inlet C13
RC13 = Redundant Inlet C13

Rear View

Rear View

C13 : AC connector

1   2   3

14 13   12   11 10 9   8-2   8-1

17 18 16   17 15-1 16   17 15-2 16

6   5

Redundant Power Supply

5.4. NovaScale R480 E1

Front view	**Rack to Build :**
	Factory installable :
	    BASBR480E19901
	On-Site installable :
	    BASBR480E19901
	
	Rack'n Roll
	Factory installable :
	    BASBR480E1BR01
	On-Site installable :
	    --
	
	Max Power : 1750 VA
	              1570 W
	              5361 BTU/hr
		Rack properties

Rack properties

42U	
4u	Horizontal

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	C13	Right
1	RC13	Left

C13 = Normal inlet C13
RC13 = Redundant Inlet C13

Rear View

C13 : AC connector

5.5. Bull Blade Chassis-Standard (7U)

Front view	MI : **BLCNSB0-2000**	Rack properties

Front view

MI : **BLCNSB0-2000**

1 to 4 Power Supply Modules

Max Power : 2000 W
6829 BTU/hr

In the future (Mid 2009) :
2320 W
8024 BTU/hr

Rack properties

42U		
7U	Horizontal	

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	C19	Top Right
1	RC19	Bottom Right
1	C19	Top Left
1	RC19	Bottom Left

C19 = Normal inlet C19
RC19 = Redundant Inlet C19

Rear View

C19 Inlet

Redundant C19 Inlet

C19 Inlet

Redundant C19 Inlet

5.6. Bull Blade Chassis-Enterprise (9U)

Front view		Rack properties	

Front view

MI : **BLCBUB0-2900**

1 to 4 Power Supply Modules

Max Power : 2900 W
                  9902 BTU/hr

Rack properties

42U	
9U	Horizontal

Power connectivity

Nbr of plug	Plug type	Rear plug position
3	C19	Top Right
3	RC19	Top Left

C19 = Normal inlet C19
RC19 = Redundant Inlet C19

Rear View

Blade Chassis (BLCNSB0-2000)
typical connection

Redundant Power

Exemple with
2xC19 – 4xC13 PDU
PDUH007-M600

Exemple with
2xC19 – 4xC13 PDU
PDUH007-M600
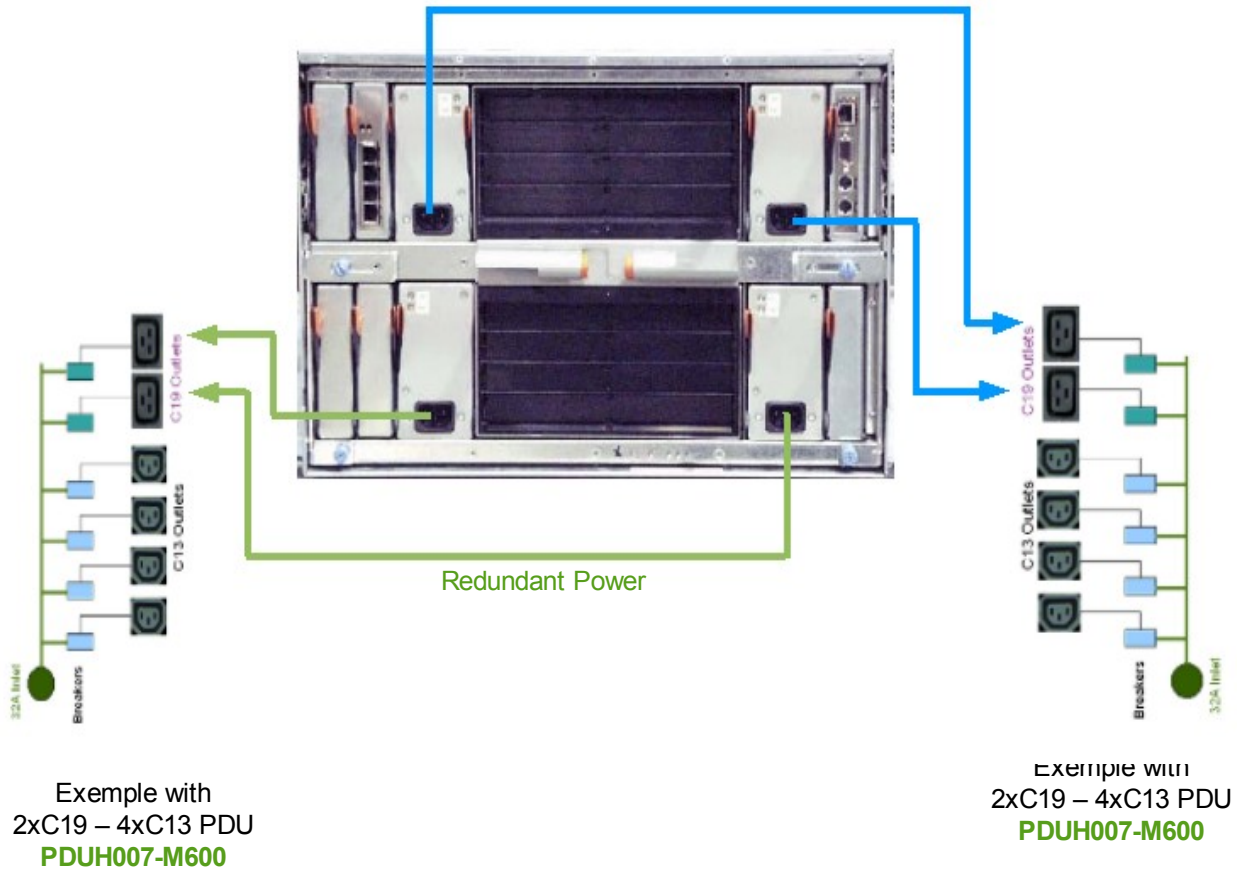
Redundant configuration with 2 PDUs, Blade Chassis
equiped with 4 power supply.

2 X Power cables: two kits are available

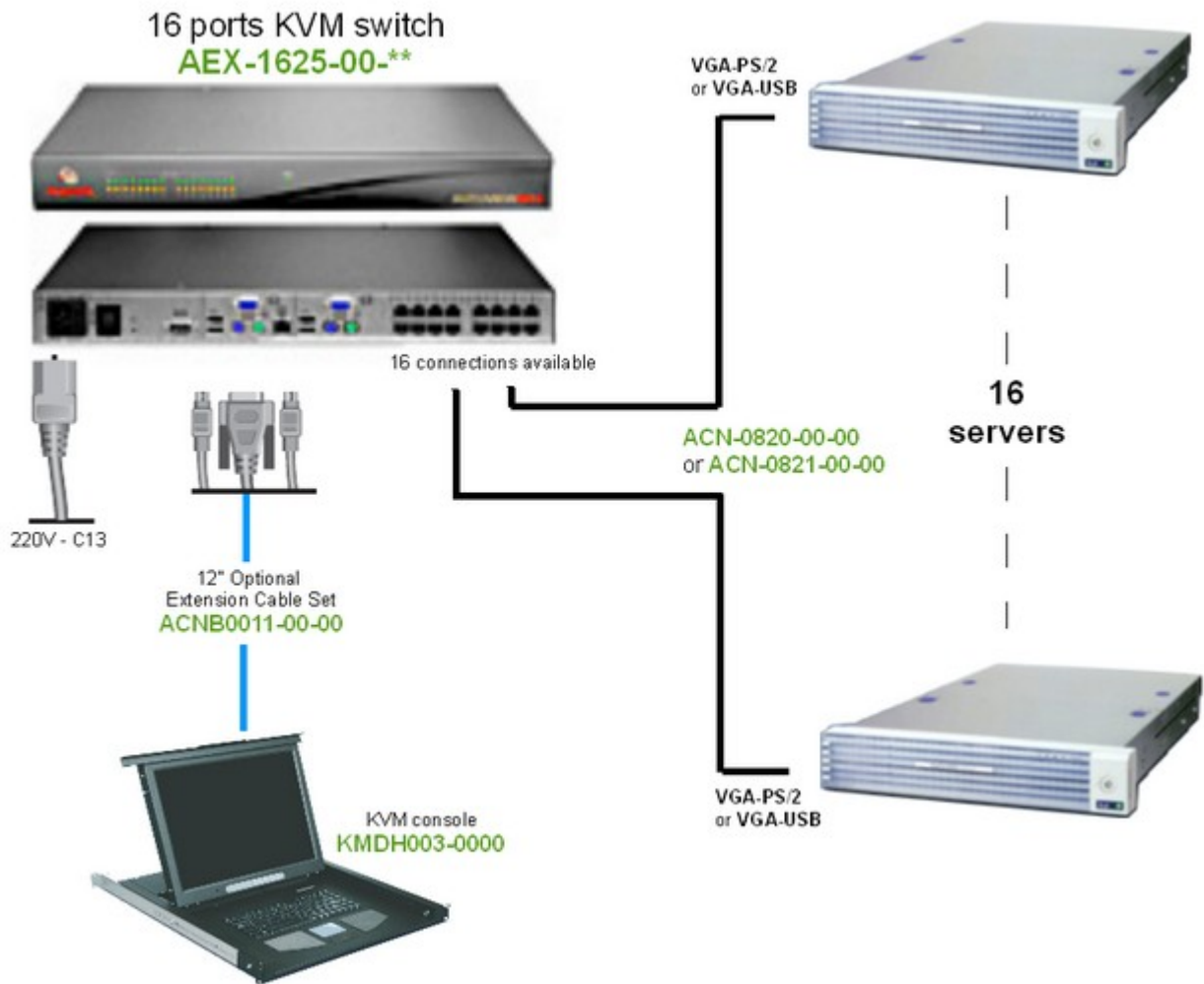|	Option 1
MI = **CBLBUB0-1000** kit of 2 x 4.3m 230V Dual 32A IEC 309, P+N+G/16A IEC 320-C20 *For this solution, the site must be equipped with 2x 32A female sockets.* *To power the blowers which only need 5.5 A, C19/C14 adaptors are provided and can be plugged to C13 connectors.*	
	Option 2
MI = **CBLBUB0-2000** kit of 2 x 2.8m 200-240V Triple 16A IEC 320-C20 from Power Supply Module (PSU) to Power Distribution Unit (PDU) *For this solution, 6xC19 power connectors are necessary.* *If necessary, to power the blowers which only need 5.5 A, C19/C14 adaptors are provided and can be plugged to C13 connectors.*	
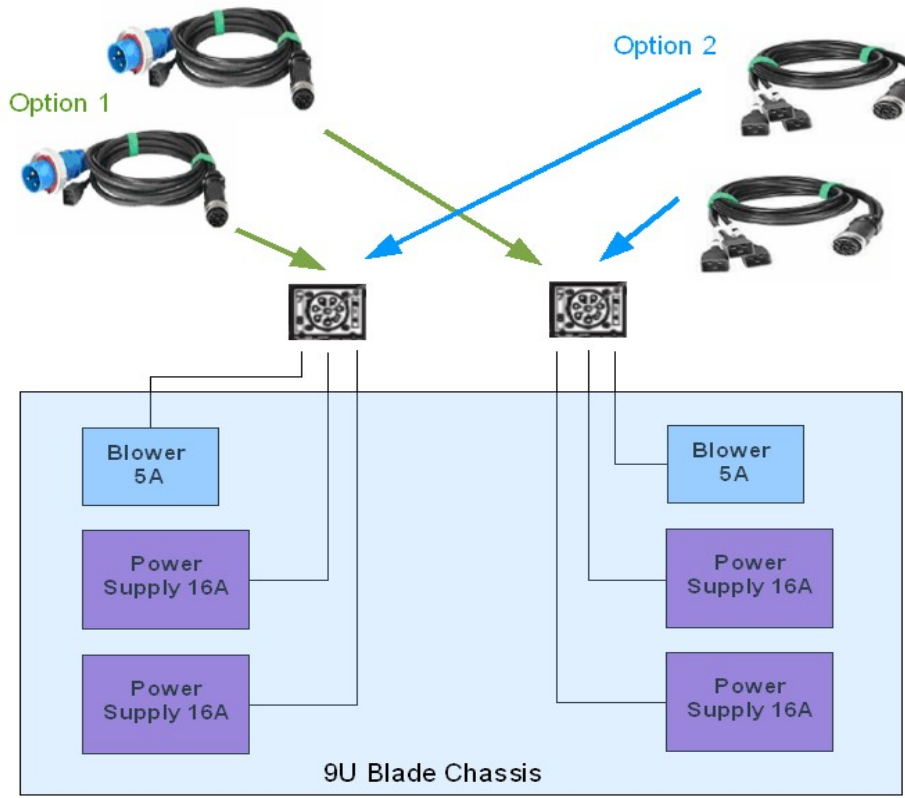
6. KVM (Keyboard Video Mouse) switches

6.1. KVM Switch Autoview

16-Port KVM switch category 5 cables – **2 users** (Avocent : AV2015)

C13 : AC connector

Factory installable :
    AEX-1625-00-BR
On-Site installable :
    AEX-1625-00-00

Power Max : **40W**

<u>Needs additional power cable</u>

C13/C14 – 1m : **CBLH017-1010**
or
C13/C14 – 2.5m : **CBLH018-1025**

Rack properties

42U	
1U	Horizontal

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	C13	Left

C13 = Normal inlet C13

6.2. KVM Switch cable (AV2000)

VGA-PS/2 interface for cat 5 KVM (Avocent) + 3m cat 5 cable (AV2015)

Factory installable :   **ACN-0820-00-00**
On-Site installable :   **ACN-0820-00-0**

VGA-USB interface for cat 5 KVM (Avocent) + 3m cat 5 cable (AV2015)

Factory installable :   **ACN-0821-00-00**
On-Site installable :   **ACN-0821-00-00**

6.3. KVM Switch Autoview : Connection model

16 ports KVM switch
AEX-1625-00-**

VGA-PS/2
or VGA-USB

16 connections available

220V - C13

12" Optional
Extension Cable Set
ACNB0011-00-00

ACN-0820-00-00
or ACN-0821-00-00

16
servers

KVM console
KMDH003-0000

VGA-PS/2
or VGA-USB

6.4. KVM Switch SV1000

4-Port KVM switch, 1 local user, w/ USB & PS/2 support (Avocent : 4SV1000)

Front view	Factory installable : **KVMH401-04S0** On-Site installable : **KVMH401-04SC**	**Rack properties**
Rear view		

Rack properties

42U		
1U	Horizontal	

Power connectivity
External power adaptor
+
MODCBLEUR0A
EUR.MODEM POWER CORD
CORDONS MODEM CE[3]

8-Port KVM switch, 1 local user, w/ USB & PS/2 support (Avocent : 8SV1000)

Front view	Factory installable : **KVMH402-08S0** On-Site installable : **KVMH402-08SC**	**Rack properties**
Rear view		

Rack properties

42U		
1U	Horizontal	

Power connectivity
External power adaptor
+
MODCBLEUR0A
EUR.MODEM POWER CORD
CORDONS MODEM CE

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3   This specific cable connects Power Adaptor to PDUs (C13/C14)

16-Port KVM switch, 1 local user, w/ USB & PS/2 support (Avocent : 16SV1000)		
Front view Rear view	Factory installable : **KVMH403-16S0** On-Site installable : **KVMH403-16SC**	**Rack properties** 42U 1U Horizontal **Power connectivity** External power adaptor + MODCBLEUR0A EUR.MODEM POWER CORD CORDONS MODEM CE

Specific cable for SV1000 family

6.5. KVM Switch cable SV1000

The 3 KVM switches above must be connected with specific cables listed below :

1.8 m cable for KVM, PS/2 & USB interface (SV1000)
      Factory installable :   **CBLH401-0290**
      On-Site installable :   **CBLH401-029C**

2.4 m cable for KVM, PS/2 & USB interface (SV1000)
      Factory installable :   **CBLH401-0300**
      On-Site installable :   **CBLH401-030C**

4.5 m cable for KVM, PS/2 & USB interface (SV1000)
      Factory installable :   **CBLH401-0310**
      On-Site installable :   **CBLH401-031C**

6.6. KVM SwitchView : Connection model
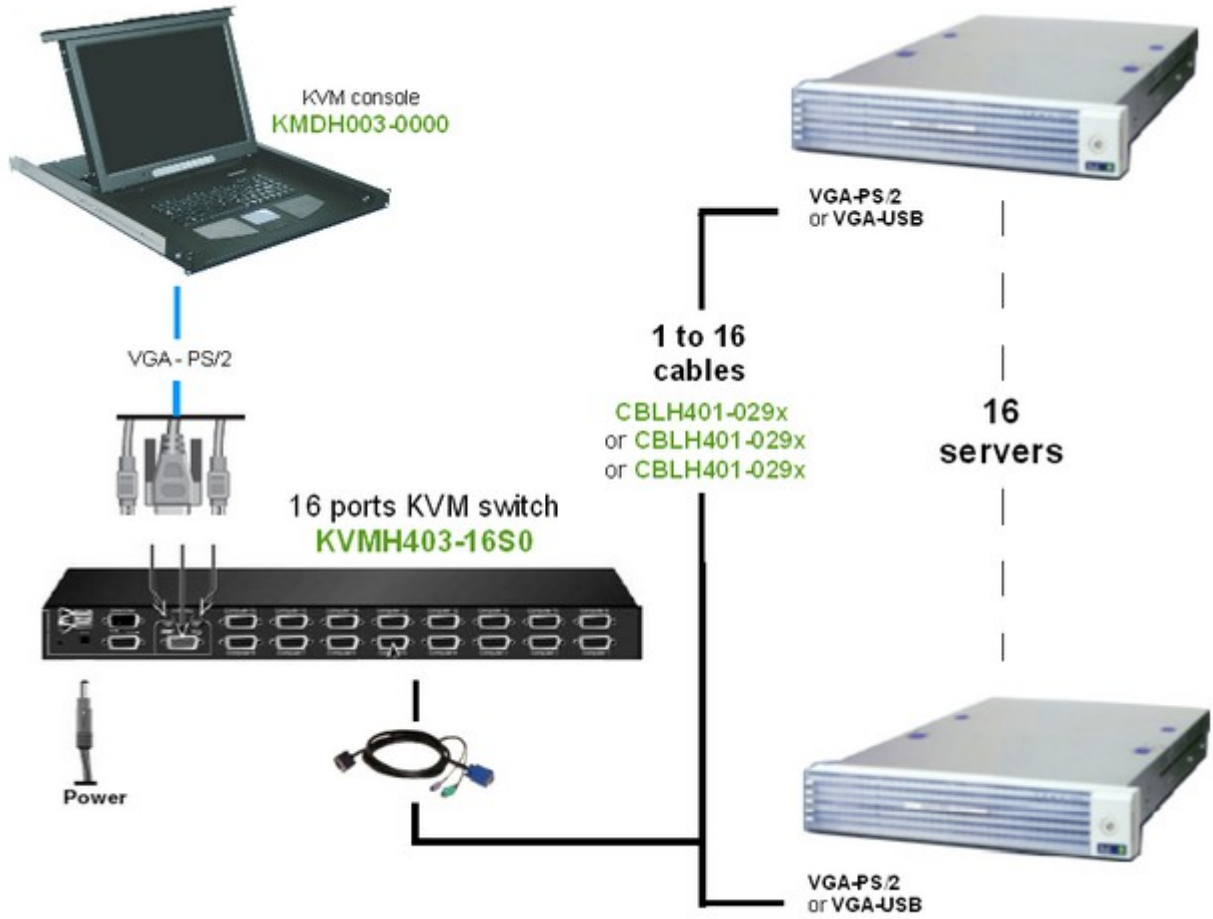
This connection model applies similarly to the 4, 8 and 16 port KVM SwitchView.

6.7. KVM SwitchView : Daisy chaining

All SwitchView 1000 switch models (4-port, 8-port and 16-port) can be daisy-chained up to 16 levels.

For example, a 16-port and 8-port SwitchView 1000 switch can be daisy-chained to connect a maximum of 24 servers.

Example of Basic Daisy Chain configuration

Cable with 15 points connector provided with KVM switch
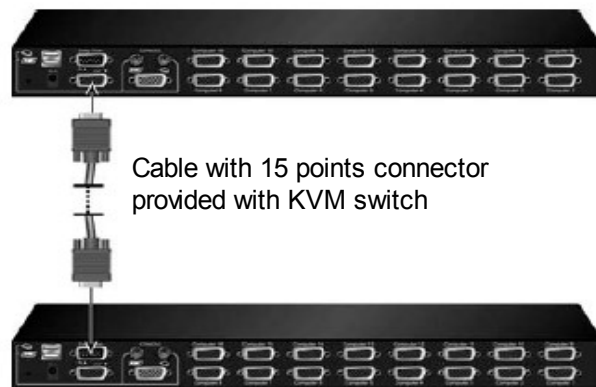
6.8. KVM console

1U tray w/ 17" LCD display, country specific keyboard and touchpad		

	Factory installable :
	    KMDH003-0000
	    + LOCH001-00**
	
	On-Site installable :
	    KMDH003-00**
	
	Power Max : **30W**
	
	Power cable provided : 2.5 m
	
	VGA/PS2 cable provided
		Rack properties
		
		| 42U		

1U	Horizontal
	| **Power connectivity** | Nbr of plug	Plug type	Rear plug position
1	C13	Right | *C13 = Normal inlet C13*

Rear view

6.9. KVM console connectivity

1U tray w/ 17" LCD display, country specific keyboard and touchpad

VGA - PS/2 Interface
Optional USB

4, 8 or 16 VGA-PS/2 optional USB
+
Daisy chain capability
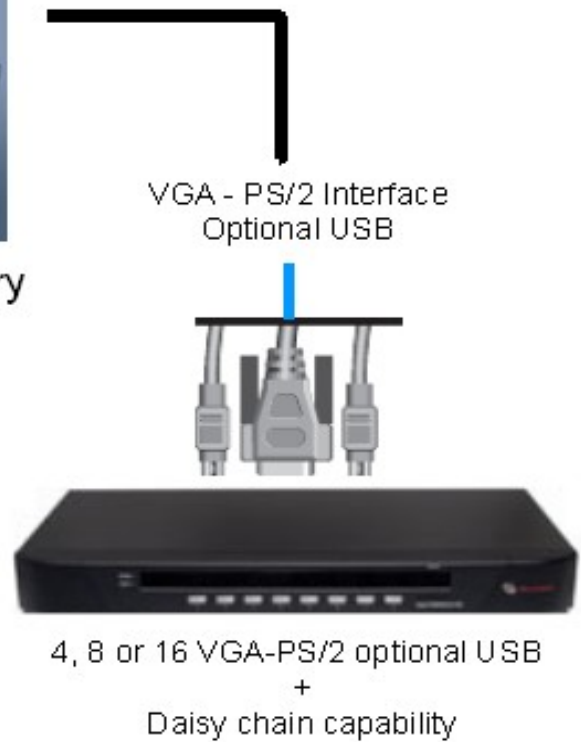
7. UPS (uninterruptible Power Supply)

7.1. Connection between UPS and PDUs

a)   Solution 1 : Recommended to get full power

DIRECT HARDWARE CONNECTION : Only available on powerful UPS (10kVA and 8 kVA)

Smart-UPS RT 8000VA
UPSH0010

Direct connection 32A max

PSSN213-32F0

Max 32 A

PDU 12 x C13
PDUH008-M12x

Power Cable UPS to PDB
CBLH013-0000
Provided with UPS
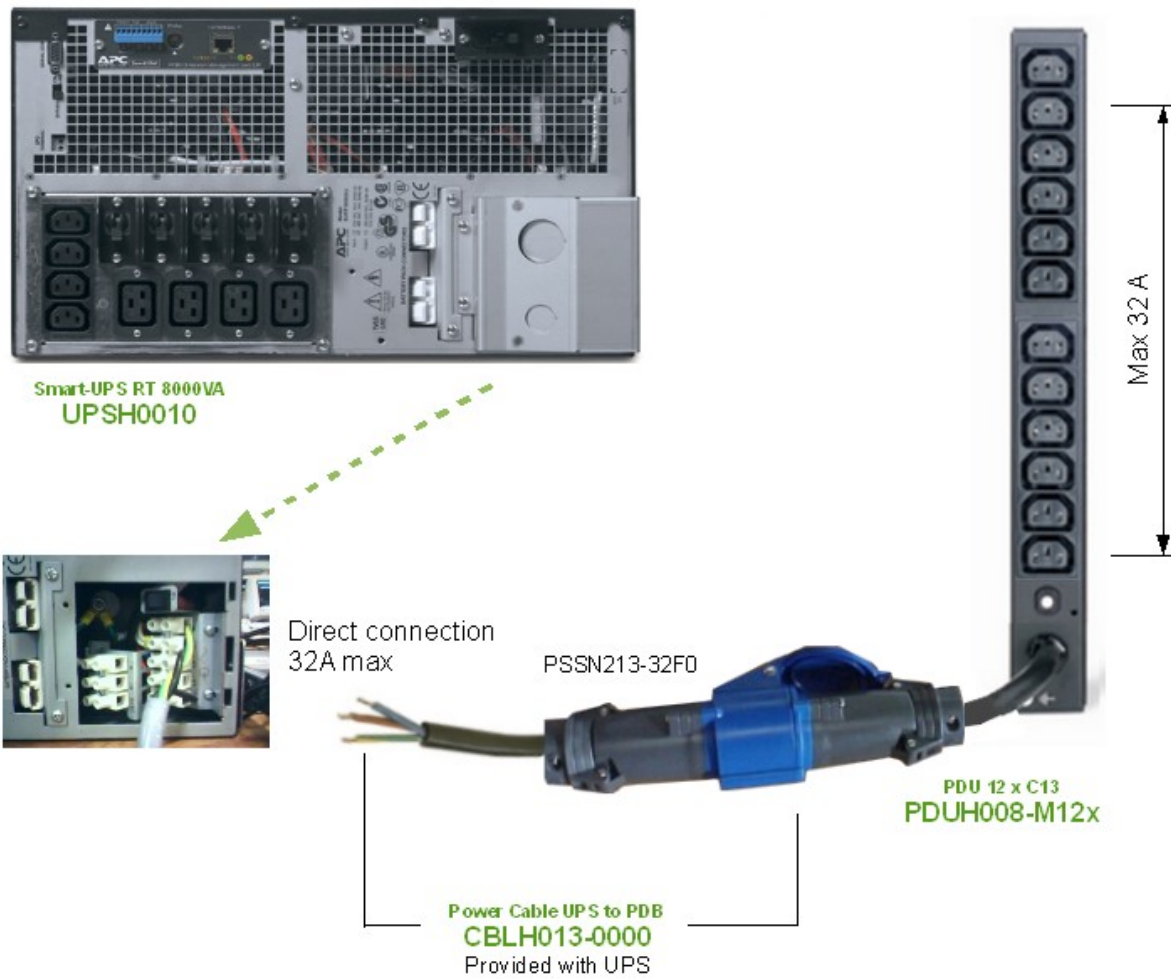
b) Solution 2 : Recommended to extend C13 connection capabilities on UPS (using secondary PDUs page 22)

IMPORTANT WARNING : Only 16 A max available on PDU
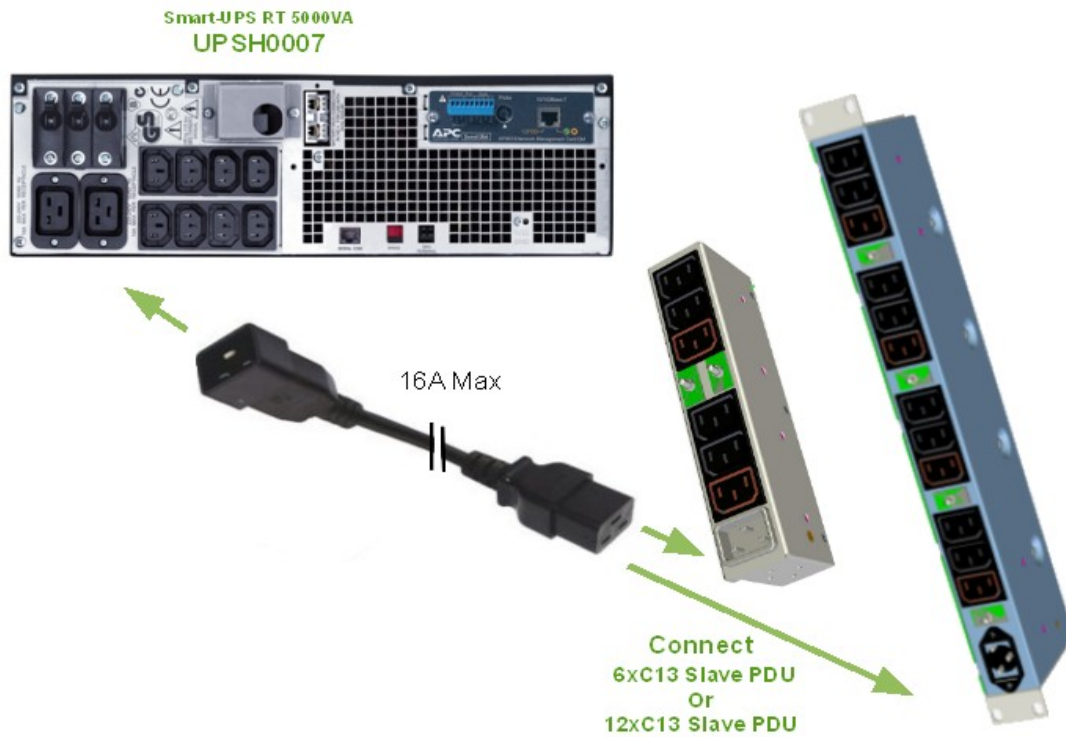
c) Solution 3 : Recommended when adding an UPS in an existing configuration

IMPORTANT WARNING : Only 16 A max available on PDU

7.2. UPSH009 (APC : SURT10000RMXLi)

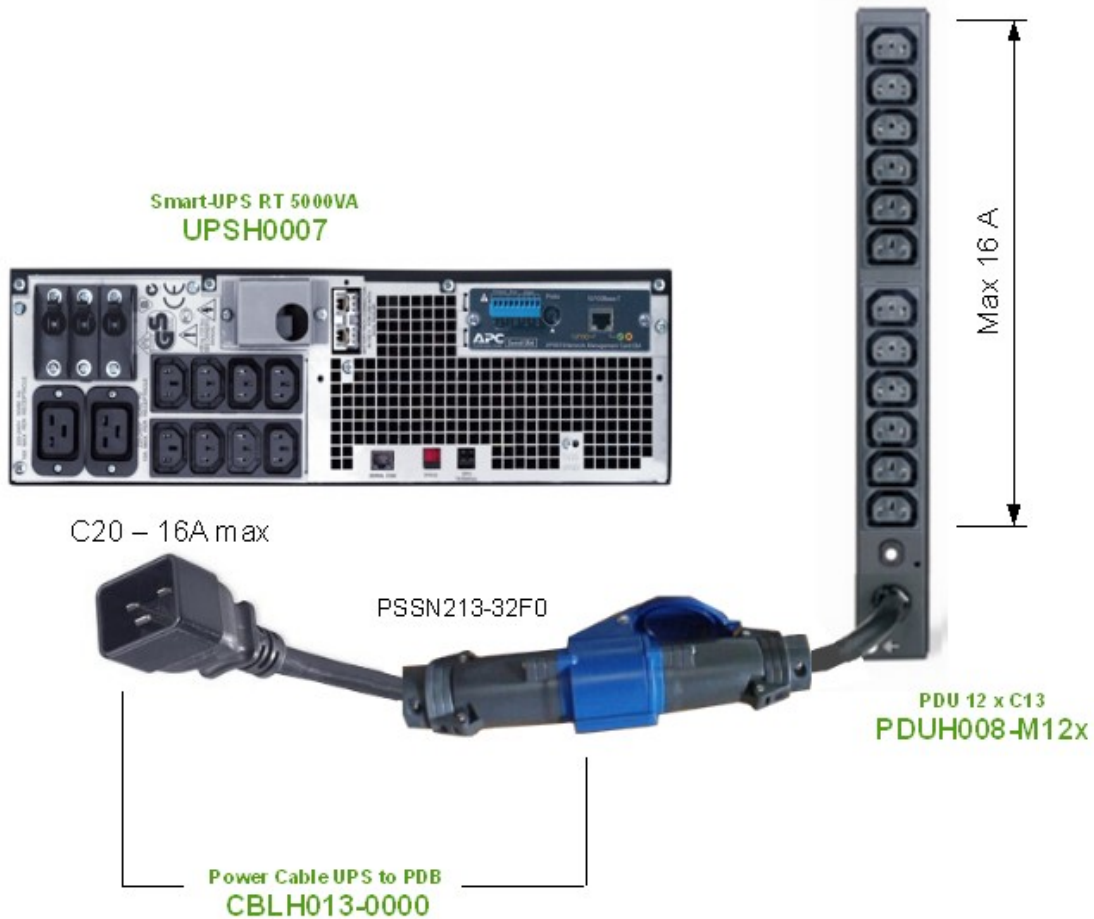| Smart-UPS RT 10000VA (8 kW)		
	Factory installable : **UPSH009** On-Site installable : **UPSH009** APC : SURT10000RMXLi Rack mounting kit provided with UPS	**Rack properties** | 42U	
6U	Horizontal
	| **Power connectivity** | Nbr of plug	Plug type	Rear plug position
1	Hard plug	Right | *Hard plug : Gnd/Neutral/Phase directly connected to UPS*

Rear view

a)   UPS Technical specification

Description	Smart-UPS RT 10000VA (8 kW)
Format	Rack mount - 6U
Size	43.2 cm x 66.3 cm x 26.3 cm
Weight	110.9 kg
VA rating	10000
Watts rating	8000
Time autonomy	4 minutes at full load
Connections	4 x IEC 320 C13 (max 10A each) 4 x IEC 320 C19 (max 16A each) Direct hardware connection
Interface	1 x RS-232 - D-Sub (DB-9) 9 broches 1 x Ethernet 10Base-T/100Base-TX – RJ-45
Management protocole	SNMP
Color	Black
Conformance	CE, C-Tick, ISO 9001, GOST, EN 60950, EN 61000-3-2, PCBC, UL 1449, VDE, EN55022 Class A, ISO 14001
Temperature	0°C to 40°C
Output volts	CA – 220V
Input volts	CA – 220V
Number of battery	2 (Lead-Acid battery)

7.3. UPSH010 (APC : SURT8000RMXLi)

Smart-UPS RT 8000VA (6.4 kW)

Factory installable :
UPSH010
On-Site installable :
UPSH010

APC : SURT8000RMXLi

Rack mounting kit provided
with UPS

Rack properties

42U		
6U	Horizontal	

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	Hard plug	Right

Hard plug : Gnd/Neutral/Phase directly connected to UPS

Rear View
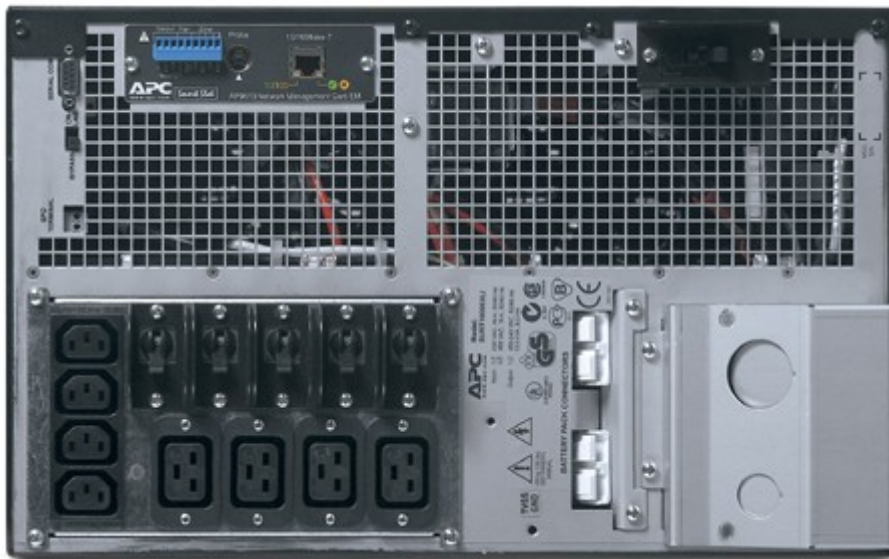
a)   UPS Technical specification

Description	Smart-UPS RT 8000VA (6.4 kW)
Format	Rack mount - 6U
Size	43.2 cm x 66.3 cm x 26.3 cm
Weight	110.9 kg
VA rating	8000
Watts rating6400	6400
Time autonomy	6.3 minutes at full load
Connections	4 x IEC 320 C13 (max 10A each) 4 x IEC 320 C19 (max 16A each) Direct hardware connection
Interface	1 x RS-232 - D-Sub (DB-9) 9 broches 1 x Ethernet 10Base-T/100Base-TX – RJ-45
Management protocole	SNMP
Color	Black
Conformance	CE, C-Tick, ISO 9001, GOST, EN 60950, EN 61000-3-2, PCBC, UL 1449, VDE, EN55022 Class A, ISO 14001
Temperature	0°C to 40°C
Output volts	CA – 220V
Input volts	CA – 220V
Number of battery	2 (Lead-Acid battery)

7.4. UPSH007 (APC : SURT5000RMXLi)

| Smart-UPS RT 5000VA (3.5 kW)		
	Factory installable : **UPSH007** On-Site installable : **UPSH007** APC : SURT5000RMXLi Rack mounting kit provided with UPS	**Rack properties**

Rack properties

42U		
3U	Horizontal	

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	Hard plug	Left

Hard plug : Gnd/Neutral/Phase directly connected to UPS

Rear View

a)   UPS Technical specification

Description	Smart-UPS RT 5000VA (3.5kW)
Format	Rack mount - 3U
Size	43.2 cm x 66.3 cm x 13 cm
Weight	54.6 kg
VA rating	5000
Watts rating6400	2500
Time autonomy	5 minutes at full load
Connections	8 x IEC 320 C13 (max 10A each)

	2 x IEC 320 C19 (max 16A each)
Interface	1 x RS-232 - D-Sub (DB-9) 9 broches 1 x Ethernet 10Base-T/100Base-TX – RJ-45
Management protocole	SNMP
Color	Black
Conformance	CE, C-Tick, ISO 9001, GOST, EN 60950, EN 61000-3-2, PCBC, UL 1449, VDE, EN55022 Class A, ISO 14001
Temperature	0°C to 40°C
Output volts	CA – 220V
Input volts	CA – 220V
Number of battery	2 (Lead-Acid battery)

7.5. UPSH006 (APC : SURT3000RMXLi)

Smart-UPS RT 3000VA (2.1 kW)		
	Factory installable : **UPSH006** On-Site installable : **UPSH006** APC : SURT3000RMXLi Rack mounting kit provided with UPS	**Rack properties** 42U / 3U Horizontal **Power connectivity**

Rack properties

42U		
3U	Horizontal	

Power connectivity

Nbr of plug	Plug type	Rear plug position
1	C19	Left

C19 = Normal inlet C19

Rear View

a)   UPS Technical specification

Description	Smart-UPS RT 3000VA (2.1kW)
Format	Rack mount - 3U
Size	43.2 cm x 66.3 cm x 13 cm
Weight	54.6 kg
VA rating	3000
Watts rating6400	2100
Time autonomy	14.1 minutes at full load
Connections	8 x IEC 320 C13 (max 10A each) 2 x IEC 320 C19 (max 16A each)
Interface	1 x RS-232 - D-Sub (DB-9) 9 broches 1 x Ethernet 10Base-T/100Base-TX – RJ-45

Management protocole	SNMP
Color	Black
Conformance	CE, C-Tick, ISO 9001, GOST, EN 60950, EN 61000-3-2, PCBC, UL 1449, VDE, EN55022 Class A, ISO 14001
Temperature	0°C to 40°C
Output volts	CA – 220V
Input volts	CA – 220V
Number of battery	2 (Lead-Acid battery)