Data Centre Co-location – Client Equipment Relocation

For reference: Insurance

Transit

Insurance is in place for transits of University of Cambridge property between any locations worldwide providing the total value does not exceed £50,000 and the department has approved the transit. There is no need to notify the Insurance Section of transits of goods where the total value is below £50,000, and there is no further cost for this cover.

However, where a transit of property exceeds £50,000 administrators should contact the Insurance Section so that appropriate transit insurance can be arranged. A completed Marine Transit form should be sent through to the Insurance Section at least 48 hours before the transit. Departments should be prepared to pay for this insurance. A Marine Transit form can be found on the Insurance Section website.


Fact-Finding Framework

Timescales

• By when does the relocation need to be completed?
• Does this timescale include contingency? If so, how much? How flexible?
• If the relocation is sizeable, can the process be broken down into discrete elements?
• Are there factors dictating when certain devices can be moved; seasonal impositions?
• Are some devices predicated on the prior relocation of other devices?
• Are there client-side parking limitations envisaged during the relocation period?
• Staff availability, both client and UIS (DCH), during the period of relocation?

Power requirements

• What is the current power consumption? In total? By device?
• How accurate are these measurements?
• Are they point-in-time measurements or average consumption figures?
• If average consumption figures, over what length of time? Affected by seasonal usage?
• What are the maximum and minimum power consumption figures? In total, By device?
• If no accurate measurements exist are the plate values of the devices known? Available?
• Apply de-rating at 0.67 of manufacturers’ name plate value; 0.8 for compute nodes

Equipment

• Identify all items of equipment to be moved
• How many items are to be relocated?
• The types of devices to be relocated? Servers, switches, storage arrays etc.?
• What size (in U) is each item? Any oversized (depth) items – Dell PV MD3000 series e.g.?
• Total rack space required?
• Number of racks required? This may be dictated by power requirements, balancing, availability?
• What are the current racks’ dimensions? Will the receiving racks need to be altered?
• In which direction does each device vent hot air? Can air-flow be reversed?
• Heavy equipment: For handling and transport across site, is lifting equipment available?
• Number of PSUs per chassis and location within? (Are both left- or right-sided e.g.?)
Racks

- Identify tool-less rails... Be alert to potentially problematic rails.
- Identify potential requirement for specialist extraction tools, screw threads.
- Types of retaining cage nuts and bolts used. Are they standard?¹
- Contain rack rail screws in LTO tape cases. Endeavour to have one case per rail set.
- During transport ensure device, rails and retaining components remain together.
- Establish depth (front-to-back) requirement of device(s)... If necessary, can rails be modified? Does the rack need to be modified? If equipment from various racks are to be housed in the same rack, are the depths consistent? If not, how problematic is this? Identify potential problems and consider solutions.

Networking requirements

- Establish what the clients networking requirements are
- Who will be responsible for switch configuration? Department? UIS?
- If the department, will the POP switch fan out to other rack switches?
- Would inter-rack connectivity be improved by deploying RapidNet² (see cabling below)?
- If UIS, Networks will/may need to configure vlans.
- For CCI organisations seeking hosting, one of two networking options needs to be chosen.

Cabling

- For clients with more than one rack, is cabling between racks be required?
- Structured cabling is to be used for inter-rack connectivity³
- Are cables to be reused? Consider existing category of cables (UTP), age etc.? Replace with 6A? Consider condition of existing cables.
- Aim to remove legacy cabling where possible.
- If existing cables must be retained, e.g. Infiniband, do stock levels limit rack placement?
- Is it possible to purchase longer cables of the existing type? If so, is the cost prohibitive?
- Will such cables need to be manufactured on request? Timescales? Alternative solutions?
- Is there a need for any other specialist cables? Device interconnects etc.
- Is there sufficient capacity on power strips for C19/C20 power cords requirements?
- Power cords for WCDC will be provided – colour coded black (supply A) and blue (supply B).

Relocation

- Identify route(s) across site, be alert to obstacles that will compromise ease of egress.
- Site access for UIS vehicle?
- Wider traffic, construction considerations?
- Avoid traffic calming measures for sensitive equipment.
- Suitability of flight cases?

² Structured cabling. Other types of structured cabling are available.
³ For temporary, very short-term requirements, direct cabling may be permissible.
Site knowledge

- Are specialist tools required – for extraction of rails, cables, equipment?
- Some HP server rails were notoriously difficult to remove without bending end plates.
- Any site-specific considerations not previously covered?

Sundry

- Encourage generation of cabling diagrams – preparation, ensure sufficient capacity, potentially identify shortages based on colour and/or length.
- Interim - Power strips: if client has existing intelligent power strips and desires retaining these, we can accommodate.
- If Power strips do not have the correct brackets, they must not be left loose in the cabinet. Tie-wrap as effectively as possible. They can be installed properly at an agreed point in the future.
- Use of UIS van: Early Friday start times will likely be compromised by Building Services requiring use of van.
- Consider third party interest in equipment to be moved. The third party may be providing existing warranty cover, for example, and may insist on relocating, racking and cabling the equipment. DCH may be required to provide escort to third-party contractors at the Data Centre.
- Dust equipment, being relocated to the Data Centre, prior to racking.
- Internal – dispose / retain packaging, return tools etc. to usual storage location(s).
- Useful (?) predictive power calculators for new* equipment (*when determining components is easier):
  http://outervision.com/power-supply-calculator (includes server option)
  http://powersupplycalculator.net/