



How to select a DDP

For DDP16D, DDP24D, DDP48D and miniDDP48D:

1. Use Table 1 to administer performance data for your desktops and get the stream count.
 2. Check the stream count and format against Table 2 and find the number of packs.
 3. Select a DDP base system which can hold the number of packs.
 4. Use Table 3 to balance pack bandwidth against type and number of ethernet ports.
 5. Select the capacity and the number of packs to get the capacity needed. See below for the capacity calculation per pack.
- * If Archiware backup or archive is required directly from the DDP a PCIe slot must be reserved for the SAS card.

For DDP Head with DDP16EX or DDP16EXR:

1. Use Table 1 to administer performance data for your desktops and get the stream count.
 2. Check the stream count and format against Table 2 and find the number of packs.
 3. Select DDP16EX or DDP16EXR base systems which can hold the number of packs.
 4. Use Table 3 to balance pack bandwidth against type and number of ethernet ports and EX cards.
 5. Select the capacity and the number of packs to get the capacity needed. See below for the capacity calculation per pack.
- * If Archiware backup or archive is required directly from the DDP a PCIe slot must be reserved for the SAS card.

For DDP Head with DDP60EXR:

1. Use Table 1 to administer performance data for your desktops and get the stream count.
 2. Check the stream count and the format against Table 2 and find the number of packs.
 3. Select DDP60EXR base systems which can hold the number of packs.
 4. Use Table 3 to balance pack bandwidth against type and number of ethernet ports and EX cards.
 5. Select the capacity and the number of packs to get the capacity needed. See below for the capacity calculation per pack.
- * If Archiware backup or archive is required directly from the DDP a PCIe slot must be reserved for the SAS card.

Table 1. Administer performance

This table shows how to use a table or spreadsheet to determine the performance requirements

Information about	Example	Desktop 1	Desktop 2...	Desktop 20...
Desktop	Z800, Z420, MacMini, iMac ...			
OS version	W7, OSX 10.9, Linux ...			
Applications	MC7, FCP/X, Adobe, Autodesk			
Video/Film format	...			
Stream count	e.g. ProRes 422, DNxHD220 ...			
Nrs of Audio tracks	#			



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Table 2. Stream counts against packs

		SSD8 pack	HD8 pack	2x HD8 pack	3x HD8 pack
1	4K, DPX, uncompressed, 4056x3112, 10 bit, 24fr/s, 1.3GB/s	1	-	1/-	1/1
2	4K, UHD, 3840x2160, 10 bit, 25fr/s, 840 MB/s	2	-	1/-	2/1
3	4K, Cinema, 4096x2160, 10 bit, 24fr/s, 840 MB/s	2	-	1/-	2/1
4	4K, with Canon EOS C500, 4096x2160, 10bit, 24fr/s, 300MB/s	5	1/1	2/2	4/3
5	2K, uncompressed 10 bit, 2028x1556, 24 fr/s, 320 MB/s	5	1/1	2/2	4/3
6	Arriraw Open Gate, 3414x2198, 24fr/s, 270 MB/s	5	1/1	2/2	4/3
7	4K,5K,6K Redcode, highest resolution and framerate,180MB/s	8	1/1	3/2	5/4
8	RGB, 10 bit, 444, 30fr/s, 180 MB/s	8	1/1	3/2	5/4
9	3K, Arriraw, 24 fr/s, 168 MB/s	8	1/1	3/2	5/4
10	HD, uncompressed 10 bit, 1080i60, 155 MB/s	9	1/1	3/2	5/4
11	HD, uncompressed, 10 bit, 720p60, 140 MB/s	10	1/1	3/2	5/4
12	HD, uncompressed, 10 bit, 1080i50, 130 MB/s	11	2/1	4/2	6/4
13	HD, uncompressed, 10 bit, 1080p24, 124 MB/s	11	2/1	4/2	7/5
14	4K, Sony, F55/F700 raw, 16bit, 24fr/s, 120 MB/s	13	2/1	4/2	7/5
15	HD, uncompressed, 8 bit, 1080i60, 117 MB/s	14	2/1	4/2	7/5
16	HDCAMSR 444, 110 MB/s	14	2/1	4/2	7/5
17	HD, uncompressed, 8 bit, 720p60, 103 MB/s	14	2/1	4/2	7/5
18	HD, uncompressed, 8 bit, 1080i50, 93 MB/s	15	2/1	4/2	7/5
19	HD, uncompressed, 8 bit, 1080p24, 93 MB/s	15	2/1	4/2	7/5
20	HDCAMSR, 75 MB/s	18	3/2	6/4	9/6
21	HD, uncompressed, 10 bit, 720p24, 56 MB/s	20	4/2	8/4	14/7
22	DNxHD444, 55 MB/s	20	4/2	8/4	14/7
23	ProRes4444, 42 MB/s	27	6/3	12/6	18/9
24	HD, uncompressed, 8 bit, 720p24, 41 MB/s	27	6/3	12/6	18/9
25	4K, R3D, 40 MB/s	27	6/3	12/6	18/9
26	4K, Sony XAVC422, 10 bit, 30 MB/s	35	7/3	14/6	22/11
27	DNxHD220, 28 MB/s	35	8/4	16/8	24/12
28	SD, uncompressed, 10 bit, 27 MB/s	36	8/5	16/8	24/12
29	ProRes HQ, 1080i60, 720p60, 1080p30, 28 MB/s	35	8/5	16/8	24/12
30	DNxHD185, 24 MB/s	41	16/5	16/10	26/15
31	ProRes HQ, 1080i50, 720p50, 1080p25, 24 MB/s	41	12/6	16/10	26/15
32	SD, uncompressed, 8 bit, 21 MB/s	50	12/6	20/10	30/16
33	DNxHD145, 18 MB/s	56	12/6	24/12	36/18
34	HDCAM, 20 MB/s	55	12/6	24/12	34/17
35	ProRes, 1080i60, 720p60, 1080p30, 18 MB/s	55	12/6	24/12	36/18
36	ProRes, 1080i50, 720p50, 1080p25, 16 MB/s	63	12/6	24/12	38/19
37	ProRes LT, 1080i60, 720p60, 1080p30, 13 MB/s	77	12/6	24/12	38/19
38	ProRes LT, 1080i50, 720p50, 1080p25, 11 MB/s	91	13/7	26/14	40/20
39	AVC-intra100, DVCPProHD100, DV100, 12 MB/s	90	13/7	26/14	40/20
40	AVC-Intra50, IMX50, AVCHD, DVCPPro50, 6 MB/s	167	20/10	40/20	60/30
41	DV25, XDCAM HD, XDCAM EX, IMX30, MPEG30, 4MB/s	250	40/20	80/40	120/60
42	MPEG2, OffLineRT, 1 MB/s	980	80/40	160/80	240/120
43	Audio, 24 bit, 48 KHz, 100 tracks, 15 MB/s	60	2/1	4/2	6/3
44	Audio, 24 bit, 96 KHz, 100 tracks, 30 MB/s	30	2/1	4/2	6/3

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How to select a DDP

- * SSD data using 1 and 2 TB SSDs, HD using Hitachi 7200 rpm drives.
- * 4K, uncompressed with 40 GbE or 100 GbE, dual 10GbE.
- * Both SSD8 pack and HD8 packs data with raid 5 set of 8.
- * The streamcount for the HD8 pack is displayed as maximum/guaranteed. The maximum value is obtained when the DDP holds less then 5% of the material. The guaranteed value is worst case when the DDP holds 70% of the material.
- * When bandwidth requirements exceed ~1500MB/s, faster cpu are needed (F labelled).
- * The streamcount of the SSD8 pack only carries the guaranteed value.
- * To get values for the SSD4 packs the values must be divided by 2. Larger values can be obtained by multiplication.
- * The figures are a guide only. Actual results may vary. Factors effecting actual stream count are: number of desktops, OS/Application/desktop type, write/copy actions, frame size, IP infrastructure length of clips being used.
- * All data are subject to change without further notice.

Table 3. Bandwidths

*This table shows the practical use cases for the various optional components for the DDP.
To guarantee performance a headroom of 50 % is used.*

HD8 pack	2x HD8 pack	3x HD8 pack	SSD4 pack	1GbE port	10GbE port	40GbE port	EX card
170 MB/s	340 MB/s	680 MB/s	490 MB/s	50 MB/s	500 MB/s	2000 MB/s	750 MB/s

Capacity Calculation per Pack

- * SSDs are delivered with 1 TB
- * HDs are delivered with 500 GB, 1, 2, 3 and 4 TB
- * Standard equal Raid 5 sets over 8 or less drives/SSDs are made. This gives an effective capacity of total pack capacity minus 1
- * Note: upon request Raid 6 sets over 8 drives can be delivered

Additional Comment:

It is not just stream count what matters. Also ingest, copying, transcoding, rendering are part of the job. The bandwidth of these must be added 1:1 to your total bandwidth requirement. When these are from/to the DDP, it should be doubled. They can reach wire speed; as high as 100 MByte/s over a 1GbE line and up to 1GByte/s over a 10GbE line.

Using Bandwidth Limiting an upper limit can be set such that the sum of these and stream count remain within the specification of the DDP.