iPBX
Technical Overview

◉ Background

We offer a completely managed telephony infrastructure, and IP Phones installed on customer premises are monitored and managed from our central sites.

Our hosted system implements SIP and other industry standards.

◉ Core technology

All the core telephony functionality runs on Dell servers running the Linux operating system. The user portals and other non-critical subsystems run on Dell servers running Microsoft Windows Server.

◉ Platform Hosting Facilities

◉ Vodafone Uxbridge

- Vodafone Uxbridge is a Tier 3+ dedicated hosting facility operated by Vodafone. The facility is secure to government List X and fully audited to ISO 27001.The facility sits within one of the few truly 'no-fly' zones in the greater London area due to the highly controlled airspace surrounding London's Heathrow airport.
- This facility incorporates UPS/generator backup for continuous electricity supply etc.
- Every critical component of our platform has dual power supplies fed from diverse power feeds. IP connectivity is provided by dual resilient feeds. We have "out of band" console access to all devices, as well as the ability to perform remote power recycling if necessary.

◉ Cogent Docklands

- Cogent Docklands is a secure dedicated hosting facility in London's Docklands which is owned and operated by Cogent (http://www.cogentco.com) one of the world's largest IP transit and network operators.
- As with our Uxbridge datacenter, this facility also incorporates UPS/generator backup for continuous electricity supply, and every critical component of our platform has dual power supplies fed from diverse power feeds. IP Connectivity is provided by dual resilient feeds. We have "out of band" console access to all devices, as well as the ability to perform remote power recycling if necessary.
- We have a private dedicated link between the two sites. Our support office in Henley also has generator / UPS backup for power and multiple diverse IP connections. In addition we have agreement in place support and monitoring contract with a leading UK company.

◉ Platform Networking

Our IP network is just "one hop" from core Vodafone and Cogent network equipment which gives iPBX excellent peering and very low latency across all internet service providers and direct access to Linx.

Within our own internal network there is no single point of failure. We have multiple independent connections to both operators and all core network components: e.g. firewalls routers and switches are at least duplicated. Servers are configured to use dual bonded network cards, so again there is no single point of failure.

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◉ Platform Resilience

Our core soft switch servers operate in a cluster. Monitoring processes can detect failures in individual nodes and reconfigure routing on the fly to keep the system operating optimally. Other services have a hot standby ready to take over should a live server fail. The SQL databases used by the platform are constantly replicating to a hot backup server.

In addition to dual power supplies and two network cards, each server also incorporates raid disks.

◉ Platform Monitoring

The iPBX platform is constantly monitored; over 250 metrics per site are checked every five minutes.

Checks include the availability of servers, temperature, power supplies, memory and disk errors, IP connectivity etc. Any abnormalities are flagged immediately via SMS and email and are promptly actioned by support staff.

In addition, many characteristics of the system are graphed on a continuous basis to help spot any abnormal behavior.

◉ Phone Management

In addition to the SIP telephony facilities of the phones, all our managed phones contact our provisioning and management servers every hour using HTTPS. They can also generate additional management information via SYSLOG.

This allows us to remotely manage and monitor the operation of the phones and trigger onsite changes if required.

◉ Platform & Data Security

The physical security at Vodafone is secure to government List X and fully audited to ISO 27001 and incorporates facial recognition.

Physical security is provided by Cogent. Internet authentication, three combination codes on three doors and a swipe card are required to gain access to our servers. Stockley Park is secured 24x7x365, by security staff pre-vetted to BS 7858. CCTV surveillance, site patrols, rigorous security checks and access management are all controlled and maintained to meet ISO IEC 27001:2005 accreditation The physical security at our Data Centre include perimeter fencing, CTTV, 24/7 security personal and vetted.

Our main firewalls at each site are a pair of Cisco ASA devices; in addition servers have their own local firewall rules.

All data is held on raid disks. Our database constantly replicates to a hot backup server. Data such as voicemails are replicated to a hot backup server every hour.

In addition, data such as static website content is also backed up to a separate server every night.

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