### JOB DESCRIPTION

Job Title: **Digital and Information**

 **Core Infrastructure Engineer**

Responsible to (insert job title): **Digital and Information**

 **Core Infrastructure Manager**

Department(s): **Digital and Information**

Directorate: **eHealth**

Operating Division: **Corporate**

Job Reference:

No of Job Holders: **6**

Last Update (insert date): **Oct 2018**

### JOB PURPOSE

To help manage, support and develop the NHS Fife Digital and Information infrastructure and systems. As part of the Core Infrastructure Team the Infrastructure Engineer (IE) will help provide highly available, efficient and resilient systems through continuous maintenance/development of existing systems and implementation of new systems.

The team provides competent advice, guidance and support to colleagues and partners internal and external to the organisation. Identifying the needs of service users based on sometimes incomplete and complex requirements.

IEs are accountable for the appropriate IT Operation, including handing incidents, problems, changes and releases related with the systems. IEs are consulted about the system requirements and core infrastructure monitoring elements (i.e. availability, capacity, performance). IEs are expected to respond to and troubleshoot issues, provide a high level of support and decision making with little or no management supervision. IEs undertake ongoing maintenance and administration to maximise systems uptime, efficiency and security. IEs are working on their own initiative or with other NHS staff, partners and suppliers to improve the servers, infrastructure and systems, including designing and implementing new systems and procedures.

1. **ORGANISATIONAL POSITION**

Head of IT Operations

Service Delivery Manager

Application Support Manager

Cyber Security

Manager

Network & Telecoms Manager

Infrastructure Manager

Service Delivery Team

AST

Cyber Security Engineer x 2

Network & Telecoms Team

**Infrastructure Team**

1. **SCOPE AND RANGE**

**Organisational**

NHS Fife has approx 9,000 employees and contractors, to whom the vast majority that have access to systems and networks provided by NHS Fife or partner organisations. The post holder is involved with helping to develop process and procedures to maintain maximum availability of the technology infrastructure and systems over which our services run. This is key to maintaining clinical and public confidence in the Information Technology for sensitive personal and business information held a on a wide variety of complex and interdependent systems. A reasonable understanding of current national and industry standards policies and infrastructure standards is required. The Core Infrastructure Team is expected to complement the other resolver groups and teams using ITILv3 guidelines.

**Technical**

Thorough knowledge of a wide range of complex technologies including but not conclusively:

• Latest Microsoft and/or Linux Server OS

• Virtual Server Farms

• SAN Storage Arrays and all fabric components

• Resilience Technologies i.e. Load Balancers and Cluster Configurations

• Backup and Snapshot Technologies

• MS SQL Server Management and Resilience

• Updates and patch management

**Projects/Workload**

The post holder will be part of a team ensuring that robust maintenance arrangements are in place across NHS Fife within different complex infrastructure and systems. This will entail the review of technologies with links to partner organisations or local authorities across approximately 65 locations including GP, pharmacies, dentists and optometrist practices. NHS Fife has a large IT estate supporting a complex range of interlinked and interdependent clinical, financial and other key business systems.

Number of Servers > 500

Number of Virtual Server Nodes > 50

Number of Storage Arrays > 10

Number of Desktop PCs > 7,500

Number of Sites Supported > 65

Number of Computer Suites > 2 Main + 10 Satellite

Staff in team > 6-9

1. **ROLE OF THE DEPARTMENT**

The overall aim of the Digital and Information Department is to deliver and maintain a comprehensive integrated digital information technology and health information strategy in order to ensure that the right information is provided in the right place at the right time, to support highest possible levels of diagnosis, treatment and care of patients and clients, to support continuous improvement of the health of the populations we serve and to achieve more effective integration between Health and the care services of our Local Authority partners.

This includes patients’ case notes and other information for clinicians working in the community and primary care, in outpatient clinics, on the point of admission for inpatients/day cases and for review after discharge: it includes developing and supporting electronic information systems for clinical and management use: and it includes collection and analysis of data required by the Scottish Executive Health & Social Care Department, for local monitoring of activity or performance, and for surveillance and protection of the health of our populations

The Digital and Information Department has approximately 110 staff, a revenue budget of approximately £10m, and annual capital budget of approximately £1m. The Digital and Information Department comprises the following departments:

* **Operations** – responsible for the overall IT service delivery to NHS Fife, H&SCP, Contractor Services and partner organisations including the delivery of the underpinning technical infrastructure and applications to support the health and corporate directorates across NHS Fife and partner organisations to agreed KPI’s and SLA’s.
* **Strategy and Programmes** - responsible for the development of the medium to long term Digital and Information/IM&T Strategy and the delivery of a large number of highly complex programmes and projects including significant service reconfiguration
* **Information Management** – responsible for the collection and analysis of information, information governance and delivery of knowledge management services. This service comprises Knowledge Services, Information Governance and Business Intelligence Acute, Partnerships and Public Health.
* **Business and Resource Management** – responsible for financial management, procurement & contract management, audit & FOI co-ordination and aspects of HR, health & safety, General Governance and facilities management activities.

The Digital and Information Department provides an on-call service with rotas covering core technical areas and duty manager with 9 sessions - Mon-Sun 18:00-08:00 and Sat-Sun 08:00-18:00. **This post will be part of the Digital and Information 24/7 on-call rota.**

## MAIN DUTIES/RESPONSIBILITIES

**Key Result Areas**

* Operate and maintain the availability, supportability and peak effectiveness of all IT Infrastructure and reliant services.
* Be involved in the development and enforcement of NHS Fife / National infrastructure standards and technical controls to ensure that all known and anticipated risks to the integrity, confidentiality and availability of systems and data are countered.
* Be involved in maintaining the Cyber Essentials standards across the organisation and reporting any technologies or assets which are not compliant to the Cyber Security Team.
* To deputise with engagements with the ICT Management team, as well as helping to provide expertise to the Head of IT Operations in all special project groups to ensure appropriate Core Infrastructure consideration is made when executing implementation and transition of delivery programmes into BAU.
* At the discretion of the Core Infrastructure Manager undertake technical development and operational audits of all NHS Fife’s Infrastructure Services and technologies as well as others that are linked with Local Authority partners and other Health Boards. Representing Fife’s interests to ensure that the availability and performance of linked technologies are maintained and agreed procedures for systems access and change management are followed.
* Supply information to meetings of local and regional IT Infrastructure colleagues in order to maintain awareness and communication on a wide range of IT issues, architectures and best practices.
* Assist with productive liaison with operational service managers, team leads and their staff to develop and implement a contingency strategy for all systems where business continuity is critical.
* Provide support by dealing with calls for support from the IT Service Desk and other resolver groups, logging and updating calls as required in a timely manner for a variety of incidents, problems and changes covering the spectrum of Core Infrastructure, appliances and tools. Identify and resolve problems and where necessary escalate to an appropriate third party. Ensure relevant documentation is maintained for work undertaken utilising the department Service Desk System and other repositories.
* Supply information regarding various IT hardware and software packages to users, discussing their requirements to allow efficient use and standardisation of equipment and software. Providing comprehensive technical support to all users of the various systems which the team is assigned to support, potentially, with the investigation, escalation and/or resolution of Digital and Information incidents, problems and changes related with any of the system services provided by the Digital and Information Department following established processes.

##### Planning & Organisational Skills

* Be aware of the ICT Systems Strategy and planning, along with members of other resolver groups.
* Assisting with planning the implementation of new systems/applications and other infrastructure of multiple components to National Infrastructure and Cyber Essentials standards.
* Adjusting plans as circumstances change ensuring other projects are also taken into consideration regarding the shared components or limited staff resource to implement the required changes.
* Communicate to all user departments any implementation plans and ensure that they understand the potential impact of an implementation or change.
* Support complex projects which impact across the department and NHS Fife and where necessary make the relevant adjustments which will ensure the achievement of the wider department strategy.
* Helping to create and maintain IT Systems plans to support the organisation's business strategy, agrees systems OLAs and plans all aspects of the systems infrastructure necessary to ensure provision of system services to meet such agreements.
* Other duties within Band skill level as directed in support of the business.

##### Research and Development

* Regularly undertaking research into new products, evaluating their effectiveness and applicability to the objectives of the Digital and Information department.
* Perusing innovative ideas and making recommendations on technologies.
* Researching potential fixes to problems and issues that regularly occur in technology solutions, reporting findings to suppliers as required.
* Maintain awareness of security threats and the techniques, technologies and best practice to help control / reduce risk.

##### Patient / Client Care

* Incidental contact

#### SYSTEMS, EQUIPMENT AND MACHINERY

Desktop PC and Printer

Telephone, Photocopier and Fax

Windows 7/10

Microsoft Office

Microsoft Project

Email

Internet

Use of various IT Infrastructure / System Management tools and diagnostic equipment.

## 8. DECISIONS & JUDGEMENTS

Highly motivated, be able to work under resource and time constraints, be able to make unsupervised decisions in order to ensure the most economic, efficient and effective use of resources.

Expected to make decisions relating to fault resolution and make changes to procedures and systems ensuring highly available, efficient and secure servers, clinical/non-clinical systems and a technical infrastructure. Expected to be proactive and capable of working independently.

Creates, updates and re-structures configuration documentation and procedures within the limits of the job role.

The post holder will be expected to make decisions on Digital and Information incidents and changes according with the processes, procedures and levels of risks pre-authorised and escalate any other resolution action for approval in case of higher levels of impact or risk.

Propose enhancements in line with systems and trends of the industry which potentially could benefit or enhance the Digital and Information Delivery Plan or the general Digital and Information Infrastructure.

**9. COMMUNICATIONS & RELATIONSHIPS**

* On a daily basis by phone/email or face-to-face: Digital and Information Managers, other Infrastructure Engineers, Cyber Security Engineers, Network Engineers, 2nd Line Engineers, Service Desk, Change Manager, Configuration and Release manager, system services suppliers, other system administrator and Project Managers.
* Frequently by phone/email or face-to-face: other Digital and Information Managers, Technical Architect, Continuity Manger, Service Level Manger, Problem Manager, users at different levels.
* Less regularly by phone/email or face-to-face: Business Manager, and Head of IT Operations and Digital and Information General Manager.
* The post holder will use a wide range of methods in order to achieve this e.g. memos, e-mail, telephone, presentations (formal/informal).
* Communicating with various commercial companies providing services and equipment related to Digital and Information.
* Addressing and advising the wider ICT Team at meetings on the topic of IT Infrastructure Management.
* Regular contact and liaison with Information Governance colleagues.
* Regular contact with operational staff across Digital and Information and other departments with responsibilities for IT Equipment and Services.
* Routine operational contact with IT Technical Staff in other Scottish Health Boards and other partner organisations, and their contractors, regarding any and all related security matters.
* Possible liaison with Scottish Government and NSS Infrastructure advisors and any other central management or audit authorities

**10. DEMANDS OF THE JOB (physical, mental, emotional)**

**PHYSICAL** – Frequent requirement to exert moderate physical effort for short or long periods during a shift. Sitting for long periods at a PC, carrying, lifting, moving objects in excess of 10 kilos for short distances.

**MENTAL** – A requirement to undertake a varied and frequently demanding workload with a requirement for concentration on the varied technical configurations. A requirement to remain calm under the pressures brought on by day to day contact with technical and non technical staff, and the events arising from technical breakdowns of systems directly impacting patient care.

Frequently switching between situations requiring concentration and instant decision making in the event of equipment/system interruption or breakdown.

Requirement to understand a wide variety of complex and interconnected systems to enable troubleshooting of often complex problems.

**EMOTIONAL** – Very rare exposure to assertive, challenging behaviour from colleagues working under pressure. Very occasional exposure to ongoing clinical procedures (e.g. Theatre surgery, endoscopy, resuscitation, etc) extremely rare indirect exposure to challenging patient behaviour, distressed mental health patients, geriatric and very elderly patients, vulnerable and mental health child patients. Extremely rare exposure to challenging and disturbed/emotional behaviour from the public.

**WORKING CONDITIONS** – Exposed to electrical equipment and hazards when installing servers within the Data Centres and Network Node Rooms where fire compression equipment is installed. These areas also have an increased level of noise to system and room cooling. IEs are required to work at VDU for the majority of the time. Some very occasional direct exposure to dirt, dust.

**11. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB**

Ensuring the systems infrastructure is designed and developed for availability, interpreting complex hardware and software configurations to implement ongoing required changes and improvements.

Undertake a varied and frequently demanding workload. Required to remain calm under the pressures brought on by day to day contact with technical and non technical customers (NHS Staff, Partners, and Patients), and the events arising from technical breakdowns of systems directly and indirectly impacting patient care.

Ensuring the security and stability of if the infrastructure to prevent intrusion from unauthorised users and malicious software.

Be prepared and willing to respond to Server / Platform based incidents in a calm and confident manner, possibly outside of normal hours and advising more senior management on their role in the response. Be prepared to practice and carry out incident response exercises on a regular basis.

**12. KNOWLEDGE, TRAINING AND/OR EXPERIENCE REQUIRED TO DO THE JOB**

**Qualifications**

Degree in computing subject and / or experience in an Infrastructure, Networking type of role or significant experience with relevant experience in these types of roles and evidence of relevant continued professional development.

**Experience**

A broad experience in IT systems support, including distributed environments like client-server, multi-tier architectures, clustered, peer-to-peer and virtualised environments. Working knowledge with PCs, MS Windows, and other Operating Systems. Good understanding of local, wide area and wireless networking is essential and some kind of Ethernet theory training desirable.

**Knowledge and skills**

Keeping abreast of current technology advances and service standards to be effective in the service development dimension of the team.

• The ability to use required IT tools and diagnostic equipment in safe and appropriate manner.

• Excellent interpersonal skills, telephone techniques, active listening and questioning and complaint management.

• Teamwork – The ability to work as part of a team and autonomously are essential.

• Empathy with Users – It is essential to look at things from the customer’s perspective, when seeking assistance from the department customers often have a tight deadline to meet or may be unable to undertake their duties. If they demand an action beyond your control, politely refer them to the line manager.

• Because customer support is a stressful activity, a clear and helpful frame of mind is essential.

• Excellent communication skills, articulate and willing to negotiate.

• Organisational skills and methodical approach to work.

• Customer focused approach to work and the ability to work well in a demanding user led service.

• The ability to respond quickly to multi tasks and an eye for detail.

• Excellent analytical skills and initiative to identify and resolve potentially complex problems spanning multiple systems and geographical/operational areas.

• Specialist technical skills in all aspects of system support, keen interest and knowledge of enterprise system management techniques.

• The post-holder should also possess the ability to self acquire new skills, use own initiative and take responsibility for continuing professional and technical development of current and emerging technologies.

• Systems design development and deployment skills.

• An excellent in-depth technical knowledge of distributed environments like Client-server, 3-tier architectures, clustered, peer-to-peer and virtualised environments, mainly Microsoft environments.

• The post holder is also expected to be self sufficient in the installation, configuration, support and maintenance of current and new technologies.

“Mandatory Induction Standards and Code of Conduct for Healthcare Support Workers – NHS Circular CEL(2010)23

Your performance must comply with the “Mandatory Inductions Standards for Health Care Support Workers in Scotland” 2009; and with the Code of Conduct for Health Care Support Workers, both as amended from time to time, which will be issued with your contract (further copies can be obtained from Human Resources). Failure to adhere to the Standards or to comply with the code may result in poor performance measures or disciplinary action and could lead to dismissal; or if you are self-employed, such failure will be deemed to be a breach of an essential term of your contract, allowing us to terminate with or without notice."

**Job Description Agreement**

**Job Holder’s Signature Date**

**Head of Department Signature Date**

**History:**

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| Version | Date | Comment |
| V1.0 | Sept 2015 | Digital and Information Infrastructure Engineer – Band 6 |
| V2.0 | Oct 2018 | Aligned with new JD layout and updated department role – Band 6 |
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