
Data Center Design Considerations

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Summary:

- **Data Center cabling lengths presented at 10GBASE-T Study Group Meeting November 10-13, 2003**

Contributors:

- **Jonathan Jew, President,**
 - **J&M Consultants (Telecommunication Engineering Firm)**
 - **Co-chair TR42.1.1, Data Center Standard**
- **Phil Isaak, Associate, Senior Communications Engineer,**
 - **Mazzetti & Associates (Engineering Firm)**
- **William Baxter, Telecommunications Practice Leader**
 - **OWP/P (A&E Firm)**

Data Center: Horizontal Cabling Length: J&M Consultants (Engineering Firm)

- Data centers built in ~2003 by (J&M) type and size
 - 93% of data center horizontal cables are \leq 45m
 - 99% of data center horizontal cables are \leq 55m

Data Center Type	Data Center Size (sq ft)	0-30 m	31-45 m	46-55m	56-75m	76-100m
Corporate	5000	100%	0%	0%	0%	0%
Corporate	8000	90%	10%	0%	0%	0%
Govt	10000	70%	20%	10%	0%	0%
Corporate	20000	70%	25%	5%	0%	0%
Corporate	20000	90%	9%	1%	0%	0%
Internet	40000	60%	35%	5%	0%	0%
Corporate	45000	65%	25%	8%	1%	1%
Internet	60000	35%	48%	15%	1%	1%
Internet	60000	55%	35%	8%	1%	1%
Internet	80000	55%	35%	8%	1%	1%
Internet	100000	55%	35%	8%	1%	1%
Average		67.7%	25.2%	6.2%	0.5%	0.5%

Source: Jonathan Jew, J&M Consultants, Co-chair TR42.1.1- Data Center Standard

Data Center: Horizontal Cabling Length: Mazzetti & Associates (Engineering Firm)

- Data centers built in ~2003 by (M&A) type and size
 - 83% of data center horizontal cables are $\leq 45\text{m}$
 - 94% of data center horizontal cables are $\leq 55\text{m}$

Data Center Type	Data Center Size (sq ft)	0-30 m	31-45 m	46-55m	56-75m	76-100m
Corporate	5000	100%	0%	0%	0%	0%
Corporate	10000	8%	23%	38%	31%	0%
Financial	25000	74%	19%	6%	1%	0%
Corporate	30000	99%	1%	0%	0%	0%
Internet	60000	47%	46%	5%	1%	1%
Internet	75000	44%	50%	4%	1%	1%
Internet	120000	35%	32%	27%	5%	1%
Average		58.1%	24.4%	11.4%	5.6%	0.4%

Source: Phil Isaak, Associate, Senior Communications Engineer,
Mazzetti & Associates (Engineering Firm)

Data Center: size versus percentage built

Data Center Size (sq ft)	Size Category	Percentage built
</= 5000	small	50%
</=15000	midrange	30%
>15000	large	20%

•80% of data centers built ~2003 by (J&M) are ≤ 15000 sq ft

Source: Jonathan Jew, J&M consultants, Engineering Firm

Data Center Size (sq ft)	Size Category	Percentage built
</=5,000	small	30%
</=15,000	midrange	45%
>15,000	large	25%

•75% of data centers built ~2003 by (M&A) are ≤ 15000 sq ft

Source: Phil Isaak, Associate, Senior Communications Engineer,
Mazzetti & Associates (Engineering Firm)