

# COMPUWARE

Compuware Technology Inc.

## Building Block Application

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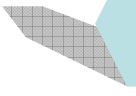
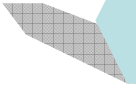
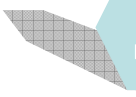
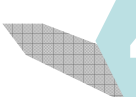


# Power Your Business



# Agenda

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-  **1** CPW Building Block Concept
-  **2** PDB Introduction
-  **3** PSU + PDB + Chassis
-  **4** Why PSU + PDB Solution ?



# CPW Building Block Concept

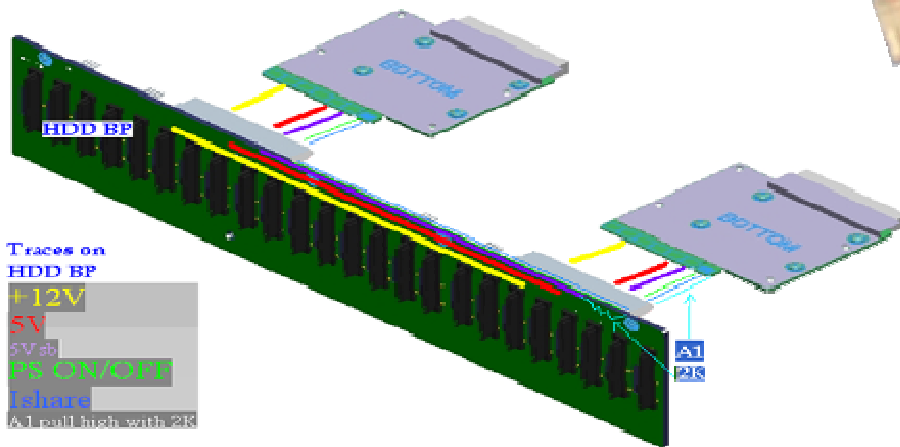
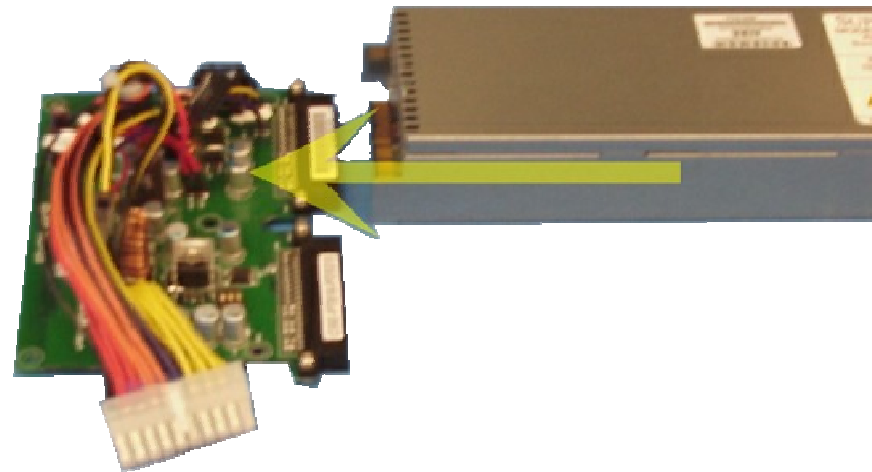
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- Building Block Concept : PSU + PDB
- PSU – Power Supply Unit
- PDB – Power Distribution Board (Backplane)
- PDB Concept (P.4)
- Building Block Solution (P.5)

# PDB Concept

- Many newer power supplies do not have direct cable output. Instead they go through a power distribution board (PDB)

- Newer power supplies provide 12V only, and let the PDB provide 5V, 3.3V and -12V.
- Allows one power supply to be used in multiple system.



- Cable less solution



# Building Block Solution

1620W/1400W  
Redundant



1280W  
Redundant



920W  
Redundant



740W  
Redundant



500W  
Redundant



DC 48V input 1010W  
Redundant

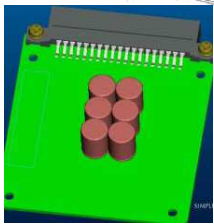
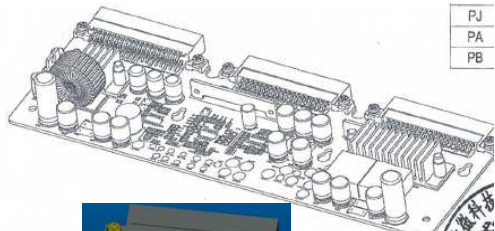
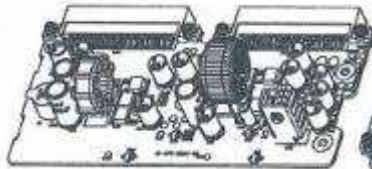
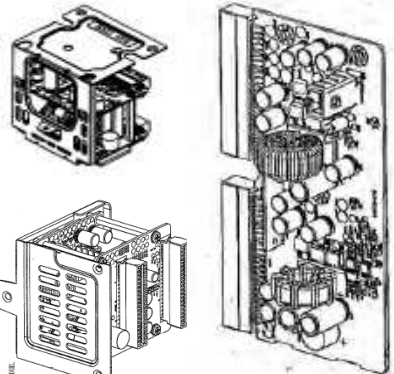


DC 48V input 710W  
Redundant



Mix  
&  
Match

Application  
Optimized!





# PDB Introduction

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➤ **PDB Categories**

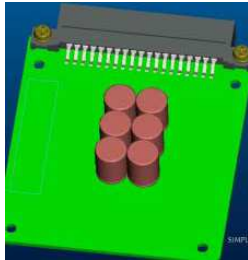
- Horizontal
- Vertical

➤ **PDB & PSU Combination**

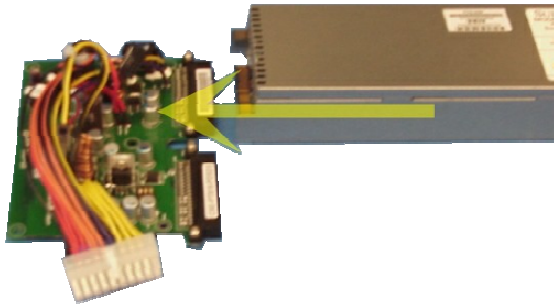
- AC-DC Power 1U Redundant
- AC-DC Power 1U Cold-Swap
- AC-DC Power 2U Redundant / Triple-Redundant
- DC-DC Power 1U Redundant / 1U Cold-Swap / 2U Redundant

# PDB Categories

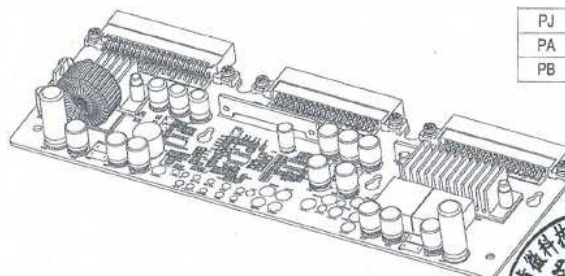
## ➤ Horizontal



- Single



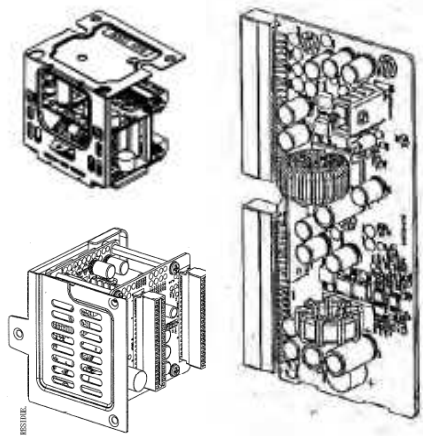
- Side by side
- 1+1 Redundant application



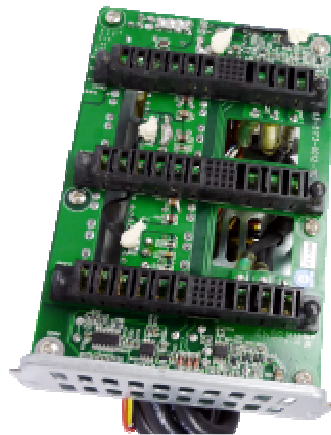
- Side by side
- 2+1 Redundant application

# PDB Categories

## ➤ Vertical



- Stacking
- 1+1 Redundant application



- Stacking
- 2+1 Redundant application



# PDB & PSU Combinations

## ➤ AC-DC Power 1U Redundant

PDB	Compatible PSU	Wattage	PSU Width	Stack Direction
<b>AC-DC POWER</b>				
<b>1U Redundant</b>				
<b>CPR-7511-1H1</b>	<b>CPR-4011-4M1</b>	400W	54.5mm	Horizontal
	<b>CPR-6011-2M1</b>	600W		
<b>CPR-6511-1H6LF</b>	<b>CPR-5011-2M1LF</b>	500W	54.5mm	Horizontal
	<b>CPR-7011-5M1LF</b>	700W		
<b>CPR-1021-1H4LF</b>	<b>CPR-5011-2M2LF</b>	500W	50mm	Horizontal
	<b>CPR-7011-5M2LF</b>	700W		
<b>CPR-8011-4H3LF</b>	<b>CPR-5011-3M1</b>	500W	76mm	Horizontal
	<b>CPR-7211-1M1LF</b>	720W		
	<b>CPR-7411-1M1</b>	740W		
	<b>CPR-9211-1M1LF</b>	920W		
	<b>CPR-1221-1M2LF</b>	1200W		
<b>CPR-8011-4H5LF</b>	<b>CPR-1421-2M1LF</b>	1400W	76mm	Horizontal
	<b>CPR-1621-1M2</b>	1620W		



# PDB & PSU Combinations

## ➤ AC-DC Power 1U Cold-Swap

PDB	Compatible PSU	Wattage	PSU Width	Stack Direction
<b>AC-DC POWER</b>				
<b>1U Cold-Swap</b>				
<b>CPR-8011-1H2LF</b>	<b>CPR-5011-3M1</b>	500W	76mm	Single
	<b>CPR-7211-1M1LF</b>	720W		
	<b>CPR-7411-1M1</b>	740W		
	<b>CPR-9211-1M1LF</b>	920W		
<b>CPR-1421-1H3LF</b>	<b>CPR-1421-1M2LF</b>	1400W	104.5mm	Single
<b>CPR-1621-1H3</b>	<b>CPR-5011-3M1</b>	500W	76mm	Single (Twin)
	<b>CPR-7211-1M1LF</b>	720W		
	<b>CPR-7411-1M1</b>	740W		
	<b>CPR-9211-1M1LF</b>	920W		
	<b>CPR-1221-1M2LF</b>	1200W		
	<b>CPR-1221-5M1</b>	1280W		
	<b>CPR-1421-2M1LF</b>	1400W		
	<b>CPR-1621-1M2</b>	1620W		



# PDB & PSU Combinations

## ➤ AC-DC Power 2U Redundant / Triple-Redundant

PDB	Compatible PSU	Wattage	PSU Width	Stack Direction
<b>AC-DC POWER</b>				
<b>2U Redundant</b>				
<b>CPR-9011-2H7LF</b>	<b>CPR-5011-3M1</b>	500W	76mm	Vertical
	<b>CPR-7211-1M1LF</b>	720W		
	<b>CPR-7411-1M1</b>	740W		
	<b>CPR-9211-1M1LF</b>	920W		
	<b>CPR-1221-1M2LF</b>	1200W		
<b>CPR-1421-4H1LF</b>	<b>CPR-1421-2M1LF</b>	1400W	76mm	Vertical
<b>CPR-1421-2H1LF</b>	<b>CPR-1421-1M2LF</b>	1400W	104.5mm	Vertical
<b>CPR-9011-2HDLF</b>	<b>CPR-1621-1M2</b>	1620W	76mm	Vertical
<b>Triple-Redundant</b>				
<b>CPR-1221-4H1LF</b>	<b>CPR-1421-1M2LF</b>	1400W	104.5mm	Vertical



# PDB & PSU Combinations

- DC-DC Power 1U Redundant / 1U Cold-Swap / 2U Redundant

PDB	Compatible PSU	Wattage	PSU Width	Stack Direction
<b>DC-DC POWER</b>				
<b>1U Redundant</b>				
CPR-8011-4H3LF	CDR-7111-1M1LF	710W	76mm	Horizontal
	CDR-1021-1M1LF	1010W		
<b>1U Cold-Swap</b>				
CPR-8011-1H2LF	CDR-7111-1M1LF	710W	76mm	Single
	CDR-1021-1M1LF	1010W		
<b>2U Redundant</b>				
CPR-9011-2H7LF	CDR-7111-1M1LF	710W	76mm	Vertical
	CDR-1021-1M1LF	1010W		



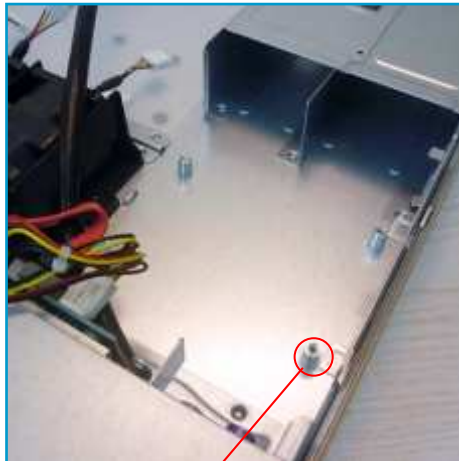
## PSU + PDB + Chassis

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- Chassis Fixtures for PSU + PDB Application
- PDB Installation
- Optional Brackets Application
  - Situations of using brackets
  - Brackets application examples
- Complete Assembly

# Chassis Fixtures for PSU +PDB

➤ Chassis provides:

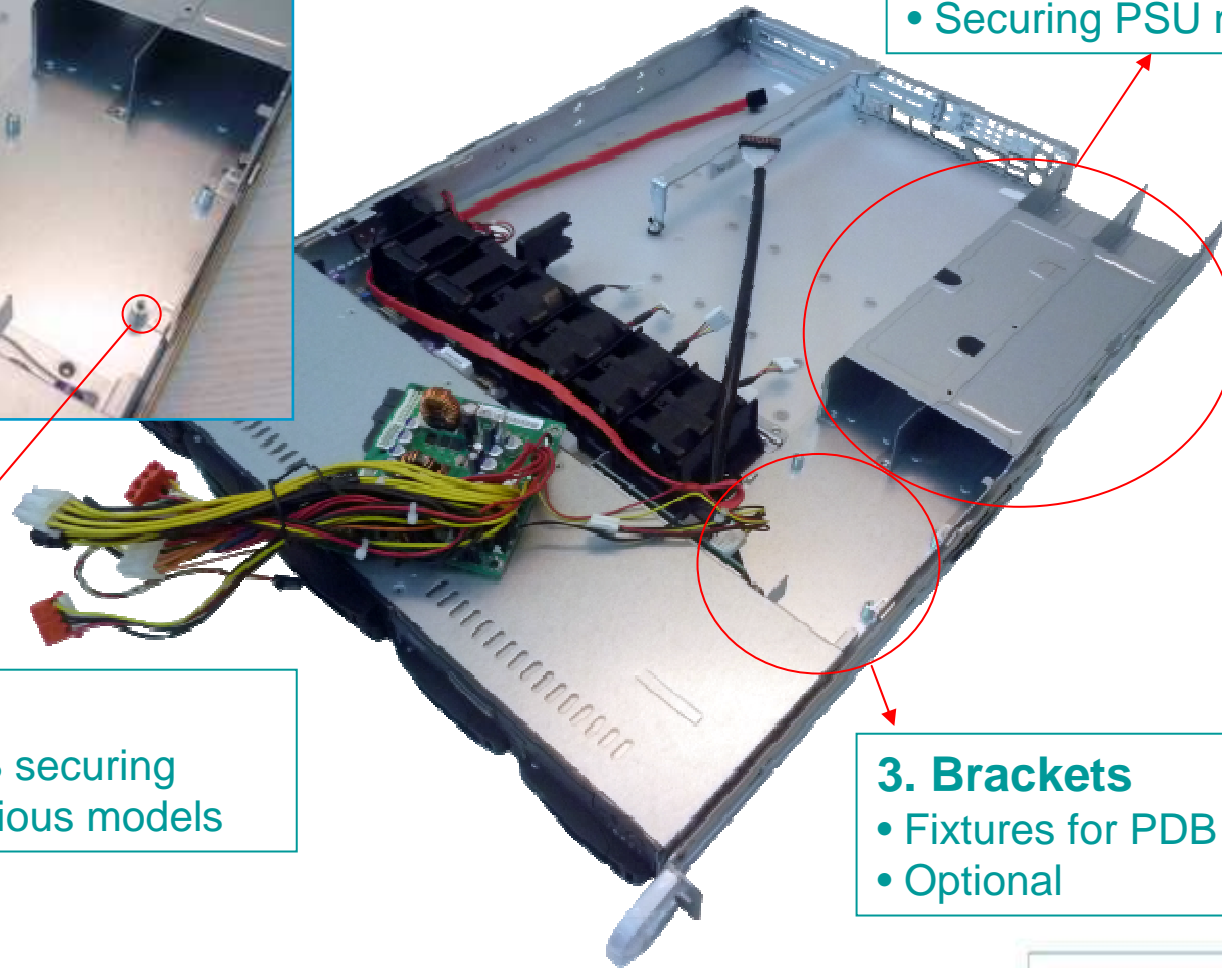


## 1. Standoffs

- Fixtures for PDB securing
- Common for various models

## 2. Guide rails

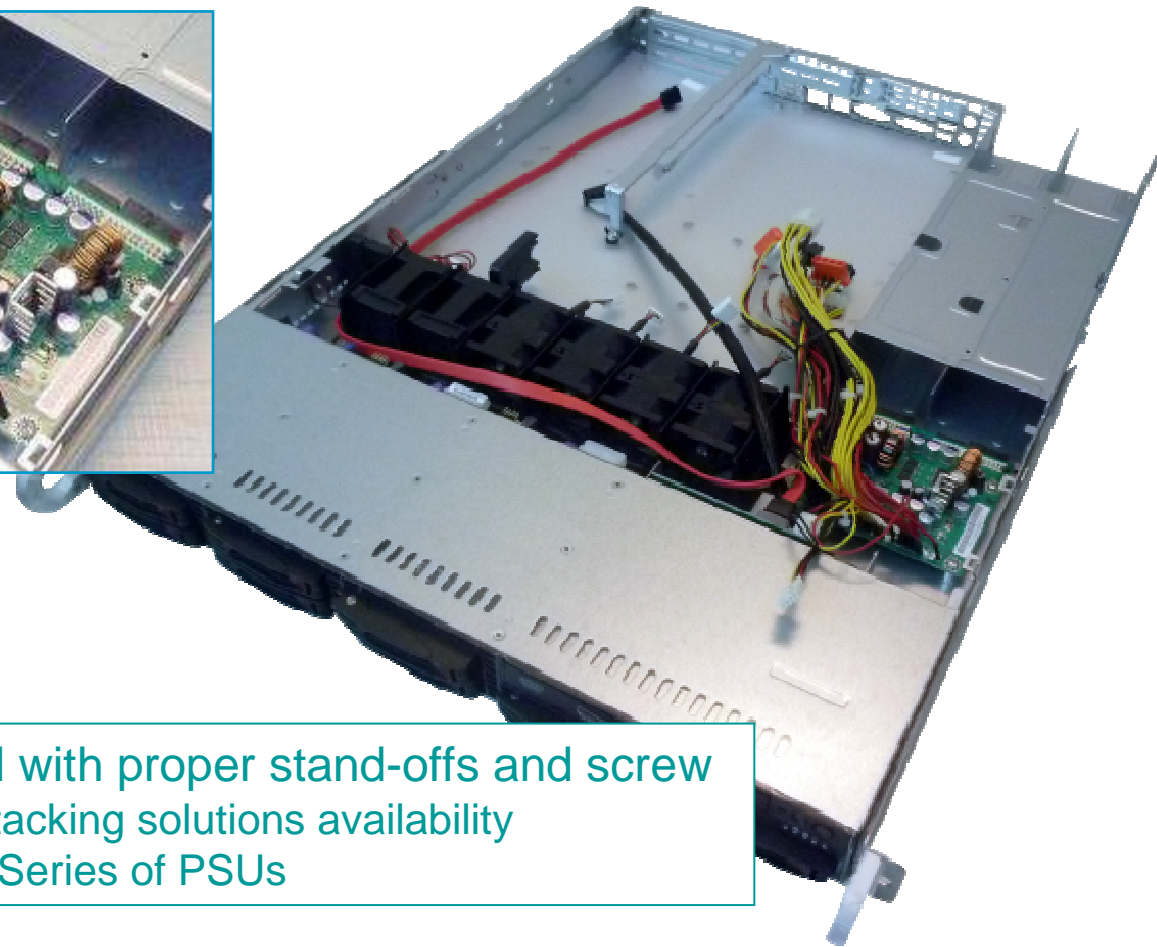
- Installation guide
- Securing PSU modules



## 3. Brackets

- Fixtures for PDB
- Optional

# PDB Installation



PDB can be simply installed with proper stand-offs and screw

- From 1U side by side or 3U stacking solutions availability
- PDB can be shared for same Series of PSUs



## Optional Brackets Application

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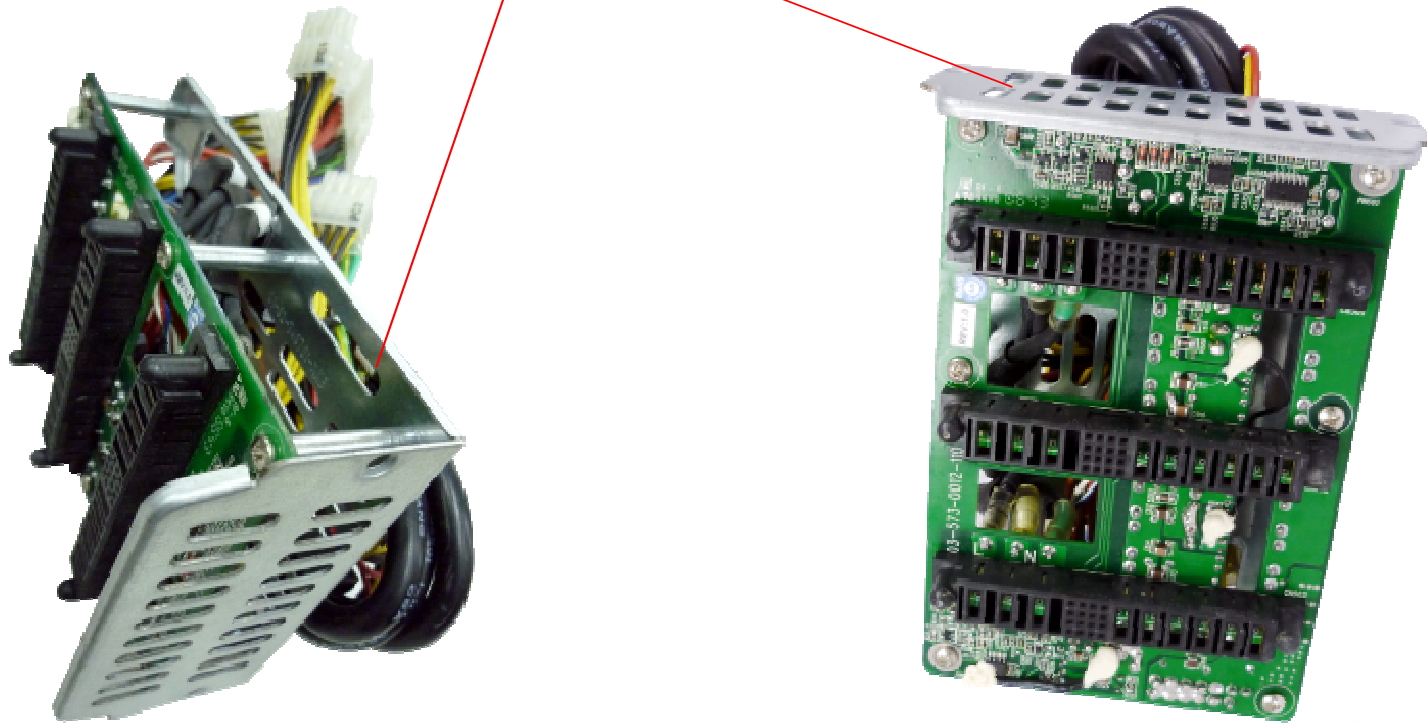
- Situations of using Brackets :
  - When PDB size is small and can't fit existing stand-offs...
  - When PDB needs to be installed vertically and there is no way to mount...
  - Others

# Optional Brackets Applications

## ➤ Optional brackets application example

### Optional Brackets

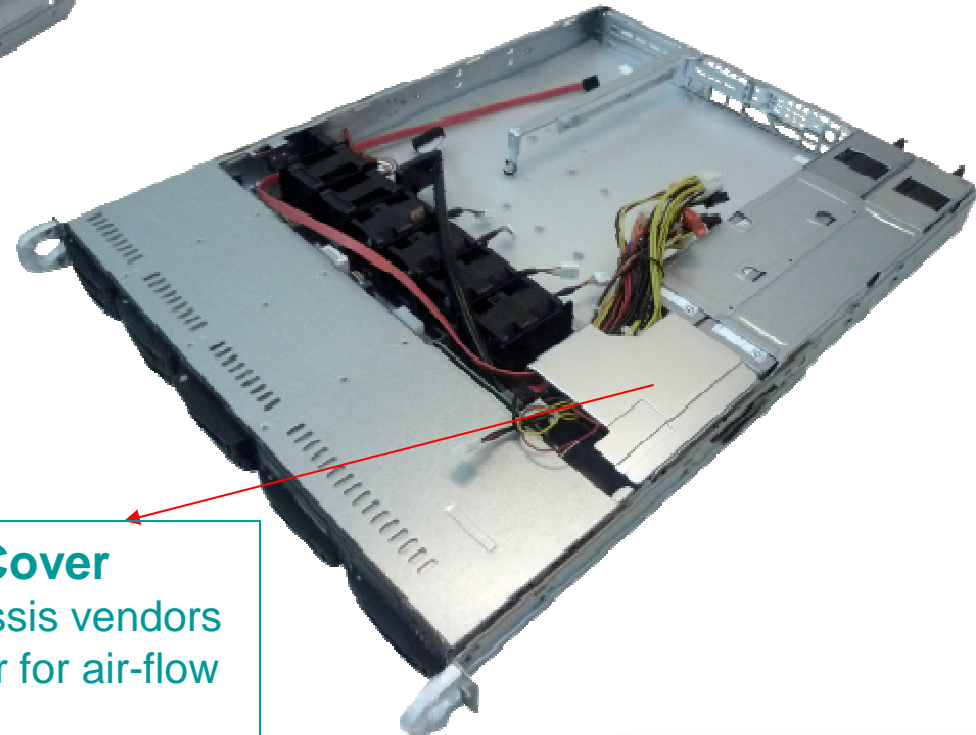
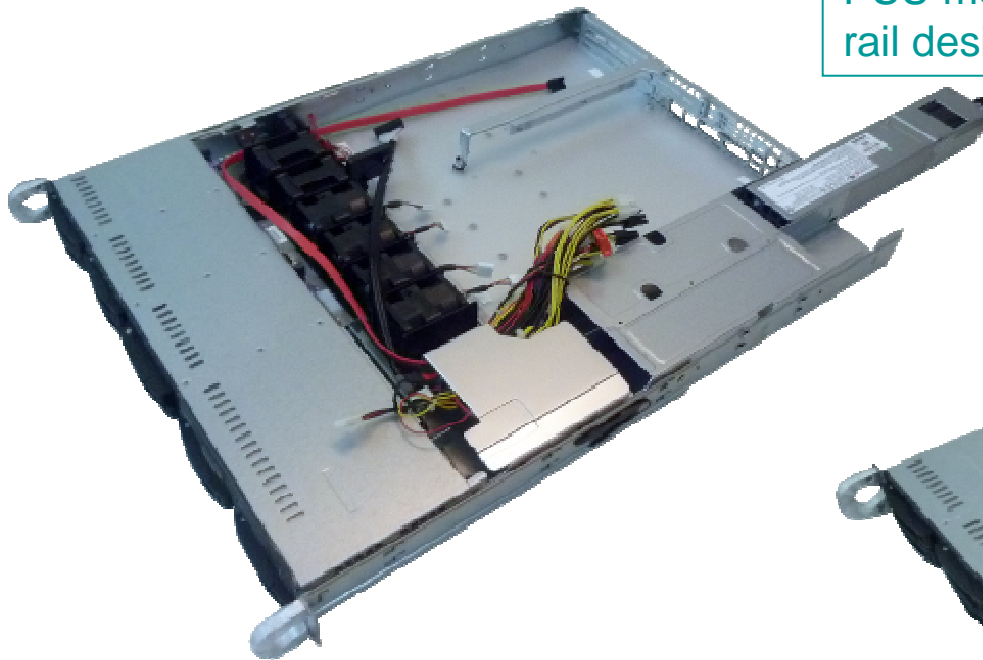
- PDB Brackets are also available if needed
- Brackets can be provided either by chassis or by CPW





# Complete Assembly

PSU modules align by chassis rail design for PDB fixture



## Optional Cover

- Some chassis vendors design cover for air-flow concern



## Why PSU + PDB Solution ?

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- Advantages of PSU + PDB solution :
  - Various PDB categories
    - ➔ Higher flexibility to comply to most chassis types
    - ➔ Higher flexibility for different system applications
  - PSU can be replaced easily while expanding system
  - Common PDB for various PSUs
    - ➔ Larger PDB quantity with better price



# Thanks for your attention !

