

## Internal Password Policy

### 1.0 Overview

Passwords are an important aspect of computer security. A poorly chosen password may result in unauthorized access and/or exploitation of NetFM's resources.

All users, including contractors and vendors with access to NetFM systems, are responsible for taking the appropriate steps, as outlined below, to select and secure their passwords.

### 2.0 Purpose

The purpose of this policy is to establish a standard for creation of strong passwords, the protection of those passwords, and the frequency of change.

### 3.0 Scope

The scope of this policy includes all personnel who have or are responsible for an account (or any form of access that supports or requires a password) on any system that resides at any NetFM facility, has access to the NetFM network, or stores any non-public NetFM information.

### 4.0 Policy

#### 4.1 General

- All system-level passwords (e.g., root, enable, administrator, application administration accounts, etc.) must be changed at least every 60 days.
- All production system-level passwords must be changed at least every 60 days.
- All user-level passwords (e.g., email, web, desktop computer, etc.) must be changed at least every 60 days.
- User accounts that have system-level privileges granted through group memberships or programs such as "sudo" must have a unique password from all other accounts held by that user.
- Where SNMP is used, the community strings must be defined as something other than the standard defaults of "public," "private" and "system" and must be different from the passwords used to log in interactively. A keyed hash must be used where available (e.g., SNMPv2).
- All user-level and system-level passwords must conform to the guidelines described below.

#### 4.2 Guidelines

##### *A. General Password Construction Guidelines*

All users at NetFM should be aware of how to select strong and secure passwords.

NetFM deem that Strong and Secure passwords have the following characteristics:

- Contain the following character classes:
  - Lower case characters
  - Upper case characters
  - Numbers
  - "Special" characters (e.g. @#\$%^&\*()\_+|~-=\`{}|:~<>/ etc)
- Contain at least eight characters.

Weak passwords have the following characteristics:

- The password contains less than eight characters
- The password is a word found in a dictionary (English or foreign)
- The password is a common usage word such as:
  - Names of family, pets, friends, co-workers, fantasy characters, etc.
  - Computer terms and names, commands, sites, companies, hardware, software.
  - "NetFM", "crowthorne", "newbury", "reading", any derivation or place name.
  - Birthdays and other personal information such as addresses and phone numbers.
  - Word or number patterns like aaabbb, qwerty, zyxwvuts, 123321, etc.
  - Any of the above spelled backwards.
  - Any of the above preceded or followed by a digit (e.g., secret1, 1secret)

Try to create passwords that can be easily remembered. One way to do this is create a password based on a song title, affirmation, or other phrase. For example, the phrase might be: "This May Be One Way To Remember" and the password could be: "TmB1w2R!" or "Tmb1W>r~" or some other variation.

(NOTE: Do not use either of these examples as passwords!)

## *B. Password Protection Standards*

- Always use different passwords for NetFM accounts from other non-NetFM access (e.g., personal ISP account, option trading, benefits, etc.).
- Always use different passwords for various NetFM access needs whenever possible. For example, select one password for systems that use directory services (i.e. LDAP, Active Directory, etc.) for authentication and another for locally authenticated access.
- Do not share NetFM passwords with anyone, including administrative assistants or secretaries. All passwords are to be treated as sensitive, confidential NetFM information.
- Passwords should never be written down or stored on-line without encryption.
- Do not reveal a password in email, chat, or other electronic communication.
- Do not speak about a password in front of others.
- Do not hint at the format of a password (e.g., "my family name")
- Do not reveal a password on questionnaires or security forms
- If someone demands a password, refer them to this document and direct them to the Technical Director.
- Always decline the use of the "Remember Password" feature of applications (e.g., email, web browsers, etc.).

If an account or password compromise is suspected, report the incident to the Technical Director. Please then take steps to change this password – and any others you feel may have been compromised – immediately.

## *C. Application Development Standards*

Application developers must ensure their programs contain the following security precautions:

Applications:

- Shall support authentication of individual users, not groups.
- Shall not store passwords in clear text or in any easily reversible form.
- Shall provide for some sort of role management, such that one user can take over the functions of another without having to know the other's password.
- Shall support TACACS+, RADIUS and/or X.509 with LDAP security retrieval wherever possible.

## *D. Use of Passwords and Passphrases for Remote Access Users*

Access to the NetFM Networks via remote access is to be controlled using either a one-time password authentication or a public/private key system with a strong passphrase.

## *E. Passphrases*

Passphrases are generally used for public/private key authentication. A public/private key system defines a mathematical relationship between the public key that is known by all, and the private key, that is known only to the user. Without the passphrase to "unlock" the private key, the user cannot gain access.

Passphrases are not the same as passwords. A passphrase is a longer version of a password and is, therefore, more secure. A passphrase is typically composed of multiple words. Because of this, a passphrase is more secure against "dictionary attacks."

A good passphrase is relatively long and contains a combination of upper and lowercase letters and numeric and special characters. An example of a good passphrase:

"The\*?#>\*@TrafficOnThe101Was\*&!#ThisMorning"

All of the rules above that apply to passwords apply to passphrases.

## *5.0 Enforcement*

Any employee found to have violated this policy may be subject to disciplinary action, up to and including termination of employment.

Password cracking or guessing may be performed on a periodic or random basis by the Technical Director or their delegates.

If a password is guessed or cracked during these exercises, the user/owner will be required to change it immediately.