

# **Secure4DM**

*A Technical White Paper*





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## The Issue

Centralized account management in large, complex, and often geographically dispersed environments consumes vast amounts of time and resources.

Attempts to keep account information synchronized across multiple hosts can cause much frustration on behalf of the System Administrator as well as the user. There is also the potential of leaving "gaps" in the system management processes which can lead to security issues.

Secure4DM will be introduced by discussing its implementation to distribute information from one of our security solutions, Secure4Access.

## The Solution - Introduction to Secure4DM

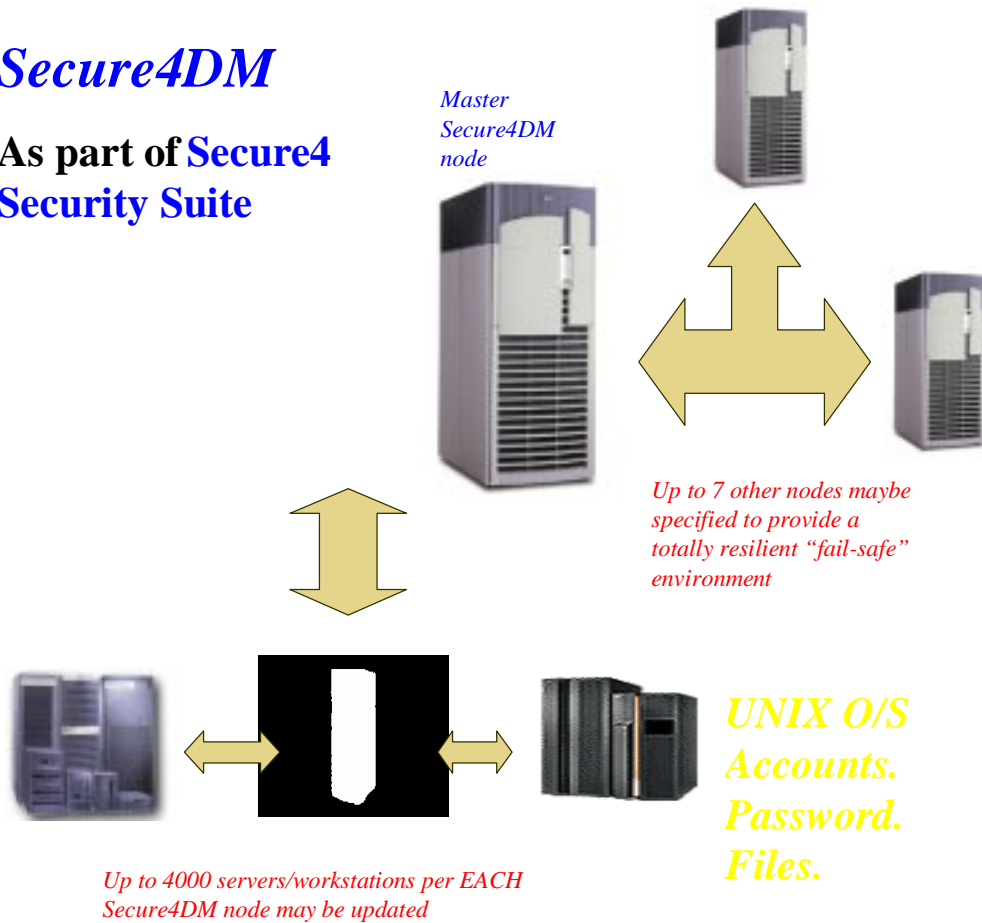
Secure4DM provides an effective means of propagating account information to a large number of remote hosts, thus allowing the Secure4Access central administration capabilities to be scaled up for large networks.

- Secure4DM has a truly unique architecture which enables it to avoid the usual problems associated with linear queue based "middle-ware" distribution suites such as performance bottle necks and frozen queues.
  - Secure4DM transmits account profiles and passwords in parallel, using multiple data transfer daemons without effecting user performance.
  - Secure4DM handles retry attempts if a target host is down
  - Secure4DM releases the administrator from waiting for updates to complete.
  - Secure4DM sends update requests to one host handling many locations.
  - Secure4DM is highly configurable to individual environments *and* allows real-time alerts and data-transfer status reports to be generated.
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# Architecture

## *Secure4DM*

As part of **Secure4  
Security Suite**



The above diagram schematically represents the use of Secure4DM in S4Software's Security Suite. Secure4DM's robust architecture is ideally suited to applications where the management of high volumes, integrity of transmission and secure receipt are of the highest importance.

## Data Replication for Secure4Access

The Secure4Access menu program and server daemon have the ability to propagate account changes to remote hosts. This feature is more than adequate for sites where individual users have individual accounts on a relatively small number of hosts. For sites where users have accounts on numerous remote systems, delays when updating the remote systems may be noticeable depending on factors such as data validation, number of variables required to be validated, and unavailability of remote hosts. Secure4DM is an application which distributes Secure4Access account profiles to remote hosts, solves this problem by off-loading the communication burden from the Secure4Access modules to Secure4DM.

In addition, multiple administrative updates of large numbers of hosts can be done safely and securely in "batch" mode with Secure4DM assurance features.

Secure4DM provides distribution host(s) which are responsible for the account profile distribution, parallel account profile transmission using multiple transfer daemons, queuing retry attempts if a target system is down, and managing error reporting.

Since Secure4DM is an entirely separate application, it can be installed on one or more dedicated hosts<sup>1</sup>, or on the same host(s) where Secure4Access is running. As with Secure4Access, Secure4DM is available for most popular versions of UNIX. Integration with Secure4Access is seamless, it reads existing Secure4Access configuration files to obtain domain-to-host mappings, etc...so its installation and configuration is very simple.

## Operational Structure

Secure4DM provides an effective means of propagating account information to a large number of remote hosts, thus allowing Secure4Access central administration capabilities to be scaled up for large networks. Up to 8 primary distribution hosts and 7 alternate distribution hosts may be defined, allowing a highly redundant, fail-safe account distribution system to be established. (A distribution host is a host where the Secure4DM daemon, `s4dmdist`, is running to receive the transfer request). The primary and alternate Secure4DM hosts defined by a single `dmdomain` line are referred to as a `dmdomain` set.

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1. Installation on a dedicated host is recommended where dataflow is expected to be heavy.



When any account activity occurs (creation, modification, deletion, installation, user password changes, etc...) various Secure4Access profile settings are checked by the Secure4Access menu program or Secure4Access sserver daemon, and if appropriate, the account information is propagated to remote hosts where the user has an account (as specified in the *Other domains* field of the Secure4Access) profile. When Secure4DM is installed, the Secure4Access modules send the update to each defined Secure4DM host rather than directly to the target hosts. The Secure4Access modules attempt to send the update to the primary host in a dmdomain set, then to each alternate in turn if necessary until a distribution host for that set is found. The update is then sent to the primary host for the next dmdomain set, and so on until it has been sent to each Secure4DM host.

Each Secure4DM host may be configured to be responsible for updating up to 4,000 servers!

If information fails to be transmitted to a specified server(s), error information is recorded in the various log files, including the Secure4DM host's `s4dm.clg` log

## Report Options

Secure4DM offers two separate log files for reviewing information. The `s4dm.log` file records all Secure4DM daemon starts, stops, and reinitialization activity. Some error messages will also be reported to the `s4dm.log` file as well. This log file is in printable format and may be viewed using standard Unix viewing commands (`more`, `view`, etc..)

Example of the `s4dm.log` file:

```
28-Mar-02 09:21:12 (s4dmdist:17950@earth) Process has been started.
28-Mar-02 09:25:29 (s4dmxfer6:18435@earth) Process has been started.
28-Mar-02 10:29:37 (s4dmxfer6:21058@earth) Process has been terminated.
28-Mar-02 10:39:02 (s4dmdist:21521@earth) Reload configuration files.
28-Mar-02 11:45:37 (s4dmdist:17950@earth) Process has been terminated.
```

The Secure4DM activity log file, `s4dm.clg` is in binary format and may only be examined using the `s4dmdist` reporting switches (see Secure4DM reference manual for more details). This report includes all receiving and transferring of account information.

Example of the s4dm.clg file:

(c) S4Software, Inc.		Secure4 DM - System Activity Report (earth)					04-Apr-02 14:24			
Date	Time	Host	SrcHost	DestHost	Module	PID	ReqUser	Event	Status	Notes
====	====	====	====	====	====	====	====	====	====	====
28-Mar-02	08:46	earth	mars	saturn	s4dmxfer	4153412	root	Forward profile	54	Create cody
28-Mar-02	08:46	earth	mars	jupiter	s4dmxfer	8272144	root	Forward profile		Create cody

## Availability

Secure4DM is currently available for most popular versions of Unix including the following:

Manufacturer	Operating System
Hewlett-Packard	HP/UX 10.0+, 11+
IBM	AIX 4+, 5+
Linux 7	Linux
Silicon Graphics	IRIX 6.5+
Sun	Solaris 2.5+ (Sparc and Intel)

To obtain a copy of Secure4DM to evaluate on your system visit us on our web page:

**<http://www.s4software.com>**

or send email to our sales department:

**[sales@s4software.com](mailto:sales@s4software.com)**

Be sure to include your operating system type and full name and address for delivery.

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