Datum Connect Series
Making Co-location Work

Volume 2 – Understanding what is needed

Finding out what you need

In the first volume of this series, we looked at the factors you might apply to your co-location selection which will hopefully help you to decide on a shortlist of appropriate providers. At this stage you might want to open more detailed discussions and to start the quote process including looking at how each provider could support you, and what would be included in the contract. In this short section we will review the type of information you will need to provide and the elements you might wish to consider to ensure the final contract fits your business needs.

Basic preparation

Most providers will need certain basic information from you in order to start scoping your requirements. Factors to consider include:

1) Your power requirements

2) How many racks you will need

3) Types of connectivity needed

Power considerations

Some co-location data centre providers price on leased space and some on power usage. Some facilities can handle high power densities whilst others are more limited. But how can you work out how much power you will require? Once again it all starts with the hardware inventory. The main calculation you will need is:

Amps*Volts=Watts

This determines how much energy a piece of equipment uses at a given moment.

There are two possible approaches.

1) Use a combination of faceplates and meters

All equipment is obliged to carry a plate showing acceptable voltage ranges and amps drawn per load - and most modern power distribution equipment includes a built-in meter displaying power use. Applying the formula will give you current draw but also allow for your kit to consume more power over time.

2) Use the hardware list

Compiling a list of the equipment, it is possible to identify the maximum power usage. It is a good idea to start off identifying certain key characteristics for each piece:

a) The CPU/RAM/HDD/SSD configuration

b) Its purpose (DNS, database, application server, web server)

c) The age as newer equipment will be more efficient

d) Special requirements eg Power over Ethernet

The manufacturer specifications will give the watt rated power supply, or will show the maximum draw in amps across a range of volt systems and an average power consumption.

Using the same formula, convert the amps/volts into watts and add the wattages for every piece of equipment to give you the maximum power usage at any one time.

This figure gives you a base to work from but you will need also to consider that **IT equipment rarely reaches its maximum power limit.** Knowing how the equipment is used will help determine how much actual power needs to be provisioned.

Once in situ, meter checks will help you to build a more accurate model based on actual consumption.

Talking racks

The basic unit of space in most co-location data centres is the rack, the metal frame that holds servers, hard disk drives, modems and other electronic equipment. How many racks you will need will depend on the amount of space your equipment needs now, with ideally the option to take a first reserve on additional space for any growth you envisage.

If you are completely new to talking in terms of racks, a standard rack is often referred to as a 42U-sized rack. U describes the amount (unit) of vertical space (1.75 vertical inches) that rack-mountable gear takes up in a standard 19-inch rack.

Running an inventory of your devices will show you how many are 1U, 2U or 1/2 in size. When calculating how many racks you will need, remember to build in redundancies and space for the power supplies.

A rack can be securely locked but you may wish to consider whether your business requires additional segregation or security. Over and above a rack, you may require a dedicated cage around your racks—and if so, carefully consider expansion needs to enable more racks to be added within the cage as required.

Define your connectivity requirements

Whilst some co-location providers are tied to one or a few connectivity providers, a carrier and cloud neutral data centre give you flexibility of choice. It will also enable you to switch providers for the best deal.

You will need to consider the connectivity needed to support your business model for ecommerce, XaaS, hybrid computing or other cloud based technologies. Increasing data transit volumes demand a network connectivity solution that enables downloading and uploading data at volume in both directions— with speedy, fully symmetrical access between peers, the cloud, and the servers on which your data is stored. You will also want to decide network access methods, including fibre versus copper, and access technologies that include Ethernet, TDM, SONET and Wavelength services.

Depending on the complexity this may require the services of a specialist Network Services company. Datum's ecosystem of specialist providers

including Interoute, Next Connex and ConnetU who can assist with a range of connectivity services such as IP transit, Leased Line connectivity, WAN & MPLS and optical wavelengths between key UK Data Centres. Datum also offers connectivity to a wide range of carriers, and to specialist cloud providers and cloud platforms.

Preparation checklist

Below is a suggested checklist of items to build in order to help scope your requirement for co-location space.

Item	Answer	Notes
Equipment inventory		
Desired term of contract (months)		
Racks (quantity)		
Power requirements (kW)		
Power billing model		
Connectivity		
- Managed bandwidth		
- IP Transit		
- Internet Breakout		
- P2P		
- Capacities		
- Diversity		
- Locations		
Dedicated cage		
Remote hands services eg		
Timeframe (desired start date)		
Budget allocated		

New to co-location or looking for a better way of working?
Take a look at the other guides in the Datum Connect Series;

Other titles include:

- Investigating the options
- Budgeting and running costs
- Planning the move
- Moving day
- Keeping the lights on

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