

Overview

The Advanced Server for UNIX® (ASU) software is a Tru64 UNIX layered application that provides seamless interoperability between systems running the Tru64 UNIX operating system software and systems running a Windows operating system software.

The ASU software implements Microsoft® Windows® NT® Version 4.0 server services such as file, print, security, and management services on a system running the Tru64 UNIX operating system software. The Tru64 UNIX system on which the ASU software is running appears as a Windows NT Version 4.0 server to other Windows systems and to users of Windows systems.

You use Windows commands and utilities to manage the ASU software and to make UNIX based file systems and printers available to Windows users as shares. Windows users access the shares without modification to their PC systems.

Features of the ASU software include:

- High Availability and scalability. You can provide highly available and scalable disk shares, printer shares, and even Windows NT Version 4.0 PDC services using reliable HP TruCluster Server software.
- Windows domain controller support. You can configure the ASU software as a Windows NT Version 4.0 primary domain controller (PDC), a backup domain controller (BDC), or a member server. In a Windows 2000/2003 environment, you can configure the ASU software as a BDC (when the Windows 2000/2003 domain controller is configured to run in mixed-mode) or as a member server. The ASU software can also act as a PDC to a set of Windows 2000 Professional Workstations.
- Trust Relationships. You can configure the ASU software to participate in a trust relationship.
- Management from Windows Administration Tools. You can create file and printer shares and user accounts by using native Windows NT Version 4.0 administrative tools and by using the Windows 2000 Microsoft Management Console (MMC) Active Directory Computers and Users snap-in
- Windows NT Security. You can set Windows NT Version 4.0 permissions on disk shares. Users can set NT access control list (ACL) permissions on individual files. Additionally, you can establish Windows NT local and global groups.
- You can use network information service (NIS) to create Tru64 UNIX user accounts.
- Two free user connections.
- Common Internet File System (CIFS) support.
- International language support.
- Windows 2000 and Windows XP client support.
- Clusterwide management of client licenses

Enhancements and corrections in the ASU Version 5.1B-4 kit:

- A new registry parameter, `StoreAclAsMetadata`, enables the ASU server to store file and directory ACLs directly in file system metadata. This is particularly useful if the number of files with explicit ACLs has caused the ACL database to grow extremely large (more than 1,000,000 ACLs or so).
- The ASU server can now be configured to use port 445 for SMB connections in addition to ports 138 and 139. Configuring ASU to use port 445 is useful if any Windows servers or clients in the network have been configured to use only port 445 for SMB connections.
- A new registry parameter, `NoLMHash`, can be used to disable the storage of LAN Manager (LM) hashes of users' passwords in the SAM database. This enhances security by preventing the ASU server from storing a weaker LM hash and allowing only storage of the stronger NT hash of a user's password.
- The ASU server now enhances security even further in its authentication and session security mechanisms by fully supporting the NTLMv2 protocol. This protocol is enabled whenever the `LMCompatibility` registry parameter is set to the value 3, 4, or 5.
- The `"lmstat -c"` command now displays the start time of the connection, the logged-in domain and user name, the mapped UNIX user name, and whether or not a NULL session has been established.
- The `"asusetup"` command on an ASU member server now updates member server's SAM database to reflect the new PDC if the PDC of the domain has changed.
- The `"nbtlookup"` command has a new option, `-a`, to display the TCP/IP address of the NetBIOS name. This option can be combined with the `-h` option to display both the TCP/IP address and the TCP/IP host name of the NetBIOS name in a single command.
- The ASU server can now join a domain, using either the `"asusetup"` or `"joindomain"` command, whose administrator account's password is longer than 14 characters.

Overview

- See the [ASU Version 5.1B-4 Release Notes](#) for a complete list of new features, functionality, and corrected problems.

The ASU Version 5.1B-4 software can be used to

- Install the ASU software on a Tru64 UNIX system for the first time.
- Upgrade previous versions of the ASU software.

Features

Sharing File Systems

You can make the following file systems mounted on a Tru64 UNIX system on which ASU is installed available to Windows 95, Windows 98, Windows NT, Windows 2000, and Windows XP users as disk shares with share names of up to 80 alphanumeric characters:

- HP's Advanced File System (AdvFS)
- UNIX File System (UFS)
- Network File System (NFS) - the ASU software provides a utility that automatically exports nonrestricted network file systems as disk shares
- CD-ROM File System (CDFS) read-only

ASU disk shares are based on the Microsoft LAN Manager Extended Server Message Block (SMB) protocols, which enable Windows users to connect to ASU disk shares by using native Microsoft utilities, such as the Windows Explorer. Once connected, the file system that is associated with the disk share appears as a transparent extension to a Windows user's local computing environment.

Other types network users can access files in ASU disk shares. For example, a Tru64 UNIX interactive user can access a text file stored in an ASU disk share.

Sharing Tru64 UNIX Printers

You can make printers hosted by Tru64 UNIX servers on which the ASU software is installed available to Windows users as printer shares.

Users configure their Windows systems to use ASU printer shares by using Microsoft utilities, such as the Add Printer Wizard. The ASU software stores supported printer drivers for Windows clients in a disk share. The printer drivers are then available for clients to automatically download.

Once configured, the printer appears as a transparent extension to the Windows user's local computing environment.

High Availability and Scalability through support of HP TruCluster Server Software

By installing the ASU software on a Tru64 UNIX system running HP TruCluster Server software, you can provide highly scalable and available file, print and Windows NT Version 4.0 domain controller services. ASU works with TruCluster Server Version 5.1A or later software in single-instance or multi-instance mode.

In TruCluster Server single-instance mode, the ASU server runs on only one cluster member at a time. If the cluster member fails, the ASU server automatically relocates to another cluster member and clients are able to reconnect transparently.

In TruCluster Server multi-instance mode, the ASU server runs on multiple cluster members at the same time but appears as one ASU server to clients. The TruCluster software distributes client connections to all cluster members running the ASU software. If a cluster member fails, the clients are able to reconnect to another cluster member transparently.

Features

Security

The ASU software provides flexible security by supporting either the Windows NT network security model exclusively, or Windows NT combined with Tru64 UNIX network security models.

The ASU software supports both Windows NT file share level security (including support for Windows NT local and global groups) and Windows NT ACL permissions on individual files.

When using the Windows NT network security model exclusively, only the Windows NT user permissions are checked. Tru64 UNIX user account and file level security are ignored.

You can configure the ASU server so that the files and directories created in ASU shares inherit the Tru64 UNIX permissions from the parent directory.

When using combined security, users have two accounts; a domain user account that you create and a Tru64 UNIX user account that the ASU software automatically creates.

Three options are provided with the ASU software to coordinate Tru64 UNIX and Windows NT Version 4.0 domain user account passwords:

- Use Windows 2000 Active Directory to resolve Tru64 UNIX user account and group information. This option requires that the Windows 2000 Active Directory be on a system that is running the Windows 2000 operating system software with HP Single Sign On (SSO) software installed on the Tru64 UNIX system.
- Windows NT Authentication for Tru64 UNIX. This option installs a Tru64 UNIX security module that enables Tru64 UNIX interactive users to be authenticated by using their domain user account name and password.
- Tru64 UNIX and domain user account password synchronization. When enabled, this option automatically synchronizes a user's Tru64 UNIX user account password or their UNIX NIS password to their associated domain user account password. Windows users can use the native Windows NT or Windows 95 or 98 password change screen to change their passwords. This option requires that the ASU server run as the PDC in a Windows NT Version 4.0 domain.

The ASU software provides full Windows NT Version 4.0 domain controller support, including support for the Tru64 UNIX system to be a PDC, BDC, or Member Server in a standalone Tru64 UNIX or mixed Tru64 UNIX and Windows NT environment. When operating in a Windows 2000/2003 domain, you can configure the ASU server as a member server or a BDC in mixed mode. In a Windows 2000/2003 native mode domain, ASU can be only a member server.

The ASU software also supports Windows NT Version 4.0 trust relationships, allowing you to grant enterprise-wide permissions to access ASU or Windows NT resources in other domains. ASU also supports Windows NT local and global groups to simplify the administration of access to file and printer shares.

The ASU software runs the netlogon service, which eliminates the need for the user to supply a password for each disk or print share connection that they make within a domain.

The ASU software fully supports the NTLMv2 security protocol, enabled whenever the LMCompatibility registry parameter is set to the value 3, 4, or 5.

International Language Support

You can configure the ASU software to display disk and printer share names and ASU user and group names in different languages. For example, if Windows systems are running the French edition of Windows, you can configure the ASU software to display information in French.

The ASU software supports most of the languages that the Tru64 UNIX operating system software supports.

Features

Network Transport Support

The ASU software provides and allows for the use of the following networking transport software:

- NetBIOS over TCP/IP uses the system's installed TCP/IP transport software for local and wide area networking.
- NetBEUI transport is used exclusively for local area networking.
- In addition, the ASU software can be configured to use port 445 (direct-hosted SMB's) for SMB connections in addition to ports 138 and 139 (used for NetBIOS over TCP/IP).

The ASU software can participate in a routed wide-area TCP/IP network when you configure it to resolve computer TCP/IP names and addresses by using any or all of the following methods:

- A Microsoft WINS Server. You can configure the ASU software as a WINS client that will use the Primary WINS server for resolution. If the Primary WINS server is not available and a secondary WINS server is configured, the ASU server will use the Secondary WINS server.
 - A Domain Name Server (DNS).
 - An lmhosts file. You edit the lmhosts file on each system to add an entry that includes the NetBIOS name and TCP/IP address for each system with which the ASU server needs to communicate.
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Administration

You can administer the ASU software from a Windows system by using common Windows management tools, such as:

- User Manager for Domains to create and manage domain user accounts and groups
- Server Manager to create and manage disk shares
- Event Viewer to view ASU events
- Windows 2000 MMC Active Directory Computers and Users snap-in to create and manage domain user accounts and groups in a W2K domain.

You can administer the ASU software using net commands on a system running the Tru64 UNIX Version 4.0F or higher software on which the ASU software is installed.

You can also use the default Tru64 UNIX Motif-based GUI tools (such as dxaccounts, dxfileshare, or dxprint) on a system running the Tru64 UNIX Version 4.0F or higher software on which the ASU software is installed. You can use the Tru64 UNIX SysMan event viewer to view status information about print jobs sent to the ASU server.

Installation and Configuration

You install the ASU software by using the Tru64 UNIX setld installation utility. You configure the ASU software by using the asusetup utility.

Most of the ASU configuration values are stored in a central database called the ASU registry; some are stored in the lanman.ini configuration file. You can view and manage the ASU registry using the Windows NT regedt32 utility or one of the registry editors that the ASU software provides.

Hardware Requirements

The ASU software is supported on Alpha systems as specified in the Tru64 UNIX operating system QuickSpecs.

Refer to the Tru64 UNIX operating system QuickSpecs for a complete list of supported systems, components, and peripherals.

Memory Requirements In addition to the memory needed for the Tru64 UNIX operating system, a minimum of 64 MB of memory is recommended for the ASU software. However, if the ASU software is to be used in an enterprise environment, then the memory requirement is based on the number of clients and shares that the ASU server supports.

A minimum 4 MB of memory is recommended per server process. Each server process can support 1 to 8 clients by default. To minimize the memory requirements, you can configure the ASU software to allow each server process to support more clients, thus requiring fewer server processes.

These memory requirements are minimum requirements only. Memory requirements can vary widely based on the system CPU, the number of clients using the server and their activities, and the other applications running on the system.

Disk Space Requirements In addition to the disk space requirements for the Tru64 UNIX operating system, a minimum of 40 MB of disk space is required on the system disk for the ASU software.

The ASU disk size requirement may vary depending on the user's system environment, configuration, and software options. Additional disk space may be required to create or expand ASU configuration databases or as user files are created.

Network Interface Controller The ASU software requires at least one network interface controller.

The ASU software supports all 10/100 Ethernet, FDDI, ATM and Gigabit Ethernet controllers supported by the Tru64 UNIX operating system.

Optional Hardware The ASU software supports the printers supported by the Tru64 UNIX operating system Version 4.0F and higher, and for which there is a compatible Windows driver.

Software Requirements

The Advanced Server Version 5.1B-4 for Tru64 UNIX software requires the Tru64 UNIX operating system software Version 5.1B-2 or 5.1B-3. It also includes support for V4.0F, V4.0G, and V5.1A under Prior Version Support agreements.

Optional Software The ASU software supports the following optional software:

Tru64 UNIX TruCluster Software TruCluster Server requires that the revision of the Operating System and the revision of Trucluster match: i.e. TruCluster Server 5.1B requires version 5.1B of the Operating system. The Tru64 UNIX operating system is a separately licensed product. See the Tru64 UNIX operating system QuickSpec for more information.

TruCluster Server requires that additional software subsets be installed. See the TruCluster Server Software Installation manual for more information.

Associated Client Software The following software products can access ASU disk and printer shares:

- Windows XP
 - Windows 2000
 - Windows NT Version 3.5, Version 3.51, and Version 4.0
 - Windows 95 or Windows 98
 - Windows for Workgroups Version 3.11
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Growth Considerations

The minimum hardware and software requirements for any future version of this product may be different from the requirements for the current version.

Software Licensing

The version of Advanced Server for UNIX described in this QuickSpec qualifies as a Minor Functional version release.

The ASU license provides the right to use the software as described in this QuickSpec, and is furnished under the licensing of Hewlett-Packard Company's Standard Terms and Conditions. Licenses for prior versions must be updated to this version either through the purchase of a Service Agreement that includes the rights-to-use new versions, or through the purchase of Update licenses. Provided with the ASU software are two free license connects that are immediately available to use after you install and configure the ASU software. Each client that connects to the ASU server or cluster needs a license, i.e. if a cluster has 10 users spread across 10 cluster nodes then you only need to purchase 10 ASU concurrent user licenses.

You purchase additional ASU licenses in the form of a product authorization key (PAK) called ASDU-CONNECT, which you load in to the Tru64 UNIX License Management Facility (LMF). You purchase ASDU-CONNECT PAKs based on the number of clients that you expect to connect to the ASU server or to the ASU cluster. For example, if you expect a maximum of 100 clients to connect to the ASU server, a 100-user license is required for that server. Alternatively, if you expect a maximum of 100 clients to connect to the ASU server, a 100-user license is required for the cluster and the software will manage the client licenses among the members of the cluster.

Each system or cluster running the ASU software requires an ASDU-CONNECT PAK. For more information on the licensing terms and policies, contact your local HP representative or reseller.

Software Requirements

Ordering Information

The following table lists the quantities and part numbers for ASDU-CONNECT PAKs:

Number of Concurrent Users	Licenses
1	QL-5U29M-3B
10	QL-5U29M-3C
25	QL-5U29M-3D
50	QL-5U29M-3E
100	QL-5U29M-3F
250	QL-5U29M-3G
500	QL-5U29M-3H
1000	QL-5U29M-3J

Software and Documentation Distribution

The ASU software and documentation are provided online at the HP Tru64 ASU web page:

http://h30097.www3.hp.com/products/adv_server/index.html

The software can no longer be obtained via CD-ROM.

Software Product Services

A variety of service options are available from HP. For more information, contact your local sales office or distributor.

Software Warranty

Warranty for this software is provided by HP in accordance with the HP warranty terms applicable to the license purchase.

This information is valid at time of release. Please contact your local sales support office or distributor for the most up-to-date information.

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