IBM System Storage N series

DataFabric Manager Host Agent 2.6 Installation and Administration Guide

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Preface

About this guide

You can use the IBM® System Storage™ N series DataFabric® Manager Host Agent software to monitor hosts through DataFabric Manager and the Operations Manager interface. This guide describes how to install this software on a Windows®, Solaris®, or Linux® host.

This guide does not cover basic system or network administration topics, such as IP addressing and network management; it emphasizes the preparations and product installation that you should carry out on hosts to enable their monitoring by the DataFabric Manager server.

Audience

This guide is for system administrators and others interested in monitoring hosts through DataFabric Manager and the Operations Manager interface.

This guide assumes that you are familiar with the following:

- Data ONTAP operating system software
- Protocols (NFS, CIFS, or HTTP) you use for file sharing or transfers
- Client-side operating systems (UNIX® or Windows®)

Supported features

IBM System Storage N series storage systems are driven by NetApp® Data ONTAP® software. Some features described in the product software documentation are neither offered nor supported by IBM. Please contact your local IBM representative or reseller for further details. Information about supported features can also be found at the following Web site:

www.ibm.com/storage/support/nas/

A listing of currently available N series products and features can be found at the following Web site:

www.ibm.com/storage/nas/

Getting information, help, and service

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your IBM N series product, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected properly.
- Check the power switches to make sure that the system is turned on.
- Use the troubleshooting information in your system documentation and use the diagnostic tools that come with your system.

Using the documentation

Information about N series hardware products is available in printed documents and a documentation CD that comes with your system. The same documentation is available as PDF files on the IBM NAS support Web site:

www.ibm.com/storage/support/nas/

Data ONTAP software publications are available as PDF files on the IBM NAS support Web site:

www.ibm.com/storage/support/nas/

Web sites

IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates.

- For NAS product information, go to the following Web site:
  www.ibm.com/storage/nas/
- For NAS support information, go to the following Web site:
  www.ibm.com/storage/support/nas/
- For AutoSupport information, go to the following Web site:
  www.ibm.com/storage/support/nas/
- For the latest version of publications, go to the following Web site:
  www.ibm.com/storage/support/nas/

Accessing online technical support

For online Technical Support for your IBM N series product, visit the following Web site:

www.ibm.com/storage/support/nas/

Hardware service and support

You can receive hardware service through IBM Integrated Technology Services. Visit the following Web site for support telephone numbers:

www.ibm.com/planetwide/

Supported servers and operating systems

IBM N series products attach to many servers and many operating systems. To determine the latest supported attachments, follow the link to the Interoperability Matrices from the following Web site:

www.ibm.com/storage/support/nas/

Firmware updates

As with all devices, it is recommended that you run the latest level of firmware, which can be downloaded by visiting the following Web site:

www.ibm.com/storage/support/nas/

Verify that the latest level of firmware is installed on your machine before contacting IBM for technical support. See the *Data ONTAP Upgrade Guide* for your version of Data ONTAP for more information on updating firmware.

Terminology

Storage systems that run Data ONTAP are referred to as *storage systems*, *filers*, *appliances*, *storage appliances*, or *systems*. The terms used in the graphical user interface for Operations Manager reflect these common usages.

When the term *appliance* is used in Operations Manager, the information applies to all supported storage systems, NearStore® systems, and N series Storage Systems.

When the term *filer* is used, it can refer to any supported storage system, including N series Storage Systems or NearStore systems.

Windows-based, Linux-based, and Solaris-based storage systems that do not run Data ONTAP are referred to as *hosts*.

Path convention

In parenthetical references to paths leading to parts of the Operations Manager user interface, the greater-than symbol (>) is used to point to the next interface element connecting you to your final destination. For example, File Systems > Views > Volume Growth means to click the File Systems tab, open the Views drop-down list, and select Volume Growth.

Command conventions

You can enter storage system commands on the system console or from any client that can obtain access to the storage system using a Telnet session. In examples that illustrate commands executed on a UNIX workstation, the command syntax and output might differ from what you actually see on your system, depending on your version of UNIX.

Typographic conventions

The following table describes the typographic conventions used in this guide.

Convention	Type of information
Italic type	Words or characters that require special attention. Placeholders for information you must supply. For example, the guide might say to enter the following command: `dfm alarm destroy` *`alarm-ids`* You must enter the characters “dfm alarm destroy” followed by the ID of the alarm you want to destroy. Book titles in cross-references.
`Monospaced` font	Command and daemon names. Information displayed on the system console or other computer monitors. The contents of files.
`Bold monospaced` font	Words or characters you type. What you type is always shown in lowercase letters, unless you must type it in uppercase letters.

Keyboard conventions

This guide uses capitalization and some abbreviations to refer to the keys on the keyboard. The keys on your keyboard might not be labeled exactly as they are in this guide.

What is in this guide…	What it means…
hyphen (-)	Used to separate individual keys. For example, Ctrl-D means holding down the Ctrl key while pressing the D key.
Enter	Used to refer to the key that generates a carriage return; the key is named Return on some keyboards.
type	Used to mean pressing one or more keys on the keyboard.

What is in this guide…	What it means…
enter	Used to mean pressing one or more keys and then pressing the Enter key.

Special messages

This guide contains special messages that are described as follows:

Note

A note contains information that is important for you to consider as you work with the information in this guide.

Attention

An attention notice contains instructions that you must follow to avoid a system crash, loss of data, or damage to the equipment.

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Overview of DataFabric Manager Host Agent 1

About this chapter

This chapter provides an overview of the DataFabric Manager Host Agent software.

Topics in this chapter

This chapter contains information about the following topics:

- "Before reading further" on page 2
- "How DataFabric Manager Host Agent works" on page 4

Before reading further

Terms and technologies you should know

Before you read about how to use DataFabric Manager Host Agent, you must familiarize yourself with the following terms and technologies:

- DataFabric Manager Host Agent
- Host agent
- Operations Manager
- SAN host
- File Storage Resource Manager (FSRM)
- SnapDrive® software
- Microsoft Cluster Services (MSCS)

Data Fabric Manager Host Agent This independent software agent resides on any third-party (Windows®, Solaris™, or Linux®) host that you want to monitor through the Operations Manager interface to the DataFabric Manager server.

Host agent: This is a server running the DataFabric Manager Host Agent software. If the host agent has SAN hardware, it can also be referred to as a *SAN host*.

Operations Manager: This Web-based interface to the DataFabric Manager server lets you monitor or manage IBM N series storage systems or Windows, Solaris, or Linux systems installed with DataFabric Manager Host Agent.

SAN host: This is any storage area network (SAN) device, such as a UNIX or Windows system, that sends requests to other SAN devices in a SAN to perform tasks. To be monitored through Operations Manager on the DataFabric Manager server, a SAN host must be running the DataFabric Manager Host Agent software.

File Storage Resource Manager (FSRM): This feature on the DataFabric Manager server enables you to monitor and manage file-level and directory-centric storage resource management (SRM) data on hosts installed with DataFabric Manager Host Agent.

SnapDrive: This software configures space on IBM N series storage systems as local disks on Windows hosts. SnapDrive is required for LUN management when DataFabric Manager Host Agent is providing the SAN host functionality on Windows.

Microsoft Cluster Services (MSCS): This is a clustering technology for Windows servers. If one of the clustered servers fails, the other server in the cluster takes over for the failed server, providing fault tolerance and increasing server availability.

How DataFabric Manager Host Agent works

About DataFabric Manager Host Agent

DataFabric Manager Host Agent is software that resides on a Windows, Linux, or Solaris host. It collects information such as OS name, version, HBA information, and file-system metadata, and then sends that information back to the DataFabric Manager server. Users can create reports of the collected information by using Operations Manager or the DataFabric Manager CLI.

To enable a target host to communicate with the DataFabric Manager server, install and configure the DataFabric Manager Host Agent software on that host. After the DataFabric Manager server discovers that instance of DataFabric Manager Host Agent, no further configuration is required.

DataFabric Manager Host Agent does not initiate any management actions on the Windows, Linux, or Solaris host. It is strictly a passive agent. It acts only on requests from external management applications, such as the DataFabric Manager server.

What DataFabric Manager Host Agent Can Do

After you install DataFabric Manager Host Agent on a non-IBM host, you can use Operations Manager to perform a variety of SAN and FSRM functions.

SAN capabilities: Using DataFabric Manager Host Agent and Operations Manager, you can perform the following SAN tasks:

- Monitor basic system information for the SAN hosts
- View detailed HBA and LUN information

For more information about DataFabric Manager Host Agent and SANs, see Chapter 3, "Using DataFabric Manager Host Agent for a SAN," on page 15.

FSRM capabilities: Using DataFabric Manager Host Agentand Operations Manager, you can perform the following FSRM tasks:

- Collect storage usage data at the file and directory level
- Identify a variety of file-related information: for example, largest files, oldest files, or space consumed per file type

For more information about DataFabric Manager Host Agent and FSRM, see Chapter 2, "Using DataFabric Manager Host Agent with FSRM," on page 7.

When you need DataFabric Manager Host Agent

You need DataFabric Manager Host Agent *only* if you want to monitor SAN hosts or FSRM-generated file system data through Operations Manager.

Accessing DataFabric Manager Host Agent

DataFabric Manager Host Agent uses a Web-based interface for configuration. You can access it either from the computer on which DataFabric Manager Host Agent is installed or from any other computer on the network. For more information, see “Accessing the user interface” on page 28.

Using DataFabric Manager Host Agent with FSRM 2

About this chapter

This chapter provides an overview of how to use DataFabric Manager Host Agent to display File Storage Resources Manager (FSRM) data through Operations Manager.

Topics in this chapter

This chapter contains the following topics:

- "Prerequisites for File Storage Resource Manager" on page 8
- "About File Storage Resource Manager" on page 10
- "Overview of DataFabric Manager Host Agent with FSRM" on page 12

Prerequisites for File Storage Resource Manager

Before reading further

This chapter introduces the File Storage Resource Manager feature of Operations Manager and its interaction with the DataFabric Manager Host Agent software. See the File Storage Resource Manager chapter in the *Operations Manager Administration Guide* for additional important information.

Prerequisites

You must meet the following prerequisites to use the Operations Manager FSRM feature:

- You must have a valid FSRM license installed on your DataFabric Manager server. Contact your sales representative to obtain a File SRM license.

  Note

  The Quotas subtab is visible in the Operations Manager user interface (under the Control Center > Home > Group Status tabs) until you install the File SRM license. After you install the license, the Quotas subtab is renamed "File SRM," and all of the FSRM features become visible when you click it.

- All hosts to be managed through Operations Manager must be connected to a TCP/IP network either known to or discoverable by the DataFabric Manager server. The hosts must be connected to the network through an Ethernet port and must have a valid IP address.
- All directory paths to be monitored must be visible to the host agent. For example, to enable FSRM host monitoring by the DataFabric Manager server, the host agent must mount a storage system share using NFS or CIFS, or the host agent must use a LUN on the storage system.
- Before setting up FSRM paths and schedules, you must enable administrative access to your host agents. For more information, see "Administration settings that you must configure" on page 8 and the *Operations Manager Administration Guide*.

Administration settings that you must configure

You must enable administrative access to your host agents before you can perform FSRM tasks with them. To enable administrative access, you must ensure that the passwords specified on the DataFabric Manager server match those set in the DataFabric Manager Host Agent software. The following table describes the options that must be set to enable administrative access.

Access type	**Operations Manager options**	DataFabric Manager **Host Agent software option**
Monitoring only	Host Agent Login=`guest` Host Agent Monitoring Password	Monitoring API Password
Management	Management Host Agent Login=`admin` Host Agent Management Password	Management API Password

For more information about the Host Agent software passwords, see “About the DataFabric Manager Host Agent software passwords” on page 30.

About File Storage Resource Manager

Definition of FSRM

The File Storage Resource Manager (FSRM) feature of Operations Manager provides monitoring and management of storage resources, including applications, files, file systems, and networks. The DataFabric Manager server interacts with the DataFabric Manager Host Agent software residing on remote Windows, Solaris, or Linux hosts to recursively examine the directory paths you have specified in the Operations Manager FSRM configuration options. The results of these directory examinations are used to generate a variety of useful file-level and directory-level reports.

Does FSRM monitor IBM N series storage systems?

Through Operations Manager, you can monitor only directory paths that are already visible to the DataFabric Manager Host Agent software. Therefore, if you want to enable FSRM monitoring of an IBM N series storage system, the host agent must mount that storage system share using NFS or CIFS, or the host agent must use a LUN on that storage system.

Note

The DataFabric Manager server cannot obtain file system data for files located in a storage system's volumes that are not exported by CIFS or NFS. Host agents can also gather FSRM data about file system paths that are not on a storage system: for example, local disk and third-party storage. For more information about FSRM prerequisites, see "Prerequisites for File Storage Resource Manager" on page 8.

What if I want to view a file system on an unsupported platform?

As long as the file system is viewable from the host agent, you can retrieve data from it. For example, you can view files located on an HP/UX system, if the file system is NFS-mounted on a Solaris host running the DataFabric Manager Host Agent software.

Why you might need FSRM

As companies expand their distributed computing systems and implement disaster recovery solutions, their storage requirements increase proportionately. As more storage devices are added to the network to fulfill these requirements, it

becomes increasingly more difficult to determine how storage space is being allocated. What file types are taking up the most space? Which users are exceeding their quotas? What are the 10 largest directories?

For example, if an administrator suspects that MP3 files are consuming an excessive amount of storage resource space, how can that administrator gather statistics for specific file extensions from the affected devices? Alternatively, perhaps an administrator wants to archive rarely used files. How can that administrator generate a report listing the least-used files?

To keep costs down, and to manage proactively their storage resource space, companies require an efficient way to determine how that space is being used: thus, the need for the FSRM tools. FSRM enables you to gather file-level statistics and directory-centric file system data.

FSRM terminology you should know

Before you configure the Operations Manager and DataFabric Manager Host Agent software to gather FSRM-requested file system data, you should be familiar with the following SRM terms and technologies:

- Path
- Path walk

Path: Defined by an administrator, a directory path gathers file-level statistics (such as file listing by age, size, owner, or type).

Path walk: A “path walk” is the process of recursively examining a directory path for file-level statistics. You can schedule this process through Operations Manager and execute it through the DataFabric Manager Host Agent software. The DataFabric Manager Host Agent software then “walks” the specified directory path and gathers per-file and per-directory data.

Overview of DataFabric Manager Host Agent with FSRM

About DataFabric Manager Host Agent with FSRM

DataFabric Manager Host Agent resides on each FSRM host from which you want to collect file-system metadata. You can use DataFabric Manager Host Agent in conjunction with FSRM for both SAN and non-SAN hosts.

FSRM management tasks you can perform with DataFabric Manager Host Agent

DataFabric Manager Host Agent enables you to perform the following FSRM functions through Operations Manager:

- Set up path walk schedules for collecting file-level storage usage statistics
- Identify file-level statistics, such as the following:
  - Largest files
  - Oldest files
  - Stalest files
  - Newest files
  - Largest directories
  - Files by owner
  - Files by type

Overview of FSRM configuration

To begin gathering file-level information, you need to perform the following tasks:

1. Identify FSRM host agents.

   If you have installed an FSRM license, DataFabric Manager will automatically discover all host agents.

2. Add new host agents manually in Operations Manager, if they have not been discovered.

3. Set up host agent administrative access on the hosts to be monitored.

   You must enable administrative access to your host agents before you can perform FSRM tasks with them.

4. Verify DataFabric Manager Host Agent software administrative access.

5. Add paths in Operations Manager.

After host agents have been discovered, you must define paths to them.

6. Set up path-walk schedules in Operations Manager.

   You must define the interval between path walks.

   Note

   Path walks can cause performance degradation. However, you can schedule your path walks to occur during low-use or nonbusiness hours. For more information, see Chapter 2, "Using DataFabric Manager Host Agent with FSRM," on page 7.

You can begin collecting basic file system data by completing the preceding tasks. The path walks will begin according to the schedules you create. These configuration steps are described in detail in the *Operations Manager Administration Guide*.

Where to find more information

For more information, see the File Storage Resource Manager chapter in the *Operations Manager Administration Guide*.

Using DataFabric Manager Host Agent for a SAN 3

About this chapter

This chapter provides an overview of DataFabric Manager Host Agent and describes how it functions in an IBM SAN.

Topics in this chapter

This chapter contains information about the following topics:

- "Prerequisites for DataFabric Manager Host Agent for a SAN" on page 16
- "How DataFabric Manager Host Agent functions in a SAN" on page 18

Prerequisites for DataFabric Manager Host Agent for a SAN

Before reading further

Before installing DataFabric Manager Host Agent, you should be familiar with setting up an IBM SAN, as documented in the Data ONTAP® *Block Access Management Guide*.

SAN terminology that you should know

Before you configure Operations Manager and DataFabric Manager Host Agent to monitor a SAN, you should be familiar with the following SAN terms and technologies:

- SAN host
- Fibre Channel Protocol (FCP)
- Internet SCSI (iSCSI)
- Host bus adapter (HBA)
- Target
- Initiators
- Logical unit number (LUN)

SAN host: A SAN host is a SAN device, such as a UNIX, LINUX, or Windows system, that sends requests to other SAN devices in a SAN to perform tasks. To be monitored by the DataFabric Manager server, a SAN host must be running the DataFabric Manager Host Agent software.

Fibre Channel Protocol (FCP): Fibre Channel is one of the storage networking protocols used by devices in a SAN to communicate with each other.

Internet SCSI (iSCSI): Internet SCSI (Small Computer System Interface) is an Internet Protocol (IP)-based storage networking protocol that enables communication between devices in a SAN over IP networks.

Host bus adapter (HBA): A host bus adapter is an interface card that plugs into a SAN device. SAN devices use the ports on their respective HBAs to connect to each other in a SAN.

Each SAN device might contain one or more HBAs. An HBA might contain more than one port. Each port can be used to establish a connection to a SAN.

Target: A target is an HBA port on a storage system in an IBM SAN to which SAN hosts send requests.

Initiator: An initiator (also known as a *host bus adapter port* or simply an *HBA port*) is an HBA port on a SAN host that is used to initiate requests to a storage system in an IBM SAN.

Logical unit number (LUN): A LUN is a logical unit of storage on a storage system (also known as a *target*) that is accessed by UNIX, LINUX, or Windows hosts (also known as *SAN hosts*) in a SAN.

How DataFabric Manager Host Agent functions in a SAN

About DataFabric Manager Host Agent for SAN hosts

DataFabric Manager Host Agent resides on each SAN host that you want to monitor through Operations Manager.

In a SAN environment, DataFabric Manager Host Agent is a network interface to HBA and LUN management utilities on a SAN host. It enables you to monitor and manage SAN hosts through Operations Manager in a secure and platform-independent way.

SAN management tasks you can perform with DataFabric Manager Host Agent

DataFabric Manager Host Agent enables you to perform the following SAN functions through Operations Manager:

- Discover SAN hosts
- Monitor basic system information for the SAN host
- View detailed HBA port (initiator) information and some iSCSI HBA details
- View current LUN mappings on the SAN host
- Execute basic LUN management requests, including the following:
  - Create and map a LUN
  - Expand a LUN
  - Delete a LUN

Note

LUN management is available only on SAN hosts running Windows. It also requires awareness of SAN host clustering. DataFabric Manager Host Agent on hosts running Windows obtains clustering information from Microsoft Cluster Services. DataFabric Manager Host Agent on hosts running Solaris and Linux cannot perform LUN management because it is not aware of SAN host clustering.

Flow of information through DataFabric Manager Host Agent

On Solaris and Linux: For HBA monitoring, and for LUN monitoring on SAN hosts running Solaris or Linux, DataFabric Manager Host Agent obtains monitoring and management information from the operating system and device drivers on the SAN host.

On Windows: For LUN monitoring and management on SAN hosts running Windows, DataFabric Manager Host Agent obtains data from SnapDrive. This data includes the following information:

- A list of LUNs
- The cluster configuration for SAN hosts (Microsoft Cluster Services)
- The version of SnapDrive

DataFabric Manager Host Agent uses proprietary APIs to communicate this data to the DataFabric Manager server over an HTTP or HTTPS connection.

Installing DataFabric Manager Host Agent 4

About this chapter

This chapter describes the system requirements and steps for obtaining and installing DataFabric Manager Host Agent on Windows, Solaris, and Linux hosts.

This chapter includes the following topics:

- "System requirements"
- "Installing DataFabric Manager Agent on Windows, Solaris, or Linux"
- "Uninstalling DataFabric Manager Host Agent"

System requirements

Supported platforms

You can install DataFabric Manager Host Agent 2.6 on the following platforms.

Platform	Supported operating system versions
Windows server	◆ Windows XP ◆ Windows 2003 (32-bit and 64-bit)
Solaris server	◆ Solaris 9 running on UltraSPARC ◆ Solaris 10 running on UltraSPARC ◆ Solaris 10 running on x86
Linux workstation or server	◆ Red Hat Enterprise Linux, version 4, update 3 or later (32-bit and 64-bit x86) ◆ Red Hat Enterprise Linux, version 5 (32-bit and 64-bit x86) ◆ SUSE Linux Enterprise Server 9, SP 2 or later (32-bit and 64-bit x86) ◆ SUSE Linux Enterprise Server 10 (32-bit and 64-bit x86)
VMware ESX Server, Standard or Enterprise Edition, version 3	◆ Windows 2003 Server (32-bit) ◆ Red Hat Enterprise Linux AS, version 4

Supported software

DataFabric Manager Host Agent 2.6 supports the following software versions.

Software	Supported versions
Operations Manager	◆ DataFabric Manager server 3.6 or later
SnapDrive for Windows (to support SAN host monitoring)	◆ SnapDrive for Windows 4.2, 4.2.1, 5.0, and 6.0 **Note** DataFabric Manager Host Agent does not support a 64-bit Windows operating system on a SAN host.

Viewing the most current system requirements

For a complete list of supported devices, operating systems, and software versions, including those released after the production of this guide, refer to the IBM N series Service and Support Web site at http://www.ibm.com/storage/support/nas/.

Installing DataFabric Manager Agent on Windows, Solaris, or Linux

You can install DataFabric Manager Host Agent on your target host from the DataFabric Manager CD.

Installing from the DataFabric Manager CD: If you are installing DataFabric Manager Host Agent from the DataFabric Manager CD onto a Windows, Solaris, or Linux host, complete the following steps.

Step	Action	
1	Ensure that your host meets the requirements described in "System requirements" on page 22.	
2	Insert the CD into the CD-ROM drive of your Windows, Solaris, or Linux host. Browse the CD; the installer files are located on the CD as described in the index.htm file.	
3	**If you are installing on a supported version of...**	**Then launch...**
	Windows	agentsetup-2-6-win32.exe
	Solaris UltraSPARC	agentsetup-2-6-solaris.bin
	Solaris x86	agentsetup-2-6-solaris-x86.bin
	Linux	agentsetup-2-6-linux.bin
4	Follow the DataFabric Manager Host Agent setup prompts to complete the installation. During the installation, you must specify a license key. After the installation is complete, DataFabric Manager Host Agent is launched automatically.	

Uninstalling DataFabric Manager Host Agent

If you need to uninstall DataFabric Manager Host Agent, complete the steps appropriate to the platform from which you are removing it.

Platform	Uninstall steps
Solaris	Log in as root and enter the following command: `pkgrm NTAPagent`
Linux	Log in as root and enter the following command to invoke the uninstall script: `/opt/NTAPagent/uninstall`
Windows	Use the Windows Add/Remove programs utility.

Managing DataFabric Manager Host Agent 5

About this chapter

This chapter describes how to manage DataFabric Manager Host Agent so that you can monitor SAN hosts through Operations Manager.

Topics in this chapter

This chapter contains the following topics:

- "Accessing the user interface" on page 28
- "User privileges and security" on page 29
- "Configuring DataFabric Manager Host Agent" on page 30
- "DataFabric Manager Host Agent log file" on page 34
- "Starting and stopping the DataFabric Manager Host Agent service" on page 33
- "Limitations of DataFabric Manager Host Agent" on page 35

Accessing the user interface

User interface

The user interface to DataFabric Manager Host Agent is Web-based. You can access it from the computer on which DataFabric Manager Host Agent is installed or from any other computer on the network.

Addresses for accessing the user interface

Enter the following URLs in your browser to access the DataFabric Manager Host Agent user interface:

- To access configuration options, enter [*hostname or IP address*]:[*port*]/admin.
- To access diagnostic information, enter [*hostname or IP address*]:[*port*]/about.

Port information

DataFabric Manager Host Agent by default listens for HTTP requests on port 4092 and for HTTPS requests on port 4093. For information about HTTPS, see “User privileges and security” on page 29.

User privileges and security

User privilege levels

DataFabric Manager Host Agent supports two levels of user privilege: monitoring and management.

- Monitoring privileges enable you to perform only monitoring functions.
- Management privileges enable you to perform both monitoring and management functions.

User passwords in new installations

In new installations of DataFabric Manager Host Agent, the default password for the monitoring user is *public*.

New installations of DataFabric Manager Host Agent disable management access until a password is configured for it. For instructions on changing configuration options, see "Configuring DataFabric Manager Host Agent" on page 30.

Password security

Passwords are stored on the host in a hashed format. Lost passwords cannot be recovered, but a user with administrator or root privileges on the host can reset them.

HTTPS transport

Whenever possible, DataFabric Manager Host Agent uses HTTPS transport to protect transmitted data and login information.

If Operations Manager is configured to use HTTP, communication between the DataFabric Manager server and DataFabric Manager Host Agent occurs but is unencrypted.

Configuring DataFabric Manager Host Agent

Credential requirement

To change configuration options in DataFabric Manager Host Agent, you must supply valid administrator (super-user) credentials on the host. On Windows hosts, you must log in as an Administrator or any other member of a Local Administrator group and on Solaris/Linux hosts, you must log in as *root*.

About the DataFabric Manager Host Agent software passwords

Host agents have two user name and password pairs. One password is for monitoring only and the other password is for administration.

Monitoring user name and password pair: The default monitoring user name and password pair is as follows:

- User name=`guest`
- Password=`public`

Host agents have the preceding settings enabled by default. The DataFabric Manager server is configured to recognize the password `public` so that read-only operations can be performed on host agents without further configuration. If you later decide to change the guest password on the host agent, you must then set the same user name and password in Operations Manager, using the Host Agent Monitoring Password option on the Options page (banner > Options link).

Administration user name and password pair: The administration user name and password pair is as follows:

- User name=`admin`
- Password=*userspecified*

You specify the password using the host agent's configuration user interface (http://*name-of-agent*:4092/). This user name and password pair allows read-write access to the host agent. After setting the administration user name and password pair for the host agent, you must then set the same user name and password in Operations Manager using the following options:

- Host Agent Login
- Host Agent Management Password

These options are located on the Options page (banner > Options link) or the Edit Settings page (*appliance name* > Tools list > Edit Settings) of each host agent.

Password configuration

Prior to DataFabric Manager Host Agent 2.5, UNIX users were required to have the root password and were unable to use the `sudo` option to configure passwords. In DataFabric Manager Host Agent 2.5 and later, the `-o` option lets you configure passwords without having root privileges. Here is example syntax that uses this option:

```
sudo dfm_agent -o Admin-Password=private
```

Configuration options

The following table lists the configuration options and their functions.

Configuration option	Function	Default value
Monitoring API Password	Changes the password for the “guest” user	public
Management API Password	Changes the password for the “admin” user	Disabled
HTTP Port	Changes the additional port on which DataFabric Manager Host Agent listens for requests if HTTPS is enabled	4092
HTTPS Port	Changes the additional port on which DataFabric Manager Host Agent listens for requests if HTTPS is enabled	4093
Remote Upgrade	Enables or disables remote upgrading of DataFabric Manager Host Agent (currently not supported)	Disabled

Changing configuration options

To change configuration options in DataFabric Manager Host Agent, complete the following steps.

Step	Action
1	Access the DataFabric Manager Host Agent user interface from your browser.

Step	Action
2	At the login prompt, log in as the administrator or super-user. **Note** For new installations, configure the management password if it has not already been configured. See “User privileges and security” on page 29.
3	Change options as needed.
4	Click Update.
5	Close the browser window to log out.

Starting and stopping the DataFabric Manager Host Agent service

Starting and stopping on Windows

On Windows hosts, DataFabric Manager Host Agent runs as a service that starts automatically when the system boots up. You can start and stop DataFabric Manager Host Agent through the Services window, as you would other Windows services.

Starting and stopping on Solaris and Linux

On Solaris and Linux hosts, DataFabric Manager Host Agent is a daemon started by the `init` service.

You can also start and stop the daemon manually, as follows:

- To start the daemon, run the command `dfm_agent start`.
- To stop the daemon, run the command `dfm_agent stop`.

Multiple instances of DataFabric Manager Host Agent

When DataFabric Manager Host Agent starts, it checks if another instance of DataFabric Manager Host Agent is running. If another instance of DataFabric Manager Host Agent is running, the second instance shuts down. No more than one instance can run at the same time.

Elevated permissions required on some hosts

DataFabric Manager Host Agent must run with elevated permissions on the following hosts:

- On Solaris and Linux hosts, the DataFabric Manager Host Agent daemon runs as `root`.

DataFabric Manager Host Agent log file

Log file name and location

DataFabric Manager Host Agent maintains a single log file, named ibm_agent.log. The log file is located in the installation directory. The default installation directory locations are as follows:

- On Windows, C:\Program Files\IBM\Agent
- On Solaris or Linux, /opt/IBMagent

Log file size and rotation

Log files are rotated when the file size exceeds 3 MB. After a log has been rotated three times, it is deleted. The total combined size of all log files does not exceed 12 MB.

Limitations of DataFabric Manager Host Agent

Discovery on cloned systems

DataFabric Manager Host Agent stores a unique system ID on each host on which it is installed. DataFabric Manager uses this ID to identify agents. When a system is “cloned,” the ID number is copied and DataFabric Manager cannot distinguish between the two host agents. You can resolve this situation by forcing the agent to regenerate its ID number. To regenerate the host agent ID number, complete the following steps.

Step	Action
1	Stop the agent.
2	Delete the existing agent ID number.
3	Restart the agent.

In Windows, you can remove the ID by deleting the following registry value:

```
HKEY_LOCAL_MACHINE\SOFTWARE\IBM\Agent\Config\System-ID
```

In Solaris or Linux, you can delete the ID by removing the line that begins with “System-ID=” from the following configuration file:

```
/opt/IBMagent/dfm_agent.cfg
```

Hang with SnapDrive for Windows uninstall

In rare cases, DataFabric Manager Host Agent might hang when installed along with SnapDrive for Windows on the same system. This only occurs if you uninstall SnapDrive for Windows but keep DataFabric Manager Host Agent.

Workaround: If you remove SnapDrive for Windows from the system, you must run the `ntap_agent start` command from the CLI, in the DataFabric Manager Host Agent install directory. This updates any service dependencies.

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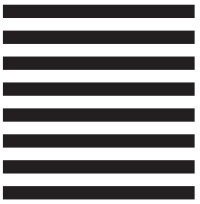

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