

7.1.2 Network Model Facts

A networking model defines how network components function and interact. The three networking models used with Windows operating systems are described in the following table:

Model	Description
Stand-Alone	<p>In the stand-alone model:</p> <ul style="list-style-type: none"> The hosts function independently. Communication takes place using a commonly available public network such as the Internet. The hosts are not connected by a local area network.
Workgroup	<p>The workgroup model is based on peer-to-peer networking. In the workgroup model:</p> <ul style="list-style-type: none"> None of the hosts in a workgroup have a specific role. <ul style="list-style-type: none"> Hosts function as both workstation and server. Hosts in a workgroup both provide network services and consume network services. The hosts are linked together by some type of local network connection. Hosts in the same workgroup can access shared resources on other hosts. Each host has a database that handles the security for the host. <p>Drawbacks of the workgroup model are:</p> <ul style="list-style-type: none"> Lack of scalability Lack of centralized configuration control. Complexity of backing up data. Lack of centralized authentication. Lack of centrally applied security settings.
Client-Server	<p>In the client-server model, each host has a specific role in the network. Servers provide services such as file storage, user management, and printing. Clients request services from servers. The client-server model is also known as <i>domain</i> networking in a Windows environment. Key facts are:</p> <ul style="list-style-type: none"> Domain networking uses objects to represent the various components of a network. The two main types of objects are: <ul style="list-style-type: none"> <i>Network resources</i>, such as servers and printers. <i>Security principals</i>, which are entities that can be authenticated, such as users, groups, and computer accounts. A Windows domain is a collection of security principals that share an Active Directory database. The Active Directory database is located on one or more servers in the domain. <ul style="list-style-type: none"> The servers running the Active Directory database are called domain controllers. Hosts in a domain must run a specified version of the Windows operating system. Within a domain, a host can have one of the following three roles: <ul style="list-style-type: none"> A <i>client</i> typically runs a client operation system, such as Windows 10, and has its own security database that is used when it is not connected to a domain. A <i>member server</i> runs a server operating system, such as Windows Server 2012 or Windows Server 2016, and has its own security database that is used when it is not connected to a domain. A <i>domain controller</i> runs a server operating system, such as Windows Server 2016, and has a copy of the Active Directory database for the domain. <p>Drawbacks of the client-server model are:</p> <ul style="list-style-type: none"> Increased cost to implement due to specialized hardware and software requirements. Increased planning time required for implementation.

TestOut Corporation All rights reserved.