IBM System Storage Productivity Center 1.4.0

Índice

System Storage Productivity Center 1

New for IBM System Storage Productivity Center Version 1.4 2
New in Release 1.3.2 3
Printable documentation 4
Getting started 5
Roadmap for IBM System Storage Productivity Center 6
Planning work sheet 7
Accessibility 10
Overview 11
Tivoli Storage Productivity Center demonstration 18
IBM System Storage Productivity Center options 19
IBM System Storage Productivity Center packages 20
IBM Tivoli Storage Productivity Center licenses 24
Maintaining user IDs and passwords 30
Identifying responsibilities for maintaining, upgrading, and configuring the SSPC server 31
IBM System Storage Productivity Center desktop 32
Hardware components 33
Planning 33
Planning work sheet 7
Maintenance responsibilities 37
Planning for the hardware 38
Features and specifications 39
Configuration information and capacity limits for the SSPC server 41
Capacity limits for CIM agents 41
Optional ordered equipment 42
Supported hardware 42
Planning for the software 43
Planning for software configuration 44
Licensing overview 45
Web browsers 46
Microsoft Phishing Filter 47
User IDs, passwords, and user roles 47
Evaluating try and buy 48
Activating the Windows license 49
Getting security updates for Windows 50
Subscribing to technical support Web sites 51
Initial tasks for installing and configuring SSPC 51
Setting up the SSPC server 54
Introduction 55
Prerequisites 56
For the customer: preparing for the installation 56
For the IBM Service Representative: installing the hardware 57
For the IBM service representative: configuring the operating system 58
For the IBM service representative: completing the initial configuration tasks 59

Running the SSPC Password Tool 60
For the IBM service representative: completing the installation 60
For the IBM service representative: testing the installation 61
Configuring SSPC for the DS8000 62
Configuring SSPC for SAN Volume Controller 67
Configuring SSPC for DS3000, DS4000, and DS5000 71
Tivoli Storage Productivity Center Basic Edition 78
Using the topology viewer to view storage systems 79
Using the topology viewer to see storage systems managed by the SAN Volume Controller 82
Accessing reports about storage resources 84
Configuring SSPC for IBM Tivoli Storage Productivity Center for Replication 87
Additional configuration for System Storage Productivity Center 91
Changing the server host name when DB2 extended security is off 91
Changing the server host name when DB2 extended security is on 92
Turning DB2 extended security on 93
Adding user IDs to SSPC 94
Enabling a non-Administrator user ID to create a backup image 97
Starting management commands for the DS CIM agent 98
Managing System Storage Productivity Center 99
Accessing the System Storage Productivity Center online help 100
Element managers 100
Starting the DS8000 GUI from the element manager 102
CIM object manager 103
Migrating SAN Volume Controller CIM agents 104
Single sign-on 105
Selecting the user authentication method to use with single sign-on 106
Changing the user authentication method 106
Changing the authentication method from LDAP to the local operating system 107
Changing the authentication method from local operating system to LDAP federated repositories 108
Changing the LTPA token expiration for single sign-on 111
Launch in context 111
Configuring SSPC for Remote Desktop connection 112
Configuring Tivoli Storage Productivity Center for DS8000 LDAP support 113
Verifying the IBM Tivoli Storage Productivity Center version 116
Verifying the IBM System Storage Productivity Center version 117
Verifying the DS3000, DS4000, DS5000 Storage Manager GUI version 117
Backing up and recovering the SSPC system 118
Backing up the SSPC system 118
Recovering the SSPC system 119
Manually setting up the LSI Configuration Utility Program 120
Recovering the SSPC system if you backed it up 121
Recovering the backup image from a shared folder on a network drive 122
Recovering the backup image from DVDs 123
Recovering the SSPC image if you did not back it up 124
Backing up the IBM Tivoli Storage Productivity Center database 126
Backing up and recovering Tivoli Storage Productivity Center for Replication 126
Upgrading the features of IBM System Storage Productivity Center 127
Adding an installation license 128

Upgrading Tivoli Storage Productivity Center 129
Upgrading the DS8000 GUI 130
Upgrading the SAN Volume Controller Console 130
Upgrading Tivoli Storage Productivity Center for Replication 130
Upgrading the DSCIMCLI 131
Upgrading the DS Storage Manager 131
Troubleshooting System Storage Productivity Center 131
Support Web sites 132
Documentation 133
Before you call 135
Getting help and information from the World Wide Web 136
Things to know about customer support for SSPC 137
Contacting customer support 137
IBM Taiwan product service 138
Troubleshooting Tivoli Storage Productivity Center problems 138
Reference 139
Reference information 140
TCP/IP ports used by System Storage Productivity Center 140
Understanding Internet Protocol Version 6 support 142
IPv6 considerations in Tivoli Storage Productivity Center 144
Inventory of the System Storage Productivity Center shipment 146
Troubleshooting topics 148
Error message: A duplicate name exists on the network 148
Element managers on the same HMC also appear in the element manager table 149
Error message: GUI8333E Failed to log in to DS8000 Element manager 150
Duplicate entries in element manager table 152
Cannot save audit logs to System Storage Productivity Center 152
Error message: SQL1046N The authorization ID is not valid 153
Installing the DS Storage Manager GUI fails using the Firefox browser 154
Tivoli Productivity Center for Replication Add storage subsystem button is disabled 154
Multiple warning windows when accessing Java Web Start 155
Prompt to download a .jnlp file 156
Prompt to download and not run a .jnlp file 156
Installing System Storage Productivity Center components 157
Installing System Storage Productivity Center 157
Installing the SAN Volume Controller Console 158
Installing the agents and Agent Manager 158
Uninstalling IBM System Storage Productivity Center components 160
Uninstalling the DS3000, DS4000, or DS5000 Storage Manager GUI 161
Accessing reports about storage resources 84
Notices 164
Trademarks 166
Important notes 167
Safety and environmental notices 167
Safety information 168
Notices and statements in this document 169
Safety notices 169
United Kingdom telecommunications safety requirement 172

Other safety information 173
Particulate Contamination 173
Electronic emission notices 174
Federal Communications Commission (FCC) statement 174
Industry Canada Class A emission compliance statement 175
Australia and New Zealand Class A statement 175
European Union EMC Directive conformance statement 175
Germany Class A warning statement 176
Korea Class A Electronic Emission statement 177
Taiwan Class A warning statement 177
People's Republic of China Class A warning statement 178
Japan Voluntary Control Council for Interference (VCCI) statement 178
Accessibility features for IBM Tivoli Storage Productivity Center 178
Glossary 179
Publications 185
IBM System Storage Productivity Center publications 186
IBM Tivoli Storage Productivity Center publications 186
Tivoli Storage Productivity Center for Replication publications 187
System Storage DS3000 publications 188
System Storage DS4000 and DS5000 publications 188
System Storage DS8000 publications 189
IBM System Storage DS Open Application Programming Interface publications 190
System Storage SAN Volume Controller publications 190
XIV Storage System publications 191
DB2 Database for Linux, UNIX, and Windows publications 191
IBM Redbooks 192
Translated publications 192

Documentação do IBM System Storage Productivity Center

Bem-vindo ao Centro de Informações do IBM System Storage Productivity Center. Este Centro de Informações contém informações que serão necessárias para instalar, configurar, manter e utilizar o IBM System Productivity Center.

Nestas Informações...

O Que Há de Novo

IBM System Storage Productivity Center 1.4

O Que é o IBM System Storage Productivity Center?

PDFs Imprimíveis

Introdução

Recursos Relacionados e ibm.com

Suporte e Assistência

Suporte para o System Storage Productivity Center
Suporte para o Tivoli Storage Productivity Center
Suporte para o Tivoli Storage Productivity Center para Replicação
Suporte para o System Storage DS8100
Suporte para o System Storage DS8300
Suporte para o System Storage DS3200
Suporte para o System Storage DS3300
Suporte para o System Storage DS3400
Suporte para o System Storage DS4000
Suporte para o System Storage DS5000
Suporte para o System Storage SAN Volume Controller
Suporte para o Agente DS CIM

Outros Centros de Informações

Centro de Informações do IBM Tivoli Storage Productivity Center
Centro de Informações do IBM System Storage DS8000
Centro de Informações do IBM System Storage SAN Volume Controller

Redbooks

Redbooks Relativos ao IBM System Storage Productivity Center

Jurídico

Termos de Uso

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Sobre o Centro de Informações
Software de Pré-requisito
Acessibilidade e Atalhos de Teclado
Navegando
Procurando
Configurando Indicadores e Imprimindo
Visualizando Informações em Idiomas Diferentes

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- Para mover para o próximo nó de tópico, pressione a seta para Baixo ou Tab.
- Para mover para o nó de tópico anterior, pressione a seta para Cima ou Shift+Tab.
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New for IBM System Storage Productivity Center Version 1.4

Use this information to learn about the new features and enhancements that are included in IBM® System Storage Productivity Center Version 1.4.

System Storage Productivity Center 1.4 adds the following new features, functions, and enhancements:

New 2805-MC4
: System Storage Productivity Center 2805-MC4 includes a hard drive that is 10 GB larger than the previous model. System Storage Productivity Center 2805-MC2 and 2805-MC3 are no longer available for purchase.

IBM Tivoli Storage Productivity Center
: IBM Tivoli Storage Productivity Center Basic Edition 4.1.1 is preinstalled on the System Storage Productivity Center server.

IBM System Storage DS8000 R5.0
: You can monitor System Storage DS8000 5.0 or earlier releases with System Storage Productivity Center.

IBM System Storage SAN Volume Controller Console 5.1.0
: IBM SAN Volume Controller Console 5.1.0 is preinstalled on the System Storage Productivity Center server. Because version 5.1.0 no longer requires a CIM agent to communicate with the SAN Volume

Controller, a CIM agent is not installed with the console. Instead, the console uses the CIM agent that is embedded in the SAN Volume Controller hardware. To manage older levels of the SAN Volume Controller, install the corresponding CIM agent on the SSPC server. PuTTY is installed on System Storage Productivity Center and available for key generation.

IBM System Storage DS Storage Manager 10.60

A new version of the System Storage DS Storage Manager user interface is available for you to optionally install on the System Storage Productivity Center server or on a remote server. The DS Storage Manager 10.60 can manage the IBM DS3000, IBM DS4000, and IBM DS5000. With DS Storage Manager 10.60, when you use Tivoli Storage Productivity Center to add and discover a DS CIM agent you can launch the DS Storage Manager from the topology viewer, the Configuration Utility, or the Disk Manager of Tivoli Storage Productivity Center.

IBM Java™ 1.5

IBM Java 1.5 is preinstalled and can be used with DS Storage Manager 10.60. You do not need to download Java from Sun Microsystems.

DS CIM agent management commands

The DS CIM agent management commands (DSCIMCLI) for Release 5.4.3 are preinstalled on the System Storage Productivity Center server.

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New in Release 1.3.2

Use this information to learn about the new features and enhancements that are included in IBM® System Storage Productivity Center release 1.3.2.

System Storage Productivity Center 1.3.2 adds the following new features, functions, and enhancements:

Name change

IBM TotalStorage Productivity Center has been renamed to Tivoli Storage Productivity Center V4.1. All user interfaces, documentation, online help, and messages reflect the new name.

Tivoli Storage Productivity Center 4.1

IBM Tivoli Storage Productivity Center Basic Edition 4.1.0 is preinstalled on the IBM System Storage Productivity Center server. Changes to the IBM Tivoli Storage Productivity Center include the following major enhancements:

Licensing changes

The following licenses are available for Tivoli Storage Productivity Center.

- IBM Tivoli Storage Productivity Center Basic Edition
- IBM Tivoli Storage Productivity Center Standard Edition
- IBM Tivoli Storage Productivity Center for Disk
- IBM Tivoli Storage Productivity Center for Data

Integration of Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication

Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication, previously separated products, are now integrated. You can start the IBM Tivoli Storage Productivity Center for Replication 4.1 user interface from within the Tivoli Storage Productivity Center 4.1 user interface.

Integration of Tivoli Storage Productivity Center and Tivoli Integrated Portal

IBM Tivoli Integrated Portal is a standards-based architecture for Web administration. The installation of Tivoli Integrated Portal is required to enable single sign-on for Tivoli Storage Productivity Center. Tivoli Storage Productivity Center now installs Tivoli Integrated Portal along with Tivoli Storage Productivity Center.

Launch in context feature

The launch in context feature enables you to access external applications from the Tivoli Storage Productivity Center GUI. Three levels of launch in context exist: *simple launch* discovers basic information about a device and its management; *launch with parameters* navigates to a particular panel or state of an application; and *launch with single sign-on* lets you access multiple external applications by using one user ID and password.

Single sign-on authentication

Single sign-on is an authentication process that enables you to enter one user ID and password to access multiple applications. It requires a centralized user and group repository that all participating applications can access, such as a directory that complies with the Lightweight Directory Access Protocol (LDAP).

Support of Storage Resource agents

On Microsoft® Windows®, AIX, and Linux®, Tivoli Storage Productivity Center supports Storage Resource agents. The Storage Resource agent probe provides the same information as information that is collected by probes that use the Data agent. The Storage Resource agents do not require the Agent Manager. Storage Resource agents offer a variety of asset reports, as well as topology and Data Path Explorer functions.

Support for IBM DB2 9.5

Tivoli Storage Productivity Center now supports DB2 9.5. You can migrate your Tivoli Storage Productivity Center databases from DB2 9.1 or DB2 8.2 to DB2 9.5. DB2 9.5 is optional. Tivoli Storage Productivity Center continues to support DB2 9.1.

System Storage SAN Volume Controller

IBM SAN Volume Controller console and SAN Volume Controller CIM agent 4.3.1 are preinstalled on the IBM System Storage Productivity Center server.

To communicate with the SAN Volume Controller, the SAN Volume Controller console can use a CIM agent that is embedded in the SAN Volume Controller hardware or a proxy CIM agent that is installed on other hardware. When you add a SAN Volume Controller CIM agent to the Tivoli Storage Productivity Center, you can use the embedded CIM agent or the proxy CIM agent.

System Storage DS Storage Manager

A new version of the IBM System Storage DS Storage Manager user interface is available for you to optionally install on the System Storage Productivity Center server or on a remote server. The DS Storage Manager 10.50 can manage the DS3000, DS4000, and DS5000.

DS CIM agent management commands

The DS CIM agent management commands (DSCIMCLI) for 5.4.2 are preinstalled on the System Storage Productivity Center system.

Enhancements to Password Tool

The Password Tool that you use to change the DB2 user, WebSphere user, and DB2 service passwords now generates fewer messages and command windows.

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- Rack Installation Instructions (aproximadamente 1194 KB)
- Read This First flyer (aproximadamente 208 KB)
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Introdução

Os tópicos nesta seção descrevem recursos de pré-instalação e tarefas.

- **Roteiro para o IBM System Storage Productivity Center**
  Use o Roteiro para instalar e configurar rapidamente o IBM® System Storage Productivity Center (SSPC).
- **Planning work sheet**
  As the customer, you are required to provide the IBM service representatives with information about these work sheets so they can set up the SSPC server. If you do not provide this information, it will delay the time it takes to set up the SSPC server.
- **Acessibilidade**
  A IBM esforça-se para fornecer produtos com acesso útil para todos, independentemente de idade ou capacidade.

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Roteiro para o IBM System Storage Productivity Center

Use o Roteiro para instalar e configurar rapidamente o IBM® System Storage Productivity Center (SSPC).

Tarefa	Quem desempenha a tarefa	Vá para este link
Leia a seção Introdução para familiarizar-se com o produto	Cliente	Introduction
Assegurar-se de que todos os pré-requisitos sejam atendidos	Cliente	Prerequisites
Completar a Planilha de Planejamento e montar os materiais necessários para a instalação	Cliente	Planning work sheet e For the customer: preparing for the installation
Instale o System Storage Productivity Center Model 2805-MC4 no rack e conecte os cabos	Representante de Serviço da IBM	For the IBM Service Representative: installing the hardware
Inicie o servidor Model 2805-MC4 e configure o sistema operacional	Representante de Serviço da IBM	For the IBM service representative: configuring the operating system
Configurar o horário e configurar a rede	Representante de Serviço da IBM	For the IBM service representative: completing the initial configuration tasks
Testar a instalação	Representante de Serviço da IBM	For the IBM service representative: testing the installation

Tarefa	Quem desempenha a tarefa	Vá para este link
Alterar a senha do SSPC	Representante de Serviço da IBM	For the IBM service representative: completing the installation
Configurar o IBM System Storage Productivity Center para funcionar com os gerenciadores de elementos DS8000	Cliente	Configuring SSPC for the DS8000
Configurar o IBM System Storage Productivity Center para funcionar com o SAN Volume Controller	Cliente	Configuring SSPC for SAN Volume Controller
Configurar o IBM System Storage Productivity Center para funcionar com o DS3000, o DS4000 e o DS5000	Cliente	Configuring SSPC for DS3000, DS4000, and DS5000
Configurar o IBM System Storage Productivity Center para funcionar com o IBM Tivoli Storage Productivity Center for Replication	Cliente	Configuring SSPC for IBM Tivoli Storage Productivity Center for Replication

Tópico pai: Introdução

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Planning work sheet

As the customer, you are required to provide the IBM® service representatives with information about these work sheets so they can set up the SSPC server. If you do not provide this information, it will delay the time it takes to set up the SSPC server.

System Storage Productivity Center server information

As part of the SSPC planning, select the rack position. The position in the rack is identified by an Electrical Industries Association (EIA) number. The SSPC has a height of one EIA, referred to as 1U. Select a location in the rack that allows enough space for hardware components that might be installed at a future date.

A keyboard and mouse with Universal Serial Bus (USB) connectors are required for the initial setup of the SSPC. A video display is also required. You can install an optional keyboard video mouse (KVM) unit by ordering Feature Code 9100. If you install it as part of this service action, record the rack location of the KVM unit in Tabela 1.
Dica: As a best practice, install the KVM unit directly above or below the System Storage Productivity Center server so that the connecting cables of the device can reach the server. Feature code 9100 comes with installation instructions. If you ordered this feature code, follow the instructions but do not remove and discard the rubber pads under the keyboard. Peel off the protective strip on the console to expose the adhesive surface and place the keyboard into the tray. Press the keyboard firmly so that it adheres to the tray. You can discard the switch mounting brackets that come with feature code 9100.

Tabela 1. EIA location of the System Storage Productivity Center server and the keyboard video mouse unit

System Storage Productivity	EIA number: _____

Center hardware location within the rack	
Keyboard video mouse unit location within the rack (this may be installed already and is optional)	EIA number: _____

Windows Server 2008 Enterprise Edition Product Key and computer name

During the initial Windows® configuration process, you are prompted to enter the 25-digit Windows product key. The key is printed on a sticker labeled "Proof of License Certificate of Authority" and is located on the outside top cover of the System Storage Productivity Center server. Record this key now because the sticker might be obscured when you place the System Storage Productivity Center server in the hardware rack.

Windows product key:

__ __ __ __ __ - __ __ __ __ __ - __ __ __ __ __ - __ __ __ __ __ - __ __ __ __ __

Tabela 2. Computer name

Field	Entry	Notes
System Storage Productivity Center	Computer name: _____	Specify the System Storage Productivity Center computer name, list it here so that the IBM service representative can set it during the installation.

Tabela 3. Customer Passwords

Field	Entry	Notes
Windows Administrator Password	Administrator Password: _____	List the password that the IBM service representative will set the Administrator ID to during the initial logon to the System Storage Productivity Center. This password can be changed after the system has been installed. The password must conform to the following rules: 8 characters, one number, one uppercase character.
Host authentication password	Host authentication password: _____	List the password that is used by the Tivoli Storage Productivity Center when communicating with the Fabric agents. This password can be different than the Windows administrator password. This password can be changed after the system has been installed. The password must conform to the following rules: 8 characters, one number, one uppercase character.

System Storage Productivity Center physical location

In Tabela 4, record the IP addresses and host name for the SSPC.

Tabela 4. IP addresses and host name

Field	IP address or host name	Notes
SSPC IP address	IP address: _____	This value is the address for the System Storage Productivity Center server.
SSPC Subnet Mask	IP address: _____	This value hides the IP address. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
SSPC Default gateway	IP address: _____	This value is the router that allows access from one network to another network. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
SSPC Preferred DNS address	DNS address: _____	This value is the address for the domain name server for your site. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
SSPC Alternate DNS address	DNS address: _____	This value is the alternate address for the domain name server for your site. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
DNS suffix	DNS suffix: _____	This value is the part of a fully qualified domain name that represents a grouping of host names. For example, in the fully qualified domain name of *sspc.ibm.com*, the DNS suffix is *ibm.com*. Obtain this value from the network administrator.

Device information

Use the following tables to record information about your storage system.

Tabela 5. Device information for DS8000

Device type	Default ports	User ID, password, and host name	IP address of storage system
DS8000 element manager	8451 (http) 8452 (https)	**Default user ID:** admin	IP address HMC: _____

Device type	Default ports	User ID, password, and host name	IP address of storage system
		Default password: admin You must change the default password when you log on. Changing the default password automatically changes the DS8000 CIM agent password to match it.	
		Host name: _____	
		Nota: Do not use special characters such as # or & in the host name. This causes the host name to be truncated.	
DS8000 CIM agent	**For embedded CIM agent:**	**Default user ID:** admin	**For embedded CIM agent:**
	6989 (https)	The default password automatically changes to match the DS8000 element manager password.	IP address of HMC: _____
	For proxy CIM agent:	**Host name:** _____	**For proxy CIM agent:**
	5988 (http) 5989 (https)		IP address of proxy CIM agent: _____

Tabela 6. Device information for SAN Volume Controller

Device type	Default ports	User ID, password, and host name	IP address of storage system
SAN Volume Controller CIM agent	**For embedded CIM agent:** 5989 (https)	**Default user ID:** superuser	IP address: _____
		Default password: passw0rd	
		Host name: _____	

Tópico pai: Introdução
Tópico pai: Planejamento

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Acessibilidade

A IBM esforça-se para fornecer produtos com acesso útil para todos, independentemente de idade ou capacidade.

Este produto usa teclas de navegação padrão do Windows.

Para obter informações adicionais sobre acessibilidade, consulte Accessibility features for IBM Tivoli Storage Productivity Center.

Tópico pai: Introdução

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Overview

IBM® System Storage Productivity Center (SSPC) is an IBM Machine Type 2805 server and preinstalled software that can help you improve and centralize the management of your storage environment through the integration of products. It provides a single point from which to manage your storage systems.

System Storage Productivity Center simplifies storage management by:

- Centralizing the management of storage network resources with IBM storage management software
- Providing greater synergy between storage management software and IBM storage devices
- Reducing the number of servers that are required to manage your software infrastructure
- Providing a simple migration path from basic device management to using storage management applications that provide higher-level functions

System Storage Productivity Center is a 1U, rack-mounted hardware appliance that has IBM Tivoli Storage Productivity Center Basic Edition and IBM Tivoli Storage Productivity Center for Replication installed on it. See Figura 1 for a view of the hardware.
Figura 1. Front view of the System Storage Productivity Center server. The illustrations in this document might differ slightly from your model.

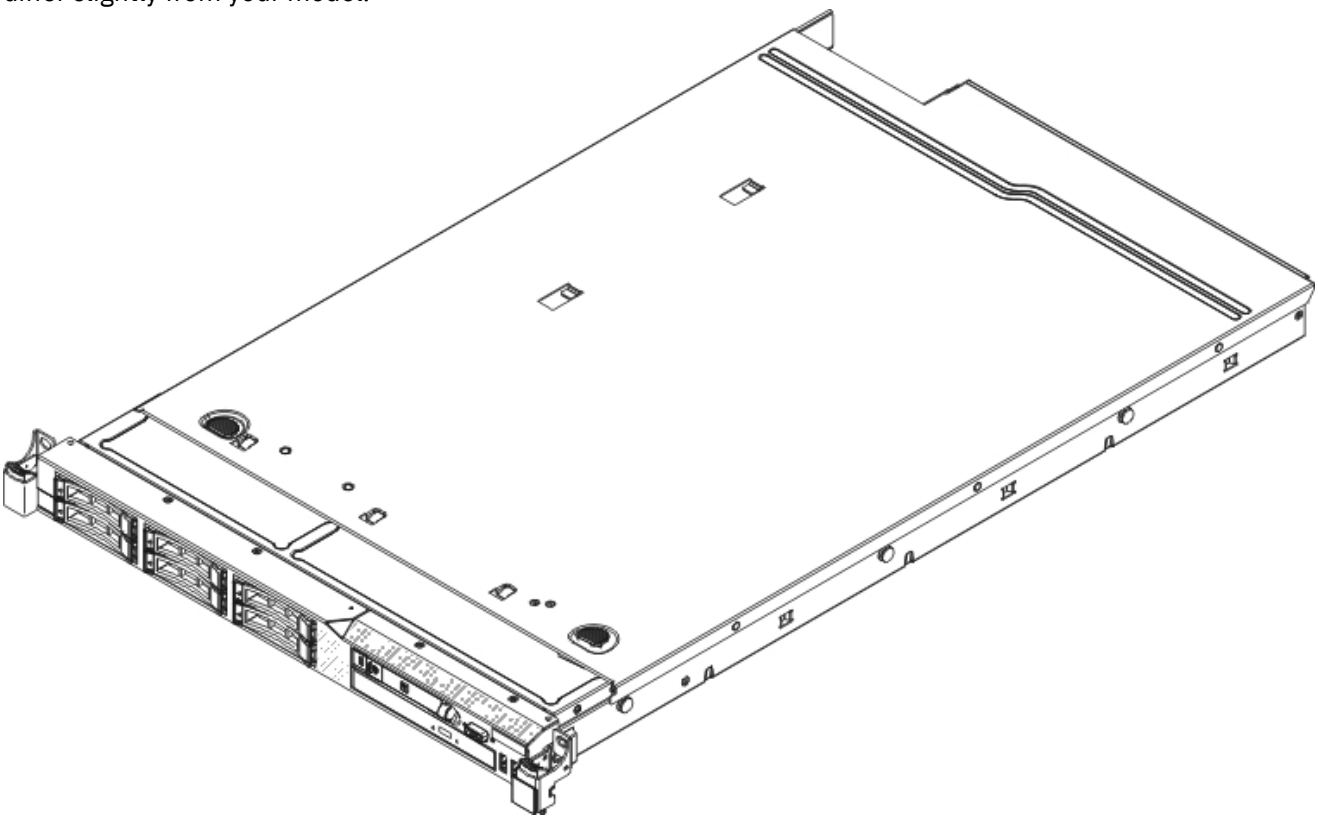
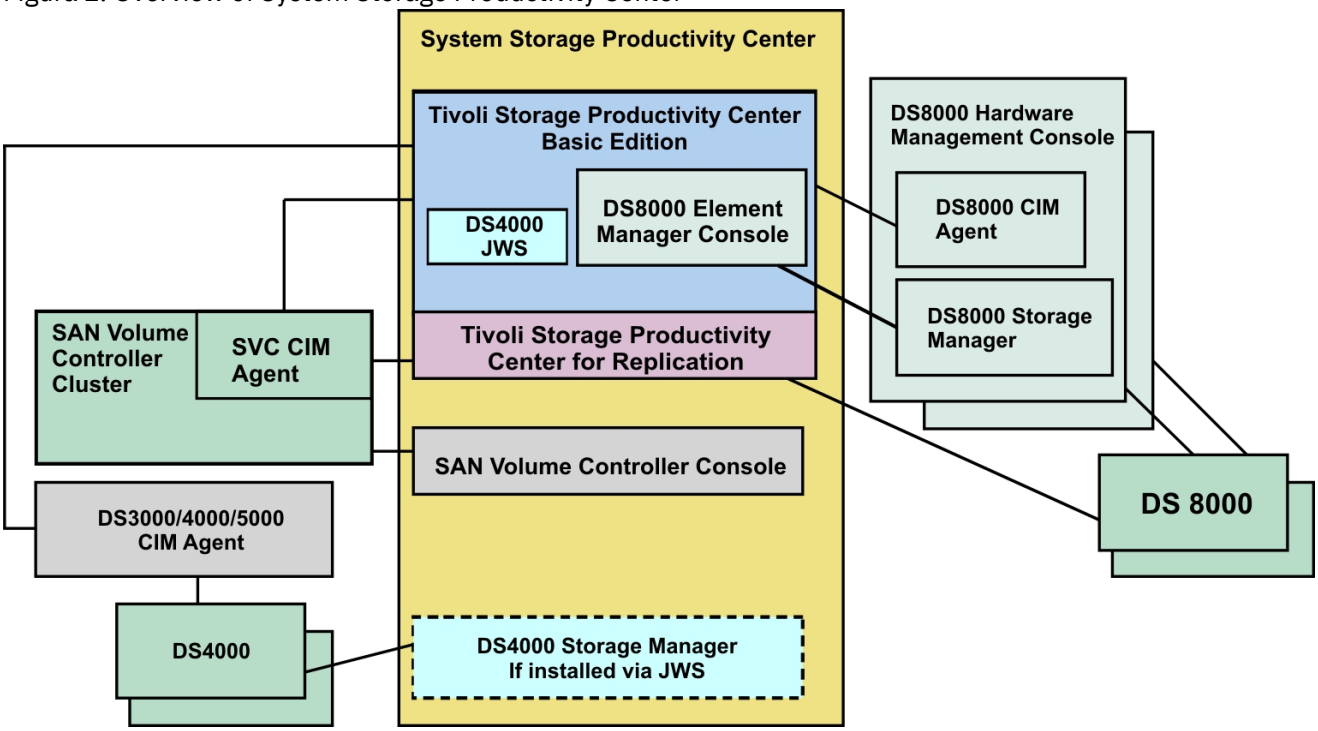


Figura 2 shows an overview of how the System Storage Productivity Center, IBM Tivoli Storage Productivity Center, IBM Tivoli Storage Productivity Center for Replication, and the hardware and software for IBM System Storage DS8000, IBM System Storage SAN Volume Controller, IBM System Storage DS3000, IBM System Storage DS4000, and IBM System Storage D5000 all relate with each other.

Nota: The IBM Tivoli Storage Productivity Center was formerly the IBM TotalStorage Productivity Center.

Figura 2. Overview of System Storage Productivity Center



System Storage Productivity Center provides integration of storage management applications for the following products:

IBM Tivoli Storage Productivity Center Basic Edition

IBM Tivoli Storage Productivity Center Basic Edition simplifies the complexity of managing multiple SAN-attached storage devices because you can perform device configuration and management of SAN-attached devices from a single console.

With Basic Edition, you can manage network storage components based on SMI-S, such as:

- IBM System Storage SAN Volume Controller
- IBM TotalStorage Enterprise Storage Server (ESS)
- IBM System Storage disk systems (DS3000, DS4000, DS5000, DS6000, and DS8000 series)
- Other storage systems that use SMI-S standards

Device discovery is performed by Service Location Protocol (SLP), as specified by SMI-S. Configuration of the discovered devices is possible in conjunction with CIM agents associated with those devices, using the standard mechanisms defined in SMI-S. Tivoli Storage Productivity Center gathers events and can start an element manager specific to each discovered device.

For SAN fabrics, Tivoli Storage Productivity Center simplifies the management and improves the availability of the SAN environment. You can monitor and report on SAN resources and use a single location for zone control. Tivoli Storage Productivity Center discovers existing zones and zone members so that you can modify or delete them. You can create new zones, and you can also use aliases.

Tivoli Storage Productivity Center gives you the ability to view events happening in your SAN environment and record state changes. Events related to topology changes or updates can be

forwarded to the IBM Tivoli Enterprise Console, to another manager that uses Simple Network Manager Protocol (SNMP), or to both.

For the SAN fabric, Tivoli Storage Productivity Center works with host bus adapters (HBAs), disk systems, tape systems, SAN switches, routers, and gateways.

SSPC might also be used with other hardware because that hardware is used by Tivoli Storage Productivity Center. For a complete list of supported devices, go to **http://www.ibm.com/software/sysmgmt/products/support/IBMTotalStorageProductivityCenterStandardEdition.html** and click Plan > [View all Plan documents].

Integrated into the IBM Tivoli Storage Productivity Center are both the IBM Tivoli Storage Productivity Center for Replication and the IBM Tivoli Integrated Portal.

Nota: Tivoli Storage Productivity Center for Replication was formerly a separate product.

IBM Tivoli Integrated Portal is a standards-based architecture for Web administration. You can access Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication from the Tivoli Integrated Portal GUI, and you can access Tivoli Storage Productivity Center for Replication from the Tivoli Storage Productivity Center GUI.

With the Tivoli Storage Productivity Center, components of the Tivoli Integrated Portal, Tivoli Storage Productivity Center for Replication, and Tivoli Storage Productivity Center are automatically configured to use a feature known as *launch in context*. The launch in context feature gives you the ability to access external applications from the Tivoli Storage Productivity Center GUI. The most prevalent external applications that use the launch in context feature are element managers. An *element manager* is typically vendor-specific software that administers a particular storage device. The launch in context feature provides starting points in the Tivoli Storage Productivity Center GUI so you can click a button or select a menu item to start an element manager and work with a specific device.

There are three levels of launch in context ability:

Simple launch
: This level exists in TotalStorage Productivity Center 3.3.2. Tivoli Storage Productivity Center discovers basic information about the device and the management of the device.

Launch with parameters
: You can specify additional parameters in the URL or command-line interface when starting an application. When the parameters are passed, you can navigate to a particular panel or state of the application that was started. You can also identify objects to operate on and possibly provide values to use in the operation.

Launch with single sign-on
: You can enhance the launch in context feature to include single sign-on. *Single sign-on* is an authentication process that lets you enter one user ID and password to access multiple applications. Single sign-on integrates with the launch in context feature so that you can move from one application to a specific location in a second application. An external application can use single sign-on to authenticate with the same user repository as Tivoli Storage Productivity Center. An example of such a user repository is a directory that complies with the Lightweight Directory Access Protocol (LDAP).

  External applications that do not include the WebSphere Application Server require the authentication service that is provided by Tivoli Integrated Portal. For example, the element managers for the IBM System Storage DS8000 (the DS8000 Storage Manager) and the SAN Volume Controller both use the authentication service of Tivoli Integrated Portal to handle launch in context with single sign-on from the Tivoli Storage Productivity Center GUI.

The installation of Tivoli Integrated Portal is required to enable single sign-on for Tivoli Storage Productivity Center. Single sign-on lets you access:

- Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication from the Tivoli Integrated Portal GUI
- Tivoli Storage Productivity Center for Replication from the Tivoli Storage Productivity Center GUI
- External applications, such as element managers from the Tivoli Storage Productivity Center GUI

The single sign-on feature requires a centralized user and group repository, such as an LDAP-compliant directory, that all participating applications can access. Also, Tivoli Storage Productivity Center uses Lightweight Third Party Authentication (LTPA) tokens to pass the user information between applications. To use LTPA tokens for single sign-on, each participating application must possess the same set of keys to encode and decode the user information contained in the token. As an additional security feature, the LTPA tokens expire after a determined amount of time. When the tokens expire, you must reenter your user ID and password information.

If you select operating system authentication, the use of the single sign-on feature is limited. Operating system authentication does not use single sign-on for element managers, even when the element manager is installed on the same server as Tivoli Storage Productivity Center. For more information about authentication,

Tivoli Storage Productivity Center works with Storage Resource agents on Microsoft® Windows®, AIX, and Linux®. The Storage Resource agent probe is equivalent to the information that is collected by probes that use the Data agent. The Storage Resource agents do not require the Agent Manager and can be deployed to other systems by using the Tivoli Storage Productivity Center GUI on the server system. Storage Resource agents offer asset reports (including reports for HBAs), capacity reports, subsystem-to-host-storage correlation (including multipathing information), and topology and Data Path Explorer functions. They do not offer file system scans, discovery or topology of network-attached storage, zoning and zone control functions, or subsystem device-driver configuration. For this information, you can continue to use the Data agent and Fabric agent. For additional information and to view sample reports,

Tivoli Storage Productivity Center now works with DB2 9.5. You can, optionally, migrate your Tivoli Storage Productivity Center databases from DB2 9.1 or DB2 8.2 to DB2 9.5. Tivoli Storage Productivity Center continues to work with DB2 9.1.

System Storage DS8000 Storage Manager

The IBM System Storage DS8000 Storage Manager user interface is accessible from the Tivoli Storage Productivity Center user interface. Tivoli Storage Productivity Center provides a DS8000 element manager page, which you can use to add and manage multiple DS8000 element managers from one console. With the DS8000 element manager page, you can:

- Access the IBM DS8000 Storage Manager interface that is embedded in the DS8000 Hardware Management Console (HMC) and
- Use the IBM DS8000 Storage Manager interface to configure and administer its associated IBM DS8000 storage arrays.

The HMC is the console located inside the IBM DS8000 storage system. Starting with Release 2, the IBM DS8000 includes the CIM agent, the Enterprise Storage Server Network Interface Server, and the client as well as the disk drives. The HMC uses WebSphere to display Web pages to the Web browser that is embedded in the Tivoli Storage Productivity Center user interface, a browser directly on the HMC, or an external browser. Starting with Release 3, the use of the Tivoli Storage Productivity Center

user interface is required. If the IBM DS8000 has an HMC that has been upgraded from Release 2 to Release 3 or later, you can start the user interface through an external browser.

The IBM DS8000 Storage Manager is preinstalled on the DS8000 HMC. This software will continue to be included with the HMC.

The CIM agent for the IBM DS8000 is embedded in the HMC. Tivoli Storage Productivity Center can be configured to communicate with the CIM agent. The CIM agent is required for storage asset information, provisioning, alerting, and performance monitoring. The CIM agent conforms to the Storage Networking Industry Association (SNIA) Storage Management Initiative - Specification (SMI-S) to provide a communication transport between Tivoli Storage Productivity Center and the managed devices. The CIM agent must be enabled by the IBM service representative for R2, R3, and R4, but not for R4.1 or later. The CIM agent is enabled by default for R4.1 or later.

The DS CIM agent that is embedded in the IBM DS8000 must be configured. To configure the DS CIM agent, you can click the Launch DSCIMCLI icon on the desktop to open a command prompt window. For information about the DSCIMCLI, go to:
http://www.ibm.com/servers/storage/support/software/cimdsoapi/

System Storage SAN Volume Controller

The SAN Volume Controller combines software and hardware into an appliance that uses symmetric virtualization.

Symmetric virtualization creates a pool of managed disks (MDisks) from the attached storage systems. Those storage systems are then mapped to a set of virtual disks (VDisks) for use by attached host systems. System administrators can view and access a common pool of storage on the SAN.

The IBM System Storage SAN Volume Controller Console is installed with System Storage Productivity Center. The SAN Volume Controller Console is a separate icon from the Tivoli Storage Productivity Center user interface icon on your desktop.

With version 5.1.0, the SAN Volume Controller Console no longer requires a CIM agent to communicate with the SAN Volume Controller. As a result, a CIM agent is not included as part of the graphical user interface (GUI) of the SAN Volume Controller. Instead, the console uses the CIM agent that is embedded in the SAN Volume Controller hardware. If it is necessary to manage an older level of the SAN Volume Controller, install the corresponding CIM agent on the SSPC server. PuTTY is installed on SSPC and available for key generation.

The SAN Volume Controller software performs the following functions for the host systems that attach to SAN Volume Controller over the SAN:

- Creates a single pool of storage
- Provides logical unit virtualization
- Manages logical volumes
- Mirrors logical volumes

The SAN Volume Controller also provides the following features:

- Large cache
- Copy Services
    - FlashCopy (point-in-time copy)
    - Metro Mirror (synchronous copy)
    - Global Mirror (asynchronous copy)
    - Data migration
- Space management

- Mapping that is based on performance of the characteristics that you want
- Service quality metering
- Space-efficient logical volumes (thin provisioning)

The SAN Volume Controller hardware consists of a SAN Volume Controller node that is an individual server in a SAN Volume Controller cluster.

The nodes are always installed in pairs, with a minimum of one and a maximum of four pairs of nodes constituting a cluster. Each pair of nodes is known as an I/O group. All I/O operations that are managed by the nodes in an I/O group are cached on both nodes. I/O groups take the storage that is presented to the SAN as MDisks by the storage systems and translates the storage into logical disks, known as VDisks, that are used by applications on the hosts. A node resides in only one I/O group and provides access to the VDisks in that I/O group.

With SAN Volume Controller, you can work with virtual disk copies, so that when the SAN Volume Controller is probed by Tivoli Storage Productivity Center, all virtual disks have underlying logical volumes representing the virtual disk.

Tivoli Storage Productivity Center for Replication

Beginning with Release 4.1, IBM Tivoli Storage Productivity Center for Replication and Tivoli Storage Productivity Center, previously separated products, are integrated. This means that you can start the IBM Tivoli Storage Productivity Center for Replication user interface from within the Tivoli Storage Productivity Center user interface.

By concentrating support for different hardware, interface implementations, element managers, and session managers into a single product, Tivoli Storage Productivity Center for Replication acts as an IBM single point of control for hardware-provided copy services. For high-level interfaces, it leverages use of copy services by providing a standard interface, standard states, and standard status across different copy types and different hardware. For example, the basic functions of Tivoli Storage Productivity Center for Replication 4.1 provide management of IBM FlashCopy, Metro Mirror and Global Mirror capabilities for the IBM ESS Model 800, IBM DS6000, and IBM DS8000. Tivoli Storage Productivity Center for Replication also manages FlashCopy and Metro Mirror for the SAN Volume Controller.

System Storage Productivity Center requires you to purchase and accept the license for the Tivoli Storage Productivity Center for Replication Two Site Business Continuity (BC), Tivoli Storage Productivity Center for Replication Three Site Business Continuity (BC), or a 60-day trial version (try and buy) before using the product.

Two Site BC provides continuous availability and disaster recovery solutions by using point-in-time replication, which includes FlashCopy, and continuous replication, which includes Metro Mirror, Global Mirror, and Metro Global Mirror. With Tivoli Storage Productivity Center for Replication Two Site BC, you can use failover and failback to ensure that your data exists on both of your sites, and you can reverse the direction of your sessions' data flow (making your secondary site your primary site, if necessary).

Three Site BC is an optional feature that provides you with all of the capabilities of Tivoli Storage Productivity Center for Replication Two Site, as well as the ability to perform a Metro Global Mirror (with failover/failback) to secondary and tertiary sites.

Nota: There are different hardware feature codes that you must purchase and install on the hardware itself for different hardware features to work. For example, if you want to use FlashCopy on the DS8000, you must have the hardware feature code to run FlashCopy on the DS8000. To determine the feature codes for supported hardware, contact your IBM marketing representative.

Tivoli Storage Productivity Center for Replication is available on a trial basis before purchase. For information, see .

With the integration of IBM Tivoli Storage Productivity Center for Replication and Tivoli Storage Productivity Center, you can:

- Access Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication from the Tivoli Integrated Portal GUI, and access Tivoli Storage Productivity Center for Replication from the Tivoli Storage Productivity Center GUI.
- Use the Tivoli Storage Productivity Center GUI to set up Tivoli Storage Productivity Center for Replication SNMP alerts and IBM Tivoli Enterprise Console events.
- Provide a Tivoli Storage Productivity Center superuser role that has authority over all Tivoli Storage Productivity Center commands. Tivoli Storage Productivity Center for Replication includes a replication administrator role that has authority to all Tivoli Storage Productivity Center for Replication commands. Tivoli Storage Productivity Center for Replication will honor the Tivoli Storage Productivity Center superuser role, giving the superuser role authority over all Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication commands.

IBM System Storage DS3000, DS4000, and DS5000 Storage Manager

You can optionally install the DS3000, DS4000, and DS5000 Storage Manager user interface on the System Storage Productivity Center server, or a remote server so that you can manage the storage systems from a single console.

The DS4000 series of storage servers use Redundant Array of Independent Disks (RAID) technology. RAID technology is used to protect the user data from disk drive failures. DS4000 storage servers contain Fibre Channel (FC) interfaces to connect both the host systems and disk drive enclosures.

The storage servers in the DS4000 series provide high system availability through the use of hot-swappable and redundant components. This is crucial when the storage server is placed in high-end customer environments such as server consolidation on storage area networks (SANs).

The DS Storage Manager software is used to configure, manage, and troubleshoot the DS4000 or DS5000 storage servers. With DS Storage Manager, you can:

- Configure RAID arrays and logical drives
- Assign logical drives to hosts
- Replace and rebuild failed disk drives
- Expand the size of the arrays and logical drives
- Convert from one RAID level to another

The DS Storage Manager also offers troubleshooting and management tasks such as:

- Checking the status of the storage server components
- Updating the firmware of the RAID controllers
- Managing the storage server

After you add and discover a DS CIM agent, you can launch the DS Storage Manager from the user interface of the Tivoli Storage Productivity Center 4.1.1. You can launch the Storage Manager from the topology viewer, Configuration Utility, or Disk Manager.

Also with DS Storage Manager, you can use advanced features of IBM Tivoli Storage Productivity Center for Replication, such as FlashCopy, Volume Copy, and Enhanced Remote Mirroring.

To use Tivoli Storage Productivity Center to view reports and topology from the DS3000, DS4000, or DS5000, you must first install the Engenio SMI-S Provider (CIM agent) for the storage system (on a separate server; not the System Storage Productivity Center server). For information about the Engenio SMI-S Provider, contact LSI at http://www.lsi.com/storage_home/products_home/external_raid/management_software/smis_provider/index.html.

Beginning with System Storage Productivity Center 1.4, when you configure the SSPC for the DS3000, DS4000, or DS5000, it is no longer necessary to install Java™. Instead, IBM Java 1.5 comes preinstalled on the SSPC server.

DS CIM agent management commands

The DS CIM agent management commands (DSCIMCLI) are installed on the System Storage Productivity Center system. The DSCIMCLI can manage the CIM agents for DS8000, DS6000, and ESS. For information about the CIM agent management commands, see *DS Open Application Programming Interface Reference* at http://www.ibm.com/servers/storage/support/software/cimdsoapi/. You see the "Support for CIM Agent for DS Open (API)" page. Click **Install > Documentation**. Reference the correct document for your CIM agent.
Use the following DS CIM agents for the specified releases:

- DS CIM agent 5.4.1 for DS8000 R4.1
- DS CIM agent 5.4.2 forDS8000 R4.2
- DS CIM agent 5.4.3 for DS8000 R4.3

- **Tivoli Storage Productivity Center demonstration**
  The Tivoli software demonstration Web site provides an introduction and a product demonstration for the storage management products you might use.
- **IBM System Storage Productivity Center options**
  IBM System Storage Productivity Center offers several different packages depending on the functions you want. This topic provides information about those packages.
- **IBM System Storage Productivity Center packages**
  IBM System Storage Productivity Center offers several different packages depending on the functions you want.
- **Maintaining user IDs and passwords**
  Use this procedure to change the passwords for Windows Administrator, DB2 user, DB2 services, and IBM Tivoli Storage Productivity Center for Replication.
- **Identifying responsibilities for maintaining, upgrading, and configuring the SSPC server**
  Use this information to learn about what responsibilities you have for maintaining, upgrading, and configuring the SSPC server.
- **IBM System Storage Productivity Center desktop**
  The IBM System Storage Productivity Center desktop displays the icons you can use to open the user interfaces for the different products.
- **Hardware components**
  The SSPC consists of an IBM System x server running the Microsoft Windows Server 2008 Enterprise Edition operating system. This topic describes the standard SSPC server configuration.

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Tivoli Storage Productivity Center demonstration

The Tivoli software demonstration Web site provides an introduction and a product demonstration for the storage management products you might use.

For a demonstration of IBM® Tivoli Storage Productivity Center, including an overview, expert videos, product demonstrations, and additional resources, see http://www.ibm.com/software/tivoli/library/demos/tpc-launchpad.html.

Tópico pai: Overview

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IBM System Storage Productivity Center options

IBM® System Storage Productivity Center offers several different packages depending on the functions you want. This topic provides information about those packages.

The following software components are preinstalled on the System Storage Productivity Center 2805-MC4 server:

- The English version of Microsoft® Windows® Server 2008 32-bit Enterprise Edition
- IBM DB2 Enterprise Server Edition 9.5 with Fix Pack 3
- IBM Tivoli Storage Productivity Center 4.1.1
- IBM Tivoli Storage Productivity Center for Replication 4.1.1
- SAN Volume Controller Console version 5.1.0
- IBM DS CIM agent management commands (DSCIMCLI) 5.4.3

When you start the SSPC server, the system will prompt you for the acceptance of the Windows License Agreement and for the license key.

You can optionally install these programs:

Tivoli Storage Productivity Center upgrades
: There are several different commercially available packages of Tivoli Storage Productivity Center that provide additional functionality beyond Tivoli Storage Productivity Center Basic Edition. Tivoli Storage Productivity Center for Disk allows you to monitor storage systems for performance. Tivoli Storage Productivity Center for Data allows you to collect and monitor file systems and databases. Tivoli Storage Productivity Center Standard Edition is a bundle that includes all other packages, along with SAN planning tools that make use of information collected from the Tivoli Storage Productivity Center components. A complete overview of the Tivoli Storage Productivity Center suite of products is available at http://www.ibm.com/systems/storage/software/center/products.html. For instructions about upgrading Tivoli Storage Productivity Center,

DS CLI commands
: You can install the DS CLI commands on the System Storage Productivity Center server. (Do not confuse these commands with the DS CIM agent commands: DSCIMCLI.) For information about installing DS CLI commands, see http://publib.boulder.ibm.com/infocenter/dsichelp/ds8000ic/index.jsp. **Click Command-line interface > Installing the DS CLI**.

DS3000, DS4000, or DS5000 Storage Manager user interface
: You can install the DS3000, DS4000, or DS5000 Storage Manager user interface on the SSPC server. For information about installing the user interface, see

Antivirus software

You can install antivirus software but it is your responsibility to keep your antivirus software up to date. Importante: As a best practice, install antivirus software on the SSPC server but no other software (except for the upgrades to the programs listed in this topic). While antivirus applications can offer protection to servers that might be in an unprotected environment, installing other software can cause port conflicts or performance issues. Other precautions that you can take to protect the SSPC server include enabling security updates to the operating system and establishing a backup procedure for the SSPC.

Tópico pai: Overview

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IBM System Storage Productivity Center packages

IBM® System Storage Productivity Center offers several different packages depending on the functions you want.

When you purchase SSPC, you receive IBM Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication preinstalled.

Tivoli Storage Productivity Center Basic Edition

Tivoli Storage Productivity Center Basic Edition has IBM Tivoli Storage Productivity Center for Disk functions. Tivoli Storage Productivity Center Basic Edition offers these functions:

- Device discovery
- Disk-storage-system management including discovery, monitoring, and provisioning (for example, volume creation and configuration) for all devices in your SAN
- Asset and capacity reporting
- Fabric management including discovery, monitoring, and provisioning (for example, zone control and planning)
- Tape management including discovery and monitoring
- Management of topology viewer and storage health

Tivoli Storage Productivity Center Basic Edition centralizes management of networked storage devices that implement the SNIA Storage Management Initiative Specification (SMI-S). This package includes support for the IBM System Storage DS family and IBM System Storage SAN Volume Controller. Tivoli Storage Productivity Center Basic Edition can help reduce storage management complexity and costs, and help improve data availability using SMI-S.

You can upgrade Tivoli Storage Productivity Center Basic Edition to IBM Tivoli Storage Productivity Center for Data, IBM Tivoli Storage Productivity Center for Disk, or IBM Tivoli Storage Productivity Center Standard Edition by purchasing licenses for these packages. The packages provide features such as performance reporting, server rollup reporting, file-level capacity utilization, SAN planning tools, and SAN configuration analysis tools. To determine which package best suits your storage-management needs, see Tabela 1. For additional information about Tivoli Storage Productivity Center packages, see IBM Tivoli Storage Productivity Center licenses.

Tabela 1. Finding the right solution to your storage-management needs

If you need...	The best solution is...

If you need...	The best solution is...
A way to measure and forecast storage growth	IBM Tivoli Storage Productivity Center for Data
A way to rationalize and classify storage data through the information lifecycle	IBM Tivoli Storage Productivity Center for Data
Management of disk performance	IBM Tivoli Storage Productivity Center for Disk
Management of multiple arrays	IBM Tivoli Storage Productivity Center for Disk
A tool to manage SAN configuration, availability, and performance	IBM Tivoli Storage Productivity Center Standard Edition
A consolidated view of storage infrastructure (Disk/SAN/capacity)	IBM Tivoli Storage Productivity Center Standard Edition
A way to measure IBM and heterogeneous storage from a single tool	IBM Tivoli Storage Productivity Center Standard Edition
The ability to manage cumbersome tasks, such as provisioning, zoning, configuration, monitoring, and problem determination	IBM Tivoli Storage Productivity Center Standard Edition
More than one of the preceding storage-management needs	IBM Tivoli Storage Productivity Center Standard Edition
The provisioning of both IBM and heterogeneous storage	IBM Tivoli Storage Productivity Center Standard Edition or IBM Tivoli Storage Productivity Center with Advanced Provisioning

IBM Tivoli Storage Productivity Center for Replication

The basic functions of Tivoli Storage Productivity Center for Replication provide management of IBM FlashCopy, Metro Mirror and Global Mirror capabilities for the IBM ESS Model 800, IBM DS6000, DS8000, and IBM SAN Volume Controller.

You can also purchase the licenses for these packages:

IBM Tivoli Storage Productivity Center for Data

The data manager is the component that is responsible for understanding the behavior of the user data located in the file systems and databases. The data manager includes enterprise-wide reporting and monitoring, policy-based management, and automated capacity provisioning for direct-attached storage (DAS), network-attached storage (NAS), and SAN environments.

The purpose of this component is to discover the usage patterns and capacity utilization of the storage from an application's point of view. The data manager is also responsible for gathering application usage demographics, reporting on storage from an application's perspective, and performing and automating actions that provision application storage either by itself or invoking other components to do so. The data manager is additionally responsible for collecting and analyzing performance information from the file systems and the databases that are used by applications.

The data manager:

- Includes many advanced features for monitoring and automating capacity utilization of your file systems and databases, helping you manage more storage with the same staff

- Provides enterprise and capacity reporting and role-based management
- Ensures application availability by providing storage on demand for file systems
- Supports leading databases and provides chargeback capabilities based on storage usage
- Supports complex heterogeneous environments such as Direct Access Storage, network-attached storage and Storage Area Network (SAN), including intelligent disk subsystems and tape libraries

IBM Tivoli Storage Productivity Center for Disk

The disk manager is the component that is responsible for discovering and monitoring storage subsystems and performing and automating actions that provision disk resources. The disk manager is additionally responsible for collecting and analyzing performance information from storage subsystems and helping in the management of SAN-attached heterogeneous storage devices from a single console.

The disk manager:

- Monitors and tracks the performance of SAN-attached Storage Management Initiative Specification (SMI-S) compliant storage devices (for example, IBM, EMC, HDS, HP, Engenio, and so forth).
- Enables proactive performance management by setting performance thresholds based on performance metrics and by generating alerts when those thresholds are met.
- Provides the data path explorer view to allow administrators to view the paths between servers and storage subsystems or between storage subsystems (for example, SAN Volume Controller to back-end storage). Performance and health overlays on this view will provide a mechanism to assess the impact of performance or device state in the paths on the connectivity between the systems.
- Provides storage provisioning for IBM and heterogeneous storage.
- Provides advanced performance management for the DS8000 and SAN Volume Controller.
- Provides tape asset reporting.

IBM Tivoli Storage Productivity Center Standard Edition

This package includes IBM Tivoli Storage Productivity Center for Data and IBM Tivoli Storage Productivity Center for Disk.
Standard Edition also provides:

- SAN planning tools:

  Volume Planner
  : The Volume Planner helps administrators plan for the provisioning of subsystem storage based on capacity, storage controller type, number of volumes, volume size, performance requirements, RAID level, performance utilization, and capacity utilization.

  Path Planner
  : The Path Planner enables administrators to plan and implement storage provisioning for hosts and storage subsystems with multipath support in fabrics managed by Tivoli Storage Productivity Center.

  Zone Planner
  : The Zone Planner enables administrators to plan for zoning and LUN masking configuration based on the following information: host ports, storage controller ports, zones, zone sets, switches, user zoning input, user LUN masking input, existing LUN masking or mapping.

- SAN configuration tools:

  Configuration analysis

This tool allows the system administrators to check whether existing configurations violate defined best practices and policies.

Configuration history

This tool displays the changes that have occurred in the SAN environment over a period of time.

- Fabric management tools:

  The fabric manager is the component that is responsible for discovering, monitoring, and controlling the SAN topology, primarily concentrating on the SAN fabric and on the hosts and storage systems that are zoned for access. The fabric manager is responsible for collecting and analyzing performance information from SAN fabrics. The fabric manager is a comprehensive management solution for heterogeneous fabric support (for example, Brocade, Cisco, McDATA, and so forth). It includes automatic resource and topology discovery, monitoring performance and alerts, and zone control.

Tabela 2 shows a comparison of Tivoli Storage Productivity Center Basic Edition and Tivoli Storage Productivity Center Standard Edition.

Tabela 2. Comparison of function of the IBM Tivoli Storage Productivity Center Basic Edition to the IBM Tivoli Storage Productivity Center Standard Edition

Function	DS Storage Manager	SAN Volume Controller console	IBM Tivoli Storage Productivity Center Basic Edition	IBM Tivoli Storage Productivity Center Standard Edition
Storage configuration and status reporting				
Discovery and configuration of devices	√	√	√	√
Management of multiple storage systems and SAN Volume Controller in one user interface	√	√	√	√
View of topology and storage management			√	√
Use of provisioning, including fabric zoning, and disk LUN assignment			√	√
Management of configuration, presentation of configuration changes over time periods, planning of storage configuration, and proposal of recommendations				√
Storage reporting				
Report of basic assets and capacity			√	√

Function	DS Storage Manager	SAN Volume Controller console	IBM Tivoli Storage Productivity Center Basic Edition	IBM Tivoli Storage Productivity Center Standard Edition
Report of relationships of computers, file systems, and disk LUNs and volumes			√	√
Analysis of capacity and prediction of growth				√
Report of customized and detailed capacity, including chargeback and database reporting				√
Performance management				
Report of performance and thresholds				√
Advice about volume performance and DS8000 configuration information based on performance workloads				√
Report and monitoring of fabric performance				√

- **IBM Tivoli Storage Productivity Center licenses**
  The following product licenses are available for IBM Tivoli Storage Productivity Center: Basic, Data, Disk, and Standard. Each license determines the functions that are accessible in the user interface. This topic lists the functions that are included with each license to help you determine which one best meets your storage management needs.

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IBM Tivoli Storage Productivity Center licenses

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IBM Tivoli Storage Productivity Center Standard Edition
: Contains all the functions for data management, disk management, fabric management, and tape management, plus:

- Analytical functions
- Configuration Analysis
- Configuration History
- SAN Planner

IBM Tivoli Storage Productivity Center for Data Edition
: Includes data management, basic tape, disk, and fabric management, database monitoring, and chargeback functions, but does not include performance monitoring functions.

IBM Tivoli Storage Productivity Center for Disk Edition
: Includes basic disk, fabric, tape, and data management functions and storage system performance monitoring, but does not include fabric performance monitoring, chargeback, and database monitoring functions.

IBM Tivoli Storage Productivity Center Basic Edition
: Includes basic disk, fabric, tape, and data management functions, but does not include chargeback, database monitoring, and performance monitoring functions.

Use the following tables to view the specific functions, reports, and elements of the user interface that are available in each license.

Tabela 1. Available functions in each Tivoli Storage Productivity Center license

Function	Basic Edition	Disk Edition	Data Edition	Standard Edition
Administrative Services				
Device Discovery	Yes, but not all[1]	Yes, but not all[1]	Yes	Yes
Data Sources	Yes, but not all[2]	Yes, but not all[2]	Yes	Yes
Configuration	Yes, but not all[3]	Yes, but not all[3]	Yes	Yes
IBM Tivoli Storage Productivity Center				
Configuration Utility	Yes	Yes	Yes	Yes
Reporting • Batch Reports • User ID reports • System Reports • Rollup Reports • Data Source Reports	Yes Not all reports are available in the Basic edition. See table 2 below for a list of available reports.	Yes Not all reports are available in the Disk edition. See table 2 below for a list of available reports.	Yes Not all reports are available in the Data edition. See table 2 below for a list of available reports.	Yes
Topology Viewer	Yes	Yes	Yes	Yes
Monitoring • Probes • TPC Server Probes	 Yes[4] No	 Yes[4] No	 Yes Yes	 Yes Yes

Function	Basic Edition	Disk Edition	Data Edition	Standard Edition
Storage Resource Group Management	Yes	Yes	Yes	Yes
Analytics • Configuration History • Storage Optimizer • SAN Planner • Configuration Analysis	 No No No No	 No No No No	 No No No No	 Yes Yes Yes Yes
Alerting • Alert Log • Authentication Configuration Alerts	 Yes, but not all[5] Yes	 Yes, but not all[5] Yes	 Yes Yes	 Yes Yes
Data Manager				
Monitoring • Groups • Pings • Scans • Profiles	 Yes Yes No No	 Yes Yes No No	 Yes Yes Yes Yes	 Yes Yes Yes Yes
Alerting	Yes, but not all[6]	Yes, but not all[6]	Yes	Yes
Policy Management	No	No	Yes	Yes
Reporting	Yes Not all reports are available in the Basic edition. See table 2 below for a list of available reports.	Yes Not all reports are available in the Disk edition. See table 2 below for a list of available reports.	Yes	Yes
Data Manager for Databases	No	No	Yes	Yes
Data Manager for Chargeback	No	No	Yes	Yes
Disk Manager				

Function	Basic Edition	Disk Edition	Data Edition	Standard Edition
Storage Subsystems • Create Volumes • Create Virtual Disks • Launch Element Manager	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes Yes Yes Yes
Storage Optimizer	No	No	No	Yes
SAN Planner	No	No	No	Yes
Monitoring • Groups • Jobs • Storage Subsystem Performance	Yes Yes No	Yes Yes Yes	Yes Yes No	Yes Yes Yes
Alerting	Yes	Yes	Yes	Yes
Profile Management	No	Yes	No	Yes
Reporting • Groups • Storage Subsystems • Storage Subsystem Performance	Yes Yes No	Yes Yes Yes	Yes Yes No	Yes Yes Yes
Fabric Manager				
Fabrics	Yes	Yes	Yes	Yes
Monitoring • Groups • Jobs • Switch Performance Monitors	Yes Yes No	Yes Yes No	Yes Yes No	Yes Yes Yes
Alerting	Yes	Yes	Yes	Yes

Function	Basic Edition	Disk Edition	Data Edition	Standard Edition
Reporting • Switch Performance	No	No	No	Yes
Tape Manager	Yes	Yes	Yes	Yes
Element Manager	Yes	Yes	Yes	Yes
Replication Manager	Yes	Yes	Yes	Yes

Notes:

1. You cannot run the following discovery jobs in the Basic and Disk editions: Netware Filer, Windows Domain, NAS, SAN FS, and VMware VI Data Source.
2. You cannot associate VMware VI Data Sources or TPC Servers with Tivoli Storage Productivity Center in the Basic and Disk editions.
3. The following nodes under **Configuration** are not available in the Basic and Disk editions:
   - License Keys
   - Quota and Constraint e-mail Address Rules
   - Scan/Probe Agent Administration
   - Manual NAS/Netware Server Entry
   - NetWare Tree Logins
   - Resource History Retention for Databases
   - Removed Resource Retention for Databases
   - Configuration History Settings
4. Use probes and Storage Resource agents to collect asset and capacity information about storage entities in the Disk and Basic editions. To collect specific file level information (for example, usage statistics), you must use the Data or Standard editions to run scans on your file systems.
   Nota: You cannot probe hypervisors in the Basic and Disk editions.
5. The following nodes under **Alert Log** are not available in the Basic and Disk editions:
   - Directory
   - User
   - OS User Group
   - Configuration Analysis (also not available in the Data edition)
   - Hypervisor
6. The following nodes under **Data Manager > Alerting** are not available in the Basic and Disk editions:
   - Directory Alerts
   - Hypervisor Alerts

Tabela 2. Available reports in each IBM Tivoli Storage Productivity Center license

Reports	Basic Edition	Disk Edition	Data Edition	Standard Edition
Batch Reports	No	Yes[1, 2]	Yes[2]	Yes
System Reports: • Data • Fabric • Disk	 Yes Yes, but not all [3] No	 Yes Yes, but not all [3] Yes	 Yes Yes, but not all [3] No	 Yes Yes Yes

Reports	Basic Edition	Disk Edition	Data Edition	Standard Edition
Rollup Reports	No	No	Yes	Yes
Data Source Reports	Yes	Yes	Yes	Yes
Asset reports: • By Cluster • By Computer • By Hypervisor • By OS Type • By Storage Subsystem • System-wide	 Yes Yes Yes Yes No Yes, but not all [4]	 Yes Yes Yes Yes No Yes, but not all [4]	 Yes Yes Yes Yes Yes Yes	 Yes Yes Yes Yes Yes Yes
Availability reports	Yes	Yes	Yes	Yes
TPC-wide Storage Space reports: • Disk Space • File System Space • Consumed File System Space • Available File System Space	 Yes Yes Yes Yes	 Yes Yes Yes Yes	 Yes Yes Yes Yes	 Yes Yes Yes Yes
Usage reports	No	No	Yes	Yes
Usage Violation reports	No	No	Yes	Yes
Backup reports	No	No	Yes	Yes
Monitored Computer Storage Space reports	Yes	Yes	Yes	Yes
Storage Subsystem reports	No	Yes	Yes	Yes
Storage Subsystem Performance reports	No	Yes	No	Yes
Switch Performance reports	No	No	No	Yes
Tape Library report	No	Yes	Yes	Yes

Reports	Basic Edition	Disk Edition	Data Edition	Standard Edition

Notes:

1. You must install Agent Manager and a Data agent to enable batch reports for these licenses. The Data agent must be installed on the computer on which you want to run batch reports.
2. The following batch reports are not available in the following editions:
   - Basic edition: No batch reports are available
   - Disk edition: Rollup Reports, Usage, Usage Violations, Backup, Switch Performance
   - Data edition: Storage Subsystem Performance, Switch Performance
3. The following Fabric system reports are not available in the Basic, Disk, and Data editions: Top switch Ports Data Rate Performance, Top Switch Ports Packet Rate Performance, Switch Port Errors, Switch Performance.
4. The following Asset > System-wide reports are not available in the Basic and Disk editions: Unmanaged Virtual Machines, Virtual Machines with no VMWare Agent, Monitored Directories, Unmanaged Computers, Users, OS User Groups.

Tópico pai: IBM System Storage Productivity Center packages

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Maintaining user IDs and passwords

Use this procedure to change the passwords for Windows® Administrator, DB2 user, DB2 services, and IBM® Tivoli Storage Productivity Center for Replication.

For security reasons, change the Windows Administrator password on a regular basis. Each time that you change the Windows Administrator password you must also run the Password Tool that is located on the SSPC desktop. When you use the Password Tool, you change the passwords for DB2 user, DB2 services, and IBM Tivoli Storage Productivity Center for Replication. The tool then makes modifications to the IBM DB2, Tivoli Storage Productivity Center for Replication, and IBM WebSphere applications so that they can authenticate properly to the Windows operating system whenever you change the Windows Administrator password.

To change the Windows Administrator, DB2 user, DB2 services, and Tivoli Storage Productivity Center for Replication passwords, follow these steps.

Importante: The password that you use for DB2 user, DB2 services and Tivoli Storage Productivity Center for Replication must match the Windows Administrator password.

1. Logon to SSPC using the Windows Administrator user ID.
2. Change the Windows Administrator password by performing the following steps.
   a. From the SSPC desktop, click **Start > Control Panel**.
   b. From the Control Panel window, double-click **User Accounts**.
   c. Click **Change your password**.
   d. In the Set Password window, type the new password twice. Click **Change password** to change the password. The User Accounts window is redisplayed. Close the window.
3. On the SSPC desktop, double-click the SSPC Password Tool icon to change the passwords for DB2 user, DB2 services, and Tivoli Storage Productivity Center for Replication. The Choose the password to change window is displayed and the **Change DB2 user password for Device and Data Server** option is selected.

Dica: If the icon for the Password Tool was deleted from the SSPC desktop, perform the following steps to start the tool:

a. Open a command prompt window and change the directory to C:\Program Files\IBM\TPC\data\server\tools.
b. Type `changepasswords` to start the Password Tool.

4. Click OK. The Change DB2 user password for Device and Data Server window is displayed.
5. Perform the following steps:
   a. Type the password that is the same as the Windows Administrator password in both the Enter password and Confirm password fields.
   b. The **Restart the Data and Device Server** option is selected. Leave it as it is and click OK.
   c. At the message `Are you sure you want to change the password?` click Yes. The Changing DB2 password for user Administrator window is displayed and shows progress messages while the password is changed. The process takes approximately 5 minutes.
   d. When `Complete` is displayed, click Back to Main. The Choose the password to change window is redisplayed.
6. Select **Change password for the DB2 services** and click OK. The Changing DB2 Services password window is displayed.
7. Perform the following steps:
   a. Type the user name of DB2 Services in the DB2 Services Username field.
   b. Type the password that is the same as the Windows Administrator password in both the Enter password and Confirm password fields.
   c. Click OK.
   d. At the message `Are you sure you want to change the password?` click Yes. The Changing DB2 Services password window is displayed and shows progress messages while the password is changed.
   e. When `Complete` is displayed, click Back to Main. The Choose the password to change window is redisplayed.
8. Select Change TPC-R password to change the password for Tivoli Storage Productivity Center for Replication, and click OK. The Change TPC-R password window is displayed.
9. Perform the following steps:
   a. Type the password that is the same as the Windows Administrator password in both the Enter password and Confirm password fields.
   b. Click OK.
   c. At the message `Are you sure you want to change the password?` click Yes. The Changing TPC-R password window is displayed and shows progress messages while the password is changed.
   d. When `Complete` is displayed, click Back to Main. The Choose the password to change window is redisplayed.

   Nota: To verify the password change has completed successfully check the log located in c:\Program Files\IBM\TPC\Data\log\PWTool.log.
10. Click Exit program to exit the Password Tool.
11. Press any key to continue, and close the command prompt window. This completes the password change.

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Identifying responsibilities for maintaining, upgrading, and configuring the SSPC server

Use this information to learn about what responsibilities you have for maintaining, upgrading, and configuring the SSPC server.

SSPC 2805-MC4 is an offering that comprises an IBM maintained server and customer maintained software.

It is the customer's responsibility for maintaining, upgrading, and configuring the applications that are installed on the SSPC server. This includes any release level updates and associated fix packs to the preinstalled software, which includes but is not limited to:

- Microsoft Windows operating system (support is provided by Microsoft)
- IBM DB2 Enterprise Server Edition 9.5 with Fix Pack 3
- IBM® Tivoli Storage Productivity Center software
- IBM System Storage SAN Volume Controller software
- IBM Tivoli Storage Productivity Center for Replication software
- IBM System Storage DS3000, DS4000, or DS5000 software
- IBM DS CIM agent management commands (DSCIMCLI)
- Any other applications such as antivirus software (support is provided by your antivirus software vendor)

Importante: As a best practice, install antivirus software on the SSPC server but not other software (except for the upgrades to the software listed in this topic). While antivirus applications can offer protection to servers that might be in an unprotected environment, installing other software can cause port conflicts or performance issues. Other precautions that you can take to protect the SSPC server include enabling security updates to the operating system and establishing a backup procedure for the SSPC.

It is also the customer's responsibility to back up and recover the SSPC system.

You, as the customer, are required to provide the IBM service representatives with the information on the work sheets so they can set up the SSPC server. See Planning work sheet.

IBM is responsible for:

- SSPC 2805-MC4 hardware support and repair as covered under warranty or authorized service agreement.
- IBM software support as covered under warranty or authorized service agreement.

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IBM System Storage Productivity Center desktop

The IBM® System Storage Productivity Center desktop displays the icons you can use to open the user interfaces for the different products.

On your desktop, you see the icons for the following user interfaces:

- **Productivity Center** (this includes the DS8000 element managers)
- **IBM Tivoli Storage Productivity Center for Replication**
- **SAN Volume Controller**
- **Launch DSCIMCLI Command Window**
- TIP console
- **SSPC Password Tool** (to change the DB2 user, WebSphere service, and DB2 services password)

You also see icons for the following:

- **SSPC Support Links** which provides direct links to product support Web sites
- **IBM Help for SSPC** which provides online help for SSPC

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Hardware components

The SSPC consists of an IBM® System x server running the Microsoft® Windows® Server 2008 Enterprise Edition operating system. This topic describes the standard SSPC server configuration.

The SSPC 2805-MC4 server is a rack-model server with the following characteristics:

- One Intel® Xeon® quad-core processor, with a speed of 2.4 GHz, a cache of 8 MB, and power consumption of 80 W
- 8 GB of RAM (eight 1-inch dual in-line memory modules of double-data-rate three memory, with a data rate of 1333 MHz)
- Two 146 GB hard disk drives, each with a speed of 15 K
- One Broadcom 6708 Ethernet card
- One CD/DVD bay with read and write-read capability

Optionally, you can add a keyboard, video, and mouse (KVM) unit, or a redundant power supply.

The SSPC 2805-MC4 server supports six 2.5-inch hot-swap Serial Attached SCSI (SAS) hard disk drives.

Nota: You can create a server that is equivalent to the SSPC by installing the SSPC software on any supported server. However, the hardware support included with the SSPC is available only if the software is installed on a 2805-MC4 server. For more information, see .

For additional information, see the *IBM System x3550 M2 Type 7946 Installation and User's Guide*. This publication is available on the *IBM System Storage Productivity Center Documentation CD*, which comes with the SSPC server.

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Planejamento

Esta seção inclui tópicos que fornecem informações sobre como planejar-se para o IBM® System Storage Productivity Center.

- **Planning work sheet**
  As the customer, you are required to provide the IBM service representatives with information about these work sheets so they can set up the SSPC server. If you do not provide this information, it will delay the time it takes to set up the SSPC server.
- **Maintenance responsibilities**
  Responsibility for updating and maintaining hardware and software for the SSPC, as well as other tasks, is divided between you and your IBM service representative.
- **Planning for hardware installation**
  The SSPC server is installed by an IBM service representative. Before the IBM service representative can set up your IBM System Storage Productivity Center hardware, you must verify that the prerequisite conditions for installation are met.
- **Planning**
  This section provides planning information for the IBM System Storage Productivity Center.

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Planning work sheet

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System Storage Productivity Center server information

As part of the SSPC planning, select the rack position. The position in the rack is identified by an Electrical Industries Association (EIA) number. The SSPC has a height of one EIA, referred to as 1U. Select a location in the rack that allows enough space for hardware components that might be installed at a future date.

A keyboard and mouse with Universal Serial Bus (USB) connectors are required for the initial setup of the SSPC. A video display is also required. You can install an optional keyboard video mouse (KVM) unit by ordering Feature Code 9100. If you install it as part of this service action, record the rack location of the KVM unit in Tabela 1.
Dica: As a best practice, install the KVM unit directly above or below the System Storage Productivity Center server so that the connecting cables of the device can reach the server. Feature code 9100 comes with installation instructions. If you ordered this feature code, follow the instructions but do not remove and discard the rubber pads under the keyboard. Peel off the protective strip on the console to expose the adhesive surface and place the keyboard into the tray. Press the keyboard firmly so that it adheres to the tray. You can discard the switch mounting brackets that come with feature code 9100.

Tabela 1. EIA location of the System Storage Productivity Center server and the keyboard video mouse unit

System Storage Productivity Center hardware location	EIA number: _____

within the rack	
Keyboard video mouse unit location within the rack (this may be installed already and is optional)	EIA number: _____

Windows Server 2008 Enterprise Edition Product Key and computer name

During the initial Windows® configuration process, you are prompted to enter the 25-digit Windows product key. The key is printed on a sticker labeled "Proof of License Certificate of Authority" and is located on the outside top cover of the System Storage Productivity Center server. Record this key now because the sticker might be obscured when you place the System Storage Productivity Center server in the hardware rack.

Windows product key:

__ __ __ __ __ - __ __ __ __ __ - __ __ __ __ __ - __ __ __ __ __ - __ __ __ __ __

Tabela 2. Computer name

Field	Entry	Notes
System Storage Productivity Center	Computer name: _____	Specify the System Storage Productivity Center computer name, list it here so that the IBM service representative can set it during the installation.

Tabela 3. Customer Passwords

Field	Entry	Notes
Windows Administrator Password	Administrator Password: _____	List the password that the IBM service representative will set the Administrator ID to during the initial logon to the System Storage Productivity Center. This password can be changed after the system has been installed. The password must conform to the following rules: 8 characters, one number, one uppercase character.
Host authentication password	Host authentication password: _____	List the password that is used by the Tivoli Storage Productivity Center when communicating with the Fabric agents. This password can be different than the Windows administrator password. This password can be changed after the system has been installed. The password must conform to the following rules: 8 characters, one number, one uppercase character.

System Storage Productivity Center physical location

In Tabela 4, record the IP addresses and host name for the SSPC.

Tabela 4. IP addresses and host name

Field	IP address or host name	Notes
SSPC IP address	IP address: _____	This value is the address for the System Storage Productivity Center server.
SSPC Subnet Mask	IP address: _____	This value hides the IP address. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
SSPC Default gateway	IP address: _____	This value is the router that allows access from one network to another network. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
SSPC Preferred DNS address	DNS address: _____	This value is the address for the domain name server for your site. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
SSPC Alternate DNS address	DNS address: _____	This value is the alternate address for the domain name server for your site. Obtain this value by typing `ipconfig` in a command prompt window on any computer on the network or by asking the network administrator.
DNS suffix	DNS suffix: _____	This value is the part of a fully qualified domain name that represents a grouping of host names. For example, in the fully qualified domain name of *sspc.ibm.com*, the DNS suffix is *ibm.com*. Obtain this value from the network administrator.

Device information

Use the following tables to record information about your storage system.

Tabela 5. Device information for DS8000

Device type	Default ports	User ID, password, and host name	IP address of storage system
DS8000 element manager	8451 (http) 8452 (https)	**Default user ID:** admin	IP address HMC: _____

Device type	Default ports	User ID, password, and host name	IP address of storage system
		Default password: admin You must change the default password when you log on. Changing the default password automatically changes the DS8000 CIM agent password to match it.	
		Host name: _____	
		Nota: Do not use special characters such as # or & in the host name. This causes the host name to be truncated.	
DS8000 CIM agent	**For embedded CIM agent:**	**Default user ID:** admin	**For embedded CIM agent:**
	6989 (https)	The default password automatically changes to match the DS8000 element manager password.	IP address of HMC: _____
	For proxy CIM agent:	**Host name:** _____	**For proxy CIM agent:**
	5988 (http) 5989 (https)		IP address of proxy CIM agent: _____

Tabela 6. Device information for SAN Volume Controller

Device type	Default ports	User ID, password, and host name	IP address of storage system
SAN Volume Controller CIM agent	**For embedded CIM agent:** 5989 (https)	**Default user ID:** superuser	IP address: _____
		Default password: passw0rd	
		Host name: _____	

Tópico pai: Introdução
Tópico pai: Planejamento

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Maintenance responsibilities

Responsibility for updating and maintaining hardware and software for the SSPC, as well as other tasks, is divided between you and your IBM® service representative.

- You are responsible for maintaining and upgrading the following applications on the SSPC server:
  - Microsoft® Windows® operating system
  - IBM DB2 Enterprise Server Edition 9.5, Fix Pack 3
  - IBM Tivoli Storage Productivity Center
  - IBM System Storage SAN Volume Controller
  - IBM Tivoli Storage Productivity Center for Replication (if installed)
  - Agent Manager and agents (if installed)
  - DS CIM agent management commands (DSCIMCLI) utility (if applicable)
  - DS3000, DS4000, and DS5000 (if applicable)
  - Any other applications, such as antivirus software
- You are responsible for backing up and recovering the SSPC system. For information,
- The IBM service representative is responsible for the following tasks:
  - Installing the initial SSPC hardware
  - Upgrading the SSPC hardware
  - Installing ordered feature codes and Miscellaneous Equipment Specification (MES)

Tópico pai: Planejamento

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Planning for hardware installation

The SSPC server is installed by an IBM® service representative. Before the IBM service representative can set up your IBM System Storage Productivity Center hardware, you must verify that the prerequisite conditions for installation are met.

1. Verify that the IBM service representative has checked Authorized Problem Analysis Reports (APARs) and Flashes on the SSPC Support Web page for information about changes to documentation and known product issues. Access the SSPC Support Web site at http://www.ibm.com/systems/support/storage/software/sspc and click Flashes.
2. Ensure that your physical site meets the environmental requirements for the SSPC. See Features and specifications for more information.
3. Verify that you have adequate rack space for the hardware. The SSPC server requires at least 1 Electrical Industries Association (EIA) unit (1 U) of available rack space.
   Nota: Select a rack location that allows for future expansion of existing hardware components.
4. Fill out Planning work sheet. Complete this work sheet before the IBM service representative arrives to install the hardware. The IBM service representative needs the information in this work sheet to perform the installation procedure.
5. If you plan to use the SSPC to manage previously installed IBM System Storage DS8000 devices, verify that the CIM Object Manager (CIMOM) located on each DS8000 Hardware Management Console (HMC) is turned on. For instructions, refer to the documentation that comes with your IBM System Storage DS8000.
6. If a previously installed DS8000 device is using the DS8000 Release 2 HMC, upgrade HMC to Release 3 or later.
7. If you plan to use the SSPC to manage SAN Volume Controller nodes, ensure that the SSPC server is near the SAN Volume Controller nodes. The SSPC server must be located no more than 50 feet away from the SAN Volume Controller nodes.
8. SSPC requires a USB keyboard and mouse, and a video display. You may provide these, or you can order the keyboard, video, and mouse (KVM) package along with SSPC.

During the hardware installation process, an IBM service representative will perform the following tasks:

1. Unpack and rack mount the SSPC server.
2. Start the SSPC server.
3. Configure the SSPC server's IP address.
4. Connect the SSPC server to your network.
5. Verify that the SSPC server can contact the DS3000, DS4000, DS5000, DS8000, and SAN Volume Controller devices.

Hardware installation instructions are provided for the IBM service representative in *Read This First: Installing the IBM System Storage Productivity Center*, which comes with the server.

- **Features and specifications**
  Before an IBM service representative can install the IBM System Storage Productivity Center (SSPC), you must prepare the physical environment. This includes verifying that there is adequate space available, and that requirements for power and environmental conditions are met.
- **Configuration information and capacity limits for the SSPC server**
- **Capacity limits for CIM agents**
- **Optional ordered equipment**
  Additional feature codes are ordered to augment the functionality of the IBM System Storage Productivity Center. The following is a list of supported feature codes.
- **Supported hardware**
  The following table shows IBM System Storage Productivity Center software support for each supported hardware system.

Tópico pai: Planejamento

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Features and specifications

Before an IBM® service representative can install the IBM System Storage Productivity Center (SSPC), you must prepare the physical environment. This includes verifying that there is adequate space available, and that requirements for power and environmental conditions are met.

Tabela 1 describes the physical characteristics and environmental requirements for the SSPC 2805-MC4 server.

Tabela 1. Features and specifications for the IBM System Storage Productivity Center 2805-MC4 server

Processor: • Supports up to two Intel® Xeon® processors (one that is preinstalled) • Type: Quad-core (four cores per microprocessor, with 8 MB shared among cores) • Speed: 2.4 GHz • Cache: 8 MB • Power consumption: 80W (see Note 1)	**Integrated functions:** Broadcom 6708 Ethernet card **Acoustical noise emissions:** (See Note 2) • Sound power, idling: 6.1 bels maximum • Sound power, operating: 6.1 bels maximum **Environment:**

Memory:

- Minimum: 1 GB
- Maximum: 8 GB
- Type: Eight 1-inch dual inline memory modules (DIMMs) of double-data-rate three (DDR3) memory
- Data rate: 1333 MHz

Hard disk drives:

- Two 146 GB hard disk drives, each with a speed of 15 K
- Six 2.5-inch expansion bays for hot-swap, Serial Attached SCSI (SAS) hard disk drives

Bay for CD or DVD:

One read or write-read bay for CD or DVD

Power supply:

- One standard power supply
- For redundancy support, a maximum of two 675-watt ac (110 or 220 V ac auto-sensing) hot-swap power supplies

Hot-swap fans:

Six dual-motor hot-swap fans

Size:

- Height: 43 mm (1.69 in., 1U)
- Depth: 711 mm (28 in.)
- Width: 440 mm (17.3 in.)
- Maximum weight: 15.4 kg (34 lb) when fully configured

- Air temperature:
  - Server on: 10°C to 35°C (50.0°F to 95.0°F); altitude: 0 to 914 m (2998.7 ft)
  - Server off: -40°C to 60°C (-104°F to 140°F); maximum altitude: 2133 m (6998.0 ft)
- Humidity:
  - Server on: 8% to 80%
  - Server off: 8% to 80%

Heat output: (see Note 1)

Approximate heat output:

- Minimum configuration: 662 Btu per hour (194 watts)
- Maximum configuration: 2302 Btu per hour (675 watts)

Electrical input:

- Sine-wave input (47 to 63 Hz) required
- Input voltage, low range:
  - Minimum: 100 V ac
  - Maximum: 127 V ac
- Input voltage, high range:
  - Minimum: 200 V ac
  - Maximum: 240 V ac
- Input kilovolt-amperes (kVA), approximately:
  - Minimum: 0.194 kVA
  - Maximum: 0.700 kVA

Notes:

1. Power consumption and heat output vary depending on the number and type of optional features installed and the power-management optional features in use.
2. The sound levels were measured in controlled acoustical environments according to the procedures specified by the American National Standards Institute (ANSI) S12.10 and ISO 7779 and are reported in accordance with ISO 9296. Actual sound-pressure levels in a given location might exceed the average values stated because of room reflections and other nearby noise sources. The noise emission level is stated in the declared (upper limit) sound-power level, in bels, for a random sample of system.

Tópico pai: Planning for hardware installation

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Configuration information and capacity limits for the SSPC server

Tabela 1 gives the capacity limits for the SSPC 2805-MC4. Design your SSPC servers so that none of the limits in Tabela 1 is exceeded.

For information about capacity limits for proxy CIM agents, see Tabela 1.

Tabela 1. Configuration information and capacity limits for SSPC 2805-MC4

Characteristic	Value
Configuration	• Up to two Intel® Xeon™ processors (one is preinstalled). The two servers must be of the same speed (for example, two 2.4 GHz processors). • Type: Quad-core (four cores per microprocessor, with 8 MB shared among cores) • Speed: 2.4 GHz • Power consumption: 80 W • Type: Eight 1-inch dual inline memory modules (DIMMs) of double-data-rate three (DDR3) memory • Data rate: 1333 MHz • Hard disk drives: Two 146 GB hard disk drives, each with a speed of 15 K • Ethernet card: Broadcom 6708 • Six 2.5-inch hot-swap Serial Attached SCSI (SAS) hard disk drive expansion bays • One read or write-read bay for CD or DVD • Optional secondary power supply
Maximum volumes	30000
Maximum subsystems	100
Maximum switches	100
Maximum switch ports	2500
Maximum copyset pairs (for Tivoli Storage Productivity Center for Replication)	10000
Maximum data agents	1500

Tópico pai: Planning for hardware installation

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Capacity limits for CIM agents

Beginning with Release 4.1, the DS8000 CIM agent is embedded in the DS8000 server and is not required to be on the SSPC server. Also, for SAN Volume Controller 4.3.1 and later, the CIM agent is embedded in the SAN Volume Controller server.

Other supported storage devices use proxy CIM agents. A proxy CIM agent is not embedded in the device hardware, but instead is located on another server. Tabela 1 gives the capacity limits for proxy CIM agents for other supported devices.

Tabela 1. Capacity limits for proxy CIM agents

Storage	Volumes	Storage systems	Agent server requirements
DS6000 series and ESS	10000	10	• Intel®, dual processor 3.2 GHz, 4 GB RAM • System p, dual p5, 4 GB RAM
DS3000, DS4000, and DS5000 series	512	10	• Intel, dual processor 3.2 GHz, 4 GB RAM • System p, dual p5, 4 GB RAM

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Optional ordered equipment

Additional feature codes are ordered to augment the functionality of the IBM® System Storage Productivity Center. The following is a list of supported feature codes.

FC 9100 - Keyboard, Video, Mouse (KVM) Unit
: Ordering this feature code provides the hardware to install a keyboard, video, mouse (KVM) unit.

FC 1810 - IBM System Storage Productivity Center Redundant Power Supply
: Ordering this feature code provides the hardware to install a second power supply. When ordering this feature code, specify whether it applies to SSPC 2805-MC2, 2805-MC3, or 2805-MC4.

FC 1170 - Wall Line Cable
: Ordering this feature code provides the hardware to replace the single wall line cord with the Y-cord for dual power supplies.

Tópico pai: Planning for hardware installation

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Supported hardware

The following table shows IBM® System Storage Productivity Center software support for each supported hardware system.

Tabela 1. System Storage Productivity Center supported hardware

Supported Hardware (see Note)	Supported Software				
	IBM Tivoli Storage Productivity Center	IBM Tivoli Storage Productivity Center for Replication	IBM System Storage SAN Volume Controller	DSCIMCLI	IBM DS Storage Manager
DS3000	X				X
DS4000	X				X
DS5000	X				X
DS6000	X	X		X	
DS8000	X	X		X	
SAN Volume Controller	X	X	X		
ESS Model 800	X	X		X	
TS3310 Tape Library	X				
TS3500 Tape Library	X				
Nota: SSPC might also support other hardware because that hardware is supported by Tivoli Storage Productivity Center. For a complete list of supported devices, see **http://www.ibm.com/software/sysmgmt/products/support/IBMTotalStorageProductivityCenterStandardEdition.html** and click **Plan > [View all Plan documents]**.					

Tópico pai: Planning for hardware installation

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Planning

This section provides planning information for the IBM® System Storage Productivity Center.

The preinstalled System Storage Productivity Center software includes the following:

- English version of Microsoft® Windows® Server 2008 32-bit Enterprise Edition
- IBM DB2 Enterprise Server V9.5 with Fix Pack 3
- IBM Tivoli Storage Productivity Center 4.1.1
- IBM Tivoli Storage Productivity Center for Replication 4.1.1
- IBM SAN Volume Controller console version 5.1.0 and CIM agent version 4.3.1
- IBM DS CIM agent management commands (DSCIMCLI) version 5.4.3

- **Planning for software configuration**
  You are responsible for configuring and maintaining the software that is preinstalled on the IBM System Storage Productivity Center server.
- **Licensing**
  License entitlement for preinstalled and optional software must be purchased separately from the IBM

System Storage Productivity Center server. The IBM System Storage DS8000 is also separately licensed. Ensure that the necessary licenses have been purchased before the IBM service representative arrives to install the System Storage Productivity Center server.

- **Web browsers**
  Internet Explorer 7 is the default browser for SSPC.
- **User IDs, passwords, and user roles**
  Use this information to know what user IDs and passwords are assigned to your SSPC system, and how to assign user roles in IBM System Storage Productivity Center.
- **Evaluating the Tivoli Storage Productivity Center for Replication (try and buy) product**
  You can evaluate IBM Tivoli Storage Productivity Center for Replication in your environment for no charge.
- **For the customer: activating the Microsoft Windows license**
- **Getting security updates to the Windows operating system**
  This section describes how to obtain security updates for the 32-bit Windows operating system.
- **Subscribing to technical support Web sites**
  It is a good practice to subscribe to the IBM technical support Web sites to receive information about important technical notes, flashes, and APAR information.
- **Initial tasks for installing and configuring SSPC**
  The information in this section describes the tasks that are required to install and configure IBM System Storage Productivity Center and indicates whether they are performed by the customer or the IBM service representative.

Tópico pai: Planejamento

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Planning for software configuration

You are responsible for configuring and maintaining the software that is preinstalled on the IBM® System Storage Productivity Center server.

An IBM service representative will install the System Storage Productivity Center hardware and set the IP address for the System Storage Productivity Center server. After the SSPC is installed and before you can use it, you must configure the SSPC to each device that you want it to monitor (for example, the IBM System Storage DS8000 or the IBM System Storage SAN Volume Controller).
Nota: License entitlement for preinstalled and optional software is purchased separately from System Storage Productivity Center. See Licensing for more information.
System Storage Productivity Center software configuration consists of the following tasks:

1. Check the following Web site for any updates to the preinstalled software: http://www.ibm.com/systems/support/storage/software/sspc.
2. Configure the IBM Tivoli Storage Productivity Center to manage your DS8000, DS5000, DS4000, and DS3000 systems.
3. If you plan to use the System Storage Productivity Center to manage SAN Volume Controller clusters, configure the SAN Volume Controller Console and command-line interface.
4. Install and configure optional software.
   Importante: As a best practice, install antivirus software on the SSPC server but no other software (except for the upgrades to the programs listed in Licensing). While antivirus applications can offer protection to servers that might be in an unprotected environment, installing other software can cause port conflicts or performance issues. Other precautions that you can take to protect the SSPC server

include enabling security updates to the operating system and establishing a backup procedure for the SSPC.

- You can configure the DS CIM agent that is embedded in the DS8000 server with the DS CIM agent management command package (DSCIMCLI) that is preinstalled on SSPC. For information about configuring the CIM agent management commands and how to use the commands, see the *IBM System Storage DS Open Application Programming Interface Reference* at the following Web site:
  http://www.ibm.com/servers/storage/support/software/cimdsoapi/
- System Storage Productivity Center can act as a server to distribute the GUI code for DS3000, DS4000, and DS5000 Storage Manager, as needed. Ensure that the version of GUI code that the System Storage Productivity Center will distribute will work with the DS3000, DS4000, and DS5000 server, as applicable.
- Install the licenses for the IBM Tivoli Storage Productivity Center for Replication on the System Storage Productivity Center server to manage IBM FlashCopy, Metro Mirror and Global Mirror functions.

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Licensing

License entitlement for preinstalled and optional software must be purchased separately from the IBM® System Storage Productivity Center server. The IBM System Storage DS8000 is also separately licensed. Ensure that the necessary licenses have been purchased before the IBM service representative arrives to install the System Storage Productivity Center server.

Preinstalled software

The following software is preinstalled on the System Storage Productivity Center server:

- Microsoft® Windows® Server 2008 Enterprise Edition
- IBM Tivoli Storage Productivity Center 4.1.1 Basic Edition
- IBM Tivoli Storage Productivity Center for Replication 4.1.1
- IBM DB2 Enterprise Server Edition 9.5 with Fix Pack 3
- IBM System Storage SAN Volume Controller Console version 5.1.0
- PuTTY

Importante: As a best practice, install antivirus software on the SSPC server but no other software (except for the upgrades to the programs listed in this topic). While antivirus applications can offer protection to servers that might be in an unprotected environment, installing other software can cause port conflicts or performance issues. Other precautions that you can take to protect the SSPC server include enabling security updates to the operating system and establishing a backup procedure for the SSPC.

The Basic Edition of Tivoli Storage Productivity Center can be upgraded to the Standard Edition, which includes additional data analysis and performance reporting features. For information about upgrading to these packages,

The IBM Tivoli Storage Productivity Center Basic Edition software is licensed per System Storage Productivity Center server, regardless of the number of processors or amount of data managed. Licensing includes the first

year of software support. After the first year, support is provided on a subscription basis.

Tivoli Storage Productivity Center for Replication is installed with local OS authentication. This program is non-licensed. You are required to purchase and install the 2-site or 3-site license to use the functions of Tivoli Storage Productivity Center for Replication.

Licensing for the IBM DB2 Enterprise Server is included in the Tivoli Storage Productivity Center Basic Edition license agreement.

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Web browsers

Internet Explorer 7 is the default browser for SSPC.

The following browsers are supported by IBM® Tivoli Storage Productivity Center:

- Windows:
  - Internet Explorer 7
  - Firefox 1.5
  - Firefox 2.0
  - Firefox 3.0
- AIX:
  - Firefox 2.0
- Linux:
  - Firefox 2.0

You must configure Internet Explorer 7 to always allow pop-up windows for SAN Volume Controller. Click **Tools > Pop-up Blocker > Turn Off Pop-up Blocker**. Additionally, if you receive a message that content was blocked because it was not signed by a valid security certificate, click the Information Bar at the top of the window and select **Show blocked content**. For more information about these requirements, see http://www-1.ibm.com/support/docview.wss?rs=591&context=STPVGU&context=STPVFV&q1=master+console&uid=ssg1S1003315&loc=en_US&cs=utf-8&lang=en.

Tips:

- If you plan to access SSPC using a Web browser other than the one that is preinstalled on the system, use the configuration instructions for that browser to ensure that new pop-up windows can automatically open when you visit a Web site. Also, uninstall or turn off any applications that block or suppress pop-up windows.
- If you launch the DS8000 user interface, SAN Volume Controller console, IBM Tivoli Storage Productivity Center for Replication, DS3000, DS4000, or DS5000 through a URL or host name, you must add the URL to the trusted zone in the browser.

- **Microsoft Phishing Filter**
  If you are using Internet Explorer and see a window with the title "Microsoft Phishing Filter", this is a Microsoft window to warn you if the Web site you are visiting might be impersonating another Web site.

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Microsoft Phishing Filter

If you are using Internet Explorer and see a window with the title "Microsoft Phishing Filter", this is a Microsoft window to warn you if the Web site you are visiting might be impersonating another Web site.

You can turn the Phishing Filter on or off automatically. Click **What is Phishing Filter** on the window to find out more information about the filter. It is suggested that you turn the phishing filter off. Click **OK**.
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User IDs, passwords, and user roles

Use this information to know what user IDs and passwords are assigned to your SSPC system, and how to assign user roles in IBM® System Storage Productivity Center.

Default user IDs and passwords

When you receive your SSPC system, there are default user IDs and passwords assigned.

See Tabela 1 for the SSPC user IDs and passwords.

Tabela 1. Default user IDs and passwords for SSPC

Component	Default user ID	Default password	Description
Windows	Administrator	None, you must set it the first time you log into SSPC	This user ID is part of the Windows Administrators group. Use this user ID to log into System Storage Productivity Center. To set this password, see For the IBM service representative: configuring the operating system.
IBM System Storage SAN Volume Controller	superuser	When you change password on SAN Volume Controller	SAN Volume Controller CIM agent and GUI

User IDs and passwords for DS8000

For DS8000 release 4.0 and earlier, the CIM agent administrator and storage administrator are required to create and maintain user passwords for both the CIM agent and the DS8000 management applications.

For DS8000 release 4.1 and later, the embedded CIM agent does not require configuration changes to manage DS8000 devices. Instead, the DS8000 device user names and passwords are used to authenticate CIM client requests. The DS8000 administrator must create user names and passwords that CIM clients can use to attach to the CIM agent. Each user that is created must be in the administrator group. Users that are created in any group other than the administrator group, cannot function with DS8000 release 4.1 and 4.2 CIM agents. The DS8000 administrator can use the DSCLI or the HMC console GUI to create the user names and passwords.

If you log in to the DS8000 Element Manager for the first time using the administrator user ID, you are required to change the password.

You need one user ID and password to set up the Element Manager. The user ID and password for the Element Manager is stored in the Tivoli Storage Productivity Center database. After the user ID and password are stored, when you log into the Element Manager within Tivoli Storage Productivity Center, that stored user ID and the privileges associated with it is used.

Nota: If you upgrade a DS8000 previous to release 4.1 to release 4.1 or later (with the embedded CIM agent), you must do one of the following to attach the CIM agent:

- Change all the Tivoli Storage Productivity Center user IDs and passwords
- Recreate all administrative user accounts.

For information on setting up LDAP and single sign-on in Tivoli Storage Productivity Center, see Configuring Tivoli Storage Productivity Center for DS8000 LDAP support and Single sign-on.

User roles for Tivoli Storage Productivity Center

In a production environment, SSPC is typically the control point of the storage systems that store large amounts of data. The security of the SSPC server is very important. Tivoli Storage Productivity Center supports application-level security using role-based authorization. With Tivoli Storage Productivity Center, you can assign different users with different roles and segregate duties among users.

You should ensure that in a multiple-user environment, all users accessing Tivoli Storage Productivity Center also have the authority to manage other aspects of the storage environment.

The procedure to add users to SSPC requires Tivoli Storage Productivity Center administrator authority and can be done as two tasks:

- Set up the user ID at the operating system level and then add this user ID to a group.
- Set up Tivoli Storage Productivity Center to map the operating system group to a Tivoli Storage Productivity Center role.

You can use many types of user roles. The commonly used roles for a user of SSPC are the disk administrator and disk operator.

For more information on how to add a user role to Tivoli Storage Productivity Center, see Adding user IDs to SSPC.

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Evaluating the Tivoli Storage Productivity Center for Replication (try and buy) product

You can evaluate IBM® Tivoli Storage Productivity Center for Replication in your environment for no charge.

Overview

A 60-day trial version (try and buy) copy of Tivoli Storage Productivity Center for Replication Two Site BC provides the same functions as the licensed product. The trial version is available if you have System Storage Productivity Center and Tivoli Storage Productivity Center for Replication preinstalled in your environment. The trial version licensing package is limited to ten customers at one time.

To obtain the license key information, contact your IBM Business Partner or authorized IBM sales representative. After obtaining the license key, perform the following steps:

1. From the My Work pane, select **Administration**.
2. Type the update key, and select **Update**.

After 60 days, you must order the licensed product to use IBM Tivoli Storage Productivity Center for Replication.

Upgrading from the try and buy product

You can upgrade from a try and buy version of Tivoli Storage Productivity Center for Replication to the licensed product by contacting your IBM Business Partner or authorized IBM sales representative.

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For the customer: activating the Microsoft® Windows license

If you did not check the Automatically activate Windows when I am online option during the IBM® System Storage Productivity Center installation or you do not have SSPC Internet connectivity, you must activate the license for Windows® using these steps. If you did enable the Automatically activate Windows when I am online option, you can skip this step.
Important: From the first time you start the SSPC server, you have 60 days to activate the Windows license and complete the Windows setup. If you exceed the 60-day time limit, you cannot use Windows until you activate the license.

1. ☐ Click Start and right-click Computer, and select Properties.
2. ☐ In the Windows activation section, click Activate Windows now and follow the instructions to activate Windows using the phone.

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Getting security updates to the Windows operating system

This section describes how to obtain security updates for the 32-bit Windows® operating system.

The procedure for getting security updates to the Windows operating system varies, depending on whether your SSPC is connected to the Internet. The sections that follow describe each method. SSPC uses the Windows Server 2008 Enterprise Edition 32-bit operating system. Do not obtain security updates for a 64-bit operating system. Updates prior to February 2009 are installed on SSPC.
Tópico pai: Planning

Getting security updates through the Internet

To obtain security updates to the Windows operating system if your SSPC is connected to the Internet, use the following steps:

1. From you SSPC desktop, click Start > Windows Update. The Windows Update window displays.
2. If prompted, follow the instructions to install ActiveX Control.
3. Click Express. The Express results window displays.
4. Click Install Updates. The Installing updates window displays while the updates are downloaded.
5. After the updates are installed, perform one of the following steps:
    a. Click Restart to reboot the system. You will be asked to change your password.
    b. Click Cancel to return to the SSPC desktop.

Getting security updates outside of the Internet

To obtain security updates to the Windows operating system if your SSPC is not connected to the Internet, use the following steps:

1. From a laptop or personal computer that is connected to the Internet, go to http://catalog.update.microsoft.com/v7/site/Install.aspx.
2. If prompted, follow the instructions to install ActiveX Control. Access the Windows Update Catalog.
3. Search for updates in the Windows Update Catalog by performing the following steps:
    a. In the Search box, enter **Windows server 2008 security** and click **Search**.
    b. View the list that displays to find the updates that you want to download. Disregard updates for x64-bit and Itanium-based systems.
    c. Select an update and click Add to add it to the download basket.
    d. Repeat these steps to search for additional updates to download.
4. Download the updates that you selected by performing the following steps:
    a. From the Search box, click **view basket** to view the contents of your download basket.
    b. Verify your list of updates and click **Download**. If you are prompted, click **Accept** to accept the license agreement.
    c. Select the location where you want to save the updates. Enter the full path of the folder or click **Browse** to locate the folder.
    d. Click **Continue** to start the download.
    e. When the download is complete, click **Close** to close the Download Window.
    f. Close the Windows Update Catalog Window.
    g. Go to the location that you specified in step 4.c.
    h. To transfer the files from your PC to the server, use a USB key of 512 MB or greater, or use a CD-R or CD-RW.
    i. Double-click each update and follow the instructions to install it.

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Subscribing to technical support Web sites

It is a good practice to subscribe to the IBM technical support Web sites to receive information about important technical notes, flashes, and APAR information.

For more information about the IBM® System Storage Productivity Center technical support Web site, see http://www.ibm.com/systems/support/storage/software/sspc.

For more information about the IBM Tivoli Storage Productivity Center technical support Web site, see http://www.ibm.com/systems/support/storage/software/tpc/.

To receive future support notifications, go to the right and from the **Stay informed** pane, click **Subscribe**. You will be required to enter your IBM ID and password. Once authenticated, you will see a Subscriptions page which provides information about the following:

- How to create and organize subscriptions
- How you are notified about subscriptions
- How to specify the frequency of email notifications
- How to subscribe for specific topics per product
- How to unsubscribe

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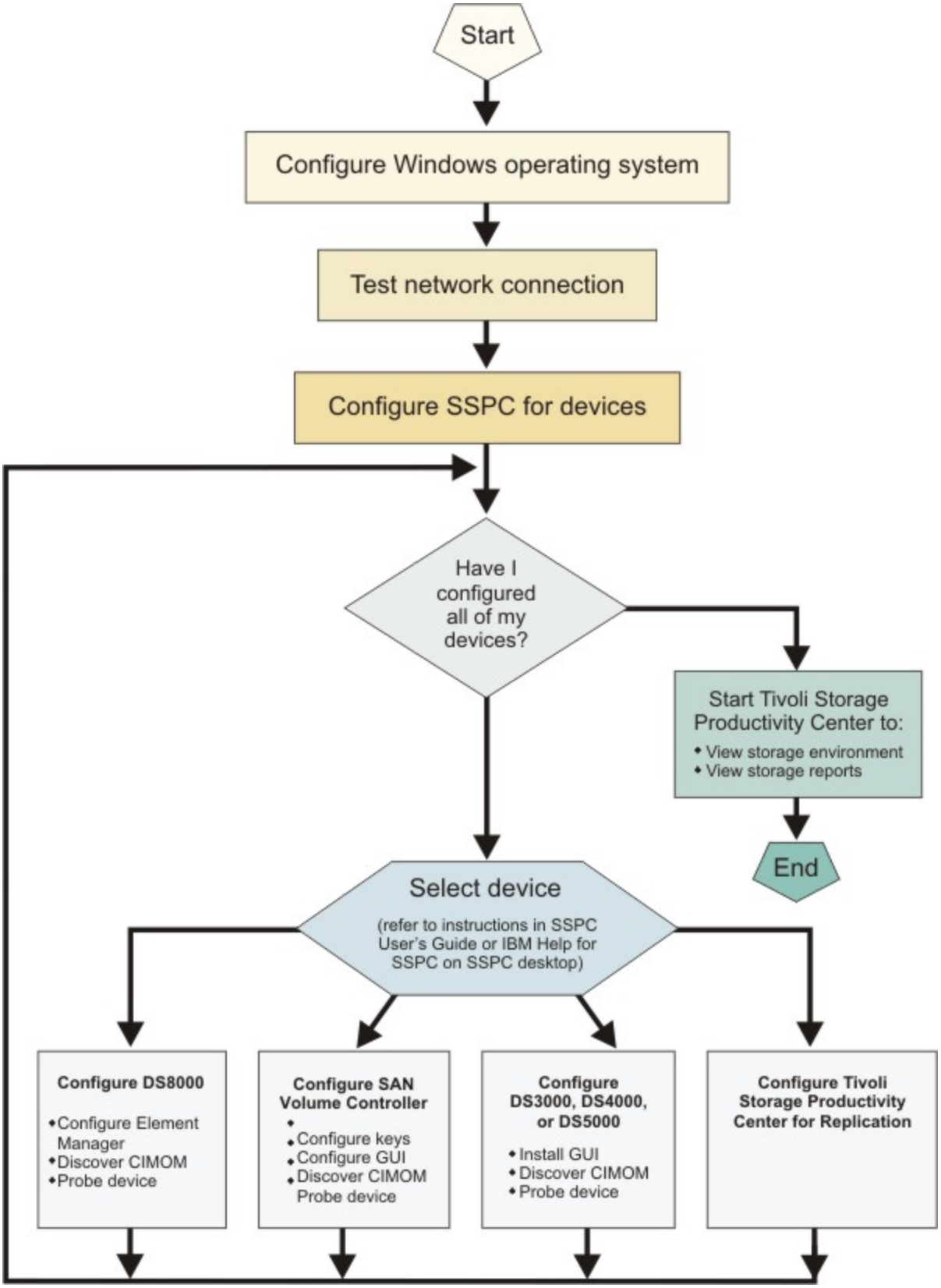
Initial tasks for installing and configuring SSPC

The information in this section describes the tasks that are required to install and configure IBM® System Storage Productivity Center and indicates whether they are performed by the customer or the IBM service representative.

Figura 1 illustrates the steps that the IBM service representative and you must perform to install and configure the IBM System Storage Productivity Center.

Figura 1. Overview of installing and configuring the System Storage Productivity Center



Use Tabela 1 to help you complete the steps that you need to set up and configure SSPC.

Tabela 1. Initial tasks to complete for configuring SSPC

Task	Responsibility	Description	Completed?

Task	Responsibility	Description	Completed?
Install storage system hardware: DS8000, SAN Volume Controller	IBM service representative	Install the hardware. You can also install supported tape devices. You do not have to have all the storage devices installed before configuring SSPC. You can install devices at a later time.	
Install non-IBM supported storage systems or devices	User	If you install non-IBM supported storage systems or devices, contact your vendor for information about CIM agents.	
Install storage system hardware: DS3000, DS4000, and DS5000	User	Install the hardware. You do not have to have all the storage devices installed before configuring SSPC. You can install devices at a later time.	
Start CIM agents for DS8000	IBM service representative	Start the CIM agent for DS8000. The CIM agent for DS8000 release 2 or later is preinstalled on the HMC. The IBM service representative is responsible for starting the CIM agent for R2, R3, and R4. The CIM agent is automatically enabled for R4.1.	
Add SAN Volume Controller clusters to the SAN Volume Controller GUI	User	Start the SAN Volume Controller GUI from the SSPC desktop (you need the IP address of the CIM agent that is used by the SAN Volume Controller clusters).	
Install switches	User	Install the switches. See your switch vendor for information.	
Install fabric CIM agent	User	Install the fabric CIM agent. The preferred method for data collection with McData and Brocade switches are through the fabric CIM agents. See your fabric CIM agent provider for information.	
Fill out work sheet	User	Fill out planning work sheets so the IBM service representative can configure Windows® and set up storage system environment. See Planning work sheet.	
Unpack SSPC, install SSPC hardware, connect cables, configure the server, test the SSPC installation	IBM service representative	Unpack and set up the SSPC hardware. Configure and test the SSPC server. See Setting up the SSPC server.	
Activate the Windows license	User	Activate the Windows license. See For the customer: activating the Microsoft Windows license.	
Change SSPC server host name	IBM service representative	Change the SSPC server host name. See Changing the server host name when DB2 extended security is off.	

Task	Responsibility	Description	Completed?
Change Windows Administrator password	User	Change the Windows Administrator password. See Maintaining user IDs and passwords.	
Configure SSPC for DS8000	User	Configure SSPC for the DS8000. See Configuring SSPC for the DS8000.	
Configure SSPC for SAN Volume Controller	User	Configure SSPC for the SAN Volume Controller. See Configuring SSPC for SAN Volume Controller.	
Configure SSPC for DS3000, DS4000, or DS5000	User	Configure SSPC for the DS3000, DS4000, or DS5000. See Configuring SSPC for DS3000, DS4000, and DS5000.	
Configure SSPC for IBM Tivoli Storage Productivity Center for Replication	User	Configure SSPC for IBM Tivoli Storage Productivity Center for Replication. See Configuring SSPC for IBM Tivoli Storage Productivity Center for Replication.	
Configure SSPC for tape	User		
Configure SSPC for other devices	User		

Tabela 2 contains other optional tasks you might want to perform after you have completed configuring SSPC.

Tabela 2. Other optional configuration tasks for SSPC

Task	Description
Add SSPC users	See Adding user IDs to SSPC.
Change DB2 user ID password	See Maintaining user IDs and passwords

Tópico pai: Planning

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Setting up the SSPC server

This topic describes the tasks that the IBM® service representative performs to install the IBM System Storage Productivity Center, including procedures for installing the SSPC server in a rack, connecting the cables, configuring the server, starting the server, and testing the installation.

- **Introduction**
  The IBM System Storage Productivity Center (SSPC) 2805-MC4 contains a SAS hot-swap hard disk drive (2.5-inch drive).
- **Prerequisites**
- **For the customer: preparing for the installation**
- **For the IBM Service Representative: installing the hardware**
- **For the IBM service representative: configuring the operating system**

- **For the IBM service representative: completing the initial configuration tasks**
- **Running the SSPC Password Tool**
  Run the Password Tool to change the Windows Administrator password and the host authentication password.
- **For the IBM service representative: completing the installation**
  The SSPC hardware installation is now complete. You can assist the customer with the following software-related tasks:
- **For the IBM service representative: testing the installation**
  During the test, if you are prompted to register the Microsoft® Windows® Server 2008 Enterprise operating system, minimize the message and continue with the procedure.

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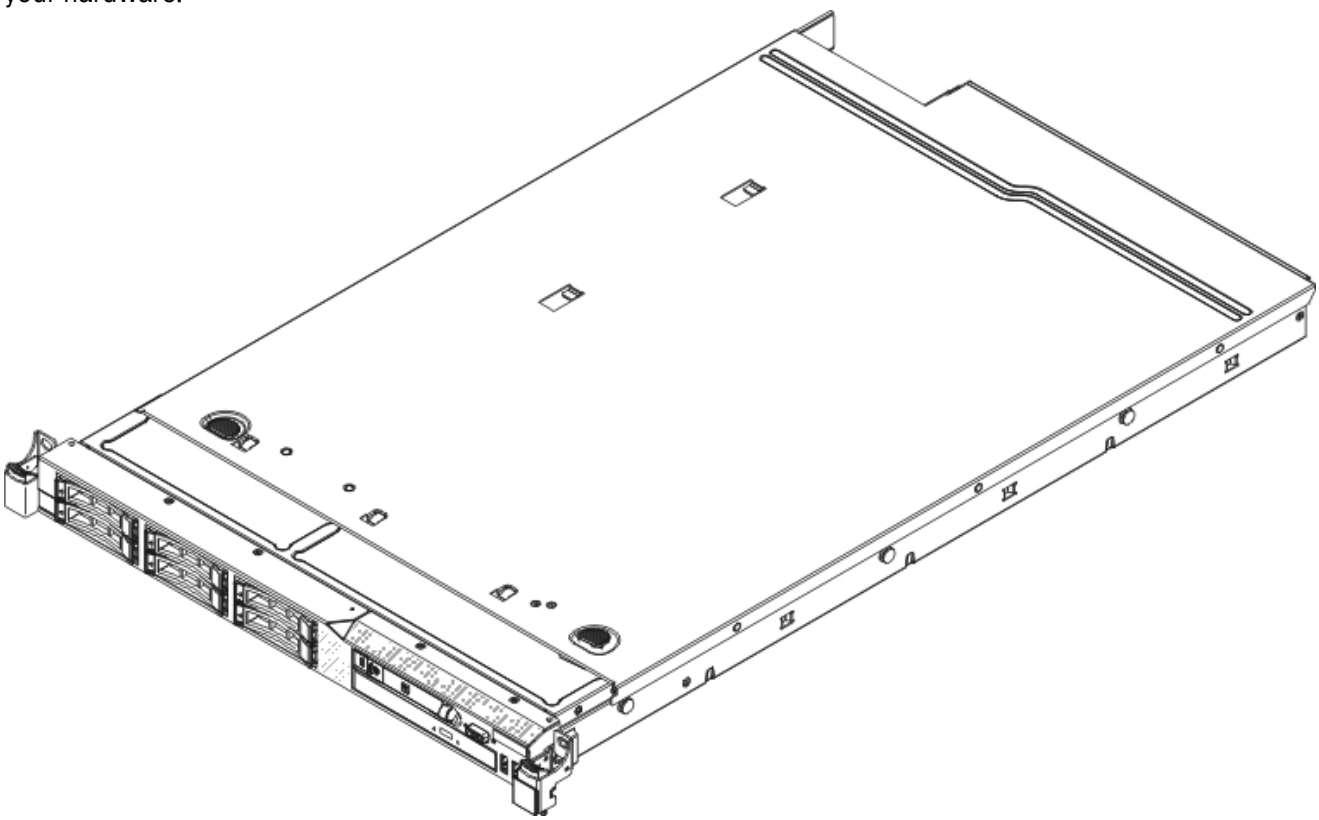
Introduction

The IBM® System Storage Productivity Center (SSPC) 2805-MC4 contains a SAS hot-swap hard disk drive (2.5-inch drive).

Figura 1 shows the System Storage Productivity Center 2805-MC4.

Figura 1. The IBM System Storage Productivity Center 2805-MC4. This illustration might differ slightly from your hardware.



The SSPC comes with a limited warranty, which is available in the box with the server and on the *IBM System Storage Productivity Center Documentation CD*.

For complete rack installation and removal instructions, see the *IBM Rack installation instructions* document.

To learn about installing optional devices, refer to the *System x3550 M2 Type 7946 User's Guide* located on the *IBM System Storage Productivity Center Documentation CD*, which comes with the server.

Tópico pai: Setting up the SSPC server

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Prerequisites

Atenção: Ensure that the customer work sheet (located in Planning work sheet) has been completely filled out by the customer before continuing with this installation procedure.

Have the following documents available before starting the procedure (they are included in the box with the server):

- *Read This First: Installing the IBM System Storage Productivity Center* flyer
- Planning Work Sheet (located in the *Read This First: Installing the IBM System Storage Productivity Center* flyer). The work sheet is also located and should be completely filled out by the customer. Ensure that it has been completed before starting this procedure.
- *IBM Important Notices*
- *Rack installation instructions*
- *IBM System Storage Productivity Center Documentation CD*
- *IBM System Storage Productivity Center Introduction and Planning Guide* (on the Documentation CD)
- *IBM System Storage Productivity Center User's Guide* (on the Documentation CD)

Attached devices must be ready

If you intend to connect the SSPC to other supported devices, such as a DS8000 system, it is optimal to have those devices fully functioning at this time.

Keyboard, mouse, and video display

A keyboard and mouse with Universal Serial Bus (USB) connectors are required for the initial setup of the SSPC. A video display is also required. You can install an optional Keyboard, Video, Mouse (KVM) unit by ordering Feature Code 9100.

Tópico pai: Setting up the SSPC server

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For the customer: preparing for the installation

1. ☐ For future reinstallation or recovery, retain all paperwork, CDs, and other information shipped with the SSPC in a safe location.
2. ☐ Complete the Planning work sheet.
3. ☐ Read the document titled *IBM Important Notices* that is included in the shipping box.

4. ☐ Obtain an Ethernet cable to use during the installation.
5. ☐ Installation requires a compatible keyboard, display, mouse, and interconnect cables. If you need to purchase these items, ask your sales representative to order feature code 9100.
   Dica: Feature code 9100 comes with installation instructions. If you ordered this feature code, follow the instructions but do not remove and discard the rubber pads under the keyboard. Peel off the protective strip on the console to expose the adhesive surface and place the keyboard into the tray. Press the keyboard firmly so that it adheres to the tray. You can discard the switch mounting brackets that come with feature code 9100.
6. ☐ During SSPC installation, accept software licensing agreements when prompted by the IBM service representative.
7. ☐ After completing the hardware installation, the IBM service representative can help you perform the IBM System Storage DS8000 element manager setup. You must configure the IBM System Storage Productivity Center for the SAN Volume Controller, the DS3000, DS4000, DS5000, or the IBM Tivoli Storage Productivity Center for Replication.

Tópico pai: Setting up the SSPC server

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For the IBM Service Representative: installing the hardware

Perform the following steps to install the SSPC in a rack:

1. ☐ Check for flashes and APAR information by accessing the IBM Support Page for SSPC (http://www.ibm.com/systems/support/storage/software/sspc) and clicking Flashes.
2. ☐ As is best practice, ensure that all related network-storage devices are fully functioning (for example, IBM® System Storage DS8000).
3. ☐ Unpack the contents of the SSPC shipping box and check off the items in .
4. ☐ Unpack the box that contains the cable-management arm.
   Dica: Save all packaging material until the cable-management arm is fully assembled. Small hardware pieces might not be visible and might be discarded accidentally with the packaging material. Carefully remove the plastic ties from the cable-management arm and do not destroy them. You might choose to use them to secure cables.
5. ☐ Read the enclosed *IBM Important Notices*.
6. ☐ Locate the *Rack installation instructions* in the plastic bag that contains the IBM System Storage Productivity Center documentation.
7. ☐ On the Planning Work Sheet, write down the 25-digit Windows® Product Key number that is found on the Microsoft® Windows Server 2008 Enterprise label affixed to the top of the SSPC.
8. ☐ Disregard the instructions that are packaged with the slide rails, and mount the SSPC server by performing the steps in the *IBM Rack installation instructions*. Set aside the screws that come with the slide rails; they are not necessary.
9. ☐ Make the following cable connections on the back panel of the SSPC.
   a. ☐ Connect the Ethernet cable from customer's network to Ethernet 1 port, which is located at the left rear of the SSPC.
      Importante: Do not use the other two Ethernet ports at this time or the network connection will fail.
   b. ☐ Connect the keyboard and mouse to USB 1 and USB 2 ports. If using a keyboard and mouse combination, connect to the USB 1 connector.
   c. ☐ Connect the video display cable to video connector port.

d. ☐ Connect the power cord (included) to the customer's rack-mounted power distribution unit (PDU) or power outlet, then to the power supply connector on the SSPC server. (If an optional redundant power supply is already installed, connect that power supply to a PDU, and plug the remaining power cord into a second PDU to increase redundancy.)

10. ☐ Connect the video display power cord to the video display, then to the customer's rack-mounted PDU or power outlet.
11. ☐ Secure all cables. Ensure that the cables have adequate slack to allow for full movement of both the cable-management arm and the server, and to allow for disconnection.
12. ☐ At the rear of the SSPC, remove the hanging tag with the address of the baseboard management controller (BMC) media access control (MAC) and give it to the customer to store with the product documentation. After you deploy the server, remove the BMC MAC address tag from the rear of the sever so that it does not impede airflow.
    Importante: The server's Ethernet ports are set to Dynamic Host Configuration Protocol (DHCP) by default. To find the BMC on an existing network, the server must identify itself by its default host name. The default host name for each server is the last eight characters of the BMC MAC address. In addition to being printed on the hanging tag, the BMC MAC address is also in the setup utility and on a label on the system board.

Tópico pai: Setting up the SSPC server

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For the IBM service representative: configuring the operating system

A step in this section requires the customer's participation.

1. ☐ Slide the cover of the power-control button to the left and press the power-control button to start the server and the operating system. The following messages are displayed whenever the server starts or restarts and no disk is in the CD/DVD drive:

   ```
   Boot Fail. CD/DVD Rom
   Boot Fail. Floppy Drive
   ```

   Ignore these messages. The server continues to start. This process takes between five and ten minutes to complete, and the server restarts before the Set Up Windows window is opened.
2. ☐ In the Set Up Windows window, enter the Country or region, Time and currency, and Keyboard layout information. Click Next.
3. ☐ Enter the 25-digit Windows® product key without dashes (recorded in Windows Server 2008 Enterprise Edition Product Key and computer name).
4. ☐ In the Windows product key window, ensure that Automatically activate Windows when I am online is checked and click Next.
   Importante: The customer must read and accept the license agreement in the next step. The IBM® service representative cannot do this on behalf of the customer.
5. ☐ In the Microsoft® Software License Terms window, select I accept the license terms and click Next.
6. ☐ Enter the computer name that the customer specified in Tabela 2. Click Start.
7. ☐ Windows opens a panel that reads `The user's password must be changed before logging on the first time.` Click OK.

8. ☐ Set the Windows Administrator password field to the one in Tabela 3 of the Planning Work Sheet. Click the arrow button.
9. ☐ Click OK at the confirmation window to complete the Set Up Windows window.

Tópico pai: Setting up the SSPC server

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For the IBM service representative: completing the initial configuration tasks

Dica: For some SSPC servers, the Password Tool window opens in the foreground and the Initial Configuration Tasks window (mentioned in step 1) opens in the background. You perform the steps in the Initial Configuration Tasks window first.

1. ☐ In the Initial Configuration Tasks window, click Set time zone and configure the clock and time zone to match the time setting of the network. Click OK to return to the Initial Configuration Tasks window.
2. ☐ Click Configure Networking.
    a. ☐ Double-click the Local Area Connection Network icon.
    b. ☐ Click Properties.
    c. ☐ If you do not use Internet Protocol Version 6, use the up or down arrow keys (↑ or ↓) to highlight Internet Protocol Version 6 (TCP/ IPv6) and clear the check box.
    d. ☐ Use the up or down arrow keys (↑ or ↓) to highlight Internet Protocol Version 4 (TCP/ IPv4) and click Properties.
    e. ☐ Select Use the following IP address and enter the values for the IP, Subnet Mask, Default Gateway, Preferred DNS, and Alternate DNS address fields, recorded in Tabela 2 of the Planning work sheet.
    f. ☐ Click Advanced and on the Advanced TCP/IP Settings panel, click the DNS tab.
    g. ☐ In the DNS suffix for this connection field, enter the DNS suffix recorded in Tabela 4 of the Planning work sheet.
    h. ☐ Close all windows until you return to the Initial Configuration Tasks window.
    i. ☐ At the bottom left of the screen, click Start and select All Programs > Accessories > Command Prompt.
    j. ☐ To verify that the network settings are correct, type `ipconfig` and press Enter. Depending on which version of Internet Protocol you are using, locate the IPv4 or IPv6 address on the window and write it down.
    k. ☐ To verify whether the SSPC is connected to the network, click Start > Control Panel. The Network and Sharing Center window shows icons that represent the SSPC server, the network, and the Internet:
        - If the SSPC is connected to the network, a green line exists between the SSPC server and the network.
        - If the SSPC is not connected to the network, a red X exists between the SSPC server and the network, and the network is grayed.

Tópico pai: Setting up the SSPC server

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Running the SSPC Password Tool

Run the Password Tool to change the Windows Administrator password and the host authentication password.

Follow these steps:

1. In the Taskbar, click the SSPC Password Tool. If the tool is closed, open it by double-clicking the SSPC Password Tools icon that is located on the desktop. If you open the **SSPC Password Tools** icon, follow the instructions for changing the password in Maintaining user IDs and passwords.
2. In the Administrator password field, enter the Windows Administrator password that was specified in Tabela 3 of the Planning Work Sheet.
3. In the Host authentication password field, enter the Host authentication password specified in Tabela 3. The Host authentication password is used for Tivoli Storage Productivity Center Fabric agents. You must enter the host authentication password even if you are not installing Fabric agents. You can use the same password as the administrator user ID or a different password. Enter this information and click **OK**.
4. The Confirm password change window opens. Click **Yes**.
5. The Changing Passwords for SSPC status window is displayed. Wait for this process to complete. You will see the text **Complete!** when the process has completed. You see error messages in the log. They can be ignored.
6. When prompted, click Exit.

Tópico pai: Setting up the SSPC server

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For the IBM service representative: completing the installation

The SSPC hardware installation is now complete. You can assist the customer with the following software-related tasks:

1. ☐ From the Initial Configuration Tasks window, click Enable Windows automatic updating and feedback.
    a. ☐ Click Manually configure settings.
    b. ☐ In the Windows Error Reporting section, click Change Setting, select I don't want to participate, don't ask me again, and click OK.
    c. ☐ Close all windows until you return to the Initial Configuration Tasks window.
2. ☐ At the bottom of the Initial Configuration Tasks window, click Do not show this window at login, and click Close.
3. ☐ The Server Manager window opens after completing the initial configuration tasks. Close the window. You can review the Server Manager settings after completing the installation.
4. ☐ The Password Tool window or the SSPC online help window opens. Minimize the SSPC online help window.

5. ☐ Change the System Storage Productivity Center password using the SSPC Password Tool. Using the tool, you or the customer can change the DB2 user, WebSphere user, and DB2 service passwords at one time according to their password policies.
    a. ☐ In the Taskbar, click SSPC Password Tool. If the tool is closed, open it by double-clicking SSPC Password Tools icon that is located on the desktop.
    b. ☐ In the Administrator password field, enter the Windows Administrator password that was specified in Tabela 3 of the Planning Work Sheet.
    c. ☐ In the Host authentication password field, enter the Host authentication password that was specified in Tabela 3 of the Planning Work Sheet. Confirm the password, and click OK.
    Notes:
        i. If the DB2 servers already have been started, the following error messages are displayed. Ignore them and continue with this procedure.

        ```
        Changing DB2 User password for Data Server...
        Changing DB2 User password for Device Server...
        OpenServiceW failed, error code = 5
        OpenServiceW failed, error code = 5
        OpenServiceW failed, error code = 5
        OpenServiceW failed, error code = 5
        ```

        ii. The password tool can take at least 5 minutes to run.
    d. ☐ The status for changing the password opens. When the password tool has completed, you will see a message that the tool has finished processing and the Exit button is enabled. Click Exit.
6. ☐ Add a DS8000 element manager For instructions, double-click the IBM Help for SSPC icon on the desktop or see the information about configuring the SSPC for the DS8000 in the *IBM System Storage Productivity Center Introduction and User's Guide*.

Tópico pai: Setting up the SSPC server

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For the IBM service representative: testing the installation

During the test, if you are prompted to register the Microsoft® Windows® Server 2008 Enterprise operating system, minimize the message and continue with the procedure.

Verify that the System Storage Productivity Center can communicate with the network by completing the following steps:

1. ☐ To verify whether the device that you want to connect to the SSPC is connected to the network (for example, a DS8000), perform one of the following steps:
    - Click Start > Network. The Network window opens and lists the devices that are connected to the network.
    - At the bottom left of the screen, click Start and select All Programs > Accessories > Command Prompt. Type *ping XXX.XXX.XXX.XXX* (where *XXX.XXX.XXX.XXX* is the IP address of a device, such as a DS8000), and press Enter. (A list of network devices is in Device information.)
    Dica: A ping to a device might not be successful because some devices do not reply to a ping.

    The SSPC server has a good network connection if the reply is similar to the following example:
    ```
    Reply from XXX.XXX.XXX.XXX: bytes=32 time<1ms TTL=122
    ```

If the reply timed out, resolve the problem using the following methods:

- Disconnect the Ethernet cable on the rear of the SSPC from Ethernet 1. Then, reconnect the Ethernet cable to Ethernet 1.
- Ask the customer to check with the Network Administrator to verify the IP address of the device, verify that the device is active, and ensure that there are no firewall issues.
- If the ping command still does not work and you suspect that it might be a hardware error, call IBM® support at 1-800-IBM-SERV (1-800-426-7378), and select hardware support. Refer to the machine type as 2805 and have the serial number available. If IBM support determines it is a software issue, call back and select software support. You must present the Customer ID and refer to the machine as the Tivoli Storage Productivity Center. To contact the IBM Support Center outside the United States, go to http://www.ibm.com/planetwide.

2. ☐ Close the command prompt window after communication between the SSPC and the customer's network has been successfully verified.
3. ☐ Close the Network and Sharing Center window.
4. ☐ Return to the Initial Configuration Tasks window.
5. ☐ If the SSPC online help window is displayed, minimize it.

Tópico pai: Setting up the SSPC server

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Configuring SSPC for the DS8000

Use this procedure to configure IBM® System Storage Productivity Center (SSPC) so that IBM Tivoli Storage Productivity Center can monitor the IBM System Storage DS8000.

Overview

Requirement: This procedure assumes you have the following settings:

- DS8000 R4.1 or later.
- The CIM agent is embedded in the Hardware Management Console and is enabled.
- The DS8000 administrator has created user names and passwords that CIM clients can use to attach to the CIM agent.
- Each user name that is created must be in the administrator group.

Prepare Internet Explorer and Windows Server 2008

1. Configure Internet Explorer 7 to allow pop-up windows using the following steps:
   a. Open the Internet Explorer by clicking the Internet Explorer icon located on the Quick Launch toolbar.
   b. From the Internet Explorer toolbar, click Tools > Pop-up Blocker > Turn Off Pop-up Blocker.

   Nota: If you receive a message that content has been blocked because it was not signed by a valid security certificate, click the Information Bar at the top of the window and select Show blocked content.
2. Add the IP address of the DS8000 Hardware Management Console (HMC) to the Internet Explorer list of trusted sites using the following steps:

a. Open Internet Explorer by clicking the Internet Explorer icon located on the Quick Launch toolbar.
b. From the Internet Explorer toolbar, click Tools > Internet options.
c. Click the Security tab, click the Trusted sites icon and then click Sites.
d. In the Add this web site to the zone field, type the IP address of the DS8000 Hardware Management Console. Click Add and the IP address is added to the Websites field.
e. Click Close and then click OK to exit the Internet Options window, and then close the Internet Explorer.

Configure IBM Tivoli Storage Productivity Center for DS8000

1. Start Tivoli Storage Productivity Center. You can double-click the Productivity Center icon on the desktop or click Start > All Programs > IBM Tivoli Storage Productivity Center > Productivity Center.
2. Log on to the Tivoli Storage Productivity Center user interface with the default user ID and password.
   Dica: The default password was set using the Password Tool during the System Storage Productivity Center initial configuration.
3. The first time that you log on to the Tivoli Storage Productivity Center user interface, the license agreement window opens. Read the terms of the license agreement. If you agree with the terms of the license agreement, select I accept the terms of the license agreement. Click Next. You will not see this panel on subsequent logins.

   The Welcome to the IBM Tivoli Storage Productivity Center panel opens if it was not disabled prior to this procedure.

4. Add a DS8000 element manager using the following steps:
   a. Click Element Management on the Welcome to the IBM Tivoli Storage Productivity Center window.
      If you closed the Welcome to the IBM Tivoli Storage Productivity Center window without clicking Element Management, you can access it in this way:
      i. Expand IBM Tivoli Storage Productivity Center.
      ii. Click Configuration Utility.
      iii. Click the Element Manager tab and click Refresh.
   b. In the DS8000 Element Manager section, click Select Action > Add Element manager.
   c. In the Add Element Manager window, enter the following information:

      Host

      Enter the Domain Name System (DNS) name or Internet Protocol (IP) address of the host computer where the element manager is located. You can enter an IPv4 or IPv6 name or address depending on what address types are configured on the element manager and on the system where Tivoli Storage Productivity Center is installed.
      Restriction: If the computer on which the element manager is located is IPv6-only, the Tivoli Storage Productivity Center servers must be installed on an IPv6-only or dual stack (IPv4 and IPv6 addresses are configured) computer.
      - Enter an IPv4 address in the following format: ###.###.###.###. For example: 127.0.0.1.
      - Enter an IPv6 address. These addresses are typically written as eight groups of four hexadecimal digits, but might vary from site to site. For example: 2001:db8:0:0:1812:5b9e:3391:3156. You can use IPv6 addresses if the computer where Tivoli Storage Productivity Center is dual-stack enabled (IPv4 and IPv6).

      Port

      Enter the port number on which the element manager listens for requests. The default port number that is shown depends on the value that is selected in the Protocol field. You can modify the port number if required for your environment.

      Username

If the DS8000 requires a user name to log on, enter that user name in this field.

Password
: If the DS8000 requires a password to log on, enter the password here.

  If the DS8000 element manager that you are adding is a new installation and the user password for the enterprise storage server network interface (ESSNI) has not been changed from the initial value of **admin**, you are prompted to change the password. Be prepared to enter a password and record the new password in a safe place.

Password Confirm
: Enter the same password that you entered in the Password field.

Protocol
: Select the protocol (`http` or `https`) for the element manager.

Display Name
: If you specify a display name, it is used to identify this element manager in the element manager table. If you do not specify a display name, the IP address of the element manager is used instead.

d. Click Save to add the DS8000 element manager. Tivoli Storage Productivity Center tests the connection to the element manager. If the connection was successful, the element manager is displayed in the DS8000 element manager table.

   If the connection is unsuccessful, an error message is displayed indicating that the element manager at the specified IP address could not be added. Click Cancel to close the window without adding the DS8000 element manager.

5. Configure the CIM agent using the following steps. You can obtain the Hardware Management Console IP address, user name (default user ID), and password from the device information section of the planning work sheet.
   Atenção: The CIM agent must be enabled by the IBM service representative for releases R2, R3, and R4, but not for R4.1 or later. The CIM agent is enabled by default for R4.1 or later. Before using the SSPC with the DS8000, verify with the DS8000 service representative that the CIM agent is running.
   a. On the SSPC desktop, double-click the Launch DSCIMCLI icon. A command prompt window opens.
   b. At the prompt, enter the Hardware Management Console IP address of the DS8000 that was recorded in the device information section of the planning work sheet. Press Enter.
   c. At the prompt, enter the user name of the DS8000 element manager and press Enter.
      Requirement: If you changed the password that you entered in step 4 you must enter that new password in step 5.d.
   d. At the prompt, enter the **password** of the DS8000 element manager and press Enter.

      After you click Enter, the DSCIMCLI script runs the **lsdev -l** command to verify that the CIM agent is connected to the DS8000 element manager and is properly configured.

      For more information about these commands, see the *IBM System Storage DS Open Application Programming Interface Reference* (for CIM agent 5.4.1 and 5.4.2).

      Any error messages from the DSCIMCLI script are displayed in the command prompt window.

   e. When the command prompt (`C:\Program Files\IBM\DSCIMCLI\Windows>`) is displayed, the Hardware Management Console procedure is complete. Close the command prompt window.
6. Add a CIM agent to Tivoli Storage Productivity Center using the following steps:
   a. Start Tivoli Storage Productivity Center by double-clicking the Productivity Center icon on the desktop.

b. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility. (Or, click Configuration in the Welcome to the IBM Tivoli Storage Productivity Center window, if the window was not disabled before this procedure.)
c. Click the Services tab and expand the CIM Agents section.
d. Click Add and the Add CIMOM page opens.
Specify information about the CIM agent:

Host
: Specify the IP address of the DS8000 CIM agent that was recorded in the device information section of the planning work sheet. You can enter a host name, IPv4 address, or IPv6 address depending on what is supported within your environment.

Port
: Enter the port number on which the CIMOM communicates.

  If you are creating a non-embedded CIM agent, set the port to 5988 (`http`) or 5989 (`https`). This port number can be changed.

  If you are creating an embedded CIM agent, set the port to 6989. This port number cannot be changed.

Username
: Enter the default user ID for the DS8000 CIM agent that was recorded in the device information section of the planning work sheet.

Password
: Enter the password for the DS8000 CIM agent (recorded in the device information section of the planning work sheet).

Password Confirm
: Reenter the password for the DS8000 CIM agent.

Interoperability Namespace
: Do not change the default value. The value is the name space within the CIMOM. This value might be used if you are connecting a non-IBM device to SSPC. This field is not used for the DS8000.

Protocol
: Enter the protocol to be used when accessing the CIMOM. Possible values are `http` or `https`.

Truststore Location
: Do not change the default value. This value is the truststore for the CIMOM. The value applies only to certain non-IBM devices. This field is no longer used for the DS8000.

Truststore Passphrase
: Do not change the default value. The passphrase for the truststore for the CIMOM applies only to certain non-IBM devices. This field is not used for the DS8000.

Display Name
: Enter a user-specified name for the CIMOM.

Description
: Enter a description of the CIMOM in this field. This description can be any combination of alphanumeric characters. This field is optional.

e. Select Test CIMOM connectivity before adding.
f. Click Save. If the connection to the CIM agent was made, a new entry is added to the list CIM Agents in the CIM Agents section and the Connection Status column displays Success. If the connection was not made to the CIM agent, check your settings in the Add CIMOM page, verify that the CIMOM is active, and check your firewall settings.

7. Run a CIMOM discovery job using the following steps:

a. Click **Run CIMOM Discovery Now**.
b. After you submit a CIMOM discovery job, a message is displayed with the text `CIMOM Discovery Job submitted`. Click OK to close the message.

A CIMOM discovery job can take a while to report status. If the job has completed successfully, a green square is shown in front of the date in the navigation tree.

8. Check the status of the CIM Agents using the following steps:
   a. From the navigation tree, expand Administrative Services > Discovery > CIMOM. A list containing the dates of the most recent CIMOM jobs is displayed below the CIMOM node.
   b. In the navigation tree, click the current date. The status of all the CIMOM discovery jobs is listed in the right pane.
      Dica: A CIMOM discovery job can take a long time to run. You can periodically check the status of a job by right-clicking CIMOM in the navigation pane and selecting Refresh Job List from the pop-up menu.
   c. After the job completes, check the discovered CIMOMs. From the navigation window, expand Administrative Services, and click Data Sources > CIMOM Agents. The CIM agents that have been discovered are listed.
9. Run a Tivoli Storage Productivity Center probe job to collect data about the storage subsystems using the following steps:
   Tip: Probe jobs can take a long time depending on how many volumes and LUNs your storage system has.
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. Click the Disk Manager tab.
   c. Expand the Storage Subsystem Probes section and click Create Probe.
   d. Click the What to PROBE tab and, complete the following steps:
      i. In the Available list, expand Storage subsystems and click All Storage Subsystems.
      ii. Click >> to move the resources to the Current Selections list.
      iii. Click the When to Run tab and schedule when you want the probe job to start and what time zone you want to use.
      iv. Click the Alert tab and set the Triggering Conditions and Triggered Actions options that you want for the alert.
      v. For more information about these fields and working with alerts, see the Tivoli Storage Productivity Center online help system by pressing F1 or clicking the Help menu.
      vi. Click the diskette icon that is located on the tool bar, enter a name for the probe job, and click OK save the probe job. After you submit a probe job, a message is displayed with the text `Probe submitted`. Click OK to close the message. Saving a probe job can take a long time.
      vii. To view the probe jobs and their status, expand IBM Tivoli Storage Productivity Center and click Monitoring > Probes.
   e. To view the probe jobs and their status, expand IBM Tivoli Storage Productivity Center > Monitoring > Probes node.
      Nota: For more information about these fields and working with alerts, see the Tivoli Storage Productivity Center online help system by pressing F1 or clicking the Help menu.
   f. Wait for the probe job to complete.
10. Verify that the DS8000 can be accessed:
    a. In navigation tree, expand IBM Tivoli Storage Productivity Center and click Topology.
    b. Click Storage. The DS8000 storage subsystems that you just added is displayed in the topology viewer.
    c. Double-click the storage subsystem to view all the subcomponents. Using the topology viewer, you can explore each subsystem in detail. For information about how to use the topology viewer, access the Tivoli Storage Productivity Center online help system by clicking the Help menu. To

learn how to view or generate reports about the storage subsystems, go to the IBM Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp and search for *Choosing a report type*.

11. To access the DS8000 GUI, expand Element Manager and click DS8000. In the right pane, select the DS8000 that you want. From the Select Action list, click Launch Default Element Manager. This opens the DS8000 Storage Manager GUI so that you can administer the DS8000.

Completing the configuration

1. Activate the Windows® license.
   If you did not check Automatically activate Windows when I am online option during the IBM System Storage Productivity Center installation or you do not have SSPC Internet connectivity, you must activate the license for Windows using these steps. If the Automatically activate Windows when I am online option was enabled, you can skip this step.
   Important: From the first time you start the SSPC server, you have 60 days to activate the Windows license and complete the Windows setup. If you exceed the 60-day time limit, you cannot use Windows until you activate the license.
   a. Click the Windows Start button, right-click Computer and select Properties.
   b. At the System panel, click Activate Windows now and follow the instructions to activate Windows using the phone.
2. Optional: Subscribe to the following technical support Web sites to receive information about important technical notes, flashes, and APAR information.
   - To receive support notifications for the Tivoli Storage Productivity Center:
     a. Go to http://www.ibm.com/software/sysmgmt/products/support/IBMTotalStorageProductivityCenterStandardEdition.html.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password.
     d. After your user ID is authenticated, the Help tab on the My Notifications page provides the following information:
        - How to create and organize subscriptions
        - How you are notified about subscriptions
        - How to specify the frequency of email notifications
        - How to subscribe for specific topics per product
        - How to unsubscribe
   - To receive support notifications for the System Storage Productivity Center:
     a. Go to http://www.ibm.com/systems/support/storage/software/sspc.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password. Click **Learn more** to view information about how to use the My notifications tool.

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Configuring SSPC for SAN Volume Controller

Use this procedure to configure IBM® System Storage Productivity Center (SSPC) so that IBM Tivoli Storage Productivity Center can monitor storage subsystems under SAN Volume Controller management.

Overview

This scenario assumes that you are using SAN Volume Controller version 5.1 with the embedded CIM agent.

Prepare Internet Explorer and Windows Server 2008

1. Configure Internet Explorer 7 to allow pop-up windows using the following steps:
    a. Open the Internet Explorer by clicking the Internet Explorer icon located on the Quick Launch toolbar.
    b. From the Internet Explorer toolbar, click Tools > Pop-up Blocker > Turn Off Pop-up Blocker.

   Nota: If you receive a message that content has been blocked because it was not signed by a valid security certificate, click the Information Bar at the top of the window and select Show blocked content.
2. Add the IP address of the SAN Volume Controller to the Internet Explorer list of trusted sites using the following steps:
    a. Open the Internet Explorer by clicking the Internet Explorer icon located on the Quick Launch toolbar.
    b. From the Internet Explorer toolbar, click Tools > Internet options.
    c. Click the Security tab, click the Trusted sites icon and then click Sites.
    d. In the Add this web site to the zone field, type the IP address of the SAN Volume Controller. Click Add and the IP address is added to the Websites field.
    e. Click Close and then click OK to exit the Internet Options window, and then close the Internet Explorer.

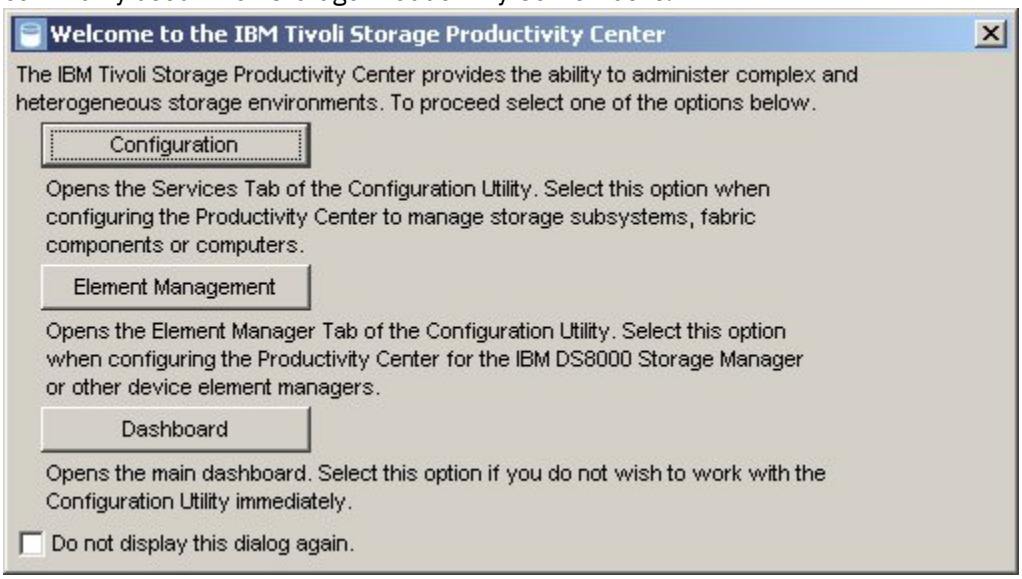
Configure SAN Volume Controller

The CIM agent for SAN Volume Controller is part of the SAN Volume Controller cluster and provides Tivoli Storage Productivity Center with access to SAN Volume Controller clusters. You must configure Tivoli Storage Productivity Center to provide the CIM agents in your environment with the correct user names and passwords.

1. Add the SVC cluster to your SAN Volume Controller console using the following steps.
    a. On the SSPC desktop, double-click the SAN Volume Controller icon or enter this address in your Web browser: `http://IP_address:9080/ica/login`. Substitute *IP_address* with the IP address of your SAN Volume Controller.
    b. From the My Work navigation pane, click Clusters.
    c. On the Viewing Clusters page, click Add a Cluster. Click OK.
    d. In the Cluster IP Address field, enter the IP address of the SVC cluster. Click OK.
    Importante: Do *not* select the Create (Initialize) Cluster function unless you must initialize your clusters because enabling this option erases your cluster configuration.
2. Start the SVC cluster management console using the following steps:
    a. On the Viewing Clusters page, select the SVC cluster you added.
    b. Click Add a Cluster and select Launch the SAN Volume Controller Console.
    c. Click Go. The SVC cluster management console Welcome window opens. This windows provides you with a navigation tree that you can use to access configurations settings.
3. Create a SAN Volume Controller user.
    a. Double-click the SAN Volume Controller console icon on the System Storage Productivity Center desktop.
    b. From the My Work navigation pane, click Manage Authentication > Users.
    c. In the right pane, select **Create a User**. Click **Go**.
    d. From the Create a User window, enter the information to create a new user and click **OK**.

Configure the Tivoli Storage Productivity Center for SAN Volume Controller

1. Start Tivoli Storage Productivity Center by double-clicking the Productivity Center icon on the desktop.
2. Log on to the Tivoli Storage Productivity Center user interface with the default user ID and password.
   Dica: The default password was set using the Password Tool during the System Storage Productivity Center initial configuration.
3. The first time that you log on to the Tivoli Storage Productivity Center user interface, the license agreement window opens. Read the terms of the license agreement. If you agree with the terms of the license agreement, select I accept the terms of the license agreement. Click Next. You will not see this panel on subsequent logins.
   The Welcome to the IBM Tivoli Storage Productivity Center panel opens if it was not disabled prior to this procedure.
   Figura 1. Welcome to the IBM Tivoli Storage Productivity Center panel. This panel provides links to commonly used Tivoli Storage Productivity Center tasks.



4. Add a CIM agent to Tivoli Storage Productivity Center using the following steps:
   a. Click **Configuration** on the Welcome page. If the Welcome page is not displayed, from the Tivoli Storage Productivity Center navigation tree expand IBM Tivoli Storage Productivity Center. Click Configuration Utility.
   b. Click the Services tab and expand the CIM Agents section.
   c. Click Add and the Add CIMOM page opens.
      Specify information about the CIM agent:

      Host
      : Specify the IP address of the SAN Volume Controller. You can enter a host name, IPv4, or IPv6 address depending on what is supported within your environment:

      Port
      : Enter the port number on which the CIMOM communicates.

        The port number for the embedded SAN Volume Controller CIM agent is 5989 (https).

      Username
      : Enter the user ID for the SAN Volume Controller CIM agent. The default user ID is superuser.

      Password
      : Enter the password for the SAN Volume Controller CIM agent.

      Password Confirm
      : Reenter the password for the SAN Volume Controller CIM agent.

Interoperability Namespace
: Enter a value for the name space within the CIM agent. The value for the embedded SAN Volume Controller CIM agent 5.1 is /root/ibm.

Protocol
: Enter the protocol to be used when accessing the CIM agent. Use `https` for the embedded SAN Volume Controller CIM agent 5.1.

Truststore Location
: Do not change the default value.

Truststore Passphrase
: Do not change the default value. The passphrase for the truststore for the CIMOM applies only to certain non-IBM devices.

Display Name
: Enter a user-specified name for the CIM Agent.

Description
: Enter a description of the CIM agent in this field. This description can be any combination of alphanumeric characters. This field is optional.

d. Select Test CIMOM connectivity before adding.
e. Click Save. If the connection to the CIM agent was successful, a new entry is added to the list CIM Agents in the CIM Agents section. The Connection Status column displays Success. If the connection was not made to the CIM agent, try double-checking your settings in the Add CIMOM page, verifying that the CIMOM is active, and that you are not restricted by your firewall settings.

5. Run a CIMOM discovery job using the following steps:
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. From the Services tab, expand the CIM Agents section and click Run CIMOM Discovery Now.
   c. After you submit a CIMOM discovery job, a message is displayed with the text `CIMOM Discovery Job submitted`. Click OK to close the message.

   A CIMOM discovery job can take a while to report status. If the job has completed successfully, a green square is shown in front of the date in the navigation tree.

6. Run a Tivoli Storage Productivity Center probe job to collect data about the storage subsystems using the following steps:
   Tip: Probe jobs can take a long time depending on how many VDisks and MDisks your storage system has.
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. Click the Disk Manager tab.
   c. Expand the Storage Subsystem Probes section and click Create Probe.
   d. Click the What to Probe tab and, complete the following steps:
      i. In the Available list, highlight Storage subsystems and select All Storage Subsystems.
      ii. Click >> to move the resources to the Current Selections list.
      iii. Click the When to Run tab and schedule when you want the probe job to start and what time zone you want to use.
      iv. Click the Alert tab and set the Triggering Conditions and Triggered Actions options that you want for the alert.
      v. For more information about these fields and working with alerts, see the Tivoli Storage Productivity Center online help system by pressing **F1** or clicking the Help menu.
      vi. Click the diskette icon that is located on the tool bar, enter a name for the probe job, and click OK save the probe job.
      Tip: Running a probe job can take a long time.
      vii. To view the probe jobs and their status, expand IBM Tivoli Storage Productivity Center and click Monitoring > Probes.

Completing the configuration

1. Activate the Windows® license.
   If you did not check Automatically activate Windows when I am online option during the IBM System Storage Productivity Center installation or you do not have SSPC Internet connectivity, you must activate the license for Windows using these steps. If the Automatically activate Windows when I am online option was enabled, you can skip this step.
   Important: From the first time you start the SSPC server, you have 60 days to activate the Windows license and complete the Windows setup. If you exceed the 60-day time limit, you cannot use Windows until you activate the license.
   a. Click the Windows Start button, right-click Computer and select Properties.
   b. At the System panel, click Activate Windows now and follow the instructions to activate Windows using the phone.
2. Optional: Subscribe to the following technical support Web sites to receive information about important technical notes, flashes, and APAR information.
   - To receive support notifications for the Tivoli Storage Productivity Center:
     a. Go to http://www.ibm.com/software/sysmgmt/products/support/IBMTotalStorageProductivityCenterStandardEdition.html.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password.
     d. After your user ID is authenticated, the Help tab on the My Notifications page provides the following information:
        - How to create and organize subscriptions
        - How you are notified about subscriptions
        - How to specify the frequency of email notifications
        - How to subscribe for specific topics per product
        - How to unsubscribe
   - To receive support notifications for the System Storage Productivity Center:
     a. Go to http://www.ibm.com/systems/support/storage/software/sspc.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password. Click **Learn more** to view information about how to use the My notifications tool.

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Configuring SSPC for DS3000, DS4000, and DS5000

Use this procedure to configure IBM® System Storage Productivity Center (SSPC) so that IBM Tivoli Storage Productivity Center can manage the DS3000, DS4000, and DS5000.

Overview

If you are installing the DS Storage Manager on the System Storage Productivity Center, you do not have to download Java™ 1.5. The SSPC has preinstalled the package that enables DS Storage Manager launch in context capabilities. If you are installing the DS Storage Manager on a remote host (a system that does not have SSPC installed), you must have the IBM Tivoli Storage Productivity Center GUI and Java 1.5 installed on the remote host. The DS Storage Manager is installed from the IBM Tivoli Storage Productivity Center GUI.

Follow these major steps:

1. Prepare Internet Explorer and Windows® Server 2008. See Prepare Internet Explorer and Windows Server 2008.
2. Configure Tivoli Storage Productivity Center using one of the following procedures:
   - Configuring Tivoli Storage Productivity Center on the SSPC. See Configuring IBM Tivoli Storage Productivity Center on the SSPC.
   - Configuring Tivoli Storage Productivity Center on a system without SSPC installed. See Configuring Tivoli Storage Productivity Center on a system without SSPC installed.
3. Complete the configuration. See Completing the configuration.

Prepare Internet Explorer and Windows Server 2008

1. Configure Internet Explorer 7 to allow pop-up windows using the following steps:
   a. Open Internet Explorer by clicking the Internet Explorer icon located on the Quick Launch toolbar.
   b. From the Internet Explorer toolbar, click Tools > Pop-up Blocker > Turn Off Pop-up Blocker.

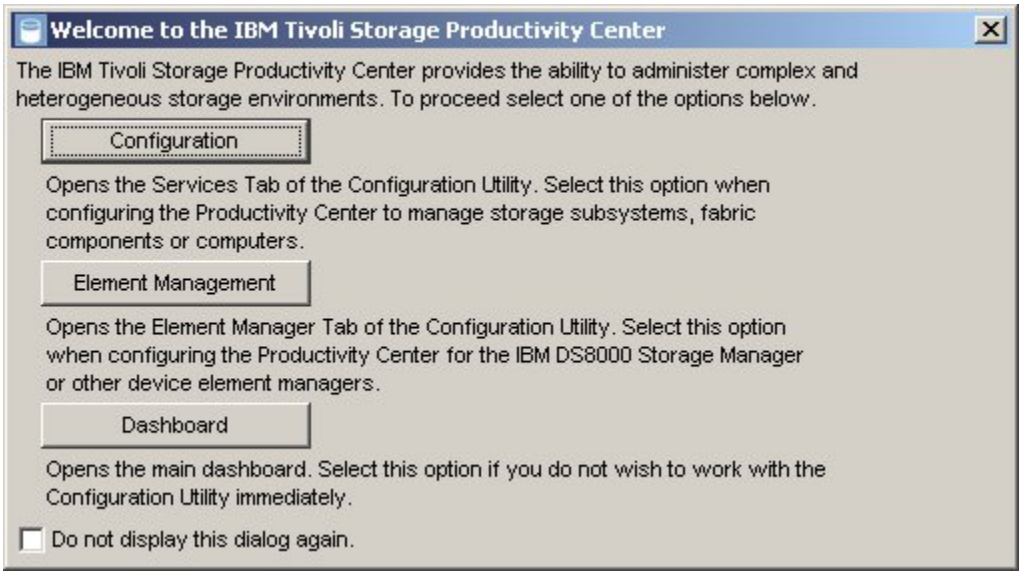
   Nota: If you receive a message that content has been blocked because it was not signed by a valid security certificate, click the Information Bar at the top of the window and select Show blocked content.
2. Add the IP address of the Storage subsystem to the Internet Explorer list of trusted sites using the following steps:
   a. From the Internet Explorer toolbar, click Tools > Internet options.
   b. Click the Security tab, click the Trusted sites icon and then click Sites.
   c. In the Add this web site to the zone field, type the IP address of the storage subsystem. Click Add and the IP address is added to the Websites field.
   d. On the Security tab, click **Custom Level**. In the Security Settings panel, make sure that Downloads > File download has **Enable** checked. This step is required if you are downloading the DS Storage Manager to a remote host.
   e. Click Close and then click OK to exit the Internet Options window.

Configuring IBM Tivoli Storage Productivity Center on the SSPC

1. Log on to the IBM Tivoli Storage Productivity Center using the following steps:
   a. Start Tivoli Storage Productivity Center by double-clicking the Productivity Center icon that is on the SSPC desktop or by clicking Start > All Programs > IBM Tivoli Storage Productivity Center > Productivity Center.
   b. Log on to the Tivoli Storage Productivity Center user interface with the user ID and password.
   Dica: The default password was set using the Password Tool during the System Storage Productivity Center initial configuration.

   If `localhost` is displayed in the Server field of the login window for Tivoli Storage Productivity Center, type the host name or the IP address of the SSPC server in this field.

   c. The first time that you log on to the Tivoli Storage Productivity Center user interface, the license agreement window opens. Read the terms of the license agreement. If you agree with the terms of the license agreement, select I accept the terms of the license agreement. Click Next. You will not see this panel on subsequent logins.
   The Welcome to the IBM Tivoli Storage Productivity Center panel opens if it was not disabled prior to this procedure.
   Figura 1. Welcome to the IBM Tivoli Storage Productivity Center panel. This panel provides links to commonly used Tivoli Storage Productivity Center tasks.



2. Add a CIM agent to Tivoli Storage Productivity Center using the following steps:
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. Click the Services tab and expand the CIM Agents section.
   c. Click Add and the Add CIMOM page opens.
   Specify information about the CIM agent:

   Host
   : Enter the hostname or IP address of the machine with the CIM agent. You can enter a host name, IPv4 address, or IPv6 address depending on what is supported within your environment:

   Port
   : Enter the port number on which the CIMOM communicates.

     The default port numbers for the CIMOM are 5988 (`http`) or 5989 (`https`). This port number can be changed.

   Username
   : Enter the default user ID for the CIM agent.

   Password
   : Enter the password for the CIM agent.

   Password Confirm
   : Reenter the password for the CIM agent.

   Interoperability Namespace
   : The value is the name space within the CIMOM.
     Nota: For information about namespaces, go to the IBM Tivoli Storage Productivity Center Information Center and search for **interop namespaces**.

   Protocol
   : Enter the protocol to be used when accessing the CIMOM. Possible values are `http` or `https`.

   Truststore Location
   : This field is not used by the CIM agent provider.

   Truststore Passphrase
   : This field is not used by the CIM agent provider.

   Display Name
   : Enter a user-specified name for the CIMOM.

   Description

Enter a description of the CIMOM in this field. This description can be any combination of alphanumeric characters. This field is optional.

d. Select Test CIMOM connectivity before adding.
e. Click Save. If the connection to the CIM agent was successfully made, a new entry is added to the list CIM Agents in the CIM Agents section. The Connection Status column displays Success. If the connection was not made to the CIM agent, try double-checking your settings in the Add CIMOM page, verifying that the CIMOM is active, and that you are not restricted by your firewall settings.

3. Run a CIMOM discovery job using the following steps.
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. From the Services tab, expand the CIM Agents section and click **Run CIMOM Discovery Now**.
   c. After you submit a CIMOM discovery job, a message is displayed with the text `CIMOM Discovery Job submitted`. Click OK to close the message.
   d. Check the status of the CIMOM discovery job. From the Tivoli Storage Productivity Center navigation tree, expand Administrative Services and click Discovery. The new CIMOM job is listed along with its timestamp in the navigation tree.

   A CIMOM discovery job can take a while to report status. If the job has completed successfully, a green square is shown in front of the date in the navigation tree.

4. Download the DS Storage Manager GUI:
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center > Topology > Storage. In the right pane, expand the subsystem icon. Right-click the DS3000, DS4000, or DS5000 icon and click **DS4000 Storage Manager**.
   b. A panel is displayed titled "There is a problem with this website's security certificate." Click **Continue to this website**.
   c. The License Agreement for Machine Code for DS Storage Manager opens. Read the terms of the license agreement. If you agree with the license agreement, select **I accept the terms of the License Agreement**. Click **OK**. If you do not accept the license agreement, the application will not be installed.
   d. The DS Storage Manager Initial Setup Tasks panel is displayed. You can now configure your storage subsystem.
5. Run a Tivoli Storage Productivity Center probe job to collect data about the storage subsystems using the following steps:
   Tip: Probe jobs can take a long time depending on how many volumes and LUNs your storage system has.
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center, and click Configuration Utility.
   b. Click the Disk Manager tab.
   c. Expand the Storage Subsystem Probes section and click Create Probe.
   d. Click the What to PROBE tab and, complete the following steps:
      i. In the Available list, double-click Storage subsystems and select the resources you want to probe.
      ii. Click >> to move the resources to the Current Selections list.
      iii. Click the When to Run and select Run Now.
      iv. Click the Alert tab and set the Triggering Conditions and Triggered Actions options that you want for the alert.
      v. For more information about these fields and working with alerts, see the Tivoli Storage Productivity Center online help system by pressing F1 or clicking the Help menu.
      vi. Click the diskette icon that is located on the tool bar, enter a name for the probe job, and click OK save the probe job.
      Tip: Running a probe job can take a long time.

e. To view the probe jobs and their status, expand IBM Tivoli Storage Productivity Center and click Monitoring > Probes.
f. The new probe is listed in the navigation tree.
g. Wait for the probe job to complete.

Configuring Tivoli Storage Productivity Center on a system without SSPC installed

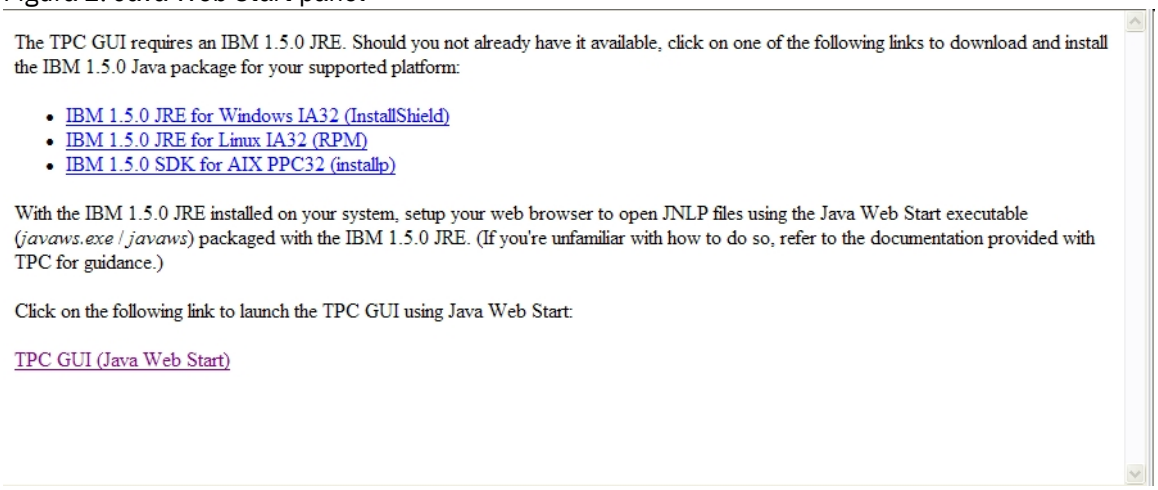
When you are configuring Tivoli Storage Productivity Center on a system without SSPC installed, you must have the Tivoli Storage Productivity Center GUI and Java 1.5 installed on the remote system. Follow these steps to download the Tivoli Storage Productivity Center GUI and DS Storage Manager on a remote system.

1. Launch the Tivoli Storage Productivity Center GUI.
   a. Access Java Web Start to launch the Tivoli Storage Productivity Center GUI. From the remote system, open a Web browser window and enter the Web address of the target server:

      `http://SSPC_server:9550/ITSRM/app/en_US/index.html`

      Where *SSPC_server* is the IP address of the SSPC server.
      Nota: If you receive multiple **Warning - Hostname Mismatch** windows when using Java Web Start, click **Run** in each window until they no longer display.
   b. The Java Web Start panel is displayed. If you do not have Java 1.5 installed on the remote host, install the JRE.
      - IBM 1.5.0 JRE for Windows IA32
      - IBM 1.5.0 JRE for Linux® IA32
      - IBM 1.5.0 SDK for AIX PPC32

      Figura 2. Java Web Start panel

   c. Download the JRE.
      i. Click the appropriate JRE as shown in Figura 2.
      ii. The Tivoli Storage Productivity Center License Agreement panel is displayed. Read the terms of the license agreement. If you agree with the terms, click **Agree**. If you do not agree with the terms and click **Disagree**, the program will not be launched.
      Nota: Leave this License Agreement panel open because you will launch the IBM Tivoli Storage Productivity Center GUI from this panel.
      iii. A panel is displayed asking if you want to run the file. Click **Run**.
      iv. A panel is displayed asking if you want to install the Java Runtime Environment. Click **Yes**.
      v. The Choose Setup Language panel is displayed. Enter English. Click **OK**.
      vi. The Welcome panel is displayed. Click **Next**.
      vii. The Java License Agreement panel is displayed. Read the terms of the license agreement. If you agree with the terms, click **Agree**. If you do not agree with the terms and click

Disagree, the program will not be launched.

viii. The Choose Destination Location panel is displayed. Click **Next**.

ix. The Setup Status panel is displayed.

x. The Browser Registration panel is displayed. Select the browser you want to associate with the Java plug-in. Click **Next**.

xi. The InstallShield Wizard Complete panel is displayed. Click **Finish**.

d. Return to the IBM Tivoli Storage Productivity Center License Agreement panel after you have downloaded the JRE. Click **TPC GUI (Java Web Start)** at the bottom of the page. This will launch the IBM Tivoli Storage Productivity Center GUI.

2. Log on to the IBM Tivoli Storage Productivity Center user interface using the following steps:
   a. Log on to the Tivoli Storage Productivity Center user interface with the user ID and password.
   Dica: The default password was set using the Password Tool during the System Storage Productivity Center initial configuration.
   b. The first time that you log on to the Tivoli Storage Productivity Center user interface, the license agreement window opens. Read the terms of the license agreement. If you agree with the terms of the license agreement, select I accept the terms of the license agreement. Click Next. You will not see this panel on subsequent logins.

   The Welcome to the IBM Tivoli Storage Productivity Center panel opens if it was not disabled prior to this procedure.

3. Add a CIM agent to Tivoli Storage Productivity Center using the following steps:
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. Click the Services tab and expand the CIM Agents section.
   c. Click Add and the Add CIMOM page opens.
   Specify information about the CIM agent:

   Host
   : Enter the hostname or IP address of the machine with the CIM agent. You can enter a host name, IPv4 address, or IPv6 address depending on what is supported within your environment:

   Port
   : Enter the port number on which the CIMOM communicates.

     The default port numbers for the CIMOM are 5988 (`http`) or 5989 (`https`). This port number can be changed.

   Username
   : Enter the default user ID for the CIM agent.

   Password
   : Enter the password for the CIM agent.

   Password Confirm
   : Reenter the password for the CIM agent.

   Interoperability Namespace
   : The value is the name space within the CIMOM.
     Nota: For information about namespaces, go to the IBM Tivoli Storage Productivity Center Information Center and search for **interop namespaces**.

   Protocol
   : Enter the protocol to be used when accessing the CIMOM. Possible values are `http` or `https`.

   Truststore Location
   : This field is not used by the CIM agent provider.

   Truststore Passphrase

This field is not used by the CIM agent provider.

Display Name
: Enter a user-specified name for the CIMOM.

Description
: Enter a description of the CIMOM in this field. This description can be any combination of alphanumeric characters. This field is optional.

d. Select Test CIMOM connectivity before adding.
e. Click Save. If the connection to the CIM agent was successfully made, a new entry is added to the list CIM Agents in the CIM Agents section. The Connection Status column displays Success. If the connection was not made to the CIM agent, try double-checking your settings in the Add CIMOM page, verifying that the CIMOM is active, and that you are not restricted by your firewall settings.

4. Run a CIMOM discovery job using the following steps.
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. From the Services tab, expand the CIM Agents section and click **Run CIMOM Discovery Now**.
   c. After you submit a CIMOM discovery job, a message is displayed with the text `CIMOM Discovery Job submitted`. Click OK to close the message.
   d. Check the status of the CIMOM discovery job. From the Tivoli Storage Productivity Center navigation tree, expand Administrative Services and click Discovery. The new CIMOM job is listed along with its timestamp in the navigation tree.

   A CIMOM discovery job can take a while to report status. If the job has completed successfully, a green square is shown in front of the date in the navigation tree.

5. Download the DS Storage Manager GUI:
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center > Topology > Storage. In the right pane, expand the subsystem icon. Right-click the DS3000, DS4000, or DS5000 icon and click **DS4000 Storage Manager**.
   b. A panel is displayed titled "There is a problem with this website's security certificate." Click **Continue to this website**.
   c. The License Agreement for Machine Code for DS Storage Manager opens. Read the terms of the license agreement. If you agree with the license agreement, select **I accept the terms of the License Agreement**. Click **OK**. If you do not accept the license agreement, the application will not be installed.
   d. The DS Storage Manager Initial Setup Tasks panel is displayed. You can now configure your storage subsystem.
6. Run a Tivoli Storage Productivity Center probe job to collect data about the storage subsystems using the following steps:
   Tip: Probe jobs can take a long time depending on how many volumes and LUNs your storage system has.
   a. From the Tivoli Storage Productivity Center navigation tree, expand IBM Tivoli Storage Productivity Center and click Configuration Utility.
   b. Click the Disk Manager tab.
   c. Expand the Storage Subsystem Probes section and click Create Probe.
   d. Click the What to PROBE tab and, complete the following steps:
      i. In the Available list, double-click Storage subsystems and select the resources you want to probe.
      ii. Click >> to move the resources to the Current Selections list.
      iii. Click the When to Run and select Run Now.
      iv. Click the Alert tab and set the Triggering Conditions and Triggered Actions options that you want for the alert.

v. For more information about these fields and working with alerts, see the Tivoli Storage Productivity Center online help system by pressing F1 or clicking the Help menu.
vi. Click the diskette icon that is located on the tool bar, enter a name for the probe job, and click OK save the probe job.
Tip: Running a probe job can take a long time.

e. To view the probe jobs and their status, expand IBM Tivoli Storage Productivity Center and click Monitoring > Probes.
f. The new probe is listed in the navigation tree.
g. Wait for the probe job to complete.

Completing the configuration

1. Activate the Windows license using the following steps:
   If you did not check Automatically activate Windows when I am online option during the IBM System Storage Productivity Center installation or you do not have SSPC Internet connectivity, you must activate the license for Windows using these steps. If the Automatically activate Windows when I am online option was enabled, you can skip this step.
   Important: From the first time you start the SSPC server, you have 60 days to activate the Windows license and complete the Windows setup. If you exceed the 60-day time limit, you cannot use Windows until you activate the license.
   a. Click the Windows Start button, right-click Computer and select Properties.
   b. At the System panel, click Activate Windows now and follow the instructions to activate Windows using the phone.
2. Optional: Subscribe to the following technical support Web sites to receive information about important technical notes, flashes, and APAR information.
   - To receive support notifications for the Tivoli Storage Productivity Center:
     a. Go to http://www.ibm.com/software/sysmgmt/products/support/IBMTotalStorageProductivityCenterStandardEdition.html.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password.
     d. After your user ID is authenticated, the Help tab on the My Notifications page provides the following information:
        - How to create and organize subscriptions
        - How you are notified about subscriptions
        - How to specify the frequency of email notifications
        - How to subscribe for specific topics per product
        - How to unsubscribe
   - To receive support notifications for the System Storage Productivity Center:
     a. Go to http://www.ibm.com/systems/support/storage/software/sspc.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password. Click **Learn more** to view information about how to use the My notifications tool.

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Tivoli Storage Productivity Center Basic Edition

IBM® System Storage Productivity Center uses IBM Tivoli Storage Productivity Center Basic Edition to perform device discovery, monitoring and reporting functions.

Tivoli Storage Productivity Center Basic Edition centralizes management of networked storage devices that implement the SNIA Storage Management Initiative Specification (SMI-S). The basic edition includes support for the IBM System Storage DS® family and IBM System Storage SAN Volume Controller. IBM Tivoli Storage Productivity Center Basic Edition can help reduce storage management complexity and costs, and help improve data availability using SMI-S.

The procedures in this section describe how to use the tools in IBM Tivoli Storage Productivity Center Basic Edition, such as the topology viewer and reporting.

- **Using the topology viewer to view storage systems**
  You can use the topology viewer to monitor and troubleshoot your storage environment and perform critical storage-management tasks.
- **Using the topology viewer to see storage systems managed by the SAN Volume Controller**
  In the topology viewer, you can view a graphical representation of the storage systems managed by the SAN Volume Controller.
- **Accessing reports about storage resources**
  IBM System Storage Productivity Center uses the functionality of IBM Tivoli Storage Productivity Center to provide reports about storage resources. These reports are organized into different types and categories to provide both summary and detailed information about the storage resources in your environment.

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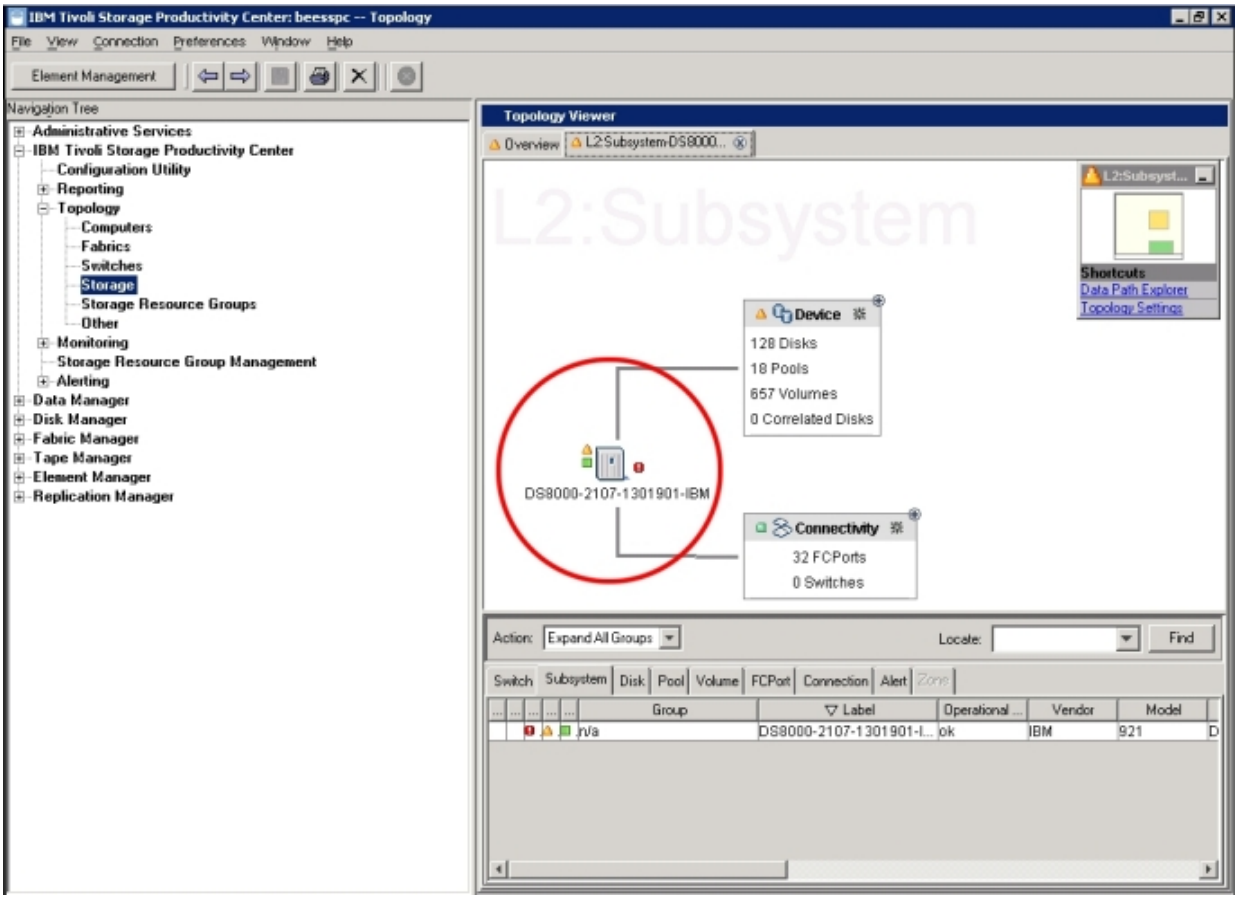
Using the topology viewer to view storage systems

You can use the topology viewer to monitor and troubleshoot your storage environment and perform critical storage-management tasks.

Start the Tivoli Storage Productivity Center user interface and log in. Complete the following steps:
Nota: These steps describe the process of viewing a DS8000, however, the procedure is the same for a DS3000, DS4000, or DS5000.

1. Expand IBM® Tivoli Storage Productivity Center in the navigation tree.
2. Click Topology > Storage. The topology viewer displays an icon for each of the storage subsystems that have been defined to IBM System Storage Productivity Center. For example, if you added a CIM agent for a DS8000, you would see an overview of the topology of the DS8000 that looks like Figura 1.
   Figura 1. Topology overview

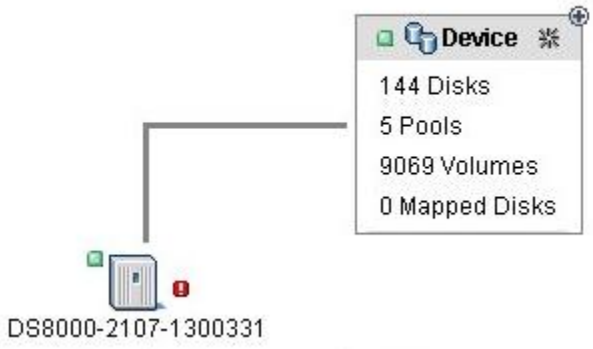


3. In the topology viewer, double-click the DS8000 icon to see the storage system environment for the DS8000. The icon, which looks like Figura 2, is circled in Figura 1.

Figura 2. Storage subsystem icon

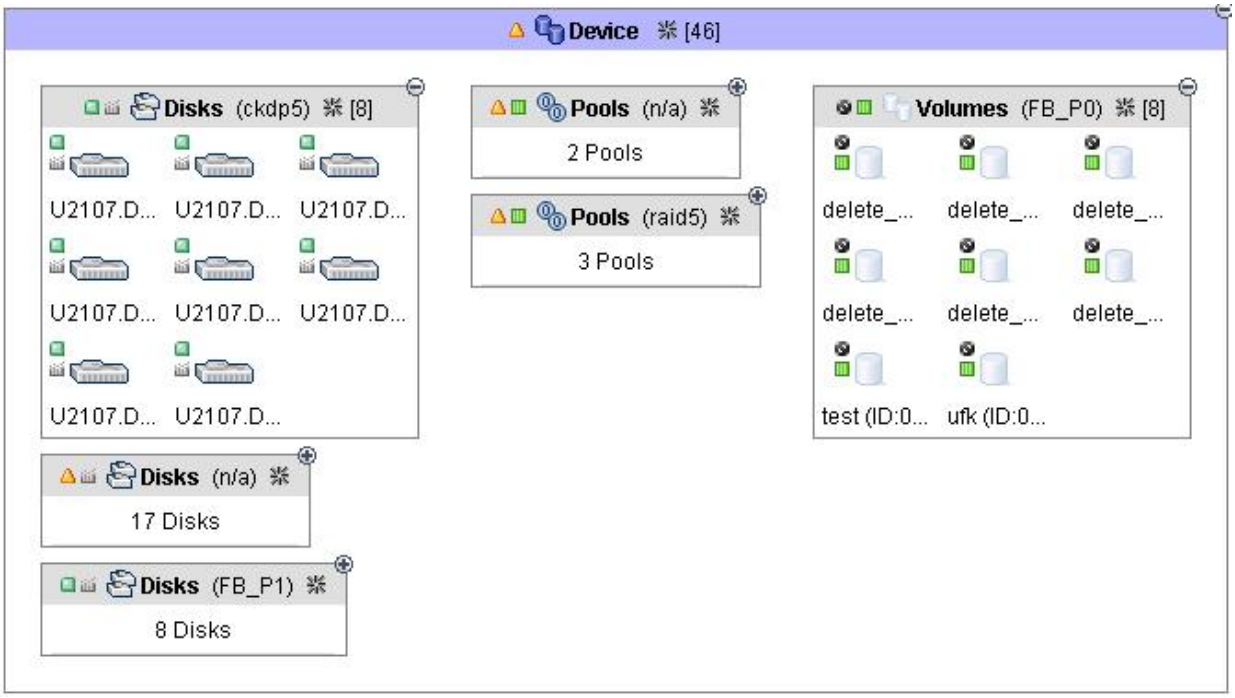
4. In the topology viewer, click the plus sign (+) on Device to see the disks, pools, and volumes for the device. Before the device panel is expanded, it looks like Figura 3.

Figura 3. Device panel



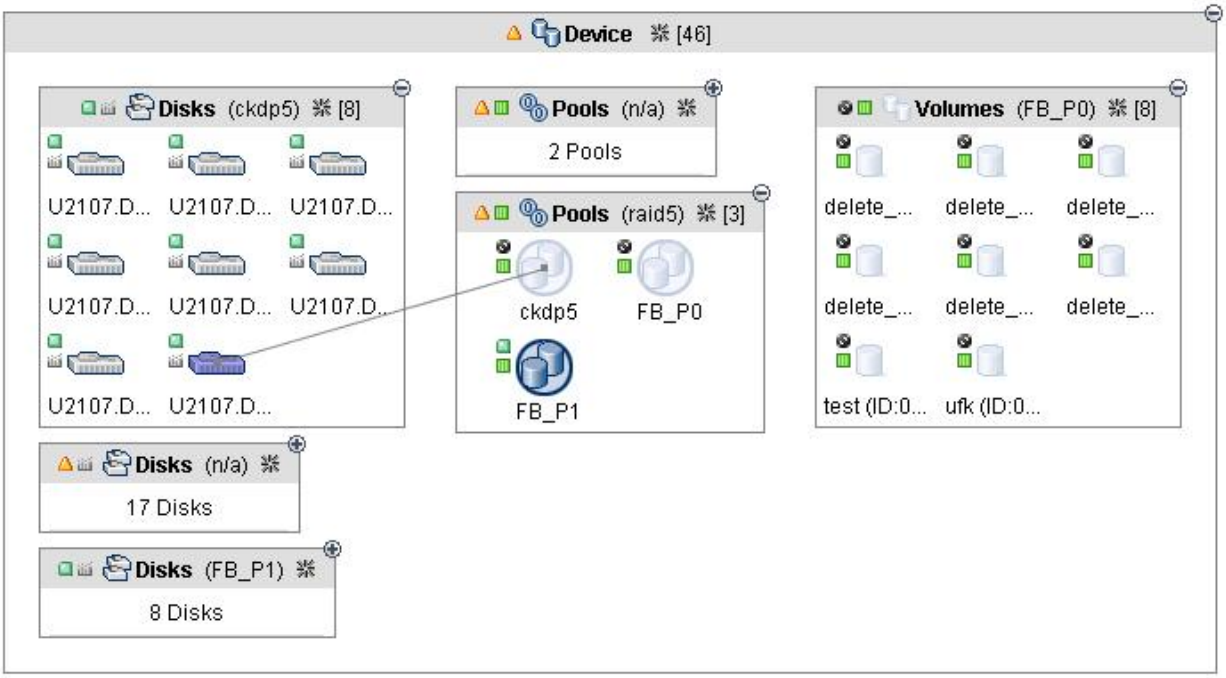
5. In the Device panel, click the plus sign (+) on Disks or on Volumes. When the disk panel is expanded, it looks like Figura 4.

Figura 4. Disks and Volumes panel



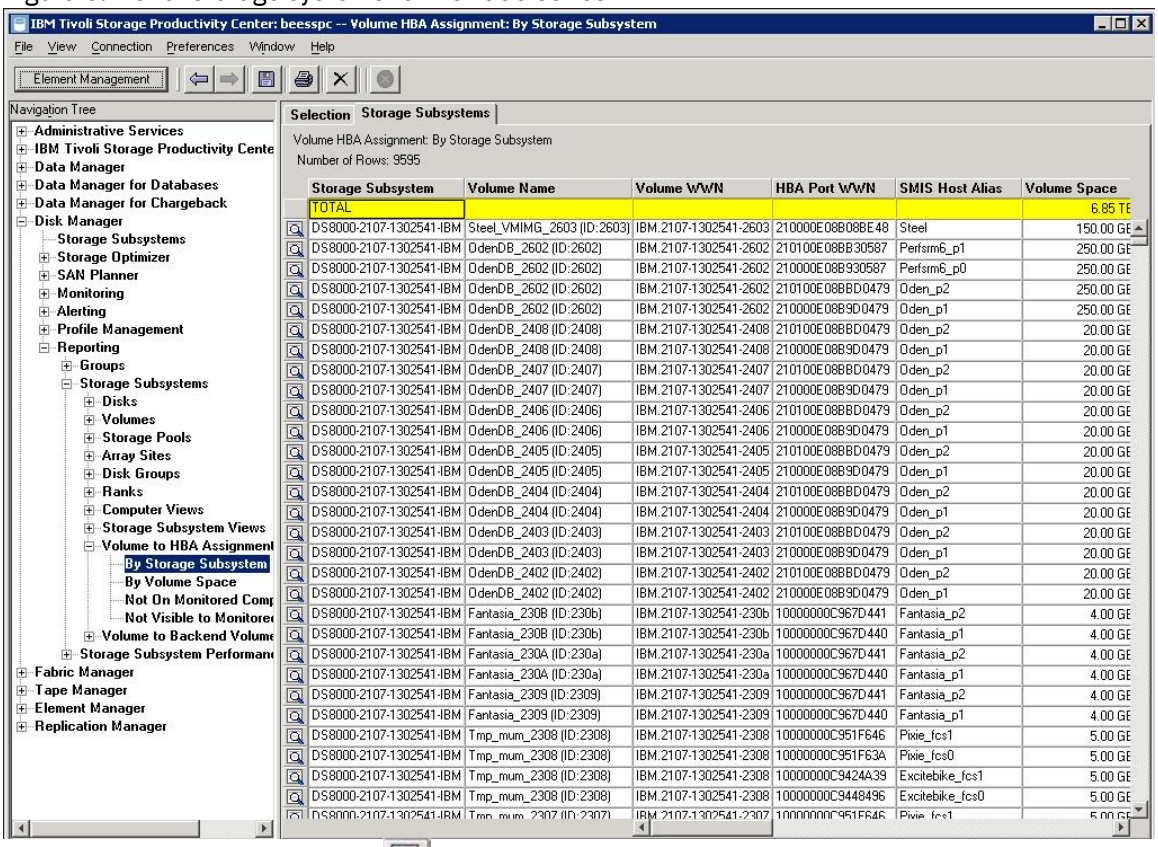
6. In the Disks or Volumes panel, double-click on a disk or volume to see its relationship to the storage pools. This relationship is indicated by a line from the disk or volume to the pool it is a part of. See Figura 5.

Figura 5. A disk's relation to a storage pool



7. For more information about the storage subsystem, use the Volume to HBA Assignment reports.
   a. Expand Disk Manager in the navigation tree.
   b. Click Reporting > Storage Subsystems > Volume to HBA Assignment > By Storage Subsystem.
   c. Move the columns that you want to display in the report into the Included Columns field and click Generate Report. See Figura 6.

Figura 6. List of storage systems for DS4000 series



d. Click the magnifying glass icon ( ) to the left of any storage system for more information about the storage system.

Tópico pai: Tivoli Storage Productivity Center Basic Edition

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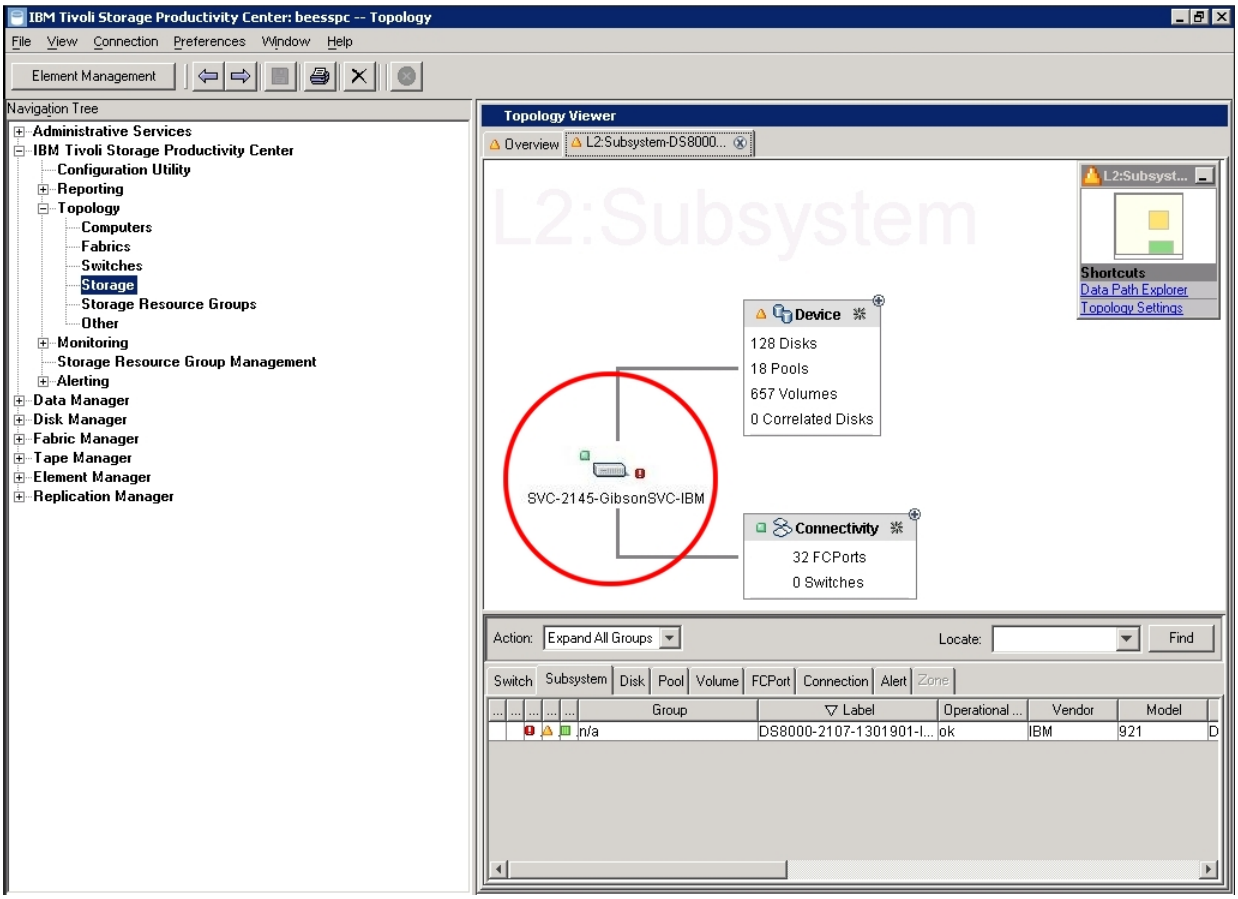
Using the topology viewer to see storage systems managed by the SAN Volume Controller

In the topology viewer, you can view a graphical representation of the storage systems managed by the SAN Volume Controller.

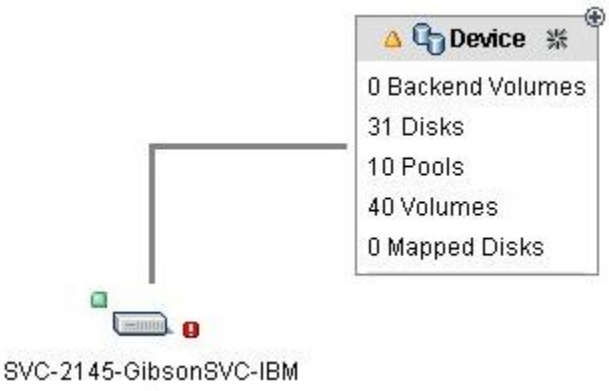
Start the Tivoli Storage Productivity Center user interface and log in. Complete the following steps:

1. Expand IBM® Tivoli Storage Productivity Center in the navigation tree.
2. Click Topology > Storage. The topology viewer displays an icon for each of the storage subsystems that have been defined to IBM System Storage Productivity Center. For example, if you added a CIM agent for a SAN Volume Controller, you would see an overview of the topology of the SAN Volume Controller that looks like Figura 1.
   Figura 1. Topology viewer for the SAN Volume Controller

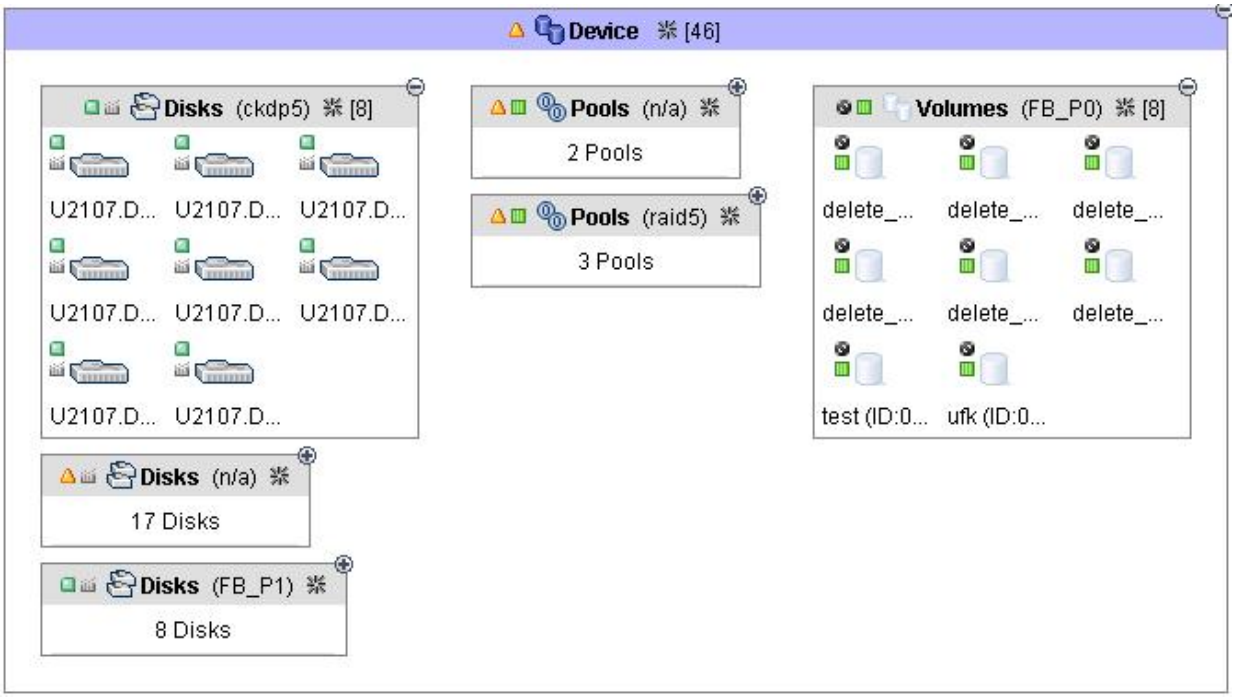


3. In the topology viewer, double-click the SVC icon to see the storage system environment for the SAN Volume Controller. The icon, which looks like Figura 2, is circled in Figura 1.
   Figura 2. Storage SVC icon

4. In the topology viewer, click the plus sign (+) on Device to see the disks, volumes, and pools for the SAN Volume Controller. Before the device panel is expanded, it looks like Figura 3
   Figura 3. Device panel

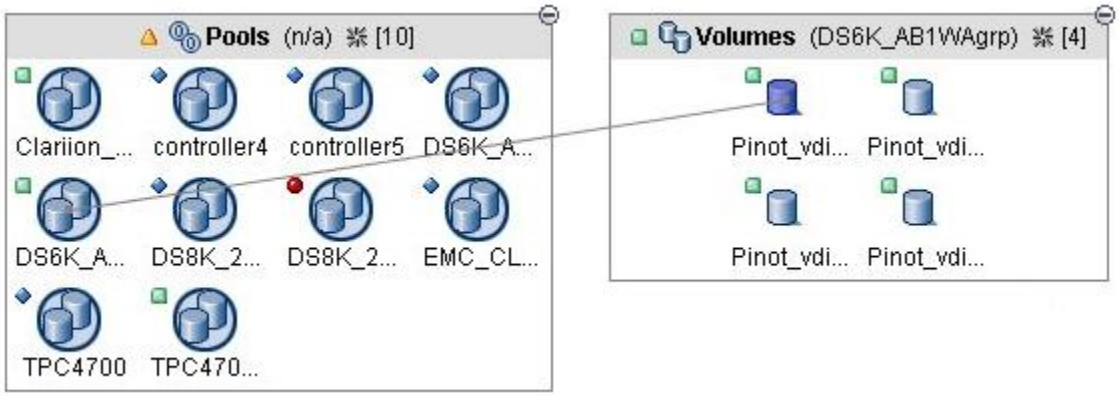


5. In the Device panel, click the plus sign (+) on Disks or Volumes. The Disks and Volumes panel looks like Figura 4.
   Figura 4. Disks and Volumes panel



6. In the Disks or Volumes panel, double-click on a disk or volume to see its relationship to the storage pools. This relationship is indicated by a line from the disk or volume to the pool it is a part of. See Figura 5.

Figura 5. Relationship of volume to storage pool



See the IBM Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp for more information about how to use the Tivoli Storage Productivity Center.

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Accessing reports about storage resources

IBM® System Storage Productivity Center uses the functionality of IBM Tivoli Storage Productivity Center to provide reports about storage resources. These reports are organized into different types and categories to provide both summary and detailed information about the storage resources in your environment.

Data that appears in reports is based on statistical information accumulated by data collection jobs and stored in the database repository. You can select the specific systems, storage subsystems, switches, clusters, disks, and file systems upon which you want to report.

Reports are organized into report types and categories, which can be expanded in the navigation tree to reveal additional sub-categories of reporting. Some reports are also accessible through the topology viewer.

- **Reporting types:** system reports, user ID reports, user-defined online reports
- **Report categories:** asset, Tivoli Storage Productivity Center-wide storage space (capacity), monitored computer storage space, storage subsystem, tape library, data source

For an example of the reports you can generate see Tabela 1. Use this table to determine which reports are most useful to you and which data collection jobs to run for those reports.

For more information about the categories of reports that are available to the IBM System Storage Productivity Center, go to the IBM Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp and search for *Reporting*.

Tabela 1. Reports available for IBM Tivoli Storage Productivity Center Basic Edition

Report Category	Description	What data collection job should I run for this report?
Asset reports	View itemized statistics about your storage resources in a hierarchy that lets you see the resources in greater detail. **Location:** These reports are available in the following locations on the navigation tree: • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) • Data Manager > Reporting > Asset	Probes, Discovery
TPC-wide storage space	Identify how much storage space is used and unused on the disks and file systems in your environment. **Location:** These reports are available in the following locations on the navigation tree: • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) • Data Manager > Reporting > TPC-wide Storage Space **Example:** Identify how much storage space is being used on the file systems within your environment, and how much unused storage space is available.	Probes

Report Category	Description	What data collection job should I run for this report?
Monitored computer storage space	Use these host-based reports to view the data that is collected by probes for computers, network-attached storage, and hypervisors. These reports contain detailed information about the consumption of file system space and enable you to relate that space back to external or internal storage without counting shared space multiple times. **Location:** These reports are available in the following locations on the navigation tree: • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) • Data Manager > Reporting > Monitored Computer Storage Space	Probes
Storage subsystem reports	View storage capacity for a computer, file system, storage subsystem, volume, array site, rank, and disk. These reports also enable you to view the relationships among the components of a storage subsystem. **Location:** • Disk Manager > Reporting > Storage Subsystems • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) **Example:** View the relationships among the components of a storage subsystem and the storage capacity for a computer, file system, storage subsystem, volume, array site, rank, and disk.	Probes

Report Category	Description	What data collection job should I run for this report?
Data source reports	Use data source reports to view detailed information about the agents from which Tivoli Storage Productivity Center collects information about storage resources. Data sources include CIMOM agents, Data agents, Fabric agents, VMWare, and subordinate Tivoli Storage Productivity Center servers. **Location:** IBM Tivoli Storage Productivity Center > Reporting > Data Source Reports **Example:** View detailed information about the CIM Agents that have been added to Tivoli Storage Productivity Center as data sources.	These reports are available for data sources that have been associated with Tivoli Storage Productivity Center.

Tópico pai: Tivoli Storage Productivity Center Basic Edition
Tópico pai: Referência

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Configuring SSPC for IBM Tivoli Storage Productivity Center for Replication

You must configure SSPC before you can start using IBM® Tivoli Storage Productivity Center for Replication with IBM Tivoli Storage Productivity Center. You must purchase and accept the Two Site or Three Site Business Continuity license before using the product.

Overview

The process for accepting the Two Site or Three Site Business Continuity license copies a new license file into the license directory. The CD or CD image for the license contains the setup file and the new license file.

The major steps for configuring SSPC for Tivoli Storage Productivity Center for Replication are:

1. Add the IP address for Tivoli Storage Productivity Center for Replication to the trusted zone in Internet Explorer.
2. Accept the Two Site or Three Site Business Continuity license for Tivoli Storage Productivity Center for Replication.
3. Open the Tivoli Storage Productivity Center GUI.
4. Manage and monitor Tivoli Storage Productivity Center for Replication.
5. Activate Windows license.
6. Subscribe to technical support Web sites.

Nota: There are different hardware feature codes that need to be purchased and installed on the hardware itself for different hardware features to work. For example, on the DS8000, if you want to use FlashCopy you must have the hardware feature code to do FlashCopy on the DS8000. If you want to create a FlashCopy

session on IBM Tivoli Storage Productivity Center for Replication that manages a DS8000, you need the FlashCopy feature on your DS8000.

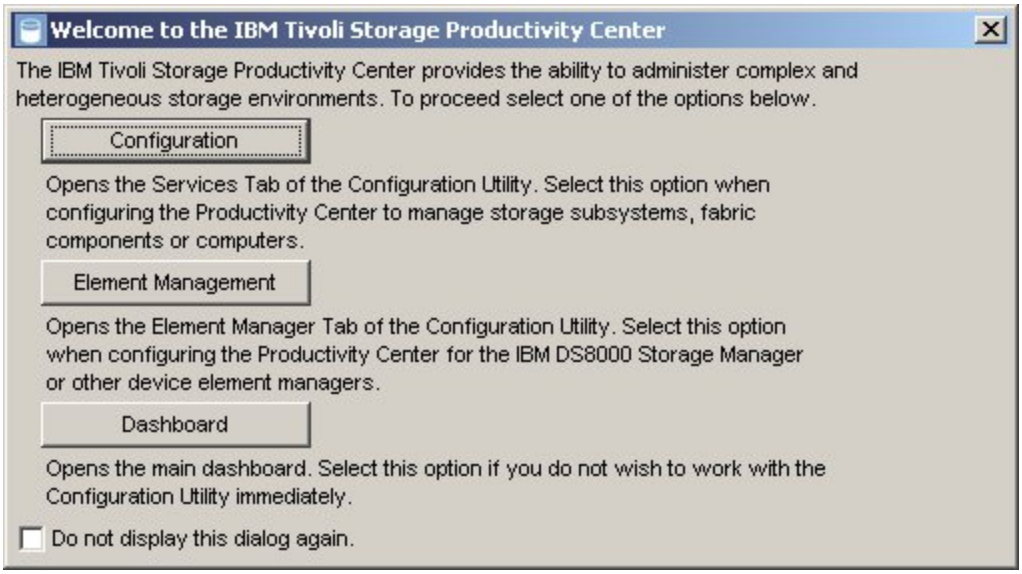
Procedure

Follow these steps:

1. Open Internet Explorer to add the IP address of Tivoli Storage Productivity Center for Replication to the trusted zone.
    a. Open Internet Explorer by double-clicking the Internet Explorer icon on the desktop.
    b. Select **Tools > Internet options** on the Internet Explorer toolbar.
    c. Click the **Security** tab.
    d. Click **Trusted sites**.
    e. Click **Sites**.
    f. Type the IP address into the **Add this web site to the zone** field. Click **Add**. The IP address is added to the **Web sites** field.
    g. Click **Close**.
    h. Click **OK** to exit the Internet Options dialog box.
    i. Close Internet Explorer.
2. Accept the Two Site or Three Site Business Continuity license.
   Follow these steps:
    a. Accept the license for Two Site or Three Site Business Continuity.
       Begin the installation by double-clicking the setup file:

       ```
       installation_directory\setupwin32.exe
       ```

    b. Click Next on the Welcome page.
    c. Review the license agreement. If you agree with the license agreement, click **I accept the terms of the license agreement**.
    d. InstallShield checks whether the operating system is appropriate for the product installation and displays the results. Click **Next**.
    e. Confirm the location where Tivoli Storage Productivity Center for Replication is installed by accepting the default location.
    f. InstallShield displays a summary dialog that allows you to change any information that you entered. After you confirm your information, click **Install** to copy the new license file onto your machine.
    g. After a successful installation, a summary of the information is displayed. To complete the installation, click **Finish**.
3. Start the Tivoli Storage Productivity Center GUI. Follow these steps:
    a. Start Tivoli Storage Productivity Center. You can double-click the **Productivity Center** icon on the desktop or click **Start > All Programs > IBM Tivoli Storage Productivity Center > Tivoli Storage Productivity Center**.
    b. Log onto the Tivoli Storage Productivity Center GUI with the default user ID and password. The default user ID is **Administrator**. Enter the password for this user ID.
    c. The first time you log on to the Tivoli Storage Productivity Center user interface, the license agreement panel opens. Read the terms of the license agreement. If you agree with the terms of the license agreement, select **I accept the terms of the license agreement**. Click **Next**. This panel does not open on subsequent logins.
    d. The Welcome to the IBM Tivoli Storage Productivity Center panel appears if you have not disabled it.
       Figura 1. Welcome to the IBM Tivoli Storage Productivity Center panel.



This panel provides links to commonly used Tivoli Storage Productivity Center tasks.

4. Open the IBM Tivoli Storage Productivity Center for Replication GUI.
   a. At the bottom of the IBM Tivoli Storage Productivity Center navigation tree, click **Replication Manager > Replication Management**. See the Tivoli Storage Productivity Center for Replication online help for information about how to administer Tivoli Storage Productivity Center for Replication
   b. The following buttons are in the right pane:

      Replication Health Overview

      The **Replication Health Overview** button displays the Health Overview panel for IBM Tivoli Storage Productivity Center for Replication. This panel provides the following information:

      - Overall session status: indicates the session status, which can be normal, warning, or severe.
      - Overall storage system status: indicates the connection status of the storage system.
      - Management server status: indicates the status of the standby server if you are logged on to the local server. If you are logged on to the standby server, this status indicates the status of the local server.

      See the IBM Tivoli Storage Productivity Center for Replication online help for information about how to read the Health Overview panel.

      Replication Sessions Overview

      The **Replication Sessions Overview** button lists all sessions defined within the IBM Tivoli Storage Productivity Center for Replication environment including their state and status. See the IBM Tivoli Storage Productivity Center for Replication online help to learn how to create a session.

      Replication Storage Systems Overview

      The **Replication Storage Systems Overview** button displays the Storage Systems panel. The Storage Systems panel lists all the known storage systems, and indicates whether the storage systems are communicating normally with the active and remote servers, if enabled. See the IBM Tivoli Storage Productivity Center for Replication online help for information about how to add a storage system and for volume protection.

      Replication Paths Overview

      The **Replication Paths Overview** button displays the ESS/DS Paths panel. The ESS/DS Paths panel summarizes all the known ESS/DS series paths, listing them by storage system. See the IBM Tivoli Storage Productivity Center for Replication online help for information about how to manage the paths.

Replication Management Servers Overview

The **Replication Management Servers** button displays the Management Servers panel. The Management Servers main panel displays the status of the management servers configuration, lists the management servers in operation (up to two), and enables you to define a standby server, or to define the local server as a standby server to an alternate server. This panel has two variations, depending on whether or not you have defined a standby. See the IBM Tivoli Storage Productivity Center for Replication online help for information about how to manage the servers.

Replication Administration

The **Replication Administration** button displays the Administration panel. The Administration panel displays a list of IBM Tivoli Storage Productivity Center for Replication users and groups and their access privileges, and allows administrators to take actions on users and groups. See the IBM Tivoli Storage Productivity Center for Replication online help for information about how to manage users and groups.

Replication Advanced Tools

The **Replication Advanced Tools** button displays the Advanced Tools panel. The Advanced Tools panel enables you to create a diagnostic package and change the automatic refresh rate of the GUI. See the IBM Tivoli Storage Productivity Center for Replication online help for information about how to create a diagnostic package or change the refresh rate of the GUI.

5. Activate the Windows® license.
   If you did not check Automatically activate Windows when I am online option during the IBM System Storage Productivity Center installation or you do not have SSPC Internet connectivity, you must activate the license for Windows using these steps. If the Automatically activate Windows when I am online option was enabled, you can skip this step.
   Important: From the first time you start the SSPC server, you have 60 days to activate the Windows license and complete the Windows setup. If you exceed the 60-day time limit, you cannot use Windows until you activate the license.
   To activate this license, follow these steps:
   a. Click the Windows Start button, right-click on Computer and select Properties.
   b. At the System panel, click Activate Windows now and follow the instructions to activate Windows using the phone.
6. Optional: Subscribe to the following technical support Web sites to receive information about important technical notes, flashes, and APAR information.
   - To receive support notifications for the Tivoli Storage Productivity Center:
     a. Go to http://www.ibm.com/software/sysmgmt/products/support/IBMTotalStorageProductivityCenterStandardEdition.html.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password.
     d. After your user ID is authenticated, the Help tab on the My Notifications page provides the following information:
        - How to create and organize subscriptions
        - How you are notified about subscriptions
        - How to specify the frequency of email notifications
        - How to subscribe for specific topics per product
        - How to unsubscribe
   - To receive support notifications for the System Storage Productivity Center:
     a. Go to http://www.ibm.com/systems/support/storage/software/sspc.
     b. In the Stay Informed section on the right, click My notifications.
     c. When you access the page, enter your IBM ID and password. Click **Learn more** to view information about how to use the My notifications tool.

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Additional configuration for System Storage Productivity Center

The section includes topics on how to configure IBM® System Storage Productivity Center.

- **Changing the server host name when DB2 extended security is off**
  Use this procedure to change the server's host name. SSPC is shipped with DB2 security turned off.
- **Changing the server host name when DB2 extended security is on**
  Use this procedure to change the server's host name when DB2 extended security is turned on.
- **Turning DB2 extended security on**
  Use this procedure to turn DB2 extended security on.
- **Adding user IDs to SSPC**
  Ensure that in a multiple-user environment, all users accessing IBM Tivoli Storage Productivity Center also have the authority to manage other aspects of the storage environment.
- **Enabling a non-Administrator user ID to create a backup image**
  You might need to assign properties to a non-Administrator user ID so that the user ID can use the Windows® Server Backup feature to back up or recover the SSPC image.
- **Starting management commands for the DS CIM agent**
  Use this information to start the management commands for the DS CIM (DSCIMCLI) for IBM System Storage Productivity Center.

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Changing the server host name when DB2 extended security is off

Use this procedure to change the server's host name. SSPC is shipped with DB2 security turned off.

DB2 has been installed with extended security turned off. Use this procedure to change the server's host name.

To change the host name, follow these steps.

Nota: Do not use this procedure after you have added agents or Agent Manager.

1. Change the server's host name on Windows®.
   a. Click **Start**.
   b. Right-click **Computer**.
   c. Click **Show on Desktop**.
   d. On the System window, click **Change settings**.
   e. On the System Properties window, click **Change**.

f. On the Computer Name/Domain Changes window, provide a new name in the **Computer name** field.
g. If you wish to set the primary DNS suffix for the system, click **More** and enter the "primary DNS of this computer" in the "DNS Suffix and NetBIOS Computer Name" panel.
h. Click **OK** until you see the window "Computer Name/Domain Changes," which tells you to restart your computer to apply the changes. Click **OK** to reboot the system.
i. You will see these messages when the system reboots, you can ignore them:

```
At least one service or driver failed during system startup.
Use Event Viewer to examine the event log for details.

SQL1042C An unexpected system error occurred.
```

2. You can open the IBM® Tivoli Storage Productivity Center user interface and start using the product.

Tópico pai: Additional configuration for System Storage Productivity Center

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Changing the server host name when DB2 extended security is on

Use this procedure to change the server's host name when DB2 extended security is turned on.

For information about how to turn DB2 extended security on, see Turning DB2 extended security on.

1. Stop the DB2 Administration Server and the DB2 instance. Open the DB2 command prompt window and run the following commands:

```
db2admin stop
db2stop
```

2. From the DB2 command prompt window, run the following commands:

```
db2set -g DB2SYSTEM=new_host_name
db2set -g DB2_EXTSECURITY=NO
db2set -all
```

The `db2 set-all` command displays the settings so that you can verify the information.

3. Update the DB2 Administration Server configuration by running the following commands:

```
db2 list admin node directory show detail
db2 uncatalog node old_host_name
db2 catalog admin tcpip node new_host_name
  remote new_host_name system new_host_name
db2 update admin cfg using DB2SYSTEM new_host_name
db2 update admin cfg using SMTP_SERVER new_host_name
```

The `db2 uncatalog node` command assumes that your admin node name is the same as your old host name.

4. Edit the `db2nodes.cfg` file. In the DB2 command prompt window, go to the following directory:

```
C:\ProgramData\IBM\DB2\DB2COPY1\DB2
```

Change the old host name to the new host name in the `db2nodes.cfg` file.

5. Change the server's host name on Windows® 2008.
   a. On the Server Manager, click **Change System Properties**.
   b. On the System Properties window, click the **Computer Name** tab.
   c. On the Computer Name window, click **Change**.
   d. On the Computer Name Changes window, provide a new name in the **Computer name** field.
   e. If you want to set the primary DNS suffix for the system, click **More** and enter the primary DNS of this computer in the DNS Suffix and NetBIOS Computer Name panel.
   f. Click **OK** and close the System Properties panel.
   g. Click **Restart Later**.
6. After renaming and restarting the computer, stop the DB2 Administration Server and the DB2 instance. Open the DB2 command prompt window and run the following commands:

```
db2admin stop
db2stop
```

7. Run the **db2extsec** command to update the security settings:

```
db2extsec -a new_host_name\DB2ADMNS -u new_host_name\DB2USERS
```

8. Start the DB2 Administration Server and the DB2 instance by running the following commands:

```
db2admin start
db2start
```

9. Run an IBM® Tivoli Storage Productivity Center discovery job using the new host name.

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Turning DB2 extended security on

Use this procedure to turn DB2 extended security on.

1. Stop the DB2 Administration Server and the DB2 instance. Open the DB2 command prompt window and go to the following directory:

```
C:\Program Files\IBM\SQLLIB\BIN
```

Run the following commands:

```
db2admin stop
db2stop
```

2. Update the DB2 Administration Server configuration by running the following commands. In the DB2 command prompt window, go to the following directory:

```
C:\Program Files\IBM\SQLLIB\BIN
```

Run these commands:

```
db2set -g DB2SYSTEM=host_name
db2 catalog admin tcpip node host_name remote host_name
  system host_name
db2 update admin cfg using DB2SYSTEM host_name
db2 update admin cfg using SMTP_SERVER host_name
```

3. Edit the db2nodes.cfg file. In the DB2 command prompt window, go to the following directory:

   ```
   C:\Program Files\IBM\SQLLIB\DB2\db2nodes.cfg
   ```

   Change the name in the **localhost** field to the host name in the db2nodes.cfg file.
4. If the DB2ADMNS and DB2USERS groups do not exist, create them now. Add the Administrator user ID to the DB2ADMNS group.
5. Run the **db2extsec** command to update the security settings:

   ```
   db2extsec -a host_name\DB2ADMNS -u host_name\DB2USERS
   ```

6. Start the DB2 Administration Server and the DB2 instance.
   a. Open the DB2 command prompt window and go to the following directory:

      ```
      C:\Program Files\IBM\SQLLIB\BIN
      ```

   b. Run these commands:

      ```
      db2admin start
      db2start
      ```

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Adding user IDs to SSPC

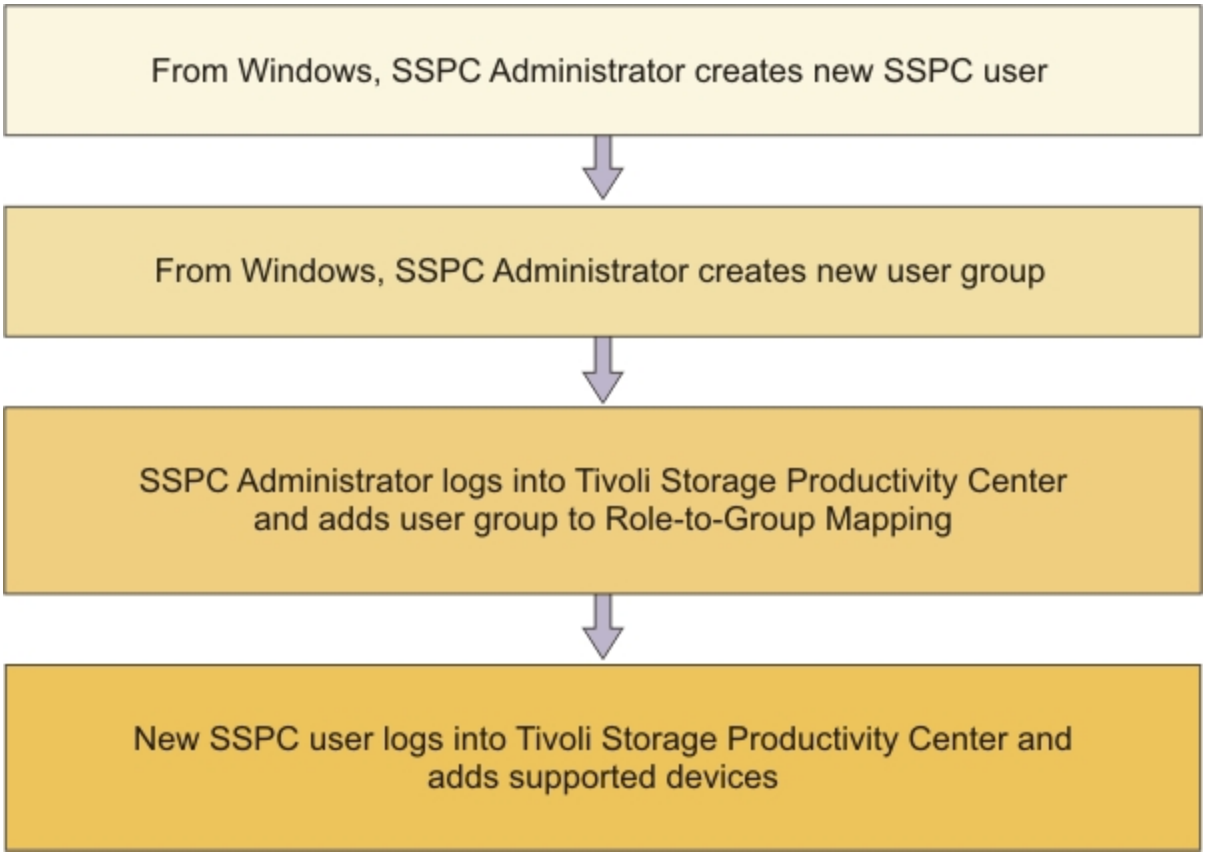
Ensure that in a multiple-user environment, all users accessing IBM® Tivoli Storage Productivity Center also have the authority to manage other aspects of the storage environment.

The procedure to add user roles to SSPC requires Tivoli Storage Productivity Center administrator authority and can be done as two tasks:

- Set up the user ID at the operating-system level, and then add this user ID to a group.
- Set up Tivoli Storage Productivity Center to map the operating-system group to a Tivoli Storage Productivity Center role.

Figura 1 illustrates how to add a new user role to the IBM System Storage Productivity Center.

Figura 1. Adding a new user to SSPC



The authorization level in Tivoli Storage Productivity Center depends on the role assigned to a user group. See Tabela 1.

Tabela 1. Roles and authorization levels

Role	**Authorization level**
Superuser	Has full access to all Tivoli Storage Productivity Center functions.
Productivity Center administrator	Has full access to operations in the Administration section of the GUI.
Disk administrator	Has full access to Tivoli Storage Productivity Center disk functions.
Disk operator	Has access to reports only for Tivoli Storage Productivity Center disk functions. This includes reports on tape devices.
Fabric administrator	Has full access to IBM Tivoli Storage Productivity Center for Fabric functions.
Fabric operator	Has access to reports only for IBM Tivoli Storage Productivity Center for Fabric functions.
Data administrator	Has full access to IBM Tivoli Storage Productivity Center for Data functions.
Data operator	Has access to reports onlyIBM Tivoli Storage Productivity Center for Data functions.
Tape administrator	Has full access to Tivoli Storage Productivity Center tape functions.
Tape operator	Has access to reports only for tape functions.

1. If a user has multiple roles, the authorization level is a combination of the levels for each of the roles.

2. If a user is not a member of any of the roles listed, no access is granted to that user.

You can use many types of user roles. The commonly used roles for SSPC are the disk administrator and disk operator.

Setting up the user ID at the operating-system level

To set up a new SSPC user role, the SSPC administrator needs to first grant the appropriate user permissions on the operating system using the following steps:

1. From the SSPC desktop, click **Server Manager > Configuration > Local Users and Groups > Users**.
2. Create a new user ID. Click **Action > New User**. Specify a value for the following fields:
    - User ID and password.
    - If appropriate, select **User must change password at next logon**.

      If you select this box, the user must change the password the first time that they log on.

    - If appropriate, select **Password never expires**.
    - Click **Create** to add the new user ID.
3. Add the new user ID to an existing group.
    a. To add the user ID to an existing group, click **Local Users and Groups > Groups**. Click **Groups**. Select a group in the right pane. Right-click on the group. Click **Add to group** to add a new group or select an existing group. Select **Add > Advanced > Find Now** and select the user to be added to the Group.
    b. On the Administrators Properties window, click **Add**.
    c. On the Select Users window, enter the user ID in the **Enter the object names to select** field. Click **OK**.
    d. Click **OK** to exit the Administrators Properties window.

To simplify user administration, use the same name for the Windows® user group and the user group roles in Tivoli Storage Productivity Center. For example, create the Windows user group "Disk Administrator" and assign this group to the Tivoli Storage Productivity Center role "Disk Administrator."

Setting up the user roles in Tivoli Storage Productivity Center

The group that is defined at the operating-system must be mapped to a role that is defined in Tivoli Storage Productivity Center.
To do this, follow these steps:

1. Log on to Tivoli Storage Productivity Center with administrator permission and click **Administrative Services > Configuration > Role-to-Group Mappings**.
2. On the right pane, click **Edit** for the role that you want to associate with the group that you have created. The Edit Group window is displayed.
3. Enter the group that you want to associate with the Tivoli Storage Productivity Center role. For DS8000 management, the roles to use are Disk Operator or Disk Administrator. After you define the user role, the operator can access the Tivoli Storage Productivity Center GUI.

   The authorization level in Tivoli Storage Productivity Center depends on the role assigned to a user group.

4. Click **File > Save** to save the mappings.

For information about Tivoli Storage Productivity Center user roles, see User IDs, passwords, and user roles.

Accessing Tivoli Storage Productivity Center as a new user

To access the Tivoli Storage Productivity Center GUI, the operator opens a Web browser using the Tivoli Storage Productivity Center user ID and password. The operator must also provide the SSPC IP address that you provide. Follow these steps to log on to the Tivoli Storage Productivity Center GUI:

1. If you selected the field **Change password at first login**, the user must first log on to SSPC to change the password. The user can log on at the SSPC server or by Remote Desktop.
2. Connect to the Web address `http://SSPC_IP_address:9550/ITSRM/app/welcome.html`.
3. Select **TPC GUI** and open the Java™ Web Start executable file. The first time you perform this task, a Java Web start session is opened and the `TSRMGUI.jar` is downloaded to the workstation where the browser was started.
4. Start the Tivoli Storage Productivity Center GUI. If `localhost` is displayed in the Server field of the login window for Tivoli Storage Productivity Center, type the host name or the IP address of the SSPC server in this field.
5. Enter the appropriate user ID and password.
6. Change the server field to *SSPC_IP_address*`:9549` if there is no name server resolution between the workstation and SSPC. *SSPC_IP_address* is the IP address of the SSPC server.

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Enabling a non-Administrator user ID to create a backup image

You might need to assign properties to a non-Administrator user ID so that the user ID can use the Windows® Server Backup feature to back up or recover the SSPC image.

To use the Windows Server Backup feature to back up or recover your SSPC system, you must be a member of the Windows Backup Operators or Administrators Group, or you must have been delegated the appropriate authority.

The Administrator user ID that is included with SSPC is a member of the Administrators Group and has appropriate authority to perform a backup or recovery. However, if another SSPC user ID exists and you want to use it, a member of the Windows Administrators Group can modify the properties of that user ID and provide authority by adding it to the Backup Operators Group.

Dica: A user ID that is a member of the Backup Operators Group can perform backup and recovery operations, but has no Administrator rights.

To enable a non-Administrator user ID to back up or recover the SSPC image by using the Windows Server Backup feature, perform the following steps.

1. Determine the user ID that you want to use to recover the backup image.
2. From the Microsoft® Windows desktop, click Start > Server Manager.
3. From the navigation pane of the Windows Server Manager window, expand **Configuration**.
4. Expand **Local Users and Groups**.
5. Double-click the **Users** folder to display a list of SSPC user IDs.
6. Double-click the user ID that you want to use. The properties for the user ID are displayed.
7. Click the **Member Of** tab.

8. Click **Add** and enter **Backup Operators**. Click **OK** and click **Apply**. The Backup Operators authority for this user ID is displayed in the Member of window.
9. Click **OK**.

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Starting management commands for the DS CIM agent

Use this information to start the management commands for the DS CIM (DSCIMCLI) for IBM® System Storage Productivity Center.

When you start the DSCIMCLI in the command prompt window, enter the following information:

```
Please enter the HMC IP Address:
Please enter the User Name:
Please enter the Password:
```

After you enter this information, press **Enter**. The dscimcli **lsdev -l** and **lsconfig** commands automatically run. An example of the output from the **lsdev -l** command is:

```
Type     IP      IP2   Username Storage Image Status  Code Level Min Codelevel

DS    xxx   xxx     xxx        xxx        xxx     xxx        xxx
```

An example of the information that is displayed from the **lsconfig** command is as follows:

```
Property       Current Value           After Restart

insecureport   <port>                  <port>
secureport     <port>                  <port>
certificate    <certificate_location>  <certificate_location>
enablesecure   <value>                 <value>
enableinsecure <value>                 <value>
loglevel       <value>                 <value>
tracemask      <value>                 <value>
tracecomponent <value>                 <value>
jvmarg         <value>                 <value>
dsdutycycle    <value>                 <value>
slpregips      <value>                 <value>
```

Any error messages are displayed in the command prompt window.
After the commands have finished running, you see the directory command prompt:

```
C:\Program Files\IBM\DSCIMCLI\Windows>
```

This command prompt window remains open so that you can enter more DSCIMCLI commands.
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Managing System Storage Productivity Center

System Storage Productivity Center uses Tivoli Storage Productivity Center to add and manage element managers for storage devices. *Element managers* are applications that are used to configure and manage a storage device. You manage connections to the element managers that are provided with the storage device or you can specify other element managers for a device.

The Element Manager tab in the Configuration Utility is used to add and manage element managers. The Element Manager tab contains multiple sections. The Other Device Element Manager section shows element managers that have been added using a discovery job or existing element managers that were added to Tivoli Storage Productivity Center before release 4.1.

For more information about Element Managers, including how to create, delete, and configure them, see the Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp.

- **Accessing the System Storage Productivity Center online help**
  IBM® System Storage Productivity Center uses IBM Tivoli Storage Productivity Center, which provides a comprehensive online help system for accessing context-sensitive information about the functions within the user interface. This section provides information on how to access the online help.
- **Element managers**
  Element managers are applications that are used to configure and manage a storage device. You can add and manage connections to the element manager that is provided with IBM System Storage DS8000. You can specify other element managers for a device. Use the Configuration Utility in IBM Tivoli Storage Productivity Center to add and manage element managers for the DS8000.
- **CIM object manager**
  A *CIM object manager* (CIMOM) is a program that is installed on storage subsystems so that management application appliances, such as IBM System Storage Productivity Center, can perform operations on that storage subsystem.
- **Single sign-on**
  Single sign-on is an authentication process by which you can enter one user ID and password to access multiple applications. For example, you can access IBM Tivoli Integrated Portal and then access IBM Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication from Tivoli Integrated Portal using a single user ID and password. Single sign-on integrates with the launch in context feature so that you can move smoothly from one application to a functionally related location in a second application.
- **Launch in context**
  The launch in context feature is available in two modes: inbound and outbound. With the inbound launch in context feature, you can start IBM Tivoli Storage Productivity Center at a specified point in the graphical user interface (GUI).
- **Configuring SSPC for Remote Desktop connection**
  Use this procedure to configure IBM System Storage Productivity Center (SSPC) for a Remote Desktop connection. Remote Desktop is included with Windows 2008 and enables you to connect to your computer across the internet from virtually any computer.
- **Configuring Tivoli Storage Productivity Center for DS8000 LDAP support**
  You must configure Tivoli Storage Productivity Center to use LDAP for single sign-on support for the DS8000 R4.2 or later.
- **Verifying the IBM Tivoli Storage Productivity Center version**
  When you encounter a problem and need IBM customer support, one of the items you need to identify is the version level of the product.
- **Verifying the IBM System Storage Productivity Center version**
  You can check the version of System Storage Productivity Center so that if you encounter a problem and need IBM customer support you can identify the version level that you are using.

- **Verifying the DS3000, DS4000, DS5000 Storage Manager GUI version**
  When you encounter a problem and need IBM customer support, one of the items you need to identify is the version level of the product.
- **Backing up and recovering the SSPC system**
  The Windows® Server Backup feature provides a basic backup and recovery solution for computers running the Windows Server 2008 operating system. SSPC provides a procedure that allows you to recover your system in the event of a system failure.

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Accessing the System Storage Productivity Center online help

IBM® System Storage Productivity Center uses IBM Tivoli Storage Productivity Center, which provides a comprehensive online help system for accessing context-sensitive information about the functions within the user interface. This section provides information on how to access the online help.

Use the online help system within Tivoli Storage Productivity Center to:

- View information about the fields, buttons, text boxes, and other elements on the windows and panels in the user interface.
- Learn how to perform storage-management tasks using features and functions available within Tivoli Storage Productivity Center.

Use the following methods for accessing online help from different locations within the user interface.

Component	How to access the online help	Description of the online help
Tivoli Storage Productivity Center main window	Press F1 or select an option from the Help menu.	This online help opens in a separate window and provides information about how to use Tivoli Storage Productivity Center.
IBM System Storage DS8000 Storage Manager windows The DS8000 Storage Manager user interface opens when you start an element manager from the Element Manager page.	Click	This online help opens within a Web browser and provides information about how to use the DS8000 Storage Manager.

Tópico pai: Managing System Storage Productivity Center

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Element managers

Element managers are applications that are used to configure and manage a storage device. You can add and manage connections to the element manager that is provided with IBM® System Storage DS8000. You can specify other element managers for a device. Use the Configuration Utility in IBM Tivoli Storage Productivity Center to add and manage element managers for the DS8000.

In the Configuration Utility, you use the Element Manager tab to view and manage all of the element managers that have been created for the DS8000 and other devices.

You can perform the following tasks in the Element Manager tab. Find more information about these procedures in the IBM Tivoli Storage Productivity Center information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp.

- Start the DS8000 Element Management Configuration page with a list of element managers that are visible to Tivoli Storage Productivity Center.
- Start the DS8000 GUI (for example, the DS8000 Storage Manager) to configure and administer the storage subsystems associated with an element manager.
- Add element managers that you want to manage.
- Remove element managers.
- Modify element managers that are on the page.
- Test the connection between IBM Tivoli Storage Productivity Center and element managers.
- Add CIM object manager (CIMOM) connections for element managers. For example, you can perform a task to associate a CIMOM that is embedded on a DS8000 Hardware Management Console (HMC) with a DS8000 element manager. You are not required to associate CIMOMs with element managers if you only want to configure and administer DS8000 storage subsystems. However, doing so enables you to use Tivoli Storage Productivity Center to monitor and collect storage metrics about the associated DS8000 storage subsystem and discover other storage entities managed by the CIMOM.
- Modify CIMOM connections for element managers.
- Remove CIMOM connections from element managers.

The user name and password for the DS8000 GUI are stored with each Tivoli Storage Productivity Center user. Therefore, before a Tivoli Storage Productivity Center user can access a DS8000 GUI, each user must have stored their user credentials. The Element Manager tab lists all element managers that are known to the Tivoli Storage Productivity Center, regardless of whether the user credentials are valid.

If the element manager has been added to Tivoli Storage Productivity Center using different credentials from the ones you are using, or if you attempt to open the DS8000 GUI for the first time after the element manager was added to Tivoli Storage Productivity Center by CIMOM discovery, you encounter the following message:

```
The element manager GUI cannot be accessed because the user name and password are
missing. Update the required fields in the next dialog. The GUI will be displayed
after the fields have been correctly completed and the dialog closed.
```

The DS8000 Element Manager section

The DS8000 Element Manager section of the Element Manager tab contains a table listing the element managers that are visible to Tivoli Storage Productivity Center and a Select Action list. With this list you can add an element manager to the section and to manage existing element managers. The menu items that are shown in the Select Action list depend on whether you have selected an element manager in the table. This table contains the following fields:

Element Manager
: Shows the IP address of the element manager or the display name if a display name was defined.

Connection Status
: Shows the status of the element manager. The values in this field are:

  Online
  : The element manager is accessible.

  Offline
  : The element manager is not accessible.

Device
: The name for the device as defined in Tivoli Storage Productivity Center.

UID/PWD
: Shows whether a user ID and password have been defined for authentication to the element manager. The values that appear in this field are:

  Yes
  : A user ID and password have been defined.

  No
  : A user ID and password have not been defined.

CIMOM
: Shows whether a CIMOM is configured for the element manager. The values that appear in this field are:

  Yes
  : A CIMOM is configured.

  No
  : A CIMOM is not configured.

LIC Enabled
: Shows whether a launch descriptor file has been registered for the element manager. A launch descriptor file is an XML file that describes the menus and the detailed uniform resource locators (URLs) for applications. An launch descriptor file is required to enable the launch in context feature for the device. Tivoli Storage Productivity Center provides a launch descriptor file for the element manager that is provided with DS8000. The values that appear in this field are:

  Yes
  : Launch in context is enabled.

  No
  : Launch in context is not enabled.

- **Starting the DS8000 GUI from the element manager**
  You can open the DS8000 GUI from the element manager provided that you have the credentials.

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Starting the DS8000 GUI from the element manager

You can open the DS8000 GUI from the element manager provided that you have the credentials.

Log on to the Tivoli Storage Productivity Center user interface. Complete the following steps:

1. Expand IBM Tivoli Storage Productivity Center in the navigation tree.
2. Click Configuration Utility.
3. From the DS8000 Element Manager section, select the DS8000 that you want to start.

   If there are no element managers listed on this page, you have not created any yet. You must add element managers before they can be listed.

4. Click Select Action and select Launch Default Element Manager. If you are logged on to Tivoli Storage Productivity Center as a user with credentials that are different than the GUI that you are trying to access, an error will occur. You can fix this using one of the following options:
   - Add the credentials to the user ID you are logged on with.
     a. Close the warning message. The Modify Element Manager window opens.
     b. Add the credentials and click Save.
     Importante: Use this method with caution because anyone who knows the Tivoli Storage Productivity Center credentials can access the DS8000 device.
   - Log on with the user ID that was used to add the element manager.
   - Navigate to the DS8000 element manager you want to start and select Launch Default Element Manager from the Select Action list.

Tópico pai: Element managers

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CIM object manager

A *CIM object manager* (CIMOM) is a program that is installed on storage subsystems so that management application appliances, such as IBM® System Storage Productivity Center, can perform operations on that storage subsystem.

You can create a CIMOM connection on IBM System Storage Productivity Center to interface with and manage a storage subsystem. After creating the CIMOM connection on the System Storage Productivity Center, you can run data collection jobs such as probes, subsystem performance monitors, and scans from your System Storage Productivity Center against the subsystem.

A CIMOM is similar to an element manager because both a CIMOM and an element manager allow the management applications to issue commands on it. However, when you create an element manager you are creating an actual interface with the storage subsystem's GUI. Creating a CIMOM connection provides a direct request and response relationship between the System Storage Productivity Center and the device. An element manager can only be created for a DS8000.

Some of the storage subsystems that support the CIMOM interface are:

- IBM Tivoli Storage
- Tivoli Storage Enterprise Storage Server
- Storage area network SAN Volume Controller
- DS4000, DS6000, DS8000

IBM System Storage Productivity Center supports any SMI-S-certified CIMOM, and tape and switch CIMOMs.

For more information about CIMOMs, including how to create, delete, and configure them, see the IBM Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp.

- **Migrating SAN Volume Controller CIM agents**
  You can migrate from the external IBM System Storage SAN Volume Controller Common Interface Model (CIM) agent to the embedded SAN Volume Controller CIM agent. Likewise, you can also migrate from an embedded CIM agent to an external agent.

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Migrating SAN Volume Controller CIM agents

You can migrate from the external IBM® System Storage SAN Volume Controller Common Interface Model (CIM) agent to the embedded SAN Volume Controller CIM agent. Likewise, you can also migrate from an embedded CIM agent to an external agent.

Migrating from an external CIM agent to an embedded CIM agent

Before you complete this procedure, make sure that the following prerequisites have been met:

- The cluster (either managed by an external or an embedded CIM agent) has been discovered and probed successfully by IBM Tivoli Storage Productivity Center.
- You have installed Tivoli Storage Productivity Center version 4.1.0.109 or later. Errors can occur if you use this migration procedure on earlier versions of Tivoli Storage Productivity Center.

Follow these steps:

1. Optional: Back up the Tivoli Storage Productivity Center database.
2. Stop any Tivoli Storage Productivity Center performance monitor jobs that are running on the specific cluster that is managed by the external CIM agent.
3. Make sure that no discovery, probes, or performance collection jobs are running on the specific device until the migration process is finished.
4. Expand Administrative Services > Data Sources > CIMOM Agents.
5. Click **Add CIMOM** to add the embedded CIM agent.
6. Both the embedded and external CIM agents are displayed in the CIMOM Agents table. Select the entry that represents the external CIM agent and click **Remove CIMOM**.

   Using both the embedded and external CIM agents to manage the device can result in failing jobs and inconsistent data that persists in the database. Also, it is important that you remove the external CIM agent *after* adding the embedded CIM agent.

7. Click **OK** in the confirmation window.
8. Run a CIM object manager (CIMOM) discovery job in Tivoli Storage Productivity Center as shown in the following steps:
   a. Expand Administrative Services > Discovery.
   b. Right-click **CIMOM** and click **Run Now**.
9. Run a probe job that includes the SAN Volume Controller system that is managed by the embedded CIM agent shown in the following steps. If you do not run a probe for the SAN Volume Controller

system, you might see errors and inconsistent data in the database.
    a. Expand IBM Tivoli Storage Productivity Center > Monitoring > Probes.
    b. Right-click the probe job and click **Run Now**.

Migrating an embedded CIM agent to an external CIM agent

Before you complete this procedure, make sure that the following prerequisites have been met:

- The cluster (either managed by an external or an embedded CIM agent) has been discovered and probed successfully by Tivoli Storage Productivity Center.
- You have installed Tivoli Storage Productivity Center version 4.1.0.109 or later. Errors can occur if you use this migration procedure on earlier versions of Tivoli Storage Productivity Center

Follow these steps:

1. Back up the Tivoli Storage Productivity Center database (optional).
2. Stop any Tivoli Storage Productivity Center performance monitor jobs running on the specific cluster that is managed by the embedded CIM agent.
3. Make sure that no discovery, probes, or performance collection jobs are running on the specific device until the migration process is finished.
4. Expand Administrative Services > Data Sources > CIMOM Agents.
5. Click **Add CIMOM** to add the external CIM agent.
6. Both the embedded and external CIM agents are displayed in the CIMOM Agents table. Select the entry that represents the embedded CIM agent and click **Remove CIMOM**.

   Using both the embedded and external CIM agents to manage the device can result in failing jobs and inconsistent data that persists in the database. Also, it is important that you remove the embedded CIM agent *after* adding the external CIM agent.

7. Click **OK** in the confirmation window.
8. Run a CIM object manager (CIMOM) discovery job in Tivoli Storage Productivity Center as shown in the following steps:
    a. Expand Administrative Services > Discovery.
    b. Right-click **CIMOM** and click **Run Now**.
9. Run a probe job that includes the SAN Volume Controller system that is managed by the external CIM agent shown in the following steps. If you do not run a probe for the SAN Volume Controller system, you might see errors and inconsistent data in the database.
    a. Expand IBM Tivoli Storage Productivity Center > Monitoring > Probes.
    b. Right-click the probe job and click **Run Now**.

Tópico pai: CIM object manager

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Single sign-on

Single sign-on is an authentication process by which you can enter one user ID and password to access multiple applications. For example, you can access IBM® Tivoli Integrated Portal and then access IBM Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication from Tivoli Integrated

Portal using a single user ID and password. Single sign-on integrates with the launch in context feature so that you can move smoothly from one application to a functionally related location in a second application.

Single sign-on is not available for the following programs:

- IBM XIV Storage Manager
- IBM System Storage SAN Volume Controller
- IBM System Storage DS4000

- **Selecting the user authentication method to use with single sign-on**
  With single sign-on, you can select the user authentication method that you want to use.
- **Changing the user authentication method**
- **Changing the LTPA token expiration for single sign-on**

Tópico pai: Managing System Storage Productivity Center

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Selecting the user authentication method to use with single sign-on

With single sign-on, you can select the user authentication method that you want to use.

The initial configuration of Tivoli Storage Productivity Center on System Storage Productivity Center is set to use the operating system (OS) users and groups on the server where Tivoli Storage Productivity Center is installed for authentication and authorization. You can configure Tivoli Storage Productivity Center to use LDAP as the authentication method.

OS Authentication
: This method authenticates the user against the users defined for the local operating system (OS).

LDAP/Active Directory
: This method authenticates the user against a Lightweight Directory Access Protocol (LDAP) or Microsoft® Active Directory repository.

If you select OS authentication, the use of the single sign-on feature is limited. OS authentication does not support single sign-on for element managers. LDAP or Microsoft Active Directory authentication supports single sign-on for element managers regardless of where they are installed.

You can change the user authentication method using the Tivoli Integrated Portal graphical user interface (GUI).

Tópico pai: Single sign-on

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Changing the user authentication method

The IBM® Tivoli Storage Productivity Center installation program enables you to select a user authentication method that is used by Tivoli Storage Productivity Center, IBM Tivoli Storage Productivity Center for Replication, and IBM Tivoli Integrated Portal. You can choose to authenticate users against the users defined for the local operating system or to authenticate users against the users defined in a Lightweight Directory Access Protocol (LDAP) or Microsoft® Active Directory repository.

- **Changing the authentication method from LDAP to the local operating system**
  You can configure IBM Tivoli Storage Productivity Center to authenticate against the local operating system. To change the authentication method from LDAP to local operating system, you must use Tivoli Integrated Portal.
- **Changing the authentication method from local operating system to LDAP federated repositories**
  You can configure IBM Tivoli Storage Productivity Center to communicate with an external Lightweight Directory Access Protocol (LDAP) repository such as IBM Tivoli Directory Server or Microsoft Active Directory. To change the authentication method from local operating system to LDAP, you must use IBM Tivoli Integrated Portal.

Tópico pai: Single sign-on

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Changing the authentication method from LDAP to the local operating system

You can configure IBM® Tivoli Storage Productivity Center to authenticate against the local operating system. To change the authentication method from LDAP to local operating system, you must use Tivoli Integrated Portal.

The local operating system authentication does not permit single sign-on if Tivoli Storage Productivity Center and Tivoli Integrated Portal are on separate computers. Operating system authentication also does not support single sign-on for element managers, regardless of the location of the element manager application. To change the user authentication method from LDAP to the local operating system, complete the following steps:

1. Start an Internet Explorer or Firefox Web browser, and type the following information in the address bar:

   `http://hostname:port`

   where *hostname* defines the server name or IP address that is running Tivoli Integrated Portal and *port* defines the port number for Tivoli Integrated Portal. If you used the default port during the installation of Tivoli Integrated Portal, the port number is 16310. Contact your Tivoli Storage Productivity Center administrator if you need to verify the host name and port number.
2. On the Tivoli Integrated Portal logon page, log on using the appropriate user ID and password. Your user ID must have administrator permissions.
3. From the Tivoli Integrated Portal navigation tree, click Security > Secure administration, applications, and infrastructure.
4. On the "Secure administration, applications, and infrastructure" page, select Local operating system from the Available Realm Definitions list.
5. On the "Local operating system" page, configure the following items:

a. In the Primary administrative user name field, enter the name of a user ID that is defined in your local operating system. This user ID is granted administrative privileges in the Tivoli Integrated Portal server, the Tivoli Storage Productivity Center Device server, and the IBM Tivoli Storage Productivity Center for Replication server.
b. Click Server identity that is stored in the repository.
c. In the Server user ID or administrative user on a Version 6.0.x node field, enter the same ID that you entered in the Primary administrative user name field and enter the password for the user ID in the Password field.
d. Click OK.
e. In the Messages pane on the "Secure administration, applications, and infrastructure" page, click Save in Save to the master configuration.

6. Configure the following items on the "Secure administration, applications, and infrastructure" page:
   a. In the Available realm definitions list, select Local operating system and click Set as current.
   b. Click Apply and click the Save link in Save to the master configuration
7. Stop and restart the Tivoli Integrated Portal, IBM Tivoli Storage Productivity Center for Replication servers and the IBM Tivoli Storage Productivity Center data and device servers.

For information about stopping and starting a server, go to the Tivoli Storage Productivity Center Information Center and search for *starting and stopping services*.

Tópico pai: Changing the user authentication method

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Changing the authentication method from local operating system to LDAP federated repositories

You can configure IBM® Tivoli Storage Productivity Center to communicate with an external Lightweight Directory Access Protocol (LDAP) repository such as IBM Tivoli Directory Server or Microsoft Active Directory. To change the authentication method from local operating system to LDAP, you must use IBM Tivoli Integrated Portal.

System Storage Productivity Center has been installed with operating system authentication. To change the user authentication method from local operating system to LDAP, complete the following steps. Contact your LDAP server administrator for assistance.

Before changing the user authentication method, stop and restart only the Tivoli Storage Productivity Center Device server before running this procedure.

1. Start an Internet Explorer or Firefox Web browser, and type the following information in the address bar:

   `http://hostname:port`

   Where *hostname* defines the server that is running Tivoli Integrated Portal such as the server name or IP address and *port* defines the port number for Tivoli Integrated Portal. If the default port was accepted during the installation of Tivoli Integrated Portal, the port number is 16310. Contact your Tivoli Storage Productivity Center administrator if you need to verify the host name and port number.
2. On the Tivoli Integrated Portal logon page, log on using the appropriate user ID and password. Your user ID must have administrator permissions.

3. In the Tivoli Integrated Portal navigation tree, click Security > Secure administration, applications, and infrastructure.
4. On the Secure administration, applications, and infrastructure page, select Federated Repositories from the Available Realm Definitions list.
5. Click Configure. The Federated repositories page is displayed.
6. Under Related Items, click Manage repositories.
7. On the Manage repositories page, add the LDAP repository that you want to use for authentication as follows:
    a. Click Add to add a new repository.
    b. Enter the values for the following fields:
        - Repository identifier. A unique identifier for the LDAP repository. This identifier uniquely identifies the repository within the cell, for example: LDAP1.
        - Directory type. The type of LDAP server to which you want to connect.
        - Primary host name. The host name of the primary LDAP server. This host name is either an IP address or a domain name service (DNS) name.
        - Port. The LDAP server port. The default value is 389, which is not a Secure Sockets Layer (SSL) connection. You can use port 636 for a Secure Sockets Layer (SSL) connection. For some LDAP servers, you can specify a different port for a non-SSL or SSL connection. If you do not know the port to use, contact your LDAP server administrator.
        - Bind distinguished name. The distinguished name (DN) for the application server to use when binding to the LDAP repository. If no name is specified, the application server binds anonymously. In most cases, bind DN and bind password are needed. However, when anonymous bind can satisfy all the required functions, bind DN and bind password are not needed.
        - Bind password. The password for the application server to use when binding to the LDAP repository.
    c. Click OK.
    d. In the Messages box on the Manage repositories page, click the Save link in Save to the master configuration.
8. On the Manage repositories page, click the identifier for the repository that you want to use in the Repository identifier column.
9. On the configuration page for the repository, configure the following items:
    a. Click LDAP entity types under Additional Properties. The LDAP entities page is displayed.
    b. In the Entity type column, click the link for Group, OrgContainer, and PersonAccount and complete the Search bases field. This field specifies the search bases that are used to search this entity type. The search bases specified must be subtrees of the base entry in the repository. The following are example search bases, where `o=ibm,c=us` is the base entry in the repository:

        ```
        o=ibm,c=us or cn=users,o=ibm,c=us or ou=austin,o=ibm,c=us
        ```

        Delimit multiple search bases with a semicolon (;). For example:

        ```
        ou=austin,o=ibm,c=us;ou=raleigh,o=ibm,c=us
        ```

    c. Click OK and then click the Save link in Save to the master configuration each time that you update the Search bases field.
10. Return to the Federated repositories page and click Supported Entity Types under Additional Properties.
11. On the Supported entity types page, configure the following items:
    a. In the Entity type column, click the link for Group, OrgContainer, and PersonAccount and complete the Base entry for the default parent and Relative Distinguished Name properties fields.
        - In the Base entry for the default parent field, enter the same value that you entered in the Search bases field in step 9.

- In the Relative Distinguished Name properties field, enter the appropriate LDAP attribute name. In most cases, the values for this field are `cn` for Group, `o;ou;dc;cn` for OrgContainer, and `uid` for PersonAccount.

b. Click OK and then click the Save link in Save to the master configuration each time that you update the Base entry for the default parent field.

12. Return to the Federated repositories page and click Apply and then click the Save link in Save to the master configuration.
13. Under Repositories in the realm, click Add base entry to Realm.
14. On the Repository reference page, configure the following items:
    a. In the Repository list, select the repository that you created in step 7.
    b. In the Distinguished name of a base entry that uniquely identifies this set of entries in the realm field, enter the distinguished name of a base entry that uniquely identifies the repository in the realm. In most instances, this value is the same value that you entered in the Search bases field in step 9.
    c. In the Distinguished name of a base entry in this repository field, enter the distinguished name of the base entry within the repository. In most instances, this value is the same value that you entered in the Distinguished name of a base entry that uniquely identifies this set of entries in the realm field.
    d. Click OK and then click the Save link in Save to the master configuration each time that you update the Distinguished name of a base entry that uniquely identifies this set of entries in the realm field.
15. On the Federated repositories page, there are now two repositories that are displayed under Repositories in the realm: the repository that you have added and a default repository that shows File in the Repository type column. Configure the following items:
    a. Leave the value in the Realm name field as is or change the name of the realm name.
    b. In the Primary administrative user name field, enter the name of a user in the repository that you added. This user is granted administrative privileges in the Tivoli Integrated Portal server, the Tivoli Storage Productivity Center Device server, and the IBM Tivoli Storage Productivity Center for Replication server.
    c. Click Server identity that is stored in the repository.
    d. In the Server user ID or administrative user on a Version 6.0.x node field, enter the same ID that you entered in the Primary administrative user name field and enter the password for the user ID in the Password field.
    e. Select the default file repository that shows File in the Repository type column and click Remove.
    f. Click OK and then click the Save link in Save to the master configuration.
16. Return to Secure administration, applications, and infrastructure page and configure the following items:
    a. In the Available realm definitions list, select Federated repositories and then click Set as current.
    b. Click Apply and then click the Save link in Save to the master configuration
17. Stop and restart the Tivoli Integrated Portal, IBM Tivoli Storage Productivity Center for Replication servers and the IBM Tivoli Storage Productivity Center Data and Device servers.
    Stop the servers in this order:
    a. Tivoli Storage Productivity Center for Replication server
    b. Tivoli Storage Productivity Center Data server
    c. Tivoli Storage Productivity Center Device server
    d. Tivoli Integrated Portal server

    Start the servers in this order:
    a. Tivoli Integrated Portal server
    b. Tivoli Storage Productivity Center Device server
    c. Tivoli Storage Productivity Center Data server
    d. Tivoli Storage Productivity Center for Replication server

For information regarding stopping and starting a server, go to the Tivoli Storage Productivity Center Information Center and search for *starting and stopping services*. If the server is running on a Windows operating system, the change to the user authentication method might not be implemented until you restart the computer.

To verify that the federated repository is configured correctly, complete the following steps:

1. Log on to Tivoli Integrated Portal as the new super user ID (the administrative account is no longer the OS credentials, but is now configured to use the LDAP server super user credentials).
2. In the Tivoli Integrated Portal navigation tree, click Users and Groups > Manage Users.
3. In the Search by list, select User ID.
4. Click Search to search for users in the federated repository. The list of users includes users from both the LDAP and the local file registry.
5. After you have completed and verified the conversion of your Tivoli Storage Productivity Center system's authentication mechanism from local operating system to LDAP federated repositories, remove all Administrative Group Roles entries in the Tivoli Integrated Portal console that involve local operating system groups:
    a. In the Tivoli Integrated Portal navigation tree, click Users and Groups > Administrative Group Roles.
    b. In the Administrative Group Roles table, select all entries that involve local operating system groups. Do **not** select entries that involve LDAP federated repository groups.
    c. Click **Remove**.
    d. In the Messages box on the Administrative Group Roles page, click **Save link** in "Save directly to the master configuration."

Tópico pai: Changing the user authentication method

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Changing the LTPA token expiration for single sign-on

For single sign-on, the user's authentication information is passed between applications using Lightweight Third-Party Authentication (LTPA) tokens. By default, the tokens expire after 24 hours. You can change the LTPA token expiration time using the Tivoli Integrated Portal user interface. For instructions about how to change the LTPA token expiration, see the Tivoli Storage Productivity Center Information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp.

Tópico pai: Single sign-on

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Launch in context

The launch in context feature is available in two modes: inbound and outbound. With the inbound launch in context feature, you can start IBM® Tivoli Storage Productivity Center at a specified point in the graphical user interface (GUI).

With the outbound launch in context feature, you can use various points in the Tivoli Storage Productivity Center GUI to start an application such as an element manager at a specified point in the manager.

Inbound launch in context feature

With the inbound launch in context feature you can start IBM Tivoli Storage Productivity Center at a specified point in the graphical user interface (GUI).
Prerequisite: You must have View and Modify permissions to use the launch in context feature.
You can run the launch in context feature in the following ways:

- Use Java™ Web Start from a Web browser.
- Use the command line on Windows®, AIX, Linux®, or UNIX®
- Use the Windows Start menu.
- Use the Tivoli Enterprise Portal GUI to define, edit, and launch commands.

Outbound launch in context feature

With the outbound launch in context feature you can start applications such as element managers from various points in the IBM Tivoli Storage Productivity Center graphical user interface (GUI).
Launch in context is not available for the following programs:

- IBM XIV Storage Manager
- IBM System Storage SAN Volume Controller
- IBM System Storage DS4000

When you right-click a storage device in the Topology Viewer graphic view, for example, you see a launch in context menu for that device. The content of the launch in context menu varies. The launch in context menu is displayed when you right-click various objects in the Tivoli Storage Productivity Center GUI.

For information about the launch in context feature, see the Tivoli Storage Productivity Center Information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp.

Tópico pai: Managing System Storage Productivity Center

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Configuring SSPC for Remote Desktop connection

Use this procedure to configure IBM® System Storage Productivity Center (SSPC) for a Remote Desktop connection. Remote Desktop is included with Windows 2008 and enables you to connect to your computer across the internet from virtually any computer.

Procedure

To configure SSPC for Remote Desktop connection, follow these steps:

1. Click Start > Administrative Tools > Server Manager.
2. The Server Manager window opens. Click **Configure Remote Desktop**.
3. The System Properties window opens. Click one of the following selections:
   - **Allow connections from computers running any version of Remote Desktop** (this option is less secure)

- **Allow connections only from computers running Remote Desktop with Network Level Authentication** (this option is more secure and connects to other systems running Windows 2008)

4. Click **Apply**.

Tópico pai: Managing System Storage Productivity Center

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Configuring Tivoli Storage Productivity Center for DS8000 LDAP support

You must configure Tivoli Storage Productivity Center to use LDAP for single sign-on support for the DS8000 R4.2 or later.

Overview

Configuring Tivoli Storage Productivity Center and DS8000 for single sign-on involves these general steps:

For Tivoli Storage Productivity Center

1. Extract the certificate. This certificate is used for securing communication between the Authentication Client on the HMC and the Authentication Service (server component) on Tivoli Storage Productivity Center.
2. Create a truststore which includes the certificate from step 1.
3. You need to know the URL for the Authentication Service.

For DS8000

1. Create a Storage Authentication Service (SAS) policy with information collected from Tivoli Storage Productivity Center and the LDAP server.
2. Test the Storage Authentication Service policy using a valid LDAP user mapped to a DS8000 user role in the policy.
3. Activate the Storage Authentication Service policy using a valid LDAP user mapped to the DS8000 administrative user role in the policy.

Configuring Tivoli Storage Productivity Center

This procedure assumes that Tivoli Storage Productivity Center is set up with the LDAP repository. Follow these steps:

1. Obtain the URL for the Authentication Service.
   Example:

   `https://`*`TIP_server_host`*`:16311/TokenService/services/Trust`

   The port for the Authentication Service (16311) is one plus the default Tivoli Integrated Portal port (16310). If you change the default port, for example, 17522, then the port number to use for the Authentication Service is one plus the Tivoli Integrated Portal port. In this example, the port number would be:

```
https://tpcserver1.storage.mycompany.com:17523/TokenService/services/Trust
```

2. Create the truststore file and import the certificate into the truststore file using the **ikeyMan** tool:
   a. Launch the **ikeyMan** tool.
   For example on Windows®:

   ```
   c:\Program Files\IBM\tivoli\tip\bin\ikeyman.bat
   ```

   b. Click **Key Database File > New**. In the **New** window, enter the following information and click **OK**:

   Key database type
   : Enter or leave the default JKS.

   File Name
   : Enter a file name. For example, enter tpc_ess.jks.
   Nota: The default location is:

   ```
   c:\Program Files\IBM\tivoli\tip\bin\
   ```

   Location
   : Enter a location. For example, enter `c:\tpc\`. Click **OK**.

   c. The next window prompts you to specify a password for this truststore. Specify a password that you can remember. Click **OK**.
   d. In the next window, click **Add**. The Add CA certificate opens. Click **Browse** and select the certificate file that you created in step 2.b. Click **Done**, then click **OK**.
      i. Look for the certificate file.
      ii. Change the Files of Type to **All files**.
      iii. Click **Open**.
   e. From the prompt, specify a label. Provide any label. An example of a label is ESS_Cert. Click **OK**. The ESS_Cert is now one of the certificates listed.
   f. Exit the ikeyman tool and locate the truststore file (for example, `tpc_ess.jks`). You need this truststore file and the password to configure the LDAP-based policy on DS8000.
3. Log on to IBM® Tivoli Integrated Portal. Start an Internet Explorer Web browser, and enter the following information in the address bar:

   ```
   https://hostname:port/ibm/console/logon.jsp
   ```

   where *hostname* defines the name of the server that is running IBM Tivoli Integrated Portal and *port* defines the port number for IBM Tivoli Integrated Portal. The default port is 16310. Contact your IBM Tivoli Storage Productivity Center administrator if you need to verify the host name and port number. On the IBM Tivoli Integrated Portal logon page, log on using the LDAP user ID and password.
4. Create the truststore in IBM Tivoli Integrated Portal.
   a. When logged in to IBM Tivoli Integrated Portal, go to the Personal Certificates page for the Default keystore. Click **Security > SSL certificate and key management > Key stores and certificates > NodeDefaultKeyStore > Personal Certificates**. On this page, select the **default** certificate and click **Extract**. On the resulting page, enter the following information:

   Certificate file name
   : Enter a file name for the extracted certificate. This file automatically gets created in *TIP_install_directory*/profiles/TIPProfile/etc/. For Windows, the default directory is `C:\`*TIP_install_directory*`\profiles\TIPProfile\etc\`. Accept and select the default data type. Click **OK**.

   b. The truststore setup is complete.

5. Find the user ID and password that is used in LDAP to use for the DS8000 Storage Authentication Service policy configuration page.

   This user ID is used for authenticating with the Authentication Service. It can be any user ID in LDAP, or a user ID that is also used by Tivoli Storage Productivity Center. This user ID is used as the "Application Client User ID" for a Storage Authentication Service policy on the DS8000.

6. Find the name of a group in LDAP with which you can log in to Tivoli Storage Productivity Center and the DS8000. You would use this LDAP group on the DS8000 also, for mapping to DS8000 roles.

   You can go to the Tivoli Storage Productivity Center **Role-to-Group Mapping** node to find out which LDAP group is mapped to the role in Tivoli Storage Productivity Center.

   To find the LDAP group name, open the Tivoli Storage Productivity Center GUI and click **Tivoli Storage Productivity Center > Configuration > Role-to-Group Mapping**.

   The information gathered in steps 1, 2, 4, 5, and 6 is used on the DS8000 Storage Authentication Service policy creation page.

7. Configure DS8000 R4.2 or later.

Configuring DS8000 for LDAP authentication

Follow these steps:

1. Add the IP address of the DS8000 Hardware Management Console to the Internet Explorer list of trusted sites using the following steps:
   a. Open the Internet Explorer by clicking the Internet Explorer icon located on the Quick Launch toolbar.
   b. From the Internet Explorer toolbar, click Tools > Internet options.
   c. Click the **Security** tab, click the Trusted sites icon and then click Sites.
   d. In the Add this web site to the zone field, type the IP address of the DS8000 Hardware Management Console (HMC). Click Add and the IP address is added to the Websites field.
   e. Click Close and then click OK to exit the Internet Options window, and then close the Internet Explorer.
2. To access the DS8000 GUI, expand Element Manager. Click **DS8000**. In the right pane, select the DS8000 you want. From the **Select Action** drop-down list, click **Launch Default Element Manager**. This action opens the DS8000 Storage Manager GUI so that you can administer the DS8000. Use the administrative user ID and password. Enter the User Name and Password. Click **OK**.
3. On the DS8000 Storage Manager Welcome page, click **Real-time manager > Monitor System > User Administration**.
4. On the User and Authentication Policy Administration Summary page, select a Complex Name. From the Select action menu, select **Create Storage Authentication Service Policy**.
5. The Authentication Service Configuration page is displayed. Enter the following information:
   - Policy Name
   - Authentication Service URL (primary)
   - Authentication Service Client User ID
   - Authentication Service Client Password
   - Confirm Authentication Service Client Password

   Click **Next**.
   Nota: An example of the authentication URL is:

   `https://`*`TIP_server_host`*`:16311/TokenService/services/Trust`

   Here is an example:

```
https://tpcserver1.storage.mycompany.com:16311/TokenService/services/Trust
```

The port for the Authentication Service (16311) is one plus the default Tivoli Integrated Portal port (16310). If you change the default port, for example, 17522, then the port number to use for the Authentication Service is one plus the Tivoli Integrated Portal port. In this example, the port number would be:

```
https://tpcserver1.storage.mycompany.com:17523/TokenService/services/Trust
```

6. The Truststore file Information page is displayed. Enter the following information:
   - Truststore File Location
   - Truststore File Password
   - Confirm Truststore File Password

   Click **Next**.
7. The Map External Users and User Groups to DS8000 User Roles page is displayed. Enter the following information:
   - External Entity Name
   - External Entity Type
   - DS8000 User Role

   Click **Add**. The entry is entered in the table at the bottom of this page. Select the entry you created and click **Next**.
8. The Verification page is displayed. Verify the information and click **Next**.
9. The Summary page is displayed. Click **Activate the Policy** if you want to activate the policy immediately. If you want to test the policy before activating it, do not select **Activate the Policy** and click **Finish** to create the policy. This scenario assumes that you want to test the policy before activating it. You see a message dialog indicating whether the policy was successfully created or not. If the policy was successfully created, close the message dialog.
10. The Manage Authorization Policy page is displayed. Select a policy. From the Select action menu, click **Test Authentication Policy**.
11. The Test Storage Authentication Service Policy page is displayed. Enter the following information:
    - External User Name
    - External User Password

    Provide an LDAP user ID and password for External User Name and External User Password. The user ID must already be mapped to a valid DS8000 user role in the Storage Authentication Service policy. This user ID does not have to be in the Administrator group. Click **OK**.
12. The Manage Authentication Policy page is displayed. Select the policy you want. From the Select action menu, click **Activate Authentication Policy**.
13. The Activate Storage Authentication Service Policy page is displayed. Enter the following information:
    - External User Name
    - External User Password

    Provide an LDAP user ID and password for External User Name and External User Password. The user ID must already be mapped to a valid DS8000 user role in the Storage Authentication Service policy. This user ID must be in the Administrator group. Click **OK**. The policy is now activated. Close the page.

Tópico pai: Managing System Storage Productivity Center

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Verifying the IBM Tivoli Storage Productivity Center version

When you encounter a problem and need IBM customer support, one of the items you need to identify is the version level of the product.

To verify the version of IBM® Tivoli Storage Productivity Center that is installed, go to the following directory:

```
Windows: C:\Program Files\IBM\TPC
```

This directory contains the version.txt file which displays the version of Tivoli Storage Productivity Center that is installed.
This is an example of the information in version.txt:

```
TPC V4.1.1 Build TPC_4.1.1.0.56 20090921
```

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Verifying the IBM System Storage Productivity Center version

You can check the version of System Storage Productivity Center so that if you encounter a problem and need IBM customer support you can identify the version level that you are using.

To verify the version of IBM® System Storage Productivity Center that is installed, go to the following directory:

```
C:\sspc
```

This directory contains the version.txt file which displays the version of System Storage Productivity Center that is installed.
This is an example of the information in version.txt:

```
SSPC V1.4 Build 20091023
```

Tópico pai: Managing System Storage Productivity Center

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Verifying the DS3000, DS4000, DS5000 Storage Manager GUI version

When you encounter a problem and need IBM customer support, one of the items you need to identify is the version level of the product.

To verify the version of DS3000, DS4000, or DS5000 Storage Manager GUI that is installed, go to the following directory:

```
C:\Program Files\IBM\TPC\device\apps\was\profiles\deviceServer\
installedApps\DefaultNode\DeviceServer.ear\DeviceServer.war\app\
product\app
```

Where *product* can be DS3000, DS4000, or DS5000. This directory contains the version.txt file which displays the version of the Storage Manager GUI that is installed.
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Backing up and recovering the SSPC system

The Windows® Server Backup feature provides a basic backup and recovery solution for computers running the Windows Server 2008 operating system. SSPC provides a procedure that allows you to recover your system in the event of a system failure.

- **Backing up the SSPC system**
  You can use the Windows Server Backup feature to protect your operating system, volumes, files, and application data. Backups can be saved to shared folders on a network drive or to DVDs. They can be scheduled to run automatically or manually.
- **Recovering the SSPC system**
  The method of recovering the SSPC system varies, depending on the number of hard disk drives that failed and whether you backed up each drive.
- **Backing up the IBM Tivoli Storage Productivity Center database**
- **Backing up and recovering Tivoli Storage Productivity Center for Replication**
  There are two methods for backing up IBM® Tivoli Storage Productivity Center for Replication.

Tópico pai: Managing System Storage Productivity Center

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Backing up the SSPC system

You can use the Windows® Server Backup feature to protect your operating system, volumes, files, and application data. Backups can be saved to shared folders on a network drive or to DVDs. They can be scheduled to run automatically or manually.

You can create a backup using the Backup Schedule Wizard to enable backups to run on a regular schedule or you can use the Backup Once Wizard to run a one-time backup. You can access both of these wizards from the Windows Server Backup Microsoft® Management Console (MMC). You can also create regular or one-time backups using the **Wbadmin** command.

When backing up your system, use the Full server (all volumes) option. Do not use the Critical volumes or Noncritical volumes option. The Full server option backs up all volumes, including all files, data, applications, and the system state.

To use Windows Server Backup, you must be a member of the Windows Backup Operators or Administrators group, or you must have been delegated the appropriate authority. (The Administrator user ID that is included with SSPC is a member of the Administrators group and has the appropriate authority to perform backups.) If you want to use an SSPC user ID other than the Administrator user ID to create and recover a backup image,

see the instructions in Enabling a non-Administrator user ID to create a backup image. Changing the properties of a non-Administrator user ID so that it is authorized to recover a backup image is a task that can be performed only by a member of the Windows Administrators group. For complete information, see Windows 2008 Help and Support by clicking Start > Help and Support. Search **add a user account to a group**.

Dica: Record the password that you use to backup SSPC. If you must recover SSPC image you must use the password that you recorded at the time that you backed up the SSPC image. Otherwise, you will not be able to log on to Windows, or access IBM® Tivoli Storage Productivity Center or IBM DB2.

For complete information about backing up your SSPC system, go to http://technet.microsoft.com/en-us/library/cc753528.aspx. This Web site includes information about the following tasks:

- Configuring automatic backups
- Modifying an automatic backup schedule
- Performing a manual backup
- Using multiple disks to store backups
- Creating a backup of the system state using a command line

Tópico pai: Backing up and recovering the SSPC system

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Recovering the SSPC system

The method of recovering the SSPC system varies, depending on the number of hard disk drives that failed and whether you backed up each drive.

If both of the hard disk drives in the SSPC server failed, you must use the LSI Configuration Utility Program to recover files. The LSI Configuration Utility Program is firmware that is preinstalled on the SSPC server that can create redundancy for the files on the 2805-MC4 hard disk drives. You are not required to manually set up the LSI Configuration Utility Program if only one hard drive fails. If one drive fails, the LSI Configuration Utility Program automatically identifies the new hard drive and copies the files from the failed drive to the redundant drive. The copying begins when Microsoft® Windows® 2008 Enterprise Editions starts, and runs in the background until the copy operation is complete.

You must manually set up the LSI Configuration Utility Program if one of the following conditions exists:

- Both hard drives have been completely formatted
- Both hard drives have been replaced
- The LSI Configuration Utility Program was removed from the SSPC server

To recover the SSPC system:

1. Determine whether you must manually set up the LSI Configuration Utility Program:
    - If you must set up the program, perform the steps in Manually setting up the LSI Configuration Utility Program and go to step 2.
    - If you do not have to set up the program, go to step 2.
2. Select and perform one of the following recovery procedures:
    - If you backed up your SSPC system and want to recover it from a shared folder on a network drive, see Recovering the backup image from a shared folder on a network drive.

- If you backed up your SSPC system and want to recover it from DVDs, see Recovering the backup image from DVDs.
- If you did not back up your SSPC system, see Recovering the SSPC image if you did not back it up.

- **Manually setting up the LSI Configuration Utility Program**
  If both of the hard drives in the SSPC 2805-MC4 have been completely formatted or replaced, or if the LSI Configuration Utility Program was removed from the SSPC server, you must manually set up the LSI Configuration Utility Program.
- **Recovering the SSPC system if you backed it up**
  This topic explains methods of recovering your backed up SSPC image.
- **Recovering the SSPC image if you did not back it up**
  You might need to recover the SSPC system if you did not back it up with the Windows Server Backup feature.

Tópico pai: Backing up and recovering the SSPC system

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Manually setting up the LSI Configuration Utility Program

If both of the hard drives in the SSPC 2805-MC4 have been completely formatted or replaced, or if the LSI Configuration Utility Program was removed from the SSPC server, you must manually set up the LSI Configuration Utility Program.

The LSI Configuration Utility Program supports the SSPC server's redundant array of independent disks (RAID). By using the LSI Configuration Utility Program, the server can create redundancy for the files on its 2805-MC4 hard disk drives so that if one disk drive fails, the data can be read or regenerated from the other disk drive in the array.

To manually set up the LSI Configuration Utility Program, perform the following steps:

1. Ensure that a keyboard, video, and mouse (KVM) unit is securely connected to the SSPC server.
2. Restart the server using the following steps:
   a. From the SSPC desktop, click Start.
   b. Click the right arrow icon and from the list click Restart. The **Shut Down Windows®** window is displayed.
   c. In the **Shutdown Event tracker** box, from Options select Operation system: Reconfiguration (Planned) and click OK. The **IBM® System x Server Firmware** window is displayed while Windows restarts.
   d. If the server does not respond (for example, if the mouse cursor does not move), press the power-control button to turn off the server. Wait two minutes and push the power-control button again to restart the server.
3. Press Ctrl + H to start the LSI Configuration Utility Program. The **Adapter Selection** window is displayed.
4. Click Start. The **MegaRAID BIOS Config Utility Virtual Configuration** window is displayed.
5. In the left navigation panel, click Configuration Wizard.
6. Click New Configuration and click Next. The following message is displayed:

```
This is a Destructive Operation!
Original configuration and data will be lost
```

```
Select YES, if desired so.
```

7. Click Yes.
8. From the **Select Configuration Method** window, perform the following steps:
    a. Click Automatic Configuration.
    b. In the Redundancy field, click Redundancy when possible from the list.
    c. Click Next.
9. In the **Configuration Preview** window. click Accept. The following message is displayed: `Save this Configuration?`
10. Click Yes. The following message is displayed:

```
All data on the new Virtual Drives will be lost.
Want to Initialize?
```

11. Click Yes. The window quickly loads twice.
12. Click Slow Initialize, and click Go. The following message is displayed:

```
All data on the new Virtual Drives will be lost.
Want to Proceed with Initialization?
```

13. Click Yes. A progress window displays the percentage of the initialization.
14. When the initialization is complete, click Back. The setup of the LSI Configuration Utility Program is successful if the text in the Drives pane is similar to the following:

```
Backplane: (252), Slot:0, SAS, HDD, 135.972 GB, Online
Backplane: (252), Slot:1, SAS, HDD, 135.972 GB, Online
```

15. Click Exit.
16. At Exit Application, click Yes.
17. After you perform step 16, the interface does not present an interactive screen. Perform the following steps:
    a. Press Ctrl + Alt + Delete on the keyboard to restart the server.
    b. When the **IBM System x Server Firmware** window is displayed (and as the server restarts), insert the Windows 2008 Recovery CD (the 32-bit version) into the DVD drive of the SSPC server.

    Windows loads files. After approximately 5 minutes, the **System Recovery Options** window opens.
18. Continue by performing one of the following types of recovery:
    - If you previously backed up your system and you want to recover the image from a shared folder on a network drive, go to step 3 in Recovering the backup image from a shared folder on a network drive.
    - If you previously backed up your system and you want to recover the image from DVDs, go to step 3 in Recovering the backup image from DVDs.
    - If you did not back up your system and you want to recover the image, go to step 3 in Recovering the SSPC image if you did not back it up.

Tópico pai: Recovering the SSPC system

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Recovering the SSPC system if you backed it up

This topic explains methods of recovering your backed up SSPC image.

If your SSPC system does not start and you previously backed it up by using the Windows® Server Backup feature, you can use the Windows 2008 Recovery CD (that comes with the SSPC) and your backup DVDs to recover the image. You can also recover the backup image from a shared folder on a network drive. The backup image that you created with Windows Server Backup can restore the operating system state, volumes, application data, backup catalog, and local files and folders. To recover the SSPC image, you must have backed it up previously by using the Full server (all volumes) option, rather than the Critical volumes or Noncritical volumes option.
Requirement: To recover data using Windows Server Backup, you must be a member of the Windows Backup Operators or Administrators group, or you must have been delegated with the appropriate authority. The SSPC Administrator user ID is a member of the Administrators group and has the appropriate authority to perform recoveries. If you have created an additional SSPC user ID and you want to perform the recovery by using this ID, see Enabling a non-Administrator user ID to create a backup image.

To obtain complete information about recovering the system, go to http://technet.microsoft.com/en-us/library/cc753920.aspx. This Web site includes additional information about recovering your server image by using specific tools.

The topics that follow describe how to recover the backup image from a shared folder on a network drive and from DVDs.

- **Recovering the backup image from a shared folder on a network drive**
  You might need to recover the backed up SSPC system image from a shared folder on a network drive.
- **Recovering the backup image from DVDs**
  You might need to recover the backed up SSPC system image from DVDs.

Tópico pai: Recovering the SSPC system

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Recovering the backup image from a shared folder on a network drive

You might need to recover the backed up SSPC system image from a shared folder on a network drive.

To restore your SSPC system image from a shared folder on a network drive, use the procedure in this section. Before you start, assemble the following materials and ensure that the SSPC server is connected to a keyboard, video, and mouse (KVM) unit:

- The password that you used when you backed up the SSPC image. To recover the image, you must use this password. Otherwise, you will not be able to log on to Windows®, or access IBM® Tivoli Storage Productivity Center or IBM DB2.
- Windows 2008 Recovery CD (use the 32-bit version that comes with your SSPC server)
- Administrator user ID and password for the device on which the shared folder resides
- IP and DNS addresses for the device on which the shared folder resides
- Directory location of the shared folder

Perform the following steps:

1. Turn on the SSPC server.

2. When the **IBM System x Server Firmware** window is displayed, insert the Windows 2008 Recovery CD (the 32-bit version) into the DVD drive of the SSPC server.

   Windows loads files. After approximately 5 minutes, the **System Recovery Options** window opens.

3. Select a language and a keyboard layout, and click **Next**.
4. Select the operating system to repair. Click **Next**.
5. At **Choose a recovery tool**, perform one of the following steps:
   - **If the SSPC server is in a Dynamic Host Configuration Protocol (DHCP) environment, Windows connects to your network drive. Go to step 8.**
   - **If the SSPC server is not in a DHCP environment, perform the following steps to connect to your network drive:**
     a. Click **Command Prompt**.
     b. Change the directory by typing `cd \sources\recovery\tools` and press Enter.
     c. To determine whether the SSPC is connected to the network, type `wpeinit` and press Enter.
     d. To initialize the network, type `ipconfig` and press Enter.
     e. To set the static IP address, type: `setipconfig` *`network port 1|2ip addrsubnet maskgatewayDNS server`* (where the values are the network port, IP address, subnet mask address, gateway address and DNS server address of the network drive) and press Enter. Wait for the Ethernet adapter Local Area Connection information to display.
     f. Click the **X** in the top right to close the command prompt window. The SSPC server connects to the network drive and returns to the **Choose a recovery tool** window.
6. Click **Windows Complete PC Restore**.
7. Click Cancel when you see the following message: `A valid backup location could not be found. Windows cannot find a backup on this computer. Attach the backup hard disk or insert the final DVD from a backup set and click Retry`, click **Cancel**.
8. At **Restore your entire computer from a backup**, click **Restore a different backup** and click **Next**.
9. At **Select the location of the backup**, click **Advanced**.
10. Click **Search for a backup on the network**.
11. At the message `Are you sure you want to connect to the network?`, click **Yes**. The server connects to the network.
12. In the **Network Folder** field, type the location of the shared folder on the network drive and click **OK**. Refer to the example on the window for the correct format. Type only the root directory (and not any subdirectories) of the network-attached drive.
13. Type the Administrator user ID and password, and click **OK**.
14. At **Select the location of the backup**, click the backup that you want to recover and click **Next**.
15. Click the backup that has the date and time that you want, and click **Next**.
16. At **Choose how to restore the backup**, click **Next**.
17. Click **Finish**. Windows presents the message `Windows Complete PC Restore will format the disks you chose to restore, which will erase all existing data.`
18. Select the check box **I confirm that I want to format the disks and restore the backup**, and click **OK**. Windows begins restoring the image from the shared folder. The process takes several minutes. When the image is fully restored, the SSPC server automatically restarts and briefly displays a message that confirms the recovery.

Tópico pai: Recovering the SSPC system if you backed it up

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Recovering the backup image from DVDs

You might need to recover the backed up SSPC system image from DVDs.

To restore the SSPC system image from DVDs, use the following procedure. Before you start, assemble the following materials and ensure that the SSPC server is connected to a keyboard, video, and mouse (KVM) unit:

- The password that you used when you backed up the SSPC image. To recover the image, you must use this password. Otherwise, you will not be able to log on to Windows®, or access IBM® Tivoli Storage Productivity Center or IBM DB2.
- Windows 2008 Recovery CD (use the 32-bit version that comes with your SSPC server)
- DVDs that contain your backup image
- A completed planning work sheet (see Planning work sheet)

Perform the following steps:

1. Turn on the SSPC server.
2. When the **IBM System x Server Firmware** window is displayed, insert the Windows 2008 Recovery CD (the 32-bit version) into the DVD drive of the SSPC server.

   Windows loads files. After approximately 5 minutes, the **System Recovery Options** window opens.

3. Select a language and a keyboard layout, and click **Next**.
4. Select the operating system to repair. Click **Next**.
5. At **Choose a recovery tool**, click **Windows Complete PC Restore**. Windows presents the message: `A valid backup location could not be found. Windows cannot find a backup on this computer. Attach the backup hard disk or insert the final DVD from a backup set and click Retry.`
6. Insert the last DVD from your backup group into the external drive and click **Retry**. Windows scans for backup disks.
7. At **Restore your entire computer from a backup**, click **Use the latest available backup (recommended)** and click **Next**.
8. At **Choose how to restore the backup**, click **Next**.
9. Click **Finish**. Windows presents the message: `Windows Complete PC Restore will erase all data on the disks you chose to restore.`
10. Select the check box **I confirm that I want to erase all existing data and restore the backup**, and click **OK**. The message `The disk is not the requested disk` displays, along with the name of a disk.
11. Remove the disk that is currently in the external drive and insert the disk that is named in the message. Click **OK**. Windows continues the recovery.
12. If prompted, insert any remaining disks from your backup group. When the image is fully restored, the SSPC server automatically restarts and briefly displays a message that confirms the recovery.

Tópico pai: Recovering the SSPC system if you backed it up

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Recovering the SSPC image if you did not back it up

You might need to recover the SSPC system if you did not back it up with the Windows® Server Backup feature.

If you need to recover the SSPC system but you did not back it up, use the Windows 2008 Recovery CD and the SSPC Recovery Image DVD to restore the SSPC to its factory image. The recovery CD and the image DVD come with the SSPC server. Perform the following steps:

Perform the following steps:

1. Turn on or restart the SSPC server.
2. When the **IBM System x Server Firmware** window is displayed, insert the Windows 2008 Recovery CD (the 32-bit version) into the DVD drive of the SSPC server.

   Windows loads files. After approximately 5 minutes, the **System Recovery Options** window opens.

3. Select a language and a keyboard layout. Click Next.
4. Click **Next**.
5. At **Choose a recovery tool**, click Command Prompt to open a command prompt window.
6. Change the directory by typing `cd \sources\recovery\tools` and press Enter.
7. At the prompt, type `Restoresspc` and press Enter. This command is not case-sensitive.
8. When prompted with `All data on non-removable disk will be lost. Proceed with Restore (Y/N)?`, type `Y` and press Enter.
9. When prompted, remove the Windows 2008 Recovery CD from the SSPC server and insert the SSPC Recovery Image DVD into the server.
10. At the prompt `Please insert the SSPC recovery DVD and enter the location of recovery DVD <d:>?`, press Enter.
11. Press any key to continue. The process of restoring the image begins.
12. When the image is fully restored, press any key to continue.
13. Click the **X** at the top right to close the window.
14. At Choose a recovery tool, remove the SSPC Recovery Image DVD from the SSPC server and perform one of the following actions:
    - If you want to restart the server, click Restart. The **IBM® System x Server Firmware** window is displayed while the server restarts. The process takes approximately 10 minutes and the server automatically restarts again.

      The following messages are displayed:

      ```
      Boot Fail. CD/DVD Rom
      Boot Fail. Floppy Drive
      ```

      Ignore these messages; they are displayed whenever the server starts or restarts and no disk is in the CD/DVD drive. The server continues to start. When the **Initial Configuration Tasks** window is displayed, configure the computer and network settings by using the instructions in For the IBM service representative: completing the initial configuration tasks.

      Dica: When you configure the computer and network settings, for some SSPC servers the Password Tool window opens in the foreground and the Initial Configuration Tasks window opens in the background. The order in which you complete the tasks in these two windows does not matter.
    - If you want to shut down the server, click Shut Down. When you start the server again, go to For the IBM service representative: configuring the operating system and complete all remaining steps for setting up the SSPC server.

Tópico pai: Recovering the SSPC system

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Backing up the IBM Tivoli Storage Productivity Center database

IBM® Tivoli Storage Productivity Center uses circular logs for the DB2 database. Therefore, only an offline database backup is supported. When an offline database backup is performed, the database connections are terminated. Therefore, the Tivoli Storage Productivity Center servers need to be stopped and then restarted.

1. Close the IBM Tivoli Storage Productivity Center GUI.
2. Stop the IBM Tivoli Storage Productivity Center servers. Click **Start > Control Panel > Administrative Tools > Services**. On the Services panel, stop these services:

   ```
   IBM WebSphere Application Server V6.1 - DeviceServer
   IBM Tivoli Storage Productivity Center Data Server
   ```

3. Back up your database.
   a. Open the DB2 Control Center. Click **Start > All Programs > IBM DB2 > DB2COPY1 > General Administration Tools > Control Center**.
   b. The Control Center View panel is displayed. Select **Basic** and click **OK**.
   c. In the Control Center navigation tree, click **All Databases**.
   d. Expand the **All Databases** node to see **TPCDB**. This is the IBM Tivoli Storage Productivity Center database. Highlight **TPCDB** and right-click on it. Click **Backup**.
   e. The Confirm the details of your database panel is displayed. Click **Next**.
   f. The Specify where to store your backup image panel is displayed. For Media Type, enter **File System**. If you want to add a new folder, click **Add**.
   g. On the Path Browser - LOCALHOST panel, click the **Create New Folder** icon. Enter the name of your new folder (for example, TPCbackup1). Click **OK**.
   h. On the Specify where to store your backup image panel, you will see your new folder listed (TPCbackup1). Click **Finish**. The database backup will run.
   i. When the database backup is completed, you will see a DB2 Message window indicating that the database backup completed successfully.
   j. Close the DB2 Message window.
4. Restart the IBM Tivoli Storage Productivity Center servers. Click **Start > Control Panel > Administrative Tools > Services**. On the Services panel, start these services:

   ```
   IBM WebSphere Application Server V6.1 - DeviceServer
   IBM Tivoli Storage Productivity Center Data Server
   ```

Tópico pai: Backing up and recovering the SSPC system

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Backing up and recovering Tivoli Storage Productivity Center for Replication

There are two methods for backing up IBM® Tivoli Storage Productivity Center for Replication.

- Use the import and export functions of Tivoli Storage Productivity Center for Replication to save the configuration of each Tivoli Storage Productivity Center for Replication session. Perform the following steps.
    1. Export a Tivoli Storage Productivity Center for Replication session to a comma separated values (CSV) file.
    2. Use the CSV file to recover the Tivoli Storage Productivity Center for Replication session.
- Use the High Availability function of Tivoli Storage Productivity Center for Replication. This option allows Tivoli Storage Productivity Center for Replication to have a real-time backup server that can take control in the event of a disaster.

For information about these backup options, go to the following links:

- http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp?topic=/com.ibm.rm.doc_4.1.1/frg_c_highavail.html
- http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp?topic=/com.ibm.rm.doc_4.1.1/frg_c_export_copyset.html
- http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp?topic=/com.ibm.rm.doc_4.1.1/frg_c_import_copyset.html

Tópico pai: Backing up and recovering the SSPC system

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Upgrading the features of IBM System Storage Productivity Center

This section provides information on how to upgrade the hardware and licenses for IBM® System Storage Productivity Center.

You can upgrade the features of the following components:

- Add a IBM Tivoli Storage Productivity Center license key. See Adding an installation license.
- Upgrade the Tivoli Storage Productivity Center. See Upgrading Tivoli Storage Productivity Center.
- Upgrade SAN Volume Controller Console. See Upgrading the SAN Volume Controller Console.
- Upgrade IBM Tivoli Storage Productivity Center for Replication. See Upgrading Tivoli Storage Productivity Center for Replication.
- Upgrade DSCIMCLI. See Upgrading the DSCIMCLI.

- **Adding an installation license**
  If you have installed a package on your system, for example, IBM Tivoli Storage Productivity Center Basic Edition, and want to add another package to your system (for example, IBM Tivoli Storage Productivity Center Standard Edition), all you have to do is add the installation license on your system. This topic provides information on how to add the installation license.
- **Upgrading Tivoli Storage Productivity Center**
  This section provides information about how to upgrade IBM Tivoli Storage Productivity Center.
- **Upgrading the DS8000 GUI**
  An IBM service representative is responsible for upgrading the IBM System Storage DS8000 graphical user interface (GUI).
- **Upgrading the SAN Volume Controller Console**
  This section provides information about how to upgrade the IBM System Storage SAN Volume

Controller Console.

- **Upgrading Tivoli Storage Productivity Center for Replication**
  When you upgrade IBM Tivoli Storage Productivity Center Version 4.0 or later, IBM Tivoli Storage Productivity Center for Replication also is upgraded automatically.
- **Upgrading the DSCIMCLI**
  If you have an older version of SSPC, you can upgrade the DSCIMCLI to the current level.
- **Upgrading the DS Storage Manager**
  Use this information to locate information about how to upgrade the DS Storage Manager.

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Adding an installation license

If you have installed a package on your system, for example, IBM® Tivoli Storage Productivity Center Basic Edition, and want to add another package to your system (for example, IBM Tivoli Storage Productivity Center Standard Edition), all you have to do is add the installation license on your system. This topic provides information on how to add the installation license.

To check the type of license you have, look for `.SYS2` files in the installation directory:

TPCBE0401.SYS2
: Indicates you have a Tivoli Storage Productivity Center Basic Edition license.

TPCSE0401.SYS2
: Indicates you have a IBM Tivoli Storage Productivity Center Standard Edition license.

TPCDATA0401.SYS2
: Indicates you have a IBM Tivoli Storage Productivity Center for Data license.

TPCDISK0401.SYS2
: Indicates you have a IBM Tivoli Storage Productivity Center for Disk license.

For example, if you want to add the IBM Tivoli Storage Productivity Center Standard Edition package to your system, complete the following steps:

1. Start the Tivoli Storage Productivity Center installation program from the DVD or image for the license you want to add.
2. The Select a language panel is displayed. Select a language from the list box and click **OK**. This is the language used to install the license.
3. The Software License Agreement panel is displayed. Read the terms of the license agreement. If you agree with the terms of the license agreement, select **I accept the terms of the license agreement**. Click **Next**.
4. The Select the type of installation panel is displayed. Select Installation Licenses. Click Next.
5. The Database administrator information panel is displayed. Enter the database administrator user ID and password. Click **Next**.
6. The Existing database schema information panel is displayed. Enter the information for where the database is located. Click **Next**.
7. The successfully installed panel is displayed. Click Finish.
8. Stop the Tivoli Storage Productivity Center GUI.
9. Stop the Device server and Data Server.
10. Start the Data Server and the Device server.
11. Start the Tivoli Storage Productivity Center GUI.

Tópico pai: Upgrading the features of IBM System Storage Productivity Center

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Upgrading Tivoli Storage Productivity Center

This section provides information about how to upgrade IBM® Tivoli Storage Productivity Center.

When you upgrade IBM Tivoli Storage Productivity Center Version 4.0 or later, IBM Tivoli Storage Productivity Center for Replication also is upgraded automatically.

To upgrade Tivoli Storage Productivity Center, follow these general steps.

Importante: When you upgrade Tivoli Storage Productivity Center 4.1.1 to a release or patch, the DS Storage Manager code is removed from the C:\Program Files\IBM\TPC\device\apps\was\profiles\deviceserver\InstalledApps\DefaultNode\SMLiCJNLPGen.ear directory. After you upgrade Tivoli Storage Productivity Center, reinstall DS Storage Manager so that the launch-in-context feature of IBM System Storage DS4000 can function properly. To reinstall the application, use the DS Storage Manager CDs that were provided with SSPC.

1. Download the latest Tivoli Storage Productivity Center 4.1.1 interim fix. Go to http://www.ibm.com/systems/support/storage/software/tpc/. Click **IBM Tivoli Storage Productivity Center for Data**. Click **Download**. Click **Downloadable files**.
2. Before continuing this procedure, perform the following steps to change the configuration of the Tivoli Integrated Portal so that it has the SSPC computer name that you want and not the SSPC computer name that was assigned by IBM Manufacturing.
    a. Open a command prompt window and change the directory to C:\Program Files\IBM\tivoli\tip\bin.
    b. Type `wsadmin -lang jython -c AdminControl.stopServer('server1')` and press Enter.
    c. Type `tipChangeHostName -h` *`hostname`* and press Enter.
    d. Verify that the Tivoli Integrated Portal has stopped by opening C:\Program Files\IBM\tivoli\tip\profiles\TIPProfile\logs\server1\server1.pid. If Tivoli Integrated Portal is stopped, the file does not exist. If the file exists, it contains the process ID of Tivoli Integrated Portal which you can use in the Task Manager to stop Tivoli Integrated Portal.
    e. Restart the SSPC server.
3. Start the Tivoli Storage Productivity Center installation program.
4. Select **Typical installation**.
5. Clear the check boxes for **Agents** and **Register with the agent manager**.
6. The "User ID and password, and server and agent information" panel is displayed. Accept the defaults and click **Next**. If you changed the DB2 administrative password, you must enter the changed password here.
7. The "Summary Information" panel is displayed. Review the summary information panel and click **Install**.
8. The program will upgrade Tivoli Storage Productivity Center.

For more information about upgrading Tivoli Storage Productivity Center, go to http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click on **Tivoli Storage Productivity Center > Upgrading**.

Tópico pai: Upgrading the features of IBM System Storage Productivity Center

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Upgrading the DS8000 GUI

An IBM® service representative is responsible for upgrading the IBM System Storage DS8000 graphical user interface (GUI).

For information about upgrading DS8000 interfaces, go to http://publib.boulder.ibm.com/infocenter/dsichelp/ds8000ic/index.jsp. Search for *Upgrading the interfaces*.

Tópico pai: Upgrading the features of IBM System Storage Productivity Center

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Upgrading the SAN Volume Controller Console

This section provides information about how to upgrade the IBM® System Storage SAN Volume Controller Console.

To upgrade the SAN Volume Controller Console, go to the SAN Volume Controller Information Center at http://publib.boulder.ibm.com/infocenter/svcic/v3r1m0/index.jsp. Search for *Upgrading the master console software*.

Tópico pai: Upgrading the features of IBM System Storage Productivity Center

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Upgrading Tivoli Storage Productivity Center for Replication

When you upgrade IBM® Tivoli Storage Productivity Center Version 4.0 or later, IBM Tivoli Storage Productivity Center for Replication also is upgraded automatically.

To upgrade Tivoli Storage Productivity Center for Replication, see Upgrading Tivoli Storage Productivity Center.

Tópico pai: Upgrading the features of IBM System Storage Productivity Center

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Upgrading the DSCIMCLI

If you have an older version of SSPC, you can upgrade the DSCIMCLI to the current level.

To upgrade the DS CIM agent management commands (DSCIMCLI), go to the Web site for IBM CIM Agent for DS Open API 5.4.3 at http://www.ibm.com/support/docview.wss?rs=1118&context=STC4NKB&dc=D400&uid=ssg1S4000652&loc=en_US&cs=utf-8&lang=en. Download the DSCIMCLI zip file for 5.4.3 and readme file for Windows. The readme file provides additional information about downloading and installing the DSCIMCLI.

Follow these steps to upgrade the DSCIMCLI:

1. Delete all files in the DSCIMCLI folder. The default directory and folder are:

   ```
   C:\Program Files\IBM\DSCIMCLI
   ```

2. Unzip the DSCIMCLI zip file into the DSCIMCLI folder.

Nota: If you unzip the DSCIMCLI zip file into a different directory, update the DSAGENT_HOME environment variable to point to the new directory.

Tópico pai: Upgrading the features of IBM System Storage Productivity Center

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Upgrading the DS Storage Manager

Use this information to locate information about how to upgrade the DS Storage Manager.

Follow these steps:

1. From the SSPC desktop, click **SSPC Support Links IBM® Tivoli Storage Productivity Center**.
2. Select the Product family: **Disk systems**.
3. Select the Product: DS3000, DS4000, or DS5000
4. Under Support & Downloads, scroll down and click **Storage Manager**.
5. Select the code to download.

Tópico pai: Upgrading the features of IBM System Storage Productivity Center

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Troubleshooting System Storage Productivity Center

This section provides troubleshooting information for the IBM® System Storage Productivity Center.

For servicing or technical support, 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 IBM and IBM products, what to do if you experience a problem with your system, and whom to call for service, if necessary.

There are several icons on your desktop to provide a quick link to the support Web sites for the following:

- System Storage Productivity Center
- IBM Tivoli Storage Productivity Center
- IBM Tivoli Storage Productivity Center for Replication
- SAN Volume Controller
- DS8000

For specific System Storage Productivity Center troubleshooting topics, see Troubleshooting topics.

- **Support Web sites**
  This section provides information for the IBM System Storage Productivity Center.
- **Documentation**
  This section provides links to documentation for IBM System Storage Productivity Center.
- **Before you call**
  Before you contact customer support, review the problem determination checklist and refer to online support.
- **Getting help and information from the World Wide Web**
  On the World Wide Web, the following IBM Web sites have up-to-date information about IBM systems, optional devices, services, and support.
- **Things to know about customer support for SSPC**
  The IBM System Storage Productivity Center (SSPC) combines an IBM Machine Type 2805 server with preinstalled storage software that represents a point of centralized management for storage devices.
- **Contacting customer support**
  Contact IBM customer support for information and assistance with System Storage Productivity Center.
- **IBM Taiwan product service**
  This section provides information about where to call in Taiwan for product service.
- **Troubleshooting Tivoli Storage Productivity Center problems**
  This section provides troubleshooting information for IBM Tivoli Storage Productivity Center.

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Support Web sites

This section provides information for the IBM® System Storage Productivity Center.

If you encounter a problem, IBM has the following support Web sites to help you determine whether this is a new problem or an existing problem. These Web sites also have information about flashes, technical notes, troubleshooting tips, planning and installation information, and download pages for code updates.

IBM DB2
: For information about DB2, go to http://www-306.ibm.com/software/data/db2/support/db2_9/.

IBM System Storage Productivity Center
: For information about System Storage Productivity Center, go to http://www.ibm.com/systems/support/storage/software/sspc.

IBM System x and xSeries

Check the following for hardware-related problems:

- All cables to ensure they are connected.
- The power switches to ensure that the system and all optional devices are turned on.
- *IBM System x3550 M2 Type 7946 Problem Determination and Service Guide*. This guide is available on the *IBM System Storage Productivity Center Documentation CD* that comes with your system. It provides information about the diagnostic tools on the system.

For more information, see http://www.ibm.com/systems/x/.

IBM Tivoli Storage Productivity Center
: For information about Tivoli Storage Productivity Center, go to http://www.ibm.com/systems/support/storage/software/tpc/.

IBM Tivoli Storage Productivity Center for Replication
: For information about IBM Tivoli Storage Productivity Center for Replication, go to http://www.ibm.com/systems/support/storage/software/tpc/.

IBM System Storage SAN Volume Controller
: For information about SAN Volume Controller, go to http://www.ibm.com/storage/support/2145.

IBM System Storage DS8000 series
: For System Storage DS8100, see http://www.ibm.com/servers/storage/support/disk/ds8100/.

  For System Storage DS8300, see http://www.ibm.com/servers/storage/support/disk/ds8300/.

IBM System Storage DS3000, DS4000, or DS5000
: For information about DS3000, DS4000, or DS5000, go to http://www.ibm.com/systems/support/storage/disk.

Engenio SMI-S Provider from LSI
: For information about the Engenio SMI-S Provider from LSI, see http://www.lsi.com/storage_home/products_home/external_raid/management_software/smis_provider/index.html.

DS CIM agent
: For information about the DS CIM agent, see http://www.ibm.com/servers/storage/support/software/cimdsoapi/.

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Documentation

This section provides links to documentation for IBM® System Storage Productivity Center.

For information about links to documentation for System Storage Productivity Center, see the following:

IBM DB2
: Go to http://publib.boulder.ibm.com/infocenter/db2luw/v9/index.jsp. Click **Troubleshooting and support**.

IBM Tivoli Storage Productivity Center
: Go to http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click on **Tivoli Storage Productivity Center > Troubleshooting**.

IBM Tivoli Storage Productivity Center for Replication

Go to http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click on **Tivoli Storage Productivity Center for Replication > Troubleshooting** and **Problem Determination**.

IBM System Storage SAN Volume Controller

For information about SAN Volume Controller, go to http://publib.boulder.ibm.com/infocenter/svcic/v3r1m0/index.jsp. Click **Troubleshooting**.

IBM System Storage DS8000

For information about the DS8000, go to http://publib.boulder.ibm.com/infocenter/dsichelp/ds8000ic/index.jsp. Click on **Troubleshooting**.

From a browser, you can check the following:

Version

You can confirm that the DS8000 Element Manager is available by entering:

```
http://ip:port/DS8000/TokenManager?user=getVersion
```

You will see the following:

- R3.0 - will return with the correct version string.
- R2.4 - will return with a "NULL" string (this feature is not supported in pre-release 3 versions).
- If nothing is returned, the element manager is not accessible.

Login

You can verify that the element manager is running and you are able to login to the element manager. Enter this:

```
http://ip:port/DS8000/TokenManager?user=user_name
&amp;passwd=password
```

A successful login results in a unique Java™ UID string being returned. This is true for R3 and R2.4. A "NULL" login means that the login failed. If nothing is returned, the element manager is unavailable.

DS8000 Element Manager servlets

The DS8000 Element Manager servlets run within the Device server web container. To access the log file, go to this directory:

```
TPC_install_dir\device\log\msgTPCDeviceServer.log
```

DS8000 Element Manager Java Server Page

To access the log file for the DS8000 Element Manager Java Server Page, go to this directory:

```
TPC_install_dir\device\apps\was\profiles\deviceServer\
installedApps\DefaultNode\DeviceServer.ear\DeviceServer.war
```

There also is a debugging console available. To access the debugging console, a flag needs to be passed to Java when launching the GUI. This flag is:

```
var dfConfig = {isDebug: true, "dojoDebugMasterConsole"};
```

This will cause Tivoli Storage Productivity Center to provide debug information to `stdout`. Nota: If Tivoli Storage Productivity Center is launched using `javaw.exe` (as used by the default in the Windows® shortcut), you will not see any output because `javaw.exe` hides the console window. In this case, you need to change the shortcut to use `java.exe`.

IBM System Storage DS3000, DS4000, or DS5000

Go to http://www.ibm.com/systems/support/storage/disk.

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Before you call

Before you contact customer support, review the problem determination checklist and refer to online support.

Before you call, ensure that you have taken these steps:

- Check all cables to ensure they are connected.
- Check the power switches to ensure that the system and all optional devices are turned on.
- Check whether connection to the hardware management console (HMC), graphical user interface (GUI), and CIM agent has been properly established. For example, to determine whether the problem is connectivity to the DS8000 CIM agent, start by checking the version of the DS8000. Depending on the version, the DS8000 CIM agent might be embedded in the DS8000 HMC or installed in other external hardware. If embedded, it might or might not be enabled or started by default. Continue by verifying that the CIM agent on the DS8000 is running (review the steps in the topics about configuring the SSPC to specific devices, such as the DS8000; to access these topics, see the online help on the SSPC desktop or the
- Refer to the following troubleshooting information:
    - *IBM System x3550 M2 Type 7946 Problem Determination and Service Guide*. This guide is available on the *IBM System Storage Productivity Center Documentation CD*that comes with your system. It provides instructions about using the diagnostic tools on the system. The troubleshooting information or the diagnostic tools might tell you that you need additional or updated device drivers or other software. IBM® maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to http://www.ibm.com/servers/eserver/support/xseries/index.html and follow the instructions for System x3550 M2 Type 7946 Model PAS.
    - contains information about problem determination for System Storage Productivity Center, IBM Tivoli Storage Productivity Center for Replication, DS8000, DS4000, DS5000, DS3000, SAN Volume Controller, and DB2.
- For explanations of error messages for SSPC, IBM Tivoli Storage Productivity Center, or IBM Tivoli Storage Productivity Center for Replication, visit the IBM System Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp and search on the error message.
- Try to determine whether the problem is related to software or hardware. For example, for hardware, look for obvious signs of a hardware fault. Error lights on the front panel might indicate a failing hardware part. Error logs might indicate whether a hardware failure has occurred. If you suspect a software problem, see the documentation for the operating system or the software product.
- If the problem is a software-related problem, you should have these items ready:
    - Version, release, modification, and service level number or the product that is causing a problem.
    - The communication protocol (for example, TCP/IP), version, and release number you are using.
    - The activity you were doing when the problem occurred, listing the steps you followed before the problem occurred.
    - The exact text of any error messages.
    - Collect relevant log files.

- Check for technical information, hints and tips, or submit a request for information by going to the SSPC Technical Support Web site at http://www.ibm.com/systems/support/storage/software/sspc.

You can also review the *IBM Software Support Handbook*, a guide to support services that is available at http://techsupport.services.ibm.com/guides/handbook.html.

Tópico pai: Troubleshooting System Storage Productivity Center

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Getting help and information from the World Wide Web

On the World Wide Web, the following IBM® Web sites have up-to-date information about IBM systems, optional devices, services, and support.

The support Web sites offer extensive information, including frequently asked questions (FAQs) and documentation for all IBM software products, such as Release Notes, Redbooks, and white papers. The documentation for some product releases is available in both PDF and HTML formats. Translated documents are also available for some product releases.

This section includes Web sites that you can access to obtain assistance.

Nota: Changes are made periodically to the IBM Web sites. Procedures for locating firmware and documentation might vary slightly.

For IBM System Storage Productivity Center
    http://www.ibm.com/systems/support/storage/software/sspc
For IBM System x
    http://www.ibm.com/systems/x/
For IBM Tivoli Storage Productivity Center
    http://www.ibm.com/systems/support/storage/software/tpc/
For IBM Tivoli Storage Productivity Center for Replication
    http://www.ibm.com/systems/support/storage/software/tpc/
For IBM System Storage DS8000 series
    For System Storage DS8100, see http://www.ibm.com/servers/storage/support/disk/ds8100/.

    For System Storage DS8300, see http://www.ibm.com/servers/storage/support/disk/ds8300/.

For IBM System Storage DS3000, DS4000, and DS5000 series
    http://www.ibm.com/servers/storage/support/disk. In the **Product** field, click the specific product that you want. Click **Go**.
For IBM System Storage SAN Volume Controller
    http://www.ibm.com/storage/support/2145
For DS CIM Agent
    http://www.ibm.com/servers/storage/support/software/cimdsoapi/

You can find service information for IBM systems and optional devices at http://www.ibm.com/servers/eserver/support/xseries/index.html.

Tópico pai: Troubleshooting System Storage Productivity Center

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Things to know about customer support for SSPC

The IBM® System Storage Productivity Center (SSPC) combines an IBM Machine Type 2805 server with preinstalled storage software that represents a point of centralized management for storage devices.

Remote support services are available for the individual products that are preinstalled with SSPC. Warranty and maintenance support for Machine Type 2805 is provided with the sale of the server. Hardware warranty terms are 1-year, 7x24 IBM On-Site Service. For IBM Tivoli Storage Productivity Center, and SAN Volume Controller (for one year at the initial purchase), further software maintenance is provided with an entitled software support contract.

Optionally, IBM provides remote technical support for the Linux® or Microsoft® Windows® Server operating system software through the Windows/Linux Support Line service. This service is not sold with SSPC, but customers can purchase it through a business partner or IBM sales representative.

Included with the sale of an IBM storage device (for example, the DS Storage Manager and CIM Agent for DS8000) is licensed hardware-management software. Defect support for both the storage device and management software is included under the product warranty for those devices. Non-defect-related support issues require the purchase of Storage Support Line service. This optional offering provides assistance with using, configuring, and determining problems associated with the managed storage device. Storage Support Line service is recommended for the storage devices at the customer location. It is not sold with SSPC, and the customer may purchase it through a business partner or IBM sales representative.

No single support entry point exists for the SSPC bundle of products. If the issue requires software support assistance, an IBM customer number for Tivoli Storage Productivity Center, SAN Volume Controller, Support Line for Windows Operating Systems, or Support Line for Storage is required.

Tópico pai: Troubleshooting System Storage Productivity Center

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Contacting customer support

Contact IBM® customer support for information and assistance with System Storage Productivity Center.

When you contact customer support, be prepared to provide the following information:

- Unless you are sure that you have a hardware-specific issue, reference the IBM Tivoli Storage Productivity Center. Provide your Tivoli Storage Productivity Center product ID (PID) and customer ID to receive warranty or Maintenance Agreement support. If the problem is not related to System Storage Productivity Center hardware or the Tivoli Storage Productivity Center, but is related to another product (for example, the DS4000 system or the SAN Volume Controller), contact the support center for that product.
- **For hardware-specific issues only, reference Machine Type 2805 and the machine's serial number.**

Be prepared to provide identification information about your company so that support personnel can readily assist you. Company identification information may also be needed to access online services available on the Web site.

For support for IBM System Storage Productivity Center, contact IBM customer support in one of the following ways:

- Go to the System Storage Productivity Center technical support Web site at http://www.ibm.com/systems/support/storage/software/sspc.

  To receive future support notifications, go to the right and from the **Stay informed** pane, click **My Notifications**. Enter your IBM ID and password. Once authenticated, you can configure your subscription for System Storage Productivity Center technical support Web site updates.

- For customers in the United States, call 1-800-IBM-SERV (1-800-426-7378).
- For customers outside the United States, call the support number for your country, available at http://www.ibm.com/planetwide.

Tópico pai: Troubleshooting System Storage Productivity Center

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IBM Taiwan product service

This section provides information about where to call in Taiwan for product service.

台灣IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路7號3樓
電話：0800-016-888

IBM® Taiwan product service contact information:

- IBM Taiwan Corporation
- 3F, No 7, Song Ren Rd.
- Taipei, Taiwan
- Telephone: 0800-016-888

Tópico pai: Troubleshooting System Storage Productivity Center

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Troubleshooting Tivoli Storage Productivity Center problems

This section provides troubleshooting information for IBM® Tivoli Storage Productivity Center.

Tivoli Storage Productivity Center provides the following tools to help you diagnose problems with Tivoli Storage Productivity Center:

- **Service** tool
- **Repocopy** tool

The **service** tool helps collect information for all installed Tivoli Storage Productivity Center components (for example, Data server, Device server, and GUI) from a centralized location. This tool detects the configuration of the system it is running on and collects the appropriate information. The information is placed in a .zip file. This file is placed in the same directory where the **service** tool is located. You can send this file to IBM Support Center to help you resolve problems.

The **service** tool does not collect information from the repository database. To collect information from the repository database, use **repocopy**.

For information about the **service** tool, go to the Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click **Tivoli Storage Productivity Center > Administering > Tivoli Storage Productivity Center > Exporting repository tables > Collecting information for IBM support**

The **repocopy** tool enables you to export all the tables in the Tivoli Storage Productivity Center database repository, if told to do so by IBM. You can send the output to the IBM Support Center.

For information about the **repocopy** tool, go to the Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click **Tivoli Storage Productivity Center > Administering > Tivoli Storage Productivity Center > Exporting repository tables > Exporting repository data**.

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Referência

Este tópico fornece informações de referência para o IBM® System Storage Productivity Center.

- **Reference information**
  This reference information describes topics that might be helpful when using IBM System Storage Productivity Center.
- **Troubleshooting topics**
  Use these troubleshooting topics to identify a specific problem you are having while running SSPC. Some topics provide additional information for working around the problem.
- **Installing System Storage Productivity Center components**
  You can design a device that is functionally equivalent to System Storage Productivity Center (SSPC) by installing specific software on a supported server.
- **Uninstalling IBM System Storage Productivity Center components**
  This section provides information on how to uninstall the components for IBM System Storage Productivity Center.
- **Accessing reports about storage resources**
  IBM System Storage Productivity Center uses the functionality of IBM Tivoli Storage Productivity Center to provide reports about storage resources. These reports are organized into different types and

categories to provide both summary and detailed information about the storage resources in your environment.

- **Notices**
  This information was developed for products and services offered in the U.S.A.
- **Accessibility features for IBM Tivoli Storage Productivity Center**
  Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.
- **Glossary**
  This glossary includes terms and definitions for the IBM System Storage Productivity Center.

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Reference information

This reference information describes topics that might be helpful when using IBM® System Storage Productivity Center.

- **TCP/IP ports used by System Storage Productivity Center**
  This topic lists the default ports that should be opened through the firewall when you use IBM System Storage Productivity Center.
- **Understanding Internet Protocol Version 6 support**
  IBM Tivoli Storage Productivity Center supports Internet Protocol Version 6 (IPv6) for communication between its components. The key IPv6 enhancement is the expansion of IP address spaces from 32 bits (up to 15 characters in length) to 128 bits (up to 45 characters in length).
- **Inventory of the System Storage Productivity Center shipment**
  Use this list to verify that all contents were received with the IBM System Storage Productivity Center server. Check off each item by the part number.

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TCP/IP ports used by System Storage Productivity Center

This topic lists the default ports that should be opened through the firewall when you use IBM® System Storage Productivity Center.

Tabela 1 shows the TCP/IP ports used by System Storage Productivity Center.

For a list of TCP/IP ports used by the IBM Tivoli Storage Productivity Center family, go to the Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp and search on TCP/IP ports used by the IBM Tivoli Storage Productivity Center family.

Tabela 1. TCP/IP ports used by System Storage Productivity Center

Component	Default	Notes

Component	Default	Notes
DB2	50000	
WebSphere (Disk Manager and Replication Manager also use these default ports)	81 2810 5567 5568 5569 7874 8009 8881 9044 9086 9091 9444	
SAN Volume Controller PuTTY ports for telnet and ssh	22 23	
Agent Manager and common agents	80 (Agent Manager-agent recovery service) 9510 (common agent) 9511 (Agent Manager) 9512 (Agent Manager) 9513 (Agent Manager public port) 9514 (common agent) 9515 (common agent)	
Fabric Manager	9550–9572	
Remote console	9560–9582	
Data Manager	2078 9510 (agent listening port)	
CIM agent for IBM TotalStorage Enterprise Storage Server (ESS)	5989	
CIM agent for DS8000	6989 (for embedded CIM agent, cannot be changed) 5989 or 5988 (proxy CIM agent, can be changed)	
IBM Tivoli Storage Productivity Center communication with DS8000 GUI	8451 8452	

Component	Default	Notes
IBM Tivoli Storage Productivity Center for Replication	Incoming communication: 3080 3443 5110 5120 Outgoing communication with ESS, DS, and SAN Volume Controller: 2433 5989 6120 SAN Volume Controller CIM agent: 5988 5989 Dica: If you changed the port configuration of your storage controller, the ports would be different.	A Web browser typically communicates with Tivoli Storage Productivity Center for Replication GUI using HTTP ports 3080 and 3443. These ports are configurable from the Tivoli Storage Productivity Center for Replication installation program. The Tivoli Storage Productivity Center for Replication command line and GUI typically communicate with the Tivoli Storage Productivity Center for Replication server using port 5110. Tivoli Storage Productivity Center for Replication uses port 5120 to communicate with other Tivoli Storage Productivity Center for Replication servers for high-availability purposes.
Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication	162 (default SNMP listening port)	Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication share this port.
Remote console login to SSPC server	3389	
Tivoli Integrated Portal server	Inbound 16310, 16311, 16312, 16313, 16315, 16316, 16318, 16320, 16322, 16323	
Tivoli Integrated Portal to LDAP authentication	Outbound 389	

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Understanding Internet Protocol Version 6 support

IBM® Tivoli Storage Productivity Center supports Internet Protocol Version 6 (IPv6) for communication between its components. The key IPv6 enhancement is the expansion of IP address spaces from 32 bits (up to 15 characters in length) to 128 bits (up to 45 characters in length).

Overview

You can run Tivoli Storage Productivity Center on computers that are enabled for IPv4, IPv6, or dual stack. *Dual stack* indicates that a machine has both the IPv4 and IPv6 stacks enabled and both addresses configured. The following table shows the internal components of Tivoli Storage Productivity Center that can communicate with each other using IPv6.

Tabela 1. IPv6 communication for internal Tivoli Storage Productivity Center components

Components in this column can communicate over IPv6 with the components in the second column	**Tivoli Storage Productivity Center components**
User interface	Data server
Data server	Device server database repository
Device server	database repository tpctool (command-line tool) SRMCP
database repository	Data server Device server Repocopy tool Tivoli Storage Productivity Center universal agent
tpctool (command-line tool)	Device server
SRMCP	Device server
Repocopy tool	database repository
Tivoli Storage Productivity Center universal agent	database repository

Tivoli Storage Productivity Center can communicate with the following external components over IPv6:

- SMI-S CIM agents
- SLP directory agents
- Out of band SNMP agents
- Storage devices (for example, the DS8000 element manager)
- SMTP server

Nota: These external components must be IPv6 enabled to communicate with Tivoli Storage Productivity Center using the IPv6 protocol.

Not all components and their related functions of Tivoli Storage Productivity Center are enabled for IPv6. Any functions that are not enabled for IPv6 will be unavailable through the user interface when Tivoli Storage Productivity Center is installed on an IPv6-only system. See for information about the functions that are currently not supported under IPv6 communication.

Using IPv6 addresses in the user interface

Support for IPv6 enables you to enter IPv6 addresses anywhere in the interface that supports the entering of IP addresses. For example, you can enter and display 128-bit IP address spaces on the following panels in the user interface:

Enter the host name (or IPv6 address) and port number of an Tivoli Storage Productivity Center server to which you want to connect.

Administrative Services > **Data Sources** >
Specify IPv4 or IPv6 addresses for the CIMOMs that are located on an IPv6 or dual stack machine.

Administrative Services > **Discovery** >
Specify IPv6 addresses when you run a discovery with SLP DA running on an IPv6-only or dual stack machine.

Administrative Services > **Data Sources** >
Specify IPv6 addresses for the Out of Band Fabric agents that are located on an IPv6 or dual stack machine.

Administrative Services > **Data Sources** >
Specify the names or IPv6 addresses of other Tivoli Storage Productivity Center servers that you want to add as subordinate servers for rollup probes and reports.

Administrative Services > **Discovery** >
Specify a range of IPv6 addresses for an SNMP discovery on an IPv6-only or dual stack machine against IPv6-enabled target machines.

Administrative Services > **Configuration** >
If the Tivoli Storage Productivity Center servers are running on an IPv6-only or dual stack machine enter the following information:

- Specify an IPv6 address for the target machine of SNMP traps that are generated as a result of triggered alerts.
- Specify an IPv6 address for a mail server that will receive emails notifications that are generated as a result of triggered alerts.

Tivoli Storage Productivity Center > **Configuration Utility** > **Element Manager** >
Use an IPv4 or IPv6 address when you specify the URL for an external tool that you want to launch from Tivoli Storage Productivity Center.

- **IPv6 considerations in Tivoli Storage Productivity Center**
  IBM Tivoli Storage Productivity Center provides limited support of some functions when using IPv6 communication.

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IPv6 considerations in Tivoli Storage Productivity Center

IBM® Tivoli Storage Productivity Center provides limited support of some functions when using IPv6 communication.

Keep in mind the following considerations when using the product on machines configured for IPv6 only:

Starting an element manager into a Web browser
: You must use Internet Explorer 7 when you start an element manager into a Web browser. Internet Explorer 6 does not support URLs that contain literal IPv6 host addresses. You can start element managers from a number of panels within the user interface:

  - Click Disk Manager > Storage Subsystems.
  - Click Disk Manager > Storage Subsystems > details.
  - Click IBM Tivoli Storage Productivity Center > Configuration Utility > Element Manager tab.

Staring the Tivoli Storage Productivity Center user interface using Java™ Web Start
: You cannot use Java Web Start to start the Tivoli Storage Productivity Center user interface on a Windows® system if both of the following conditions are true:

  - An IPv6 address or a hostname that resolves to an IPv6 address is specified as the target host in the Java Web Start URL.
  - Java Runtime Environment (JRE) 1.4.2 is installed on the same system as the Tivoli Storage Productivity Center user interface.

Using the Brocade API when adding an out of band fabric agent
: You cannot use the advanced Brocade API functions with switches because it does not support IPv6. Use a CIM agent for managing a switch or enable the IPv4 protocol on the switch. On an IPv6-only machine, the **Enable Advanced Brocade Discovery** check box on the panel is disabled.

Using IPv6 communication between master and subordinate servers (for Rollup reporting)
: If the master server is located on an IPv6-only computer, it can communicate with existing subordinate servers under the following conditions: the subordinate servers are upgraded to IBM TotalStorage Productivity Center v3.3.2 or higher and the IPv6 protocol is enabled on the computers where they are located.

Defining Tivoli Enterprise Console events as triggered actions
: You cannot use Tivoli Enterprise Console (TEC) events as triggered actions when defining alerts for Tivoli Storage Productivity Center jobs.

Selecting files for archive and backup
: You cannot select files for Tivoli Storage Manager archive and delete jobs. For example, you cannot use the alerting function of a constraint to automatically invoke a Tivoli Storage Manager archive or backup job to run against the files that violate that constraint.

Using Data agents and Fabric agents to collect information about the storage in your environment
: Data and Fabric agents cannot communicate with Data and Device servers that have been enabled for IPv6 and are installed on IPv6-only machines. However, Data and Fabric agents that are located on IPv4 machines can communicate with Data and Device servers that are installed on machines that have both IPv4 and IPv6 stacks (dual stack) enabled.
  Because of this limitation, the following functions are not available in an IPv6-only environment:

  - The Agent Manager is disabled under IPv6 communication. Agent Manager and agent communication can use IPv4 only. The Agent Manager is a network service that provides authentication and authorization. It also processes queries about its registry of configuration information about the agents and management applications, and provides an agent recovery service which is a network service for error logging for agents that cannot communicate with other Agent Manager services.

- You cannot use Data Manager for Chargeback to charge for storage information. The agents that collect charge back information do not communicate over IPv6.
- You cannot use Data Manager for Databases to monitor relational databases. The agents that collect relational database information do not communicate over IPv6.
- You cannot monitor NetWare and NetApp devices. The agents that collect information about these devices do not communicate over IPv6.
- You cannot monitor VMware ESX servers and Virtual Centers (hypervisors) because they are not IPv6 enabled.
- You cannot monitor HACMP and MSCS clusters.

In IPv6-only environments, Tivoli Storage Productivity Center will gather data about devices managed by:

- SMI-S CIM (Common Information Model) agents (for example, Brocade CIM agents, DS8000K CIM agents, SVC CIM agents)
- Out of Band Fabric SNMP agents
- SLP (Service Location Protocol) directory agents
- IPv6-enabled Tivoli Storage Productivity Center servers for rollup probes and reporting

Nota: These management components must be IPv6 enabled to communicate with Tivoli Storage Productivity Center using the IPv6 protocol.

Tópico pai: Understanding Internet Protocol Version 6 support

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Inventory of the System Storage Productivity Center shipment

Use this list to verify that all contents were received with the IBM® System Storage Productivity Center server. Check off each item by the part number.

Purpose

Tabela 1. Shipping list

√	Part number	Description
	49Y3575	SSPC Server (System x3550 Server, SSPC Machine Type 2805 Model MC4)
	39Y5533	Line cord (PDU connector)
	P43X3238	Cardboard shipping bracket
	43V6983	Cable-management arm box
	46C4162	Cable basket
	46C4163	Cable-management arm support arm
	46C4164	Support/stop bracket assembly
	46C4165	Cable-management arm mount clip

√	Part number	Description
	49Y5314	Cable ties, 8.0 inches
	49Y5423	Cable ties, 8.0 inches
	49Y4827	Slide kit
	46C4160	Left slide assembly
	46C4161	Right assembly
	12J5289	M6 hex head screw
	49Y5312	10 32 Shoulder screw
	49Y8842	Windows® software and documentation
	49Y8691	IBM Product CD Microsoft® Windows Server 2008 Enterprise Edition DVD (32–bit)
	49Y8692	IBM Product CD Microsoft Windows Server 2008 Enterprise Edition DVD (64–bit)
	X13-25990	Windows Server 2008 Getting Started Guide
	X13-25991	Microsoft Software License Terms
	65G6851	Plastic bag
	59Y7020	*IBM Important Notices*
	44R5225	*IBM Rack installation instructions*
	59Y7448	IBM System x3550 M2 Type 7946 Documentation 1.00, Multilingual (CD)
	49Y8635	IBM Director for x86 - Base v6.1.0 DVD
	40M3819	IBM ServeRAID 10.0 Support CD
	45W5651	*Read This First: Installing the IBM System Storage Productivity Center* for Version 1 Release 4
	45W5652	*IBM System Storage Productivity Center Documentation CD Version 1 Release 4*
	45W5653	*IBM Warranty Information* flyer
	X14-02139	License Windows Server Enterprise Edition 2008
	45W2036	DB2 9.5 fix pack 3
	45W6798	IBM DB2
	45W6799	IBM Tivoli Storage Productivity Center Basic Edition for Windows Version 4.1.1
	45W6800	IBM System Storage SAN Volume Controller Version 5.1.0
	45W6801	IBM DS Storage Manager 10.60.35 and IBM System Storage DS Open Application Programming Interface (DSCIMCLI) 5.4.3 for SSPC 1.4
	45W6802	Windows 2008 Recovery CD Version 1.4
	45W6803	SSPC Recovery Image DVD Version 1.4

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Troubleshooting topics

Use these troubleshooting topics to identify a specific problem you are having while running SSPC. Some topics provide additional information for working around the problem.

- **Error message: A duplicate name exists on the network**
  This error message is displayed when you have duplicate node names on the network.
- **Element managers on the same HMC also appear in the element manager table**
  IBM DS8000 element managers that exist on the same Hardware Management Console (HMC) might appear in the element manager table at the same time.
- **Error message: GUI8333E Failed to log in to DS8000 Element manager**
  You can encounter this message when you attempt to open a DS8000 GUI from the **Element Manager** node of Tivoli Storage Productivity Center and the user credentials are not set for the element manager. This message also is displayed the first time that you start a DS8000 element manager after changing the type of user authentication from local operating system (OS) to Lightweight Directory Access Protocol (LDAP) or Microsoft® Active Directory repository authentication.
- **Duplicate entries in element manager table**
  You see duplicate entries in the element manager table for the same element manager.
- **Cannot save audit logs to System Storage Productivity Center**
  This error occurs when you are saving the audit logs to IBM System Storage Productivity Center.
- **Error message: SQL1046N The authorization ID is not valid**
  You receive this error message when you change the server's host name. DB2 extended security has been turned on.
- **Installing the DS Storage Manager GUI fails using the Firefox browser**
  This problem occurs when you try to install the DS Storage Manager GUI on AIX using the Firefox browser.
- **Tivoli Productivity Center for Replication Add storage subsystem button is disabled**
  When you are adding a storage subsystem to IBM Tivoli Storage Productivity Center for Replication, the Add Storage Subsystem button does not function and therefore cannot add a storage subsystem.
- **Multiple warning windows when accessing Java Web Start**
  This problem occurs when you access the Java™ Web Start program.
- **Prompt to download a .jnlp file**
  This problem occurs when you start the IBM Tivoli Storage Productivity Center graphical user interface (GUI) from IBM Tivoli Integrated Portal.
- **Prompt to download and not run a .jnlp file**
  This problem occurs when you start the IBM Tivoli Storage Productivity Center graphical user interface (GUI) for the first time from the Windows® Explorer browser.

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Error message: A duplicate name exists on the network

This error message is displayed when you have duplicate node names on the network.

Problem

When you complete the Windows® setup wizard and the system reboots, the following error message is displayed:

```
A duplicate name exists on the network.
```

Action

Change the node name for the new system. For information about changing the node name, see Changing the server host name when DB2 extended security is off.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

Tópico pai: Troubleshooting topics

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Element managers on the same HMC also appear in the element manager table

IBM DS8000 element managers that exist on the same Hardware Management Console (HMC) might appear in the element manager table at the same time.

Problem

This problem occurs if:

1. You manually add an element manager to the Element Manager page and indicate HTTP or HTTPs for its connection protocol.
2. You add a CIMOM (DS CIM Agent) connection to that element manager.
    a. IBM® Tivoli Storage Productivity Center automatically starts a CIMOM discovery job.
    b. Element managers that are managing the same storage subsystems as the CIMOM are automatically added to the element manager table upon a successful CIMOM discovery job.
3. The CIMOM discovery process in Tivoli Storage Productivity Center might be configured to report IBM DS8000 element managers that use an IP protocol other than the protocol you defined when adding the element manager. For example, if you define HTTP for an element manager's protocol, and the CIMOM discovery job reports another element manager on the same HMC that uses HTTPS, then both element managers from that HMC will appear on the Element Manager page.

Each CIMOM in your environment has configurable values in a properties files that determine which protocol (HTTP or HTTPS) to return when reporting upon a registered IBM DS8000's Element Manager URL. By default,

the CIMOM will return the HTTPS version of the element manager during a successful CIMOM discovery job in Tivoli Storage Productivity Center.

In this default setup, the HTTPS version of the element manager is automatically added to the element manager table after a CIMOM discovery, thus resulting in two element managers from the same machine appearing on the table: the HTTP version of the element manager that was manually added and the HTTPS version that was automatically added through the CIMOM discovery process.

Action

Edit the values of the properties in the DS CIM Agents `/config/provider.configuration` file that determine which element managers are reported during a CIMOM discovery job in Tivoli Storage Productivity Center. The properties and default values in the provider.configuration file are:

```
DS_StorageManager_HTTPEnabled = true
DS_StorageManager_HTTPSEnabled = true
```

Set a property to false if you want to prevent the CIMOM from reporting an element manager on that protocol. For example:

1. Set `DS_StorageManager_HTTPSEnabled = false`.
2. Use the Element Manager page to add an element manager and define HTTP for its protocol.
3. Add a CIMOM connection to the element manager. The CIMOM discovery job in Tivoli Storage Productivity Center runs and does not report the HTTPS element manager that might be on the same machine. The element manager on HTTP appears in the Element Manager page only.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

Tópico pai: Troubleshooting topics

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Error message: GUI8333E Failed to log in to DS8000 Element manager

You can encounter this message when you attempt to open a DS8000 GUI from the **Element Manager** node of Tivoli Storage Productivity Center and the user credentials are not set for the element manager. This message also is displayed the first time that you start a DS8000 element manager after changing the type of user authentication from local operating system (OS) to Lightweight Directory Access Protocol (LDAP) or Microsoft® Active Directory repository authentication.

Problem

You receive this error message:

```
GUI8333E Failed to log in to DS8000 Element manager.  Enter valid Username
and password.
```

Nota: An element manager might be added to the Element Manager table in the course of a CIMOM discovery, and the discovered element manager will not have user credentials set. The user must add credentials to the

element manager before they can start the element manager. The CIM agents must also have credentials set for the CIMOM discovery to be successful. The CIM agent credentials are different from the element manager credentials. The CIM agent credentials allow Tivoli Storage Productivity Center to communicate with the CIM agent and collect information during CIMOM discovery. The element manager credentials allow a user to start the element manager for the particular storage device from the **Element Manager** page.

The **Element Manager** page keeps different sets of credentials for each user logged into Tivoli Storage Productivity Center. To grant a user the right to open a DS8000 Storage Manager, you must log in to Tivoli Storage Productivity Center as that user and add credentials to the element manager. For example, if you set the credentials for the element manager as user **db2admin**, then another user logs in as **userx**, **userx** must set the credentials for that element manager.

This message can occur in these situations:

- You have CIM agents 5.2.x, 5.3.x, and 5.4.x that are registered in Tivoli Storage Productivity Center with the same DS8000. Tivoli Storage Productivity Center performs a CIMOM discovery. This will cause the duplicate entries in the database table.
- You have a CIM agent 5.3.x that is registered in Tivoli Storage Productivity Center with the DS8000. Tivoli Storage Productivity Center performs a CIMOM discovery. You manually add the element manager. This will cause duplicate entries in the database table.
- You can encounter this message when you attempt to open a DS8000 GUI from the **Element Manager** page of Tivoli Storage Productivity Center while logged into Tivoli Storage Productivity Center with a different user ID from the user ID who added the element manager.
- Tivoli Storage Productivity Center finds the element manager in the course of a CIMOM discovery. When you log into Tivoli Storage Productivity Center, add a CIM agent with CIMOM credentials (optional, see note below), and then run a CIMOM discovery, the CIM agent will provide the element manager path, which Tivoli Storage Productivity Center adds to the Element Manager table. The first time you open the DS8000 GUI, you will see this message.
  Nota: You do not need to manually add the CIM agent, it can be found on the same subnet if you have "scan local subnet" selected in CIMOM discovery options, which is the default. If you discover the CIM agents on the local subnet you will have to modify the DS CIM agent details to add CIM agent credentials. CIM agent credentials are different from element manager credentials.
- The first time after you changed the user authentication method from OS to LDAP and tried to start a DS8000 element manager. Though you created the truststore certification and activated the LDAP policy, message GUI8333E is displayed.

Action

To work around this problem, follow these steps:

1. At the error message, click **OK**. The Modify Element Manager panel is displayed.
2. Enter the correct credentials (username and password). If you changed the authentication method from OS to LDAP, enter the LDAP credentials.
3. Enter the password again to confirm it.
4. Enter an optional display name.
5. Click **Save**. The DS8000 element manager that you want automatically starts.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

Tópico pai: Troubleshooting topics

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Duplicate entries in element manager table

You see duplicate entries in the element manager table for the same element manager.

Problem

You receive this message:

```
EMSG_0009E The element manager already exists.
```

This message can occur in these situations:

- You have CIM agents 5.3.x and 5.4.x that are registered with the DS8000. Tivoli Storage Productivity Center performs a CIMOM discovery. You manually add the Element Manager using HTTPS protocol. This will cause duplicate entries in the element manager table. If you did not specify a Display Name when manually adding the element manager, the table entries will have the same name: `https://<IP_address_of_element_manager>`.
- You have a CIM agent (either 5.4.x, 5.3.x, or pre-5.3) which has a DS8000 registered. Tivoli Storage Productivity Center performs a CIMOM discovery. You manually add the Element Manager using HTTP protocol. This will cause duplicate entries in the table. If you did not specify a Display Name when manually adding the element manager, the display names will be nearly the same, differing only in their protocol. For example `http://<IP_address_of_element_manager>` for the manually added element manager, and `https://<IP_address_of_element_manager>` for the discovered element manager.

Action

To work around this problem, follow these steps:

1. At the error message, click **OK**. The Modify Element Manager panel is displayed.
2. Enter the correct credentials (username and password).
3. Enter the password again to confirm it.
4. Enter an optional display name.
5. Click **Save**. The DS8000 element manager that you want automatically launches.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

Tópico pai: Troubleshooting topics

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Cannot save audit logs to System Storage Productivity Center

This error occurs when you are saving the audit logs to IBM® System Storage Productivity Center.

Problem

You receive this error message when you try to save the audit logs to System Storage Productivity Center:

```
Your current security settings do not allow this
file to be downloaded.
```

The security settings and alert is a function of Internet Explorer and not IBM Tivoli Storage Productivity Center or the DS8000 GUI. The cause could be because the Internet Explorer security settings are set too high to allow the download of files.

Action

To change the security settings, follow these steps:

1. In Internet Explorer, click **Tools > Internet Options** . Click on the **Security** tab.
2. Select **Internet**. Click **Custom Level**.
3. Scroll down to **Downloads**. Change **Automatic prompting for file downloads** to **Enable**. Change **File download** to **Enable**. Click **OK**.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

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Error message: SQL1046N The authorization ID is not valid

You receive this error message when you change the server's host name. DB2 extended security has been turned on.

Problem

When changing the server's host name and you run this command:

```
db2extsec /u db2users /a db2admns
```

You receive this error message:

```
SQL1046N  The authorization ID is not valid.
```

When changing the server's host name, the new host name cannot begin with the following:

- SYS
- sys
- IBM®
- ibm
- SQL
- sql

Action

Select another host name that meets the requirements above and begin the host rename process again.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

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Installing the DS Storage Manager GUI fails using the Firefox browser

This problem occurs when you try to install the DS Storage Manager GUI on AIX using the Firefox browser.

Problem

You try to download or install the DS Storage Manager GUI on AIX using the Firefox browser.

Action

Follow these steps:

1. Open the Firefox browser.
2. Click on the toolbar **Tools > Options**.
3. Select the **Content** tab on the **Options** dialog box.
4. Click on **Manage** in the box File Types.
5. In the Download Actions dialog box, select **.jnlp** from the list box.
6. Click on **Change Action**.
7. Select the radio button **Open them with this application.** This opens the file selector dialog box.
8. Navigate to the directory `<Java_home>/jre/javaws`.
9. Select the **javaws** file from the file list.
   Nota: For Windows®, select **javaws.exe**.
10. Click **Open**.
11. Close the **Download Actions** dialog box.
12. Close the **Options** dialog box.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

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Tivoli Productivity Center for Replication Add storage subsystem button is disabled

When you are adding a storage subsystem to IBM® Tivoli Storage Productivity Center for Replication, the Add Storage Subsystem button does not function and therefore cannot add a storage subsystem.

Problem

This problem occurs when you perform the following steps:

1. You log on to IBM System Storage Productivity Center and start IBM Tivoli Storage Productivity Center for Replication by double-clicking the TPC for Replication icon on the desktop.
2. From the Tivoli Storage Productivity Center navigation navigation, you clicked Storage Systems.
3. When you click Add Storage System, the button seems disabled and it does not open the Add storage subsystem window.

Action

1. From the Storage Subsystem panel with the Add Storage System button, double-click the message on the browser that reads Certificate Error.
2. Complete the wizard to import the security certificate that was missing.
3. Return to the Storage Systems panel and click Add Storage System to open Add Subsystem Wizard.

If the problem persists, follow the instructions in Contacting customer support. Before you contact customer support, read these instructions to familiarize yourself with the information that you must provide.

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Multiple warning windows when accessing Java Web Start

This problem occurs when you access the Java™ Web Start program.

Problem

When accessing the Java Web Start program so that you can start IBM® Tivoli Storage Productivity Center, you repeatedly receive windows that are titled **Warning - Hostname Mismatch**. This problem occurs whether you use the Microsoft® Internet Explorer or Mozilla Firefox Web browser.

Action

In each **Warning-Hostname Mismatch** window, click Run. Continue to click Run in each **Warning-Hostname Mismatch** window until they no longer display and you see the IBM Tivoli Storage Productivity Center login window. Type the required information in the login window to access IBM Tivoli Storage Productivity Center.
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Prompt to download a .jnlp file

This problem occurs when you start the IBM® Tivoli Storage Productivity Center graphical user interface (GUI) from IBM Tivoli Integrated Portal.

Problem

When you start the Tivoli Storage Productivity Center GUI for the first time from the Tivoli Integrated Portal, you might be prompted to download a .jnlp file.

Action

If you see this prompt, save the file. Then manually install the Java™ Runtime Environment. To install the Java Runtime Environment, go to `http://SSPCServer:9550/ITSRM/app/en_US/index.html`, where *SSPCServer* is the computer name of the SSPC server. Choose the appropriate operating system and follow the steps to perform the installation. After you install Java Runtime Environment, start the Tivoli Storage Productivity Center GUI.

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Prompt to download and not run a .jnlp file

This problem occurs when you start the IBM® Tivoli Storage Productivity Center graphical user interface (GUI) for the first time from the Windows® Explorer browser.

Problem

When you start the Tivoli Storage Productivity Center GUI, you receive a prompt asking whether to download, save, and not run a .jnlp file. Two reasons are possible:

- IBM Java™, which is preinstalled on the IBM System Storage Productivity Center server, was uninstalled.
- The default start program for .jnlp changed from javaws.exe to another program.

Action

If you see this prompt, perform the following steps to change the program that opens the .jnlp file to javaws.exe (from Microsoft® Notepad or any other program):

1. Click Cancel to remove the prompt.
2. From Microsoft Internet Explorer, click Tools > Internet Options > Programs. The **Internet Options** window is displayed.

3. From Internet programs, click Set programs. The **Default Programs** window is displayed.
4. Click Associate a file type or protocol with a program. The **Set Associations** window is displayed.
5. Scroll to .jnlp, and in the Current Default column, verify that the file type of .jnlp is opened by the Java WebStart Executable program, and not by Notepad or Microsoft Windows Wordpad.
6. Click **Change program**. The **Open With** window is displayed.
7. Click to select Java WebStart Executable IBM as the program that you want to open the .jnlp file, and click OK.
8. Close the **Internet Options** window, return to where you first attempted to run the .jnlp file, and run the file again.

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Installing System Storage Productivity Center components

You can design a device that is functionally equivalent to System Storage Productivity Center (SSPC) by installing specific software on a supported server.

If you choose to create a functionally equivalent device, you must install the following software in this order:

1. IBM® DB2 V9.5 with Fix Pack 3
2. IBM Tivoli Storage Productivity Center Basic Edition 4.1.1
3. IBM Tivoli Storage Productivity Center for Replication 4.1.1
4. SAN Volume Controller Console version 5.1.0
5. DS CIM agent management commands (DSCIMCLI) 5.4.3

- **Installing System Storage Productivity Center**
  This topic provides information about installing IBM System Storage Productivity Center equivalent components.
- **Installing the SAN Volume Controller Console**
  This section provides information about installing the SAN Volume Controller Console. The SAN Volume Controller Console installation includes the SAN Volume Controller CIM agent.
- **Installing the agents and Agent Manager**
  You can install the agents and Agent Manager to collect additional information from the machines or storage systems.

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Installing System Storage Productivity Center

This topic provides information about installing IBM® System Storage Productivity Center equivalent components.

To install System Storage Productivity Center, follow these general steps:

1. Install DB2 d. For information about installing, see the IBM Tivoli Storage Productivity Center Information Center at this Web site: http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click **IBM Tivoli Storage Productivity Center V4.1.1 > Installing > DB2**.
2. Install Tivoli Storage Productivity Center 4.1.1. Do not install the Agent Manager or agents. For information about installing the product, see the IBM Tivoli Storage Productivity Center Information Center at this Web site: http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click **IBM Tivoli Storage Productivity Center V4.1.1 > Installing > IBM Tivoli Storage Productivity Center > Using typical installation**.
3. If you are using the SAN Volume Controller. Follow these steps:
    a. Install PuTTY (for SAN Volume Controller).
    b. Install the SAN Volume Controller Console 5.1.0.
    c. Configure the SAN Volume Controller Console. See Configuring SSPC for SAN Volume Controller.
4. Install the DS3000, DS4000, or DS5000 Storage Manager GUI. See Configuring SSPC for DS3000, DS4000, and DS5000.

Tópico pai: Installing System Storage Productivity Center components
Informações relacionadas
<_a><_div>
http://publib.boulder.ibm.com/infocenter/svcic/v3r1m0/index.jsp

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Installing the SAN Volume Controller Console

This section provides information about installing the SAN Volume Controller Console. The SAN Volume Controller Console installation includes the SAN Volume Controller CIM agent.

To install the SAN Volume Controller Console and CIM agent, follow these steps:

1. Install PuTTY (for SAN Volume Controller).
2. Install the SAN Volume Controller Console 5.1.0. For information about installing the SAN Volume Controller Console, SAN Volume Controller Information Center at http://publib.boulder.ibm.com/infocenter/svcic/v3r1m0/index.jsp. Search for **Upgrading the SAN Volume Controller Console**.
3. After you install the SAN Volume Controller Console, there are configuration steps to follow. See Configuring SSPC for SAN Volume Controller.

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Installing the agents and Agent Manager

You can install the agents and Agent Manager to collect additional information from the machines or storage systems.

The Agent Manager server is a network service that provides authentication and authorization services and maintains a registry of configuration information about the managed systems in your environment. The Agent Manager is required only if you plan on installing the agents.

The Data agents collect information from the machine or host on which they are installed. The agents collect asset information, file and filesystem attributes, and any other information needed from the computer system. Data agents can also gather information on database managers installed on the server, Novell NDS tree information, and NAS device information.

Fabric agents use scanners to collect information. The Fabric agents are installed on the computer systems that have fiber optic connectivity (through HBAs) into the SAN fabrics that you want to manage and monitor. The agents collect fabric topology information, port state information, and zoning information. The Fabric agents can identify other SAN-attached devices (if they are in the same zone).

If you have an Agent Manager already installed in your environment, you do not have to install another Agent Manager.

The agents and Agent Manager are shipped with IBM® Tivoli Storage Productivity Center.

Before you install the agents and Agent Manager

If you are installing the agents and have changed your host name on the SSPC server, you must change the `InstallVariable.properties` file with the new host name. Follow these steps:

1. Go to the following directory:

   ```
   C:\Program Files\IBM\TPC\config\
   ```

2. Change the parameters in the `InstallVariable.properties` file:

   ```
   varDataSrvName=localhost
   varDevSrvName=localhost
   ```

   To your fully qualified host name on the SSPC server:

   ```
   varDataSrvName=tron.storage.usca.ibm.com
   varDevSrvName=tron.storage.usca.ibm.com
   ```

3. Save the file.
4. Restart the Device server and Data server.

If you are going to deploy the agent, follow these steps before deploying the agent:

1. Modify the `setup.properties` file. Go to the following directory:

   ```
   C:\Program Files\TPC\device\conf\
   ```

2. In the `setup.properties` file, modify the following parameters to the fully-qualified host name:

   ```
   manager.loc=fully_qualified_host_name
   agent.deployer=fully_qualified_host_name
   ```

3. Save the file.
4. Restart the Device server.
5. Run the agent deployment.

Procedure

There are several steps involved with installing and activating theAgent Manager and agents. These steps assume that Tivoli Storage Productivity Center is already installed:

1. If you are installing the Agent Manager on a machine that does not have DB2 installed, install DB2 V9.5 with Fix Pack 3. To install DB2, see the Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click **IBM Tivoli Storage Productivity Center V4.1.1> Installing > DB2**.
2. Install the Agent Manager. For information about installing the Agent Manager, see the IBM Tivoli Storage Productivity Center Information Center. Click **IBM Tivoli Storage Productivity Center V4.1.1 > Installing > IBM Tivoli Storage Productivity Center > Agent Manager**.
3. Register the Device server and Data server with the Agent Manager. For information about registering the servers with the Agent Manager, see the IBM Tivoli Storage Productivity Center Information Center and search for **Agent Manager Registration**.
4. Install the agents (Data agent and Fabric agent). For information about installing the agents, see the IBM Tivoli Storage Productivity Center Information Center. Click **IBM Tivoli Storage Productivity Center V4.1 > Installing the IBM Tivoli Storage Productivity Center family > IBM Tivoli Storage Productivity Center > Installing the agents**.
   Nota: Before installing any agents, restart the Data server and Device server on the SSPC server. To start the servers on Windows, go to **Start > Settings > Control Panel > Administrative Tools > Services**. On the Services Window, right-click on each of the following services and click **Stop** and then **Start**:

   ```
   IBM WebSphere Application Server V6 - DeviceServer
   IBM Tivoli Storage Productivity Center - Data Server
   ```

Tópico pai: Installing System Storage Productivity Center components

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Uninstalling IBM System Storage Productivity Center components

This section provides information on how to uninstall the components for IBM® System Storage Productivity Center.

To uninstall the System Storage Productivity Center, you must uninstall the components in a specific order. Uninstall the components and related software in this order:

1. Uninstall IBM Tivoli Storage Productivity Center and related software.
   Uninstall the components in this order:
   a. Data server, Device server, GUI, and CLI.
   b. Database schema (this can be local or remote).
   All of these components can be uninstalled at the same time.

   For information about uninstalling Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication, go to http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp. Click **IBM Tivoli Storage**

Productivity Center V4.1.1 > Uninstalling > Uninstalling the IBM Tivoli Storage Productivity Center family using the uninstallation program.

2. Uninstall DB2. For information about uninstalling DB2, go to http://publib.boulder.ibm.com/infocenter/db2luw/v9/index.jsp?. Search for **Uninstalling your DB2 product**.
3. Uninstall the SAN Volume Controller Console. For information about uninstalling the SAN Volume Controller Console, see http://publib.boulder.ibm.com/infocenter/svcic/v3r1m0/index.jsp. Search for **Uninstalling master console software**.
4. Uninstall the DS CIM agent management commands (DSCIMCLI). Go to the directory where the DS CIM agent management commands were unzipped. Delete all files in the DSCIMCLI folder. The default directory and folder are:

   ```
   C:\Program Files\IBM\DSCIMCLI
   ```

5. If you installed the DS4000 Storage Manager GUI using the Java Web Start application, you can uninstall the application. See Uninstalling the DS3000, DS4000, or DS5000 Storage Manager GUI.

- **Uninstalling the DS3000, DS4000, or DS5000 Storage Manager GUI**
  To uninstall the DS3000, DS4000, or DS5000 Storage Manager GUI, follow this procedure.

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Uninstalling the DS3000, DS4000, or DS5000 Storage Manager GUI

To uninstall the DS3000, DS4000, or DS5000 Storage Manager GUI, follow this procedure.

To uninstall the DS3000, DS4000, or DS5000 Storage Manager GUI, you must have administrative authority. Follow these steps.

On Windows

Follow these steps:

1. Click **Start > Settings > Control Panel**.
2. Double-click **Add/Remove Program**.
3. Find **IBM System Storage *product*–FAStT Storage Manager 10 - Java Web Start** where *product* is DS3000, DS4000, or DS5000.
4. Click **Remove**.
5. You will receive a message asking if you want to remove the program. Click **OK** if you want to remove the program.

If the preceding procedure does not uninstall the GUI, follow these steps:

1. Launch Java Web Start from the path `C:\Program Files\Java\jre1.5.XX\bin\javaws.exe`.
2. The Java Web Start Application Manager window is displayed. Select DS4000 from the Java Web Start Application Manager window.
3. Remove the application by clicking **Application > Remove Application**.

On UNIX or Linux

Follow these steps:

1. Go to the following directory:

   `usr/name_of_file/bin`

2. Run **javaws**.
3. The Java Web Start Application window is displayed. Select **DS4000** from the Java Web Start Application Manager window.
4. Remove the application by clicking **Application > Remove Application**.

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Accessing reports about storage resources

IBM® System Storage Productivity Center uses the functionality of IBM Tivoli Storage Productivity Center to provide reports about storage resources. These reports are organized into different types and categories to provide both summary and detailed information about the storage resources in your environment.

Data that appears in reports is based on statistical information accumulated by data collection jobs and stored in the database repository. You can select the specific systems, storage subsystems, switches, clusters, disks, and file systems upon which you want to report.

Reports are organized into report types and categories, which can be expanded in the navigation tree to reveal additional sub-categories of reporting. Some reports are also accessible through the topology viewer.

- **Reporting types:** system reports, user ID reports, user-defined online reports
- **Report categories:** asset, Tivoli Storage Productivity Center-wide storage space (capacity), monitored computer storage space, storage subsystem, tape library, data source

For an example of the reports you can generate see Tabela 1. Use this table to determine which reports are most useful to you and which data collection jobs to run for those reports.

For more information about the categories of reports that are available to the IBM System Storage Productivity Center, go to the IBM Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp and search for *Reporting*.

Tabela 1. Reports available for IBM Tivoli Storage Productivity Center Basic Edition

Report Category	Description	What data collection job should I run for this report?

Report Category	Description	What data collection job should I run for this report?
Asset reports	View itemized statistics about your storage resources in a hierarchy that lets you see the resources in greater detail. **Location:** These reports are available in the following locations on the navigation tree: • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) • Data Manager > Reporting > Asset	Probes, Discovery
TPC-wide storage space	Identify how much storage space is used and unused on the disks and file systems in your environment. **Location:** These reports are available in the following locations on the navigation tree: • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) • Data Manager > Reporting > TPC-wide Storage Space **Example:** Identify how much storage space is being used on the file systems within your environment, and how much unused storage space is available.	Probes
Monitored computer storage space	Use these host-based reports to view the data that is collected by probes for computers, network-attached storage, and hypervisors. These reports contain detailed information about the consumption of file system space and enable you to relate that space back to external or internal storage without counting shared space multiple times. **Location:** These reports are available in the following locations on the navigation tree: • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) • Data Manager > Reporting > Monitored Computer Storage Space	Probes

Report Category	Description	What data collection job should I run for this report?
Storage subsystem reports	View storage capacity for a computer, file system, storage subsystem, volume, array site, rank, and disk. These reports also enable you to view the relationships among the components of a storage subsystem. **Location:** • Disk Manager > Reporting > Storage Subsystems • IBM Tivoli Storage Productivity Center > Reporting > My Reports (if you save the definition of an online report it appears in this location) **Example:** View the relationships among the components of a storage subsystem and the storage capacity for a computer, file system, storage subsystem, volume, array site, rank, and disk.	Probes
Data source reports	Use data source reports to view detailed information about the agents from which Tivoli Storage Productivity Center collects information about storage resources. Data sources include CIMOM agents, Data agents, Fabric agents, VMWare, and subordinate Tivoli Storage Productivity Center servers. **Location:** IBM Tivoli Storage Productivity Center > Reporting > Data Source Reports **Example:** View detailed information about the CIM Agents that have been added to Tivoli Storage Productivity Center as data sources.	These reports are available for data sources that have been associated with Tivoli Storage Productivity Center.

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Important notes

- Processor speeds indicate the internal clock speed of the microprocessor; other factors also affect application performance.
- CD or DVD drive speed is the variable read rate. Actual speeds vary and are often less than the possible maximum.
- When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1024 bytes, MB stands for approximately 1 048 576 bytes, and GB stands for approximately 1 073 741 824 bytes.
- When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.
- Maximum internal hard disk drive capacities assume the replacement of any standard hard disk drives and population of all hard disk drive bays with the largest currently supported drives that are available from IBM®.
- Maximum memory may require replacement of the standard memory with an optional memory module.
- IBM makes no representation or warranties regarding non-IBM products and services that are ServerProven, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.
- IBM makes no representations or warranties with respect to non-IBM products. Support (if any) for the non-IBM products is provided by the third party, not IBM.
- Some software might differ from its retail version (if available), and might not include user manuals or all program functionality.

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Safety and environmental notices

Be sure to read all caution and danger statements in this document before using this product. Read any additional safety information that comes with the server or optional device before you install the device. The environmental notices that apply to this product are provided in the *IBM Environmental Notices and User Guide*, Z125-5823. This guide is located on the *IBM System Storage Productivity Center Documentation CD*.

- **Safety information**
  Before installing this product, read the Safety Information.
- **Notices and statements in this document**
  You can locate the translated version of any safety notice or statement in this document.
- **Safety notices**
- **United Kingdom telecommunications safety requirement**

- **Other safety information**
  IBM® System Storage Productivity Center has specific requirements for voltage, usage with visual-display workplace devices, and usage of a telecommunication line cord.
- **Particulate Contamination**
  This topic identifies contamination information.

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Safety information

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الآمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 Safety Information
(安全信息)。
安裝本產品之前，請先閱讀「安全資訊」。
Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.
Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας
(safety information).
לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.
A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。
본 제품을 설치하기 전에 안전 정보를 읽으십시오.
Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się
z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по
технике безопасности.
Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.
Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

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Notices and statements in this document

You can locate the translated version of any safety notice or statement in this document.

Important:

Each caution and danger statement in this document is labeled with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the multilingual *IBM® Safety Information* document which is located on the documentation CD that came with the product.

For example, if a caution statement is labeled "Statement 1," translations for that caution statement are in the *IBM Safety Information* document under "Statement 1."

Be sure to read all caution and danger statements in this document before you perform the procedures. Read any additional safety information that comes with the server or optional device before you install the device.

The following notices and statements may be used in this document:

- **Attention:** These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.
- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These statements indicate situations that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

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Safety notices

Statement 1

PERIGO

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet.
- Connect to properly wired outlets any equipment that will be attached to this product.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.

To Connect:	**To Disconnect:**
1. Turn everything OFF. 2. First, attach all cables to devices. 3. Attach signal cables to connectors. 4. Attach power cords to outlet. 5. Turn device ON.	1. Turn everything OFF. 2. First, remove power cords from outlet. 3. Remove signal cables from connectors. 4. Remove all cables from devices.

Statement 2

CUIDADO:
When replacing the lithium battery, use only IBM® Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.
Do not:

- Throw or immerse into water
- Heat to more than 100°C (212°F)
- Repair or disassemble

Dispose of the battery as required by local ordinances or regulations.

Statement 3

CUIDADO:
When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.

PERIGO
Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

Class 1 Laser Product
Laser Klasse 1
Laser Klass 1
Luokan 1 Laserlaite
Appareil À Laser de Classe 1

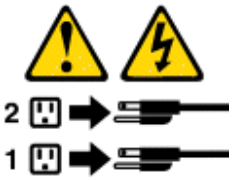
Statement 4

≥ 18 kg (39.7 lb)	≥ 32 kg (70.5 lb)	≥ 55 kg (121.2 lb)

CUIDADO:
Use safe practices when lifting.

Statement 5

CUIDADO:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.



Statement 6

CUIDADO:
Do not place any objects on top of a rack-mounted device unless that rack-mounted device is intended for use as a shelf.

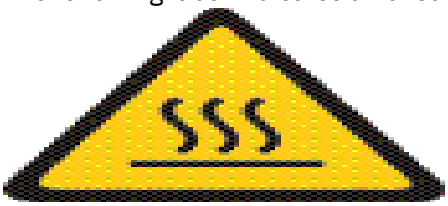
Statement 8

CUIDADO:
Never remove the cover on a power supply or any part that has the following label attached.

Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

Statement 12

CUIDADO:
The following label indicates a hot surface nearby.



Statement 26

CUIDADO:
Do not place any object on top of rack-mounted devices.

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United Kingdom telecommunications safety requirement

Notice to customers

This apparatus is approved under approval number NS/G/1234/J/100003 for indirect connection to public communications systems in the United Kingdom.

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Other safety information

IBM® System Storage Productivity Center has specific requirements for voltage, usage with visual-display workplace devices, and usage of a telecommunication line cord.

The System Storage Productivity Center server is suitable for use on an information technology power-distribution system whose maximum phase-to-phase voltage is 240 V under any distribution fault condition.

Restrição: This product is not suitable for use with visual-display workplace devices according to Clause 2 of the German Ordinance for Work with Visual Display Units.
Atenção: Use a telecommunication line cord that is size No. 26 American wire gauge (AWG) or larger, and is listed by Underwriters Laboratories (UL) or certified by the Canadian Standards Association (CSA).
Atenção: Use a telecommunication line cord that has a size of American wire gauge (AWG) 26 or larger, and is listed by Underwriters Laboratories (UL) or certified by the Canadian Standards Association (CSA).
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Particulate Contamination

This topic identifies contamination information.

Atenção: Airborne particulates (including metal flakes or particles) and reactive gases acting alone or in combination with other environmental factors such as humidity or temperature might pose a risk to the server that is described in this document. Risks that are posed by the presence of excessive particulate levels or concentrations of harmful gases include damage that might cause the server to malfunction or cease functioning altogether. This specification sets forth limits for particulates and gases that are intended to avoid such damage. The limits must not be viewed or used as definitive limits, because numerous other factors, such as temperature or moisture content of the air, can influence the impact of particulates or environmental corrosives and gaseous contaminant transfer. In the absence of specific limits that are set forth in this document, you must implement practices that maintain particulate and gas levels that are consistent with the protection of human health and safety. If IBM determines that the levels of particulates or gases in your environment have caused damage to the server, IBM may condition provision of repair or replacement of servers or parts on implementation of appropriate remedial measures to mitigate such environmental contamination. Implementation of such remedial measures is a customer responsibility.

Tabela 1. Limits for particulates and gases

Conta minant	**Limits**

Contaminant	Limits
Particulate	• The room air must be continuously filtered with 40% atmospheric dust spot efficiency (MERV 9) according to ASHRAE Standard 52.2[1]. • Air that enters a data center must be filtered to 99.97% efficiency or greater, using high-efficiency particulate air (HEPA) filters that meet MIL-STD-282. • The deliquescent relative humidity of the particulate contamination must be more than 60%[2]. • The room must be free of conductive contamination such as zinc whiskers.
Gaseous	• Copper: Class G1 as per ANSI/ISA 71.04-1985[3]. • Silver: Corrosion rate of less than 300 Å in 30 days.

Notes:

- [1] ASHRAE 52.2-2008 - *Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*. Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
- [2] The deliquescent relative humidity of particulate contamination is the relative humidity at which the dust absorbs enough water to become wet and promote ionic conduction.
- [3] ANSI/ISA-71.04-1985. *Environmental conditions for process measurement and control systems: Airborne contaminants*. Instrument Society of America, Research Triangle Park, North Carolina, U.S.A.

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Electronic emission notices

- **Federal Communications Commission (FCC) statement**
- **Industry Canada Class A emission compliance statement**
- **Australia and New Zealand Class A statement**
- **European Union EMC Directive conformance statement**
- **Germany Class A warning statement**
- **Korea Class A Electronic Emission statement**
- **Taiwan Class A warning statement**
- **People's Republic of China Class A warning statement**
- **Japan Voluntary Control Council for Interference (VCCI) statement**

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Federal Communications Commission (FCC) statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM® is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Industry Canada Class A emission compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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Australia and New Zealand Class A statement

Atenção: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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European Union EMC Directive conformance statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM® cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Atenção: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment. Such cables and connectors are available from IBM authorized dealers. IBM cannot accept responsibility for any interference caused by using other than recommended cables and connectors.

European Community contact:
IBM Technical Regulations
Pascalstr. 100, Stuttgart, Germany 70569
Tele: 0049 (0)711 7851176
Fax: 0049 (0)711 785 1283
e-mail: tjahn@de.ibm.com

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Germany Class A warning statement

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM® empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden: “Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen.“

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem “Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)“. Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung des EMVG ist die IBM Deutschland GmbH, 70548 Stuttgart. Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

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Korea Class A Electronic Emission statement

이기기는 업무용으로 전자파 적합등록을 받은 기기이오니, 판매자 또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 구입하셨을 때에는 구입한 곳에서 비업무용으로 교환하시기 바랍니다.

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Taiwan Class A warning statement

警告使用者:
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

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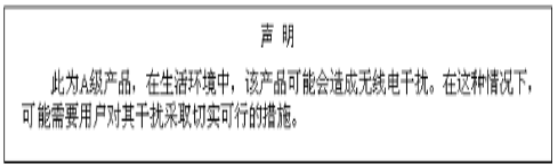
People's Republic of China Class A warning statement

中华人民共和国“A类”警告声明



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Japan Voluntary Control Council for Interference (VCCI) statement

この装置は、クラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

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Accessibility features for IBM Tivoli Storage Productivity Center

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.

Accessibility features

The following list includes the major accessibility features in IBM® Tivoli Storage Productivity Center:

- IBM Tivoli Storage Productivity Center functions are available using the keyboard for navigation instead of the mouse. You can use keys or key combinations to perform operations that can also be done using

a mouse. However, you must use the mouse to navigate the Topology Viewer and report graphs. Standard operating system keystrokes are used for standard operating system operations.
- You can use screen readers to read the user interface.
- The user interface communicates all information independently of color.
- The *IBM Tivoli Storage Productivity Center Information Center*, and its related publications are accessibility-enabled and include the following accessibility features:
  - The information center is provided in XHTML 1.0 format, which is viewable in most Web browsers. XHTML allows you to view documentation according to the display preferences set in your browser. It also allows you to use screen readers and other assistive technologies.
  - All documentation is available in PDF format.
  - All images are provided with alternative text, so that users with vision impairments can understand the contents of the images.

Keyboard navigation

This product uses standard Microsoft Windows navigation keys.

Interface information

Use the options available in the **Preferences** > **Look and Feel** menu to select how to display the IBM Tivoli Storage Productivity Center user interface. To do this, complete the following steps:

1. Start the IBM Tivoli Storage Productivity Center user interface.
2. Select one of the following options from the **Preferences** > **Look and Feel** menu to change the visual appearance of the user interface to best suit your visual needs:
   - Windows Classic
   - Windows
   - CDE/Motif
   - Metal

Related accessibility information

You can view the publications for IBM Tivoli Storage Productivity Center in Adobe Portable Document Format (PDF) using the Adobe Acrobat Reader. You can access the PDFs from the Printable PDFs topic in the information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp.

IBM and accessibility

See the IBM Human Ability and Accessibility Center website for more information about the commitment that IBM has to accessibility.

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Glossary

This glossary includes terms and definitions for the IBM® System Storage Productivity Center.

The following cross-references are used in this glossary:

- See refers the reader from a term to a preferred synonym, or from an acronym or abbreviation to the defined full form.
- See also refers the reader to a related or contrasting term.

To view glossaries for other IBM products, go to http://www.ibm.com/software/globalization/terminology/.

1U
: A unit of measurement that equals 1.75 inches in height and is one unit of space between shelves on a rack.

agent
: An entity that represents one or more managed objects by sending notifications regarding the objects and by handling requests from servers for management operations to modify or query the objects.

authentication
: The security service that provides proof that a user of a computer system is genuinely who that person claims to be. Common mechanisms for implementing this service are passwords and digital signatures. Authentication is distinct from authorization; authentication is not concerned with granting or denying access to system resources. See also *authorization*.

authorization
: The process of granting a user, system, or process either complete or restricted access to an object, resource, or function.

CIM
: See *Common Information Model*.

CIM agent
: The code that consists of common building blocks that can be used instead of proprietary software or device-specific programming interfaces to manage devices that are compliant with the Common Information Model (CIM).

CIMOM
: See *CIM object manager*.

CIM object manager (CIMOM)
: The common conceptual framework for data management that receives, validates, and authenticates the CIM requests from the client application. It then directs the requests to the appropriate component or service provider.

cluster
: Up to four pairs of IBM System Storage SAN Volume Controller nodes that provide a single configuration and service interface.
: A partition capable of performing all DS8000 series functions.

Common Information Model (CIM)
: An implementation-neutral, object-oriented schema for describing network management information. The Distributed Management Task Force (DMTF) develops and maintains CIM specifications.

Configuration Utility
: A utility in the Tivoli Storage Productivity Center that enables a user to configure and administer the IBM System Storage DS8000 and other storage subsystems by adding and managing element managers.

console
: A user interface to a server, for example, the interface provided on a personal computer.

data collection
: The process of obtaining performance and availability monitoring data and providing that data to a metric evaluator. Examples of data collectors include DNS probes, Web page analyzers, or database analyzers. See also *discovery*.

discovery
: The process of finding resources within an enterprise, including finding the new location of monitored resources that were moved. Discovery includes the detection of changes in network topology, such as

new and deleted nodes, or new and deleted interfaces.

domain name
: In Internet communications, a name of a host system. A domain name consists of a sequence of subnames that are separated by a delimiter character, for example, www.ibm.com. See also *Domain Name System*.

domain name server
: In Internet communications, a server program that supplies name-to-address conversion by mapping domain names to IP addresses.

Domain Name System (DNS)
: The distributed database system used to map domain names to IP addresses. See also *domain name*.

DNS
: See *Domain Name System*.

EIA unit
: A unit of measure, established by the Electronic Industries Association, equal to 4.45 millimeters (0.175 inches).

EIA
: See *Electrical Industries Association*.

Electronic Industries Association
: An organization of electronics manufacturers that advances the technological growth of the industry, represents the views of its members, and develops industry standards.

element
: A component of a storage infrastructure. For example, an element can be a storage system, a switch, or a virtualization appliance.

element manager
: An application that is used for remotely configuring and managing a specific component of a storage infrastructure. See also *element*.

enclosure
: A free-standing structure or frame that can hold multiple servers and expansion units.

Enterprise Systems Connection (ESCON)
: A set of IBM products and services that provides a dynamically connected environment using optical cables as a transmission medium.

ESCON
: See *Enterprise Systems Connection*.

Ethernet
: A packet-based networking technology for local area networks (LANs) that supports multiple access and handles contention by using Carrier Sense Multiple Access with Collision Detection (CSMA/CD) as the access method. Ethernet is standardized in the IEEE 802.3 specification.

event
: An occurrence of significance to a task or system. Events can include completion or failure of an operation, a user action, or the change in state of a process.

fabric
: A complex network of hubs, switches, adapter endpoints, and connecting cables that support a communication protocol between devices. For example, fibre channel uses a fabric to connect devices.

fibre channel
: A technology for transmitting data between computer devices. It is especially suited for attaching computer servers to shared storage devices and for interconnecting storage controllers and drives.

FICON
: See *fibre channel connection*.

fibre channel connection
: A fibre-channel communication protocol designed for IBM mainframe computers and peripherals.

FlashCopy
: An optional feature of the Storage System DS family that can make an instant copy of data, that is, a point-in-time copy of a volume.

fuzzy copy
: A backup version or archived copy of a file that might not accurately reflect the original contents of the file, because it was backed up or archived when the file was being modified.

Global Copy
: An optional capability of the DS8000 remote mirror and copy feature that maintains a fuzzy copy of a logical volume on the same DS8000 storage unit or on another DS8000 storage unit. In other words, all modifications that any attached host performs on the primary logical volume are also performed on the secondary logical volume at a later point in time. The original order of update is not strictly maintained. See also *remote mirror and copy* and *Metro Mirror*.

Global Mirror
: An optional capability of the remote mirror and copy feature that provides a two-site extended-distance remote copy. Data that is written by the host to the storage unit at the local site is automatically maintained at the remote site. See also *Metro Mirror*, *remote mirror and copy*, and *Global Copy*.

GUI
: See *graphical user interface*.

Globally Unique Identifier (GUID)
: An algorithmically determined number that uniquely identifies an entity within a system.

graphical user interface (GUI)
: A type of computer interface that presents a visual metaphor of a real-world scene, often of a desktop, by combining high-resolution graphics, pointing devices, menu bars and other menus, overlapping windows, icons and object-action relationship.

GUI
: Graphical user interface.

GUID
: See *Globally Unique Identifier*.

Hardware Management Console (HMC)
: A system that controls managed systems, including the management of logical partitions. Using service applications, the HMC communicates with managed systems to detect, consolidate, and send information to IBM for analysis.

HMC
: See *Hardware Management Console*.

host
: A computer that is connected to a network and that provides an access point to that network. The host can be a client, a server, or both a client and server simultaneously.

host name
: In Internet communication, the name given to a computer. The host name might be a fully qualified domain name such as mycomputer.city.company.com, or it might be a specific subname such as `mycomputer`. See also *host system*.

host system
: A computer, either mainframe (S/390 or zSeries) or open-system, that is connected to the ESS. S/390 or zSeries hosts are connected to the ESS through ESCON or FICON interfaces. Open-systems hosts are connected to the ESS by the Small Computer System Interface (SCSI) or the fibre-channel interface.

hub
: A fibre channel device that connects nodes into a logical loop by using a physical star topology.

in-band
: Pertaining to signals that are carried within the telephony voice channel.

Internet Protocol (IP)
: A protocol that routes data through a network or interconnected networks. This protocol acts as an intermediary between the higher protocol layers and the physical network. See also *Transmission Control Protocol/Internet Protocol*.

IP
: See *Internet Protocol*.

IP address
: A unique address for a device or logical unit on a network that uses the Internet Protocol standard.

launch descriptor file
: An XML file that describes the menus and the detailed uniform resource locators (URLs) for applications. A launch descriptor file is required to enable the launch in context feature for the device.

launch in context
: A feature that enables a user to access external applications from the Tivoli Storage Productivity Center GUI.

LDAP
: See *Lightweight Directory Access Protocol*.

Lightweight Directory Access Protocol (LDAP)
: An open protocol that uses TCP/IP to provide access to directories that support an X.500 model and that does not incur the resource requirements of the more complex X.500 Directory Access Protocol (DAP). For example, LDAP can be used to locate people, organizations, and other resources in an Internet or intranet directory.

Lightweight Third Party Authentication (LTPA)
: An authentication framework that allows single sign-on across a set of Web servers that fall within an Internet domain.

LTPA
: See *Lightweight Third Party Authentication*.

managed host
: A host that is managed by Tivoli Storage Productivity Center and one or more active in-band fabric agents.

Management Information Base (MIB)
: In the Simple Network Management Protocol (SNMP), a database of objects that can be queried or set by a network management system.

Metro Mirror
: A function of the remote mirror and copy feature that constantly updates a secondary copy of a volume to match changes made to a source volume. See also *remote mirror and copy* and *Global Copy*.

Metro Global Mirror
: A three-site, high availability, disaster recovery solution. Metro Global Mirror uses synchronous replication to mirror data between a local site and an intermediate site, and asynchronous replication to mirror data from an intermediate site to a remote site.

MIB
: See *Management Information Base*.

navigation tree
: A hierarchical structure that is used to access information.

password tool
: A software application that manages the Administrator password and the host authentication password so that they can be changed as one.
: A software application that manages the DB2 user password, DB2 service password, and WebSphere user password so that they can changed as one.

pool
: A named set of storage volumes that is the destination for storing client data.

rack
: See *enclosure*.

RAID
: See *Redundant Array of Independent Disks*.

Redundant Array of Independent Disks (RAID)
: A collection of two or more disk physical drives that present to the host an image of one or more logical disk drives. In the event of a single physical device failure, the data can be read or regenerated from the other disk drives in the array due to data redundancy.

remote console

A display device that qualifies as a system console but is not directly attached to a system.

remote mirror and copy
: A feature of a storage server that constantly updates a secondary copy of a logical volume to match changes made to a primary logical volume. The primary and secondary volumes can be on the same storage server or on separate storage servers. See also *Global Mirror*, *Metro Mirror*, and *Global Copy*.

SAN
: See *storage area network*.

SCSI
: See *Small Computer System Interface*.

Simple Network Management Protocol (SNMP)
: A set of protocols for monitoring systems and devices in complex networks. Information about managed devices is defined and stored in a Management Information Base (MIB).

single sign-on
: An authentication process in which a user can access more than one system or application by entering a single user ID and password.

Small Computer System Interface (SCSI)
: A standard used by computer manufacturers for attaching peripheral devices (such as tape drives, hard disks, CD-ROM drives, printers, and scanners) to computers (servers).

SMI-S
: See *Storage Management Initiative Specification*.

SNMP
: See *Simple Network Management Protocol*.

storage area network (SAN)
: A dedicated storage network tailored to a specific environment, combining servers, storage products, networking products, software, and services.

Storage Management Initiative Specification (SMI-S)
: A design specification developed by the Storage Networking Industry Association (SNIA) that specifies a secure and reliable interface with which storage management systems (SMSs) can identify, classify, monitor, and control physical and logical resources in a storage area network (SAN). The interface integrates the various devices to be managed in a storage area network (SAN) and the tools used to manage them.

Storage Networking Industry Association (SNIA)
: An alliance of computer vendors and universities that focus on developing and promoting industry standards for storage networks.

storage pool
: An aggregation of storage resources on a SAN that have been set aside for a particular purpose.

subsystem
: A secondary or subordinate system, usually capable of operating independently of, or asynchronously with, a controlling system.

switch
: A network infrastructure component to which multiple nodes attach. Unlike hubs, switches typically have internal bandwidth that is a multiple of link bandwidth, and the ability to rapidly switch node connections from one to another. A typical switch can accommodate several simultaneous full link bandwidth transmissions between different pairs of nodes. Contrast with *hub*.

system
: A functional unit, consisting of one or more computers and associated software, that uses common storage for all or part of a program and also for all or part of the data necessary for the execution of the program. A computer system can be a stand-alone unit, or it can consist of multiple connected units.

token
: The basic syntactic unit of a computing language. A token consists of one or more characters, excluding the blank character and excluding characters within a string constant or delimited identifier.

topology

The physical or logical mapping of the location of networking components or nodes within a network. Common network topologies include bus, ring, star, and tree.

virtualization
: In the storage industry, a concept in which a pool of storage is created that contains several disk subsystems. The subsystems can be from various vendors. The pool can be split into virtual disks that are visible to the host systems that use them.

volume
: A discrete unit of storage on disk, tape or other data recording medium that supports some form of identifier and parameter list, such as a volume label or input/output control. See also *storage pool*.

zone
: A segment of a SAN fabric composed of selected storage device nodes and server nodes. Only the members of a zone have access to one another.

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Publicações

Esta seção lista as publicações na biblioteca do IBM® Tivoli Storage Productivity Center e outras publicações relacionadas. Descreve também como acessar publicações on-line, como solicitar publicações e como enviar comentários sobre as publicações.

As publicações estão disponíveis no IBM Publications Center em http://www.ibm.com/shop/publications/order.

- **Publicações do IBM System Storage Productivity Center**
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- **System Storage DS8000 publications**
  Use these publications for information about how to install, configure, and use the IBM System Storage DS8000 system.
- **IBM System Storage DS Open Application Programming Interface publications**
  Use these publications for information about how to install, configure, and use the DS CIM agent.
- **System Storage SAN Volume Controller publications**
  Use these publications for information about how to install, configure, and use IBM System Storage SAN Volume Controller.

- **XIV Storage System publications**
  Use the publications for information about how to install, configure, and use IBM XIV System Storage. These publications are available in the Information Center at http://publib.boulder.ibm.com/infocenter/ibmxiv/r2/index.jsp.
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Para documentos PDF, clique em **System Storage Productivity Center > Documentação para Impressão**.

Título da publicação	Número do pedido
IBM System Storage Productivity Center Guia de Introdução e Planejamento	SC23-8824
CD de Documentação do IBM System Storage Productivity Center	S517-9570
Read This First: Installing the IBM System Storage Productivity Center	GI11-8938
IBM System Storage Productivity Center User's Guide	SC27-2336

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For PDF documents, in the left navigation pane, click **IBM Tivoli Storage Productivity Center > Printable documentation**.

Publication title	Order number
IBM Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication Installation and Configuration Guide	SC27-2337
IBM Tivoli Storage Productivity Center User's Guide	SC27-2338
IBM Tivoli Storage Productivity Center Messages	SC27-2340
IBM Tivoli Storage Productivity Center Command-Line Interface Reference	SC27-2339
IBM Tivoli Storage Productivity Center Problem Determination Guide	GC27-2342
IBM Tivoli Storage Productivity Center Workflow User's Guide	SC27-2341

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Tivoli Storage Productivity Center for Replication publications

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In the left navigation pane, click **Tivoli Storage Productivity Center for Replication > Reference > Publications**.

Information for installing, upgrading, and uninstalling Tivoli Storage Productivity Center for Replication is documented in the *IBM Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication Installation and Configuration Guide*.

Publication title	Order number
IBM Tivoli Storage Productivity Center for Replication for System z v4.1 Installation and Configuration Guide	SC27-2321-00
IBM Tivoli Storage Productivity Center for Replication V4.1 Command-Line Interface User's Guide	SC27-2323-00
IBM Tivoli Storage Productivity Center for Replication V4.1 Problem Determination Guide	GC27-2320-00
IBM Tivoli Storage Productivity Center for Replication V4.1 User's Guide	SC27-2322-00

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System Storage DS3000 publications

Use these publications for information about how to install, configure, and use the IBM System Storage DS3000.

To see the DS3000 publications, follow these steps:

1. Go to http://www.ibm.com/servers/storage/support/.
2. In the **Product Family** field, select **Disk systems**.
3. In the **Product** field, select **DS3200**, **DS3300**, or **DS3400**.
4. Click **Go**.
5. In the Support & downloads pane, click **Documentation**.
6. Under Documentation, click on a document title.

Publication title	Part or order number
IBM System Storage DS3000 Storage Manager Version 10 Installation and Support Guide for Windows, Linux, NetWare, and VMware, Tenth Edition	46M1395
IBM System Storage DS3000 Storage Manager Version 10 Installation and Support Guide for AIX, Linux on POWER, and Sun Solaris, Fifth Edition	46M1396
IBM System Storage DS3200 Storage Subsystem Installation, Maintenance, and User's Guide, Sixth Edition	46M1392
IBM System Storage DS3300 Storage Subsystem Installation, Maintenance, and User's Guide, Fourth Edition	46M1393
IBM System Storage DS3400 Storage Subsystem Installation, Maintenance, and User's Guide, Fifth Edition	46M1394

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System Storage DS4000 and DS5000 publications

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To see the IBM DS4000 or IBM DS5000 publications, follow these steps:

1. Go to http://www.ibm.com/systems/support/storage/disk.
2. In the **Product Family** field, click **Disk systems**.
3. In the **Product** field, click the appropriate storage system.
4. Click **Go**.
5. Click **Documentation**.
6. Click a document.

Publication title	Order number

Publication title	Order number
IBM® System Storage DS4000 Concepts Guide	GC26-7734
IBM System Storage DS4000/DS5000 Fibre Channel and Serial ATA Intermix Premium Feature Installation Overview	GC53-1137
IBM System Storage DS Storage Manager Version 10 IBM System Storage DS Storage Manager Installation and Host Support Guide	GC53-1135
IBM System Storage DS Storage Manager Version 10.50 Copy Services User's Guide	GC53-1136
IBM System Storage DS4800 Storage Subsystem Quick Start Guide	GC27-2148
DS5100, DS5300 and EXP5000 Quick Start Guide	GC53-1134
IBM System Storage DS4800 Storage Subsystem Installation, User's, and Maintenance Guide	GC26-7845
IBM System Storage DS5100 and DS5300 Storage Subsystems Installation, User's, and Maintenance Guide	GC53-1140
IBM System Storage DS4000/DS5000 Hard Drive and Storage Expansion Enclosure Installation and Migration Guide	GC53-1139
IBM System Storage DS5000 EXP5000 Storage Expansion Enclosure Installation, User's, and Maintenance Guide	GC53-1141
IBM System Storage DS3000, DS4000, and DS5000 Command Line Interface and Script Commands Programming Guide	GC52-1275
IBM System Storage DS4000/DS5000EXP810 Storage Expansion Enclosure Installation, User's and Maintenance Guide	GC26-7798

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These publications are available from the DS8000 Information Center at http://publib.boulder.ibm.com/infocenter/dsichelp/ds8000ic/index.jsp.

Publication title	Order number
IBM System Storage DS8000: Host Systems Attachment Guide	SC26-7917
IBM System Storage DS8000: Introduction and Planning Guide	GC35-0515
IBM System Storage DS Command-Line Interface User's Guide for the DS6000 series and DS8000 series	GC53-1127
IBM System Storage DS8000: Architecture and Implementation	SG24-6786

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IBM System Storage DS Open Application Programming Interface publications

Use these publications for information about how to install, configure, and use the DS CIM agent.

Publications for the IBM® System Storage DS Open Application Programming Interface are available at http://www.ibm.com/servers/storage/support/software/cimdsoapi/. Under Support & downloads, click Install > Documentation. Select the document that applies to the version of the CIM agent.

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System Storage SAN Volume Controller publications

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Publication Title	Order Number
IBM System Storage SAN Volume Controller CIM Agent Developer's Guide	SC26-7904
IBM System Storage SAN Volume Controller Command-Line Interface User's Guide	SC26-7903
IBM System Storage SAN Volume Controller Software Installation and Configuration Guide	SC23-6628
IBM System Storage SAN Volume Controller Host Attachment Guide	SC26-7905
IBM System Storage SAN Volume Controller Planning Guide	GA32-0551
IBM System Storage SAN Volume Controller Troubleshooting Guide	GC27-2227
IBM System Storage SAN Volume Controller Hardware Maintenance Guide	GC27-2226
IBM System Storage SAN Volume Controller Model 2145-8G4 Hardware Installation Guide	GC27-2220
IBM System Storage SAN Volume Controller Model 2145-8A4 Hardware Installation Guide	GC27-2219
IBM System Storage SAN Volume Controller Model 2145-4F2 Hardware Installation Guide	GC27-2222

Publication Title	Order Number
IBM System Storage SAN Volume Controller Models 2145-8F2 and 8F4 Hardware Installation Guide	GC27-2221
IBM System Storage SAN Volume Controller Model 2145-CF8 Hardware Installation Guide	GC52-1356

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XIV Storage System publications

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DB2 Database for Linux, UNIX, and Windows publications

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Publication title	Order number
IBM® DB2 Version 9.5 for Linux, UNIX, and Windows, Getting started with DB2 installation and administration on Linux and Windows	GC23–5857
IBM DB2 Version 9.5 for Linux, UNIX, and Windows, Command Reference	SC23–5846
IBM DB2 Version 9.5 for Linux, UNIX, and Windows, Message Reference Volume 1	GI11–7855
IBM DB2 Version 9.5 for Linux, UNIX, and Windows, Message Reference Volume 2	GI11–7856
IBM DB2 Version 9.5 for Linux, UNIX, and Windows, Migration Guide	GC23–5859
IBM DB2 Version 9.5 for Linux, UNIX, and Windows, Troubleshooting Guide	GI11–7857

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For information about IBM Tivoli Storage Productivity Center, see *IBM Tivoli Storage Productivity Center V4.1 Release Guide*. Search for **SG24-7725**.

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