System Requirements Document for 8233-E8B

Product Internal Name: ATLAS HV32

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- Announce 10/12/2010
- Announce 08/17/2010, GA: 09/17/2010
- Announce 07/13/2010
- Announce 2Q 2010

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Journal of Changes

Date	Version	Description of Changes	Author
11/07/2008	1.0	Initial Release	Jerry Allen
12/09/2008	1.1	Chapter 2.2.1 - Added Op Panel cables #1856 and #1878 Chapter 2.2.2 - Added Op Panel cables #1856 and #1878	Jerry Allen
12/15/2008	1.2	Chapter 4 - Added Base Fab Mechanical Diagrams Chapter 8.4.1 - Removed #1880 Chapter 8.4.4 - Removed #0850 Chapter 8.4.6 - Added Quantity 150 codes section Chapter 8.3 - Added #5661 and #5673	Peter TL Shen
02/18/2009	1.3	Chapter 2.2.1 - Removed #7714 Chapter 2.2.1 - Replaced #7292 with #7291 Chapter 2.2.1 - Replaced #7360 with #7636 Chapter 2.7.2 - Added #0854, #0855 Chapter 7 - Removed #5874 (TRES) Chapter 7 - Added #5877 Chapter 7.2.1 - Removed #5608 Chapter 7.2.1 - Added #5609 Chapter 8.4.4 - Added #0854, #0855 Chapter 8.4.6 - Added #7536, #7546 QTY150 codes Chapter 9.2.3 - Removed #4746 Chapter 15.6 - Removed #0534	Peter TL Shen
03/31/2009	1.4	***New Format with Common Chapters** Chapter 9 - Added #5765 Oliver IO Drawer Chapter 11- Removed #0042 Mirrored IOP (Data Protection	Peter TL Shen
06/03/2009	1.5	Chapter 2 - Updated system overview Chapter 7 - Updated processor requirements Chapter 7 - Updated processor speeds 3.1GHz and 3.3GHz Chapter 7 - Removed #8334, #7714 and #2324 Chapter 8 - Updated memory rules Chapter 12 - Changed #5903 SQUIB-E to a short card Chapter 12 - Updated TRES-19 common chapter *Base Fab will now come with 2 power supplies Chapter 2 - Each system must contain TWO (2) Power Supplies Chapter 3 - Updated quantity of #7740 to TWO (2) Chapter 6 - Base Mechanical - Two (2) Power supplies required Chapter 14 - Updated AC Specific Rules: two #7740 will be installed	Peter TL Shen

08/28/2009	1.6	Chapter 2 - Updated system overview with GA Chart Chapter 3 - Updated minimum configuration to include #8334 Chapter 3 - Added #7146 Rail Kit to minimum configuration Chapter 7 - Updated #8334, #7714 and #2324 Chapter 9 - Removed Pearl, updated drawer chart Chapter 9 - Added #5887 HomeRun Chapter 9 - Updated all quantities and 150 Codes Chapter 10 - Removed Pearl DASD Chapter 10 - Added HomeRun DASD (Gen2-S carrier) Chapter 21 - Updated #7793 (Max 3 partitions per system)	Peter TL Shen
10/062009	1.7	Chapter 2 - Updated paragraph 2 of System Description Chapter 2 - Updated maximum number of GX+ supported Chapter 2 - Updated Atlas GA Table Chapter 2 - Updated Basic System Components table Chapter 3 - Removed #7217, #7291, & #1856 (Desk side System, OP Panel Cables) Chapter 3 - Removed #5743 (SATA DVDROM) Chapter 3 - Added Atlas HPC minimum requirements Chapter 4 - Removed #5544 & #5548 (System Console) Chapter 4 - Updated Remote Load Source Specify Codes Chapter 4 - Updated I5/OS Boot Requirements table Chapter 7 - Updated Kapalua Processor Card diagram Chapter 8 - Updated Memory Attributes table Chapter 8 - Updated Specific Rules, Restrictions, Fillers section Chapter 9 - Updated Atlas Supported Drawers table Chapter 9 - Updated Tres 19 supported servers Chapter 9 - Updated 5886 orderable/supported disk table Chapter 9 - Updated Atlas Supported Drawers notes Chapter 9 - Updated Overview paragraph 4 Chapter 10 - Added #1972 (VIPER/SATURN) Chapter 10 - Updated Quantity 150 table Chapter 12 - Updated Card Placement Table Chapter 12 - Updated Card Priority and Placement Table Chapter 16 - Updated Kapalua Processor Card diagram Chapter 20 - Updated Primary and Partition Specify Codes table	Jerome G. Sampang

10/28/2009	1.8	Chapter 2 - Updated System Description Chapter 2 - Updated Minimum System Configuration Chapter 2 - Updated Basic System Components table Chapter 3 - Replaced #8346 DASD Backplane with #8340 Chapter 3 - Removed Rack Feature Codes from the minimum requirements Chapter 4 - Removed [i UNIQ] from the Boot Requirements table Chapter 4 - Removed #1890 and replaced it with #1909 Chapter 4 - Removed #0855 and replaced it with #3587 Chapter 6 - Added Power Supply Feature Codes Chapter 7 - Updated CPU/Processor description Chapter 7 - Added #8332 to the Processors table Chapter 9 - Removed [i UNIQ] from #5786 Chapter 9 - Changed the maximum quantity of 7031-D24 and 7031-T24 from 4 to 24 Chapter 10 - Updated Storage Devices description Chapter 10 - Updated DASD External table Chapter 10 - Changed #5762 minimum quantity to 1 Chapter 10 - Updated Quantity 150 Codes table Chapter 12 - Changed the #5903 description Chapter 12 - Updated PCI-X card placement table Chapter 12 - Added maximum quantity and notes on #5708 Chapter 12 - Added note 3 on PCI-X DDR cards Chapter 12 - Updated the PCI-X DDR Notes Chapter 12 - Updated the PCI-X table Chapter 12 - Removed #1981, #1982, #5718 and #5719 Chapter 14 - Updated the Power and Cooling Requirements for CEC and I/O description Chapter 15 - Removed section 15.1 Chapter 15 - Removed [i UNIQ] from Rack Power Requirements table and Rack Cover Features and Rules table Chapter 15 - Updated Racks table Chapter 15 - Removed note number 2 under the Racks table Chapter 18 - Added Solid State Drive (SSD) (Zeus) Configuration Rules Chapter 20 - Changed #0267 description to IBMi Chapter 20 - Updated Operating System implementation rules	Jerome G. Sampang

11/18/2009	1.9	Chapter 2 - Updated the System Overview table Chapter 2 - Updated the Basic System Components table Chapter 3 - Updated the Minimum Requirements table Chapter 3 - Updated the Atlas 8236-E8C Edition Rules Chapter 4 - Updated Remote Load Source Specify Codes Chapter 4 - Remove the notes in the System Console table Chapter 7 - Added 3.55GHz processor in 7.1 Chapter 7 - Updated the Supported Processor Features table Chapter 7 - Updated information in Processor Activations Chapter 8 - Updated the Specific Rules, Restrictions, Fillers section Chapter 9 - Added #5786 & #5787 in the Atlas Supported Drawers table Chapter 9 - Updated the General Rules, Restrictions, Riser cards, fillers Chapter 9 - Updated the GX+/GX++ Expansion Card Placement Rules Chapter 9 - Updated the Tres drawer section Chapter 9 - Updated the Sundance drawer section Chapter 9 - Updated the Charlotte drawer section Chapter 10 - Updated the Quantity 150 Codes table Chapter 12 - Updated the Card Placement Table for Feature Priority and Placement table Chapter 15 - Updated the Racking Approach for the System section	Jerome G. Sampang
02/05/2010	2.0	Chapter 2 - Updated the Atlas Configuration Support Roll-out plan table Chapter 3 - Updated the Minimum requirements table Chapter 3 - Removed the Atlas 8236-E8C Edition Rules section Chapter 8 - Updated the Memory Max table Chapter 8 - Added new memory rule Chapter 8 - Added a note on memory plug sequence Chapter 9 - Updated the Atlas supported drawers table Chapter 10 - Updated the DASD: External table Chapter 10 - Updated the Quantity 150 codes table Chapter 12 - Updated the PCI-X table Chapter 15 - Updated the Rack Cover features and Rules table Chapter 15 - Updated the Rack/Tower related table	Jerome G. Sampang
03/01/2010	2.1	Chapter 8 - Added bundled memory Chapter 12 - Updated the PCI-Express table Chapter 15 - Added Ethernet switches and CAT 5 switch cables Chapter 18 - Added the external modems, routing indicator and CAT 5 switch cables	Jerome G. Sampang
03/24/2010	2.2	Chapter 9 - Added a rule under the GX+ / GX++ Expansion Card Placement Rules Chapter 12 - Removed FC 5912 from the PCI-X table since it is a PCI-X DDR adapter Chapter 12 - Added FC 5904 from the PCI-X DDR table Chpater 12 - Removed FC 4808 from the PCI-Express table since it cannot be installed in the CEC Chapter 13 - Removed i5 compatibility with FC 3669 Chapter 15 - Removed FC 1109 per PCRB - P000H7.4; P000H7.5 Chapter 17 - Added a note on processor upgrade Chapter 18 - Removed FC 1109 per PCRB - P000H7.4; P000H7.5 Chapter 18 - Added FC 5918, 5919, 5920, 5926 into the miscellaneous table	Jerome G. Sampang
04/09/2010	2.3	Chapter 4 - Added #0856 into chapter 4 IBM i boot requirements if no SAN boot table Chapter 10 - Added #1911 into the DASD: External table under the SAS/SFF section Chapter 17 - Updated MTM conversions and processor upgrades section	Jerome G. Sampang

06/15/2010	2.4	Chapter 2 - Updated the minimum quantity of #8336 in Basic System Components table Chapter 4 - Added #0724 IBMi Boot Requirements table Chapter 7 - Updated note on #8336 Chapter 7 - Updated the minimum quantity of #8336 in Supported Processor Features table Chapter 9 - Updated notes on 5786 in Drawers table Chapter 9 - Updated the Tres 19 common chapter Chapter 10 - Added notes on cables needed by tape drives Chapter 10 - Added dasd/media backplane and cable requirements Chapter 10 - Added information on the USB disk drive requirement Chapter 12 - Added the Blue Darter common chapter in the Adapters section Chapter 15 - Updated 5786 in drawers mounted in 0551 rack Chapter 15 - Updated 5786 in drawers mounted in 0553 rack Chapter 18 - Added #0010 & #0011 into the Miscellaneoud table Chapter 18 - Added #0712 into the Miscellaneoud tabletable in Chapter 18 FC 0712 Chapter 18 - Added #4367 & #4377 into the Miscellaneoud table	Jerome G. Sampang
07/20/2010	2.5	Chapter 10 - Updated information on feature #2054 Chapter 12 - Updated Blue Darter common chapter Chapter 12 - Updated PCI-Express table. Updates max value of feature #4807 Chapter 12 - Updated PCI-Express table. Added back and updated notes on feature #4808 Chapter 12 - Updated PCI-Express table. Added feature #5805 Chapter 12 - Added new notes in PCI-Express table Chapter 12 - Updated PCI-X table. Removed note 5 on feature #5740 Chapter 14 - Removed notes on not supporting DC power supply. Chapter 18 - Updated Miscellaneous table. Added feature #0709 Chapter 18 - Updated Miscellaneous table. Added feature #1140 Chapter 18 - Updated Micellaneous table. Removed features #0010 & #0011. Chapter 18 - Updated Miscellaneous table to synch with eFM	Jerome G. Sampang
10/05/2010	2.6	Chapter 10 - Removed the "Other SSD Features" section Chapter 12 - Updated the plug sequence of feature #5903 & #5805 Chapter 12 - Added new note for feature #5903 & #5805 to prevent mechanical interference between the Squib-e card and the GX++ connector Chapter 12 - Removed the Blue Darter common chapter Chapter 12 - Added new note for 4807 & 4808 (IBMi 6.1 with 6.1.1 machine code support) Chapter 12 - Added a new note for feature 5903 withdrawal Chapter 18 - Removed 1995, 1996, 2054, from the miscellaneous table	Jerome G. Sampang

11/24/2010	2.7	Chapter 3 - Updated the minimum requirements table by adding new processor feature Chapter 3 - Updated the minimum requirements table by adding new processor activation feature Chapter 3 - Added new note in the minimum requirements table Chapter 4 - Added new load source specify codes to the table under the IBM i Boot Requirements if no San Boot section Chapter 4 - Updated the Remote Load Source Specify Codes section by adding item 5 for Feature #0728 Chapter 7 - Updated the Processor section 7.1 Description paragraph Chapter 7 - Added refreshed processors to the supported processor features table Chapter 7 - Added new notes to the the supported processor features table Chapter 7 - Added new processor activations to the Processor activations section Chapter 7 - Added new no-charge processor activations to the Processor activations section Chapter 9 - Added Oliver drawer in the drawer table based on PCR 1012 Chapter 9 - Added the Homerun common chapter Chapter 9 - Updated the Tres19 common chapter Chapter 10 - Striked-out Feature #1914 from the DASD:External table Chapter 10 - Added new SAS/SFF HDDs into the DASD:External table Chapter 10 - Added new quantity 150 codes Chapter 10 - Added new tape drive into the table Chapter 10 - Added bay priority placement to #5673 Chapter 10 - Added new note - IBMi support via VIOS Chapter 12 - Removed Feature #4808 since it cannot be installed in the CEC Chapter 12 - Added Feature #5913 to the PCIe table Chapter 12 - Added Feature #5287 to the PCIe table Chapter 13 - Added the Homerun 6GB SAS cables to the I/O Drawer Cabling table Chapter 13 - Added the 6GB/s SAS cables table Chapter 18 - Updated the miscellaneous table to include the features for the 04/2011 announce	Jerome G. Sampang
02/03/2011	2.8	Chapter 2 - Updated the basic system components table Chapter 4 - Added a new column (DASD Type) in the IBM i Boot Requirements table Chapter 4 - Added the description of the DASD Type supported in the IBM i Boot Requirements table Chapter 7 - Removed notes 3-6 under the Supported Processor Features table Chapter 9 - Updated the Tres Common Chapter Chapter 9 - Updated the Homerun Common Chapter Chapter 10 - Removed note 4 on Feature #5638 Chapter 10 - Added note 4 on Feature #5673 Chapter 12 - Removed Features #5287 & #5288 from the PCI Express table Chapter 12 - Added plugging sequence on Feature #5913 Chapter 21 - Added note 3 in partitioning rules section Chapter 21 - Added note 3 in the notes column of Feature #7795	Jerome G. Sampang
03/01/2011	2.9	Chapter 7 - Added Processor Deconfiguration section based on RFA 54277 Chapter 9 - Updated the Homerun common chapter Chapter 18 - Updated the Miscellaneous Table Chapter 21 - Added a new note for Feature #2319 based on RFA 54277 Based on PCR 1359 and EPIC 0554 the following changes have been added: Chapter 10 - Added back information on Feature #1995 and #1996 Chapter 12 - Added back Feature #2054 into the PCI-Express Table Chapter 12 - Added back the BlueDarter Common Chapter Chapter 18 - Updated the Miscellaneous Table	Jerome G. Sampang

03/04/2011	2.9.1	Chapter 4 - Added 0871 to the IBM i boot Requirments table (Based on RFA 54447) Chapter 9 - Updated the Homerun Common Chapter Chapter 10 - Removed the “Placement in #5887 (HomeRun)” comment from Feature #1775 and #1790 Chapter 10 - Removed the double entry on Feature #1917 and #1925 Chapter 18 - Updated the Miscellaneous Table by adding a comment on Feature #5924	Jerome G. Sampang
03/22/2011	3.0	Based on PCR 1400, the following changes were made: Chapter 12 - Added Note 10. “Announce moved to July 12,2011” to the Notes section of the PCI-Express table Chapter 12 - Added 10 on the Notes column of the PCI-Express table for Feature #5913 Chapter 13 - Added a Notes Column to the I/O Drawer Cabling table Chapter 13 - Added a Notes section under the I/O Drawer Cabling table Chapter 13 - Added Note 1. “Announce moved to July 12,2011” to the Notes section of the I/O Drawer Cabling table Chapter 13 - Added 1 on the Notes column of the I/O Drawer Cabling table for Feature #3450, #3451, #3452, #3453, #3454, #3455, #3456, #3457 & #3458 Chapter 13 - Added Note 2. “Announce moved to July 12,2011” to the Notes section of the 6GB/s SAS Cable table Chapter 13 - Added 2 on the Notes column of the 6GB/s SAS Cable table for Feature #5915, #5916, #5917 & #3689 Chapter 18 - Added "Announce moved to July 12,2011” to the Comment column of the Miscellaneous table for Feature #5913, #5924, #9385, #9386, #9387, #3450, #3451, #3452, #3453, #3454, #3455, #3456, #3457, #3458, #5915, #5916, #5917, #3689	Jerome G. Sampang
04/05/2011	3.1	Based on PCR 1400 > OPTDB LI 0013FT.002 & RFA 54447, the following corrections were implemented: Chapter 13 - Updated the I/O Drawer Cabling table to avoid confusion. All the 36XX cables are compatible to both Feature #5886 & #5887 as these cables connects to the Cadet-E (FC 5901), Knorr (FC 5904), and Squib-E (FC 5805). Chapter 13 - Added Notes and Notes column to the I/O Drawer Cabling table. Chapter 13 - Removed 1 from the Notes column on Feature #3457 & #3458. Added 2 to the Notes column on Feature #3457 & #3458. Chapter 13 - Added 1, 2 on the Notes column on Feature #5918. Chapter 18 - Added "Available on October 2011 Announce" to the Comments section on Feature #3457 & #3458 of the Miscellaneous table. Removed "Announce moved to July 12, 2011". Chapter 18 - Removed strikethrough on Feature #5918. Added "Announce moved to July 12,2011" to the Comments column.	Jerome G. Sampang

04/05/2011	3.1	Based on PCR 1418, the following changes were implemented: Chapter 4 - Added Note 2. "Moved to July 2011 announce" to the IBMi Boot requirements table. Chapter 4 - Added 2 to the Notes column on Feature #0722 & 0876 of the IBMi Boot requirements table. Chapter 10 - Added “Note 7. Moved to July 2011 announce" to the Notes section of the DASD: External table. Chapter 10 - Added 7 to the Notes column on Feature #1775, 1787, 1793, 1794 of the DASD: External table Chapter 10 - Added Notes section to the Quantity 150 Codes table. Added “Note 1. Moved to July 2011 Announce". Chapter 10 - Added 1 to the Notes column on Feature #1887 & 1958 of the Quantity 150 Codes table. Chapter 18 -Added "Moved to July 2011 Announce" to the Comments section on Feature #1775, #1787, #1793, #1794, #1887, #1958, #0722, #0876 & #0465 of the Miscellaneous table. Based on PCR 1332 > PRCRB LI P000TL.0002, the following changes were implemented: Chapter 21 - Updated Note 3 to "For orders that include AIX, Linux, #7795 will be the eConfig default for PowerVM Editions based on PCR 1332". Chapter 21 - Added "For orders that include IBM i but not AIX, Linux, #7795 will be the eConfig default for PowerVM Editions based on PCR 1332". Chapter 21 - Added 5 to the Notes column on Feature #7794. Based on PRCRB LI P000WF, the following changes were implemented: Chapter 9 - Added "Note 4. Can be ordered with no disk units present." to the Notes section of the Supported Drawers table. Chapter 9 - Added 4 to the Notes column on feature #5886 & #5887. Chapter 18 - Added "Can be ordered with no disk units present" to the Comments column on Feature #5886 & #5887. Based on RFA 54447, this has been added to the BI: Chapter 10 - Removed Feature #5673 from the Media table. Removed Note 4 from the Note section. Based on PCR 1366, this has been added to the BI: Chapter 18 - Added information to the Comments column on Feature #ERA5 & #ERA6. Based on PCR 1370, this has been added to the BI: Chapter 18 - Added information to the Comments column on Feature #0711. Based on PCR 1374, this has been added to the BI: Chapter 18 - Added information to the Comments column on Feature #0010. BI clean-up Chapter 9 - Updated TRES-19 common chapter Chapter 9 - Updated Homerun common chapter Chapter 10 - Updated the “Description” section of Storage Devices.	Jerome G. Sampang

04/13/2011	3.11	BI clean-up Chapter 10 - Updated the “Description” section of Storage Devices by including Feature #5887 capability of attaching to the external SAS port. Chapter 10 - Removed "Placement in #5887 (Homerun)" on Feature #1787 & #1916 from the DASD External table. Chapter 12 - Removed Feature #5287 & #5288 from the PCI-Express table. Chapter 12 - Changed the maximum quantity of Feature #2054 to 1 from the PCI Express table. Chapter 12 - Updated the Blue Darter common chapter. Chapter 18 - Updated the "Comment" section of Feature #EM08, #EM16 and #EM32 by adding "Announce date - 10/11/2011". Chapter 18 - Removed Feature #EU01, #EU03 and #EU04 from the Miscellaneous table.	Jerome G. Sampang
06/06/2011	3.2	Chapter 4 - Updated the IBM i Boot Requirements if no San Boot table. Added Feature #0870 & #0872. Chapter 9 - Updated the TRES common chapter. Chapter 9 - Updated the Homerun common chapter. Chapter 10 - Updated the Media table. Added Feature #EU01 into the Tape section. Chapter 10 - Updated the DASD: External table. Added Feature #1879, #1880, #1948 & #1953 into the SAS/SFF section. Chapter 10 - Updated the Quantity 150 Codes table. Added Feature #1926, #1927, #1928 & #1929. Chapter 18 - Updated the Miscellaneous table. Chapter 21 - Updated Note 5. From “Note 5: For orders that include IBM i but not AIX, Linux, #7795 will be the eConfig default for PowerVM Editions based on PCR 1332.” to “Note 5: For orders that include IBM i but not AIX, Linux, #7794 will be the eConfig default for PowerVM Editions based on PCR 1332.” **Based on PCR 1354 the following changes were added:** Chapter 2 - Updated the Basic Components table. Added Feature #EM08, #EM16 & #EM32 to the Memory Feature Code row. Chapter 3 - Updated the Minimum requirements when AIX/Linux is the primary operating system table. Added Feature #EM08 & quantity 1 to the Memory row. Chapter 3 - Added Note 4 to the Note: section under the Minimum requirements when AIX/Linux is the primary operating system table. Chapter 3 - Updated the Minimum requirements when IBM i is the primary operating system table. Added Feature #EM08 & quantity 1 to the Memory row. Chapter 3 - Added Note 2 to the Note: section under the Minimum requirements when IBM i is the primary operating system table. Chapter 8 - Updated the Memory table. Added Feature #EM08, #EM16 & #EM32, minimum quantity 0 & maximum quantity 16. Chapter 8 - Added Notes 2, 3 & 4 to the Note: section under the Memory table. **Based on PCR 1411, this has been added to the BI:** Chapter 12 - Updated the PCI-Express table. Added Feature #5289. **Based on PCR 1367, this has been added to the BI:** Chapter 12 - Updated the Blue Darter Common Chapter.	Jerome G. Sampang

07/15/2011	3.21	1. Chapter 7,17 - Added note on the minimum required firmware level for processors #EPA1, #EPA2, #EPA3 and #EPA4 (per P0016K) 2. Chapter 18 - Added note that the 1.5M IB cable (#1862) can be selected instead of the defaulted 3M IB cable (#1865) (per P00116Z) 3. Chapter 11 - Added note that #5679 only required for Data Protection indicators #0041 and #0047 if there are IBM i CEC-placeable disks (per defect139454)	Kenton Lynne
08/11/2011	3.22	1. Chapter 10, 18 - Removed #1926 and #1928 QTY 150 feature codes for the Yellowjacket DASD since those quantities cannot be reached on this machine (RTC 159053). 2. Chapter 18 - Added #EUC6 (Cloud Billing Payment Feature) to table of Miscellaneous Feature codes supported [RTC 158957]	Kenton Lynne
08/18/2011	3.23	1. Chapters 12, 13, 18 - Changed Cubic-R (#5913) and its associated features (9385, 9386, 3450, 3451, 3452, 3453, 3454, 3455, 3456, 3689, 5915, 5916, 5917, 5918 and 5924) Announce Date from July 12 to October 2011 [RTC 161667]	Kenton Lynne
09/18/2011	3.24	1. Chapter 13 and 18 - Moved 15M SAS cables (#3457/#3458) out to Apr 2012 Announce on **page 149** and **page 176** [RTC 176213]	Kenton Lynne
09/20/2011	3.25	1. Chapter 18 - Removed the note that 1.5M IB cable (#1862) can be selected instead of the defaulted 3M IB cable (#1865) -- see Version 3.21 notes (item 2) above -- on **page 174** [RTC 170122]	Kenton Lynne
11/01/2011	3.26	1. Chapter 18 - Added the #3930 IB Cable supporting Bell2 (#5289) in Table on **page 177** [RTC 197521] 2. Chapter 8 - Corrected ambiguity in Note regarding the #EMxx memory features on **page 32** [RTC 197526]	Kenton Lynne

12/16/11	3.27 (revised)	**April 2012 Announce** 1. Added the #EU16 USB Tape drive to the table of Storage Devices on **page 129** [RTC 199410] 2. Added note to the #1865 IB cables in the Table on **page 174** indicating that it can be replaced by other length IB cables (#1861, #1862, #1864) [RTC 163447] 3. Added #5899 Ethernet adapter (Austin) to the table on **page 137** [RTC 199410] 4. ~~Added the #ESA1 RAID controller (Cubic-J) to table on **page 138** [RTC 199410]~~ ~~**Note:** Some of the information for #ESA1 (Cubic-J) may be incomplete or possibly even incorrect at this time. The next version of this document will contain any additions/corrections needed.~~ **Note:** Cubic-J (#ESA1) is now no longer going to be announced on the 8233-E8B so all information on Cubic-J has been removed from this document. [RTC 199410] 5. Added the Taurus-2 disk drives and associated FCs (#ES0A, #ES0B, #ES0C, #ES0D, #0893, #0894) in tables on **page 20**, **page 130, page 132, page 133** and **page 173** [RTC 199410] 6. ~~Added link (tbd) to Railhawk (#ER05) on **page 161**[RTC 151242]~~ ~~**Note:** The Railhawk information in this version is incomplete and will be updated in the next version of this document~~ **Note:** Railhawk has since moved to October so all the information on Railhawk has been removed from this version of the document 7. Put in the missing value for max number of Homerun #5887 drawers supported (21) in Table on **page 34** 8. (EPIC) Noted that #4526, #4527, #4528 and #4544 Memory Features are now only MES-orderable on **page 32** and the Table in **"18.0 Miscellaneous"** on **page 177** [RTC 223665] 9. Added #6667 (Australian Line Cord) to table on **page 18** [RTC 199410]	Kenton Lynne
1/18/2012	3.28	**January 2012 Announce** 1. (Epic 1195) Change the #8332, #8334, #8335 and #8336 processors to MES-orderable only on **page 15**, **page 16**, **page 27** and the Table in "18.0 Miscellaneous" on **page 184** [RTC 232857]	Kenton Lynne
2/06/2012	3.29	**April 2012 Announce** 1. Added the Shipping and Handling FCs (#ESC0 and #ESC7) to Table in Chapter **"18.0 Miscellaneous"** on **page 189** [RTC 212116] 2. Added 320B Disk Drive Cartridge (#EU08) to Table in Chapter **"18.0 Miscellaneous"** on **page 189** [RTC 237517] 3. Republished to point to the latest version of common Homerun BIs on **page 42** that clarify the AA cable requirements for Cubic-R [RTC 235652]	Kenton Lynne
3/01/2012	3.30	1. Added missing information on the rules for using SSDs within the CEC on **page 192**	Kenton Lynne

3/27/2012	3.31	**April 2012 Announce** 1. Moved #3457 and #3458 3Gb 15M cables from April to July 2012 Announce [RTC 273024] 2. Added feature #ECSC (Shenzhen routing indicator) to Table in Chapter **"18.0 Miscellaneous"** on **page 186** [RTC 264309] 3. Added all the new RoHS II keyboards (#EK51-#EK83) to the table in Chapter **"18.0 Miscellaneous"** on **page 187** [RTC 257907]	Kenton Lynne
6/21/2012	3.32	1. Chapter 18 - Added the 150 quantity feature code #EQ02, #EQ03 for the SAS cables #3452, #3453.	Jerry Ding Chen
6/26/2012	3.33	1. Chapter 18 "Miscellaneous"- Added network cables #ECB0, #ECB2 to the table. 2. Chapter 15.6 "Rack Power Requirements" - Added network cables #ECB0, #ECB2 to the table.	Jerry Ding Chen
7/8/2012	3.34	1. "15.7 Rack Cover Features and Rules" on page 156 - Added rack door features #EC01, #EC02, #EC03 , #EC04 and #EC15 2. "15.6 Rack Power Requirements: " on page 156 - Added new PDU features #7189, #7196 3. "15.8 Racks" on page 157 - Added RailHawk feature code #ER05	Jerry Ding Chen
8/1/2012	3.4	1. "10.0 Storage Devices" on page 128 - Added new SFF SAS HD #1737, #1738, #1751 and #1752 2. "18.0 Miscellaneous" on page 170- Remove the strikethrough marker for #EU03 and #EU04. Added new feature #EUC7 3. "18.0 Miscellaneous" on page 170 - Added four promotional-based RPQs : #8A2033,#8A2034, #8A2041 and #8A2042 4. "4.0 Boot Requirements" on page 19 - Added load source feature #EQ37, #EQ38, #EQ51 and #EQ52.	Jerry Ding Chen
8/21/2012	3.41	1. "15.5 Rack Cabling Features and Rules:" on page 156 - Added note 2 for the announce date of #EC01, #EC02, #EC03, #EC04, #EC15. [RTC 236945] 2. "15.6 Rack Power Requirements: " on page 156 - - Added note 2 for the announce date of #7189, #7196.[RTC 236945] 3. "15.8 Racks" on page 157 - Added note 2 for the announce date of #ER05.[RTC 236945]	Jerry Ding Chen
09/07/2012	3.42	1. See "Media:" on page 129. - Added #EU15.	Jerry Ding Chen
09/27/2012	3.43	1. "15.8 Racks" on page 157 - Added note for #ER05 which is due to announce on Marh 2013.	Jerry Ding Chen
10/26/2012	3.44	1. See "12.0 Adapters" on page 136. - Added #EN13, #EN14 to prelace the EOLed features #2893, #2895	Jerry Ding Chen
11/15/2012	3.45	1. See "7.4 Processor Activations" on page 28. - Added the following notes for the processor activation coes: "These Express processor activations are NOT offered/orderable in the Greater China Group (GCG) geographical area: China - on-shore; Hong Kong; Macao; Mongolia; Taiwan, province of China."	Jerry Ding Chen

11/18/2012	3.46	1. See “12.0 Adapters” on page 136. - Move the announce to Feb-11-2014 for #EN13, #EN14 to prelace the EOLed features #2893, #2895	Jerry Ding Chen
11/26/2012	3.47	1. See “18.0 Miscellaneous” on page 170.- Re-active the DVD-ROM #5771 as it is supported on eFM.	Jerry Ding Chen
12/11/2012	3.48	1. See “Other SSD Features” on page 133. - Added lower price SSD feature codes: #ESRA, #ESRB, #ESRC and #ESRD	Jerry Ding Chen
12/13/2012	3.49	1. See “10.0 Storage Devices” on page 128. - Modifed the note to specify SAS HD #1738 is supported by IBM i and #1751 is supported by AIX.	Jerry Ding Chen
01/04/2013	3.50	1. See “18.0 Miscellaneous” on page 170. - Change the defualt DVD ROM from #5762 to #5771. 2. See “3.1 Minimum requirements when AIX/Linux is the primary operating system.” on page 15. - Change the entry for the minimum media requirement for installing the Linux operating system, reqleace the #5762 with #5771. 3. See “Specific Rules and Restrictions:” on page 130. -Change the defualt DVD ROM from #5762 to #5771.	Jerry Ding Chen
02/18/2013	3.51	1. See “7.2 Supported Processor Features” on page 27. - Added Note 4 to indicate that #EPA3 is not available in China or Taiwan.	Jerry Ding Chen
02/22/2013	3.52	1. See “ECB7” on page 178. - Added #ECB7 to enable the adapter #5289(Bell2) adapter.	Jerry Ding Chen
04/04/2013	3.53	1. See “14.0 Power and Cooling Requirements for CEC and I/O” on page 153. - Added rule 2 to alter the customer that DC power supply is not supported when 8233-E8B is integrated with the 7014 racks.	Jerry Ding Chen
04/24/2013	3.54	1. See “18.0 Miscellaneous” on page 170. - Withdraw cable feature #ECB7 from the announcement.	Jerry Ding Chen
05/27/2013	3.55	1. See “18.0 Miscellaneous” on page 170. - Added RDX tape #EU07 2. See “18.0 Miscellaneous” on page 170. - Added CSC routing indicator #ECSM.	Jerry Ding Chen
08/30/2013	3.56	1. See “Quantity 150 Codes” on page 133. - - Added 150 Quantity code #EQ0G, #EQ19, #EQ1A, #EQD2, #EQD3 2. See “4.0 Boot Requirements” on page 19.- Added load source specify codes - #0907, #0911,#ELS1, #ELS9, #ELSF,#ELSH 3. See “Lower Price SSD Features” on page 135. - Added low price SDD feature codes: #ESRE,#ESRF,#ESRG #ESRH 4. See “10.0 Storage Devices” on page 128. - Added the following storage devices that will be announced on Oct. 7: #ES0E,#ES0F,#ES0G,#ES0H,#ES10,#ES11,#ES19,#ES1A,#ESD0,#ESD1,#ESD2,#ESD3.	Jerry Ding Chen

10/21/2013	3.57	1. See “Lower Price SSD Features” on page 135. - Added 0 priced feature code - #ES2B, #ES2D	Jerry Ding Chen
10/23/2013	3.58	1. See “Lower Price SSD Features” on page 135. - Revoke the change on 0 priced feature code - #ES2B, #ES2D	Jerry Ding Chen
11/07/2013	3.59	1. See “12.0 Adapters” on page 136. - Set 01/15/2013 as the announce date for #EN13, #EN14 to prelace the EOLed features #2893, #2895. 2. See “15.8 Racks” on page 157 - Remove the strikethrough for TF4 monitor to replace the old monitor TF3. 3. See "15.8 Racks" on page 157 - Added RailHawk feature code #ER05 and re-set the announce date to 02/12/2014.	Jerry Ding Chen
02/14/2014	3.60	– **For 04/08/2014 Announcement:** 1. **Ch 12 & 13 & 9**: According to WI 646528(parent 558606): Added Sabot feature #ESA3 and indicator #EJS1 and pls refer to Tres19 common chapter updated with #EJS5/#EJS6 and HomeRun common chapter updated with #EJS2/#EJS3/#EJS4.	Yan Sun
02/25/2014	3.61	– **For 04/29/2014 Announcement:** 1. **Ch 10** According to WI 664631(parent WI 538094): Added Gen 2-S carriers #EH10/#EH11/#EH12/#EH13 for upgrades/migration.	Yan Sun
04/25/2014	3.62	– **For 06/10/2014 Announcement:** 1. **Ch 10** According to WI 699409(parent WI 686208): Add new Feature Conversions #EH14/#EH16 for Withdrawn Gen 2S SSDs.	Yan Sun

1.0 Links to Related Documents

Machine Type Model individual Feature Matrix Link in eFM format

https://rchefmp1.rchland.ibm.com/FeatureMatrix/jsp/login.jsp

Comma Separated Variable (CSV) file for Machine Type model from eFM

TBD

eFM Machine Type Model conversion Link

TBD

eFM Feature Conversions Link

https://rchefmp1.rchland.ibm.com/FeatureMatrix/pageAccessFilter.wss?pageVar=WEBFCONV.HTM&brand=pSeries&invGroup=eServer&appState=PSERIES_ESERVER&pageHeading=Feature%20conversion%20list

2.0 System Overview

System Description:

The 8233-E8B is an 6, 8, 12, 16, 18, 24 or 32-way SMP mid-range server based on the IBM P7 3.0 GHz, 3.3GHz or 3.55GHz 64-bit processor. The 8233-E8B system is a rack mountable drawer, intended for use in HACMP, HPC or LAN custered environments. The 8233-E8B can have up to 512GB of DDR3 RDIMM memory, up to 8 hot-pluggable SFF SAS DASD, one Slim SATA DVD and one Half-High Tape Drive.

The 8233-E8B has three PCI-e x8 card slots, 2 PCI-x card slots and a Host Ethernet Adapter slot. The 8233 also has redundant and hotpluggable cooling fans and has hot-pluggable and redundant power supplies. Processor granularity varies based on the configuration.

Atlas Configuration Support Roll-out Plan (version 12.3)

	Aug'09 EESP (8/24/09)	Nov'09 Dev ESP (11/16/09)	Dec'09 EAP (12/04/09)	Feb'10 GA (Ann Feb 9, 2010) (2/19/10)	Mar/Apr'10 GA (Ann Feb 9, 2010) (3/16/10)
HW	3.0GHz or 3.3GHz (DD1.0, 4 or 6 cores)	Same config. as Dec EAP	3.55 GHz, 8C DD2.0 (1,2 or 4 card) (SNx81d1.0 proc cards)	3.55 GHz, 8C DD2.0 (1,2,3,4 card) 3.3 GHz, 8C DD2.0 (1,2,3,4 card) 3.3 GHz, 6C DD2.0 (1,2,3,4 card) 3.0 GHz, 8C DD2.0 (1,2,3,4 card) (SNx81d1.1 proc cards)	3.55 GHz, 8C DD2.1 (1,2,3,4 card) 3.3 GHz, 8C DD2.1 (1,2,3,4 card) 3.3 GHz, 6C DD2.1 (1,2,3,4 card) 3.0 GHz, 8C DD2.1 (1,2,3,4 card) (SNx81d1.1 proc cards)
	4GB or 8GB DIMMs	Same config. as Dec EAP	8GB DIMMs - 8 DIMMs / socket - 2 suppliers; Samsung +1	8GB,16GB DIMMs -any multiple of 2 DIMMS/socket -2 suppliers; Samsung+1	4GB, 8GB,16GB DIMMs -any multiple of 2 DIMMS/sockets -3 suppliers; Samsung, Micron, Hynix
	No IO drawers	Same config. as Dec EAP	Tres 19" 1 or 4 Drawers	Tres 19", Sundance IB, Charlotte 1,2,3,4 Drawers	Tres 19", Sundance IB, Charlotte 1,2,3,4 Drawers
	Legacy DASD (Limited)	Same config. as Dec EAP	Legacy - IO,Adapters, DASD SAN	Legacy - IO, Adapters,DASD	POR - IO, Adapters,DASD
FW	FW7.1	Same config. as Dec EAP	FW7.1	FW 7.1	FW 7.1.1
	HMC V7 R7.1	Same config. as Dec EAP	HMC V7 R7.1	HMC V7 R7.1 IVM	HMC V7 R7.1 SP1 IVM
	Disruptive Firmware Update	Same config. as Dec EAP	Disruptive Firmware Update	Disruptive Firmware Update	Non-Disruptive Firmware Update
	160 DLPAR partitions and 128 AMS partitions	Same config. as Dec EAP	160 DLPAR partitions and 128 AMS partitions	160 LPARs and >128 AMS partitions	160 DLPAR partitions, 320 AMS partitions HMC Scaling – 1000 DLPAR
OS	6.1H	Same config. as Dec EAP	6.1H SP2 (0947_61H) VIOS 2.1.2 plus latest FixPack SLES11	6.1H SP2 VIOS 2.1.2 plus latest FixPack SLES11	AIX 6.1J, includes 5.3X Linux SLES 10 SP3, SLES 11 SP1, RHEL 5.5, RHEL 6.0 IBM i 7.1, 6.1.1 VIOS 2.1.2 plus latest FixPack

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Each system must contain (Minimum) :

Two (2) Power supplies (On the base fab)

One (1) P7 Processor Card

One (1) RDIMM Feature

One (1) Host Ethernet Adapter

One (1) DVD

Two (2) Line cords

Each CEC supports up to (Maximum) :

Five (5) PCI I/O cards (3 PCI-E, 2 PCI-X DDR)

Eight (8) SFF SAS DASD

One (1) GX+ adapters

One (1) GX++ adapters

One (1) DVD removable media device

One (1) HH Tape device

Eight (8) memory DIMMs per processor card, 32 memory DIMMs per system

Basic System Components :

Component	Minimum	Maximum
Desktop, Deskside, Rackmount or Rack System	4U 19" rack mount or Deskside Tower	
Allowable n-way Systems	4 core (4, 8, 12, 16) way 3.7 GHz configuration 6 core (6, 12, 18, 24) way - 3.7 GHz configuration 8 core (8, 16, 24, 32) way - 3.2 or 3.61 GHz configuration ~~6 core (6, 12, 18, 24) way - 3.3 GHz configuration~~ ~~8 core (8, 16, 24, 32) way - 3.0 or 3.3 GHz configuration~~ ~~8 core (32) way - 3.55 GHz configuration~~	
CUOD Base Processor Activations	All installed processors MUST be activated	
Orderable Processor Speed(s)	3.2GHz, 3.61GHz or 3.7GHz ~~3.0GHz, 3.3GHz or 3.55GHz~~	
Processor Card Feature Codes	1 x #EPA1 or 1 x #EPA2 or 1 x #EPA3or 1 x #EPA4 ~~1 x #8332 or~~ ~~1 x #8334 or~~ ~~1 x #8335 or~~ ~~4 x #8336~~ ~~1 x #8336 (starting 8/17)~~	4 x #EPA1 or 4 x #EPA2 or 4 x #EPA3or 4 x #EPA4 ~~4 x #8332 or~~ ~~4 x #8334 or~~ ~~4 x #8335 or~~ ~~4 x #8336 or~~ ~~4 x #8336~~
CUOD Processor Activation Feature Codes	See Chapter 7	See Chapter 7
Flexible Service Processors (FSPs)		
Part of Base		
Orderable		

Component	Minimum	Maximum
Total Memory (see Memory section)	8GB	512GB
Memory feature size offerings (GB)	8, 16, 32	
Memory cards or Dimms	Each FC consumes 2X memory dimm slots	
Memory Feature Code	~~1 x #4526~~ 1 x #EM08 (Ann: Oct. 2011)	~~16 x #4526 / #4527 / #4528~~ 16 x EM08 / #EM16 / EM32 (Ann: Oct. 2011)
CUOD Memory Activation	N/A	N/A
Number of orderable I/O drawers	0	Tres19 (2 per loop) Sundance (4 per loop)
System Adapter Slots		
PCI-E / PCI-X per CEC	3 / 2	3 / 2
PCI-E / PCI-X per Tres-19 I/O drawer	10 (Tres) / 0 (Tres)	40 (Tres) / 0 (Tres)
Cassetted?	No (System) /Yes (Tres)	
Total Media Bays	2 per system	
Tape SAS/SCSI/USB	1 / 0	1 / 0
Optical slimline/standard	1 per system (SATA)	1 per system (SATA)
Total DASD Bays	8 (SAS)	8 + 72 (via Tres)
SCSI Standard	0	576
SAS SFF/Standard	8 per system	8 per system, 72 via Tres Expansion

Note: Only 32 core configuration is available in 3.55GHz processor

Number/Type of Integrated Ports:

Integrated in CEC or I/O drawer?	CEC
Internal SCSI type/ports	N/A
Internal SAS ports	0
External SCSI type/ports	0
External SAS ports	1
Ethernet Ports	2
USB Ports	3 per CEC drawer
Other (serial, parallel, keyboard and mouse)	2 (SPCN)

Other Characteristics:

HA Version Supported	No
DC Power Option (applies to 19” rack mount drawers)	No
Redundant Power Required or optional?	Required
OEM Version Supported	yes
Cover Colors	black only
Cover types offered: (acoustic, slimline)	Accoustic only

3.0 Minimum Orderable Configuration

Minimal required feature codes for least expensive working system are to be listed by OS.

3.1 Minimum requirements when AIX/Linux is the primary operating system.

Feature, or MTM	F/C	Feature Code Description	Qty
System Features:			
Primary OS Feature Code - AIX Primary OS Feature Code - Linux	#2146 #2147	Primary Operating System Indicator - AIX Primary Operating System Indicator - Linux	1
OEM Bezel or IBM Bezel	-	The base machine includes the bezels for the rack. No feature code required.	
Processor Card	~~#8335~~ #EPA3	~~0/6W 3.3GHz PROC CD, P7 SCM(6GC), 8xDIMMs, (HAPALUA)~~ 0/4W 3.724GHz PROC CD, P7 SCM(DD2.2/DD2.3), (HAPALUA)	1
CUOD Processor Activation	~~#7717~~ #EPB3	~~ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #8335~~ ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA3	6
Memory	~~#4526~~ #EM08	~~8GB (2x4GB), DIMMs, 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2Rx8)~~ 8GB (2x4GB), DIMMs (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2Rx8)	~~1~~ 1
CUOD Memory Activation	-	NA	
DASD	#1883	73.4GB SAS DASD, 15K RPM SFF (MAVERICK, AL-10SX)	1
DASD Backplanes (if feature code)	#8340	ENHANCED DASD/MEDIA BP W EXT SAS, 8X 2.5" SAS DASD, SATA DVD, SAS TAPE, (LAHAINA-A/MCNAIR)	1
Op Panel	-	Op Panel is part of Base, no feature code required	
Op Panel Cables	#1878	Op Panel Cable, Drawer w/ SFF DASD BP	
Media	#5771	SATA DVDRAM, Slim-Line, (STERLING)	1
Media Backplane	#8340	See DASD Backplane above	1
Adapters (includes IOPs or GX)	-	None	
Adapters (HEA)	#5624	1 Gigabit Ethernet Card (TITOV)	1
Cables	-	None	
SPCN	-	None	
RIO or IB	-	None	
Power Supplies	#7740	Auto-dock AC Power Supply, 100-240V, 1725W (On base fab)	2
Power Line Cord	-	Customer Orderable - Country Specific	2
Language Group	-	Customer Orderable - Country Specific	1
I/O or Other Required Drawer			
I/O DASD		See above	
DASD Backplanes (if feature code)		See above	
I/O Media		See above	
I/O Adapters (includes IOPs, PCIX, PCIE)		None	
I/O Cables (SCSI, SAS, IB, FCAL)		None	
I/O Power Supplies		See above	
I/O Power Line Cord		See above	
Rack Feature Code (if applicable):			
Doors or Trim kit (7014-T00 or 7014-T42)			
Rack Mount Rail Kit			

Power Component (PDU, BPC, BPD, BPR)			
Rack Power Line cord			
Ethernet cables (if applicable)			
Drawer specify code (if applicable)			
MTM required (HMC? or Rack?)			

Note:

1. 8 GB memory feature (#4526) is planned to be available on March 16, 2010. However, it is MES-orderable only because of supply constraints.
2. No internal DASD is required if #0837 (Boot from SAN) is selected. A fibre channel adapter must also be ordered.
3. Processor refresh as stated in PCR 1282.
4. 8 GB memory feature (#EM08) will be announced on October 2011.
5.

3.2 Minimum requirements when IBM i is the primary operating system.

Feature, or MTM	F/C	Feature Code Description	Qty
System Features:			
Primary OS Feature Code - IBM i	#2145	Primary Operating System Indicator - IBM i	1
Primary OS Specify Code	#0566 or #0567	IBM i 6.1.1 (V6R1M1 OS) or IBM i 7.1.0 (V7R1M0 OS)	
OEM Bezel or IBM Bezel	-	The base machine includes the bezels for the rack. No feature code required.	
Processor Card	~~#8335~~ #EPA3	~~0/6W 3.3GHz PROC CD, P7 SCM(6GC), 8xDIMMs, (HAPALUA)~~ 0/4W 3.724GHz PROC CD, P7 SCM(DD2.2/DD2.3), (HAPALUA)	1
CUOD Processor Activation	~~#7717~~ #EPB3	~~ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #8335~~ ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA3	8
Memory	~~#4526~~ #EM08	~~8GB (2x4GB), DIMMs, 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2Rx8)~~ 8GB (2x4GB), DIMMs (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2Rx8)	~~1~~ 1
CUOD Memory Activation	-	NA	
DASD	#1884	69.7GB SAS DASD, 15K RPM SFF (MAVERICK, AL-10SX)	2
DASD Backplanes (if feature code)	#8340	ENHANCED DASD/MEDIA BP W EXT SAS, 8X 2.5" SAS DASD, SATA DVD, SAS TAPE, (LAHAINA-A/MCNAIR)	1
Op Panel	-	Op Panel is part of Base, no feature code required	
Op Panel Cables	#1878	Op Panel Cable, Drawer w/ SFF DASD BP	
Media	#5762	SATA DVDRAM WITH WRITE CACHE, SLIM-LINE, (STEVENS)	1
Media Backplane	#8340	See DASD Backplane above	1
Adapters (includes IOPs or GX)	-	None	
Adapters (HEA)	#5624	1 Gigabit Ethernet Card (TITOV)	1
Cables	-	None	
SPCN	-	None	
RIO or IB	-	None	
Power Supplies	#7740	Auto-dock AC Power Supply, 100-240V, 1725W (On base fab)	2
Power Line Cord	-	Customer Orderable - Country Specific	2
Language Group	-	Customer Orderable - Country Specific	1
I/O or Other Required Drawer			
I/O DASD		See above	

DASD Backplanes (if feature code)		See above	
I/O Media		See above	
I/O Adapters (includes IOPs, PCIX, PCIE)		None	
I/O Cables (SCSI, SAS, IB, FCAL)		None	
I/O Power Supplies		See above	
I/O Power Line Cord		See above	
Rack Feature Code (if applicable)**:**			
Doors or Trim kit (7014-T00 or 7014-T42)			
Rack Mount Rail Kit			
Power Component (PDU, BPC, BPD, BPR)			
Rack Power Line cord			
Ethernet cables (if applicable)			
Drawer specify code (if applicable)			
MTM required (HMC? or Rack?)			

Note:

1. Processor refresh as stated in PCR 1282.
2. 8 GB memory feature (#EM08) will be announced on October 2011.

3.3 Language Codes:

The following languages are orderable for the 8233-E8B

Feature Code	Description
#9300	LANGUAGE SPECIFY ENGLISH
#9700	LANGUAGE SPECIFY, DUTCH
#9703	LANGUAGE SPECIFY, FRENCH
#9704	LANGUAGE SPECIFY, GERMAN
#9705	LANGUAGE SPECIFY, POLISH
#9706	LANGUAGE SPECIFY, NORWEGIAN
#9707	LANGUAGE SPECIFY, PORTUGUESE
#9708	LANGUAGE SPECIFY, SPANISH
#9711	LANGUAGE SPECIFY, ITALIAN
#9712	LANGUAGE SPECIFY, FRENCH/CANADIAN
#9714	LANGUAGE SPECIFY, JAPANESE
#9715	LANGUAGE SPECIFY, TRADITIONAL CHINESE (TAIWAN)
#9716	LANGUAGE SPECIFY, KOREAN
#9718	LANGUAGE SPECIFY, TURKISH
#9719	LANGUAGE SPECIFY, HUNGARIAN
#9720	LANGUAGE SPECIFY, SLOVAKIAN
#9721	LANGUAGE SPECIFY, RUSSIAN
#9722	LANGUAGE SPECIFY, SIMPLIFIED CHINESE (PRC)
#9724	LANGUAGE SPECIFY, CZECH
#9725	LANGUAGE SPECIFY, ROMANIAN
#9726	LANGUAGE SPECIFY, CROATIAN
#9727	LANGUAGE SPECIFY, SLOVENIAN
#9728	LANGUAGE SPECIFY, BRAZILIAN PORTUGUESE
#9729	LANGUAGE SPECIFY, THAI

3.4 Line Cords

The following Line Cord features are orderable with 8233-E8B

Feature Code	Description
#6458	PWR CBL, DRWR TO IBM PDU, 14', 200-240V/10A, IEC320/C13, IEC320/C14
#6460	PWR CBL, DRWR TO OEM PDU, 14', 100-127V/15A, IEC320/C13, PT#4
#6469	PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#5
#6470	LINECORD, TO WALL, 6',100-127V/12A, IEC320/C13, PT#4
#6471	LINECORD, TO WALL/OEM PDU, 9' 100-127V/10A, IEC320/C13, PT#70
#6472	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#18
#6473	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#19
#6474	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#23
#6475	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#32
#6476	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#24
#6477	LINECORD, TO WALL/OEM PDU, 9', 200-240V/16A, IEC320/C13, PT#22
#6478	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#25
#6487	LINECORD, TO WALL, 6' 200-240V/15A, IEC320/C13, PT#5
#6488	LINECORD, TO WALL/OEM PDU, 9', 100-127V/15A OR 200-240V/10A, IEC320/C13, PT#2
#6493	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#62
#6494	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#69
#6496	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#66
#6497	LINECORD, TO WALL, 6', 200-240V/10A, IEC320/C13, PT#10
#6498	LINECORD, TO WALL, 6', 250V/15A, IEC320/C13, PT#34
#6651	LINECORD, TO WALL/OEM PDU 9', 100-127V/15A, IEC320/C13, PT#75
#6659	LINECORD, TO WALL/OEM PDU 9', 200-240V/15A, IEC320/C13, PT#76
#6660	PWR CBL, DRWR TO OEM PDU 9',100-127V/15A, IEC320/C13, PT#59
#6665	PWR CBL DRWR TO IBM PDU, 10', 200-240V/10A, IEC320/C13, IEC320/C20, (39Y7938)
#6667	LINECORD, PDU TO WALL, 14', 3PH/32A, UTG0247, PDL 56P532, AUSTRALIA<6667 ON P>
#6669	PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#57
#6671	PWR CBL, DRWR TO IBM PDU, 9', 200-240V/10A, IEC320/C13, IEC320/C14
#6672	PWR CBL, DRWR TO IBM PDU, 5', 200-240V/10A, IEC320/C13, IEC320/C14
#6680	LINECORD, TO WALL/OEM PDU, 9', 250/10A, IEC320/C13, PT#6, INSULATED

Notes:

1. Please refer to the table on Chapter 14 for Line Cord features orderable with 8233-E8B.
2. Default Line Cord is country specific. Please refer to Chapter 23.

Additional Notes for this System Requirements Document

***Chapter 2.3 - System Racking** in HV32 Build Instructions v1.3 has been moved to **Chapter 15 - Rack and Racking Requirements** in this document*

***Chapter 2.7.1 - DASD / Data Protection** in HV32 Build Instructions v1.3 has been moved to **Chapter 11 - Data Protection (Common Chapter)** in this document*

***Chapters 2.7.2 - Load Source Specify Codes, 2.73 Remote Load Source Specify, 2.74 ECS Card, and 2.75 System Console** in HV32 Build Instructions v1.3 have been moved to **Chapter 4 - Boot Requirements** in this document*

4.0 Boot Requirements

Description:

The boot process, based on the Initial Program Load (IPL) setup, will depend on the hardware setup and on the way we will use the features that P6 processor-based systems provide. Depending on the customer configuration, a system may or may not require the use of an HMC to manage the system.

The IPL process starts when power is connected to the system. Immediately after, the Service Processor (FSP-1) starts an internal self test based on integrated diagnostic programs (Built-In-Self-Test, BIST). Only if all the test units have been successfully passed, the system status changes to Standby.

Specific Rules for the following:

1. AIX/Linux Boot Requirements if no San Boot:

N/A

2. AIX/Linux Boot Requirements if San Boot:

N/A

3. IBM i Boot Requirements if no San Boot:

If #2145 is selected as the primary operating system, one of the following Load/Source specify codes must be specified :

F/C	Description	DASD Type	Notes
#0724	#1996 LOAD SOURCE SPECIFY (177GB SATA S/S DRIVE, CD MOUNTABLE)	FC #1996 - 177GB SATA S/S DRIVE, 1.8", PCI CARD MOUNTABLE, (ARIES - IBMi)	
#0836	#4328 LOAD SOURCE SPECIFY (MONZA/SATURN)	FC #4328 - 141.12GB 15K RPM DISK UNIT (VIPER A/SATURN)	1
#0838	#3676 Load Source Specify	FC #3676 - 69.7GB SAS DASD, 15K RPM, 3.5", (Viper-B, Timberland)	1
#0839	#3677 Load Source Specify	FC #3677 - 139.5GB SAS DASD, 15K RPM, 3.5", (Viper-B, Timberland)	
#0840	#3678 Load Source Specify	FC #3678 - 283.7GB SAS DASD, 15K RPM, 3.5", (Viper-B, Timberland)	
#0841	#4329 LOAD SOURCE SPECIFY (VIPER B/TIMBERLAND)	FC #4329 - 282.25GB 15K RPM DISK UNIT ULTRA320 SCSI (VIPER B/TIMBERLAND)	1
#0844	#3658 LOAD SOURCE SPECIFY (HURRICANE, VIPER-B+)	FC #3658 - 428.43GB SAS DASD, 15K RPM, 3.5", (HURRICANE, VIPER-B+)	
#0851	#1884 LOAD SOURCE SPECIFY (MAVERICK, AL-10SX)	FC #1884 - 69.7GB SAS DASD,15KRPM, SFF, (MAVERICK, AL-10SX)	1
#0853	#1888 LOAD SOURCE SPECIFY (HORNET, AL-11SX)	FC #1883 - 139.5GB SAS DASD, 15K RPM, SFF, (HORNET, AL-11SX)	
#0854	#1909 LOAD SOURCE SPECIFY (69GB, 2.5", ZEUS - IBMi)	FC #1909 - 69GB 2.5" SAS S/S Drive, (ZEUS - IBMi)	
#0855	#3587 LOAD SOURCE SPECIFY (69GB, 3.5", ZEUS - IBMi)	FC #3587 - 69GB 3.5" SAS S/S DRIVE, (ZEUS - IBMi)	
#0856	#1911 LOAD SOURCE SPECIFY (283GB 10K SFF SAS DISK)	FC #1911 - 283GB SAS DASD,10KRPM, SFF, (FIREFLY, COBRA-D)	

#0722	#1787 LOAD SOURCE SPECIFY (177GB SAS SFF S/S DRIVE)	FC #1787 - 177GB SAS SFF S/S DRIVE, (TAURUS, AIX/LINUX))	2
#0876	#1794 LOAD SOURCE SPECIFY	FC #1794 - 177GB SAS S/S DRIVE IN GEN2-S CARRIER, (TAURUS - IBMi)	2
#0857	#1916 LOAD SOURCE SPECIFY (571GB 10K SFF SAS DISK)	FC #1916 - 571GB SAS DASD, 10KRPM, SFF, (AL12SE, COBRA-D)	
#0875	#1962 LOAD SOURCE SPECIFY	FC #1962 - 571GB 10KRPM SAS HDD IN GEN2-S CARRIER, (AL12SE, COBRA-D)	
#0874	#1956 LOAD SOURCE SPECIFY	FC #1956 - 283GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIREFLY, COBRA-D)	
#0871	#1947 LOAD SOURCE SPECIFY	FC #1947 - 139GB 15KRPM SAS HDD IN GEN2-S CARRIER, (HORNET, AL11SX)	
#0870	#1879 LOAD SOURCE SPECIFY (AL12SX, YELLOW JACKET)	FC #1879 - 283GB SAS HDD, 15K RPM, SFF, (AL12SX, YELLOW JACKET)	3
#0879	#1737 LOAD SOURCE SPECIFY (856GB LIGHTNING, COBRA-E)	FC #1737 - 856GB 10K RPM SAS HDD, 10KRPM, SFF,	3
#0880	#1738 LOAD SOURCE SPECIFY (856GB GEN2-S CARRIER LIGHTNING, COBRA-E, IBMi)	FC #1738 - 856GB 10K RPM SAS HDD IN GEN2-S CARRIER	
#0893	#ES0B LOAD SOURCE SPECIFY (400GB ARIES-2 W CLAW FOR BLUEHAWK IBMi)	FC #ES0B - 387GB SAS SFF S/S DRIVE (TAURUS-2, IBMi)	
#0894	#ES0D LOAD SOURCE SPECIFY, 387GB SAS SFF S/S DRIVE (TAURUS-2, IBMi)	FC #ES0D - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, IBMi)	
#ELSF	#ES0F LOAD SOURCE SPECIFY, 775GB SAS SFF S/S DRIVE (TAURUS-3, IBMi)	#ES0F - 775GB SAS SFF S/S DRIVE IN GEN 1 CARRIER (TAURUS-3, IBMi)	
#0907	#ESD0 LOAD SOURCE SPECIFY (1.14TB COBRA-EP, IRONMAN IBMi)	#ESD0 - 1.14TB 10K RPM SAS HDD, SFF (COBRA-EP, IRONMAN) (IBMi)	
#0911	#ESD2 LOAD SOURCE SPECIFY (1.14TB GEN2-S COBRA-EP, IRONMAN IBMi)	#ESD2 - 1.14TB 10K RPM SAS HDD IN GEN2-S CARRIER, (COBRA-EP, IRONMAN) (IBMi)	
#ELS1	#ES11 LOAD SOURCE SPECIFY, 387GB SAS SFF S/S DRIVE (TAURUS-3, IBMi)	#ES11 - 387GB SAS SFF S/S DRIVE (TAURUS-3, IBMi)	
#ELS9	#ES1A LOAD SOURCE SPECIFY, 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, IBMi)	#ES1A - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, IBMi)	

Notes :

1.Support only, not orderable

2. Moved to July 2011 announce.

4. IBM i Boot Requirements if San Boot:

F/C	Description	Notes
#0837	SAN Load Source Specify (Boot from SAN)	

Remote Load Source Specify Codes

If #2145 is on the order and the load source disk unit is placed somewhere other than in the System Unit, one of the following specify codes must also be on the order.

1. #0725 - Remote Load Source in #5786/#5787 DASD Expansion Drawer (PEARL)
   a. Ordering this specify causes the load source disk unit to be placed in the #5786/#5787 expansion unit. For inital order systems, a #5786 DASD Expansion Drawer must be on the order.
2. #0726 - Remote Load Source in #5802/#5803 PCIe/DASD Expansion Drawer (TRES-19))
   a. Ordering this specify causes the load source disk unit to be placed in the #5802/#5803 expansion unit. For initial order systems, a #5802/#5803 PCIe/DASD Expansion Drawer must be on the order.
3. #0727 - Remote Load Source in #5886/~~#5887~~ DASD Expansion Drawer (CHARLOTTE)
   a. Ordering this specify causes the load source disk unit to be placed in the #5886/~~#5887~~ expansion unit. For inital order systems, a #5886/~~#5887~~ DASD Expansion Drawer must be on the order.
4. #0837 - SAN Load Source Specify (Boot from SAN)
5. #0728 - Remote Load Source in #5887 DASD Expansion Drawer (HOMERUN)
   a. Ordering this specify causes the load source disk unit to be placed in the #5887 expansion unit. For inital order systems, a #5887 DASD Expansion Drawer must be on the order.

System Console

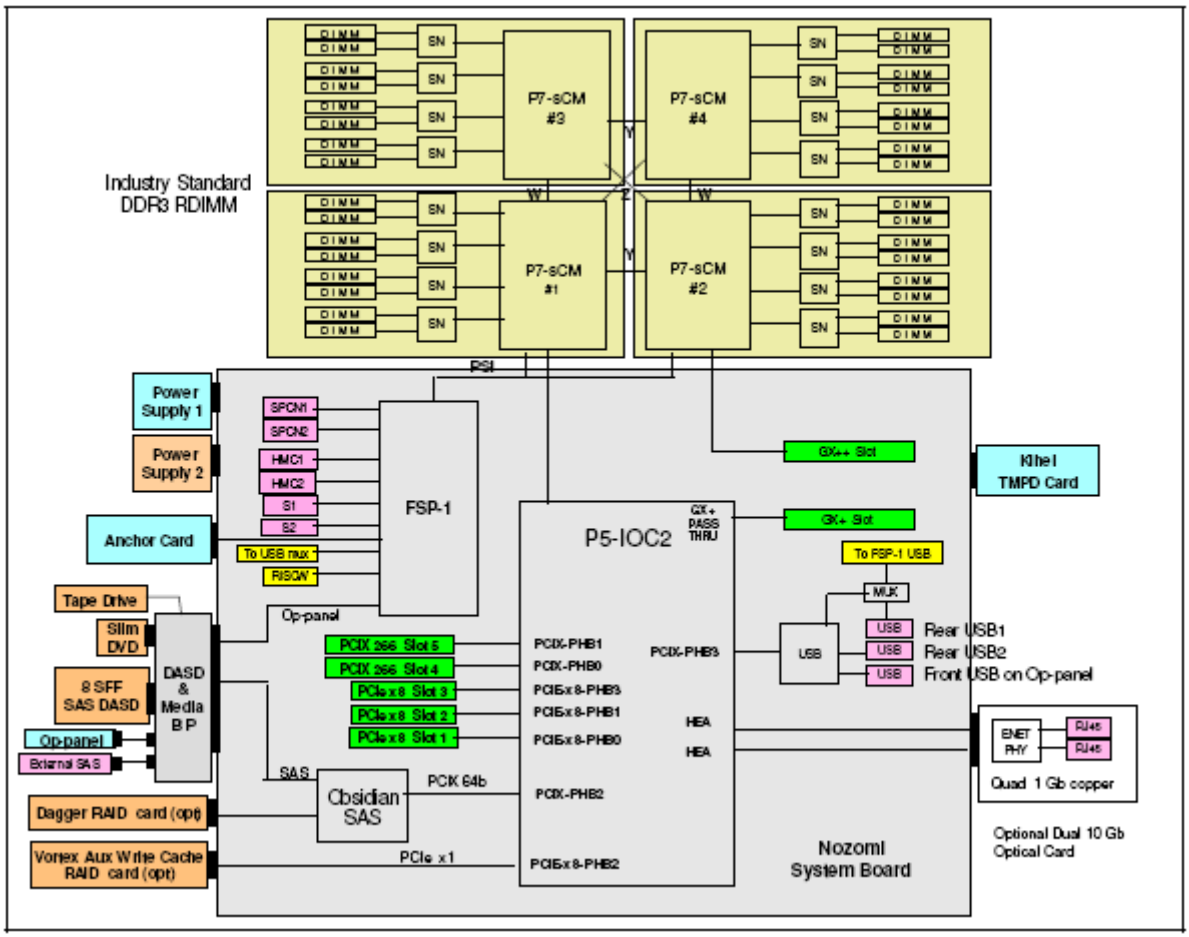
If the 8233-E8B has #2145 IBM i Primary Operating System Indicator specified, then one of the following system console specify codes must be selected.

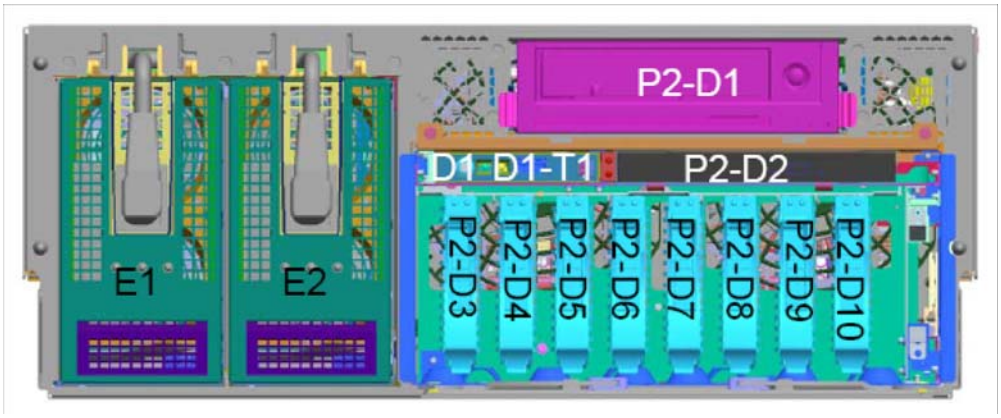
Specify Code	Description	Notes
#5550	System Console on HMC	
#5553	System Console - Internal LAN	

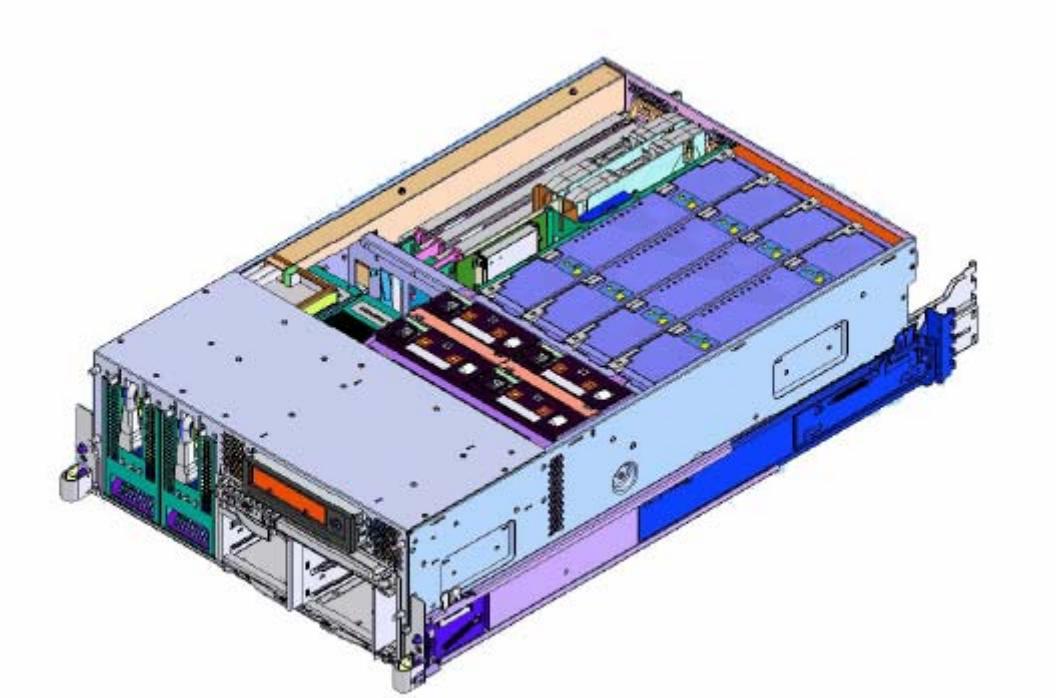
5.0 System Diagrams and Labels

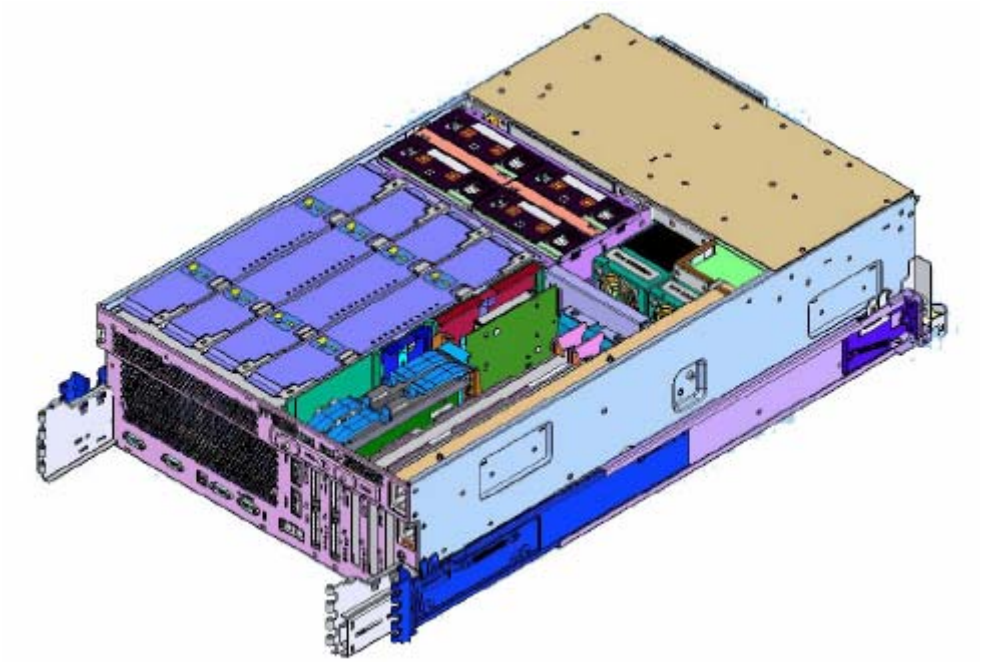
Box, Drawer, Rack Views with descriptions:

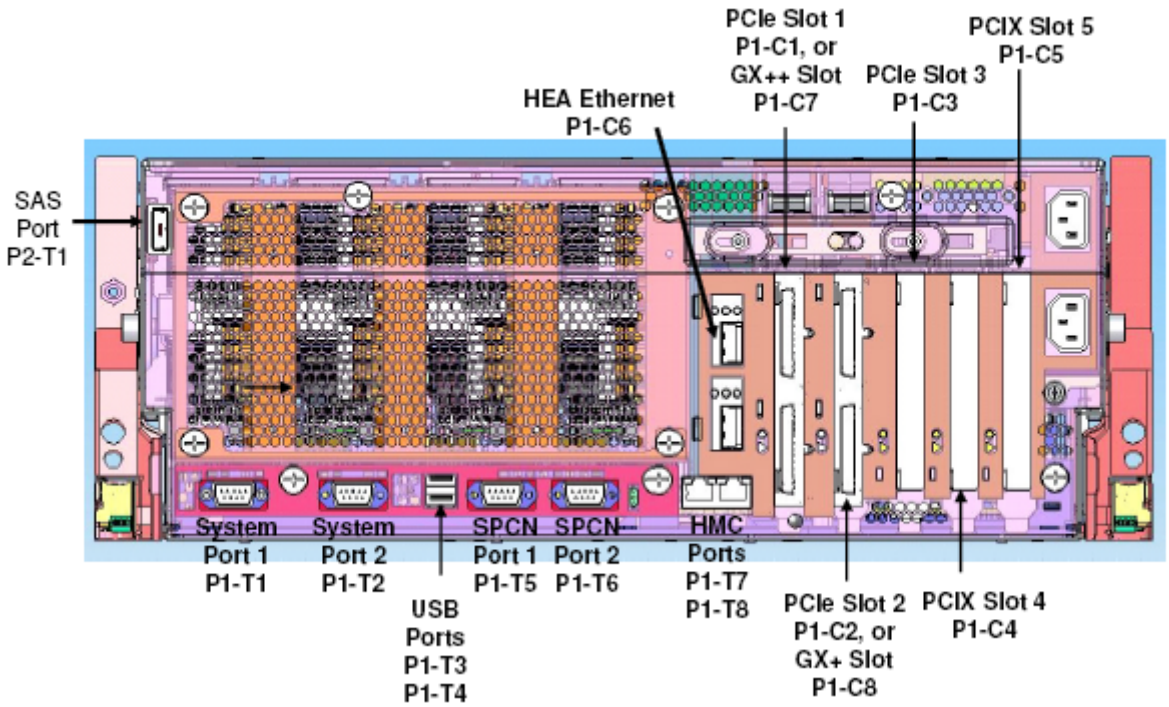
Simple diagram showing labeling of slots, bays, ports, and connectors with location codes

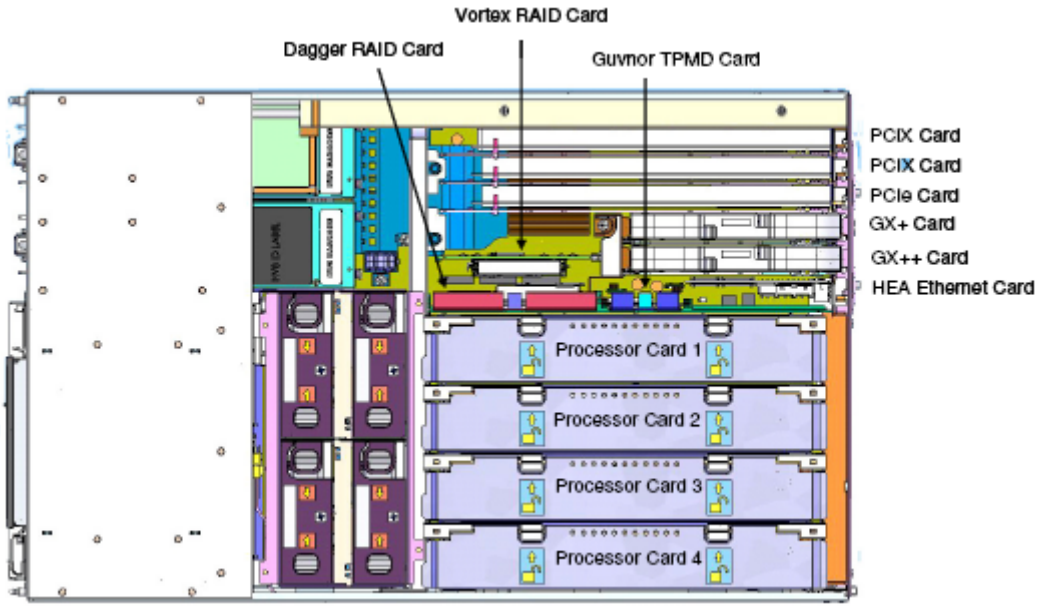


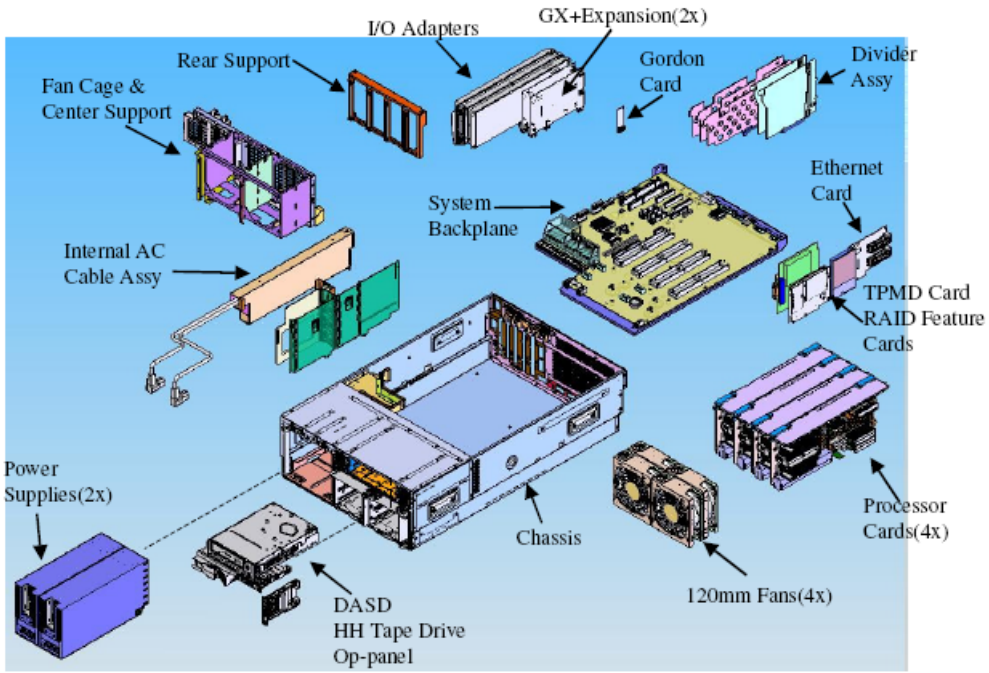

P2-D1
D1
D1-T1
P2-D2
E1
E2
P2-D3
P2-D4
P2-D5
P2-D6
P2-D7
P2-D8
P2-D9
P2-D10






PCIe Slot 1
P1-C1, or
GX++ Slot
P1-C7
PCIX Slot 5
P1-C5
HEA Ethernet
P1-C6
PCIe Slot 3
P1-C3
SAS
Port
P2-T1
System
Port 1
P1-T1
System
Port 2
P1-T2
USB
Ports
P1-T3
P1-T4
SPCN
Port 1
P1-T5
SPCN
Port 2
P1-T6
HMC
Ports
P1-T7
P1-T8
PCIe Slot 2
P1-C2, or
GX+ Slot
P1-C8
PCIX Slot 4
P1-C4


Vortex RAID Card
Dagger RAID Card
Guvnor TPMD Card
PCIX Card
PCIX Card
PCIe Card
GX+ Card
GX++ Card
HEA Ethernet Card
Processor Card 1
Processor Card 2
Processor Card 3
Processor Card 4


I/O Adapters
GX+Expansion(2x)
Rear Support
Gordon Card
Divider Assy
Fan Cage & Center Support
Ethernet Card
System Backplane
Internal AC Cable Assy
TPMD Card
RAID Feature Cards
Power Supplies(2x)
Chassis
Processor Cards(4x)
120mm Fans(4x)
DASD
HH Tape Drive
Op-panel

6.0 Base/Fab Mechanical

Atlas HV32 4S4U package includes:

- 1 System Board
- 1 DASD and media backplane
- **2 power supplies (required)**
  - #7740 AUTO-DOCK AC POWER SUPPLY, 100-240v, 1725W, E8B/E8C
  - #7708 AUTO-DOCK DC POWER SUPPLY, -48V, 1700W, E8A/E8B/E8C

Additional Description:

- All cards directly dock on the system board
- Two power supplies, CEC & I/O fan assemblies also dock directly to the system board
- Eight SFF SAS DASD dock to the DASD & media backplane
  The 4 EIA sheet metal enclosure on sliding rack rails provides mounting for the hardware, and slides out of the front of the rack for service.

Specific Rules:

List any feature codes that manufacturing decided will be part of base.

TBD

7.0 CPU / Processor Requirements

7.1 Description:

Atlas can support up to four (4) processor cards. Each processor card has one P7 module and eight industry standard DDR3 DIMM slots. There currently are three four supported processor card features*.

- 8-cores at 3.0 GHz
- 6-cores at 3.3 GHz
- 8-cores at 3.3 GHz
- 8-cores at 3.55 GHz**

**The number of features will be revisited at PDT level to ensure the optimization of processor yields and revenue.*

***Starting 08/17, Feature #8336 will support 1, 2, 3 and 4 processor configurations.*

The supported processor card features listed above will be replaced to improve Atlas price, performance and competitiveness. As stated in PCR 1282, the following are the refreshed processor features for Atlas.

- 8-cores at 3.612GHz
- 6-cores at 3.724GHz
- 4-cores at 3.724GHz
- 8-cores at 3.22GHz

Withdrawal of the current 8-Core 3.55GHz, 8-Core 3.3GHz, 8-Core 3.0GHz and 6-Core 3.3GHz will be announced at the same time as the announcement of the new processors(04/2011). Effective withdrawal will be 180 days after announce of withdrawal of these processors.

7.2 Supported Processor Features

F/C	Description	Min.	Max.
Processors			
#8332	0/8W 3.3GHz PROC CD, P7 SCM(8GC), (KAPALUA)	0 (See Note)	4
#8334	0/8W 3.0GHz PROC CD, P7 SCM(8GC), 8xDIMMs, (KAPALUA)	0 (See Note)	4
#8335	0/6W 3.3GHz PROC CD, P7 SCM(6GC), 8xDIMMs, (KAPALUA)	0 (See Note)	4
#8336	0/8W 3.55GHz PROC CD, P7 SCM(8GC), 8xDIMMS, (KAPALUA)	~~4,~~ 1	4
#EPA1	0/8W 3.612GHz PROC CD, P7 SCM(DD2.3), 8xDIMMS, (HAPALUA)	1 (See Note)	4
#EPA2	0/6W 3.724GHz PROC CD, P7 SCM(DD2.2/DD2.3), 8xDIMMs, (HAPALUA)	0 (See Note)	4
#EPA3	0/4W 3.724GHz PROC CD, P7 SCM(DD2.2/DD2.3), (HAPALUA)	0 (See Note)	4
#EPA4	0/8W 3.22GHz PROC CD, P7 SCM(DD2.2/DD2.3), 8xDIMMs, (HAPALUA)	0 (See Note)	4

Note:

1. At least one processor feature code is required on each 8233-E8B system
2. All processor features on a system must be the same
3. #EPA1, #EPA2, #EPA3 and #EPA4 processors require a minimum firmware level (machine code) of FW AL730_035_035.
4. #EPA3 is not available in the China or Taiwan.
5. #8332, #8334, #8335 and #8336 are MES-orderable only (as of 1/10/2012)
6. ~~Mixing of processor speeds and core counts within a server is not allowed.~~
7. ~~DD 2.2 and DD2.3 processors can be mixed in the same server if they are the same speed and core count.~~

8. ~~DD2.1 processors within a server must be the same speed, DD level, and core count.~~
9. ~~DD2.3 processors will have the capability to run in DD2.2 mode.~~

7.3 Processor Plug Sequence

Processor cards are plugged first into processor slot #1 (P1-C13), then slot #2 (P1-C14, then slot #3 (P1-C15) and then slot #4 (P1-C16).

7.4 Processor Activations

The following permanent processor activations are supported;

- #7715 - One Processor Activation for Processor Feature #8332 (Maximum = 32)
- #7714 - One Processor Activation for #8334 (Maximum = 32)
- #7717 - One Processor Activation for #8335 (Maximum = 24)
- #7716 - One Processor Activation for #8336 (Maximum = 32)
- #EPB1 - ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA1 (Maximum = 32)
- #EPB2 - ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA2 (Maximum = 24)
- #EPB3 - ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA3 (Maximum = 16)
- #EPB4 - ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA4 (Maximum = 32)

The following Express, no-charge processor activations are supported;

- #2325 - 1w Processor Activation for #8332 (Maximum = 16)
- #2324 - 1w Processor Activation for #8334 (Maximum = 16)
- #2327 - 1w Processor Activation for #8335 (Maximum = 12)
- #2326 - 1w Processor Activation for #8336 (Maximum = 16)
- #EPF1 - 1W PROC ACTIVATION FOR FC EPA1 ($0) (Maximum = 16)
- #EPF2 - 1W PROC ACTIVATION FOR FC EPA2 ($0) (Maximum = 12)
- #EPF3 - 1W PROC ACTIVATION FOR FC EPA3 ($0) (Maximum = 8)
- #EPF4 - 1W PROC ACTIVATION FOR FC EPA4 ($0) (Maximum = 16)

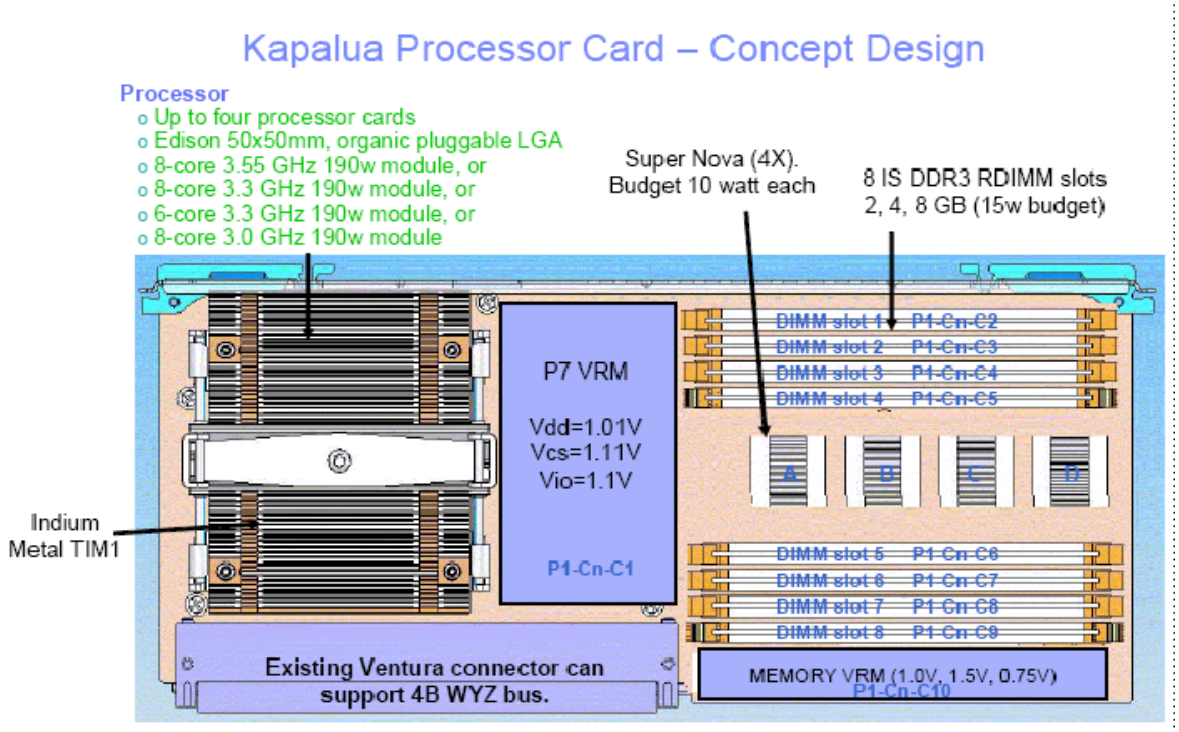
These Express processor activations are NOT offered/orderable in the Greater China Group (GCG) geographical area: China - on-shore; Hong Kong; Macao; Mongolia; Taiwan, province of China.

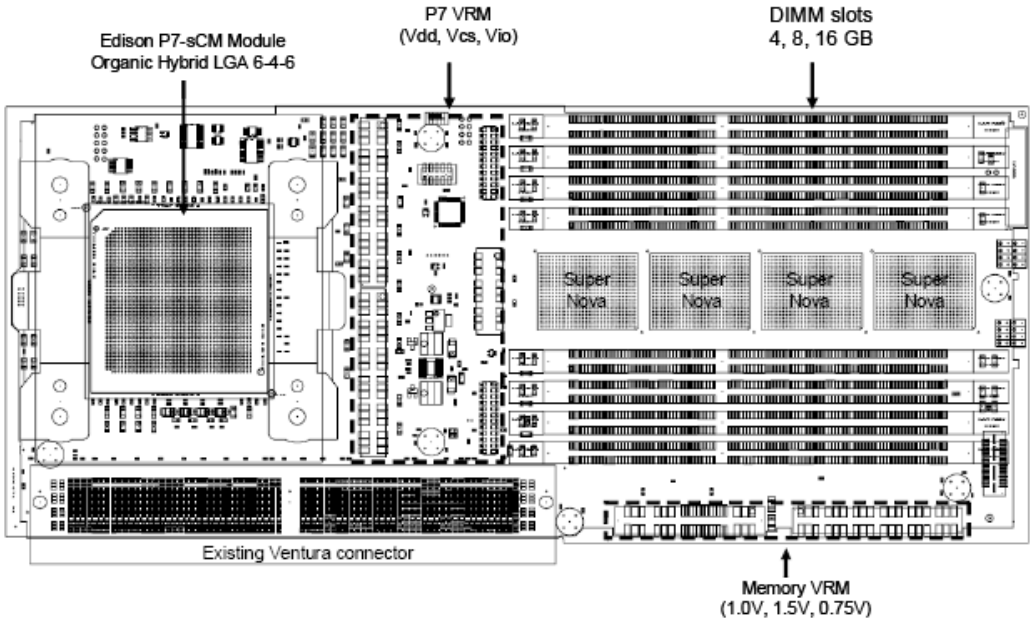
7.5 Processor Deconfiguration

Feature Code 2319 enables factory deconfiguration of processor cores to assist with optimization of software licensing. This Feature will be orderable on initial orders of 8233-E8B with eight (8) processor cores or less. The maximum quantity of Feature Code 2319 will be the total core count on the system minus one (1) (e.g. If quantity 1 of feature #EPA3 processor on E8B, the maximum will be 3, if quantity 2 of feature #EPA3, the maximum will be 7, etc.).

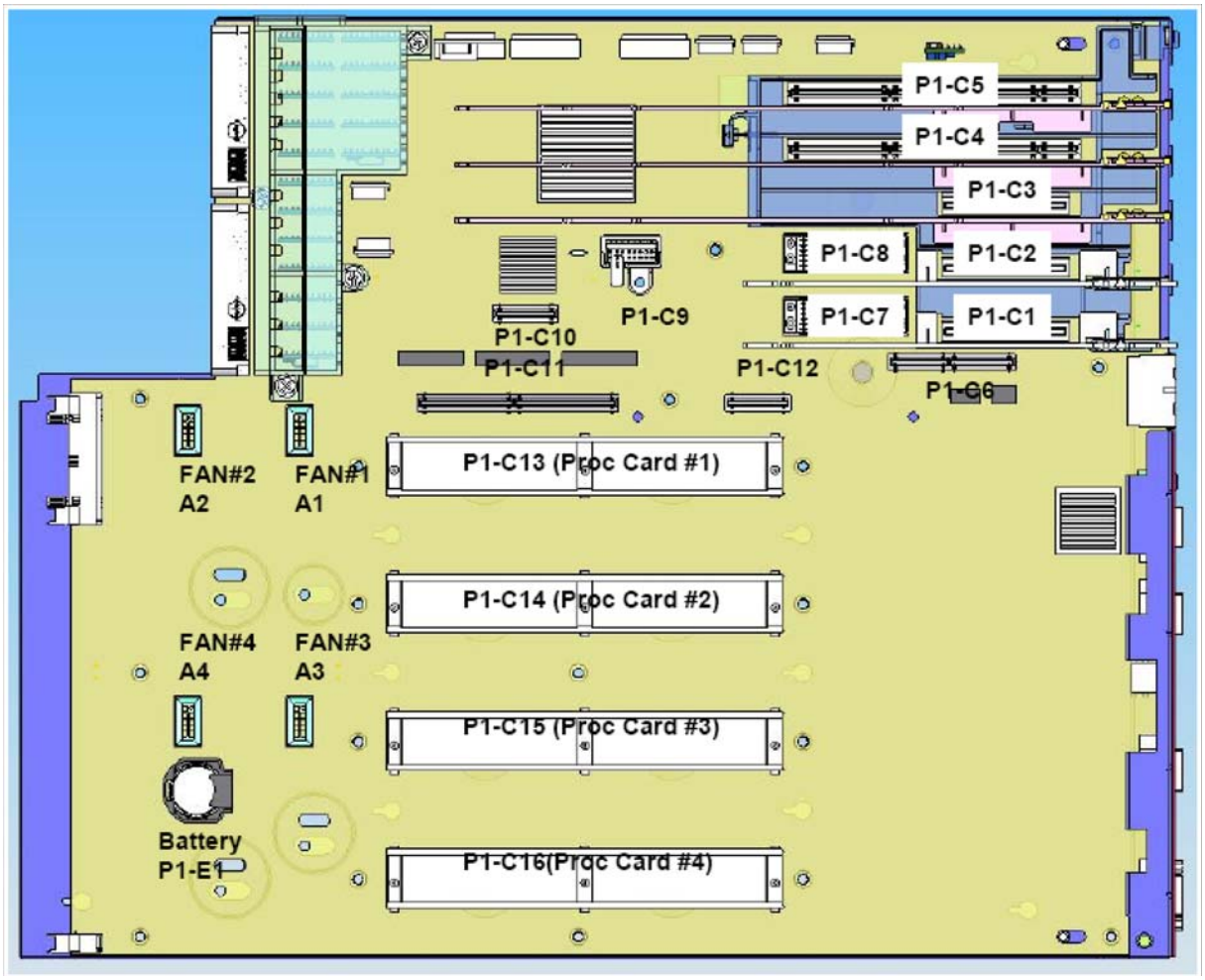
- Feature Code 2319 is supported on systems with AIX, Linux, or IBM i as primary OS (Feature #2146, #2147, #2145).
- If Feature Code 2319 exists on the installed system records, e-config will still treat the system as having less active field so that e-config allows, for example, to order additional AIX licences, users will need to remove Feature Code 2319. The removal can be done by either removing Feature Code 2319 in BaseEdit when validating the installed system and accepting the removal as RPO MES, or by removing it through e-config MES GUI. The latter will result in real MES removal transactions generated on the MES order.
- Processor activations (entitlements) will still be required to cover all cores on the machine even if Feature Code 2319 is selected.
- Feature Code 2319 will not be available via MES order.

7.6 Diagrams with location IDs / labels:




Edison P7-sCM Module
Organic Hybrid LGA 6-4-6
P7 VRM
(Vdd, Vcs, Vio)
DIMM slots
4, 8, 16 GB
Super Nova
Super Nova
Super Nova
Super Nova
Existing Ventura connector
Memory VRM
(1.0V, 1.5V, 0.75V)

Board Layout with location codes



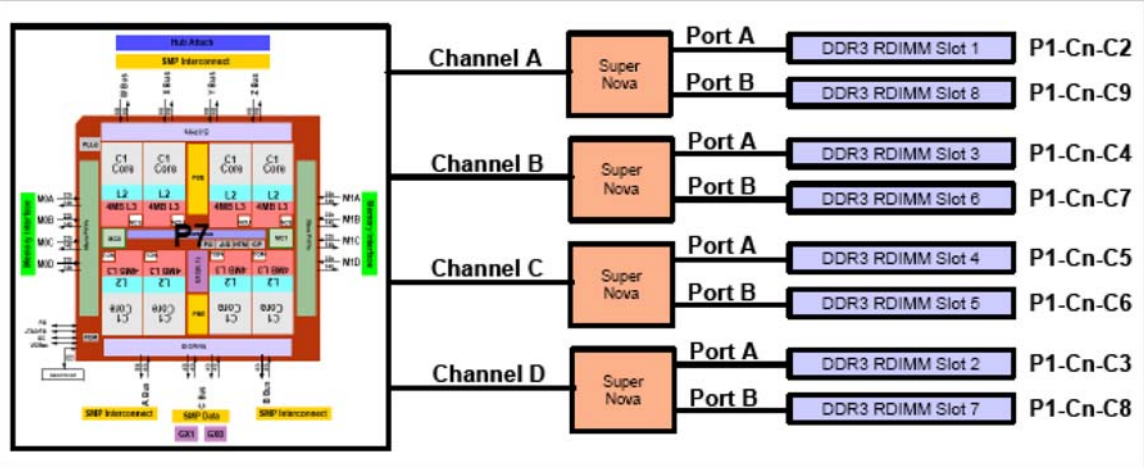
8.0 Memory

Description:

The Memory Controller is integrated in the P7 processor. It is interfaced to Super Nova which is located on P7 processor card. Super Nova is the next generation Synchronous Memory Interface ASIC that connects memory controllers to DDR-3 memory devices. Memory for ATLAS is installed on the processor card. Each ATLAS processor card has eight industry standard DDR3 RDIMM slots. ATLAS can support up to 32 DIMM slots.

Memory Controller	Internal in P7, four memory channels, each channel has 2 Byte Read data & 1 Byte Write data.
Buffers	Super Nova
Capacity	Installed DIMM increments in pairs 8 GB min (2 x 4 GB DIMM) and 512 GB max (128 GB per processor card)
Memory DIMMs Package Size Form Factor Technology SDRAM Org	 Industry Standard RDIMM, 240-pin PC3-8500: 4, 8, 16 GB 30 mm high: 4, 8 GB @ 1066 Mbps and 16GB @ 800 MHz 1Gb and 2Gb x4, x8

Diagram with labels: (Simple diagram showing labels)



DIMM Size	DRAM Density	DIMM Org	DRAM Type	DIMM Height	DRAM Rows	Number of DRAMs
4GB	1Gbit	4Rx8	Stack	30mm	Single	36
8GB	2Gbit	4Rx8	Stack	30mm	Single	36
			Planar		Dual	
16GB	2Gbit	4Rx4	Stack	30 or 38mm	Dual	72

F/C	Description	Min.	Max.
Memory			
#4526	8GB (2x4GB), DDR3, 1066MHz, RDIMM	0	16
#4527	16GB (2x8GB), DDR3, 1066MHz, RDIMM	0	16
#4528	32GB (1x16GB), DDR3, 1066MHz, RDIMM	0	16
#4544	32GB OF 512GB BUNDLE, REDUCED PRICE EQUIV FC 4528, MUST ORDER QTY=16	16	16
#EM08	8GB (2x4GB), DIMMs (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2Rx8)	0	16
#EM16	16GB (2X8GB), DIMMS (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2RX4)	0	16
#EM32	32GB (2x16GB), DIMMs (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 4Rx4)	0	16
Activations			
-	All installed memory must be activated		
	CuOD not supported		

Note:

1. The 8233-E8B must have at least one memory feature specified: either #4526 or #4527 or #4528 or #EM08 or #EM16 or #EM32
2. Feature #EM08, #EM16 & #EM32 will have an October 2011 GA date.
3. Features #4526, #4527, #4528 and #4544 are MES-orderable only due to supply constraints.
4. For MES orders:
    - New Combo DIMMs CAN be mixed with the old 1.5V DIMMs on above systems with FW7.3.x and newer firmware level except for 8GB DIMMs on Atlas and Juno.
    - Old 1.5V DIMMS will be orderable only on above systems that have the eFW 7.2.x or olderexcept for 8GB 1.5V DIMMs on Atlas and Juno which can be ordered with any FW level.
    - New Combo DIMMs cannot be mixed with the old 1.5V DIMMs on above systems with FW 7.2.x and older firmware level 1.5V DIMMs will remain orderable on the above systems until inventory is depleted. After inventory is depleted then customers will have to upgrade FW to eFW 7.3 or newer to support Combo DIMM MES orders.

Specific Rules, Restrictions, Fillers:

1. All installed memory RDIMMs are activated (No memory CUoD capability)
2. Atlas HV32 supports memory Scrubbing, 64-Byte Marking ECC and Chipkill.
3. Each RDIMM Feature Code consists of 2 RDIMMs (pair)
4. Memory DIMMS can be pluggable in pairs.
5. The base memory feature is 8 GB and consists of two (2) 4 GB RDIMM.
6. The 2 RDIMMs which comprise a Feature Code must be identical. Mixing of DIMM size or DIMM speed is not allowed.
7. All RDIMMs on a given processor card must be identical. Mixing of DIMM size or DIMM speed is not allowed.

8. Minimum memory size is 8GB, 1x #4526 8GB RDIMMs
9. Maximum memory size is 512GB, 16x #4528 32GB RDIMMS
10. Memory should be placed starting from largest size RDIMM pair proceeding in the plug sequence to smallest size RDIMM pair, based on the slot placement specified in the table below.
11. Memory on each processor card is recommended but not required.
12. Memory must be installed in groups of 1 feature (2 DIMMs), 2 features (4 DIMMs), or 4 features (8 DIMMs) per processor card. Installation of 3 features (6 DIMMs) is not allowed.

Placement Rules:

Memory Plugging Sequence

	RDIMM Slot	Processor Card #1 (C13)	Processor Card #2 (C14)	Processor Card #3 (C15)	Processor Card #4 (C16)
Single Processor Card System	**P1-Cxx-C2, P1-Cxx-C4**	1			
	P1-Cxx-C3, P1-Cxx-C5	2			
	P1-Cxx-C9, P1-Cxx-C7	3			
	P1-Cxx-C8, P1-Cxx-C6	4			
Two Processor Card System	**P1-Cxx-C2, P1-Cxx-C4**	1	2		
	P1-Cxx-C3, P1-Cxx-C5	3	4		
	P1-Cxx-C7, P1-Cxx-C9	5	6		
	P1-Cxx-C6, P1-Cxx-C8	7	8		
Three Processor Card System	**P1-Cxx-C2, P1-Cxx-C4**	1	2	3	
	P1-Cxx-C3, P1-Cxx-C5	4	5	6	
	P1-Cxx-C7, P1-Cxx-C9	7	8	9	
	P1-Cxx-C6, P1-Cxx-C8	10	11	12	
Four Processor Card System	**P1-Cxx-C2, P1-Cxx-C4**	1	2	3	4
	P1-Cxx-C3, P1-Cxx-C5	5	6	7	8
	P1-Cxx-C7, P1-Cxx-C9	9	10	11	12
	P1-Cxx-C6, P1-Cxx-C8	13	14	15	16

For example: if 6 RDIMM features are installed in a 2 processor card system, the RDIMM plugging sequence would be;

Slots P1-C13-C2, P1-C13-C4, then
Slots P1-C14-C2, P1-C14-C4, then
Slots P1-C13-C3, P1-C13-C5, then
Slots P1-C14-C3, P1-C14-C5, then
Slots P1-C13-C7, P1-C13-C9, then
Slots P1-C14-C7, P1-C14-C9

Note:

The memory plug sequence above applies when all memory features ordered on a system are identical. Otherwise, make sure that all RDIMM on a given processor card must be identical. Mixing of DIMM size or DIMM speed is not allowed.

9.0 I/O Drawers

This will be a common chapter for I/O drawers starting with Tres. System owners will document exceptions that apply to their system.

ATLAS supports the following Drawers

F/C or MTM	Drawer Description	Max per Loop	Connect Type	Max per system	Notes	Reference
#5786	19-inch DASD EXPANSION DRAWER, 24 DISK SLOTS, 220VAC POWER (PEARL)	-	SCSI	24	2, 3	
#5787	DASD EXPANSION TOWER, 24 DISK SLOTS, AC POWER (PEARL)	-	SCSI	24	2	
#5796	PCI-X IB EXPANSION DRAWER (SUNDANCE IB)	4	IB	8	1	
#5802	19" PCIE/DASD 4U EXP DRWR (2 DASD BKPLNS/18 SFF BAYS + 10 PCIE SLOTS), (TRES19)	2	IB	4	1	
#5877	19" PCIE 4U EXP DRWR (10 PCIE SLOTS), (TRES 19 - W/O DISKS)	2	IB	4	1	
#5886	19-inch DASD EXPANSION DRAWER (2 EIA), 12 SAS DISK SLOTS, 220VAC POWER (CHARLOTTE)		SAS	48	1, 4	
#5887	19" SAS (6Gb/s) DASD DRWR, 2U, 24 GEN2-S DISK BAYS, (HOMERUN)		SAS	21	1, 4	
#5765	QUAD E'NET (4X RJ45 1Gb), PCIE2-8X/LP CAP, (RED RIVER-2, 1Gb UTP)		SAS	48		
7031-D24	Pearl 4U		SCSI	24	2	
7031-T24	Pearl Tower		SCSI	24	2	
7314-G30	Sundance IB	4	IB	8	2	
7216-1U2	Oliver	N/A	TBD	TBD	1	

Notes :

1. Orderable at initial order or MES
2. Supported only, not orderable
3. Can only be used with IBM i (#2145)
4. Can be ordered with no disk units present.

General Rules, Restrictions, Riser cards, fillers:

1. 2 Infiniband loops maximum
2. 4 IB drawers per Infiniband loop
3. Total 8 IB drawers
4. No mixing of Tres19 drawers with any other drawer on the same IB loop

System / Drawer Connectivity

GX+ / GX++ Expansion Cards

The 8233-E8B supports one GX+ expansion card and one GX++ expansion card per system. Optional GX+ adapter (e.g.IB adapters) and GX++ adapter (Guardian) are used for external I/O Drawer / Tower expansion or IB Clustering. Atlas supports the following GX+ adapters. The following table describes the GX+/GX++ expansion cards :

Feature Code	Description
#5616	Dual Port 12X IB, GX+ Card, (valery)
#5609	ENHANCED DUAL PORT 12X IB ADPTR, GX++, DDR, (GUARDIAN+)

GX+ / GX++ Expansion Card Placement Rules

1. Use of the GX+ Expansion card slot (U-P1-C8) precludes the use of PCIe card slot #2 (U-P1-C2).
2. Use of the GX++ Expansion card slot (U-P1-C7) precludes the use of PCIe card slot #1 (U-P1-C1).
3. In a system with a single processor card only the GX+ card slot (U-P1-C8) is activated. The GX++ card slot (U-P1-C7) is NOT activated.
4. In a system with two or more processor cards, both the GX+ cand slot (U-P1-C8) and the GX++ card slot (U-P1-C7) are activated.
5. GX+ Card is NOT SUPPORTED in a GX++ slot.
6. To install a GX++ adapter in the system, two or more processor cards are required.

#5786 : Pearl

#5786 DASD Expansion Unit (Pearl)
The 5786 is a rack (19-inch) mounted (4 EIU), unit that has 24 disk unit slots, divided into 4 bays (6 disk slots per bay). Each #5786 comes base with two power supplies (these supplies are redundant) and three fans (the third fan is redundant).

The #5787 is deskside tower equivalent of the #5786, but has been withdrawn. The #5787 is support only, it is not orderable.

The #5786 does not use HSL/RIO cables, nor do they use SPCN cables.

The #5786 connects, via SCSI cable features, to the following disk controller:
- #5778/#5782 (BIREME) - can have up to three connections to a #5786. A #5778/#5782 does support daisy-chaining 12 disk units on each port. The #5778/#5782 only has external SCSI connectors and therefore cannot drive internal disks or internal removable media devices.

SCSI Port Reservation Specifies for Attaching to Pearls
- #0302 - SCSI Controller Port Attach (in field)

SCSI Repeaters
Minimum of one SCSI repeater required. Maximum of four allowed (any combination)
- #5741 - Single Bus SCSI Repeater (marketing configurator will default 2 per initial order #5786)
- #5742 - Dual Bus SCSI Repeater (marketing configurator will default 2 per initial order #5786)

A #5741 or #5742 must be ordered for each disk controller connection to a #5786. The #5786 can have up to four (4) #5741s and/or #5742s installed (maximum of four, any combination).
- Note : FC#7514 : Quantity 150 of #5741

SCSI Cable Features:
Orderable SCSI cables for connection between a disk controller and a #5741 (default one per connection) and for connection between a disk controller and a #5742 (default two per connection). Customer may remove any/all SCSI cable features.
- #2138 - 0.55m SCSI Cable (marketing configurator will default 1 per #5742)
- #2124 - 1m SCSI Cable
- #2125 - 3m SCSI Cable (marketing configurator will default 1 per #5741 and 1 per #5742)
- #2126 - 5m SCSI Cable
- #2127 - 10m SCSI Cable
- #2128 - 20m SCSI Cable
- #7204 - Quantity 150 of #2124
- #7205 - Quantity 150 of #2125
- #7206 - Quantity 150 of #2126
- #7207 - Quantity 150 of #2127
- #7208 - Quantity 150 of #2128
- #7213 - Quantity 150 of #2138.

Line Cord Features:

Orderable line cords (two required for each #5786).

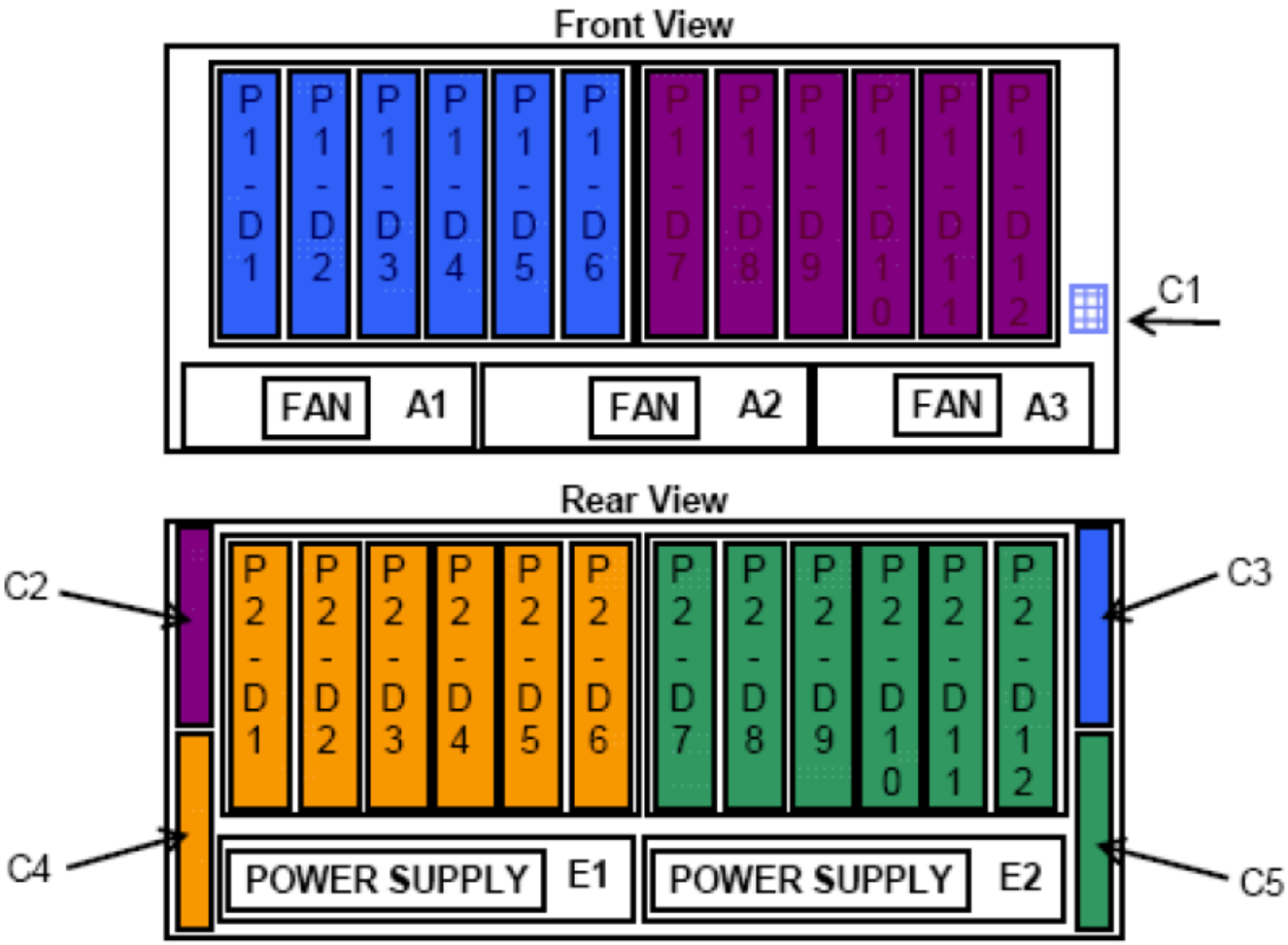
#6458 - 14 Ft Drawer to IBM PDU - 14' 250V/10A, IEC320/C13, IEC320/C14
#6459 - PWR CBL, DRWR TO IBM PDU, 12', 250V/10A, RT ANGLE, IEC320/C13, IEC320/C14 <6459 ON E>
#6460 - 14 Ft Drawer to OEM PDU - 14', 125V/15A, IEC320/C13, PT#4
#6469 - 14 Ft Drawer to OEM PDU - 14' 250V/15A, IEC320/C13, PT#5
#6471 - LINECORD, TO WALL/OEM PDU, 9' 100-127V/10A, IEC320/C13, PT#70
#6472 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#18
#6473 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#19
#6474 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#23
#6475 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#32
#6476 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#24
#6477 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/16A, IEC320/C13, PT#22
#6478 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#25
#6487 - LINECORD, TO WALL, 6', 200-240V/15A, IEC320/C13, PT#5
#6488 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#2
#6493 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#62
#6494 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#69
#6496 - LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#66
#6651 - LINECORD, TO WALL/OEM PDU, 9', 100-127V/15A, IEC320/C13, PT#75
#6659 - LINECORD, TO WALL/OEM PDU 9', 200-240V/15A, IEC320/C13, PT#76
#6671 - PWR CBL, DRWR TO IBM PDU, 9', 200-240V/10A, IEC320/C13, IEC320/C14
#6672 - PWR CBL, DRWR TO IBM PDU, 5', 200-240V/10A, IEC320/C13, IEC320/C14
#6680 - LINECORD, TO WALL/OEM PDU, 9', 250/10A, IEC320/C13, PT#6, INSULATED

Disk Unit Features:

Orderable/Supported disk unit features for a #5786.

#4328 - 141.12GB 15K RPM DISK UNIT (VIPER A/SATURN)
#7510 - QUANTITY 150 OF #4328 (VIPER A/SATURN)

Layout


Front View
P1-D1
P1-D2
P1-D3
P1-D4
P1-D5
P1-D6
P1-D7
P1-D8
P1-D9
P1-D10
P1-D11
P1-D12
C1
FAN A1
FAN A2
FAN A3
Rear View
C2
C3
C4
C5
P2-D1
P2-D2
P2-D3
P2-D4
P2-D5
P2-D6
P2-D7
P2-D8
P2-D9
P2-D10
P2-D11
P2-D12
POWER SUPPLY E1
POWER SUPPLY E2

#5796 : Sundance IB

The #5796 is a rack (19-inch) mounted (4 EIU), half-wide, unit that has 6 PCI-X slots. To mount a #5796 in a rack requires one #7314 - Dual I/O Unit Enclosure (with adjustable rails) (for use in any rack feature #0551, #0553, #0554 or #0555), to be installed in the rack for each pair of #5796s installed (side-by-side). The #5796 comes standard with two redundant 220V 300W power supplies.

#5790 must contain a bus adapter to provide the 12X interface to the system. Choose one of the following 12X bus adapters:

- #6446 - 12X Bus Adapter without Repeater (CCIN 520B) (ETTA-LITE)
- #6454 - 12X Bus Adapter with Repeater (CCIN 520A) (ETTA)

The following 12X interface cables can be ordered for use with a #5796:

- #1829 - 0.6m 12X Enhanced Cable
- #1830 - 1.5m 12X Enhanced Cable
- #1834 - 8.0m 12X Enhanced Cable
- #1840 - 3.0m 12X Enhanced Cable

The following SPCN cables can be ordered for use with a #5796:

- #6001 - 2m SPCN Cable (Note this cable cannot be plugged into HV4, HV8 or #0595)
- #6006 - 3m SPCN Cable
- #6008 - 6m SPCN Cable
- #6007 - 15m SPCN Cable
- #6029 - 30m SPCN Cable

Two of the following line cords must be ordered for use with each #5796:

- #6458 - Line Cord, Drwr to IBM PDU, 14 Ft, 200-240V/10a, IEC320/C13, IEC320/C14
- #6469 - Line Cord, Drwr to OEM PDU, 14 Ft, 200-240V/10a, IEC320/C13, PT#5
- #6472 - 9 Ft Wall/OEM PDU - 9' 250V/10A, IEC320/C13, PT#18
- #6473 - 9 Ft Wall/OEM PDU - 9' 250V/10A, IEC320/C13, PT#19
- #6474 - 9 Ft Wall/OEM PDU - 9' 250V/10A, IEC320/C13, PT#23
- #6475 - 9 Ft Wall/OEM PDU - 9' 250V/10A, IEC320/C13, PT#32
- #6476 - 9 Ft Wall/OEM PDU - 9' 250V/10A, IEC320/C13, PT#24
- #6477 - 9 Ft Wall/OEM PDU - 9' 250V/10A, IEC320/C13, PT#22
- #6478 - 9 Ft Wall/OEM PDU - 9' 250V/10A, IEC320/C13, PT#25
- #6487 - Line Cord, to wall, 6 Ft, 250V/15a, C13/PT#5
- #6493 - Line Cord, to wall/OEM PDU, 9 Ft, 250V/10a, C13/PT#62
- #6494 - Line Cord, to wall/OEM PDU, 9 Ft, 250V/10a, C13/PT#69
- #6495 - Line Cord, to wall/OEM PDU, 9 Ft, 250V/10a, C13/PT#73
- #6496 - Line Cord, to wall/OEM PDU, 9 Ft, 250V/10a, C13/PT#66

- #6577 - DRWR TO IBM PDU, MFG SEL LENGTH, 200-240V/10A, IEC320/C13, IEC320/C14
  - Selection of this feature code (up to qty 2 per racked CEC and up to qty 2 per each racked feature coded I/O expansion) will allow IBM to select the optimum line cord for the racked unit during sys tem build. This feature is only valid on initial order systems or model upgrades into E8A. Each ordered #6577 takes the place of any other available “Drawer to IBM PDU” line cord feature.
- #6659 - Line Cord, to wall/OEM PDU, 9 Ft, 100V/15a, C13/PT#76
- #6669 - Line Cord, Drwr to OEM PDU, 14 Ft, 200-240V/10a, IEC320/C13, PT#57
- #6671 - Drwr to IBM PDU, 9 Ft, 250V/10a, C13/C14
- #6672 - Drwr to IBM PDU, 5 Ft, 250V/10a, C13/C14
- #6680 - Line Cord, to wall, 9 Ft, 250V/10a, C13/PT#6 insulated
- #6687 - Line Cord, to wall, 6 Ft, 200/240V/15a, C13/PT#57

IB drawer cabling rules:

Sundance-IB to Sundance-IB:

- Etta-Lite (#6446) to Etta-Lite (#6446) - only 0.6m (#1829) or 1.5m (#1830) enhanced IB cables can be used.
- Etta-Lite (#6446) to Etta (#6457) or Etta (#6457) to Etta-Lite (#6446)- any enhanced IB cable can be used (#1829, #1830 and #1840 (3m)).
- Etta (#6457) to Etta (#6457) - any IB cable can be used (#1829, #1830, #1840, or #1834 (8m)).

CEC to Sundance-IB or Sundance-IB to CEC:

- CEC to Etta-Lite (#6446) or Etta-Lite (#6446) to CEC - enhanced IB cables #1830 and #1840 can be used (Note: #1829 cable cannot be used).
- CEC to Etta (#6457) or Etta (#6457) to CEC - IB cables #1830, #1840, or #1834 can be used (Note: #1829 cable cannot be used).

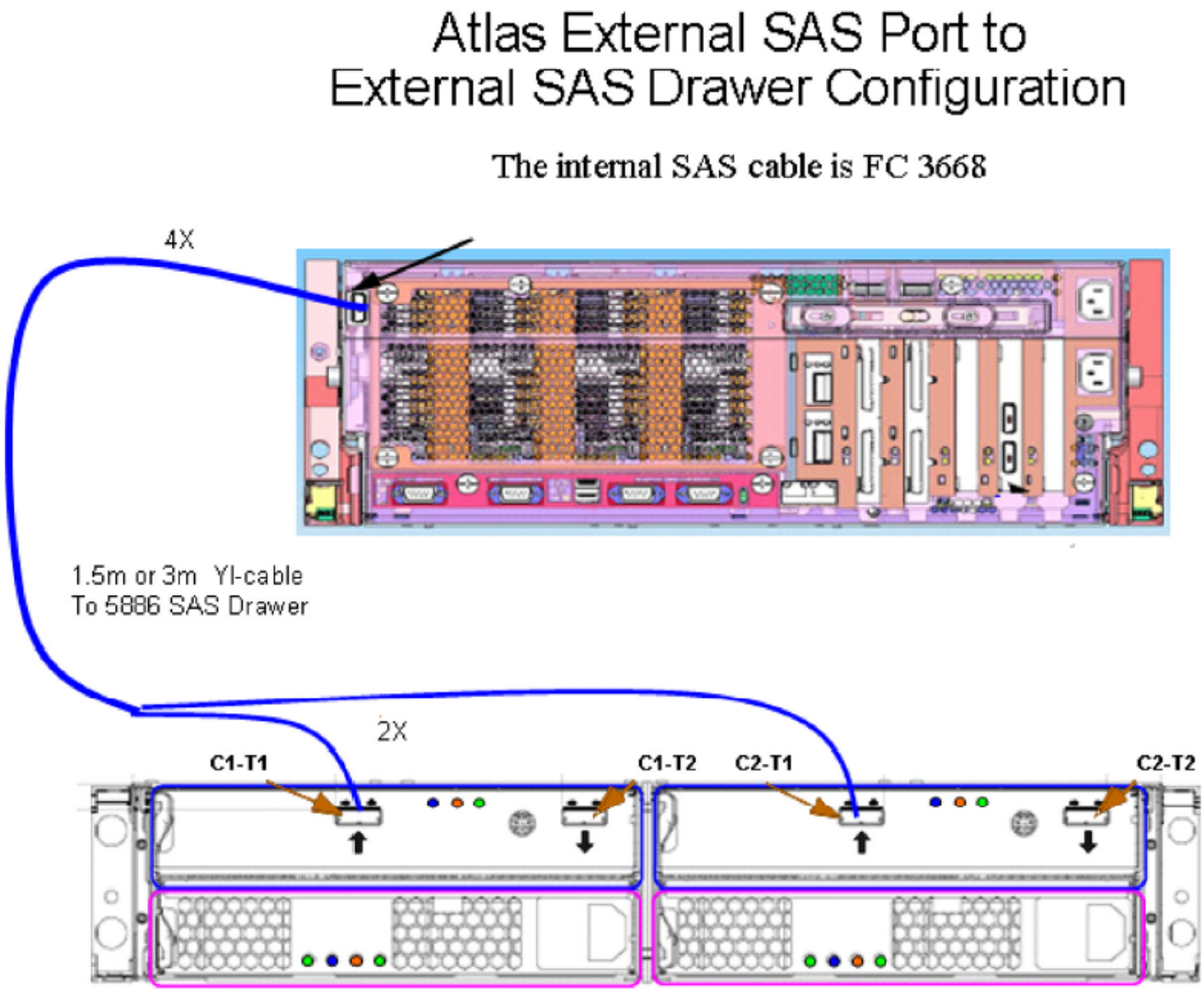
The Charlotte drawer - FC#5886

For Charlotte configuration information, please refer to the Charlotte (FC 5886) build instructions (found on the feature matrix build instruction web page).

https://rchefmp1.rchland.ibm.com/FeatureMatrix/pageAccessFilter.wss?pageVar=BUILDINST.HTM&brand=pSeries&invGroup=eServer&appState=PSERIES_ESERVER&pageHeading=Build%20Instructions

Charlotte #5886 on ATLAS

Charlotte 19”x2U Storage Drawer with 12 x 3.5” SAS DASD is currently offerred. Only one Charlotte Drawer is supported via Atlas HV32 4S4U embedded SAS port. Additional Charlotte SAS Drawer can be supported by PCIX or PCIe SAS adapter.



Orderable and/or Supported disk unit features for a #5886:

Feature Code	Description	Notes
#3646	73.4GB SAS DASD, 15K RPM, 3.5", (VIPER-A/B, TIMBERLAND)	1
#3647	146.8GB SAS DASD, 15K RPM, 3.5", (VIPER-A/B, TIMBERLAND)	
#3648	300GB SAS DASD, 15K RPM, 3.5", (VIPER-B, TIMBERLAND)	
#3649	450GB SAS DASD, 15K RPM, 3.5" (HURRICANE, VIPER-B+)	
#3657	SAS Cable Grp (logic + power) for HH SAS Tapes, rt-angle connector	
#3658	428.43GB SAS DASD, 15K RPM, 3.5", (HURRICANE, VIPER-B+)	
#3676	69.7GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)	1
#3677	139.5GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)	
#3678	283.7GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)	
#7517	QUANTITY 150 OF #3676 (VIPER-B, TIMBERLAND)	1
#7518	QUANTITY 150 OF #3677 (VIPER-B, TIMBERLAND)	
#7519	QUANTITY 150 OF #3678 (VIPER-B, TIMBERLAND)	
#7538	QUANTITY 150 OF #3658	
#7549	QTY 150 OF #3647 (146.8GB 15K 3.5" SAS DISK)	
#7564	QTY 150 OF #3648 (300GB 15K 3.5" SAS DISK)	
#7565	QTY 150 OF #3649 (450GB 15K 3.5" SAS DISK)	

Notes:

1. Supported only, not orderable

Specific Rules and Restrictions:

1.Required adapters

2.Required Cables, restrictions, and rules

3.Required riser cards

4.Required Fillers

5.Drawer Cover rules (if applicable)

The Homerun drawer - FC#5887

The Homerun (#5887) I/O drawer detailed documentation is maintained in a separate Build Instruction that can be accessed at the following URL:

https://w3-01.ibm.com/buildInstGetAction.wss?System/FC-5887-_4.00.pdf

10.0 Storage Devices

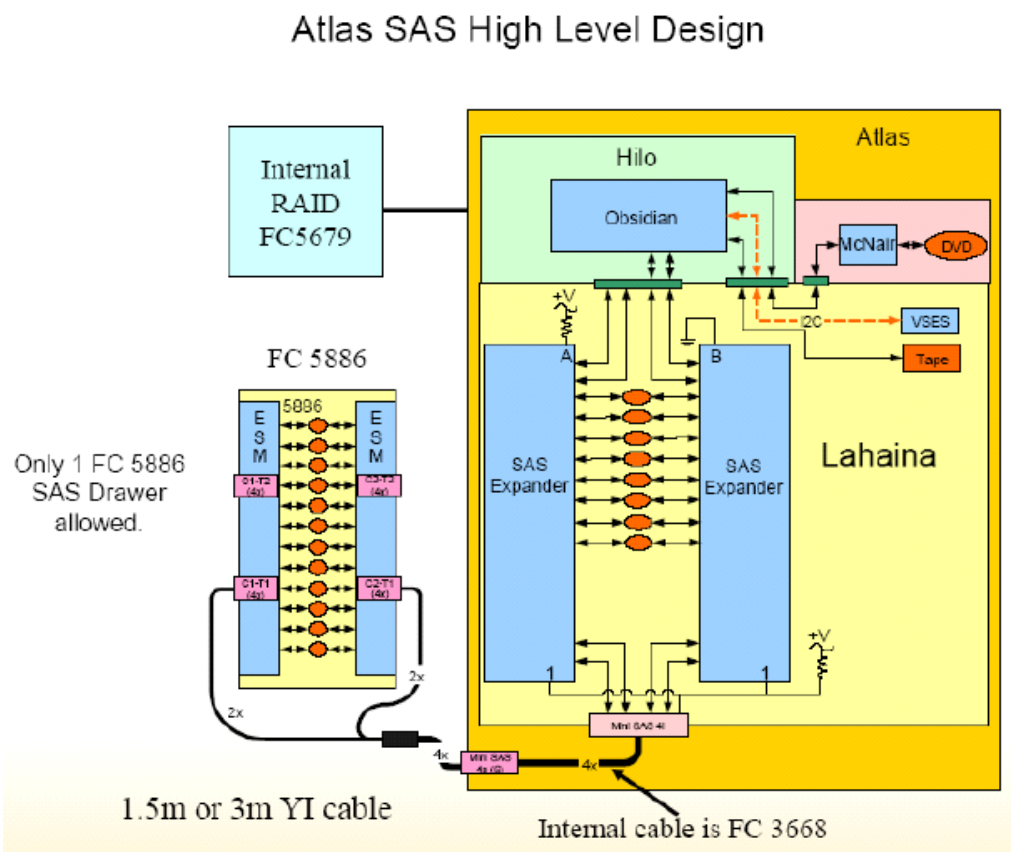
Description:

ATLAS uses the **#8340 LAHAINA-A/MCNAIR Backplane** which feature provides 8 SAS DASD slots, one slot for SATA DVD and one slot for SAS Half-high Tape. The SFF DASD slots and the SATA DVD slot support Hot Plugging, whereas the SAS Half-high Tape is not Hot Pluggable. The #8340 also provides and external SAS port.

Plug Location : Un-P2

Feature #8340 provides a high function and high availability 8x2.5" SFF (Small Form Factor) DASD backplane with an external SAS port. The external SAS port on this feature supports a single feature 5886 or a single feature 5887 drawer attachment with cable #3668 and supports disk units within the CEC to be split into two distinct 4-disk groups with cable #3669. It Supports connection for a slim SATA DVD-ROM or DVD-RAM and a 5.25 inch half high tape drive.

- #3668 - SAS CBL, DASD BP TO BLKHD EXT CONN, E8A/E8B/E8C, for remote SAS port. This internal cable is required if customer wants to utilize the CEC remote SAS port. A single #5886 (Charlotte) or a single #5887 (Homerun) can be attached to this port.
- #3669 SAS CBL-SPLIT BP, DASD BP TO BLKHD CONN, E8A/E8B. This internal cable allows disk units within the CEC to be split into two distinct 4-disk groups. One group is driven by the imbedded CEC disk controller and the other group by a #5900/#5912/#5904 disk controller. Requires #5912 SAS DUAL CNTRLR, PCIX 2.0, SHORT/64BIT/3.3V, 2Ext, LOW-PROFILE CAPABLE, (CADET) or #5904 CACHING SAS RAID CNTRL (KNORR) and a #3679 SAS CABLE, ADPTR TO ENCL, 1M, (AI). The #3679 external cable attaches to the #5900/#5901/#5912/#5904 and the CEC external SAS port. The #3669 is not supported within an i5/OS partition.



Diagrams/location IDs: Please refer to Chapter 5 for diagrams and Chapter 16 for location codes

Media:

F/C	Description	Bay Priority and Placement	Min.	Max.	Notes
Optical					
#5743	SATA DVDROM, SLIM-LINE, (FREESTONE)	Slim-line Slot (Un-P2-D2)	0*	1	1
#5762	SATA DVDRAM, SLIM-LINE, (STERLING)	Slim-line Slot (Un-P2-D2)	1*	1	
Tape					
#5619	4MM 80/160GB TAPE, SAS, (CADENZA-4 SAS)	Half-high Slot (Un-P2-D1)	0	1	2
#5746	HH 800GB/1.6TB LTO-4 SAS TAPE DRIVE (HHLTO4-SAS)	Half-high Slot (Un-P2-D1)	0	1	3
#5661	DAT320 160GB SAS TAPE DRIVE, TEST/CLEAN CARTRIDGES + MTG HDWR, (MICKEY)	Half-high Slot (Un-P2-D1)	0	1	3
~~#5673~~	~~DAT320 160GB USB TAPE DRIVE + TEST/CLEAN CARTRIDGES + CBLS + MTG HDWR, (MINNIE)~~	~~Half-high Slot (Un-P2-D1)~~	~~0~~	~~1~~	~~4~~
#5638	HH 1.5TB/3.0TB LTO-5 SAS TAPE DRIVE, (GOOFY)	Half-high Slot (Un-P2-D1)	0	1	
#EU15	1.5TB REMOVABLE DISK DRIVE CARTRIDGE				
#EU16	80/160GB DAT160 USB TAPE + TEST/CLEAN CARTRIDGES + CBLS + MTG HDWR (DAT160-USB)	Half-high Slot (Un-P2-D1)	0	1	
#EU01	1TB REMOVABLE DISK DRIVE CARTRIDGE, (RDX), (46C2335)				

***One optical drive required**

Note:

1. Supported only, not orderable
2. Feature #3656 must be selected
3. Feature #3657 must be selected
4. ~~IBMi support via VIOS~~

If a half-high tape device is selected, then the following SAS logic/power cable must also be selected.

- #3656 - SAS Cable Grp (logic+power) for HH SAS Tapes, in-line connector. If tape device #5619, is installed in the half-high media bay, feature #3656 must be selected.
- #3657 - SAS Cable Grp (logic + power) for HH SAS Tapes, rt-angle connector. If a tape device #5746 or #5661 is installed in the half-high media bay,feature #3657 must be selected.

Internal USB Disk Drive

- #1103 - INTERNAL DOCK+CBLS, REMOVABLE USB DISK DRIVES, (RDX)
  - The #1103 comes with an internal power cable which plugs into the internal CEC tape power port. The #1103 also comes with a USB cable that plugs, internally, into the op panel (with a #1103 present, the external USB port on the Op Panel is inoperative).The #1103 can accomodate a single removable USB disk drive. If a second drive is to be used, the first one must be removed.
  - Only usable with AIX and Linux (no IBM i support).
  - The following removable disk drives can be used:
    + #1106 - 160GB Removable USB Disk Drive (RDX)
    + #1107 - 500GB Removable USB Disk Drive (RDX)

- #1104 - External USB Removal Disk Drive Docking Station and Cable
  - A #1104 is equivalent to the #1103, but is a stand-alone unit. The #1104 connects to any USB port. A 3m USB cable is included with each #1104. A #1104 can accomodate a single removable USB disk drive. The #1104 system max has been set to 4, by Marketing.

- Removable USB disk drives usable in the #1104: #1106 - 160GB and #1107 - #500GB. At a minimum, quantity 1 of #1106 or #1107 MUST BE ordered with each #1104 ordered.
- Only usable with AIX and Linux (no IBM i support).
- The #1104 comes with an external AC power cord, 1m, (no separate feature code for this power cord) and a number of different interchangeable wall plugs. One of the plugs can be used to plug the power cable into a PDU.... but the #1104 can plug into any AC wall outlet (100V to 240V).

A minimum of 1 #1106 or #1107 MUST BE ordered with each #1103 and #1104 ordered (Example: If quantity 2 #1103s or quantity 1 #1103 and quantity 1 #1104 are ordered, quantity 2 of #1106 or #1107 (any combination) MUST BE ordered).

Specific Rules and Restrictions:

1. One Optical Drive is required (#5771 must be installed)
2. The Lahaina DASD backplane supports connections for a slim SATA DVD and a SAS 5.25 inch or 3.5 inch HH
3. The slim media bay is for slim SATA DVD device. Direct dock and hot plug of DVD media device is supported
4. The half high (HH) bay is for SAS tape drive. Tape drive is NOT hot pluggable.

DASD: Internal

F/C Linux/ AIX	F/C IBM i	Description	Bay Priority and Placement	Min.	Max.
#1882		146.8/139.5GB 10K SFF SAS DASD (FIREBIRD)	DASD Slot 1 thru 8	0	8
#1885		300/283.7GB 10K SFF SAS DASD (FIREFLY, COBRA-C)	DASD Slot 1 thru 8	0	8
#1883	#1884	73.4/69.7GB 15K SFF SAS DASD (MAVERICK, AL-10SX)	DASD Slot 1 thru 8	0	8
#1886	#1888	146.8/139.5GB 15K SFF SAS DASD (HORNET, AL-11SX)	DASD Slot 1 thru 8	0	8
#1890	#1909	69GB 2.5" SAS S/S DRIVE, (ZEUS - AIX/ LINUX #1890, IBM i #1909)	DASD Slot 1 thru 8	0	8
#ES0A	#ES0B	387GB SAS SFF S/S DRIVE (TAURUS-2)	DASD Slot 1 thru 8	0	8

DASD: External

F/C	Description	Bay Priority and Placement	Min.	Max.	Notes
SCSI					
#1972	146.8GB ULTRA320 15K RPM, 1 inch, U320 MODULE, (VIPERA/SATURN)	Placement in #5786/#5787 (Pearl)	0	576	2
#4328	141.12GB 15K RPM DISK UNIT (VIPER A/SATURN)	Placement in #5786/#5787 (Pearl)	0	576	1, 6
#7510	QUANTITY 150 OF #4328 (VIPER A/SATURN)	Placement in #5786 (Pearl)	0	3	6
#1971	73.4GB ULTRA320 15K RPM, 1 inch, U320 MODULE, (ODYSSEY/VIPERA/SATURN)	Placement in #5786/#5787 (Pearl)	0	576	2, 6
#3278	73.4GB ULTRA320 15K RPM, 1 inch, U320 MODULE, (ODYSSEY/VIPERA/SATURN)	Placement in #5786/#5787 (Pearl)	0	576	2, 6
#3279	146.8GB ULTRA320 15K RPM, 1 inch, U320 MODULE, (VIPERA/SATURN)	Placement in #5786/#5787 (Pearl)	0	576	2, 6

#3585	300GB U320 15K RPM SCSI DASD, (TIMBERLAND/VIPERB)	Placement in #5786/#5787 (Pearl)	0	576	6
#4327	70.56GB 15K RPM DISK UNIT (ODYSSEY)	Placement in #5786/#5787 (Pearl)	0	576	1, 6
#4329	282.25GB 15K RPM DISK UNIT ULTRA320 SCSI (VIPER B/ TIMBERLAND)	Placement in #5786/#5787 (Pearl)	0	576	1, 6
SAS					
#3646	73.4GB SAS DASD, 15K RPM, 3.5", (VIPER-A/B, TIMBERLAND) (WD 11/28/08)	Placement in #5886 (Charlotte)	0	576	2, 3, 6
#3647	146.8GB SAS DASD, 15K RPM, 3.5", (VIPER-A/B, TIMBERLAND)	Placement in #5886 (Charlotte)	0	576	2, 3
#3648	300GB SAS DASD, 15K RPM, 3.5", (VIPER-B, TIMBERLAND)	Placement in #5886 (Charlotte)	0	576	2, 3
#3649	450GB SAS DASD, 15K RPM, 3.5" (HURRICANE, VIPER-B+)	Placement in #5886 (Charlotte)	0	576	2, 3
#3658	428.43GB SAS DASD, 15K RPM, 3.5", (HURRICANE, VIPER-B+)	Placement in #5886 (Charlotte)	0	576	1, 3
#3676	69.7GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)	Placement in #5886 (Charlotte)	0	576	1, 3, 6
#3677	139.5GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)	Placement in #5886 (Charlotte)	0	576	1, 3
#3678	283.7GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)	Placement in #5886 (Charlotte)	0	576	1, 3
SAS/SFF					
#1882	146.8GB SAS DASD, 10K RPM, SFF, (FIREBIRD)	Placement in #5802 (Tres)	0	80	2, 4
#1883	73.4GB SAS DASD, 15K RPM, SFF, (MAVERICK, AL-10SX)	Placement in #5802 (Tres)	0	80	2, 4
#1884	69.7GB SAS DASD,15KRPM, SFF, (MAVERICK, AL-10SX)	Placement in #5802 (Tres)	0	80	1, 4
#1885	300GB SAS DASD, 10KRPM, SFF, (FIREFLY, COBRA-C)	Placement in #5802 (Tres)	0	80	2, 4
#1886	146.8GB SAS DASD, 15K RPM, SFF, (HORNET, AL-11SX)	Placement in #5802 (Tres)	0	80	2, 4
#1888	139.5GB SAS DASD, 15K RPM, SFF, (HORNET, AL-11SX)	Placement in #5802 (Tres)	0	80	1, 4
#1890	69GB 2.5" SAS S/S DRIVE, (ZEUS - AIX/LINUX)	Placement in #5802 (Tres)	0	80	2, 4
#1909	69GB 2.5" SAS S/S DRIVE, (ZEUS - IBM i)	Placement in #5802 (Tres)	0	80	1, 4
#1911	283GB SAS DASD,10KRPM, SFF, (FIREFLY, COBRA-D)	Placement in #5802 (Tres)	0	80	1, 4
#1917	146GB 15KRPM SAS HDD IN GEN2-S CARRIER, (HORNET, AL-11SX)	Placement in #5887 (HomeRun)	0	TBD	2, 5
#1925	300GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIREFLY, COBRA-C)	Placement in #5887 (HomeRun)	0	TBD	2, 5
#1946	69GB 15KRPM SAS HDD IN GEN2-S CARRIER, (MAVERICK, AL-10SX)	Placement in #5887 (HomeRun)	0	TBD	2, 5
#1947	139GB 15KRPM SAS HDD IN GEN2-S CARRIER, (HORNET, AL-11SX)	Placement in #5887 (HomeRun)	0	TBD	2, 5
#1787	177GB SAS SFF S/S DRIVE, (TAURUS, IBMi)	~~Placement in #5887 (HomeRun)~~	0	TBD	1, 5, 7
#1775	177GB SAS SFF S/S DRIVE, (TAURUS, AIX/LINUX))	~~Placement in #5887 (HomeRun)~~	0	TBD	2, 5, 7
#1794	177GB SAS S/S DRIVE IN GEN2-S CARRIER, (TAURUS - IBMi)	Placement in #5887 (HomeRun)	0	TBD	1, 5, 7
#1793	177GB SAS S/S DRIVE IN GEN2-S CARRIER, (TAURUS - AIX/ LINUX)	Placement in #5887 (HomeRun)	0	TBD	2, 5, 7
#1916	571GB SAS DASD, 10KRPM, SFF, (FIRESTORM, COBRA-D)	~~Placement in #5887 (HomeRun)~~	0	TBD	1, 5
#1962	571GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIRESTORM, COBRA-D)	Placement in #5887 (HomeRun)	0	TBD	1, 5
#1956	283GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIREFLY, COBRA-D)	Placement in #5887 (HomeRun)	0	TBD	1, 5
~~#1925~~	~~300GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIREFLY, COBRA-D)~~	~~Placement in #5887 (HomeRun)~~	~~0~~	~~TBD~~	
#1790	600GB SAS 10K RPM SFF DASD, (FIRESTORM/COBRA-D)	~~Placement in #5887 (HomeRun)~~	0	TBD	
#1964	600GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIRESTORM, COBRA-D)	Placement in #5887 (HomeRun)	0	TBD	

#1879	283GB SAS HDD, 15K RPM, SFF, (AL12SX, YELLOW JACKET)		0	TBD	
#1880	300GB SAS HDD, 15K RPM, SFF, (AL12SX, YELLOW JACKET)		0	TBD	
#1948	283GB 15K RPM SAS HDD IN GEN2-S CARRIER, (AL12SX, YELLOWJACKET)		0	TBD	
#1953	300GB 15K RPM SAS HDD IN GEN2-S CARRIER, (AL12SX, YELLOWJACKET)		0	TBD	
#ES0A	387GB SAS SFF S/S DRIVE (TAURUS-2, AIX/LINUX)	Placement in #5802 (Tres)	0	80	2, 4
#ES0B	387GB SAS SFF S/S DRIVE (TAURUS-2, IBMi)	Placement in #5802 (Tres)	0	80	1, 4
#ES0C	387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, AIX/LINUX)	Placement in #5887 (HomeRun)	0	504	2
#ES0D	387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, IBMi)	Placement in #5887 (HomeRun)	0	504	1
#ES0E	775GB SAS SFF S/S DRIVE IN GEN 1 CARRIER (TAURUS-3, AIX/LINUX)	Placement in #5802 (Tres)		80	
#ES0F	775GB SAS SFF S/S DRIVE IN GEN 1 CARRIER (TAURUS-3, IBMi)	Placement in #5802 (Tres)		80	
#ES0G	775GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, AIX/LINUX)	Placement in #5887 (HomeRun)		384	
#ES0H	775GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, IBMi)	Placement in #5887 (HomeRun)		384	
#ES10	387GB SAS SFF S/S DRIVE (TAURUS-3, AIX/LINUX)			80	
#ES11	387GB SAS SFF S/S DRIVE (TAURUS-3, IBMi)			80	
#ES19	387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, AIX/LINUX)			254	
#ES1A	387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, IBMi)			254	
#ESD0	1.14TB 10K RPM SAS SFF-1 Disk Drive (IBM i)				
#ESD1	1.20TB 10K RPM SAS HDD, SFF (COBRA-EP, IRONMAN) (AIX/LINUX)				
#ESD2	1.14TB 10K RPM SAS HDD IN GEN2-S CARRIER, (COBRA-EP, IRONMAN) (IBMi)				
#ESD3	1.20TB 10K RPM SAS HDD IN GEN2-S CARRIER (COBRA-EP, IRONMAN) (AIX/LINUX				
#1737	856GB 10K RPM SAS HDD, 10KRPM, SFF, (LIGHTNING, COBRA-E IBMi)	Placement in #5802, #5803(Tres)	0		1
#1738	856GB 10K RPM SAS HDD IN GEN2-S CARRIER, (LIGHTNING, COBRA-E IBMi)	Placement in #5887 (HomeRun)	0		1
#1751	900GB 10K RPM SAS HDD, (LIGHTNING, COBRA-E)	Placement in #5802, #5803(Tres)	0		2
#1752	900GB 10K RPM SAS HDD IN GEN2-S CARRIER, (LIGHTNING, COBRA-E, AIX/LINUX)	Placement in #5887 (HomeRun)	0		2

Notes :

1. For use with i5/OS (IBM i operating system 6.1) partitions
2. For use with AIX/Linux partitions
3. SAS 3.5” DASD maximums in Charlotte (Based on 48 Charlottes, 48 x 12)
4. SAS SFF DASD maximums in TRES (8 Drives in CEC + 72 Drives in four TRES 19’s)
5. SAS SFF DASD maximums in HomeRun (Based on 48 HomeRun, 48 x 24)
6. Supported only, not orderable
7. Moved to July 2011 announce.

Specific Rules and Restrictions:

1. 8233-E8B requries a minimum of one (1) DASD device per system
2. When #2145 IBM i OS is selected, a minimum of two (2) DASD are required
3. The system recognizes DASD in slot one (1) as a Load/Source disk unless specified elsewhere by orderable feature code
4. When #2145 IBM i OS is selected, mirroring should be defaulted on the system
5. No more than 2 InfiniBand loops per system
6. CEC maximum of 8 per system

Quantity 150 Codes

F/C	Description	Notes
#7518	QUANTITY 150 OF #3677 (VIPER-B, TIMBERLAND)	
#7519	QUANTITY 150 OF #3678 (VIPER-B, TIMBERLAND)	
#7535	QTY 150 OF #3586 (69GB 3.5" S/S SAS DRIVE - AIX/LINUX)	
#7536	QTY 150 OF #3587, (3.5", 69GB, ZEUS - IBM i)	
#7538	QUANTITY 150 OF #3658	
#7549	QTY 150 OF #3647	
#7564	QTY 150 OF #3648 (300GB 15K 3.5" SAS DISK)	
#7565	QTY 150 OF #3649 (450GB 15K 3.5" SAS DISK)	
#7204	QUANTITY 150 OF #2124	
#7205	QUANTITY 150 OF #2125	
#7206	QUANTITY 150 OF #2126	
#7207	QUANTITY 150 OF #2127	
#7208	QUANTITY 150 OF #2128	
#7213	QUANTITY 150 OF #2138	
#1868	QUANTITY 150 OF #1947, 15K-SFF, (AL11SX, HORNET)	
#1866	QUANTITY 150 OF #1917, 15K-SFF, (AL11SX, HORNET)	
#1958	QUANTITY 150 OF #1794, SAS SSD, (TAURUS-IBMi)	1
#1887	QUANTITY 150 OF #1793, SAS SSD, (TAURUS-AIX/LINUX)	1
#1817	QUANTITY 150 OF #1962, 10K-SFF, (FIRESTORM, COBRA-D)	
#1844	QUANTITY 150 OF #1956, 10K-SFF, (FIREFLY, COBRA-D)	
#1869	QUANTITY 150 OF #1925, 10K-SFF, (FIREFLY, COBRA-D)	
#7550	QTY 150 OF #1790 (600GB 10K SFF SAS DISK)	
#1818	QUANTITY 150 OF #1964, 10K-SFF, (FIRESTORM, COBRA-D)	
~~#1926~~	~~QUANTITY 150 OF #1879, 15K-SFF, (AL12SX, YELLOWJACKET)~~	
#1927	QUANTITY 150 OF #1948, 15K-SFF, (AL12SX, YELLOWJACKET)	
~~#1928~~	~~QUANTITY 150 OF #1880, 15K-SFF, (AL12SX, YELLOWJACKET)~~	
#1929	QUANTITY 150 OF #1953, 15K-SFF, (AL12SX, YELLOWJACKET)	
#EQ0C	QUANTITY 150 OF #ES0C, 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, AIX/LINUX)	
#EQ0D	QUANTITY 150 OF #ES0D, 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, IBMi)	
#EQ37	QUANTITY 150 OF #1737 856GB 10KRPM SAS HDD (COBRA-E, LIGHTNING)	

#EQ38	QUANTITY 150 OF #1738 856GB 10KRPM SAS HDD IN GEN2-S CARRIER (COBRA-E, LIGHTNING, IBMi)	
#EQ51	QUANTITY 150 OF #1751 900GB 10KRPM SAS HDD (COBRA-E, LIGHTNING)	
#EQ52	QUANTITY 150 OF #1752 900GB 10KRPM SAS HDD IN GEN2-S CARRIER (COBRA-E, LIGHTNING, AIX/LINUX)	
#EQ0G	QUANTITY 150 OF #ES0G, 775GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, AIX/LINUX)	
#EQ19	QUANTITY 150 OF #ES19, 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, AIX/LINUX)	
#EQ1A	QUANTITY 150 OF #ES1A, 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, IBMi)	
#EQD2	QUANTITY 150 OF #ESD2 1.14TB 10K RPM SAS HDD IN GEN2-S CARRIER, (COBRA-EP, IRONMAN IBMi)	
#EQD3	QUANTITY 150 OF #ESD3 1.20TB 10K RPM SAS HDD IN GEN2-S CARRIER (COBRA-EP, IRONMAN AIX/LINUX)	

Notes :

1. Moved to July 2011 Announce.

Additional DASD Cabling Diagrams: (Basic diagram that helps clarify feature coded cable connections)

Other SSD Features

The following SSD module features can only be placed on Blue Darter PCIe2 cards (#2054) on Atlas (E8B, E8C) and Jupiter (E4B, E6B). Mixing of these module features on a single #2054 is not allowed.

FC	Description	Min.	Qty. 150 FC	Max Per #2054 (Charlotte)	Notes
SAS					
#1995	177GB SATA S/S DRIVE, 1.8", PCI CARD MOUNTABLE, (ARIES - AIX/LINUX)	0	N/A	4	1, 2, 3
#1996	177GB SATA S/S DRIVE, 1.8", PCI CARD MOUNTABLE, (ARIES - IBMi)	0	N/A	4	1, 2, 4

Notes:

1. Initial and MES orderable
2. Supported only. Not orderable.
3. Not orderable for use in IBM i partitions
4. Not orderable for use in AIX or Linux partitions

Notes:

Please see Chapter 4 for Load Source Specify codes

Please refer to Chapter 11 for Data Protection Specify codes

Lower Price SSD Features

The following features are for the promotional purpose. ~~Each feature represents a pack for four 387GB SDD hard disks which are offered at a lower price.~~

FC	Description	Notes
#ESRA	Four 387GB SFF-1 SSD for AIX/Linux with eMLC	2
#ESRB	Four 387GB SFF-1 SSD for IBM i with eMLC	2
#ESRC	Four 387GB SFF-2 SSD for AIX/Linux with eMLC	
#ESRD	Four 387GB SFF-2 SSD for IBM i with eMLC	
#ESRE	Four ES10 387GB SFF-1 SSD for AIX/Linux - #ES0D	2
#ESRF	Four ES11 387GB SFF-1 SSD for IBM i - #ES11	2
#ESRG	Four ES19 387GB SFF-2 SSD for AIX/Linux - #ES19	
#ESRH	Four ES1A 387GB SFF-2 SSD for IBM i - #ES1A	
#EH10	MODIFIED FOR UPGRADE #ESRC QTY 1 - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, AIX/LINUX)	1,2
#EH11	MODIFIED FOR UPGRADE #ESRG QTY 1 - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, AIX/LINUX)	1,2
#EH12	MODIFIED FOR UPGRADE #ESRD QTY 1 - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, IBMi)	1,2
#EH13	MODIFIED FOR UPGRADE #ESRH QTY 1 - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-3, IBMi)	1,2
#EH14	MODIFIED FOR UPGRADE #ES0C - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, AIX/LINUX)	3
#EH16	MODIFIED FOR UPGRADE #ES0D - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, IBMi)	3
~~#ES2B~~	~~($0 #ES0B or #ES11) 387GB SAS SFF S/S DRIVE (TAURUS-2/3, IBMi)~~	
~~#ES2D~~	~~($0 #ES0D or #ES1A) 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2/3, IBMi)~~	

1. MES only and ship only the Gen2-S trays. The customer physically removes the existing drive from the Gen 1 SSD and DASD units to Gen 2S carriers and place those drives in a Homerun drawer [(#5887) - EXP24S SFF Gen2-bay Drawer] rather than the CEC or TRES [(#5802) - 12X I/O Drawer PCIe, SFF disk or (#5802) - 12X I/O Drawer PCIe, SFF disk] drawer that they were placed in with gen 1 carriers.
2. #ESRA can be removed and quantity 4 #EH10 added**.** #ESRE can be removed and quantity 4 #EH11 added. #ESRB can be removed and quantity 4 #EH12 added. #ESRF can be removed and quantity 4 #EH13 added.
3. MES only to allow the Gen 1 units to convert. They CAN NOT be ordered, even though they are MES. They are only allowed via conversions. Ordering these conversions may result in additional hardware configured on the system to ensure placement of the newly converted unit. These conversions ship only the Gen2-S carriers. The customer physically removes the existing drive from the Gen1 carrier to Gen2-S carriers and place those drives in a Homerun drawer [(#5887) - EXP24S SFF Gen2-bay Drawer] rather than the CEC or TRES [(#5802) - 12X I/O Drawer PCIe, SFF disk or (#5803) - 12X I/O Drawer PCIe, SFF disk] drawer that they were placed in with Gen1 carriers. There may also be a tamper proof screwdriver provided one per order regardless of the number of these conversions ordered.

11.0 Data Protection and Raid Rules

Common chapter owned by Jerome Sampang. System owner will list any exceptions that apply to their specific system.

The following applies when #2145 IBM i Primary Operating System Indicator is on the order/system.

Description:

F/C	Description	Controller Requirement	Drawer Requirement	DASD Requirement
Mirroring Specifies				
#0040	Mirrored System Disk Level Protection	Integrated Obsidian SAS Controller	None, unless more than 8 DASD used	Minimum 2 Disk Units
#0043	Mirrored System Bus Level Protection	Integrated Obsidian SAS Controller	None, unless more than 8 DASD used	Minimum 2 Disk Units
#0308	Mirrored System IOA Level Protection	Integrated Obsidian SAS Controller	None, unless more than 8 DASD used	Minimum 2 Disk Units
RAID Specifiies				
#0041	Device Parity Protection-All (RAID-5)	#5679 SAS RAID Enablement Cards (DAGGER/VORTEX)	None, unless more than 8 DASD used	Minimum 3 Disk Units
#0047	Device Parity Protection-All (RAID-6)	#5679 SAS RAID Enablement Cards (DAGGER/VORTEX)	None, unless more than 8 DASD used	Minimum 4 Disk Units
#0296	Custom Data Protection Specify	Depending on configuration	None, unless more than 8 DASD used	Custom

DASD / Data Protection:

Base assumptions :

1. Data protection mandate is in effect - iSeries boxes MUST have either RAID or Mirroring
2. Mirroring should be the default DASD data protection scheme on all Model E8B systems.
   a. If mirroring is accepted , a minimum of two (2) DASD should be defaulted on the order/system.
   b. Must have one of the following features specified on the order/system.
      i. **#0040 - Mirrored System Disk Level Protection**
         - Minimum of two same capacity disk units or two disk units which are “close” in capacity are required. In the “close” instance, the Load Source can only be mirrored to a Disk Unit which is larger in capacity. The Load Source disk unit can not be mirrored to a disk unit of lesser capacity.
      ii. **#0043 - Mirrored System Bus Level Protection**
         - Mirrored disk units must be driven by different disk controllers in different expansion units, the system unit is considered an expansion unit.
         - Minimum of two same capacity disk units or two disk units which are “close” in capacity are required. In the “close” instance, the Load Source can only be mirrored to a Disk Unit which is larger in capacity. The Load Source disk unit can not be mirrored to a disk unit of lesser capacity.

iii. #0308 - Mirrored System IOA Level Protection

- Mirrored disk units must be driven by different disk controllers, with no restriction on where the disk controllers are placed.
- Minimum of two same capacity disk units or two disk units which are “close” in capacity are required. In the “close” instance, the Load Source can only be mirrored to a Disk Unit which is larger in capacity. The Load Source disk unit can not be mirrored to a disk unit of lesser capacity.

3. Mirroring may be over-ridden. In that case the system must have one of the following :

a. Sanboot : FC#0837 (SANboot) MUST be on the order to allow the over-ride (no additional DASD need be on the order) or

b. RAID -- Must have one of the following features specified on the order/system.

i. #0041 - Device Parity Protection-All (RAID-5)

- Minimum of three (3) disk units required on the system.
- Requires #5679 SAS RAID Enablement Cards (DAGGER/VORTEX) -- **but only if CEC-placeable IBM i disks are present on the system/order.**
- #0347 - System RAID Hot Spare. This specify is optional when #0041 is selected. If this specify is on the order, eConfig will increase the minimum RAID set from three (3) to four (4). eConfig is to default #0347 whenever #0041 is selected, but allow the customer to remove the #0347 from the order.

i. #0047 - Device Parity Protection-All (RAID-6)

- Minimum of four (4) disk units required on the system.
- Requires #5679 SAS RAID Enablement Cards (DAGGER/VORTEX) -- **but only if CEC-placeable IBM i disks are present on the system/order.**
- #0347 - System RAID Hot Spare. This specify is optonal when #0047 is selected. If this specify is on the order, eConfig will increase the minimum RAID set from four (4) to five (5). eConfig is to default #0347 whenever #0041 is selected, but allow the customer to remove the #0347 from the order.
- RAID capable disk controller cards with auxillary cache are required when selecting #0047.

c. #0296 - Custom Data Protection Specify

This data protection level is used when the system has multiple IBM i partitions and there will be different data protection levels among these partitions. Putting this specify on a system order effectively turns off system validation of minimum required hardware for data protection.

12.0 Adapters

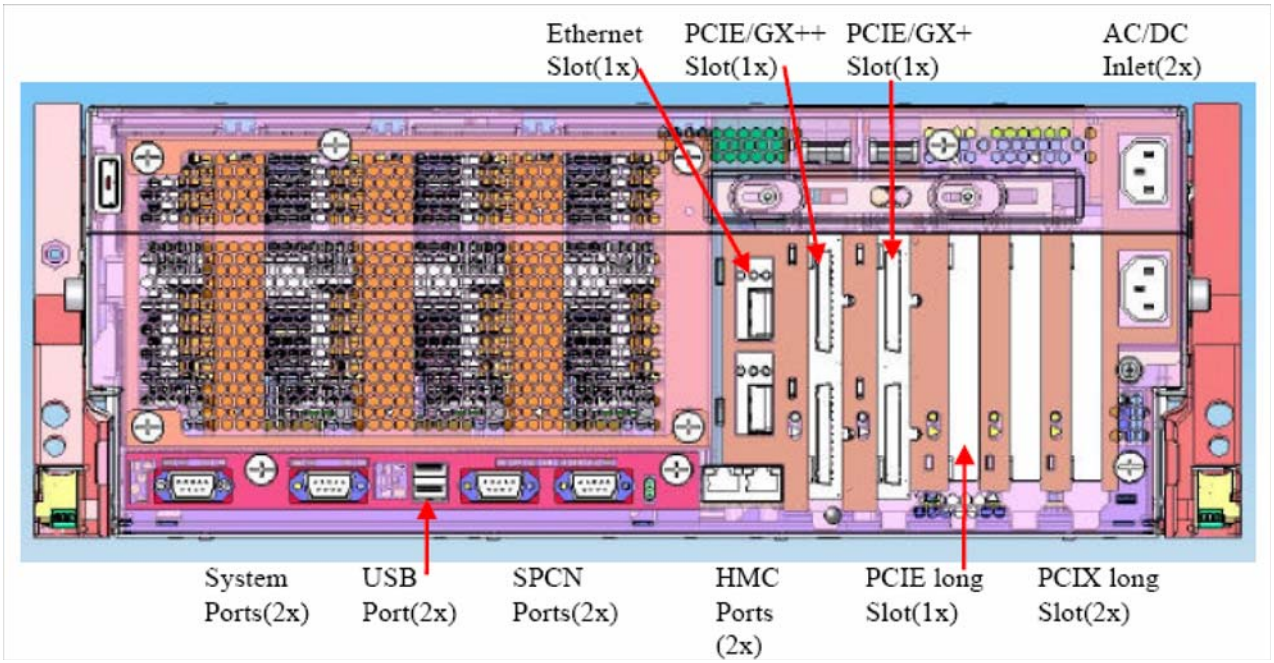
Description:

ATLAS CEC supports 3 PCIe adapters and 2 PCIX adapters. All PCIe or PCIX slots are hot pluggable and provide Enhanced Error Handling (EEH). It is assumed that O/S device driver supports EEH for all supported PCIe and PCIX adapters. Note that all PCIe slots require EEH-aware or EEH-capable devide drivers. EEH-disabled mode is not supported for PCIe slots.

Note 1: According to the Development team, the ATLAS HV32 plug sequence is the same as the HV8 except that RIO-G IO Drawers will not be supported.

PCI Card Slot Descriptions

PCI I/O Slot	Description	Slot Location Code	P5IOC2 PHB	Concurrent Maintenance	Connector	Card Size
1	PCIe x8	U-P1-C1	PHB0	Hot Pluggable	PCIe x8, 98-pin	Standard PCI short card
	GX++ Slot (From 2nd P7 Proc Card)	U-P1-C7		NOT Hot Pluggable	VHDM	Short card
2	PCIe x8	U-P1-C2	PHB1	Hot Pluggable	PCIe x8, 98-pin	Standard PCI short card
	GX+ Slot (P5IOC Pass-thru)	U-P1-C8		NOT Hot Pluggable	VHDM	Short card
3	PCIe x8	U-P1-C3	PHB3	Hot Pluggable	PCIe x8, 98-pin	Standard PCI long card
4	PCIx DDR	U-P1-C4	PHB0	Hot Pluggable	PCIx, 64b, 184-pin	Standard PCI long card
5	PCIx DDR	U-P1-C5	PHB1	Hot Pluggable	PCIx, 64b, 184-pin	Standard PCI long card



PCI-Express

General Rules :

1. With the 8233-E8B PCI-E cards, each slot is a separate PHB. In addition, each slot is electronically identical. Slots 1 and 2 are short slots, slot 3 is a long slot. As a result, the card placement priority should be : slot 3 followed by slot 1, then slot 2
2. Long cards cannot be placed in Slots 1 and 2.
3. Long cards have placement priority in Slot 3 over short cards.

Refer to the following card placement table for 8233-E8B feature placement.

Feature Code	Description	Plug Sequence	Placement Priority	Maximum	Notes
#2728	4-PORT USB 2.0 PCIE ADPTR, PCIE-1x/SHORT, (LILY)	1, 2, 3		3	2
#2893	PCIE 2-Line WAN w/ Modem (Quartz)	1, 2, 3		3	4, 6
#2894	PCIE 2-Line WAN w/ Modem (CIM) (Quartz)	1, 2, 3		3	4, 6
#EN13 (Ann. 01/ 15/2013)	PCIE 2-LINE WAN W/ MODEM (QUARTZ) RENUMBERED 2893 TO LIMIT USAGE DUE TO EOL	1, 2, 3		3	4,6
#EN14 (Ann. 01/ 15/2013)	PCIE 2-LINE WAN W/ MODEM - CIM - (QUARTZ) RENUMBERED 2894 TO LIMIT USAGE DUE TO EOL	1, 2, 3		3	4,6
#5708	DUAL PORT(SR FIBER), 10Gb E'NET NIC/FCoE, LOW PROFILE CAPABLE, PCIE-8x/SHORT, (MASON)			3	2
#5717	1Gb E'NET UTP 4-PORT ADPTR, PCIE-4x/SHORT, LOW-PROFILE CAPABLE (COLEMAN)	1, 2, 3		3	2
#5732	10Gb E'NET-CX4(COPPER), RNIC, PCIE-8X/SHORT, (RED RIVER-CX4), Low profile capable	1, 2, 3		3	2
#5735	FCAL(8GBS) 2 PORT, PCIE-4x/SHORT, LOW-PROFILE CAPABLE, (COHO)	1, 2, 3		3	
#5748	2D GRAPHICS ADAPTER, PCIE-1x/SHORT, (CORTINA)	1, 2, 3		3	2
#5767	1Gb Ethernet UTP 2-port Adapter, PCI-E/SHORT/4CH, (El Paso-TX)	1, 2, 3		3	
#5768	1Gb Ethernet Fiber 2-port Adapter, PCI-E/SHORT/4CH, (El Paso-SX)	1, 2, 3		3	
#5769	10Gb E'NET-SR(FIBER), RNIC, PCIE-8X/SHORT, (RED RIVER-SR), Low-profile capable	1, 2, 3		3	2
#5773	FCAL(4GBS) 1 PORT, PCI-E/SHORT/4CH, (FLIPPER 4Ge)	1, 2, 3,	1	3	2, 5
#5774	FCAL(4GBS) 2 PORT, PCI-E/SHORT/4CH, (FLIPPER 4Ge)	1, 2, 3	1	3	
#5785	-PRT ASYNCH EIA-232, ADPTR + FAN-OUT CBL, PCIE-1X/SHORT, LP CPBL, (BELL)	1, 2, 3		3	1, 2
#5899	1Gb E'NET(UTP) 4-PORT ADPTR, PCIE-x4/SHORT, LOW-PROFILE CAPABLE (AUSTIN)	1, 2, 3		3	
#5901	SAS Controller, PCI-E/short low-profile/8 Ch, 2Ext, (Cadet-E)	1, 2, 3		3	
#5903	SAS RAID Controller, PCI-E/short/8 Ch, 2Ext, (Squib-E)	3, 2, 1		3	7, 9
#4807	4765-001 CRYPTO COPROC + SECURE KEY ACCEL, PCIE-4X, (Y4CRYPTO)	1, 2, 3		2	3, 8
~~#4808~~	~~4765-001 CRYPTO COPROC (#4807) WITH GEN3' CASSETTE, (Y4CRYPTO-GEN3')~~	~~1, 2, 3~~		~~10~~	~~2, 3, 8~~
5805	SAS RAID Controller (new battery), PCIE-8x/Short, 2Ext, (SQUIB-E)	3, 2, 1		41	7
5913	6Gb/s SAS RAID CNTRLR W/CACHE, PCIE2 8X/SHORT, (CUBIC-R)	2, 3, 1			10

Feature Code	Description	Plug Sequence	Placement Priority	Maximum	Notes
ESA3	6Gb/s SAS RAID CNTRLR W/CACHE, PCIE2 8X/SHORT (SABOT/ CUBIC-R HC)	2, 3, 1			12
~~5287~~	~~DUAL PORT E'NET (2X SFP+(SR) 10Gb), PCIE2 8X/LPC, (RAINS,SR)~~				
~~5288~~	~~DUAL PORT E'NET (2X SFP+(TWINAX) 10Gb), PCIE2 8X/LPC, (RAINS, TWINAX)~~				
2054	3Gb/s SAS RAID CNTRLR W/4X SSD SOCKETS, PCIE 8X/SHORT/DBL WIDE/LPC, (BLUEDARTER)	3, 2		~~2~~ **1**	
5289	2-PRT ASYNCH EIA-232 ADPTR, 2x RJ45 CONNS, PCIE-1X/SHORT, LPC, (BELL2)				
~~ESA1~~	~~6Gb/s SAS RAID CNTRLR CACHELESS, PCIE2 8X/SHORT LP CAPA-BLE, (CUBIC-J)~~	~~tbd~~	~~tbd~~	~~tbd~~	~~11~~

Notes:

1. #4276 DVI-A to HD15 (VGA) dongle for connecting to an analog HD15 (VGA) connection (eg KVM switch, or CRT) must be ordered separately.
2. Not supported by IBM i operating system
3. Not supported by Linux operating system
4. Not supported by AIX operating system
5. Supported only, not orderable
6. Should not be defaulted on configurations for any orderable systems
7. Avoid placing Squib-E in slots 2 (P1-C2) and 1 (P1-C1) as much as possible to prevent mechanical interference between the Squib-e card and the GX++ connector.
8. IBM i 6.1 with i 6.1.1 machine code support will be available on November 19, 2010.
9. Effective January 7, 2011, IBM is withdrawing feature 5903.
10. Announce moved to October 11, 2011.
11. Announce date pushed out to Feb-11, 2014.
12. #ESA3 is MES only. It is a refreshed version of the #5913 PCIe2 adapter offering the same function and performance, but with lower energy consumption. It Cannot be paired with feature #5913 and Cannot be used with non-paired feature #5924 else.

FC#EJS1 : NON-PAIRED SABOT (#ESA3) INDICATOR, (2ND RAID ADAPTER IN ANOTHER SYSTEM)

When a #ESA3 is required on a system, it must be ordered in pairs. The system firmware disables the #ESA3 cache until a second #ESA3 is recognized. The exception to this rule is in a distributed environment a #ESA3 may be unpaired on a system if there is a second system with the pair #ESA3. In that case the system firmware WILL enable the #ESA3 cache. FC #EJS1 was assigned to indicate that an odd number of #ESA3 is acceptable on a system order because the odd #ESA3 will be paired within the network environment and that the #ESA3 should be enabled.

PCI-X DDR

General Rules :

1. With the 8233-E8B PCI-X cards, each slot is a separate PHB. In addition, each slot is electronically identical. As a result, the card placement priority should be : slot 4, followed by slot 5.
2. Long cards have placement priority in Slots 4 and 5 over short cards.
3. Slots take Gen 3 Blindswap Cassettes

Refer to the following card placement table for 8233-E8B feature placement.

Feature Code	Description	Plug Sequence	Placement Priority	Maximum	Notes
#5721	10 GIGABIT ENET(FIBER) 2.0 DDR, PCIX/SHORT/32-64BIT/3.3V, (KING-SHORT REACH)	4, 5	1	2	1, 3
#5902	SAS RAID Controller, PCI-X 2.0/long/64-bit/3.3v, 2Ext, (SQUIB)	4, 5	3	2	2, 3
#5912	SAS DUAL CNTRLR, PCIX 2.0, SHORT/64BIT/3.3V, 2Ext, LOW-PROFILE CAPABLE, (CADET-2)	4, 5	2	2	3
#5736	ULTRA 320 SCSI, PCIX 2.0, SHORT/32-64BIT/3.3V, 2INT-P/2EXT-VHDCI (HOBIE)	4,5		2	
#1912	ULTRA SCSI, PCIX 2.0, Short, 2INT-P/2EXT-VHDCI(HOBIE)	4,5		2	3
#5904	CACHING SAS RAID CNTRLR, PCIX-2.0/LONG/2-WIDE, (KNORR)	4,5		1	

Notes :

1. #5721 is a high performance adapter and peak performance may not be obtained when used in machines with limited bandwidth and other high performance adapters.
2. Not supported by IBM i operating system
3. Supported only, not orderable

PCI-X

Please refer to the following card placement table for feature priority and placement.

Feature Code	Description	Plug Sequence	Placement Priority	Maximum	Notes
#1905	FCAL (4GBS) 1 PORT, PCIX/SHORT/32 OR 64BIT/3.3V (FLIPPER 4G)	4, 5		2	2, 5
#1910	FCAL (4GBS) 2 PORT, PCIX/SHORT/32 OR 64BIT/3.3V (FLIPPER 4G)	4, 5		2	2, 5
#1954	4-PORT 10/100/1000BASET E'NET, PCIX/SHORT/32-64BIT/3.3V (CONCHO)	4,5		2	2, 5
#1977	FCAL(2GBS), PCIX/SHORT/32 OR 64BIT/3.3 OR 5V, (FLIPPER-X,CR)	4, 5		2	2, 5
#1978	GIGABIT ENET(FIBER), PCIX/SHORT/32-64BIT/3.3 OR 5V (GOLIAD-SX)	4, 5		2	2, 5
#1979	GIGABIT ENET(UTP), PCIX/SHORT/32-64BIT/3.3 OR 5V (GOLIAD-TX)				2, 5
#1980	LANAI+ (GXT135P), PCI/SHORT/32BIT/3.3 OR 5V, 2D ENTRY GRAPHICS ADAPTER WITH DIGITAL PORT	4, 5		2	2, 5
#1983	DUAL PORT GIGABIT ENET(UTP), PCIX/SHORT/32-64BIT/3.3 OR 5V (DUVAL-TX)	4, 5		2	2, 5
#1986	ISCSI TOE GIGABIT ENET (COPPER) , PCIX/SHORT/32-64BIT/3.3 OR 5V (SAN JACINTO)	4, 5		2	2, 5
#1987	ISCSI TOE GIGABIT ENET (FIBER) , PCIX/SHORT/32-64BIT/3.3 OR 5V (SAN JACINTO)	4, 5		2	2, 5
#2738	USB 2.0 PCI ADPTR, PCI/SHORT/32BIT/3.3 OR 5V,(ROSE)	4, 5	10	2	2, 5

Feature Code	Description	Plug Sequence	Placement Priority	Maximum	Notes
#2849	LANAI+ (GXT135P), PCI/SHORT/32BIT/3.3 OR 5V, 2D ENTRY GRAPHICS ADPTR WITH DIGITAL PORT	4, 5	11	2	2, 5
#2943	MEDINA, 8-PORT, PCI/SHORT/32BIT/3.3 OR 5V, EIA232/422 ADPTR/FAN-OUT BOX	4, 5	12	2	2, 3, 5
#2947	ARTIC97HX ADPTR + 4PRT MP AIB, PCI/LONG/32BIT/3.3 OR 5V (TIGERSHARK, REMORA)	4,5		2	2, 3, 5
#2962	2 PORT SDLC, X.25, PCI/SHORT/32BIT/3.3 OR 5V (HERMOSA)	4, 5		2	2, 3, 5
#4764	PCI CRYPTO COPROCESSOR (X-CRYPTO)	4, 5	9	2	3
#5700	GIGABIT ENET(FIBER), PCIX/SHORT/32-64BIT/3.3 OR 5V, (GOLIAD-SX)	4, 5	5	2	5
#5701	GIGABIT ENET(UTP), PCIX/SHORT/32-64BIT/3.3 OR 5V, (GOLIAD-TX)	4, 5	4	2	5
#5706	DUAL PORT GIGABIT ENET(UTP), PCIX/SHORT/32-64BIT/3.3 OR 5V, (DUVAL-TX)	4, 5	3	2	
#5713	ISCSI TOE GIGABIT ENET(COPPER), PCIX/SHORT/64BIT/3.3 OR 5V, (SAN JACINTO)	4, 5	8	2	
#5714	ISCSI TOE GIGABIT ENET (FIBER), PCIX/SHORT/64BIT/3.3 OR 5V (SAN JACINTO)	4, 5		2	5
#5716	FCAL(2GBS), PCIX/SHORT/32 OR 64BIT/3.3 OR 5V (FLIPPER-X,CR)	4,5		2	2, 5
#5721	10 GIGABIT ENET (FIBER), PCIX 2.0, SHORT/32-64BIT/3.3V (KING-SHORT REACH)	4, 5		2	5
#5722	10 GIGABIT ENET (FIBER), PCIX 2.0, SHORT/32-64BIT/3.3V (KING-LONG REACH)	4, 5		2	5
#5723	2-PORT EIA-232 ASYNCH, SHORT/32BIT/3.3 OR 5V(JASMINE)	4, 5	13	2	2, 5
#5740	4-PORT 10/100/1000BASET E'NET, PCIX/SHORT/32-64BIT/3.3V, (CONCHO)	4, 5	1	2	1, 2,
#5749	FCAL(4GBS) 2 PORT, PCIX/SHORT/64BIT/3.3V (SAUGER-DC 4Gb)	4, 5		2	3, 4
#5758	FCAL(4GBS) 1 PORT, PCIX/SHORT/32 OR 64BIT/3.3V (FLIPPER 4G)	4, 5	7	2	5
#5759	FCAL(4GBS) 2 PORT, PCIX/SHORT/32 OR 64BIT/3.3V (FLIPPER 4G)	4, 5	6	2	2
#5778	PCI-X ULTRA320 SCSI RAID EXTERNAL DISK CTRL (BIREME, IOP-LESS)	4		1	3, 4, 5
#5782	PCI-X ULTRA320 SCSI RAID EXTERNAL DISK CTRL (BIREME, IOP-LESS in Gen 3.0 DW BSC)	4, 5		2, 1	3, 4, 5
#5900	SAS CONTROLLER, PCIX 2.0, SHORT/64BIT/3.3V, LOW-PROFILE CAPABLE, 2EXT (CADET)	4, 5		2	2, 5
#5902	SAS RAID Controller, PCI-X 2.0/long/64-bit/3.3v, 2Ext, (Squib)	4, 5	14	2	2, 5
#6805	PCI TWO-LINE WAN IOA (GRANITE, IOP-less)	4, 5		2	4, 5
#6808	PCI QUAD MODEM IOA (TOMBSTONE, IOP-less)	4, 5		2	4
#6809	PCI QUAD MODEM IOA (CIM) (TOMBSTONE, IOP-less)	4, 5		2	4
#6833	PCI 2-LINE WAN W/MODEM (MARBLE, IOP-less)	4, 5		2	4, 5
#6834	PCI 2-LINE WAN W/MODEM (CIM) (MARBLE, IOP-less)	4, 5		2	4, 5

Notes :

1. This is a high-performance adapter and peak performance may not be obtained when used in machines with limited bandwidth and other high performance adapters. Sustained, full bandwidth performance may not be achieved with more than one Concho adapter per PHB.

2. Not supported by IBM i operating system
3. Not supported by Linux operating system
4. Not supported by AIX operating system
5. Supported only, not orderable

Special Case Adapters :

HEA Adapters

The following Host Ethernet Adapter (HEA) cards are supported on the 8233-E8B :

F/C	Description	Placement	Min.	Max.	Notes
#5624	4-Port 1Gb Ethernet Planar Daughter Card (TITOV)	Un-P1-C6	0	1	
#5613	Dual Port 10Gb Ethernet Planar Daughter Card (SERGEI)	Un-P1-C6	0	1	
#5623	2-Port 1Gb Ethernet Planar Daughter Card (TITOV	Un-P1-C6	0	1	1

Notes:
#5623 is support only, not orderable

HEA card rules

1. One HEA adapter is required on each order:
   a. #5624 4-port 1Gb Ethernet Planar Daughter Card is the default
   b. #5624 may be replaced on the order with #5613 Dual Port 10Gb Fiber Planar Daughter Card
2. HEA cards have their own card slot and do not occupy any PCI card real estate
3. HEA cards do not count in the number of PCI cards on the system
4. Refer to Chapter 13 for system diagrams which show placement locations

Service Processor

One Service Processor (FSP-1) is included on each 8233-E8B system planar (Nozomi), no feature code required.

Special Instructions

FC#5922 : NON-PAIRED SQUIB INDICATOR

By executive decree, when a #5902 is required on a system, it must be ordered in pairs. The system firmware disables the #5902 cache until a second #5902 is recognized. The exception to this rule is in a distributed environment a #5902 may be unpaired on a system if there is a second system with the pair #5902. In that case the system firmware WILL enable the

#5902 cache. FC#5922 was assigned to indicate that an odd number of #5902 is acceptable on a system order because the odd #5902 will be paired within the network environment and that the #5902 should be enabled.

13.0 CPU system to I/O drawer Cabling

Description: Briefly describe required connections from cpu system (node, deskside, desktop, rack mounted drawer) to it's I/O drawers. This should include spcn and RIOG, HSL, or IB cabling.

SYSTEM CABLING

I/O Drawer Cabling

FC	CONNECTION	CABLE FEATURES	DESCRIPTION	NOTES
#5786 (Pearl)	SCSI	#2124	U320 SCSI CABLE, I/O DRWR ATTACH, 1M, (SEE 2104-DS4 FC 5301)	
		#2125	U320 SCSI CABLE, I/O DRWR ATTACH, 3M, (SEE 2104-DS4 FC 5303)	
		#2126	U320 SCSI CABLE, I/O DRWR ATTACH, 5M, (SEE 2104-DS4 FC 5305)	
		#2127	U320 SCSI CABLE, I/O DRWR ATTACH, 10M, (SEE 2104-DS4 FC 5310)	
		#2128	U320 SCSI CABLE, I/O DRWR ATTACH, 20M, (SEE 2104-DS4 FC 5320)	
		#2138	SCSI CABLE, I/O DRWR ATTACH, 0.55m	
#5796 (Sundance IB)	Infiniband	#1828	CABLE, 12X TO 4X IB CNVRTR, COPPER, 1.5M	
		#1829	0.6M ENHANCED 12X CABLE	
		#1830	1.5M ENHANCED 12X CABLE	
		#1834	8.0M 12X CABLE	
		#1840	3.0M ENHANCED 12X CABLE	
		#1841	CABLE, 12X TO 4X IB CNVRTR, COPPER, 3M	
#5802 (Tres-19)	Infiniband	#1828	CABLE, 12X TO 4X IB CNVRTR, COPPER, 1.5M	
		#1829	0.6M ENHANCED 12X CABLE	
		#1830	1.5M ENHANCED 12X CABLE	
		#1834	8.0M 12X CABLE	
		#1840	3.0M ENHANCED 12X CABLE	
		#1841	CABLE, 12X TO 4X IB CNVRTR, COPPER, 3M	
#5802	SAS	#3688	SAS CABLE, ADAPTER TO TRES I/O DRWR, 0.6M, (AT)	
#5805 #5901 #5904	SAS	#3652	SAS CABLE, ENCL TO ENCL, 1M, (EE)	1, 2
		#3653	SAS CABLE, ENCL TO ENCL, 3M, (EE)	1, 2
		#3654	SAS CABLE, ENCL TO ENCL, 6M, (EE)	1, 2
		#3661	SAS CABLE, 2X ADPTRS TO ENCL, 3M, (X)	1, 2
		#3662	SAS CABLE, 2X ADPTRS TO ENCL, 6M, (X)	1, 2
		#3663	SAS CABLE, 2X ADPTRS TO ENCL, 15M, (X)	1, 2
		#3679	SAS CABLE, ADPTR TO ENCL, 3M, (AE)	1, 2
		#3684	SAS CABLE, ADPTR TO ENCL, 1M, (AI)	1, 2
		#3685	SAS CABLE, ADPTR TO ENCL, 6M, (AE)	1, 2
		#3686	SAS CABLE, SYSTEM TO ENCL, 1.5M, (YI)	1, 2
		#3687	SAS CABLE, SYSTEM TO ENCL, 3M (YI)	1, 2
		#3688	SAS CABLE, ADAPTER TO TRES I/O DRWR, 0.6M, (AT)	1, 2
		#3691	SAS CABLE, 1X ADPTR TO ENCL, 1.5M, (YO)	1, 2
		#3692	SAS CABLE, 1X ADPTR TO ENCL, 3M, (YO)	1, 2
		#3693	SAS CABLE, 1X ADPTR TO ENCL, 6M, (YO)	1, 2
		#3694	SAS CABLE, 1X ADPTR TO ENCL, 15M, (YO)	1,2

#5913/ESA3	SAS	#3450	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 1.5M, (YO)	1, 2, 4
		#3451	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 3M, (YO)	1, 2, 4
		#3452	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 6M, (YO)	1, 2, 4
		#3453	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 10M, (YO)	1, 2, 4
		#3454	SAS CABLE, 2X ADAPTERS TO ENCLOSURE, 6Gbs, 3M, (X)	1, 2, 4
		#3455	SAS CABLE, 2X ADAPTERS TO ENCLOSURE, 6Gbs, 6M, (X)	1, 2, 4
		#3456	SAS CABLE, 2X ADAPTERS TO ENCLOSURE, 6Gbs, 10M, (X)	1, 2, 4
		#3457	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 15M, (YO)	1, 2, 5
		#3458	SAS CABLE, 2X ADAPTERS TO ENCLOSURE, 6Gbs, 15M, (X)	1, 2, 5

Notes :

1. Compatible to #5886 (Charlotte).
2. Compatible to #5887 (Homerun).
3. ~~Moved to July 2011 Announce.~~
4. Available on 2011 Announce.
5. Moved to ~~April~~ July 2012 Announce.

SPCN Cabling

SPCN cabling is required between the system CEC and attached drawers. The following cables may be used:

Cable FC	Description	Notes
#6001	POWER CONTROL CABLE, 2M, (SPCN)	1
#6006	POWER CONTROL CABLE, 3M, (SPCN)	
#6007	POWER CONTROL CABLE, 15M, (SPCN)	
#6008	POWER CONTROL CABLE, 6M, (SPCN)	1

Notes :

1. Supported, not orderable

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InfiniBand Cabling

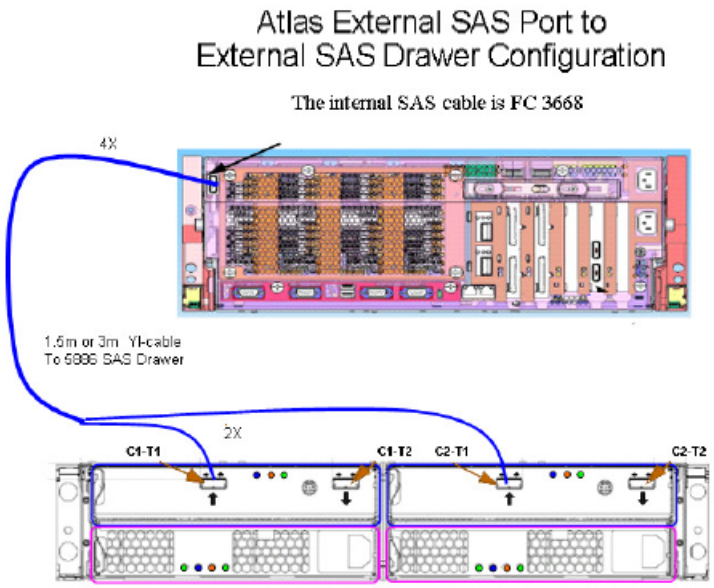
The 8233-E8B does not have an embedded InfiniBand port. An InfiniBand adapter, either #5609 (Guardian) or #5616 (Valery), must be used to connect InfiniBand drawers.

1. An InfiniBand cable is connected to a port on the InfiniBand adapter and then to a port on the InifiniBand drawer. Another InfiniBand cable connects the second port on the InfiniBand adapter to the second port on the InfiniBand drawer, forming a “loop”.
2. If two or more InfiniBand drawers are installed (maximum of 4 drawers on an Infiniband “loop”), then additional InfiniBand cables are required to connect the drawers.

SAS Cabling

External SAS Port on Rear Bulkhead

The 8233-E8B has an Exteranl SAS Port on the rear bulkhead which can be utililzed to drive an expansion drawer such as the #5886 DASD Expansion Drawer (CHARLOTTE). A YI SAS Cable, either #3686 or #3687, is used to connect the #5886 to the External SAS Port.



6GB/s SAS Cables

Cable FC	Description	Notes
#3689	SAS CABLE, ADAPTER TO TRES I/O DRWR, 6Gbs, 0.6M, (AT)	2
#5915	SAS CABLE, ADPTR TO ADPTR, 6Gbs, 3M, (AA)	1, 2
#5916	SAS CABLE, ADPTR TO ADPTR, 6Gbs, 6M, (AA)	1, 2
#5917	SAS CABLE, ADPTR TO ADPTR, 6Gbs, 1.5M, (AA)	1, 2
#5918	SAS CABLE, ADPTR TO ADPTR, 6Gbs, 0.6M, (AA)	1, 2

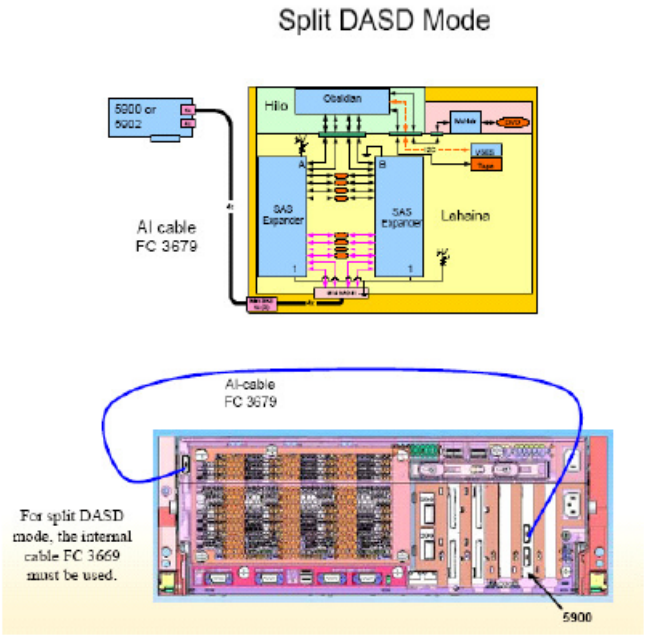
Notes :

1. For connecting two Cubic-R adapters together.
2. Announce moved to October 11, 2011

Split DASD Backplane Feature

The Lahaina DASD backplane supports a Split DASD Backplane Mode.

1. #3669 SAS Cable - Split Backplane is used to put Lahaina into the Split DASD Backplane Mode in which the 4 SFF DASD on the left (front view, slots 1, 2, 3 and 4) are assigned to the integrated Obsidian SAS controller.
2. The 4 SFF DASD on the right (front view, slots 5, 6, 7 and 8) are assigned to the External SAS Port on the rear bulkhead of the system unit. A PCIe or PCIx adapter card, such as a #5900 (CADET) or #5901 (CADET-E), can access the right 4 SFF DASD via an external SAS cable, #3679 SAS Cable Adapter to Enclosure, 1m (AI)
3. The #3669 SAS Cable - Split Backplane replaces the standard #3668 Internal SAS cable which also drives the External SAS Port.



SAS Cable Definitions

Cable type definition :

Cable Type	Definition
AE	These cables are used to connect a SAS adapter to a media expansion drawer. These cables can also be used to connect two SAS adapters to a disk expansion drawer in a JBOD configuration.
AI	This cable is used to connect from a SAS adapter to internal SAS disk slots using the System External SAS port.

Cable Type	Definition
EE	This cable is used to connect one disk expansion drawer to another in a cascaded configuration. Disk expansion drawers may only be cascaded one level deep, and only in certain configurations.
X	This cable is used to connect two SAS adapters to a disk expansion drawer in a RAID configuration. The cable must be routed along the right side of the rack frame (as viewed from the rear) when connecting to a disk expansion drawer.
YI	This cable is used to connect a system external SAS port to a disk expansion drawer. The cable must be routed along the right side of the rack frame (as viewed from the rear) when connecting to a disk expansion drawer.
YO	This cable is used to connect a SAS adapter to a disk expansion drawer. The cable must be routed along the right side of the rack frame (as viewed from the rear) when connecting to a disk expansion drawer.
YR	This cable is used to connect two SAS adapters to internal SAS disk slots using a FC3669 SAS cable.

Connection Use Recommendation

Recommended Cable to use	Scenario	Supported OS environment	Notes
YO	Connect a SAS adapter to a SAS DASD expansion drawer	i5, AIX, Linux	
YO x 2	Connect A SAS adapter to two SAS DASD expansion drawers	i5, AIX, Linux	
YO x 2 EE x 4	Connect A SAS adapter to four SAS DASD expansion drawers	i5, AIX, Linux	
AE x 1	Connect a SAS adapter to a SAS media expansion drawer	i5, AIX, Linux	
YO x 1 AE x 1	Connect a SAS adapter to a SAS media expansion drawer AND a SAS DASD expansion drawer	i5, AIX, Linux	
#3669 x 1 plus YR x 1	Connect a SAS adapter to internal SAS DASD on a 8233-E8B (#3669 gives control of 4 internal DASD)	AIX, Linux	
X x 1	Connects two SAS adapters to one SAS DASD expansion drawer in a redundant controller mode	i5, AIX, Linux	
X x 2	Connects two SAS adapters to two SAS DASD expansion drawers in a redundant controller/RAID configuration	i5, AIX, Linux	
X x 2 plus EE x 4	Connects two SAS adapters to four SAS DASD expansion drawers in a redundant controller/redundant drawer mode in JBOD mode	i5, AIX, Linux	
AE x 2	Connects two SAS adapters to one SAS DASD expansion drawer in JBOD mode	AIX, Linux	

UPS Cabling

FC#1827 : SERIAL TO SPCN CBL, 9-DSHELL/9-DSHELL, 0.14M

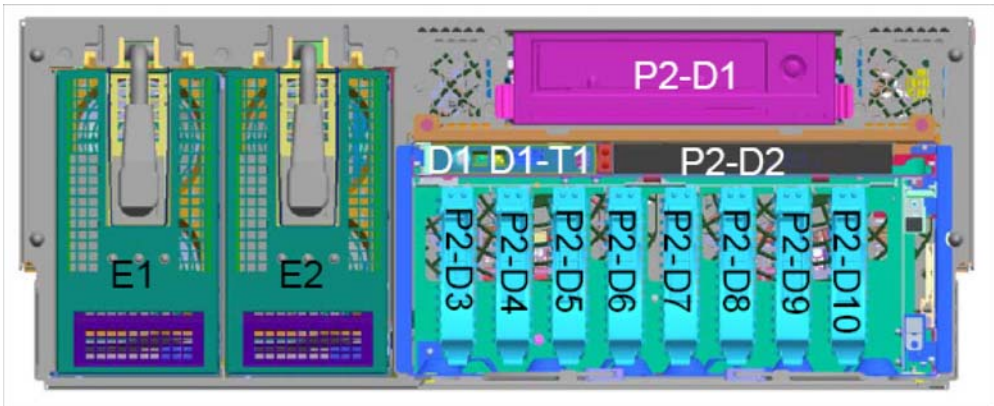
FC#1827 : #1827 is a 0.14M adapter cable with a female 9-pin D-shell connector on each end. #1827 converts a CEC serial port to a SPCN/UPS port, providing an additional port for UPS control. The mode of the port cannot be changed during runtime, a re-IPL is required to change the mode once the adapter cable is connected or disconnected.

14.0 Power and Cooling Requirements for CEC and I/O

Description:

The 8233-E8B has two hot-pluggable power supply bays. The base AC fab will ship with two (2) #7740 AC power supplies. Either AC or DC power supplies can be installed, they can not be mixed. The power supplies are self-cooling and they also provide cooling for the PCI cards and the GX+/GX++ cards.

Diagrams/location IDs:



Components	Physical Location Code	Fault / Identify LED	Comments
Power Supply 1	Un - E1	Yes	Front view - Left Power Supply
Power Supply 2	Un - E2	Yes	Front view - Right Power Supply
Power Supply 1 Internal AC Cord	Un - E1-T1	Yes	Rear view - Top
Power Supply 2 Internal AC Cord	Un - E2-T2	Yes	Rear view - Bottom

Featurized power supplies with max amperage, cooling fans and linecords

F/C	Description	Min.	Max.	Notes
#7740	Auto-Dock AC Power Supply, 100-240v, 1725 Watt	2	2	1,3
#7708	Auto-Dock DC Power Supply, -48V, 1700 Watt	0	2	1,~~2~~

Notes:

1. The 8233-E8B has four hot-pluggable, redundant cooling fans. These fans cool the processor cards, memory RDIMMs, DASD and system electronics. The cooling fans are “base” and do not have feature codes.
2. Base fab will ship with two (2) #7740 power supplies.

AC Specific Rules and Restrictions:

1. Two (2) #7740 Power Supplies must be installed in the 8233-E8B. (On base fab)
2. Since two #7740 Power Supplies are installed, there are no restrictions on the number of processor cards installed in the 8233-E8B.

DC Specific Rules and Restrictions:

1. Existing eCLipz HV8 -48VDC power supply can be used in Atlas. However, this 48VDC power supply does not support the power management interface to Kihei TPMD card. Thus, Active Energy Management is not fully supported with -48VDC power supply. Hardware configuration restriction TBD.
2. DC power supply is not supported when 8233-E8B is being integrated with the 7014-T00, T42 racks on the IBM mfg site (indicated by #4651 to #4666). Therefore DC power supply #7708 should not be selected when 8233-E8B is mounted on the 7014-T00 and T42 rack when the rack specify indicator (from #4651 to #4666) is on the order. However, if 8233-E8B is not integrated with the 7014-T00, T42 racks on the IBM mfg site(indicated by #4650) , customer can order either DC or AC power supply as they prefer.

The following Line Cord features are orderable with 8233-E8B

Feature Code	Description
#6458	PWR CBL, DRWR TO IBM PDU, 14', 200-240V/10A, IEC320/C13, IEC320/C14
#6460	PWR CBL, DRWR TO OEM PDU, 14', 100-127V/15A, IEC320/C13, PT#4
#6469	PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#5
#6470	LINECORD, TO WALL, 6',100-127V/12A, IEC320/C13, PT#4
#6471	LINECORD, TO WALL/OEM PDU, 9' 100-127V/10A, IEC320/C13, PT#70
#6472	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#18
#6473	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#19
#6474	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#23
#6475	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#32
#6476	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#24
#6477	LINECORD, TO WALL/OEM PDU, 9', 200-240V/16A, IEC320/C13, PT#22
#6478	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#25
#6487	LINECORD, TO WALL, 6' 200-240V/15A, IEC320/C13, PT#5
#6488	LINECORD, TO WALL/OEM PDU, 9', 100-127V/15A OR 200-240V/10A, IEC320/C13, PT#2
#6493	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#62
#6494	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#69
#6496	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#66
#6497	LINECORD, TO WALL, 6', 200-240V/10A, IEC320/C13, PT#10
#6651	LINECORD, TO WALL/OEM PDU 9', 100-127V/15A, IEC320/C13, PT#75
#6659	LINECORD, TO WALL/OEM PDU 9', 200-240V/15A, IEC320/C13, PT#76
#6660	PWR CBL, DRWR TO OEM PDU 9',100-127V/15A, IEC320/C13, PT#59
#6665	PWR CBL DRWR TO IBM PDU, 10', 200-240V/10A, IEC320/C13, IEC320/C20, (39Y7938)
#6669	PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#57
#6671	PWR CBL, DRWR TO IBM PDU, 9', 200-240V/10A, IEC320/C13, IEC320/C14
#6672	PWR CBL, DRWR TO IBM PDU, 5', 200-240V/10A, IEC320/C13, IEC320/C14
#6680	LINECORD, TO WALL/OEM PDU, 9', 250/10A, IEC320/C13, PT#6, INSULATED

15.0 Rack and Racking Requirements

15.1 Base System Rack Overview:

1. The 8233-E8B may be integrated into a 19” rack.
2. The marketing configurator should NOT default a rack on the order

15.2 The racking approach for the system is :

1. A 8233-E8B may be ordered without a rack
2. If a rack is desired on the initial system order it should be either a 7014-T00 or 7014-T42
3. #0551 and #0553 are available on MES orders in an additional rack

15.3 Machine Type Rack placement codes

If 8233-E8B is installed in a rack, one of the following placement codes must be specified.

Feature Code	Description	Notes
#4650	INDICATOR - DRAWER NOT FACTORY INTEGRATED	
#4651	INDICATOR FOR RACK #01	
#4652	INDICATOR FOR RACK #02	
#4653	INDICATOR FOR RACK #03	
#4654	INDICATOR FOR RACK #04	
#4655	INDICATOR FOR RACK #05	
#4656	INDICATOR FOR RACK #06	
#4657	INDICATOR FOR RACK #07	
#4658	INDICATOR FOR RACK #08	
#4659	INDICATOR FOR RACK #09	
#4660	INDICATOR FOR RACK #10	
#4661	INDICATOR FOR RACK #11	
#4662	INDICATOR FOR RACK #12	
#4663	INDICATOR FOR RACK #13	
#4664	INDICATOR FOR RACK #14	
#4665	INDICATOR FOR RACK #15	
#4666	INDICATOR FOR RACK #16	

15.4 Rack Drawer Placement Features and Rules

The feature code **#0297** RACK CONTENT SPECIFY: 8233/E8B - 4EIA is required on each rack order when 8233-E8B is placed in the following racks:

- 7014-T00
- 7014-T42
- 7014-S25
- 7014-B42

15.5 Rack Cabling Features and Rules:

TBD

15.6 Rack Power Requirements:

Supported PDU's

Feature Code	Description	Notes
#7109	ADDTNL IPDU, WW, 1-PH 24/48A, 3-PH 16/24A, 12XC13 OUTLETS, UTG0247 INPUT	
#7188	PDU, WW, 1-PH 24/48A, 3-PH 16/24A, 12XC13 OUTLETS, UTG0247 INPUT <7188 ON P>	
#7189	OPTNL PDU, WW, 1-PH 24/48A, 3-PH 16/24A, 6XC19 OUTPUTS, UTG0247 INPUT	2
#7196	OPTNL PDU, US 3-PH 48A, 6XC19 OUTPUTS, FIXED PWR CORD, IEC309 60A PLUG(3P+G)	2

CAT 5 Switch Cables for the Smart Analytics offering

Feature Code	Description	Notes
#1111	CAT5E SWITCH CABLE, 3M, BLUE	1
#1112	CAT5E SWITCH CABLE, 10M, BLUE	1
#1113	CAT5E SWITCH CABLE, 25M, BLUE	1
#1115	CAT5E SWITCH CABLE, 3M, GREEN	1
#1116	CAT5E SWITCH CABLE, 10M, GREEN	1
#1117	CAT5E SWITCH CABLE, 25M, GREEN	1
#1118	CAT5E SWITCH CABLE, 3M, YELLOW	1
#1119	CAT5E SWITCH CABLE, 10M, YELLOW	1
#1121	CAT5E SWITCH CABLE, 25M, YELLOW	1
#ECB0	CAT5E ETHERNET CABLE,0.6M,BLUE	
#ECB2	CAT5E ETHERNET CABLE,1.5M,BLUE	

Notes

1. Requires feature codes #1114 or #0710
2. Announce date for #7189, #7196 is 10/09/2012.

15.7 Rack Cover Features and Rules

Feature Code	Description	Notes
#0599	RACK FILLER PANELS KIT	
#6068	OPTIONAL FRONT DOOR (BLACK/FLAT) FOR 1.8M RACK <6068 ON P>	
#6069	OPTIONAL FRONT DOOR (BLACK/FLAT) FOR 2.0M RACK <6069 ON P>	
#6248*	ACOUSTIC FRONT/REAR DOORS, BLACK IBM, FOR 1.8M RACKS<6248 ON P>	1
#6249*	ACOUSTIC FRONT/REAR DOORS, BLACK IBM, FOR 2.0M RACKS <6249 ON P>	1
#EC01	FRONT DOOR (BLACK/FLAT) FOR RAILHAWK RACK	1
#EC02	REAR DOOR (BLACK/FLAT) FOR RAILHAWK RACK	2
#EC03	SIDE COVER KIT (BLACK) FOR RAILHAWK RACK	2
#EC04	SIDE/SIDE ATTACH KIT (BLACK) FOR RAILHAWK RACK	2
#EC15	HEAT EXCHANGER REAR DOOR FOR RAILHAWK FC RACK #ER05	2

Notes

1. Accoustic front/rear doors should be defaulted on orders.
2. Announce date changed to 02/12/2014.

MISC Features and Rules (additional features):

15.8 Racks

The following table identifies the support disposition for racks

Rack Name	Feature Code	MTM	8233-E8B Disposition	Notes
36U	0551		MES Orderable	1
42U	0553		MES Orderable	1
42U	ER05		MES Orderable	2
11U	0554		Not Supported	
25U	0555		Supported, Not Orderable	
36U		7014-T00	8233-E8B can be integrated into 7014-T00 (via #0297)	
42U		7014-T42	8233-E8B can be integrated into 7014-T42 (via #0297)	
11U		7014-S11	Not Supported	
25U		7014-S25	8233-E8B can be integrated into 7014-S25 (via #0297)	
BC 42U		7014-B42	8233-E8B can be integrated into 7014-B42 (via #0297)	

Notes :

1. **Feature coded racks are for I/O expansion drawers and associated power only.**
2. **#ER05 is due to announce on March 2013.**

15.9 Feature Racks

- **#0551 I/O Rack, 19 inch, 36 EIA**

The following drawers can be mounted in a #0551 rack

Feature Code / MTM	Description	Notes
#5786	EXP-24 (PEARL) (4-EIA units high)	Supported, Not orderable
#5796	PCI Expansion Unit (SUNDANCE-IB) (4-EIA units high, half wide)	requires #7314
#5886	EXP-12 (CHARLOTTE) (2-EIA units high)	
#5802	I/O Expansion Drawer (TRES 19 (4-EIA units high)	
7315-CR4	Hardware Management Console (HMC)	
7316-TF2	IBM 7316-TF2 Rack Mounted Flat Panel Console	Supported, Not orderable
7316-TF3	IBM 7316-TF3 Rack Mounted Flat Panel Console	

Feature Code / MTM	Description	Notes
7316-TF4	IBM 7316-TF4 Rack Mounted Flat Panel Console	
#1108	EXP4200 E'NET SWITCH, 1U, (JUNIPER)	requires #1114 or #0710

Power Distribution Units for #0551 rack

- One (1) to eight (8) Power Distribution Units (PDU) may be specified with the #0551 (four mounted vertically, four mounted horizontally).
- The PDUs may be ordered on initial orders, model upgrades, or on MES orders.
- Each #516x PDU has six IEC 320-C13 power outlets.
- The #7188 PDU has 12 IEC 320-C13 power outlets. Only #7188 PDUs can be mixed with other PDU features, otherwise, no mixing of PDU types/features within a #0551 or on a system is allowed.

The following PDUs are supported for #0551 rack

Feature Code	Description	Notes
#7188	Power Distribution Unit 1 Phase NEMA	1
#7109	Power Distribution Unit 1 Phase NEMA	2

Note 1: The #7188 is the replacement for the #5160, #5161, #5162 & #5163 PDUs.
Note 2: The #7109 is an intelligent PDU and a replacement for the #7188 PDU.

The following line cords are supported on the #7188:

Feature Code	Description	Notes
#6489	Line Cord, to wall, 14 Ft, 3PH/24A, UTG0247, IEC309 32A, 3P+N+G	
#6491	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 63A, P+N+G	
#6492	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 60A, 2P+G	
#6653	Line Cord, to wall, 14 Ft, 3PH/16A, UTG0247, IEC309 16A, 3P+N+G	
#6654	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#12	
#6655	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#40	
#6656	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, IEC309 32A, P+N+G	
#6657	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#PDL	
#6658	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#KP	
#6671	Drwr to IBM PDU, 9 Ft, 250V/10a, C13/C14	
#6672	Drwr to IBM PDU, 5 Ft, 250V/10a, C13/C14	

The following line cords are supported on the #7109:

Feature Code	Description	Notes
#6489	Line Cord, to wall, 14 Ft, 3PH/24A, UTG0247, IEC309 32A, 3P+N+G	
#6491	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 63A, P+N+G	
#6492	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 60A, 2P+G	
#6653	Line Cord, to wall, 14 Ft, 3PH/16A, UTG0247, IEC309 16A, 3P+N+G	
#6654	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#12	

Feature Code	Description	Notes
#6655	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#40	
#6656	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, IEC309 32A, P+N+G	
#6657	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#PDL	
#6658	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#KP	
#6671	Drwr to IBM PDU, 9 Ft, 250V/10a, C13/C14	
#6672	Drwr to IBM PDU, 5 Ft, 250V/10a, C13/C14	

NOTES:

3. PDU features can be ordered without a #0551 rack being ordered or present on the system.
4. Racked units plugging into a PDU will require a PDU line cord (#1422 or #6458).

The following features may be ordered for installation on/with a #0551 (maximum one each per #0551):

Feature Code	Description	Notes
#0599	Rack Filler Panels Kit (kit includes three 1u fillers and one 3u filler)	
#6068	Optional Front Door (Flat/Black)	
#6248	Acoustic Front/Rear Doors	
#6580	Optional Rack Security Kit	
#7840	Side/Side Attach Kit (Black)(Support only, not orderable)	
#7841	Ruggedize Kit (Brace, Bolt Down Hardware, Metal Filler Panels)(Support only, not orderable)	

The following features may be ordered for use with a #0551:

Feature Code	Description	Notes
#6586	Modem Tray	

- **#0553 I/O Rack, 19 inch, 42 EIA (2m Rack)**

The following drawers can be mounted in a #0553 rack:

Feature Code	Description	Notes
#5786	EXP 24 (PEARL) (4-EIA units high)	Supported, Not orderable
#5796	PCI Expansion Unit (SUNDANCE-IB) (4-EIA units high, half wide) (requires #7314)	
#5886	EXP 12 (CHARLOTTE) (2-EIA units high)	
#5802	I/O Expansion Drawer (TRES 19 (4-EIA units high)	
MT.7315-CR4	Hardware Management Console (HMC)	
MT.7316-TF2	IBM 7316-TF2 Rack Mounted Flat Panel Console (supported not orderable)	
MT.7316-TF3	IBM 7316-TF3 Rack Mounted Flat Panel Console	
#1108	EXP4200 E'NET SWITCH, 1U, (JUNIPER)	requires #1114 or #0710

Power Distribution Units for #0553 Rack

1. One (1) to nine (9) Power Distribution Units may be specified with the #0553 (four mounted vertically, five mounted horizontally).
2. The PDUs may be ordered on initial orders, model upgrades, or on MES orders.
3. The #7188/#7109 PDU has 12 IEC 320-C13 power outlets.
4. Only #7188 and #7109 PDUs can be mixed with other PDU features, otherwise, no mixing of PDU types/features within a #0553 or on a system is allowed. The following PDUs are supported:

The following PDUs are supported for #0553 rack

Feature Code	Description	Notes
#7188	Power Distribution Unit 1 Phase NEMA	1
#7109	Power Distribution Unit 1 Phase NEMA	2

Note 1: The #7188 is the replacement for the #5160, #5161, #5162 & #5163 PDUs.
Note 2: The #7109 is an intelligent PDU and a replacement for the #7188 PDU.

The following line cords are supported on the #7188:

Feature Code	Description	Notes
#6489	Line Cord, to wall, 14 Ft, 3PH/24A, UTG0247, IEC309 32A, 3P+N+G	
#6491	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 63A, P+N+G	
#6492	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 60A, 2P+G	
#6653	Line Cord, to wall, 14 Ft, 3PH/16A, UTG0247, IEC309 16A, 3P+N+G	
#6654	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#12	
#6655	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#40	
#6656	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, IEC309 32A, P+N+G	
#6657	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#PDL	
#6658	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#KP	
#6671	Drwr to IBM PDU, 9 Ft, 250V/10a, C13/C14	
#6672	Drwr to IBM PDU, 5 Ft, 250V/10a, C13/C14	

The following line cords are supported on the #7109:

Feature Code	Description	Notes
#6489	Line Cord, to wall, 14 Ft, 3PH/24A, UTG0247, IEC309 32A, 3P+N+G	
#6491	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 63A, P+N+G	
#6492	Line Cord, to wall, 14 Ft, 200 to 240V/48a, UTG0247, IEC309 60A, 2P+G	
#6653	Line Cord, to wall, 14 Ft, 3PH/16A, UTG0247, IEC309 16A, 3P+N+G	
#6654	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#12	
#6655	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#40	
#6656	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, IEC309 32A, P+N+G	
#6657	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#PDL	
#6658	Line Cord, to wall, 14 Ft, 200 to 240V/24a, UTG0247, PT#KP	
#6671	Drwr to IBM PDU, 9 Ft, 250V/10a, C13/C14	
#6672	Drwr to IBM PDU, 5 Ft, 250V/10a, C13/C14	

NOTES:

1. PDU features can be ordered without a #0551 rack being ordered or present on the system.

2. Racked units plugging into a PDU will require a PDU line cord (#1422 or #6458).

The following features may be ordered for installation on/with a #0551 (maximum one each per #0551):

Feature Code	Description	Notes
#0599	Rack Filler Panels Kit (kit includes three 1u fillers and one 3u filler)	
#6068	Optional Front Door (Flat/Black)	
#6248	Acoustic Front/Rear Doors	
#6580	Optional Rack Security Kit	
#7840	Side/Side Attach Kit (Black)(Support only, not orderable)	
#7841	Ruggedize Kit (Brace, Bolt Down Hardware, Metal Filler Panels)(Support only, not orderable)	

The following features may be ordered for use with a #0551:

Feature Code	Description	Notes
#6586	Modem Tray	

Rack / Tower related

Feature Code	Description	Notes
#6068	OPTIONAL FRONT DOOR (BLACK/FLAT) FOR 1.8M RACK <6068 ON P>	
#6069	OPTIONAL FRONT DOOR (BLACK/FLAT) FOR 2.0M RACK <6069 ON P>	
#6248	ACOUSTIC FRONT/REAR DOORS, BLACK IBM, FOR 1.8M RACKS<6248 ON P>	
#6249	ACOUSTIC FRONT/REAR DOORS, BLACK IBM, FOR 2.0M RACKS <6249 ON P>	
#6489	LINECORD, PDU TO WALL, 14', 3PH/32A, UTG0247, IEC309 3P+N+G <6489 ON P>	
#6491	LINECORD, PDU TO WALL, 14', 200-240V/48A, UTG0247, IEC309 63A P+N+G <6491 ON P>	
#6492	LINECORD, PDU TO WALL, 14', 200-240V/48A, UTG0247, IEC309 60A 2P+G <6492 ON P>	
#6580	OPTIONAL RACK SECURITY KIT <6580 ON P>	
#6586	MODEM TRAY, 19" RACKS, 1U <6586 on p>	
#6653	LINECORD, PDU TO WALL, 14', 3PH/16A, UTG0247, IEC309 16A 3P+N+G <6653 ON P>	
#6654	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#12 <6654 ON P>	
#6655	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#40 <6655 ON P>	
#6656	LINECORD, PDU TO WALL, 14', 200-240V/32A, UTG0247, IEC309 P+N+G <6656 ON P>	
#6657	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#PDL <6657 ON P>	
#6658	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#KP <6658 ON P>	
#7188	PDU, WW, 1-PH 24/48A, 3-PH 16/24A, 12XC13 OUTLETS, UTG0247 INPUT <7188 ON P>	

- **#ER05 2.0M FLEX RACK (RAILHAWK)**

Another option is for racking is the #ER05 (RAILHAWK) rack which is a slightly narrower rack that fits within a standard 2x2 foot flooring panel. Current information and details on the RAILHAWK and what features it supports can be found at:

RailHawk (7953-94Y) Rack Common Chapter

Author: Aaron Wang

Document Version: 0.4

Document Version Date: 06/05/13

The announce date of ER05 (7953-94Y) Rack is ~~10/08/13~~ 10/07/13.

Date	Version	Description of Changes	Author
08/23/12	0.0	- Initial version is realised.	Aaron Wang
12/05/12	0.1	- Add EC01	Aaron Wang
12/18/12	0.2	- Move announce date of 94Y to 10/08/13.	Aaron Wang
03/23/13	0.3	- Add no-mixing linecord rules of PDUs to 94X and 94Y.	Aaron Wang
06/05/13	0.4	- Changed the announce date of 94Y rack to 10/07/13. - Removed 7189 and 7196 from this common chapter. - Addd ELC0 and relevant rules.	Aaron Wang

The following PDUs are supported:

Description	FC	Min	Max	Notes
Note: The PDU in the RailHawk Rack is optional unlike the T00 and T42 racks				
~~OPTNL PDU, WW, 1-PH 24/48A, 3-PH 16/24A, 6XC19 OUTPUTS, UTG0247 INPUT~~	~~7189~~	~~0~~	~~No Max~~	~~1~~
~~OPTNL PDU, US 3-PH 48A, 6XC19 OUTPUTS, FIXED PWR CORD, IEC309 60A PLUG(3P+G)~~	~~7196~~	~~0~~		
PDU, WW, 1-PH 24/48A, 3-PH 16/24A, 12XC13 OUTLETS, UTG0247 INPUT <7188 ON P>	7188	0		
ADDTNL IPDU, WW, 1-PH 24/48A, 3-PH 16/24A, 12XC13 OUTLETS, UTG0247 INPUT	7109	0		
Rack PDU to Wall Power Cables for ~~7189~~, 7188/7109 PDUs. Note: The ~~7196 PDU has a fixed linecord~~.				
LINECORD, PDU TO WALL, 14', 3PH/32A, UTG0247, IEC309 3P+N+G <6489 ON P> , 380-415V	6489	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 200-240V/48A, UTG0247, IEC309 63A P+N+G <6491 ON P>	6491	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 200-240V/48A, UTG0247, IEC309 60A 2P+G <6492 ON P>	6492	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 3PH/16A, UTG0247, IEC309 16A 3P+N+G <6653 ON P> , 380-415V	6653	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 3PH/32A, UTG0247, PDL 56P532, AUSTRAILIA<6667 ON P> , 380-415V	6667	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#12	6655	0	1 per 7188/7109/ ~~7189~~ PDU	

Description	FC	Min	Max	Notes
LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#40	6654	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 200-240V/32A, UTG0247, IEC309 P+N+G	6656	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#PDL	6657	0	1 per 7188/7109/ ~~7189~~ PDU	
LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#KP	6658	0	1 per 7188/7109/ ~~7189~~ PDU	

NOTE:

1. *There are max 12 PDUs that needs to be enforced. 1U of rack space is consumed for each PDU ordered beyond four (6). This means that the EIA capacity of the rack is reduced by the number of PDUs ordered beyond four (6).*
2. ~~*PDUs are supported for both 7953-94X and 7953-94Y.*~~
3. ~~*The max quantity of 7196 is 4.*~~
4. *All PDUs on a rack order must have the same linecord from the PDU to the wall.*
5. *On future MES orders the selected PDU to Wall cord can be different than what was chosen on the initial order, but all must be the same on the MES order.*
6. *ELC0 is ordered with every vertical PDU for 94Y rack.*
   ELC0 - 0.38M, WW, UTG to UTG INTERNAL JUMPER CORD (PIGTAIL)

FC 6654,6655,6656,6657 and 6658 are announced for 7953-94Y.

The following features may be ordered for installation on/with a ER05 :

Base, Feature or MTM	Description	Feature Quantity	Placement	FBM
Base	Base 42U Rack with Front Door	N/A	N/A	
Must pick one of the following Rear Doors. Feature #EC02 will be the default rear door. If EC15 is in the 94X order then a 1164-95X (heat exchanger door) must be added to the order				
EC01	FRONT DOOR (BLACK/FLAT) FOR RAILHAWK RACK	1	Front of Rack	
EC02	REAR DOOR (BLACK/FLAT) FOR RAILHAWK RACK	1	Back of Rack	
EC15	HEAT EXCHANGER REAR DOOR	1	Back of Rack	
Side covers are optional. Feature #EC03 will be the default side cover kit.-				
EC03	SIDE COVER KIT (BLACK) FOR RAILHAWK RACK	1	Sideof Rack	

Base, Feature or MTM	Description	Feature Quantity	Placement	FBM
EC04	SIDE/SIDE ATTACH KIT (BLACK) FOR RAILHAWK RACK	1	Side of Rack	

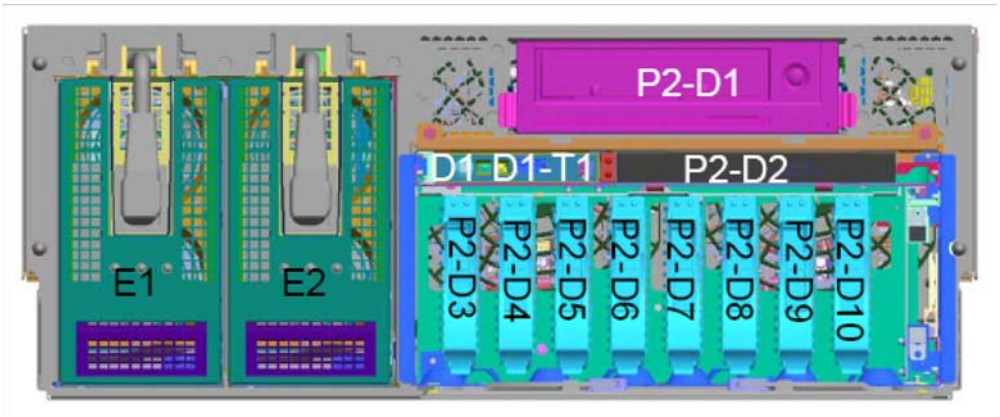
Note:
When FC EC04 is ordered, EC03 will be optional.
When the Dagger Heat Exchanger door (1164-95X) is chosen, EC03 need to be ordered.
If the Dagger Heat Exchanger door(1164-95X) and EC04 are both chosen, EC03 must be ordered so that air can go through the Dagger.

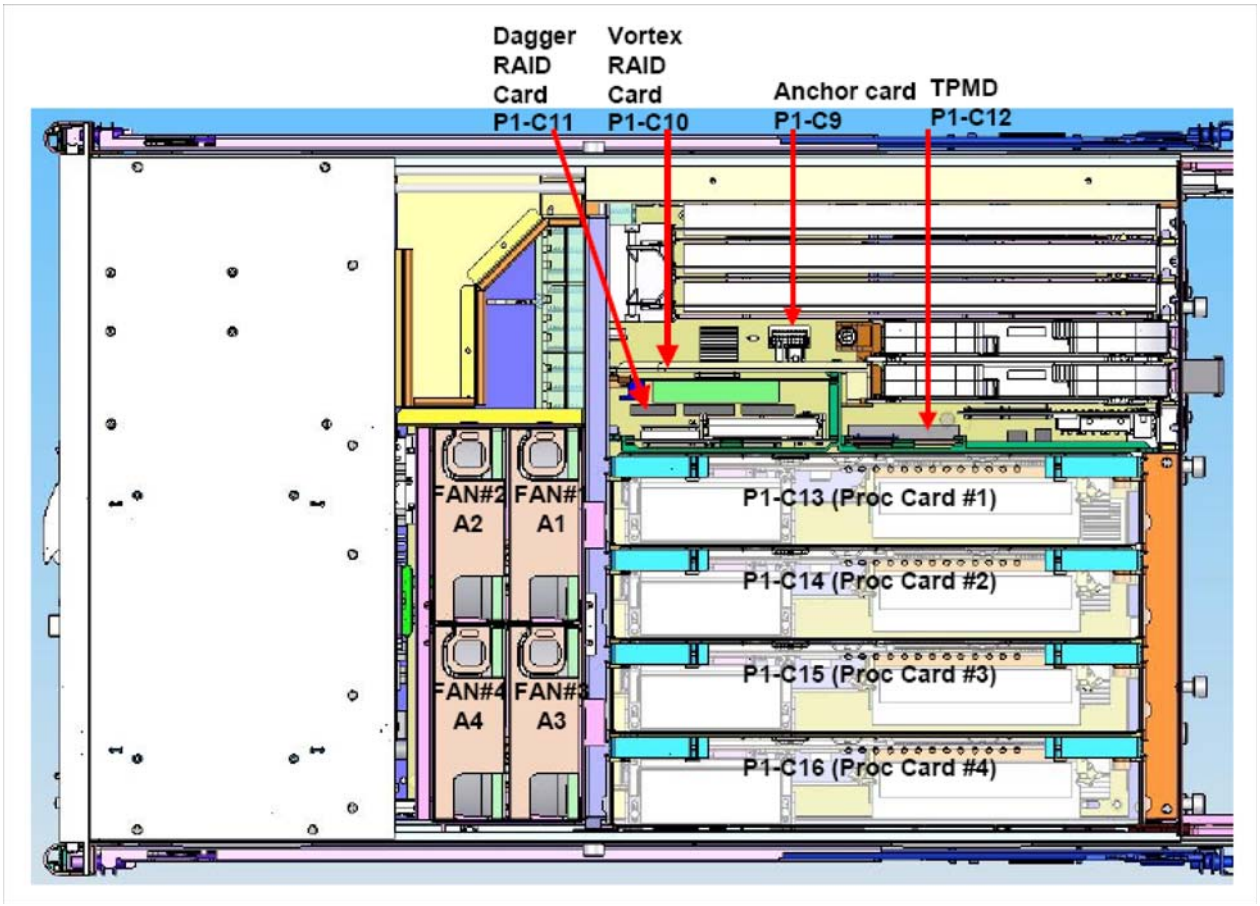
The following features may be ordered for use with a RailHawk rack (ER05):

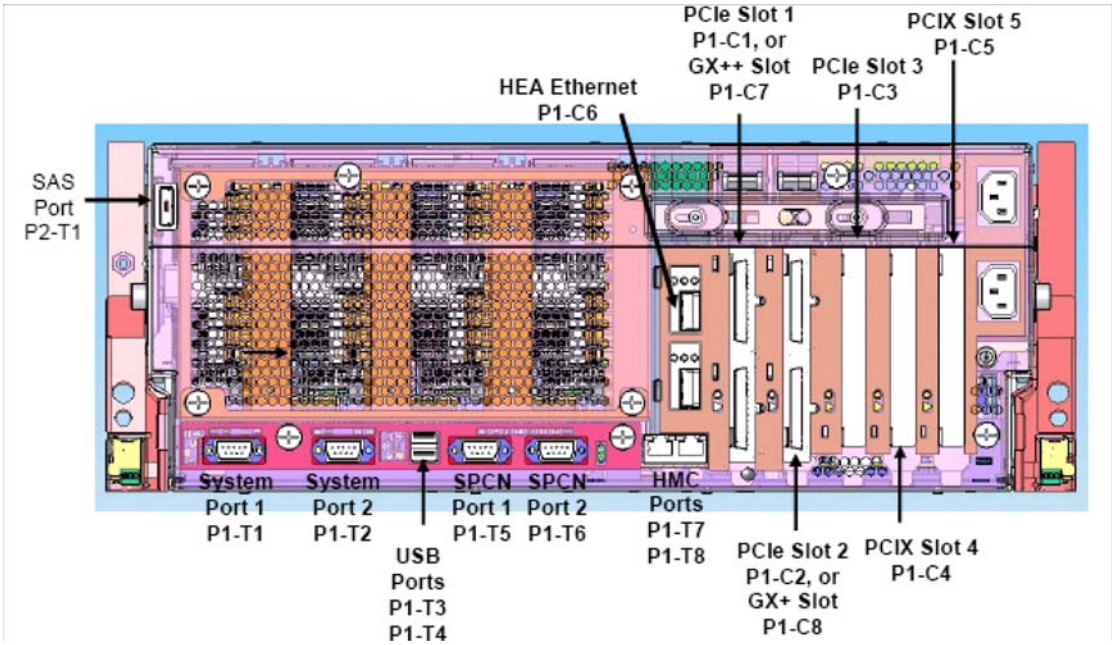
FC	Description
0373	UPS Factory Integration Specify
0374	HMC Factory Integration Specify
0375	Display Factory Integration Specify
0376	Reserve 1 EIA of Rack Space for UPS
0377	Reserve 1 EIA of Rack Space for HMC
0378	Reserve 1 EIA of Rack Space for Display
6586	Modem Tray
7118	Temperature/Humidy PDU Probe
0599	Rack Filler Panels Kit

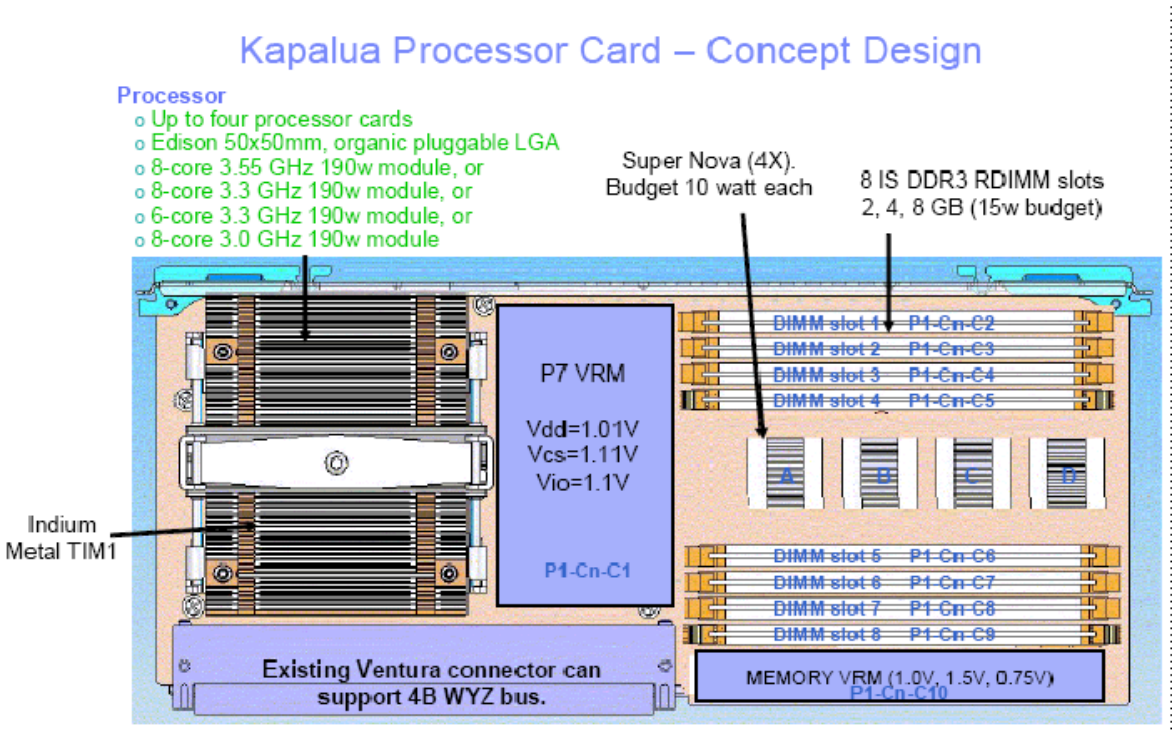
16.0 Location codes

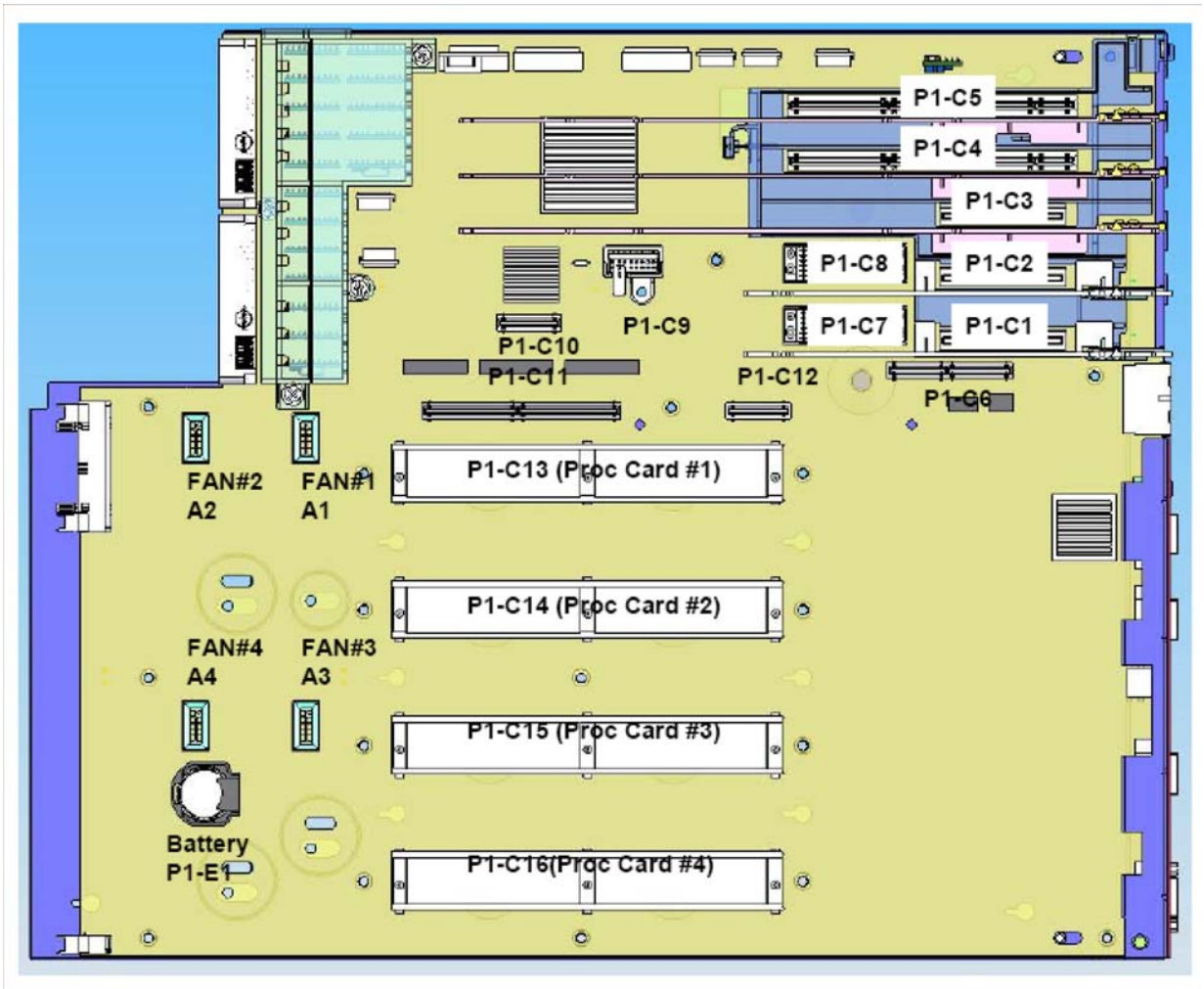
Table and drawing below list the physical location codes based on the latest mechanical design of Atlas HV32.






PCIe Slot 1
P1-C1, or
GX++ Slot
P1-C7
PCIe Slot 3
P1-C3
PCIX Slot 5
P1-C5
HEA Ethernet
P1-C6
SAS
Port
P2-T1
System
Port 1
P1-T1
System
Port 2
P1-T2
USB
Ports
P1-T3
P1-T4
SPCN
Port 1
P1-T5
SPCN
Port 2
P1-T6
HMC
Ports
P1-T7
P1-T8
PCIe Slot 2
P1-C2, or
GX+ Slot
P1-C8
PCIX Slot 4
P1-C4


Kapalua Processor Card – Concept Design
Processor
o Up to four processor cards
o Edison 50x50mm, organic pluggable LGA
o 8-core 3.55 GHz 190w module, or
o 8-core 3.3 GHz 190w module, or
o 6-core 3.3 GHz 190w module, or
o 8-core 3.0 GHz 190w module
Super Nova (4X).
Budget 10 watt each
8 IS DDR3 RDIMM slots
2, 4, 8 GB (15w budget)
Indium
Metal TIM1
P7 VRM
Vdd=1.01V
Vcs=1.11V
Vio=1.1V
P1-Cn-C1
DIMM slot 1 P1-Cn-C2
DIMM slot 2 P1-Cn-C3
DIMM slot 3 P1-Cn-C4
DIMM slot 4 P1-Cn-C5
A
B
C
D
DIMM slot 5 P1-Cn-C6
DIMM slot 6 P1-Cn-C7
DIMM slot 7 P1-Cn-C8
DIMM slot 8 P1-Cn-C9
Existing Ventura connector can
support 4B WYZ bus.
MEMORY VRM (1.0V, 1.5V, 0.75V)
P1-Cn-C10



Converged Location Codes			
Components	**Physical Location Code**	**Fault / Identify LED**	**Comments**
CEC Enclosure	Uffff.ccc.sssssss		ffff.ccc: Enclosure Feature Code sssssss:Enclosue Serial Number
P7 Processor Card 1	Un-P1-C13	Yes	1st slot from the middle of chassis
DIMM Slot 1 on Proc Card 1	Un-P1-C13-C2	Yes	1st of the farthest slot from Ventura
DIMM Slot 2 on Proc Card 1	Un-P1-C13-C3	Yes	2nd of the farthest slot from Ventura
DIMM Slot 3 on Proc Card 1	Un-P1-C13-C4	Yes	3rd of the farthest slot from Ventura
DIMM Slot 4 on Proc Card 1	Un-P1-C13-C5	Yes	4th of the farthest slot from Ventura
DIMM Slot 5 on Proc Card 1	Un-P1-C13-C6	Yes	5th of the farthest slot from Ventura
DIMM Slot 6 on Proc Card 1	Un-P1-C13-C7	Yes	6th of the farthest slot from Ventura
DIMM Slot 7 on Proc Card 1	Un-P1-C13-C8	Yes	7th of the farthest slot from Ventura
DIMM Slot 8 on Proc Card 1	Un-P1-C13-C9	Yes	8th of the farthest slot from Ventura
P7 Processor Card 2	Un-P1-C14	Yes	2st slot from the middle of chassis

DIMM Slot 1 on Proc Card 2	Un-P1-C14-C2	Yes	1st of the farthest slot from Ventura
DIMM Slot 2 on Proc Card 2	Un-P1-C14-C3	Yes	2nd of the farthest slot from Ventura
DIMM Slot 3 on Proc Card 2	Un-P1-C14-C4	Yes	3rd of the farthest slot from Ventura
DIMM Slot 4 on Proc Card 2	Un-P1-C14-C5	Yes	4th of the farthest slot from Ventura
DIMM Slot 5 on Proc Card 2	Un-P1-C14-C6	Yes	5th of the farthest slot from Ventura
DIMM Slot 6 on Proc Card 2	Un-P1-C14-C7	Yes	6th of the farthest slot from Ventura
DIMM Slot 7 on Proc Card 2	Un-P1-C14-C8	Yes	7th of the farthest slot from Ventura
DIMM Slot 8 on Proc Card 2	Un-P1-C14-C9	Yes	8th of the farthest slot from Ventura
P7 Processor Card 3	Un-P1-C15	Yes	3rd slot from the middle of chassis
DIMM Slot 1 on Proc Card 3	Un-P1-C15-C2	Yes	1st of the farthest slot from Ventura
DIMM Slot 2 on Proc Card 3	Un-P1-C15-C3	Yes	2nd of the farthest slot from Ventura
DIMM Slot 3 on Proc Card 3	Un-P1-C15-C4	Yes	3rd of the farthest slot from Ventura
DIMM Slot 4 on Proc Card 3	Un-P1-C15-C5	Yes	4th of the farthest slot from Ventura
DIMM Slot 5 on Proc Card 3	Un-P1-C15-C6	Yes	5th of the farthest slot from Ventura
DIMM Slot 6 on Proc Card 3	Un-P1-C15-C7	Yes	6th of the farthest slot from Ventura
DIMM Slot 7 on Proc Card 3	Un-P1-C15-C8	Yes	7th of the farthest slot from Ventura
DIMM Slot 8 on Proc Card 3	Un-P1-C15-C9	Yes	8th of the farthest slot from Ventura
P7 Processor Card 4	Un-P1-C16	Yes	4th slot from the middle of chassis
DIMM Slot 1 on Proc Card 4	Un-P1-C16-C2	Yes	1st of the farthest slot from Ventura
DIMM Slot 2 on Proc Card 4	Un-P1-C16-C3	Yes	2nd of the farthest slot from Ventura
DIMM Slot 3 on Proc Card 4	Un-P1-C16-C4	Yes	3rd of the farthest slot from Ventura
DIMM Slot 4 on Proc Card 4	Un-P1-C16-C5	Yes	4th of the farthest slot from Ventura
DIMM Slot 5 on Proc Card 4	Un-P1-C16-C6	Yes	5th of the farthest slot from Ventura
DIMM Slot 6 on Proc Card 4	Un-P1-C16-C7	Yes	6th of the farthest slot from Ventura
DIMM Slot 7 on Proc Card 4	Un-P1-C16-C8	Yes	7th of the farthest slot from Ventura
DIMM Slot 8 on Proc Card 4	Un-P1-C16-C9	Yes	8th of the farthest slot from Ventura
Power Supply 1	Un - E1	Yes	Front view - Left Power Supply
Power Supply 2	Un - E2	Yes	Front view - Right Power Supply
Power Supply 1 Internal AC Cord	Un - E1-T1	Yes	Rear view - Top
Power Supply 2 Internal AC Cord	Un - E2-T2	Yes	Rear view - Bottom
Fan 1 for Proc card	Un - A1	Yes	Front view - Left & Rear side Fan
Fan 2 for Proc card	Un - A2	Yes	Front view - Left & Front side Fan
Fan 3 for Proc card	Un - A3	Yes	Front view - Rithg & Rear side Fan
Fan 4 for Proc card	Un - A4	Yes	Front view - Right & Front side Fan
System Planar	Un - P1	Yes	
DASD & Media Backplane	Un - P2	Yes	Behind the DASDs
Dagger RAID base Card	Un - P1-C11	Yes	Front view - left side of the 1st Proc card.
Vortex RAID aux Card	Un - P1-C10	Yes	Front view - left side of the Dagger RAID base card
RAID Card Battery	Un - P1-C10-E1	No	Plug into Vortex RAID aux card.
Anchor Card	Un - P1-C9	Yes	Front view - In front of 2nd PCI slot
TPMD Card	Un - P1-C12	Yes	Front view - behind the Dagger RAID card.
PCIX 2.0 Slot 5 Card	Un - P1-C5	Yes	Rear view- 5th slot from the center. P5IOC2 PCIX-PHB0
PCIX 2.0 Slot 4 Card	Un - P1-C4	Yes	Rear view- 4th slot from the center. P5IOC2 PCIX-PHB1
PCIe x8 Slot 3 Card	Un - P1-C3	Yes	Rear view- 3rd slot from the center. P5IOC2 PCIE-PHB3
PCIe x8 Slot 2 Card	Un - P1-C2	Yes	Rear view- 2nd slot from the center. P5IOC2 PCIE-PHB1
PCIe x8 Slot 1 Card	Un - P1-C1	Yes	Rear view- 1st slot from the center. P5IOC2 PCIE-PHB0
GX+ Slot Adapter	Un - P1-C8	Yes	Rear view- 2nd slot from the center. P5IOC2 Pass-Thru slot
GX+ Slot Adapter Port 1 (Valery IB-1)	Un - P1-C8-T1	No	Top connector
GX+ Slot Adapter Port 2 (Valery IB-1)	Un - P1-C8-T2	No	Bottom connector
GX++ Slot Adapter	Un - P1-C7	Yes	Rear view-1st slot from the center . 2nd P6 GX Bus.
GX++ Slot Adapter Port 1	Un - P1-C7-T1	No	Top connector

GX++ Slot Adapter Port 2	Un - P1-C7-T2	No	Bottom connector
P7 VRM - Vdd	Un - P1-C13-C1	Yes	Processor Card 1 P7 VRM
P7 VRM - Vcs			
P7 VRM - Vio			
P7 VRM - Vdd	Un - P1-C14-C1	Yes	Processor Card 2 P7 VRM
P7 VRM - Vcs			
P7 VRM - Vio			
P7 VRM - Vdd	Un - P1-C15-C1	Yes	Processor Card 3 P7 VRM
P7 VRM - Vcs			
P7 VRM - Vio			
P7 VRM - Vdd	Un - P1-C16-C1	Yes	Processor Card 4 P7 VRM
P7 VRM - Vcs			
P7 VRM - Vio			
Memory VRM - Vcc	Un - P1-C13-C10	Yes	Processor Card 1 Memory VRM
Memory VRM - Vdimm			
Memory VRM - Vtt			
Memory VRM - Vcc	Un - P1-C14-C10	Yes	Processor Card 2 Memory VRM
Memory VRM - Vdimm			
Memory VRM - Vtt			
Memory VRM - Vcc	Un - P1-C15-C10	Yes	Processor Card 3 Memory VRM
Memory VRM - Vdimm			
Memory VRM - Vtt			
Memory VRM - Vcc	Un - P1-C16-C10	Yes	Processor Card 4 Memory VRM
Memory VRM - Vdimm			
Memory VRM - Vtt			
Ethernet Card	Un - P1-C6	Yes	Between Proc card and PCI/GX+ slot.
Quad 1 Gbit Ethernet Port 1	Un - P1-C6-T1	No	Top RJ45 connector
Quad 1 Gbit Ethernet Port 2	Un - P1-C6-T2	No	Middle top RJ45 connector
Quad 1 Gbit Ethernet Port 3	Un - P1-C6-T3	No	Middle bottom RJ45 connector
Quad 1 Gbit Ethernet Port 4	Un - P1-C6-T4	No	Bottom RJ45 connector
Dual 10 Gbit Ethernet Port 1	Un - P1-C6-T1	No	Top SR connector
Dual 10 Gbit Ethernet Port 2	Un - P1-C6-T2	No	Bottom SR connector
Embedded USB - Front Port	Un -D1-T1	No	Front connector on Op-panel
Embedded USB - Rear Port 1	Un -P1-T3	No	Top connector
Embedded USB - Rear Port 2	Un -P1-T4	No	Bottom connector
External SAS Port	Un - P2-T1	No	Available with High Function DASD backplane or SFF DASD backplane.
System Port 1	Un - P1-T1	No	Rear view- Serial left connector
System Port 2	Un - P1-T2	No	Rear view- Serial right connector
HMC 1 Connector	Un - P1-T7	No	Rear view- HMC connector #1 (left)
HMC 2 Connector	Un - P1-T8	No	Rear view- HMC connector #2 (right)
SPCN Port 1	Un - P1-T5	No	Rear view- SPCN left connector
SPCN Port 2	Un - P1-T6	No	Rear view- SPCN right connector
Obsidian controller	Un - P1-T9	No	Obsidian controller is internal use only.
RiscWatch Connector		No	RiscWatch conn is internal use only.
SFF DASD 1	Un - P2-D3	Yes	Front view - left 1
SFF DASD 2	Un - P2-D4	Yes	Front view - left 2
SFF DASD 3	Un - P2-D5	Yes	Front view - left 3
SFF DASD 4	Un - P2-D6	Yes	Front view - left 4
SFF DASD 5	Un - P2-D7	Yes	Front view - left 5
SFF DASD 6	Un - P2-D8	Yes	Front view - left 6

SFF DASD 7	Un - P2-D9	Yes	Front view - left 7
SFF DASD 8	Un - P2-D10	Yes	Front view - left 8
Half High SAS Tape Device	Un - P2-D1	No	Media Bay #1 Device
Slim DVD	Un - P2-D2	No	Media Bay #2 Device
Op-panel	Un - D1	No	Plug into DASD cage.
Temperature Sensor	Un - D1	No	On Op-panel
Time-of-Date (TOD)	Un - P1	No	
Battery	Un - P1-E1	No	Underneath FANs
Machine Location Code	Utttt.mmm.sssssss	No	tttt: System Machine type mmm: System Model Number sssssss: System Serial Number
Um is Utttt.mmm.sssssss			
Platform Firmware	Um -Y1	No	
System	Um	No	

17.0 MTM Conversions and Processor Upgrades

Currently no conversions or model upgrades are available.

Machine type conversions into 8233-E8B : None

Machine type conversions out of 8233-E8B : None

Model conversions into 8233-E8B : None

Model conversions out of 8233-E8B : None

NOTE:

1. There is no conversion from P6 processor feature and memory feature to P7 processor feature and memory feature on Atlas, respectively.

MES Upgrades

The table below describes the supported list of MES upgrades and its characteristics. In general, these MES upgrades consist of a box of parts to be installed into the server. Some of these upgrades may be installed by the customer. Other upgrades may require an IBM CE, or IBM Business Partner to handle the installation process depending on the parts complexity.

MES	Description	Add or Replace	Concurrent Upgrade	Customer Installable
Processor	Kapalua processor cards	Both	NO	YES
Memory DIMM	IS Memory DIMM	Both	NO	YES
PCI Adapters	See list of supported adapters	Both	YES	YES
GX Adapters	Guardian or Valery IB	Both	NO	YES
HEA Cards	Titoy or Sergei	Replace	NO	YES
Disks	SFF HDD or SSD	Both	YES	YES
DVD Device	Optical Media Device	Replace	YES	YES
Tape Drive	DAT or LTO	Add	NO	YES
RAID Cards	Dagger, Vortex	Add	NO	YES
I/O Drawer	Tres-19 drawer	Add	YES	YES
I/O Drawer	Sundance IB drawer	Add	YES	YES

Processor upgrades within 8233-E8B :

NOTE:

1. Customers will be allowed to remove all existing processor cards and add in different processor card(s) in their place.
2. Make sure that the newly added processors are of the same speed and type. Processor card speeds cannot be mixed.
3. Customers are entitled to keep all removed/replaced processor cards.
4. There won't be any trade-ins of old processors or upgrades from other systems into 8233-E8B.
5. #EPA1, #EPA2, #EPA3 and #EPA4 processors require a minimum firmware level (machine code) of FW AL730_035_035

This section will be a common chapter maintained by the requirements team. The owner will work with the planners to determine agreed to upgrade plan.

This will include:

1. All the “from” models and “to” models for this system.
2. All supported processor upgrades/migrations/conversions.
3. All supported processor activations upgrades/migrations/conversions.
4. All supported memory upgrades/migrations/conversions.
5. All supported memory activation upgrades/migrations/conversions
6. List of all must remove features in the “from” models.
7. List of all Record Purpose Only Features changes.
8. List of all supported feature conversions.
9. List of all remove and convert features.

The placement rules for the “to” system are identical to those already documented in the bi.

18.0 Miscellaneous

This section is for special feature codes that do not fit well on any of the above sections but are key to clarify placement or configurations. This is up to the discretion of the build instruction offer but can include items such as partition specify codes and special/edition configurations

F/C	Description	Max	Comment
0002	SDI ORDER INDICATOR - ISU		Orders with #0002 on them are supported by e-config. These orders are used to increase the stock of our SDI partners. There are leagal contracts and processes that force SDI ISUs to conform to the ISU defintions. This specify turns off minimum system MAT/COV checking for an order.
0003	BULK MES ORDER INDICATOR - SDI/OEM		Orders with #0003 on them are not supported by e-config. Used by SDI Business Partners to order MES features in quantities. This specify turns off system maximum MAT/COV checking for an order.
0004	BULK MES ORDER INDICATOR - NON SDI/OEM		Orders with #0004 on them are not supported by e-config. Used by customers to order MES features in quantities. This specify turns off system maximum MAT/ COV checking for an order.
0005	SDI BILLING ADJUSTMENT INDICATOR, US		
0006	OEM EMPTY BOX INDICATOR		
0009	SDI ORDER INDICATOR - DO NOT BUILD		
0010	QTY=1, CSC BILLING UNIT		For the integrated solution Sybase mCommerce Solution on Power servers, the effort in CSC is sized as two billable units. So when an order is placed for the Sybase mCommerce Solution, users would add **quantity 2 of FC 0010** to the order to cover the cost of the work performed in CSC.
0011	QTY=10, CSC BILLING UNIT		
~~0032~~	~~EXTERNAL MODEM~~	~~384~~	~~• Required if an external high speed modem is to be shipped with the system.~~ ~~• This feature code cannot be ordered in the following countries: Albania, Angola, Armenia, Bahamas, Belize, Brunei, Ghana, Kenya, Macedonia, Moldavia, Nigeria, Rep Dominica, Santa Lucia, Serbia, Trinidad & Tobago, Zambia.~~ ~~• No AIX support~~ ~~• Initial order maximum: 250~~

~~0034~~	~~ALTERNATE EXTERNAL MODEM (UK AND IRELAND)~~	~~384~~	~~• This specify feature provides another external modem, in addition to the primary external modem (#0032).~~ ~~• This feature code cannot be ordered in the following countries: Albania, Angola, Armenia, Bahamas, Belize, Brunei, Ghana, Kenya, Macedonia, Moldavia, Nigeria, Rep Dominica, Santa Lucia, Serbia, Trinidad & Tobago, Zambia.~~ ~~• No AIX support~~ ~~• Initial order maximum: 250~~
0040	MIRRORED SYSTEM DISK LEVEL		
0041	DEVICE PARITY PROTECTION-ALL		
0043	MIRRORED SYSTEM BUS LEVEL		
0047	DEVICE PARITY RAID-6 ALL		
0098	SPECIAL MFG OPS INDICATOR, EMEA		
0205	RISC-TO-RISC DATA MIGRATION		
0265	AIX PARTITION SPECIFY (ONE PER PARTITION)		
0266	LINUX PARTITION SPECIFY (ONE PER PARTITION)		
0267	OS/400 PARTITION SPECIFY (ONE PER PARTITION)		
~~0275~~	~~CSC SPECIFY - CSC Routing Indicator Roch Bldg 114~~		
0296	Custom Data Protection Specify		
0308	Mirrored System IOA Level Protection		
0347	Sys RAID Hot Spare Specify		
0348	V.24/EIA232 20-FT PCI CABLE		
0353	V.35 20-FT PCI CABLE		
0359	X.21 20-FT PCI CABLE		
0368	V.24/EIA232 20 FT PCI CABLE w/M3 THUMB SCREWS (GERMANY)		
0444	IBM i CBU SPECIFY FOR LOW END MODELS		
0456	CUSTOMER SPECIFIED PLACEMENT		
0462	SSD Admin - CEC Placement		
0463	SSD Admin - Tres Placement		
0464	SSD Admin - Charlotte Placement		
0465	SSD Admin - HomeRun Placement		Moved to July 2011 Announce
0551	1.8M RACK		
0553	2.0M RACK		
0555	25U MINIRACK		
0566	IBM i 6.1.1 (V6R1M1 OS)		
0567	IBM i 7.1.0 (V7R1M0 OS)		
0599	RACK FILLER PANELS KIT		
0709	EXTREME WORK ENVIRONMENT ACTIVATION CODE	1	• Ordering this feature will deliver a system that will enable customers to reset the thermal tolerances of the system to the higher limits specified by NEBS Level 3 (Network Equipment Building System) compliant specifications • This feature is also available for systems currently installed via an MES order • Initial order maximum = 1

0710	BALANCED WAREHOUSE SOLUTION INDICATOR (FOR ORDER ROUTING)	1	• Specifies that the DS4000 EXP810 ordered will be a component of the Balanced Warehouse Solution. • Will automatically be selected by the configurator when a Balanced Warehouse solution is configured. • The solution will be integrated at the Customer Solution Center.

			Integration of Sybase commerce 365 SW, IBM WAS, IBM HTTP server, IBM DB2 on Power 750 server config with DS 5300 Storage Starting 4/12, required features for the mCommerce configuration will be listed when mCommerce is selected. User will be required to transpose these features in the configurator in order to place the order. There will also be a message posted to the order entry screen " e-config support for mCommerce will be enhanced through 2nd quarter". An error message will be posted on any incorrect feature or if a feature quantity is entered. The error message will serve as a warning the user but it will not block the order from being placed. By end of 2Q 2011, the minimum config for mCommerce will be initialized in the configurator. Error message will be posted if quantities in any field gets changed but order will still flow (ie. order entry fields are not protected). Specifically:
0711	SYBASE MCOMMERCE SOLUTION INDICATOR (FOR ORDER ROUTING)		The Solution Feature Could is presented as a 'Configuration Option' on the Hardware "Products" panel of the 'main' MTM(s) used in that Solution. eConfig will default the HW/SW options that 'define' the solution. eConfig will be enforcing a 'minimum' configuration (as specified in the Solution 'definition' or requirement) the user would still be allowed to add additional items. If additional items are added that are not specified in the base configuration a warning message will be posted "Additional Features have been added to the base/recommended Rational appliance configuration. <IBM/ Rational> cannot guarantee that additional items will work with the base configuration." *Note: Based on PCR 1374 - For the integrated solution Sybase mCommerce Solution on Power servers, a post manufacturing step to configure the hardware and load the Sybase software on the server would be defined. This offering is announced to the field and the effort in CSC is sized as two billable units. So when an order is placed for the Sybase mCommerce Solution, users would **add 2 - FC 0010** to the order to cover the cost of the work performed in CSC.

0712	CLOUD ON POWER SOLUTION INDICATOR FOR ORDER ROUTING	**1**	CSC Routing Indicator for 8233-E8B Platform
0719	Diskless CEC Specify - No Disk in System Unit		
0722	#1787 LOAD SOURCE SPECIFY (177GB SAS SFF S/S DRIVE)		Moved to July 2011 Announce
0724	#1996 LOAD SOURCE SPECIFY (177GB SATA S/S DRIVE, CD MOUNTABLE)		
0725	REMOTE LOAD SOURCE IN 5786/5787 (PEARL)		
0726	REMOTE LOAD SOURCE IN 5802/5803, (TRES-19/24)		
0727	REMOTE LOAD SOURCE IN #5886/#5887 (CHARLOTTE/ HOMERUN)		
0728	REMOTE LOAD SOURCE IN #5887 (HOMERUN)		
0837	SAN Load Source Specify (Boot from SAN)		
0839	#3677 Load Source Specify		
0840	#3678 Load Source Specify		
0841	#4329 LOAD SOURCE SPECIFY (VIPER B/TIMBERLAND)		
0844	#3658 LOAD SOURCE SPECIFY (HURRICANE, VIPER-B+)		
~~0851~~	~~#1884 LOAD SOURCE SPECIFY (MAVERICK, AL-10SX)~~		
0853	#1888 LOAD SOURCE SPECIFY (HORNET, AL-11SX)		
~~0854~~	~~#1909 LOAD SOURCE SPECIFY (69GB, 2.5", ZEUS - IBMi)~~		
~~0855~~	~~#3587 LOAD SOURCE SPECIFY (69GB, 3.5", ZEUS - IBMi)~~		
0856	#1911 LOAD SOURCE SPECIFY (283GB 10K SFF SAS DISK)		
0857	#1916 LOAD SOURCE SPECIFY (571GB 10K SFF SAS DISK)		
0870	#1879 LOAD SOURCE SPECIFY (AL12SX, YELLOW JACKET)		
0871	#1947 LOAD SOURCE SPECIFY		
0872	#1948 LOAD SOURCE SPECIFY		
0874	#1956 LOAD SOURCE SPECIFY		
0875	#1962 LOAD SOURCE SPECIFY		
0876	#1794 LOAD SOURCE SPECIFY		Moved to July 2011 Announce
0893	#ES0B LOAD SOURCE SPECIFY, 387GB SAS SFF S/S DRIVE (TAURUS-2, IBMi)		
0894	#ES0D LOAD SOURCE SPECIFY, 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, IBMi)		
0983	ASSEMBLED IN COMPLIANCE WITH US TRADE AGREEMENT ACT INDICATOR		
1010	MODEM CABLE - AUSTRIA		
1011	MODEM CABLE - BELGIUM		
1012	MODEM CABLE - AFRICA		
1014	MODEM CABLE - ITALY		
1015	MODEM CABLE - FRANCE		
1016	MODEM CABLE - GERMANY		
1017	MODEM CABLE - UK		
1018	MODEM CABLE - ICELAND/SWEDEN		
1019	MODEM CABLE - AUSTRALIA		
1020	MODEM CABLE - HK/NZ		
1021	MODEM CABLE - FIN/NOR		
1022	MODEM CABLE - NETHERLANDS		
1023	MODEM CABLE - SWISS		

1024	MODEM CABLE - DENMARK		
~~1025~~	~~MODEM CABLE - US/CANADA~~		
1103	INTERNAL DOCK+CBLS, REMOVABLE USB DISK DRIVES, (RDX)		
1104	EXT USB HDD DOCK + USB CBL + EXT P/S + CNVRTR PLUG KIT + PDU CBL , (RDX)		
1106	160GB REMOVABLE USB DISK DRIVE, (RDX), (46C5374)		
1107	500GB REMOVABLE USB DISK DRIVE, (RDX), (46C5379)		
1108	EXP4200 E'NET SWITCH, 1U, (JUNIPER)		
1109	EXP4200 E'NET SWITCH, 1U, (JUNIPER - IBM LOGO)		
1111	CAT5E SWITCH CABLE, 3M, BLUE		Fully orderable
1112	CAT5E SWITCH CABLE, 10M, BLUE		Fully orderable
1113	CAT5E SWITCH CABLE, 25M, BLUE		Fully orderable
1114	BALANCED WAREHOUSE SOLUTION CONSOLIDATION SITE ROUTING INDICATOR		• Smart Analytics System routing indicator
ECB0	BLUE 0.6M CAT5 ETHERNET CABLE (40K5679)		•
ECB2	BLUE 1.5M CAT5 ETHERNET CABLE (40K8785)		•
1115	CAT5E SWITCH CABLE, 3M, GREEN		
1116	CAT5E SWITCH CABLE, 10M, GREEN		
1117	CAT5E SWITCH CABLE, 25M, GREEN		
1118	CAT5E SWITCH CABLE, 3M, YELLOW		
1119	CAT5E SWITCH CABLE, 10M, YELLOW		
1121	CAT5E SWITCH CABLE, 25M, YELLOW		
1140	CSC ORDER ROUTING INDICATOR - ROCHESTER	9999	Initial order maximum = 1
1452	PWR CBL, CENTER TO WALL, 4.3M, 15A/250V, C19 to NEMA 6-15P (US)		
1724	EMEA/AP SDI MES QUICK SHIP INDICATOR		
1748	EMEA SDI CUSTOM QUICK SHIP INDICATOR, FACTORY ONLY		
1775	177GB SAS SFF S/S DRIVE, (TAURUS, AIX/LINUX))		Moved to July 2011 Announce
1787	177GB SAS SFF S/S DRIVE, (TAURUS, IBMi)		Moved to July 2011 Announce
1790	600GB SAS 10K RPM SFF DASD, (FIRESTORM/COBRA-D)		
1793	177GB SAS S/S DRIVE IN GEN2-S CARRIER, (TAURUS - AIX/ LINUX)		Moved to July 2011 Announce
1794	177GB SAS S/S DRIVE IN GEN2-S CARRIER, (TAURUS - IBMi)		Moved to July 2011 Announce
1817	QUANTITY 150 OF #1962, 10K-SFF, (FIRESTORM, COBRA-D)		
1818	QUANTITY 150 OF #1964, 10K-SFF, (FIRESTORM, COBRA-D)		
1827	SERIAL TO SPCN CBL, 9-DSHELL/9-DSHELL, 0.14M		
1828	CABLE, 12X TO 4X IB CNVRTR, COPPER, 1.5M		
1841	CABLE, 12X TO 4X IB CNVRTR, COPPER, 3M		
1844	QUANTITY 150 OF #1956, 10K-SFF, (FIREFLY, COBRA-D)		
1854	CABLE, 12X TO 4X IB CNVRTR, COPPER, 10M, ENHANCED		
1861	0.6M DDR IB CABLE, (ALL SDR/DDR APPS)		
1862	1.5M DDR IB CABLE, (ALL SDR/DDR APPS)		
1864	8.0M DDR IB CABLE, (ALL SDR/DDR APPS)		
1865	3.0M DDR IB CABLE, (ALL SDR/DDR APPS)		Default (but 1861, 1862, 1864 or none can be substituted if customer desires)
1866	QUANTITY 150 OF #1917, 15K-SFF, (AL11SX, HORNET)		

1868	QUANTITY 150 OF #1947, 15K-SFF, (AL11SX, HORNET)		
1869	QUANTITY 150 OF #1925, 10K-SFF, (FIREFLY, COBRA-D)		
1878	OP PANEL CABLE, DRAWER W/SFF DASD BP		
1879	283GB SAS HDD, 15KRPM, SFF, (AL12SX, YELLOW JACKET)		
1880	300GB SAS HDD, 15KRPM, SFF, (AL12SX, YELLOW JACKET)		
~~1883~~	~~73.4GB SAS DASD, 15K RPM, SFF, (MAVERICK, AL-10SX)~~		
~~1884~~	~~69.7GB SAS DASD,15KRPM, SFF, (MAVERICK, AL-10SX)~~		
1885	300GB SAS DASD, 10KRPM, SFF, (FIREFLY, COBRA-C)		
1886	146.8GB SAS DASD, 15K RPM, SFF, (HORNET, AL-11SX)		
1887	QUANTITY 150 OF #1793, SAS SSD, (TAURUS-AIX/LINUX)		Moved to July 2011 Announce
1888	139.5GB SAS DASD, 15K RPM, SFF, (HORNET, AL-11SX)		
~~1890~~	~~69GB 2.5" SAS S/S DRIVE, (ZEUS - AIX/LINUX)~~		
~~1909~~	~~69GB 2.5" SAS S/S DRIVE, (ZEUS - IBMi)~~		
1911	283GB SAS DASD,10KRPM, SFF, (FIREFLY, COBRA-D)		
1916	571GB SAS DASD, 10KRPM, SFF, (FIRESTORM, COBRA-D)		
1917	146GB 15KRPM SAS HDD IN GEN2-S CARRIER, (HORNET, AL-11SX)		
1925	300GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIREFLY, COBRA-C)		
1927	QUANTITY 150 OF #1948, 15K-SFF, (AL12SX, YELLOWJACKET)		
1929	QUANTITY 150 OF #1953, 15K-SFF, (AL12SX, YELLOWJACKET)		
1947	139GB 15KRPM SAS HDD IN GEN2-S CARRIER, (HORNET, AL-11SX)		
1948	283GB 15KRPM SAS HDD IN GEN2-S CARRIER, (AL12SX, YELLOWJACKET)		
1953	300GB 15KRPM SAS HDD IN GEN2-S CARRIER, (AL12SX, YELLOWJACKET)		
1956	283GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIREFLY, COBRA-D)		
1958	QUANTITY 150 OF #1794, SAS SSD, (TAURUS-IBMi)		Moved to July 2011 Announce
1962	571GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIRESTORM, COBRA-D)		
1964	600GB 10KRPM SAS HDD IN GEN2-S CARRIER, (FIRESTORM, COBRA-D)		
~~1983~~	~~DUAL PORT GIGABIT ENET(UTP), PCIX/SHORT/32-64BIT/3.3 OR 5V, (DUVAL-TX)~~		
1995	177GB SATA S/S DRIVE, 1.8", PCI CARD MOUNTABLE, (ARIES - AIX/LINUX)		
1996	177GB SATA S/S DRIVE, 1.8", PCI CARD MOUNTABLE, (ARIES - IBMi)		
2054	3Gb/s SAS RAID CNTRLR W/4X SSD SOCKETS, PCIE 8X/ SHORT/DBL WIDE/LPC, (BLUEDARTER)		
2055	PRE-CASSETTED FC 2054, DBL-WIDE, SAS RAID CNTRLR W/ 4X SSD SOCKETS, (BLUEDARTER-BSC)		
2145	PRIMARY OPERATING SYSTEM INDICATOR - IBM i		
2146	PRIMARY OPERATING SYSTEM INDICATOR - AIX		
2147	PRIMARY OPERATING SYSTEM INDICATOR - LINUX		
2319	1W FACTORY PROC DECONFIGURATION, 8 OR LESS INSTALLED PROCS		

2324	1W PROC ACTIVATION FOR FC 8334 (EXPRESS N/C)		
2325	1W PROC ACTIVATION FOR FC 8332 (EXPRESS N/C)		
2326	1W PROC ACTIVATION FOR FC 8336 (EXPRESS N/C)		
2327	1W PROC ACTIVATION FOR FC 8335 (EXPRESS N/C)		
2456	CABLE, FIBRE, LC(M)/SC(F) 50 MICRON CONVERTER, 2M		
2459	CABLE, FIBRE, LC(M)/SC(F) 62.5 MICRON CONVERTER, 2M		
2728	4-PORT USB 2.0 PCIE ADPTR, PCIE-1x/SHORT, (LILY)		
2893	PCIE 2-Line WAN w/ Modem (Quartz)		
2894	PCIE 2-Line WAN w/ Modem (CIM) (Quartz)		
2934	ASYNCH TERMINAL/PRINTER CABLE, 3M, 25PIN(FEMALE)/ 25PIN(MALE)		
2936	ASYNC MODEM CABLE-EIA232/188		
3124	HACMP, 25PD TO 25PD NULL MODEM SERIAL CABLE - DWR/ DWR (SHORT)		
3125	HACMP, 25PD TO 25PD NULL MODEM SERIAL CABLE - RACK/ RACK (LONG)		
3450	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 1.5M, (YO)		Announce moved to October 11, 2011
3451	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 3M, (YO)		Announce moved to October 11, 2011
3452	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 6M, (YO)		Announce moved to October 11, 2011
3453	SAS CABLE, ADAPTER TO ENCLOSURE, 6Gbs, 15M, (YO)		Announce moved to October 11, 2011
3454	SAS CABLE, 2X ADAPTERS TO ENCLOSURE, 6Gbs, 3M, (X)		Announce moved to October 11, 2011
3455	SAS CABLE, 2X ADAPTERS TO ENCLOSURE, 6Gbs, 6M, (X)		Announce moved to October 11, 2011
3456	SAS CABLE, 2X ADAPTERS TO ENCLOSURE, 6Gbs, 15M, (X)		Announce moved to October 11, 2011
3457	SAS CABLE, SYSTEM TO ENCLOSURE, 6Gbs, 1.5M, (YI)		Available on ~~April~~ July 2012 Announce
3458	SAS CABLE, SYSTEM TO ENCLOSURE, 6Gbs, 3M, (YI)		Available on ~~April~~ July 2012 Announce
~~3586~~	~~69GB 3.5" SAS S/S DRIVE, (ZEUS - AIX/LINUX)~~		
~~3587~~	~~69GB 3.5" SAS S/S DRIVE, (ZEUS - IBMi)~~		
3632	DISPLAY, LENOVO, WIDESCREEN, WIDE FORMAT, ANALOG+DIGITAL CBLS		
3647	146.8GB SAS DASD, 15K RPM, 3.5", (VIPER-A/B, TIMBERLAND)		
3648	300GB SAS DASD, 15K RPM, 3.5", (VIPER-B, TIMBERLAND)		
3649	450GB SAS DASD, 15K RPM, 3.5" (HURRICANE, VIPER-B+)		
3652	SAS CABLE, ENCL TO ENCL, 1M, (EE)		
3653	SAS CABLE, ENCL TO ENCL, 3M, (EE)		
3654	SAS CABLE, ENCL TO ENCL, 6M, (EE)		
3656	SAS Cable Grp (logic+power) for HH SAS Tapes, in-line connector		
3657	SAS Cable Grp (logic + power) for HH SAS Tapes, rt-angle connector		
3658	428.43GB SAS DASD, 15K RPM, 3.5", (HURRICANE, VIPER-B+)		
3661	SAS CABLE, 2X ADPTRS TO ENCL, 3M, (X)		
3662	SAS CABLE, 2X ADPTRS TO ENCL, 6M, (X)		
3663	SAS CABLE, 2X ADPTRS TO ENCL, 15M, (X)		
3668	SAS CBL, DASD BP TO BLKHD EXT CONN, E8A/E8B/E8C		
3669	SAS CBL-SPLIT BP, DASD BP TO BLKHD CONN, E8A/E8B		
~~3675~~	~~SAS CABLE, ADPTR TO ENCL, 6Gbs, 3M, (AE)~~		
3677	139.5GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)		
3678	283.7GB SAS DASD, 15K RPM, in carrier (Viper-B, Timberland)		

3679	SAS CABLE, ADPTR TO ENCL, 1M, (AI)		
~~3680~~	~~SAS CABLE, ADPTR TO ENCL, 6Gbs, 6M, (AE)~~		
3681	SAS CABLE, ADPTR TO ADPTR, 3M, (2:6)		
3682	SAS CABLE, ADPTR TO ADPTR, 6M, (2:6)		
3684	SAS CABLE, ADPTR TO ENCL, 3M, (AE)		
3685	SAS CABLE, ADPTR TO ENCL, 6M, (AE)		
~~3686~~	~~SAS CABLE, SYSTEM TO ENCL, 1.5M, (YI)~~		
3687	SAS CABLE, SYSTEM TO ENCL, 3M, (YI)		
3688	SAS CABLE, ADAPTER TO TRES I/O DRWR, 0.6M, (AT)		
3689	SAS CABLE, ADAPTER TO TRES I/O DRWR, 6Gbs, 0.6M, (AT)		Announce moved to October 11, 2011
3691	SAS CABLE, 1X ADPTR TO ENCL, 1.5M, (YO)		
3692	SAS CABLE, 1X ADPTR TO ENCL, 3M, (YO)		
3693	SAS CABLE, 1X ADPTR TO ENCL, 6M, (YO)		
3694	SAS CABLE, 1X ADPTR TO ENCL, 15M, (YO)		
3925	SERIAL PORT CONVERTER CABLE, 9PIN(FEMALE)/ 25PIN(MALE), 0.3M		
~~3926~~	~~ASYNCH TERMINAL/PRINTER CABLE, 9PIN(FEMALE)/ 25PIN(MALE), 4M~~		
3927	HACMP, 9PD TO 9PD NULL MODEM SERIAL CABLE, 3.7M		
3928	HACMP, 9PD TO 9PD NULL MODEM SERIAL CABLE, 10M		
3930	SYSTEM PORT (SERIAL) CONVERTER CABLE, RJ45/ 9PD(MALE)		This feature is used with the Bell2 (#5289) Asych adapter to provide additional RJ45 ports
ECB7	RJ45 TO 9 PIN D SHELL SERIAL CONVERTER/CABLE FOR BELL2 FC #5289/#5290		This feature is used with the Bell2 (#5289)
4242	CABLE, 15P TO 15P, 6' EXTENDER CABLE FOR DISPLAYS		
4256	EXTENDER CABLE FOR USB KEYBOARDS/DISKETTES, 2M		
4276	DVI TO ANALOG DONGLE, CONVERTER PLUG		
4367	BUNDLE: 5X FC 2055 + 20X FC 1995, (FOR AIX/LINUX)	4	
4377	BUNDLE: 5X FC 2055 + 20X FC 1996, (FOR IBM I)	4	
4526	8GB (2x4GB), DIMMs, 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2Rx8)		MES-orderable only (supply constraint)
4527	16GB (2x8GB), DIMMs, 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 4Rx8)		MES-orderable only (supply constraint)
4528	32GB (2x16GB), DIMMs, 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 4Rx4)		MES-orderable only (supply constraint)
4544	32GB OF 512GB BUNDLE, REDUCED PRICE EQUIV FC 4528, MUST ORDER QTY=16		MES-orderable only (supply constraint)
4650	INDICATOR - DRAWER NOT FACTORY INTEGRATED		
4651	INDICATOR FOR RACK #01		
4652	INDICATOR FOR RACK #02		
4653	INDICATOR FOR RACK #03		
4654	INDICATOR FOR RACK #04		
4655	INDICATOR FOR RACK #05		
4656	INDICATOR FOR RACK #06		
4657	INDICATOR FOR RACK #07		
4658	INDICATOR FOR RACK #08		
4659	INDICATOR FOR RACK #09		
4660	INDICATOR FOR RACK #10		

4661	INDICATOR FOR RACK #11		
4662	INDICATOR FOR RACK #12		
4663	INDICATOR FOR RACK #13		
4664	INDICATOR FOR RACK #14		
4665	INDICATOR FOR RACK #15		
4666	INDICATOR FOR RACK #16		
~~4764~~	~~PCI CRYPTO COPROCESSOR (X-CRYPTO)~~		
4792	POWER ACTIVE MEMORY EXPANSION, ENABLEMENT FOR MODEL E8B/E8C		
4807	4765-001 CRYPTO COPROC + SECURE KEY ACCEL, PCIE-4X, (Y4CRYPTO)		
4808	4765-001 CRYPTO COPROC (#4807) IN GEN3' CASSETTE, (Y4CRYPTO-GEN3')		
4988	SINGLE PROCESSOR 5250 ENTERPRISE ENABLEMENT, E8B		
4989	FULL SYSTEM 5250 ENTERPRISE ENABLEMENT, E8B		
5000	SOFTWARE PRELOAD REQUIRED		
5002	iSeries CUSTOMER SOLUTION CENTER - ROCHESTER MFG		
~~5287~~	~~DUAL PORT E'NET (2X SFP+(SR) 10Gb), PCIE2 8X/LPC, (RAINS,SR)~~		
~~5288~~	~~DUAL PORT E'NET (2X SFP+(TWINAX) 10Gb), PCIE2 8X/LPC, (RAINS, TWINAX)~~		
5289	2-PRT ASYNCH EIA-232 ADPTR, 2x RJ45 CONNS, PCIE-1X/ SHORT, LPC, (BELL2)		
5524	RFID TAGS FOR SERVERS/BLADES/BLADECENTERS/RACKS/ HMCS		
5550	SYS CONSOLE ON HMC		
5553	System Console - Internal LAN		
5609	ENHANCED DUAL PORT 12X IB ADPTR, GX++, DDR, (GUARDIAN+)		
5613	Dual Port 10Gb Ethernet, Planar Daughter Card, Fiber-SR, (IVE-SERGEI)		
5616	Dual Port 12X IB, GX+ Card, (valery)		
5619	4MM 80/160GB TAPE, SAS, (CADENZA-4 SAS)		
5623	Dual Port 1Gb Ethernet, Planar Daughter Card, Copper, (IVE-TITOV)		
5624	4-Port 1Gb Ethernet, Planar Daughter Card, Copper, (IVE-TITOV)		
5638	HH 1.5TB/3.0TB LTO-5 SAS TAPE DRIVE, (GOOFY)		
5646	Blind Swap Cassette, Type 3, Short PCIE		
5647	Blind Swap Cassette, Type 3, Standard PCI(X/E)		
~~5661~~	~~DAT320 160GB SAS TAPE DRIVE, TEST/CLEAN CARTRIDGES + MTG HDWR, (MICKEY)~~		
~~5673~~	~~DAT320 160GB USB TAPE DRIVE + TEST/CLEAN CARTRIDGES + CBLS + MTG HDWR, (MINNIE)~~		
5679	SAS RAID ENABLEMENT CARDS, (DAGGER/VORTEX)		
5689	DAT160 TAPE CARTRIDGE (5X), 80/160GB		
5706	DUAL PORT GIGABIT ENET(UTP), PCIX/SHORT/32-64BIT/3.3 OR 5V, (DUVAL-TX)		
5708	DUAL PORT(SR FIBER), 10Gb E'NET NIC/FCoE, LOW PROFILE CAPABLE, PCIE-8x/SHORT, (MASON)		

5713	ISCSI TOE GIGABIT ENET(COPPER), PCIX/SHORT/64BIT/3.3 OR 5V, (SAN JACINTO)		
5717	1Gb E'NET UTP 4-PORT ADPTR, PCIE-4x/SHORT, LOW-PROFILE CAPABLE (COLEMAN)		
5732	10Gb E'NET-CX4(COPPER), RNIC, PCIE-8X/SHORT, (RED RIVER-CX4), Low profile capable		
5735	FCAL(8GBS) 2 PORT, PCIE-4x/SHORT, LOW-PROFILE CAPABLE, (COHO)		
5736	ULTRA 320 SCSI, PCIX 2.0, SHORT/32-64BIT/3.3V, 2INT-P/2EXT-VHDCI (HOBIE)		
5740	4-PORT 10/100/1000BASET E'NET, PCIX/SHORT/32-64BIT/3.3V, (CONCHO)		
~~5744~~	~~QUAD E'NET (2X RJ45 1Gb / 2X SFP+(SR) 10Gb), PCIE2-8X/LP-CAP, (RED RIVER-2, SR)~~		
~~5745~~	~~QUAD E'NET (2X RJ45 1Gb / 2X SFP+(TWINAX) 10Gb), PCIE2-8X/LP-CAP, (RED RIVER-2, TWINAX)~~		
~~5746~~	~~HH 800GB/1.6TB LTO-4 SAS TAPE DRIVE (HHLTO4-SAS)~~		
5747	ULTRIUM4 - 800GB LTO-4 TAPE CARTRIDGE		
5748	2D GRAPHICS ADAPTER, PCIE-1x/SHORT, (CORTINA)		
5749	FCAL(4GBS) 2 PORT, PCIX/SHORT/64BIT/3.3V (SAUGER-DC 4Gb)		
~~5750~~	~~DVD-READER, SATA BLU-RAY, SLIM-LINE, (RENVILLE)~~		
5759	FCAL(4GBS) 2 PORT, PCIX/SHORT/32 OR 64BIT/3.3V (FLIPPER 4G)		
5762	SATA DVDRAM, SLIM-LINE, (STERLING)		MES-orderable only (supply constraint)
~~5765~~	~~QUAD E'NET (4X RJ45 1Gb), PCIE2-8X/LP-CAP, (RED RIVER-2, 1Gb UTP)~~		
5767	1Gb Ethernet UTP 2-port Adapter, PCIE-4x/SHORT, LP CAP, (El Paso-TX)		
5768	1Gb Ethernet Fiber 2-port Adapter, PCIE-4x/SHORT, LP CAP, (El Paso-SX)		
5769	10Gb E'NET-SR(FIBER), RNIC, PCIE-8X/SHORT, (RED RIVER-SR), Low-profile capable		
5771	SATA DVDRAM WITH WRITE CACHE, SLIM-LINE, (STEVENS)		This is the default DVD RAM which is required on the initial order.
5772	10Gb E'NET-LR, 1-PORT FIBER ADPTR, LOW-PROFILE CAPABLE, PCIE-8x/SHORT, (KNOX-LR)		
5774	FCAL(4GBS) 2 PORT, PCIE-4x/SHORT/LP CAP, (FLIPPER 4Ge, JACK)		
5785	4-PRT ASYNCH EIA-232, ADPTR + FAN-OUT CBL, PCIE-1X/ SHORT, LP CPBL, (BELL)		
~~5788~~	~~QUAD E'NET (2X RJ45 1Gb / 2X SFP+(LR) 10Gb), PCIE2-8X/LP-CAP, (RED RIVER-2, LR)~~		
~~5789~~	~~QUAD E'NET (2X RJ45 1Gb / 2X RJ45 10Gb), PCIE2-8X/LP CAP, (RED RIVER-2, 10Gb UTP)~~		
5796	PCI-X IB EXPANSION DRAWER (SUNDANCE IB)		
5802	19" PCIE/DASD 4U EXP DRWR (2 DASD BKPLNS/18 SFF BAYS + 10 PCIE SLOTS), (TRES19)		
5805	SAS RAID Controller (new battery), PCIE-8x/Short, 2Ext, (SQUIB-E)		

5877	19" PCIE 4U EXP DRWR (10 PCIE SLOTS), (TRES 19 - W/O DISKS)		
5886	19-inch DASD EXPANSION DRAWER (2 EIA), 12 SAS DISK SLOTS, 220VAC POWER (CHARLOTTE)		Can be ordered with no disk units present.
5887	19" SAS (6Gb/s) DASD DRWR, 2U, 24 GEN2-S DISK BAYS, (HOMERUN)		Can be ordered with no disk units present.
5901	SAS CONTROLLER, PCIE-8x/SHORT, LOW-PROFILE CAPABLE, 2Ext, (CADET-E)		
~~5903~~	~~SAS RAID Controller, PCIE-8x/Short, 2Ext, (SQUIB-E)~~		
5904	CACHING SAS RAID CNTRLR, PCIX-2.0/LONG/2-WIDE, (KNORR)		
5908	CACHING SAS RAID CNTRLR, IN GEN 3 CASSETTE, PCIX-2.0/ LONG/2-WIDE, (KNORR 3.0)		
5912	SAS DUAL CNTRLR, PCIX 2.0, SHORT/64BIT/3.3V, 2Ext, LOW-PROFILE CAPABLE, (CADET-2)		
5913	6Gb/s SAS RAID CNTRLR W/CACHE, PCIE2 8X/SHORT, (CUBIC-R)		Announce moved to October 11, 2011
~~5914~~	~~6Gb/s SAS RAID CNTRLR, W/6X SSD SOCKETS, PCIE2 8X/ LONG, (PEREGRINE-2)~~		
5915	SAS CABLE, ADPTER TO ADPTR, 6Gbs, 3M, (AA)		Announce moved to October 11, 2011
5916	SAS CABLE, ADPTR TO ADPTR, 6Gbs, 6M, (AA)		Announce moved to October 11, 2011
5917	SAS CABLE, ADPTR TO ADPTR, 6Gbs, 1.5M, (AA)		Announce moved to October 11, 2011
5918	SAS CABLE, ADPTR TO ADPTR, 6Gbs, 0.6M, (AA/ID)		Announce moved to October 11, 2011
~~5919~~	~~SAS CABLE, ADPTR TO ADPTR, 6Gbs, 1.2M, (AA/ID)~~		
~~5920~~	~~SAS CABLE, ADPTR TO ADPTR, 6Gbs, 3M, (AA/ID)~~		
5922	NON-PAIRED SQUIB-X INDICATOR (2ND RAID ADAPTER IN ANOTHER SYSTEM)		
5923	NON-PAIRED SQUIB-E INDICATOR, (2ND RAID ADAPTER IN ANOTHER SYSTEM)		
5924	NON-PAIRED CUBIC-R INDICATOR, (2ND RAID ADAPTER IN ANOTHER SYSTEM)		Announce moved to October 11, 2011 Must be added for every instance of a non-paired SAS RAID adapter #5913. It identifies a specific high availability configuration supported by AIX or Linux which has one #5913 on one system and the paired #5913 located on a second system. IBM i does not support paired adapter on different servers. • Attributes provided: SAS RAID adapter firmware disables write cache until a second SAS RAID adapter is recognized. • Attributes required: Every #5924 requires a 6Gb/s SAS RAID adapter (#5913) on both this server and on another server that will pair up the SAS RAID adapter and enable the onboard caches to function.
~~5926~~	~~SAS CABLE, ADPTR TO ADPTR, 6Gbs, 6M, (AA/ID)~~		
5951	USB KEYBD, BLACK, US ENGLISH, #103P, PS/2 Key Layout 3m cable with USB Hub		

5952	USB KEYBD, BLACK, FRENCH,#189, PS/2 Key Layout 3m cable with USB Hub		
5953	USB KEYBD, BLACK, ITALIAN, #142, PS/2 Key Layout 3m cable with USB Hub		
5954	USB KEYBD, BLACK, GERMAN/AUSTRIAN, #129, PS/2 Key Layout 3m cable with USB Hub		
5955	USB KEYBD, BLACK, UK ENGLISH, #166, PS/2 Key Layout 3m cable with USB Hub		
5956	USB KEYBD, BLACK, SPANISH, #172, PS/2 Key Layout 3m cable with USB Hub		
5957	USB KEYBD, BLACK, JAPANESE, #194, PS/2 Key Layout 3m cable with USB Hub		
5958	USB KEYBD, BLACK, BRAZILIAN PORTUGUESE, #275, PS/2 Key Layout 3m cable with USB Hub		
5959	USB KEYBD, BLACK, HUNGARIAN, #208, PS/2 Key Layout 3m cable with USB Hub		
5960	USB KEYBD, BLACK, KOREAN, #413, PS/2 Key Layout 3m cable with USB Hub		
5961	USB KEYBD, BLACK, CHINESE, #467, PS/2 Key Layout 3m cable with USB Hub		
5962	USB KEYBD, BLACK, FRENCH CANADIAN, #445, PS/2 Key Layout 3m cable with USB Hub		
5964	USB KEYBD, BLACK, BELGIUM/UK, #120, PS/2 Key Layout 3m cable with USB Hub		
5965	USB KEYBD, BLACK, SWEDISH/FINNISH, #153, PS/2 Key Layout 3m cable with USB Hub		
5966	USB KEYBD, BLACK, DANISH, #159 , PS/2 Key Layout 3m cable with USB Hub		
5967	USB KEYBD, BLACK, BULGARIAN, #442, PS/2 Key Layout 3m cable with USB Hub		
5968	USB KEYBD, BLACK, SWISS,FRENCH/GERMAN, #150F/G, PS/2 Key Layout 3m cable with USB Hub		
5969	USB KEYBD, BLACK, NORWEGIAN, #155, PS/2 Key Layout 3m cable with USB Hub		
5970	USB KEYBD, BLACK, DUTCH, #143, PS/2 Key Layout 3m cable with USB Hub		
5971	USB KEYBD, BLACK, PORTUGUESE, #163, PS/2 Key Layout 3m cable with USB Hub		
5972	USB KEYBD, BLACK, GREEK, #319 PS/2 Key Layout 3m cable with USB Hub		
5973	USB KEYBD, BLACK, HEBREW, #212, PS/2 Key Layout 3m cable with USB Hub		
5974	USB KEYBD, BLACK, POLISH, #214, PS/2 Key Layout 3m cable with USB Hub		
5975	USB KEYBD, BLACK, SLOVAKIAN, #245, PS/2 Key Layout 3m cable with USB Hub		
5976	USB KEYBD, BLACK, CZECH, #243, PS/2 Key Layout 3m cable with USB Hub		
5977	USB KEYBD, BLACK, TURKISH, #179, PS/2 Key Layout 3m cable with USB Hub		

5978	USB KEYBD, BLACK, LA SPANISH, #171, PS/2 Key Layout 3m cable with USB Hub		
5979	USB KEYBD, BLACK, ARABIC, #253, PS/2 Key Layout 3m cable with USB Hub		
5980	USB KEYBD, BLACK, THAILAND, #191, PS/2 Key Layout 3m cable with USB Hub		
5981	USB KEYBD, BLACK, RUSSIAN, #443, PS/2 Key Layout 3m cable with USB Hub		
5982	USB KEYBD, BLACK, SLOVENIAN, #234, PS/2 Key Layout 3m cable with USB Hub		
5983	USB KEYBD, BLACK, US EURO, #103P, PS/2 Key Layout 3m cable with USB Hub		
6006	POWER CONTROL CABLE, 3M, (SPCN)		
6007	POWER CONTROL CABLE, 15M, (SPCN)		
6068	OPTIONAL FRONT DOOR (BLACK/FLAT) FOR 1.8M RACK <6068 ON P>		
6069	OPTIONAL FRONT DOOR (BLACK/FLAT) FOR 2.0M RACK <6069 ON P>		
6248	ACOUSTIC FRONT/REAR DOORS, BLACK IBM, FOR 1.8M RACKS<6248 ON P>		
6249	ACOUSTIC FRONT/REAR DOORS, BLACK IBM, FOR 2.0M RACKS <6249 ON P>		
6263	LOW INTERFERENCE NO DOOR TRIM KIT FOR 0551 RACKS		
6272	LOW INTERFERENCE NO DOOR TRIM KIT FOR 0553 RACKS		
6446	DUAL PORT INFINIBAND ADPTR W/O REPEATER (ETTA-LITE)		
6457	DUAL PORT INFINIBAND ADPTR W REPEATER (ETTA)		
6458	PWR CBL, DRWR TO IBM PDU, 14', 200-240V/10A, IEC320/C13, IEC320/C14		
6460	PWR CBL, DRWR TO OEM PDU, 14', 100-127V/15A, IEC320/C13, PT#4		
6469	PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#5		
6470	LINECORD, TO WALL, 6', 100-127V/12A, IEC320/C13, PT#4		
6471	LINECORD, TO WALL/OEM PDU, 9' 100-127V/10A, IEC320/C13, PT#70		
6472	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#18		
6473	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#19		
6474	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#23		
6475	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#32		
6476	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#24		
6477	LINECORD, TO WALL/OEM PDU, 9', 200-240V/16A, IEC320/C13, PT#22		
6478	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#25		
~~6487~~	~~LINECORD, TO WALL, 6', 200-240V/15A, IEC320/C13, PT#5~~		

6488	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#2		
6489	LINECORD, PDU TO WALL, 14', 3PH/32A, UTG0247, IEC309 3P+N+G <6489 ON P>		
6491	LINECORD, PDU TO WALL, 14', 200-240V/48A, UTG0247, IEC309 63A P+N+G <6491 ON P>		
6492	LINECORD, PDU TO WALL, 14', 200-240V/48A, UTG0247, IEC309 60A 2P+G <6492 ON P>		
6493	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#62		
6494	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#69		
6496	LINECORD, TO WALL/OEM PDU, 9', 200-240V/10A, IEC320/C13, PT#66		
6497	LINECORD, TO WALL, 6', 200-240V/10A, IEC320/C13, PT#10		
6577	PWR CBL, DRWR TO IBM PDU, MFG SEL LENGTH, 200-240V/ 10A, IEC320/C13, IEC320/C14		
6580	OPTIONAL RACK SECURITY KIT <6580 ON P>		
6586	MODEM TRAY, 19" RACKS, 1U <6586 on p>		
6651	LINECORD, TO WALL/OEM PDU, 9', 100-127V/15A, IEC320/C13, PT#75		
6653	LINECORD, PDU TO WALL, 14', 3PH/16A, UTG0247, IEC309 16A 3P+N+G <6653 ON P>		
6654	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#12 <6654 ON P>		
6655	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#40 <6655 ON P>		
6656	LINECORD, PDU TO WALL, 14', 200-240V/32A, UTG0247, IEC309 P+N+G <6656 ON P>		
6657	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#PDL <6657 ON P>		
6658	LINECORD, PDU TO WALL, 14', 200-240V/24A, UTG0247, PT#KP <6658 ON P>		
6659	LINECORD, TO WALL/OEM PDU 9', 200-240V/15A, IEC320/C13, PT#76		
6660	PWR CBL, DRWR TO OEM PDU, 14', 100-127V/15A IEC320/C13, PT#59		
6665	PWR CBL DRWR TO IBM PDU, 10', 200-240V/10A, IEC320/C13, IEC320/C20, (39Y7938)		
6669	PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#57		
6671	PWR CBL, DRWR TO IBM PDU, 9', 200-240V/10A, IEC320/C13, IEC320/C14		
6672	PWR CBL, DRWR TO IBM PDU, 5', 200-240V/10A, IEC320/C13, IEC320/C14		
6680	LINECORD, TO WALL/OEM PDU, 9', 250/10A, IEC320/C13, PT#6, INSULATED		
~~6808~~	~~PCI QUAD MODEM IOA (TOMBSTONE, IOP less)~~		
~~6809~~	~~PCI QUAD MODEM IOA (CIM) (TOMBSTONE, IOP less)~~		

7109	ADDTNL IPDU, WW, 1-PH 24/48A, 3-PH 16/24A, 12XC13 OUTLETS, UTG0247 INPUT		
7118	TEMPERATURE/HUMIDITY PROBE FOR iPDUs		
7188	PDU, WW, 1-PH 24/48A, 3-PH 16/24A, 12XC13 OUTLETS, UTG0247 INPUT <7188 ON P>		
~~7204~~	~~QUANTITY 150 OF #2124~~		
~~7205~~	~~QUANTITY 150 OF #2125~~		
~~7206~~	~~QUANTITY 150 OF #2126~~		
~~7207~~	~~QUANTITY 150 OF #2127~~		
~~7208~~	~~QUANTITY 150 OF #2128~~		
~~7213~~	~~QUANTITY 150 OF #2138~~		
7305	AAP SOFTWARE PRE-INSTALL INDICATOR (US)		
7314	DUAL 7314-G30 I/O UNIT ENCLOSURE + 19" RACK MTG HDWR		
7518	QUANTITY 150 OF #3677 (VIPER-B, TIMBERLAND)		
7519	QUANTITY 150 OF #3678 (VIPER-B, TIMBERLAND)		
7535	QTY 150 OF #3586 (69GB 3.5" S/S SAS DRIVE)		
~~7536~~	~~QTY 150 OF #3587, (3.5", 69GB, ZEUS - IBM i)~~		
7538	QUANTITY 150 OF #3658		
7549	QTY 150 OF #3647 (146.8GB 15K 3.5" SAS DISK)		
7550	QTY 150 OF #1790 (600GB 10K SFF SAS DISK)		
7564	QTY 150 OF #3648 (300GB 15K 3.5" SAS DISK)		
7565	QTY 150 OF #3649 (450GB 15K 3.5" SAS DISK)		
7708	AUTO-DOCK DC POWER SUPPLY, -48V, 1700W, E8A/E8B/E8C		
7714	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #8334		
7715	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #8332		
7716	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #8336		
7717	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #8335		
7740	AUTO-DOCK AC POWER SUPPLY, 100-240v, 1725W, E8B/E8C		
7770	OEM (GENERIC) INDICATOR		
7773	OEM (GROUPE BULL) INDICATOR		
7775	OEM (HITACHI) INDICATOR		
7779	OEM INDICATOR, IBM LOGO/OEM PUBS		
7780	SIDE/SIDE ATTACH KIT (BLACK) (FOR 2M RACKS)		
7793	POWERVM, E8B, (EXPRESS)		
7794	POWERVM, E8B, (STANDARD)		
7795	POWERVM, E8B, (ENTERPRISE)		
7802	ETHERNET CABLE, HMC ATTACHMENT, 15M		
7863	BLINDSWAP CASSETTE TYPE 3 FOR DOUBLE WIDE PCI CARDS		
8143	CHARGEABLE PRE-REQ FOR LINUX PRE-LOAD		
8144	CHARGEABLE PRE-REQ FOR LINUX PRE-LOAD, (BP ONLY)		
8332	0/8W 3.3GHz PROC CD, P7 SCM(8GC), (KAPALUA)		MES-orderable only (as of 1/10/2012)
8334	0/8W 3.0GHz PROC CD, P7 SCM(8GC), 8xDIMMs, (KAPALUA)		MES-orderable only (as of 1/10/2012)
8335	0/6W 3.3GHz PROC CD, P7 SCM(6GC), 8xDIMMs, (KAPALUA)		MES-orderable only (as of 1/10/2012)

8336	0/8W 3.55GHz PROC CD, P7 SCM(8GC), 8xDIMMS, (KAPALUA)		MES-orderable only (as of 1/10/2012)
8340	ENHANCED DASD/MEDIA BP W EXT SAS, 8X 2.5" SAS DASD, SATA DVD, SAS TAPE, (LAHAINA-A/MCNAIR)		
8845	USB MOUSE (2-BUTTON) + CABLE, BLACK		
8A1484	RECONCILIATION OF Y ORDERS		
8A1677	IBM BRAZIL & CON MFG FLEX		
8A1767	MELLANOX INFINIBAND ADAPTER		
8A1790	8-CORE 3.55 GHZ E8B		
8A1791	16-CORE 3.55 GHZ E8B		
8A1792	ADDITIONAL 8-CORE PROCESSOR		
8A1796	8CORE DD2.0 P7 PROCESSORS		
8A1801	EXTND WRTY-WALMART E8B		
8A1821	EMETER POWER OFFERING		
8A1822	5250 PROC ENTITLEMNT FOR 750		
8A1854	IL EXTND WRTY		
8A1862	RACK CFG #1 FOR FLEX BRZ		
8A1863	RACK CFG #2 FOR FLEX BRZ		
8A1864	RACK CFG #3 FOR FLEX BRZ		
8A1865	RACK CFG #4 FOR FLEX BRZ		
8A1866	RACK CFG #5 FOR FLEX BRZ		
8A1867	RACK CFG #6 FOR FLEX BRZ		
8A1880	ALLOW #1775 IN TRES 19		
8A1882	ALLOW #1787 IN TRES 19		
8R7100	LIVE PARTITION MOBILITY		
8A2033	8233-E8B PROCESSOR PROMOTION		
8A2034	8233-E8B MEMORY PROMOTION		
8A2041	8233-E8B 3.2 GHZ PROC. PROM		
8A2042	POWER SYSTEMS W/NO POWER CRD		
8A2050	BRAZIL MFG ON HMC CFG POWER		
8A2051	BRZ MFG ON CONSOLE CFG POWER		
9169	System Plant Order Routing Indicator		
9300	LANGUAGE SPECIFY ENGLISH		
~~9356~~	~~SPECIFY ALL FC 5887 DRAWERS ARE MODE 1~~		
~~9357~~	~~SPECIFY ALL FC 5887 DRAWERS ARE MODE 2~~		
~~9358~~	~~SPECIFY ALL FC 5887 DRAWERS ARE MODE 4~~		
9359	SPECIFY ALL FC 5887 DRAWERS CONNECT VIA REDUNDANT SAS CNTRLRS		
9360	INDICATOR, FC 5887 DRAWER, MODE 1, TWO CADETS, YO CABLES		
9361	INDICATOR, FC 5887 DRAWER, MODE 2, TWO CADETS, YO CABLES		
9365	INDICATOR, FC 5887 DRAWER, MODE 4, FOUR CADETS, X CABLES		

9366	INDICATOR, FC 5887 DRAWER, MODE 2, FOUR CADETS, X CABLES		
9367	INDICATOR, FC 5887 DRAWER, MODE 1, TWO SQUIBS, YO CABLES		
9368	INDICATOR, FC 5887 DRAWER, MODE 2, FOUR SQUIBS, X CABLES		
9382	INDICATOR, FC 5887 DRAWER, MODE 1, SINGLE KNORR, YO CABLE		
9383	INDICATOR, FC 5887 DRAWER, MODE 1, TWO KNORRS, YO CABLES		
9384	INDICATOR, FC 5887 DRAWER, MODE 1, INTGRTD SAS CNTRLR, YI CABLE		
9385	INDICATOR, FC 5887 DRAWER, MODE 1, TWO CUBIC-R, 6G YO CABLES		Announce moved to October 11, 2011
9386	INDICATOR, FC 5887 DRAWER, MODE 2, FOUR CUBIC-R, 6G X CABLES		Announce moved to October 11, 2011
~~9387~~	~~INDICATOR, FC 5887 DRAWER, MODE 2, TWO CUBIC-R, 6G X CABLES~~		~~Announce moved to July 12,2011~~
9440	AIX PROCESSOR COUNTER SPECIFY		
9441	IBMi PROCESSOR COUNTER SPECIFY		
9442	RED HAT LINUX PROCESSOR COUNTER SPECIFY		
9443	SUSE LINUX PROCESSOR COUNTER SPECIFY		
9444	TRANSFER AIX PROCESSOR COUNTER SPECIFY		
9445	TRANSFER LINUX PROCESSOR COUNTER SPECIFY		
9446	3RD PARTY LINUX PROCESSOR COUNTER SPECIFY		
9447	VIRTUAL I/O SERVER (VIOS) PROCESSOR COUNTER SPECIFY		
9448	TRANSFER IBMi PROCESSOR COUNTER SPECIFY		
9461	MONTH INDICATOR, QTY = 1 thru 12		
9462	DAY INDICATOR, QTY = 1 THRU 31		
9463	HOUR INDICATOR, QTY = 1 THRU 24		
9464	MINUTE INDICATOR, QTY = 1 THRU 60		
9465	INDICATOR, QTY OF ADDITIONAL CFR/SEN IN SOLUTION		
9466	INDICATOR, COUNTABLE MEMBER OF A SOLUTION		
9666	TIVOLI STORAGE MANAGER BP PRE-LOAD SPECIFY		
9700	LANGUAGE SPECIFY, DUTCH		
9703	LANGUAGE SPECIFY, FRENCH		
9704	LANGUAGE SPECIFY, GERMAN		
9705	LANGUAGE SPECIFY, POLISH		
9706	LANGUAGE SPECIFY, NORWEGIAN		
9707	LANGUAGE SPECIFY, PORTUGUESE		
9708	LANGUAGE SPECIFY, SPANISH		
9711	LANGUAGE SPECIFY, ITALIAN		
9712	LANGUAGE SPECIFY, FRENCH/CANADIAN		
9714	LANGUAGE SPECIFY, JAPANESE		
9715	LANGUAGE SPECIFY, TRADITIONAL CHINESE (TAIWAN)		
9716	LANGUAGE SPECIFY, KOREAN		
9718	LANGUAGE SPECIFY, TURKISH		
9719	LANGUAGE SPECIFY, HUNGARIAN		

9720	LANGUAGE SPECIFY, SLOVAKIAN		
9721	LANGUAGE SPECIFY, RUSSIAN		
9722	LANGUAGE SPECIFY, SIMPLIFIED CHINESE (PRC)		
9724	LANGUAGE SPECIFY, CZECH		
9725	LANGUAGE SPECIFY, ROMANIAN		
9726	LANGUAGE SPECIFY, CROATIAN		
9727	LANGUAGE SPECIFY, SLOVENIAN		
9728	LANGUAGE SPECIFY, BRAZILIAN PORTUGUESE		
9729	LANGUAGE SPECIFY, THAI		
9742	MES INSTALLATION INDICATOR - CUSTOMER		
9743	MES INSTALL INDICATOR		
9993	'RENOVATED BY IBM' INDICATOR		
ECSC	CSC ORDER ROUTING INDICATOR - SHENZHEN	9999	Initial order maximum = 1
ECSM	CSC ORDER ROUTING INDICATOR - MEXICO	9999	Initial order maximum = 1
EK51	USB KEYBD, BLACK, US ENGLISH, #103P, PS/2 Key Layout 2m cable		
EK52	USB KEYBD, BLACK, FRENCH,#189, PS/2 Key Layout 2m cable		
EK53	USB KEYBD, BLACK, ITALIAN, #141, PS/2 Key Layout 2m cable		
EK54	USB KEYBD, BLACK, GERMAN/AUSTRIAN, #129, PS/2 Key Lay-out 2m cable		
EK55	USB KEYBD, BLACK, UK ENGLISH, #166, PS/2 Key Layout 2m cable		
EK56	USB KEYBD, BLACK, SPANISH, #172, PS/2 Key Layout 2m cable		
EK57	USB KEYBD, BLACK, JAPANESE, #194, PS/2 Key Layout 2m cable		
EK58	USB KEYBD, BLACK, BRAZILIAN PORTUGUESE, #275, PS/2 Key Layout 2m cable		
EK59	USB KEYBD, BLACK, HUNGARIAN, #208, PS/2 Key Layout 2m cable		
EK60	USB KEYBD, BLACK, KOREAN, #413, PS/2 Key Layout 2m cable		
EK61	USB KEYBD, BLACK, CHINESE, #467, PS/2 Key Layout 2m cable		
EK62	USB KEYBD, BLACK, FRENCH CANADIAN, #445, PS/2 Key Lay-out 2m cable		
EK64	USB KEYBD, BLACK, BELGIUM/UK, #120, PS/2 Key Layout 2m cable		
EK65	USB KEYBD, BLACK, SWEDISH/FINNISH, #153, PS/2 Key Lay-out 2m cable		
EK66	USB KEYBD, BLACK, DANISH, #159 , PS/2 Key Layout 2m cable		
EK67	USB KEYBD, BLACK, BULGARIAN, #442, PS/2 Key Layout 2m cable		
EK68	USB KEYBD, BLACK, SWISS,FRENCH/GERMAN, #150, PS/2 Key Layout 2m cable		
EK69	USB KEYBD, BLACK, NORWEGIAN, #155, PS/2 Key Layout 2m cable		
EK70	USB KEYBD, BLACK, DUTCH, #143, PS/2 Key Layout 2m cable		
EK71	USB KEYBD, BLACK, PORTUGUESE, #163, PS/2 Key Layout 2m cable		
EK72	USB KEYBD, BLACK, GREEK, #319 PS/2 Key Layout 2m cable		

EK73	USB KEYBD, BLACK, HEBREW, #212, PS/2 Key Layout 2m cable		
EK74	USB KEYBD, BLACK, POLISH, #214, PS/2 Key Layout 2m cable		
EK75	USB KEYBD, BLACK, SLOVAKIAN, #245, PS/2 Key Layout 2m cable		
EK76	USB KEYBD, BLACK, CZECH, #243, PS/2 Key Layout 2m cable		
EK77	USB KEYBD, BLACK, TURKISH, #179, PS/2 Key Layout 2m cable		
EK78	USB KEYBD, BLACK, LA SPANISH, #171, PS/2 Key Layout 2m cable		
EK79	USB KEYBD, BLACK, ARABIC, #253, PS/2 Key Layout 2m cable		
EK80	USB KEYBD, BLACK, THAILAND, #191, PS/2 Key Layout 2m cable		
EK81	USB KEYBD, BLACK, RUSSIAN, #443, PS/2 Key Layout 2m cable		
EK82	USB KEYBD, BLACK, SLOVENIAN, #234, PS/2 Key Layout 2m cable		
EK83	USB KEYBD, BLACK, US EURO, #103P, PS/2 Key Layout 2m cable		
~~EN01~~	~~E'NET CABLE, SFP+, ACTIVE, IBM VPD, COPPER(TWINAX), 1M~~		
ELPM	TRIAL POWERVM LIVE PARTITION MOBILITY		
EM08	8GB (2x4GB), DIMMs (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2Rx8)		Announce date - 10/11/2011 GA on 10/21/2011
EM16	16GB (2X8GB), DIMMS (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 2RX4)		Announce date - 10/11/2011 GA on 10/21/2011
EM32	32GB (2x16GB), DIMMs (1.35V), 1066MHz, 2Gb DDR3 DRAM, (RDIMM, 4Rx4)		Announce date - 10/11/2011 GA on 10/21/2011
~~EN02~~	~~E'NET CABLE, SFP+, ACTIVE, IBM VPD, COPPER(TWINAX), 3M~~		
~~EN03~~	~~E'NET CABLE, SFP+, ACTIVE, IBM VPD, COPPER(TWINAX), 5M~~		
EPA1	0/8W 3.612GHz PROC CD, P7 SCM(DD2.3), 8xDIMMS, (HAPALUA)		
EPA2	0/6W 3.724GHz PROC CD, P7 SCM(DD2.2/DD2.3), 8xDIMMs, (HAPALUA)		
EPA3	0/4W 3.724GHz PROC CD, P7 SCM(DD2.2/DD2.3), (HAPALUA)		
EPA4	0/8W 3.22GHz PROC CD, P7 SCM(DD2.2/DD2.3), 8xDIMMs, (HAPALUA)		
EPB1	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA1		
EPB2	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA2		
EPB3	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA3		
EPB4	ONE PROCESSOR ACTIVATION FOR PROCESSOR FEATURE #EPA4		
EPF1	1W PROC ACTIVATION FOR FC EPA1 ($0)		
EPF2	1W PROC ACTIVATION FOR FC EPA2 ($0)		
EPF3	1W PROC ACTIVATION FOR FC EPA3 ($0)		
EPF4	1W PROC ACTIVATION FOR FC EPA4 ($0)		

ERA5	P750 RATIONAL APPLIANCE COBOL SOLUTION TRACKING CODE		Bundle the Rational Appliance components into a Single Order. Rational Power Appliance consists of a preconfigured POWER7 server with preinstalled AIX v6L operating system, Rational Team Concert for Power System Software v3.0, Rational Developer for Power System Software v8.0, and COBOL for AIX v4.1. Rack is optional and needs to be ordered separately. For teams of 40 developers (Enterprise Edition), additional hardware expansion and software licenses must be ordered separately and will not be considered as part of the Rational Power Appliance.
ERA6	P750 RATIONAL APPLIANCE C/C++ SOLUTION TRACKING CODE		Bundle the Rational Appliance components into a Single Order. Rational Power Appliance consists of a preconfigured POWER7 server with preinstalled AIX v6L operating system, Rational Team Concert for Power System Software v3.0, Rational Developer for Power System Software v8.0, and XL C/C++ for AIX v11.1. Rack is optional and needs to be ordered separately. For teams of 40 developers (Enterprise Edition), additional hardware expansion and software licenses must be ordered separately and will not be considered as part of the Rational Power Appliance.
ESC0	SHIPPING AND HANDLING	1	zero-charge: Can override #ESC7 only for appropriate contractual or competitive bid reasons
ESC7	SHIPPING AND HANDLING	1	default
EU01	1TB REMOVABLE DISK DRIVE CARTRIDGE, (RDX), (46C2335)		
EU03	ENHANCED INTERNAL USB DOCKING STATION +CBLS, (RDX)		Announce on 10/03/2012
EU04	ENHANCED EXT USB DOCKING STATION + USB CBL + P/S + PWR CBL + CNVRTR PLUG KIT, (RDX)		Announce on 10/03/2012
EU07	RDX REMOVABLE HARD DRIVE DOCKING STATION WITH SATA INTERFACE		Announce on 10/03/2012
EUC6	SERVICE PROVIDER INFRASTRUCTURE PAYMENT FEATURE (CLOUD BILLING)	250	
EUC7	CORE USE HW FEATURE 10X	10	Announce on 10/03/2012
EU08	320GB REMOVABLE DISK DRIVE CARTRIDGE, (RDX), (46C5377)		
EQ02	QUANTITY 150 OF #3452 SAS CABLE, ADAPTER TO ENCLOSURE- 6M		

EQ03	QUANTITY 150 OF #3453 SAS CABLE, ADAPTER TO ENCLOSURE -10M		
ES2B	($0 #ES0B or #ES11) 387GB SAS SFF S/S DRIVE (TAURUS-2/3, IBMi)		
ES2D	($0 #ES0D or #ES1A) 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2/3, IBMi)		
ESRB	(RP #ES0B) QTY 4 -387GB SAS SFF S/S DRIVE (TAURUS-2, IBMi)		
ESRD	(RP #ES0D) QTY 4 - 387GB SAS SFF S/S DRIVE IN GEN2-S CARRIER (TAURUS-2, IBMi)		

Solid State Drive (SSD) (Zeus and Taurus) Configuration Rules

e-config will add quantities of the following specify codes onto an order, based on where e-config determined SSDs would be placed:

- #0462 - SSD Admin - CEC Placement (if both sides of a split backplane contain SSDs, the qty 2 of #0462 will be added to the order).
- #0463 - SSD Admin - Tres Placement (if both sides of a split backplane contain SSDs, the qty 2 of #0463 will be added to the order) (October 2009 announce).
- #0464 - SSD Admin - Charlotte Placement

The above specify codes and quantities, thereof, are not selectable or modifiable by an e-config user.

2.5" SSD features - 1890 - AIX/Linux, 1909 - IBM i (require IBM i 6.1 or later)
3.5" SSD features - 3586 - AIX/Linux, 3587 - IBM i (require V5R4M5 or later)

a) SSD units and SAS HDD features (#3676) will not be allowed to mirror with each other.

b) SSD units cannot be driven by Cadets & Squib-X (5900, 5901, 5902, 5912). This means that Charlottes containing SSDs cannot be attached to Cadet or Squib-X . SSD units in 9117-MMA CEC enclosures being connected by #3650 or #3651 (cable cassettes), cannot be cabled to a Cadet or Squib-X. Nor can those SSD units, in a MMA CEC enclosure, be driven by a #5909/#5911 (Cadet-EL).

c) 3.5" SSD features will not be supported in the 8203-E4A, 8261-E4S and 8204-E8A CECs. Only 2.5" SSD features will be supported in the 8203-E4A and 8204-E8A CECs (maximum of 8 SFF (2.5”) SSD features supported in the E4A and E8A CEC).

d) Only 3.5" SSD features are supported in the 9117-MMA and 8234-EMA CEC enclosures.

e) Only 2.5" SSD features are supported in Tres (#5802/#5803), but not until the Oct '09 announce.

f) Maximum of 8 SSDs per Charlotte drawer. No mixing of SSDs and HDDs within a given Charlotte enclosure.

g) Maximum of 1 Charlotte containing SSDs attached to a disk controller.

h) A Charlotte containing SSDs CAN NOT be daisy chained to any other Charlotte.

i) A disk controller, driving a Charlotte with SSDs, the remaining SAS ports can not be cabled to anything.

j) A Charlotte containing SSDs CAN NOT attach to the CEC SAS external port of the E4A, E4S and E8A CECs.

k) For E4A, E4S, E8A and MMA/EMA, with split backplanes, SSDs and HDDs may be placed in either "split", but no mixing of SSDs and HDDs within a "split" is allowed.

l) For E4A, E4S, E8A and MMA/EMA, without split backplanes, SSDs and HDDs may be mixed (any combination). Exception is... for MMA/EMA, using a 3651 (x6) backplane connection to a disk controller adapter card.. mixing is not allowed. For the purposes of these placement rules, use of a #3651 will be considered to be a "split" backplane configuration.

m) Tres Rules (19") (Supported in Oct' 2009 for Dual Squib-E)

SSDs and HDDs, in Tres, must be driven by a disk controller residing in that same Tres enclosure.

For Dual disk controller configurations, both disk controllers must reside in that same Tres enclosure

No mixing of SSDs and HDDs in a "mode 1" (non-split) backplane (18 disk bays connected together).

SSDs in Tres, can only be driven by Squib-Es (connected in dual controller mode). This is due to the fact that we do not allow SSDs to be driven by Cadet-E and there is no PCIe version of Knorr available, at this time.

A dual Squib-E configuration, within a Tres, driving a Charlotte which contains SSDs, can not drive anything else.

A dual Squib-E configuration, within a Tres, driving a "mode 2" (split in two) backplane, can drive SSDs in one split, but can not drive HDDs in the other split.

A quad Squib-E configuration (qty 2 dual Squib-E configurations), within a Tres, driving a "mode 2" (split in two) backplane, one dual Squib-E configuration can drive SSDs in one split and the other dual Squib-E configuration can drive either SDDs or HDDs in the other split. The dual Squib-E configuration driving SSDs, can not drive anything else. The dual Squib-E configuration driving HDDs, can not drive a Charlotte that contains SSDs but can drive up to two Charlottes (daisy chained) that contain HDDs.

For 18 drive configuration ..... max of 9 SSDs and no HDDs. Other port of the disk controller can not be attached to anything.

For split configuration of 9 / 9 ..... max of 18 SSDs and no HDDs (9 SSDs allowed per split). This would be allowed for each 9 slot backplane driven by dual Squib-Es

Tres Rules (24") (Supported in Oct' 2009 for Dual Squib-E)

SSDs and HDDs, in Tres, must be driven by a disk controller residing in that same Tres enclosure.

For Dual disk controller configurations, both disk controllers must reside in that same Tres enclosure

No mixing of SSDs and HDDs in a "mode 1" (non-split) backplane (26 disk bays connected together).

SSDs in Tres, can only be driven by Squib-Es (connected in dual controller mode). This is due to the fact that we do not allow SSDs to be driven by Cadet-E and there is no PCIe version of Knorr available, at this time.

A dual Squib-E configuration, within a Tres, driving a Charlotte which contains SSDs, can not drive anything else.

A dual Squib-E configuration, within a Tres, driving a "mode 2" (split in two) backplane, can drive SSDs in one split, but can not drive HDDs in the other split.

A quad Squib-E configuration (qty 2 dual Squib configurations), within a Tres, driving a "mode 2" (split in two) backplane, one dual Squib-E configuration can drive SSDs in one split and the other dual Squib-E configuration can drive HDDs in the other split. The dual Squib configuration driving SSDs, , can not drive anything else. The other dual Squib configuration driving HDDs, not drive a single Charlotte that contains SSDs or but can drive up to two Charlottes (daisy chained) that contain HDDs.

For 26 drive configuration ..... max of 9 SSDs and no HDDs. Other port of the disk controller can not be attached to
anything.

For split configuration of 13 / 13 ..... max of 18 SSDs and no HDDs (9 SSDs allowed per split). This would be allowed for each 13 ~~9~~ slot backplane driven by dual Squib-Es

Cadet E is not supportted with SSDs in Tres. So multiple partitions are not allowed for SSDs.

n) For Squib-E/Knorr driving a SSD 6-pack in a MMA/EMA CEC, what can and cannot be attached to the open ports of the Squib/Knorr.

Dual Squib-E (AIX/LINUX support on 05/09, IBMi support 10/09): Drive a single SSD 6-pack in a MMA/EMA CEC and nothing else.

Knorr: Drive a single SSD 6-pack in a MMA/EMA CEC and nothing else.

o) For Knorr, driving a split backplane, in a HV4/HV8 CEC, with SSDs, what type of Charlottes can the other port(s) drive?

Dual Squib-E (AIX/LINUX support on 05/09, IBMi support 10/09): Drive a single SSD split backplane in HV4/Hv8, nothing else can be driven by these Squib-Es. then the 2nd port can drive a Charlotte with HDDs only

Knorr: Drive a single SSD split backplane in HV4/HV8, nothing else can be driven by this Knorr.

Same question with HDDs in split backplane. Can a Charlotte with SSDs attach to a Knorr driving a split backplane containing HDDs? No

p) For AIX/Linux systems, with non-split backplanes for HV4, HV8 and MMA CEC, with a mix of SSDs and 107

HDDs, which device (HDD, SSD) should be placed as the "boot" drive?

If there is a mix, we want to go with the HDD as the default for the "boot" drive.

q) For MMA/EMA CEC enclosures, using #3650 (3x3 split) or #3651 (x6, no split):

- A YR cable (#3667) must be used to connect dual Squib-Es to a single #3650 or #3651.
- A AI cable (#3679) must be used to connect a Knorr to a single #3650 or #3651.

r) SSDs can be placed in the Atlas CEC, with the following restrictions:

- If the DASD backplane is **not** split, then HDDs and SSDs can be mixed in any proportion. On new orders one Feature Code #0462 must be added if there are any SSDs installed in the CEC.
- If the DASD backplane **is** split, then HDDs may not be mixed with SSDs within each split. That is, within a split, only HDDs or SSDs may be configured. On new orders, one Feature Code #0462 must be added for each split that contains SSDs.

eConfig Warning or “must read” Messages:

1.List here econfig warning messages requested by PDTs, planners or development
-Acoustic door is recommended when MMA is installed in a 19” rack...list a warning when Acoustic door is not selected.

19.0 Customer Specify Placement

TBD

List customer specify placement code:

F/C	Description

Specific Restrictions and Rules:

Are customer specify placement feature codes required?

List any unique customer specify rules or restrictions

20.0 Operating System (OS) related Rules

List Primary and partitions specify codes by OS

F/C	Description
Primary OS	
#2145	IBM i 6.1 (V6R1) requires #0566
#2146	AIX (1D or 3Q)
#2147	Linux*
Partition OS specifies	
#0265	AIX Partition Specify (One per Partition)
#0266	LINUX Partition Specify (One per Partition)
#0267	IBMi Partition Specify (One per Partition)

Implementation rules :

1. One of these feature MUST be on each system order
2. Primary OS are mutually exclusive on the same system
3. For whatever primary system is specified, each MES order for that system must specify a primary operating system consistent with the system primary operating system.

Note : The 8233-E8B with IBM i as the primary operating system is not available through the SDI channel at this time

21.0 Partitioning Rules

This will be a common chapter maintained by Dave Moen. System owner will document any exceptions that apply to their systems.

Brief overview of partitioning supported in system:

The 8233-E8B supports LPAR granularity down to portions of a processor. However, the maximum number of supported partitions is 320 total partitions. The following feature codes support partitioning :

Feature Code	Description	Notes
#7793	ADVANCED POWER VIRTUALIZATION (EXPRESS APV)	2
#7794	ADVANCED POWER VIRTUALIZATION (STANDARD APV)	1, 4, 5
#7795	ADVANCED POWER VIRTUALIZATION (ENTERPRISE APV)	1, 3, 4

Note 1: #7794 and #7795 each deliver 10 partitions per processor.

Note 2: #7793 supports 3 partitions per system (PowerVM Express).

Note 3: For orders that include AIX, Linux, #7795 will be the eConfig default for PowerVM Editions based on PCR 1332.

Note 4: If Feature #2319 is selected, the system maximum of 160 dynamic LPARs is now increased to 320.

Note 5: For orders that include IBM i but not AIX, Linux, #7794 will be the eConfig default for PowerVM Editions based on PCR 1332.

22. Express Seller Link

TBD

List applicable Express Seller Indicator FC
--#0050 - IBM Express Seller Indicator (for example)

Link to Express Seller requirements provided by G Herzog. (per Doug Ewing)

23. Geo Related Link

TBD

Link to Geo Unique Document from Perry Ottmar
-Note: actual document owned by Perry Ottmar

List any known exceptions that are system specific here.

24. Incomplete System Unit (ISU) Requirements

TBD

(consult with Chuck and Planners)

Define SDI ISU requirements in terms of FCs:
FC 0002--SDI Order Indicator--ISU
FC xxxx
FC yyyy
FC zzzz

Define OEM ISU requirments in terms of FCs:
FC 0006? --SDI Order Indicator--ISU
FC 777x -- generic, groupe bull, hitachi, MCS,or Fixstars
FC xxxx
FC yyyy
FC zzzz