



## Authenticating Network Appliances File Servers with Likewise and AD

### IN THIS DOCUMENT

- Configuring Active Directory with Likewise cells for access to NetApp file servers.
- Setting up NetApp file servers to use RFC 2307 attributes.

### REQUIREMENTS

- The Active Directory installation must comply with RFC 2307, such as Windows Server 2003 R2.
- Likewise Enterprise must be installed on a Windows administrative workstation that can connect to your Active Directory domain controller.
- Likewise Enterprise must be installed on your Linux, Unix, and Mac clients and they must be connected to Active Directory.
- NetApp OnTap 6.5 or later.

### Abstract

Enterprises rely on Network Appliances file servers to provide the versatility, scalability, and reliability for their most demanding technical workloads. Many enterprises also rely on Microsoft Active Directory to manage and authenticate their users. Likewise Enterprise ports the power of Active Directory authentication to Network Appliances, lowering the cost of managing access to the file servers and helping to improve security.

This document describes how to use Likewise Enterprise to provision users in Active Directory with RFC 2307 attributes so that the users can access Network Appliances file servers by using their Active Directory credentials.

### About Likewise Enterprise

By joining Linux, Unix, and Mac computers to Active Directory – a secure, scalable, stable, and proven identity management system – Likewise gives you the power to manage all your users' identities in one place, use the highly secure Kerberos 5 protocol to authenticate users in the same way on all your systems, apply granular access controls to sensitive resources, and centrally administer Linux, Unix, Mac, and Windows computers with group policies. Likewise includes reporting and auditing capabilities that can help improve regulatory compliance. The result: lower operating costs, better security, enhanced compliance.

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Likewise Software  
15395 SE 30th Place, Suite #140  
Bellevue, WA 98007  
USA



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## Introduction

This document describes how to use Likewise Enterprise to provision users in Active Directory with RFC 2307 attributes so that the users can access Network Appliances file servers by using their Active Directory credentials.

The target audience is network directory administrators who manage access to workstations, servers, and other network resources within Active Directory. The guide assumes that you know how to administer Active Directory as well as computers running Linux and Unix, including Network Appliances servers.

**Important:** This guide assumes that you have installed Likewise Enterprise on a Windows administrative workstation that can connect to your Active Directory domain controller and that your Active Directory installation complies with RFC 2307. (Windows Server 2003 R2 complies with RFC 2307.) Note that raising the forest functional level to Windows Server 2003 will exclude Windows 2000 domain controllers from the domain. This guide also assumes that you have joined your Linux, Unix, and Mac clients to your AD domain by using Likewise Enterprise. For more information and instructions on how to install Likewise, see the Likewise Enterprise Installation Guide at [http://www.likewise.com/resources/user\\_documentation/](http://www.likewise.com/resources/user_documentation/).

## Configuration Overview

Setting up NetApp storage systems to authenticate users with Likewise and Active Directory requires four main steps, the first two of which are specific to your NetApp product:

1. Configure NetApp to enable a volume for access from a Windows network with the CIFS protocol and to enable the same volume for access from a Unix network with the NFS protocol. This document assumes that you have already completed this step; for instructions, see your NetApp documentation.
2. Configure NetApp to authenticate users with Active Directory. NetApp servers include built-in functionality that allows you to join them to Active Directory by using the NetApp CIFS Setup Wizard, which is accessible through the NetApp Administration Web Console. The NetApp filer must be joined to the domain that

contains your Likewise cell. This document assumes that you have already completed this step; for instructions, see the documentation for your NetApp product.

3. Use Likewise to configure your Active Directory users who need to access the NetApp volume with Unix attributes.

To make shared volume available to a user regardless of whether the user accesses it from Windows or Unix, Likewise maps each user's Windows and Unix identities so that the file ownership and permissions settings are the same. Each user can then access the shared NetApp volume from either Windows or Unix with the same ownership and permission settings.

4. Use `options ldap` commands to configure your NetApp server to control user access with Active Directory's RFC 2307 attributes.

## Configuring AD with Cells for NetApp Access

To make shared NetApp volume available to a user regardless of whether the user accesses it from a Windows or Unix machine, Likewise uses *cells* to map users' Windows and Unix identities so that the file ownership and permissions settings are the same. Each user in the Likewise cell can then access the shared NetApp volume from either Windows or Unix with the same ownership and permission settings.

### About Likewise Cells

Active Directory uses Organizational Units to group related objects in a common container so that you can manage the objects in a uniform and consistent way. To map Active Directory users to Linux and Unix user identifiers (UIDs) and group identifiers (GIDs), you associate Likewise cells with Organizational Units. When you associate a cell with an Organizational Unit (OU), the cell becomes a custom mapping of Active Directory users to UIDs and GIDs.

Cells can map a user to different UIDs and GIDs for different computers. Linux and Unix computers that are in the OU (or an OU nested in it) use the cell to map AD users to UIDs and GIDs. In the following screen shot, the example user, Clark Kent, is allowed to access the Linux and Unix



computers, including any properly configured NetApp servers, that are in the selected Likewise cells:

**Clark Kent Properties**

Published Certificates | Member Of | Dial-in | Object  
 Security | Environment | Sessions | Remote control  
 General | Address | Account | Profile | Telephones | Organization  
 Terminal Services Profile | COM+ | **Likewise Settings**

UNIX/Linux User Information

To allow this user to logon to UNIX/Linux computers joined to Active Directory, you must specify which Centeris Likewise cell(s) the user is allowed to access. If you have not created any cells, specify the Default cell.

Centeris Cells Use Distinguished Names

- (Default) - Default cell
- Accounting - OU=Accounting,DC=centerisdemo,DC=com
- Engineering - OU=Engineering,DC=centerisdemo,DC=com
- Marketing - OU=Marketing,DC=centerisdemo,DC=com
- StevesTester - OU=StevesTester,DC=centerisdemo,DC=com

User info for cell: (Default)

Specify UID

GID

Login Name

Home Directory

Login Shell

Comment (GECOS)

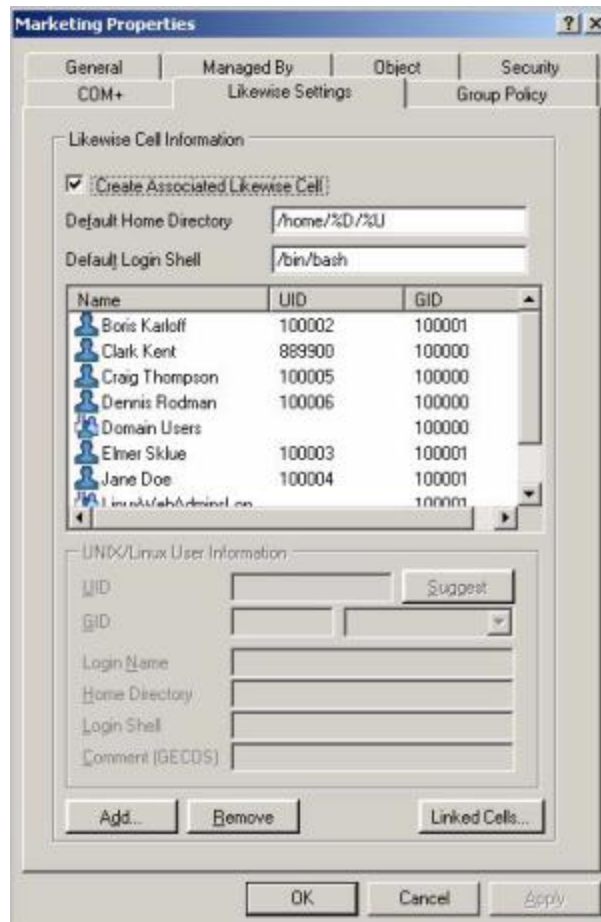
OK Cancel Apply

### Giving Members of an OU Access to a NetApp Server

To give users access to a NetApp server, you can use your existing OU structure. For example, if you just need to give access to the members of your *Marketing* OU access to the NetApp server, all you need to do is associate a Likewise cell with the OU – a simple process that takes only a few minutes:

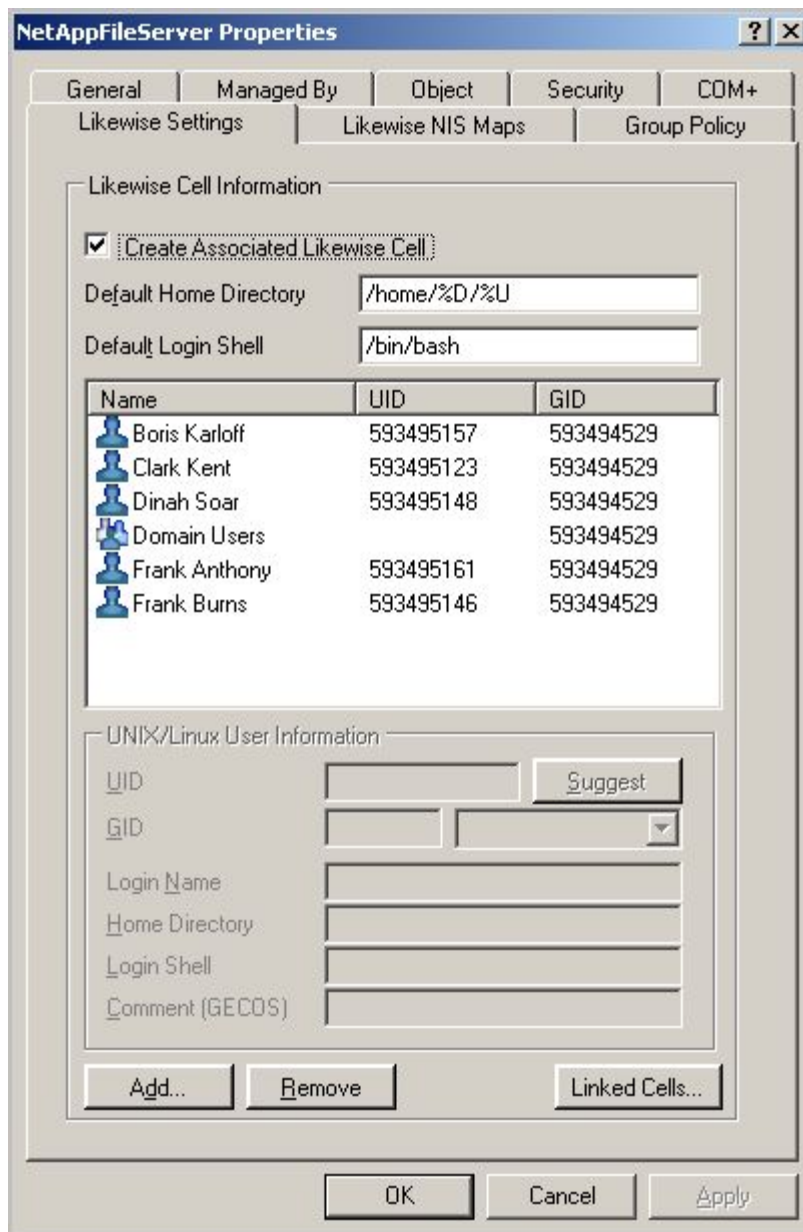
1. In the Active Directory Users and Computers console tree, right-click the OU for which you want to create a cell, click **Properties**, and then click the **Likewise Settings** tab.

- Under **Likewise Cell Information**, select the **Create Associated Likewise Cell** check box, and then click **OK**:



### Creating a Cell for NetApp Users and Groups

Another option is to create a custom list of users and groups who can access the NetApp server. To do so, create an OU, associate a Likewise cell with it, and then add to the cell the users that you want to give access to the NetApp server:



## Configuring NetApp to Use AD and Cells

Configuring a NetApp filer for use with Likewise cells requires the following:

1. AD Domain for filer contains a Likewise Enterprise cell in schema mode.
2. NetApp OnTap versions 6.5.x or above.

Both default and non-default/named cells are supported. Integration, however, is not supported for cells in non-Schema Mode. For details about the OnTap configuration for AD, see NetApp's TR-3458 document, *Unified Windows and UNIX Authorization Using Microsoft Active Directory LDAP as a Directory Store*.

In brief, the basic configuration for integrating a filer is as follows:

- Join the filer to the AD domain that hosts the cell.
- Set LDAP options for use against that AD domain.

See the Netapp documentation for details on joining with CIFS. For LDAP configuration, consult NetApp document TR-3458 with the following modifications:

1. Launch a terminal session on your NetApp filer.
2. At the console, execute the following series of commands, replacing the variables in square brackets with the information that you want to set:

```
options ldap.ADDomain [DNS_of_ADdomain]

options ldap.name [DN_of_ADuser]

options ldap.passwd [ADuser_password]

options ldap.enable on

options ldap.base [DN_of_Cell]
```

The [DN\_of\_Cell] has the LDAP syntax:

CN=\$LikewiseIdentityCell,OU=Test,DC=likewise,DC=com. The users that you defined in your Likewise cell for the NetApp file server can



now use their Active Directory credentials to access the NetApp filer from either a Windows or a Likewise client.

**NOTE:** NetApp does not recommend setting the `ldap.servers` or `ldap.servers.preferred` when using AD. Also, setting LDAP options does not supplant the need to run 'cifs setup'.

### ABOUT LIKewise

Likewise Software is an open source company that provides audit and authentication solutions designed to improve security, reduce operational costs and help demonstrate regulatory compliance in mixed network environments. Likewise Open allows large organizations to securely authenticate Linux, UNIX and Mac systems with a unified directory such as Microsoft Active Directory. Additionally, Likewise Enterprise includes world-class group policy, audit and reporting modules.

Likewise Software is a Bellevue, WA-based software company funded by leading venture capital firms Ignition Partners, Intel Capital, and Trinity Ventures. Likewise has experienced management and engineering teams in place and is led by senior executives from leading technology companies such as Microsoft, F5 Networks, EMC and Mercury.