

# Level 2 Networking, telephony and VoIP for the digital home technology integrator (7575-004)

## Assignment guide for Candidates Assignment A

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December 2012  
Version 3.0



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## City & Guilds

**1 Giltspur Street**

**London EC1A 9DD**

**T +44 (0)844 543 0000 (Centres)**

**T +44 (0)844 543 0033 (Learners)**

**F +44 (0)20 7294 2413**

**[www.cityandguilds.com](http://www.cityandguilds.com)**

**[learnersupport@cityandguilds.com](mailto:learnersupport@cityandguilds.com)**

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# Level 2 Networking, telephony and VoIP for the digital home technology integrator (7575-004)

## Assignment A

### Introduction – Information for Candidates

#### About this document

This assignment comprises all of the assessment for Level 2 Networking, telephony and VoIP for the digital home technology integrator (7575-004)

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#### Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

#### Time allowance

The recommended time allowance for this assignment is **four hours**.

# Level 2 Networking, telephony and VoIP for the digital home technology integrator (7575-004)

## Candidate Instructions

**Time allowance: 4 hours**

### **Assignment set up:**

This assignment is made up of **four** tasks

### **Scenario**

Qinvoip is a company that specialises in integrating digital devices into homes. As part of the process it offers customers a free site visit to discuss their requirements.

Following a site visit, your role is to prepare a plan detailing the layout of the connecting transmission media and the specifications of the digital devices that are to be installed.

When the customer has agreed the design and specifications that have been recommended, you will install and troubleshoot the digital devices and associated transmission media.

Read all of the instructions carefully and complete the tasks in the order given.

The customer has two PCs and a laptop. One PC is connected to the internet via an ADSL Broadband connection. (See the attached figures for the locations of the PCs and ADSL modem).

**Note: The laptop has not been illustrated on the floor plans as it is a mobile device and could be anywhere in the home.**

**During the discussion with the customer the following requirements were identified:**

- The customer would like the two PCs and the laptop to be able to access the internet. The laptop must be able to access the network from anywhere in the house while the PCs are to remain in their current locations and must be physically connected.
- The customer wants all devices to have manually configured network settings and the wireless network should be hidden.
- Anti-virus and firewall software is to be installed onto the laptop.
- The customer would like a shared folder located on the laptop to be accessible from the PCs.
- The customer must be able use voice over internet protocol (VoIP) to make phone calls over the internet from all three computers.

## Task A

- 1 Using the **Answer sheet** and any technical specifications provided by the assessor, identify the following:

- Suitable devices that meet the customer requirements.
- Proposed locations of the devices that you have selected.
- List the sources used to find product specifications.
- Cable types and approximate lengths.
- Any software and device drivers required.
- IP addresses and subnet masks to be used by each device

*You are permitted to use any printed documentation provided by the assessor, e.g. manufacturers' manuals for the devices.*

- 2 Using the room diagram provided by the assessor, detail the following:
  - the location of each device
  - the proposed type and layout of transmission media used

*Assume an adequate power source is available wherever you choose to site the customer's equipment.*

- 3 **Please use the Answer Sheet provided to complete Task A3**

List **three** common causes of interference on a wireless network that uses the 802.11g standard.

- 4 **Please use the Answer Sheet provided to complete Task A4**

Briefly explain the function of a subnet mask.

- 5 **Please use the Answer Sheet provided to complete Task A5**

Give **three** reasons why it is important to plan and document customer installations.

## Task B

**Your assessor will provide you with a save directory or removable storage media.**

- 1 Using the details provided by the Assessor, install and configure a wireless network to the customer's requirements ensuring that broadcasting of the SSID is disabled.
- 2 Connect **all** of the customers' devices to the network as required by the customer.
  - You should create new network cables of the required length for your solution.

- 3 Produce screen shots showing the following:
- Your SSID setting.
  - That broadcasting of the SSID is disabled.
  - A manually configured IP address on each device.
  - That you have configured security onto the wireless network.

Save the screen shots as **screenshots1**.

- 4 **Please use the Answer Sheet provided to complete Task B4**

Briefly explain the function of NAT in a home network

- 5 Install anti-virus software on the laptop.  
Update the anti-virus software with the latest virus definitions.

**Produce a screenshot which shows the anti-virus software is installed and up-to-date. Save it as screenshot2.**

- 6 **Please use the Answer Sheet provided to complete Task B6**

Identify the current version of the VoIP software and go to the manufacturer's website to check if this is the most up-to-date version.

- 7 Install a software firewall on the laptop.  
Update the firewall software to the latest version.

**Produce a screenshot which shows the firewall software is installed and up-to-date. Save it as screenshot3.**

- 8 Configure the default web browser on the laptop to:
- block website pop-ups
  - disable all browser add-ons
  - delete temporary internet files on shutdown.

**Produce a screenshot which shows the default web browser is configured to block website pop-ups, disable all browser add-ons and temporary internet files are deleted on shutdown. Save it as screenshot 4.**

- 9 **Please use the Answer Sheet provided to complete Task B9**

Briefly explain the dangers of using a laptop when the following are present:

- malware
- spyware
- Trojan

- 10 Configure a shared folder on the laptop.

- 11 Test that the folder can be accessed across the network from the PCs.

**At this point demonstrate to the assessor that the PCs can access the laptop shared folder remotely**

## Task C

- 1 Install the required hardware to allow the customer to communicate using VoIP on to **each** device.
- 2 Install and configure appropriate VoIP software on to **each** device.  
**The assessor will provide you with VoIP account information.**

Once the software has been installed and configured, test that it is functioning correctly.

**At this point ask the assessor to verify that the VoIP communication is operational**

## Task D

A few months after the install the customer complains that there have been problems connecting one of the PCs to the internet.

- 1 Use appropriate command line or terminal troubleshooting utilities to identify the following information. Produce screen shots of the following results:
  - Connectivity of the local network interface card using the loopback address.
  - The IP address and subnet mask allocated to the computer.
  - The IP address of the external DNS server.

Save the screenshots as **Screenshots5**.

- 2 Test **two** patch leads using appropriate test equipment to identify any problems. Inform the assessor of any faults identified.

When you have finished working:

- Sign each document above your name and label all removable storage media with your name.
- Hand all paperwork and removable storage media to your assessor.

If the assignment is taken over more than one period, all paperwork and removable media must be returned to the test supervisor at the end of each sitting.

**End of assignment**



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**Published by City & Guilds**  
**1 Giltspur Street**  
**London**  
**EC1A 9DD**  
**T +44 (0)844 543 0000 (Centres)**  
**T +44 (0)844 543 0033 (Learners)**  
**F +44 (0)20 7294 2413**  
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