Gigaclear Cabinet Access Service

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2. Introduction and Scope

Gigaclear is able to facilitate space in or adjacent to our access (active) roadside cabinets to other network operators as part of our third-party access commitments under BDUK and under negotiated commercial conditions for purely commercial build areas.

Gigaclear does not have exchange sites in the same way that BT and some other operators do, and so our cabinets are exclusively external cabinets, typically located at the roadside. These cabinets are not temperature controlled, are limited in size to limit the visual impact on the environment. They are typically found in hub locations within our coverage areas.

Gigaclear has a network formed of these cabinets, as well as "gateway" sites which house backhaul/transport equipment which can provide connectivity directly to our core sites in London and Slough.

All of our inter-cabinet links use Ethernet networking, and coarse or dense wavelength division multiplexing mux/demux capability can be provided for wavelength services. Transport links in some areas provide optical transport network services.
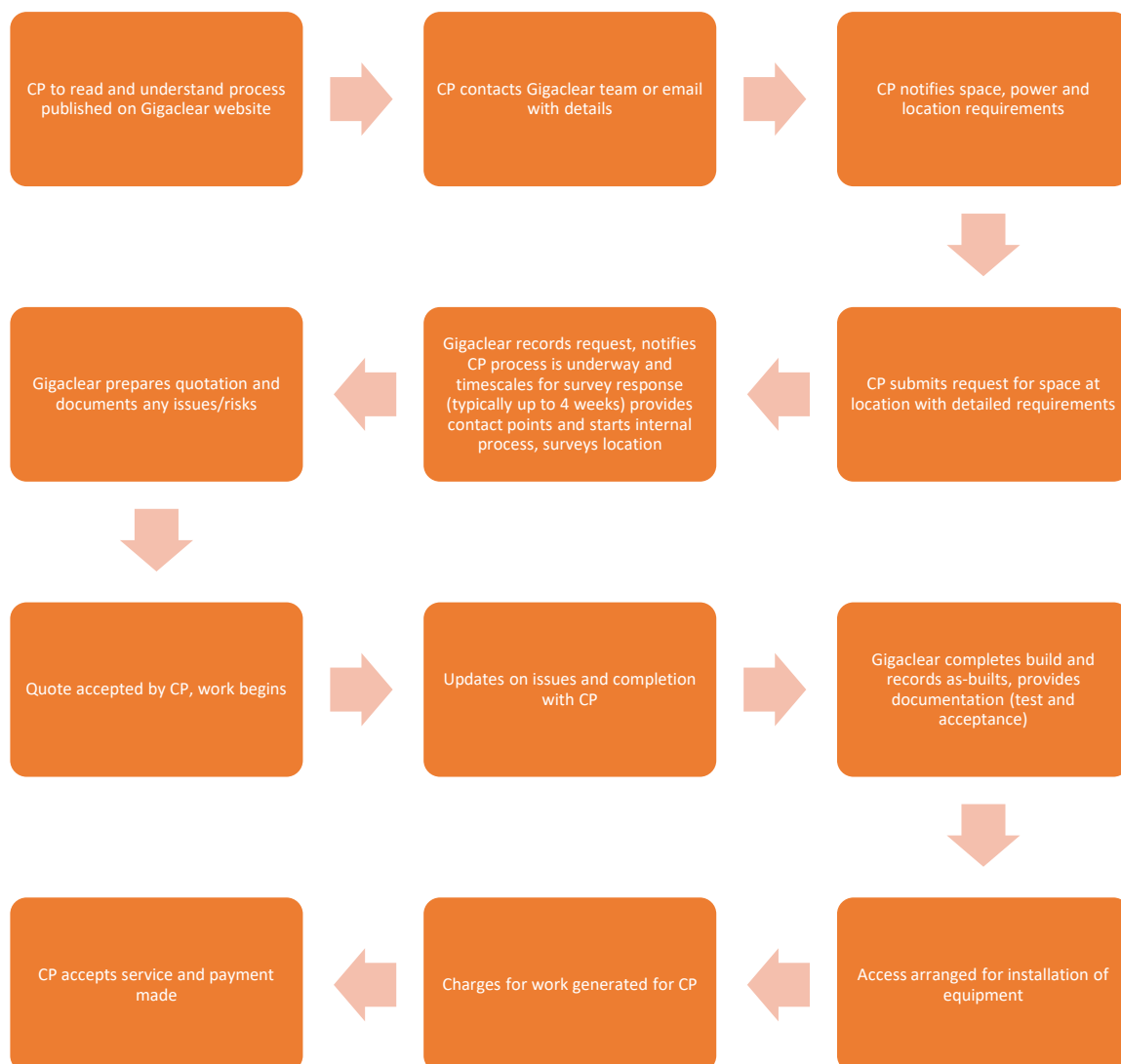
Because of the limited size of cabinets, third-party access to space inside the cabinets typically requires the deployment of a second cabinet nearby to the desired cabinet, which Gigaclear will facilitate. This process could take several months and is primarily dependent on the agreement of local stakeholders, including landowners where the cabinet is on private land, local Parish and County councils, and local highways bodies.

In providing additional cabinet space, Gigaclear will also provide enough duct/cable capacity to this cabinet from our existing cabinet as well as a limited amount of power if required. Very small pieces of equipment *may* be accommodated within Gigaclear's existing cabinets; in the case of gateway locations, larger pieces of equipment may also be accommodated, all subject to survey and quote.

3. Process

In the first instance the communications provider (CP) should contact Gigaclear to register their interest in the use of Gigaclear cabinet space under the BDUK rules. Existing partners may contact Gigaclear using their partner support channel, new partners can use any mechanism facilitated by the 'Contact Us' page on the website. The CP should request what capacity is needed, where and under what timescales. Following the enquiry Gigaclear will be able to provide a list of cabinet locations that the operator is interested in with guidance on space and power availability. The process will then work as described below.

3.1. Order Process

CP to read and understand process published on Gigaclear website	→	CP contacts Gigaclear team or email with details	→	CP notifies space, power and location requirements

Gigaclear prepares quotation and documents any issues/risks	←	Gigaclear records request, notifies CP process is underway and timescales for survey response (typically up to 4 weeks) provides contact points and starts internal process, surveys location	←	CP submits request for space at location with detailed requirements

Quote accepted by CP, work begins	→	Updates on issues and completion with CP	→	Gigaclear completes build and records as-builts, provides documentation (test and acceptance)

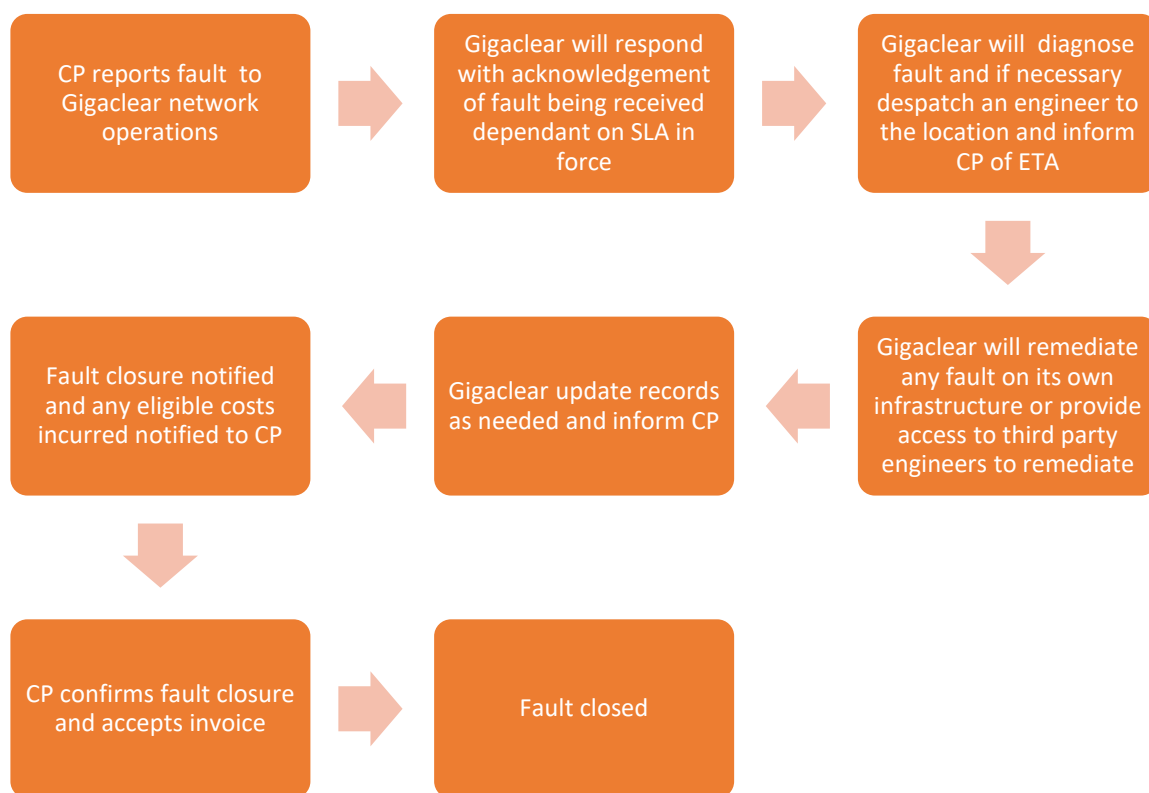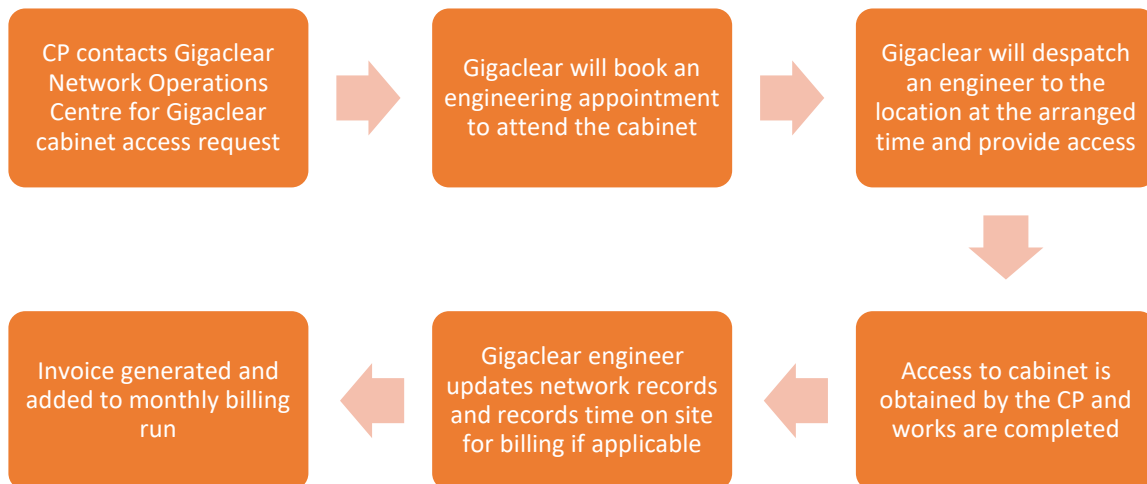| CP accepts service and payment made	←	Charges for work generated for CP	←	Access arranged for installation of equipment

3.2. Troubleshooting and Fault Resolution

Gigaclear's Partner Technical support team within our Network Operations Centre (NOC) constantly monitors all active network components in our network and will be the first port of call for all faults. The NOC is also responsible for arranging access to third-parties to remediate or troubleshoot issues with third-party equipment in cabinets. Any service affecting preventative works will be communicated to the CP generally with 2 weeks notice. Unscheduled fault or power outages that become service affecting will be notified usually within 30 minutes of our NOC detecting the problem.

If there are problems or faults with a Gigaclear cabinet, power or the space itself, the following process must be followed. Any interference with a Gigaclear cabinet without prior permission is not allowed and could cause service issues to our customers.

CP reports fault to Gigaclear network operations → Gigaclear will respond with acknowledgement of fault being received dependant on SLA in force → Gigaclear will diagnose fault and if necessary despatch an engineer to the location and inform CP of ETA ↓

Fault closure notified and any eligible costs incurred notified to CP ← Gigaclear update records as needed and inform CP ← Gigaclear will remediate any fault on its own infrastructure or provide access to third party engineers to remediate

CP confirms fault closure and accepts invoice → Fault closed

3.3. Accessing Cabinets

Any cabinet access required will be under the supervision of a Gigaclear engineer. There is no provision for unattended access. Changes that require Gigaclear engineering work (for instance, DC power or network uplink reconfiguration) may require specialist engineers who must be requested by the CP at the time of requesting access.

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┌─────────────────────────┐      ┌─────────────────────────┐      ┌─────────────────────────┐
│ CP contacts Gigaclear   │  →   │ Gigaclear will book an  │  →   │ Gigaclear will despatch │
│ Network Operations      │      │ engineering appointment │      │ an engineer to the      │
│ Centre for Gigaclear    │      │ to attend the cabinet   │      │ location at the arranged│
│ cabinet access request  │      │                         │      │ time and provide access │
└─────────────────────────┘      └─────────────────────────┘      └─────────────────────────┘
                                                                              ↓
┌─────────────────────────┐      ┌─────────────────────────┐      ┌─────────────────────────┐
│ Invoice generated and   │  ←   │ Gigaclear engineer      │  ←   │ Access to cabinet is    │
│ added to monthly billing│      │ updates network records │      │ obtained by the CP and  │
│ run                     │      │ and records time on site│      │ works are completed     │
│                         │      │ for billing if applicable│     │                         │
└─────────────────────────┘      └─────────────────────────┘      └─────────────────────────┘
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3.4. Cabinet Maintenance

Gigaclear access cabinets are subject to a regular preventative maintenance programme to ensure maximum reliability.

Additional cabinets supplied to Partners will also be subject to the same preventative maintenance programme, the cost for this is included in the monthly rental.

Maintenance of CP equipment is not included in this cost; the scope of this maintenance is limited to Gigaclear supplied equipment, fan filters, power systems and cabinet housing.

4. Technical Specifications

4.1. Gigaclear Cabinet Equipment Rack and Space

The picture to the right shows Gigaclear's typical new-build cabinet equipment rack, populated with equipment. Typically, a dedicated cabinet provided for third party access will be empty of all equipment except for a 13A mains power splitter and a 1U fibre patch panel.
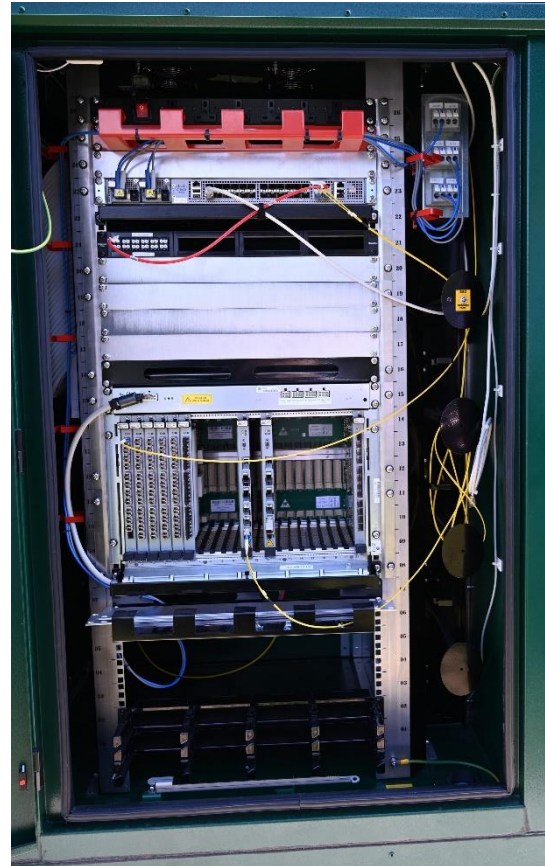
Gigaclear's cabinets can provide (per provider) up to:

- 5U of equipment (in a typical existing gateway cabinet)
- 7U of equipment (in a typical new-build cabinet for third-party use)

These figures assume a 3-way sharing scenario; additional space may be sought at additional cost. Existing cabinets may have space but no guarantees can be made.

The rack is a standard 19" rack and has a minimum 300mm depth. Increased depth is available in some scenarios. 21" racks are available in some cabinet configurations on request. Space in front of the rack is limited to 100mm.

Non-rack-mount equipment can often be accommodated, such as radio equipment or test devices. This is done at Gigaclear's discretion.

Figure 1: Typical new-build cabinet, populated with Gigaclear equipment **- for third-party use this rack is empty from U21 down**

Fibre and DC power cable management is shared between all cabinet users and takes the form of cable retention rings and trays for DC power at the left and top of the cabinet as well as a set of fibre guide loops on the right hand side. Power is detailed in the section below.

4.2. Environmental Requirements

The interior environment targets, but does not guarantee, compliance with ETSI EN 300 019-1-3 class 3.4 (sites with heat-trap).

Filtered forced air cooling is provided and equipment should draw cool air from the front of the rack and exhaust to the rear. Other airflow types can be accommodated.

Ambient air temperatures are typically between $-5°C$ and $+60°C$ in extremes.

Relative humidity can vary between 10% and 100%, and so conformal coated components are recommended where possible.

Gigaclear recommends industrial temperature hardened parts, particularly optical transceivers, are used; commercial grade parts often fall short of maximum temperature requirements and fail.

4.3. Power and Earthing

All Gigaclear cabinets are AC powered from the local power grid. This feeds a DC 48V power system that is used to provide power to telecoms equipment. AC power supply sockets are also provided for engineering laptops and other devices that do not require reliable power.

In existing cabinets all power is subject to survey and only a single 5A DC supply can be guaranteed.

In additional (3rd-party dedicated) cabinets, two DC power breakers can be provided per CP with up to 10A total draw. Additional power may be available on request and subject to survey/design.

Battery back-up is supplied at all cabinets for all DC supplies and is guaranteed for a minimum runtime of 2 hours in worst-case full-load conditions in winter. Typical runtimes exceed 4 hours and this is increased for gateway sites. Gigaclear will always endeavour to provide generator cover for planned and unplanned power outages.

All equipment is grounded through chassis connections or grounding point connections to the rack or cabinet bonding points, which are connected to a ground electrode maintained by Gigaclear.

Electrical safety of equipment is the responsibility of the CP; Gigaclear is responsible for making connections to the cabinet. The CP will provide appropriate DC power cables and terminate their equipment side, providing enough cable slack to reach the DC power clamps following the approved route. Gigaclear will provide an electrician to check the connection, make the final connection to the DC supply, and energise breakers.

No guarantees are made as to the quality or stability of AC power supplies within the cabinet.

4.4. Incoming and Outgoing Cabling

There is provision for cables to enter and leave the cabinet through a series of ducts which terminate in Gigaclear chambers adjacent to the cabinet. Each CP may bring in cables so long as their combined diameter (measured as a bundle) remains below 25mm (e.g. the entire bundle of cables could fit within a 25mm duct).

Cable termination must be accomplished with in the CP's rack space or within a small portion of the provided cable termination space (depending on cabinet type).

Connections to Gigaclear fibre can be accommodated but must be specified and arranged as part of the initial ordering process. Access to additional fibres after order delivery will be managed as a change to the service.

4.5. Labelling

Gigaclear will issue a service reference number as part of the order process.

All cabling and equipment installed by a CP within Gigaclear's cabinets must be labelled clearly at both ends with the CP's service reference number. Additional information such as the equipment to which the cable is connected should also be noted.

Labels must be printed and be of a hard-wearing nature suitable for the cabinet environment.

5. Services and Pricing

Refer to Wholesale Price List

5.1. Contract Conditions

Please refer to the Gigaclear Passive Network, Cabinet, and Dark Fibre agreement for full conditions of the contract.