

Higher National Unit Specification

General information for centres

Unit title: Mail Server Administration

Unit code: DG07 35

Purpose: This Unit is designed to introduce candidates to the issues involved in installing and administering a mail system for a group of users, both internal and external to the organisation. It is intended for candidates undertaking an HNC or HND in Computing, Computer Networking or a related area who require a detailed knowledge of mail systems. On completion of the Unit the candidate should be able to:

1. Install mail server software.
2. Configure mail server software.
3. Restore system functionality and user data.
4. Manage recipient objects.
5. Monitor and manage messaging connectivity.
6. Manage mail server growth.

Credit value: 2 HN credits at SCQF level 8: (16 SCQF credit points at SCQF level 8)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: The candidate should have good computer skills and knowledge of computer networks and in particular the TCP/IP protocol, DNS and routing over the Internet. This may be demonstrated by the possession of HN Units such as DF9P 34 Network Concepts and DF9N 34 Network Server Operating System, or by considerable practical experience, including system setup and/or administration in a network environment.

Core skills statement: There may be opportunities to gather evidence towards core skills in this Unit, although there is no automatic certification of core skills or core skills components.

Context for delivery: This Unit is included in the framework of a number of HNC and HND group awards. It is recommended that it should be taught and assessed within the context of the particular group award to which it contributes.

General information for centre (cont)

Assessment: Evidence for the knowledge and/or skills for the entire Unit must be produced using a set of 50 restricted-response questions to assess candidates' knowledge and understanding. This may be administered as a single end-of unit test, or as several subtests, each covering one or more outcomes.

Candidates must answer at least 70% of the questions correctly in order to obtain a pass. If subtests are used, they must also score at least 70% in each subtest.

Testing must take place in a closed-book environment where candidates have no access to books, handouts, notes or other learning material. Testing can be done in either a machine-based or paper-based format and must be invigilated by a tutor or mentor. There must be no communication between candidates and communication with the administrator must be restricted to matters relating to the administration of the test.

If a candidate requires to be reassessed, a different selection of questions must be used. At least half the questions in the reassessment must be different from those used in the original test.

If an outcome has a practical component, this must be assessed by having the candidate use a logbook to record the practical tasks successfully completed. The logbook can be in paper or electronic form and must be authenticated by the tutor or mentor.

For some outcomes only a sample of the practical tasks needs to be completed and recorded for assessment purposes, e.g. three out of five. This is clearly indicated in the logbook instructions for the outcomes involved. Where this occurs, tutors must inform candidates of the tasks to be completed.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, knowledge and/or skills, and evidence requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Install mail server software.

Knowledge and Skills

- ◆ Install mail server software on a server computer.
- ◆ Diagnose and resolve failed installations.
- ◆ Perform client deployments.

Evidence Requirements

Restricted response test

The knowledge and skills component of Outcome 1 must be examined by six questions, two derived from each of the three items listed below. Each question must be derived from a single item.

1. Install Mail Server software on a server computer.

Server hardware specification, hardware requirements, server software specification, software requirements, install and configure mail server software.

2. Diagnose and resolve failed installations.

Ascertain reasons for failure, implement solution.

3. Perform client deployments.

Client hardware specification, hardware requirements, client software specification, software requirements, install and configure mail client software,

The test may be administered on its own as a subtest or be combined with other outcome subtests in the Unit.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

Alternatively, the 6 questions for this outcome may contribute towards a single end-of-unit test of 50 questions.

Logbook

The logbook for Outcome 1 must record successful completion by the candidate of **each** of the three tasks listed below.

1. Install mail server software on a server computer

A record of the tasks carried out by the candidate to install and configure mail server software.

2. Diagnose and resolve failed installations.

A record of the tasks carried out by the candidate to diagnose and resolve a failed installation by ascertaining the reasons for failure and implementing a solution.

3. Perform client deployments.

A record of the tasks carried out by the candidate to install and configure mail client software.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

The suggested time allocation for a restricted response test is 2 minutes for each question plus 5 minutes starting-up time and 5 minutes finishing-off time, thus a total of 110 minutes should be allocated for a 50-question end-of-unit test.

Although individual outcome tests are permissible, it is suggested that if subtests are to be used, outcomes should be combined to produce tests of no fewer than 10 questions. A 10-question test would therefore have a time allocation of 30 minutes.

Outcome 2

Configure mail server software.

Knowledge and skills

- ◆ Configure server for messaging and collaboration.
- ◆ Create and manage administrative groups.
- ◆ Diagnose and resolve mail server availability and performance problems.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

- ◆ Configure mail server for high security
- ◆ Configure and manage system folders.

Evidence Requirements

Restricted response test

The knowledge and skills component of Outcome 2 must be examined by ten questions, two derived from each of the five items listed below. Each question must be derived from a single item.

1. Configure server for messaging and collaboration.

requirements specification, private and public information storage, restricted access dependent upon group membership.

2. Create and manage administrative groups.

Delegation of administrative permissions to designated administrative groups which have role based administrative permissions.

3. Diagnose and resolve mail server availability and performance problems.

Ascertain reasons for failures, slow responses and connectivity issues and implement solution.

4. Configure mail server for high security

Plan and implement high security authentication methods for local access and encryption methods for remote access.

5. Configure and manage system folders.

Identify the mail system folders, their location and size. Plan and implement a solution for their location on the server taking into account number of disks, partitions and space available.

The test may be administered on its own as a subtest or be combined with other outcome subtests in the Unit.

Alternatively, the 10 questions for this outcome may contribute towards a single end-of-unit test of 50 questions.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

Logbook

The logbook for Outcome 2 must record successful completion by the candidate of **three** of the five tasks listed below, **including the first task**. The tasks to be completed must be chosen by the tutor.

1. Configure server for messaging and collaboration.

A record of the tasks carried out by the candidate to configure a mail server for messaging and collaboration, in accordance with a given specification, which must include the necessity for at least private and public information storage. Public information storage must include restricted access dependent upon group membership.

2. Create and manage administrative groups.

A record of the tasks carried out by the candidate to delegate administrative permissions to designated administrative groups. This must include groups which have role based administrative permissions, e.g. create mailbox only as part of the create user role.

3. Diagnose and resolve mail server availability and performance problems.

A record of the tasks carried out by the candidate to ascertain reasons for failures, slow responses and connectivity problems and implement solutions.

4. Configure mail server for high security

A record of the tasks carried out by the candidate to implement high security authentication methods for local access and encryption methods for remote access.

5. Configure and manage system folders.

A record of the tasks carried out by the candidate to identify the required mail system folders and place them in appropriate locations, taking into account their size and the disks, partitions and space available.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

The suggested time allocation for a restricted response test is 2 minutes for each question plus 5 minutes starting-up time and 5 minutes finishing-off time, thus a total of 110 minutes should be allocated for a 50-question end-of-unit test.

Although individual outcome tests are permissible, it is suggested that if subtests are to be used, outcomes should be combined to produce tests of no fewer than 10 questions. A 10-question test would therefore have a time allocation of 30 minutes.

Outcome 3

Restore system functionality and user data.

Knowledge and skills

- ◆ Apply a backup and restore plan.
- ◆ Diagnose and resolve backup and restore problems.
- ◆ Restore user data and system data.
- ◆ Restore information stores.
- ◆ Configure a server for disaster recovery.

Evidence requirements

Restricted response test

The knowledge and skills component of Outcome 3 must be examined by ten questions, two derived from each of the five items listed below. Each question must be derived from a single item.

1. Apply a backup and restore plan.

Planning and implementing a backup and restore plan.

2. Diagnose and resolve backup and restore problems.

Ascertaining reasons for problems and implementing solutions.

3. Restore user data and system data.

Recovering deleted mailboxes and deleted items

4. Restore information stores.

Recovering corrupted information stores.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

5. Configure a server for disaster recovery.

Requirements specification, implementing the configuration required for a full disaster recovery solution.

The test may be administered on its own as a subtest or be combined with other outcome subtests in the Unit.

Alternatively, the 10 questions for this outcome may contribute towards a single end-of-unit test of 50 questions.

Logbook

The logbook for Outcome 3 must record successful completion by the candidate of **at least three** of the five tasks listed below. The tasks to be completed must be chosen by the tutor.

1. Apply a backup and restore plan.

Documentary evidence that the candidate can implement a backup and restore plan.

2. Diagnose and resolve backup and restore problems.

Documentary evidence that the candidate can ascertain reasons for **two** problems and implement solutions.

3. Restore user data and system data.

Documentary evidence that the candidate can recover deleted mailboxes and deleted items

4. Restore information stores.

Documentary evidence that the candidate can recover corrupted information stores.

5. Configure a server for disaster recovery.

Documentary evidence that the candidate can implement the configuration required for a full disaster recovery solution.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

The suggested time allocation for a restricted response test is 2 minutes for each question plus 5 minutes starting-up time and 5 minutes finishing-off time, thus a total of 110 minutes should be allocated for a 50-question end-of-unit test.

Although individual outcome tests are permissible, it is suggested that if subtests are to be used, outcomes should be combined to produce tests of no fewer than 10 questions. A 10-question test would therefore have a time allocation of 30 minutes.

Outcome 4

Manage recipient objects.

Knowledge and skills

- ◆ Configure messaging.
- ◆ Manage user and information store association.
- ◆ Diagnose and resolve problems.
- ◆ Create and manage address lists.

Evidence Requirements

Restricted response test

The knowledge and skills component of Outcome 4 must be examined by eight questions, two derived from each of the four items listed below. Each question must be derived from a single item.

1. Configure messaging.

Configuring a user for e-mail.

2. Manage user and information store association.

Configuring user information stores.

3. Diagnose and resolve problems.

Ascertaining reasons for user connectivity problems and implementing solution.

4. Create and manage address lists.

Creating distribution groups.

The test may be administered on its own as a subtest or be combined with other outcome subtests in the Unit.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

Alternatively, the 8 questions for this outcome may contribute towards a single end-of-unit test of 50 questions.

Logbook

The logbook for Outcome 4 must record successful completion by the candidate of **at least two** of the four tasks listed below. The tasks to be completed must be chosen by the tutor.

1. Configure messaging.

Documentary evidence that the candidate can configure a user for e-mail.

2. Manage user and information store association.

Documentary evidence that the candidate can configure user information stores.

3. Diagnose and resolve problems.

Documentary evidence that the candidate can ascertain reasons for user connectivity problems and implement solutions.

4. Create and manage address lists.

Documentary evidence that the candidate can create distribution groups.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

The suggested time allocation for a restricted response test is 2 minutes for each question plus 5 minutes starting-up time and 5 minutes finishing-off time, thus a total of 110 minutes should be allocated for a 50-question end-of-unit test.

Although individual outcome tests are permissible, it is suggested that if subtests are to be used, outcomes should be combined to produce tests of no fewer than 10 questions. A 10-question test would therefore have a time allocation of 30 minutes.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

Outcome 5

Monitor and manage messaging connectivity.

Knowledge and Skills:

- ◆ Manage and troubleshoot messaging connectivity.
- ◆ Manage messaging queues for multiple protocols.
- ◆ Monitor link status.

Evidence Requirements

Restricted response test

The knowledge and skills component of Outcome 5 must be examined by six questions, two derived from each of the three items listed below. Each question must be derived from a single item.

1. Manage and troubleshoot messaging connectivity.

manage connectivity to foreign mail systems, diagnose and resolve routing problems, diagnose and resolve problems reported by non-delivery report messages.

2. Manage messaging queues for multiple protocols.
3. Monitor link status.

Monitor messages between different mail server systems.

The test may be administered on its own as a subtest or be combined with other outcome subtests in the Unit.

Alternatively, the 6 questions for this outcome may contribute towards a single end-of-unit test of 50 questions.

Logbook

The logbook for Outcome 5 must record successful completion by the candidate of **at least two** of the three tasks listed below. The tasks to be completed must be chosen by the tutor.

1. Manage and troubleshoot messaging connectivity

Documentary evidence that the candidate can manage connectivity to foreign mail systems, diagnose and resolve routing problems and diagnose and resolve problems reported by non-delivery report messages.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

2. Manage messaging queues for multiple protocols.

Documentary evidence that the candidate can manage messaging queues for multiple protocols.

3. Monitor link status.

Documentary evidence that the candidate can monitor messages between different mail server systems.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

The suggested time allocation for a restricted response test is 2 minutes for each question plus 5 minutes starting-up time and 5 minutes finishing-off time, thus a total of 110 minutes should be allocated for a 50-question end-of-unit test.

Although individual outcome tests are permissible, it is suggested that if subtests are to be used, outcomes should be combined to produce tests of no fewer than 10 questions. A 10-question test would therefore have a time allocation of 30 minutes.

Outcome 6

Manage mail server growth

Knowledge and skills

- ◆ Monitor services use.
- ◆ Manage growth of public and private message store databases.
- ◆ Manage growth of user population and message traffic.
- ◆ Manage recipient and server policies.
- ◆ Optimise public folder and mailbox searching.

Evidence Requirements

Restricted response test

The knowledge and skills component of Outcome 6 must be examined by ten questions, two derived from each of the five items listed below. Each question must be derived from a single item.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

1. Monitor services use.

Monitor access and use of services provided by the Mail Server.

2. Manage growth of public and private message store databases.

Monitor size of databases in relation to disk space available and take appropriate action.

3. Manage growth of user population and message traffic.

Using simulation tools monitor increase in users, traffic and size of messages. Formulate a strategy which will implement policies to facilitate message transfers.

4. Manage recipient and server policies.

Plan and implement policies on users and mailboxes according to requirements. Ascertain reasons for problems and implement solution.

5. Optimise public folder and mailbox searching.

Configure public folder or mailbox for full-text indexing and perform full-text indexing.

The test may be administered on its own as a subtest or be combined with other outcome subtests in the Unit.

Alternatively, the 10 questions for this outcome may contribute towards a single end-of-unit test of 50 questions.

Logbook

The logbook for Outcome 5 must record successful completion by the candidate of **at least three** of the five tasks listed below. The tasks to be completed must be chosen by the tutor.

1. Monitor services use.

Documentary evidence that the candidate can monitor the access and use of services provided by the Mail Server.

2. Manage growth of public and private message store databases.

Documentary evidence that the candidate can monitor size of databases in relation to disk space available and take appropriate action.

Higher National Unit specification: statement of standards (cont)

Unit title: Mail Server Administration

3. Manage growth of user population and message traffic.

Documentary evidence that the candidate can use simulation tools monitor increase in users, traffic and size of messages.

4. Manage recipient and server policies.

Documentary evidence that the candidate can plan and implement policies on users and mailboxes according to requirements.

5. Optimise public folder and mailbox searching.

Documentary evidence that the candidate can configure public folders or mailboxes for full-text indexing and perform full-text indexing.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

The suggested time allocation for a restricted response test is 2 minutes for each question plus 5 minutes starting-up time and 5 minutes finishing-off time, thus a total of 110 minutes should be allocated for a 50-question end-of-unit test.

Although individual outcome tests are permissible, it is suggested that if subtests are to be used, outcomes should be combined to produce tests of no fewer than 10 questions. A 10-question test would therefore have a time allocation of 30 minutes.

Administrative Information

Unit code:	DG07 35
Unit title:	Mail Server Administration
Superclass category:	CD
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Higher National Unit specification: support notes

Unit title: Mail Server Administration

Unit code: DG07 35

This part of the Unit specification is offered as guidance.

The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the Centre, the notional design length is 80 hours.

The recommended time allocations for each outcome (including assessment) are as follows:

Outcome 1:	16 hours
Outcome 2:	16 hours
Outcome 3:	16 hours
Outcome 4:	8 hours
Outcome 5:	16 hours
Outcome 6:	8 hours

Guidance on content/context

The Unit is primarily intended to prepare candidates for a role as a mail administrator in a commercial environment for a medium to large organisation.

Although the Unit is expressed in generic terms, a single large case study could be used to allow candidates to understand how each outcome is related. If necessary the terminology used in the Unit can be adapted to suit particular Mail Systems.

The Unit can be approached from the standpoint of a particular organisation installing a mail server(s). The candidate can then follow through the installation, configuration and testing of the mail system until the organisational needs are met. If candidates can be given the same server for every assessment then a feeling of ownership and easier development of the mail system will occur due to familiarisation.

Examples of mail systems which could be used are:

Microsoft Exchange (OS Microsoft),
Novell Groupwise (OS Novell/Microsoft),
FirstClass (OS Microsoft/Macintosh/UNIX/LINUX).

This Unit may assist candidates in preparing for Microsoft examination 70-284: Implementing and Managing Microsoft Exchange Server 2003. Vendor certifications can change rapidly and candidates should be encouraged to check the current details at www.microsoft.com/traincert to ensure that all objectives have been covered. This examination contributes towards the Microsoft Certified Systems Engineer (MCSE) award.

Higher National Unit specification: support notes (cont)

Unit title: Mail Server Administration

Outcome 1

1 Install mail server software on a server computer

Outcome 1 asks the candidate to carry out the initial installation of the mail server and client software, ensuring the target hardware and software is fit for purpose.

2 Diagnose and resolve failed installations

Setting up the mail server in a “bench test” environment should be encouraged. Use of hardware tools and third party software may also be encouraged to examine hardware configuration.

3 Perform client deployments

The client software need only be installed on the server to enable testing of the installation, e.g. by sending a message to the Administrator’s account. The candidate should also be aware of services which are required on the network to enable messaging.

Outcome 2

1 Configure server for messaging and collaboration

Outcome 2 asks the candidate to configure the installed mail server according to the organisations requirements. The requirements should include private and public storage as well as multiple administrator levels in designated areas. Web-enabling the mail server could also be incorporated.

2 Create and manage administrative groups.

E.g. routing groups, public folder trees, policies, chat networks, conferencing services, servers and monitors

3 Diagnose and resolve mail server availability and performance problems.

Diagnosing problems with the mail server will require candidates to take a systematic approach and can incorporate the use of third party diagnostic tools. The “bench test” environment can be implemented here with third party simulation tools used to create the problems.

Higher National Unit specification: support notes (cont)

Unit title: Mail Server Administration

4 Configure mail server for high security

Security on a mail server is paramount and the candidate must be aware of the facilities available and be able to implement a strategy relevant to the mail server. For example, if available on the Internet, not allowing the mail server to be used as an Open Relay for spam and being black listed, incorporating blacklists into the configuration, virus checking as mail enters the system, changing the default port to prevent direct connection from hackers, ensuring security of private folders etc.

The candidate should carry out research into the vulnerabilities of mail systems and the measures which can be implemented to achieve a security level suitable for the organisation.

5 Configure and manage system folders.

System folder placement is dependant upon the size and number of hard disks in the server. This part may have to be carried out at install time although in most mail systems it is possible to change the location after installation. The candidate should be aware of the importance of the placement of these folders or files and plan and implement a suitable strategy.

Outcome 3

Apply a backup and restore plan.

Outcome 3 emphasises the requirement to protect the information and configuration of the mail server. Candidates should plan and implement a backup strategy which will recover user data.

Diagnose and resolve backup and restore problems.

A full disaster recovery could be carried out to a separate server to test the effectiveness of the backups.

Restore user data and system data.

Location of the files and storage media should be discussed to ensure availability and security. Monitoring of the backup logs should be carried out to ensure reliable backups.

Restore information stores.

General problems that require the restoration of messages and private stores can be instigated throughout the course of the Unit ensuring the backup strategy is effective.

Higher National Unit specification: support notes (cont)

Unit title: Mail Server Administration

Configure a server for disaster recovery.

The backup strategy should recover user data and enable a full disaster recovery of the system onto another server.

Outcome 4

1 Configure messaging

Outcome 4 covers the connection of the mail server to other mail servers either within or external to the organisation. If the candidates were able to have their own individual mail servers, this would give the opportunity to connect to other candidates mail servers.

Connection to different types of mail servers using different protocols gives the candidate the opportunity to research the foreign mail systems and the configuration requirements for both sides. This introduces an opportunity for working with the foreign systems mail administrator to enable messaging between the two mail systems.

2 Manage user and information store association

Candidates should be given the skills to analyse the headers of email messages to ascertain message routes. The candidate should configure the system to send an alert if a link is not available. This encourages proactive administration instead of reactive.

3 Diagnose and resolve problems

The investigation of non-delivery reports allows for the candidate to research the problem through the use of online help either on the system or the products web site.

4 Create and manage address lists

Candidates should be able to create new address lists and stipulate whether or not these are visible to specified users.

Outcome 5

Outcome 5 considers the ongoing administration required of a mail system with emphasis on the growth of number of messages and connections, private and public stores etc, which if not managed can lead to loss of service and/or information. This allows candidates to test their system by the use of third party tools to simulate many connections and carry out diagnostics.

Higher National Unit specification: support notes (cont)

Unit title: Mail Server Administration

Also policies may require to be implemented to restrict the size of private stores and folders may require to be moved to larger hard disks. Alerts may be set up to warn of lack of disk space. The emphasis again is on proactive administration and implementing a solution before users know there is a problem.

1 Manage and troubleshoot messaging connectivity

Candidates should be able to manage server messaging connectivity, including connectivity to foreign mail servers. Connectivity types could include X.400, SMTP and Internet messaging. They should also be able to diagnose and resolve routing problems and problems reported by non-delivery reports. Diagnosing connectivity problems gives the candidate a chance to resolve problems such as forgotten passwords, changed configuration settings, name resolution, mail server unavailability etc.

2 Manage messaging queues for multiple protocols

Candidates should be able to manage messaging queues for multiple protocols, including

SMTP queues, X.400 queues, Messaging Application Programming Interface (MAPI) queues etc.

3 Monitor link status

The candidate should be able to monitor messages between similar servers, or between a server and a foreign server.

Outcome 6

1 Monitor services use

Candidates should be able to monitor the use of services such as messaging, chat, public folder access, instant messaging and calendaring.

2 Manage growth of public and private message store databases

Candidates should be able to monitor the information store service and manage the growth of public and private message store databases.

3 Manage growth of user population and message traffic

Candidates should be able to monitor and manage growth in the number of users and the number of messages they send.

Higher National Unit specification: support notes (cont)

Unit title: Mail Server Administration

4 Manage recipient and server policies

Candidates should be able to apply, delete copy and rename policies and configure a mailbox store policy to over-ride some of the configuration options defined on the mailbox itself. They should be aware that an object can only have one policy applied to it at any one time. If two policies contain conflicting settings for an object, you are asked to decide which policy applies.

5 Optimise public folder and mailbox searching

Candidates should be aware that Exchange 2000 supports full-text indexing (or context indexing) to provide linear search and performance. However, considerable time and CPU resources are required to index and indexing can take up to 20% of the database. They should know that the Application Log records all errors and information messages according to the logging level specified on the store and the System Monitor can be used to determine the resource usage indexing takes and to identify performance bottlenecks.

Guidance on the delivery and assessment of this Unit

This Unit is likely to form part of a group award which is primarily designed to provide candidates with technical or professional knowledge and skills related to a specific occupational area. It is highly technical in content and should not be adopted by group awards in other areas or delivered as a stand-alone Unit without careful consideration of its appropriateness.

It is a Unit which candidates are unlikely to find accessible at an introductory level; it is suggested that it be delivered only as part of an HNC/HND program in Computing or a related area. It should be delivered in tandem with other Computing Units and opportunities for teaching and assessment integration explored.

To minimise assessment overhead, one or more sets of closed-book restricted-response questions, totalling 50 questions in all, should be used to provide evidence of candidates' knowledge for all Outcomes. It is suggested that multiple-choice questions should be used as the preferred assessment method – as well as reducing the time required for assessment and marking, these reduce the need for candidates to memorise details and encourage understanding. 70% of the questions must be answered correctly. Candidates must also complete a logbook or checklist recording the practical work undertaken for each outcome.

Open learning

If this Unit is delivered by open or distance learning methods, additional planning and resources may be required for candidate support, assessment and quality assurance.

A combination of new and traditional authentication tools may have to be devised for assessment and re-assessment purposes.

Higher National Unit specification: support notes (cont)

Unit title: Mail Server Administration

For further information and advice, please see *Assessment and Quality Assurance for Open and Distance Learning* (SQA, February 2001 — publication code A1030).

Special needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering special alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, 2001).

General information for candidates

Unit title: Mail Server Administration

This is a 2-credit Unit at Level 8 intended for candidates undertaking a Computing or IT-related qualification who require an understanding of mail server administration. It is designed to develop an understanding of the issues involved in managing mail server. On completion of the Unit you should be able to:

- Install Mail Server Software
- Configure Mail Server Software
- Restore System Functionality and User Data
- Manage Recipient Objects
- Monitor and Manage Messaging Connectivity
- Manage Mail Server Growth

In the first part of the course, you will study installing mail server software, including diagnosing and resolving failed installations and performing client deployments.

The second section covers configuring mail server software including configuring for messaging and collaboration, managing administrative groups, resolving availability and performance problems, configuring for high security and managing system folders.

The third section covers restoring system functionality and user data, including applying a backup and restore plan, diagnosing and resolving problems, restoring user and system data and information stores and configuring a server for disaster recovery.

The fourth section covers managing recipient objects, including configuring messaging, managing user and information store association, diagnosing and resolving problems and creating and managing address lists.

The fifth section covers monitoring and managing messaging connectivity, including troubleshooting messaging connectivity, managing messaging queues for multiple protocols and monitoring link status

The final section covers managing mail server growth, including monitoring service use, managing growth of message databases, user population and message traffic, managing recipient and server policies and optimising folder and mailbox searching.

There will be one or more closed-book restricted-response assessments covering all outcomes. You will be presented with a total of 50 questions and expected to answer 70% of these correctly. You will also be expected to keep a checklist or logbook recording the practical tasks you have carried out during the Unit. You must satisfy the requirements for these assessments in order to achieve the Unit.

This Unit may assist you in preparing for Microsoft examination 70-284: Implementing and Managing Microsoft Exchange Server 2003, which contributes towards the Microsoft Certified Systems Engineer (MCSE) award. Vendor certifications can change rapidly and you should check the current details at www.microsoft.com/traincert to ensure that all objectives have been covered.