



in-tuition

# Our Hosting Infrastructure

An introduction to our Platform,  
Data Centres and Data Security.

[www.in-tuition.net](http://www.in-tuition.net)

# UK Infrastructure

## Infrastructure Overview

In-Tuition Networks has provided managed Internet solutions since 1996 – combining excellent personal service with a sound technical infrastructure.

We own and operate our own high specification technical platform which is hosted within two Tier III UK data centres in London and Manchester.

Data security and system stability are at the heart of everything we do. We build redundancy into every layer of the platform wherever technically possible, even if that involves extra cost for us.

We use high specification, enterprise grade equipment for super fast response times and we select our Internet routing partners with care to ensure we have the best internet peering possible.

Our services sit only a few hops away from one of the world's largest and most respected peering points (LINX) and our Manchester site has over 80Gbps of connectivity, is connected to 7 of the worlds most important Internet exchanges and is directly peered with over 70% of Europe's ISPs.

Many years of continued investment and refinement have resulted in a reliable, resilient platform and a huge amount of experience which we continue to apply everyday.



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London

## London Docklands

Our primary data centre sits at the heart of London's Docklands data centre area – since 2002 it has provided uninterrupted service for our primary hosting platform which is located here.

Recognised as one of the leading data centre premises in the UK, our London Docklands data centre is purpose designed and operated to Tier III. It offers outstanding levels of power and cooling reliability and exceptional security from which to host our equipment.



# Technical Specification: London

## Building Overview and Management Systems

- Purpose built data centre recognised as one of the leading data centre premises in the UK.
- Operated to Tier III specification
- Located in the heart of London's Internet infrastructure zone – AC1 (main sub sea cable to North America) and WACS are within data centre.
- Environmental conditions and engineering systems monitored continuously 24x7
- Dedicated facilities management team carry out physical checks to every data floor throughout the day (they don't just rely on automated checks) as well as regular simulated power outages.

## Power supply and management

- 11kV Utility supply with N+1 redundancy
- Utility power supply capacity of 9MVA
- Technical power supplied on site primarily by static UPS with backup standby generation and in part by diesel rotary type UPS with N+1 redundancy
- 4MW technical (IT) power
- Mechanical systems backed up by standby generator system
- Typical UPS battery autonomy 20 minutes
- Racks fed by A and a B power feeds – each powered from a different upstream Power Distribution Unit (PDU).
- All key equipment items are connected to both A and B feeds to ensure continuity of supply in the event of a failure of one of the feeds or equipment PSU.
- On-site diesel tanks support 48 hours at full capacity with 24x7 fuel delivery

## Cooling & Environment

- Chilled water cooling system
- Minimum N+1 resilience on all systems
- 11.8MW of total cooling provision
- Diverse distribution pipework throughout
- N+1 Computer Room Air Conditioning units
- Air-conditioning units with built-in resilience and under-floor cooling maintain room temperature at 21 degrees C  $\pm$  3 degrees C and humidity at 50%  $\pm$  10%, with a cooling load per rack of 2.5kw

## Fire Detection and Suppression

- Analogue addressable fire detection system in all areas
- Very Early Smoke Detection Alarm (VESDA) system – can detect fire, smoke and differential changes in temperature and humidity levels
- Fully redundant fire suppression system managed 24x7 with controlled shutdown
- Argonite and FM200 gas suppression systems

## Connectivity

- Cisco powered, multi-homed network running BGP – multiple diversely routed fibre connections and industry leading peering arrangements
- 2 hops away from the LINX – super fast network performance
- Multiple Ethernet connections to all hosting equipment to core network for complete redundancy
- Kcom, Level 3 and AboveNet transit providers

## Security

- Security Operations Centre manned 24x7
- Security guard patrols 24x7
- Strictly controlled vehicular access to parking areas via single entrance – all boarders are either security fenced or protected by a moat and pedestrians must enter by man trap.
- Having been allowed access to the car park, all visitors must enter the building via a man trap door and can not proceed further without the appropriate pass.
- Premises under constant CCTV surveillance both exterior and interior common parts
- CCTV records kept for a minimum of 31 days
- Intruder alarms to all areas
- Perimeter Intrusion Detection System
- Strict access control procedures controlled using proximity card readers and biometric systems
- Secure managed delivery and loading area available 24/7



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# Manchester

Manchester provides our second UK location operated to Tier III and features independent connectivity to Europe routed via the East of the UK to avoid reliance on London.

Our Manchester data centre is one of the most power efficient data centres in the business. With a PUE of less than 1.2, it goes far beyond offsetting its carbon footprint. And with a dedication to continually become more efficient it reduces its carbon use by over 1,000 tons each year.

With redundant 80-Gigabits of Internet connectivity and peering relationships with over 70% of all the European ISPs, our network connectivity and capacity from Manchester is second to none. Complete network independence from London is achieved via a fibre route to Europe via the East of England to ensure continuity of Internet connectivity should a massive problem affect London.

Manchester boasts similar levels of security as our London data centre with multiple physical security levels and is manned 24/7 inside a fenced and gated compound.

Both data centres also use an internal maglock security system – the same system used at all high-security prisons to ensure only those who need access can access the various areas of the data centre – even we can't access the data centre without an appointment.

Manchester is also fully UKAS accredited for ISO 9001:2008 Quality Management System.

# Technical Specification: Manchester

## Building Overview

- Operated to Tier III
- Dedicated detached building housing state-of-the-art data centre
- Overhead data cable distribution
- Committed R&D programme and test laboratory
- 24x7x365 onsite engineers
- Full UKAS accreditation for ISO 9001:2008 Quality Management System

## Building Management

- Experienced 24x7 facilities team
- Environmental conditions monitored continuously in all technical areas
- All engineering systems monitored 24x7
- Comprehensive energy metering system

## Power

- <1.2 PUE
- Resilient N+1 UPS power protection
- Multiple layers of guaranteed and tested power redundancy
- Fully automatic diesel power generation
- 7 days fuel storage on-site with refuelling SLA from two separate depots
- Full mains failure simulated in monthly test
- Dedicated onsite High-Voltage substations
- 16 amp A + B power feeds to racks

## Cooling & Environment

- Adiabatic free cooling system
- Sealed 'cold aisle' for efficiency

## Fire Protection

- Analogue addressable fire detection system in all areas
- Very Early Smoke Detection Alarm (VESDA) system – can detect fire, smoke and differential changes in temperature and humidity levels
- FM200 gas suppression systems

## Connectivity and Network Capacity

- Multiple diverse and redundant optical fibre entry points
- 80-gigabits of live Internet connectivity
- Extensive and expanding advanced 10 / 20 Gbps IP and MPLS network connected directly to 7 of the world's largest and most important Internet exchanges
- Resilient European network ring spanning Manchester, London, Amsterdam, Frankfurt, Paris and Belgium with a full London bypass
- Direct peering relationships with 70% of all the European ISPs

## Security

- ISO 27001 Accredited
- Located in secure fenced and gated compound
- Multiple physical security layers
- Manned 24/7/365 by expert staff
- CCTV surveillance cameras
- Access controlled maglock internal doors





# Obsessive About Security.

Data security and system stability are at the heart of everything we do.

Real time replication and backups means that for every 1 GB in a mailbox, we actually store 8 GB.

# Data Security Details

## Network/System Level

- All services are protected by multiple redundant firewall and Intrusion Detection Systems.
- Individual servers run local firewalling and operating systems are “security hardened” to industry best practices.
- Servers support Transport Layer Security (TLS) and default to using this if the third party mail server supports TLS.
- Connections to Webmail, IMAP and POP3 are all possible via SSL encryption.
- Backup data is encrypted before being transferred to any offsite location.
- Passwords are stored using one way hashing – staff are not able to view Zimbra passwords.
- For every active component in our platform, there is a corresponding standby ready to take over automatically should the primary fail.
- All core data is stored on volumes protected by at least two separate storage nodes. Writes are only committed when confirmed by at least two separate storage nodes. Storage nodes run RAID5 or greater.
- Battery backed write caches are enabled on all RAID controllers.
- Nightly backups are performed, encrypted and then transferred offsite to geographically diverse locations.
- Access to equipment and data centres is strictly controlled and monitored.
- Individual racks are locked and unused USB/Serial ports are disabled. BIOS set-up passwords are enabled on all physical equipment.

## Physical Security

- Mail systems are hosted within very secure data centre facilities in London and Manchester (see above for details).
- Access to equipment and data centres is strictly controlled and monitored.
- Individual racks are locked and unused USB/Serial ports are disabled. BIOS set-up passwords are enabled on all physical equipment.

## Policies and Procedures

- Strict and extensive range of policies and procedures in place designed to ensure data integrity and security.
- Culture of security and safety first which is continually reinforced.
- Staff awareness of information security is very high and regularly reinforced.
- Staff access to core systems and facilities is restricted to only long standing staff members.
- Strict access controls and auditing on management systems/links.
- Principle of least level of access required is applied across all systems.





# Green.

Our datacenters are  
world-leading when it  
comes to keeping green.

Everything from the  
lighting to the air  
conditioning is as  
efficient as it can be.





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