



# IBM Tivoli Storage Manager 6.1

## *Server installation, configuration, and initialization*

**Tivoli.** software



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This module describes an IBM Tivoli Storage Manager 6.1 server installation and initialization.

## Objectives

Upon completion of this module, you will be able to:

- Install and initialize the Tivoli Storage Manager server, license, and device driver
- Configure the server instance
- Install and configure the administrative client command line
- Start the Tivoli Storage Manager server
- Verify the configuration
- Register the license
- Secure the new installation by backing up the database



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## Installation overview

### Installable components include:

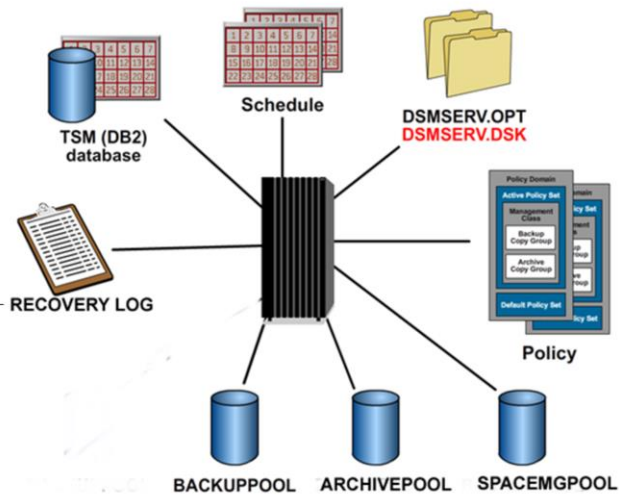
- Tivoli Storage Manager Server
  - ▶ The Tivoli Storage Manager client application programming interface (API) is automatically installed when you select the server component
  - ▶ The DB2® database and logs are installed with the server
- Tivoli Storage Manager license
- Tivoli Storage Manager device drivers (install these drivers even if you have no devices currently attached)
- IBM Tivoli Storage Manager backup-archive client
- IBM Tivoli Storage Manager storage agent
- IBM Integrated Solutions Console (ISC) and IBM Tivoli Storage Manager Administration Center

The installable components include the Tivoli Storage Manager server, license, device drivers, client, storage agent, and the Administration Center.

## Tivoli Storage Manager component changes

The recovery (transaction) log consists of these logs:

- Active log
- Active log mirror (optional)
- Archive log
- Archive failover log (optional)



The Tivoli Storage Manager server has several component changes.

- Only three storage pools are defined during installation: the backup pool, archive pool, and space management pool. The disk pool is no longer created by default.
- The database is now a DB2 database. The DB2 database provides greater capacity and reduces the number of servers required.
- The recovery log has several changes. The log now consists of the active log, the active log mirror, the archive log, and the archive failover log. The active log and archive log are required. The active log mirror and the archive failover log are optional, but are useful to have. Before installation, you create the directory for each log. Then, you specify each directory location during the server configuration process. The Database Manager automatically manages the space that you designate for the recovery log and the database. You do not need to create and format any volumes for those items.

## System requirements for IBM Tivoli Storage Manager server

Detailed system requirements are available in the *IBM Tivoli Storage Manager 6.1 Installation Guide* for your platform. The requirements for Windows are in the following example.

Hardware	Intel Pentium® processor or compatible multiprocessor based system
Operating System	Microsoft® Windows® Server 2003, 32-bit, 64-bit, and x64
Disk Space	At least 3 GB free disk storage 1.5 GB temporary directory space
Memory	At least 2 GB. A minimum of 4 GB for production servers. 8 GB is optional.
Applications	IBM Java 1.5 or later
Client Communication Method	TCP/IP (version 4 or 6) Named Pipes Shared Memory
Web Browser	Microsoft Internet Explorer 6.0 SP1 or 7.0 Mozilla 1.7.8, Firefox 1.5, 2.0 or 3.0, Netscape 6.2 and 7

You can find the system requirements for IBM Tivoli Storage Manager server in the *IBM Tivoli Storage Manager 6.1 Installation Guide* for your platform. Always review the requirements for your server operating system when planning your installation.

## Selecting an installation method

### ▶ Installation wizard

- To start the wizard without saving your responses, double-click the `install.exe` file or enter the following command: `install.exe`
- To start the wizard and save your responses, enter the following command. Specify the `-r` option: `install.exe -r C:\response.rsp`

### ▶ Console installation wizard

- To start the wizard without saving your responses, enter the following command: `install.exe -i console`
- To start the wizard and save your responses, enter the following command. Specify the `-r` option: `install.exe -i console -r C:\response.rsp`

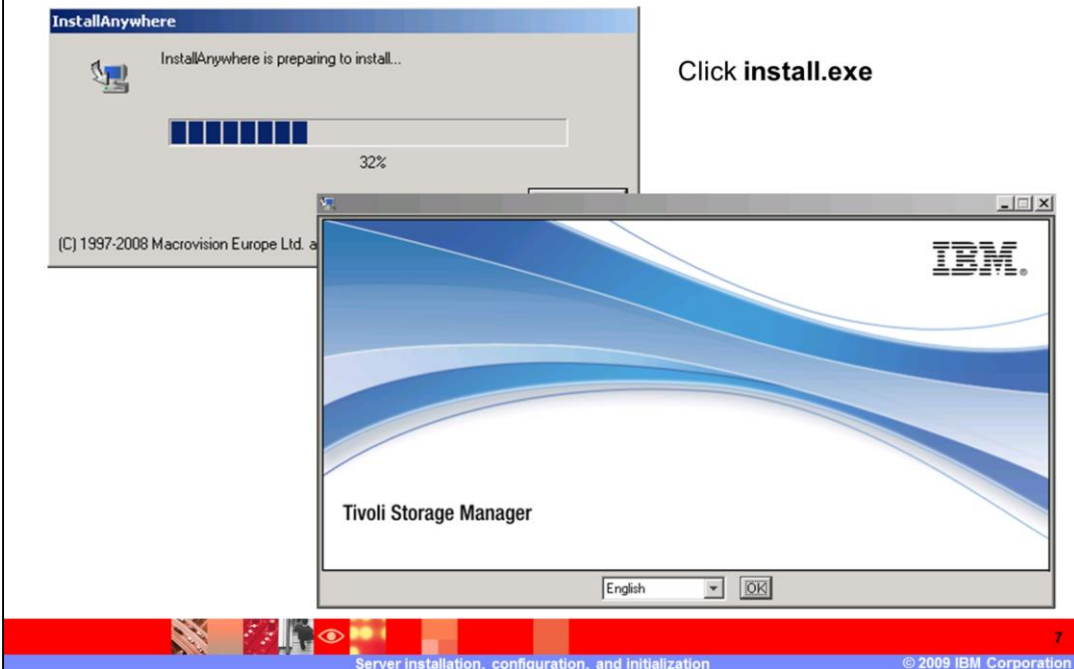
### ▶ Silent mode

- Instructions are available in the installation guide for your platform



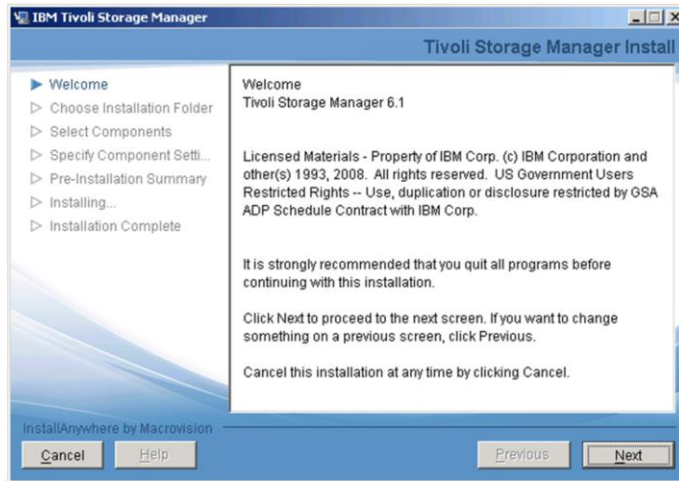
You can use one of the following methods to install the Tivoli Storage Manager server: the installation wizard, the command-line console wizard, or silent mode. The demonstration in this module shows the installation wizard without saving responses.

## Launching the new installer



Before you launch the new installer, ensure that you are logged in as the Administrator on Windows or root on UNIX®. If you do not log in with the correct authority, certain key Tivoli Storage Manager functions do not work properly. After extracting the server installation files, double-click the install.exe file. This action starts a new installer called InstallAnywhere. When prompted, select a language and click OK to begin the installation.

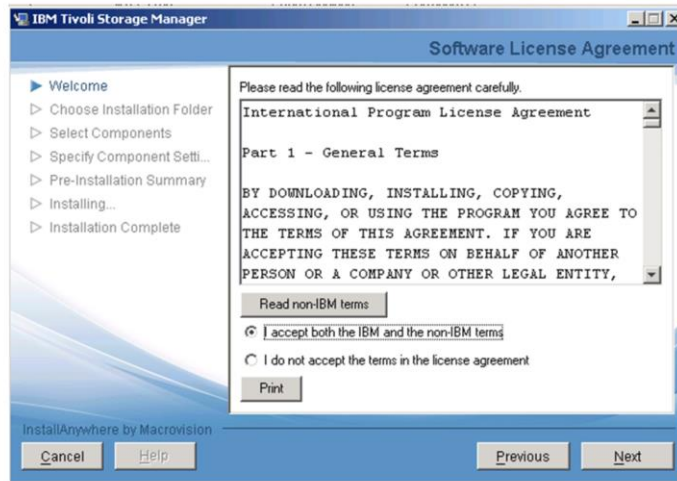
# Installing IBM Tivoli Storage Manager on Windows



On the Welcome page is a list of tasks. Quit all programs before continuing the installation.

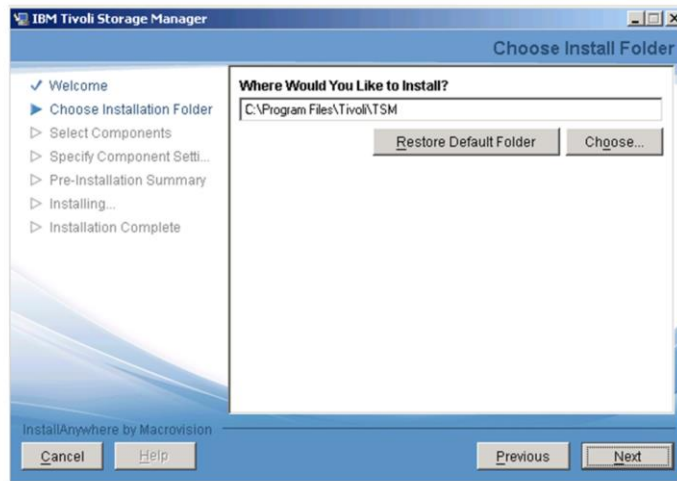


## Accepting the license agreement



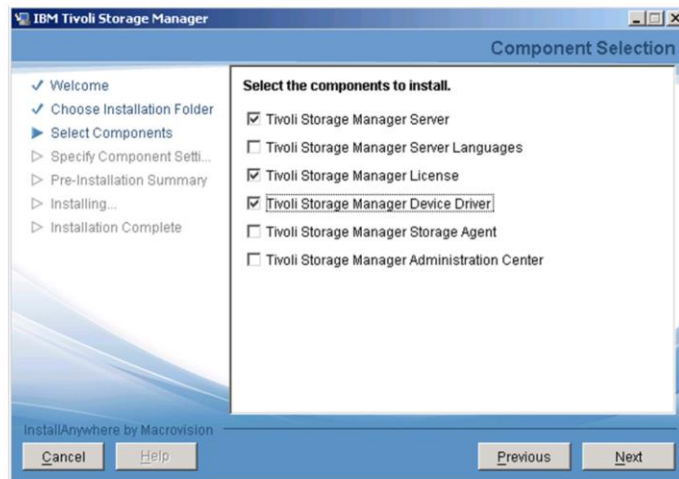
Accept the license agreement and click **Next**.

## Choosing the installation folder



Accept the default installation folder or click **Choose** to select a different folder. Click **Next**.

## Selecting components to install



In this example you are installing the server, license, and device driver.

## Installing DB2

IBM Tivoli Storage Manager

DB2 Enterprise Server Edition

- ✓ Welcome
- ✓ Choose Installation Folder
- ✓ Select Components
- ▶ Specify Component Setti...
- ▶ Pre-Installation Summary
- ▶ Installing...
- ▶ Installation Complete

Enter the following information to create a DB2 database for your server instance. Use either the Tivoli Storage Manager DB2 administrative-user ID and password, or a new user ID and password that you create now.

DB2 administrative-user ID:  
db2user1

DB2 password:  
\*\*\*\*\*

Verify password:  
\*\*\*\*\*

Database name:  
DB2

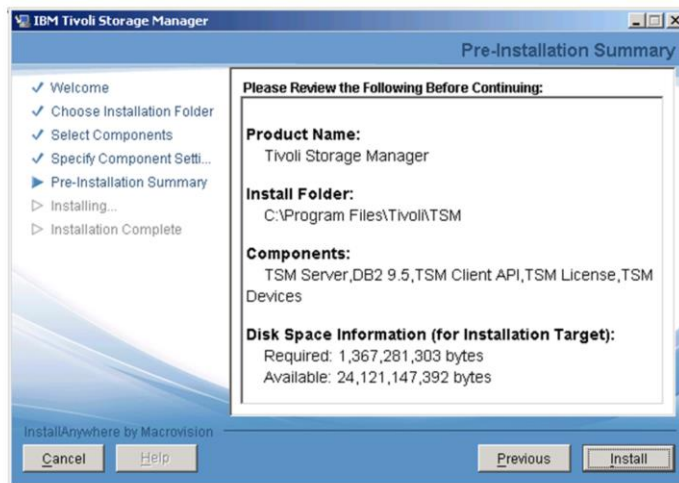
InstallAnywhere by Macrovision

Cancel Help Previous Next

Server installation, configuration, and initialization © 2009 IBM Corporation

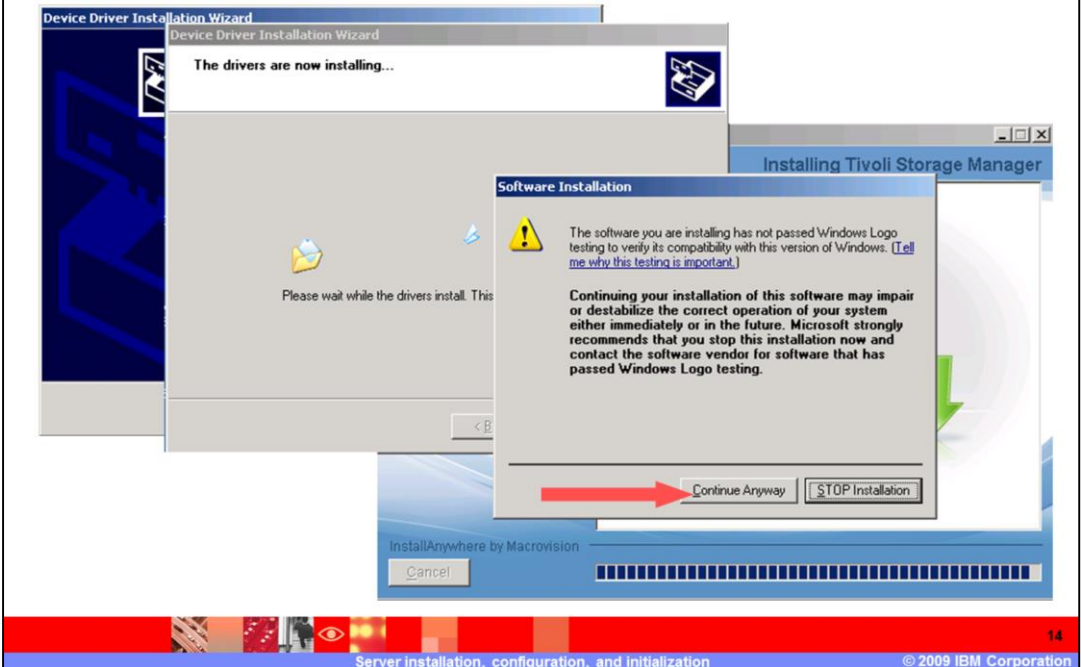
Accept the defaults for the DB2 user name and database name. Then, create and confirm a password. If you are installing on Windows Server 2008, include an *at* symbol (@) or a pound sign (#) in your password.

## Reviewing the preinstallation summary



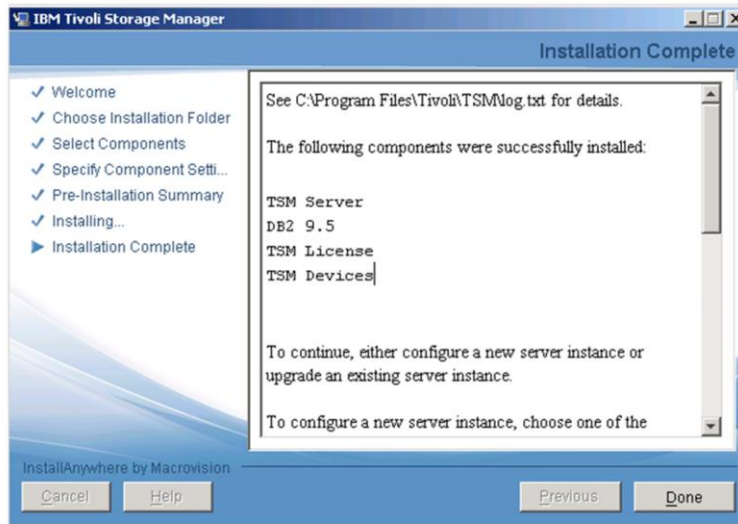
Verify that the components you selected are in the list and click **Install**.

## Installing the device drivers



During the installation, a prompt is displayed about installing the device drivers. Click **Continue Anyway** for each of the three drivers.

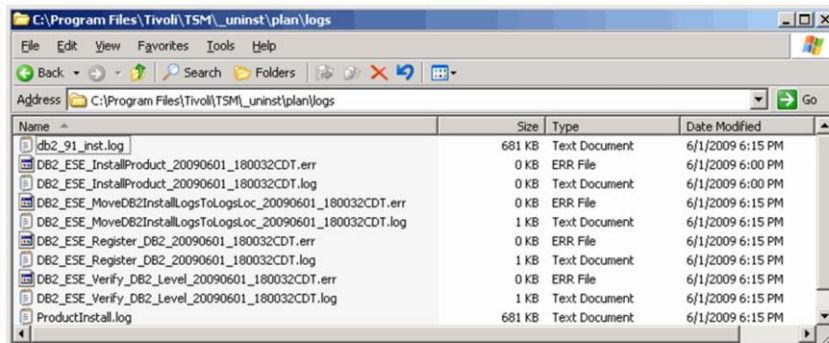
## Completing the installation



On the Installation Complete page is a list of the components that were successfully installed. If any errors occurred during the installation, view the installation log. You will also see a list of methods for configuring your new server instance.

## Checking the installation logs

- If you encounter any problems with the installation, you can see directions for referencing the appropriate log files
- For example, the db2 logs are located in the following directory: C:\Program Files\tivoli\TSM\\_uninst\plan\logs



If an error occurs during installation, you can check several logs. In this example you see a list of DB2 logs.



## Viewing the log.txt file

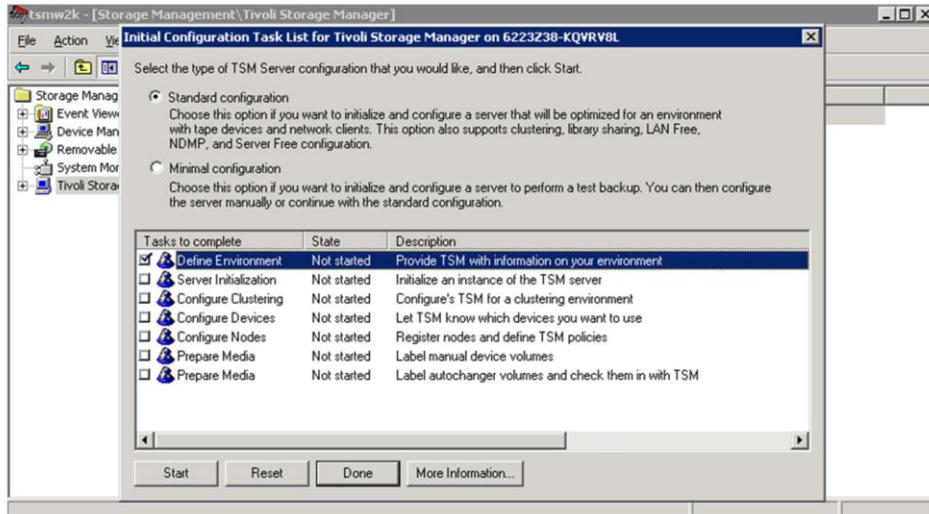
```

log.txt - Notepad
File Edit Format View Help
Tue Jun 02 09:07:39.968 CDT 2009 : FINE: RETURN (from com.ibm.ac.coi.ext.ia.COIWrapperPlugin
Tue Jun 02 09:07:39.968 CDT 2009 : STDOUT: $IAGLOBAL_AC_Desc$
Tue Jun 02 09:07:39.968 CDT 2009 : FINE: PlanStepEventOccurred(Completed target 'step_00003_
Tue Jun 02 09:07:39.984 CDT 2009 : FINE: MachinePlaneEventOccurred(Completed MachinePlan 'loc
Tue Jun 02 09:07:39.984 CDT 2009 : FINE: DeploymentPlanEventOccurred(Completed DeploymentPlai
Tue Jun 02 09:07:39.984 CDT 2009 : FINE: COIEventType.COMPLETED (from com.ibm.ac.coi.ext.ia
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: ** DeploymentPlanProcessor.process(INSTALL) complet
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: ENTRY (from COIWrapperWorkerThread.disposeSIRuntime
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: ENTRY (from DEOperations.disposeSIRuntime)
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: RETURN (from DEOperations.disposeSIRuntime)
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: RETURN (from COIWrapperWorkerThread.disposeSIRuntime
Tue Jun 02 09:07:40.671 CDT 2009 : FINEST: Reenabled the cancel button. (from com.ibm.ac.coi.e
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: $IAGLOBAL_COI_PLAN_STATUS$=SUCCESS (from com.ibm.ac
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: $IAGLOBAL_COI_SUCCEED_INSTALL_MESSAGE$=0ewAS0ISC0TSI
Tue Jun 02 09:07:40.671 CDT 2009 : FINE: RETURN (from com.ibm.ac.coi.ext.ia.plugin.COIProces
Tue Jun 02 09:07:40.671 CDT 2009 : STDERR: Retrying installables deferred in pass 0
Tue Jun 02 09:07:40.671 CDT 2009 : STDERR: Deferral retries done because:
Tue Jun 02 09:07:40.671 CDT 2009 : STDERR: There were no deferrals in the last pass.
Tue Jun 02 09:07:40.890 CDT 2009 : STDERR: RepositoryManager: repository successfully written
Tue Jun 02 09:07:41.140 CDT 2009 : FINE: ENTRY (from com.ibm.ac.coi.ext.ia.plugin.PostFailur
Tue Jun 02 09:07:45.343 CDT 2009 : FINE: RETURN (from com.ibm.ac.coi.ext.ia.plugin.PostFailur
Tue Jun 02 09:23:32.687 CDT 2009 : STDERR: SHUTDOWN REQUESTED
Tue Jun 02 09:23:32.687 CDT 2009 : STDOUT: (X) committing registry
Tue Jun 02 09:23:32.687 CDT 2009 : STDERR: REGISTRY ALREADY STORED!
Tue Jun 02 09:23:32.687 CDT 2009 : STDOUT: (X) shutting down service manager
Tue Jun 02 09:23:34.468 CDT 2009 : STDOUT: (X) cleaning up temporary directories
Tue Jun 02 09:23:35.343 CDT 2009 : STDERR: cleanup()
Tue Jun 02 09:23:35.343 CDT 2009 : STDERR: calling cleanupwin32()
Tue Jun 02 09:23:38.906 CDT 2009 : STDERR: Exiting with exit code: 0

```

The installation log for the server is stored in the server installation directory. Look for the log.txt and logs.zip files. In this example you see a log from a successful installation. Note the return code **zero** at the end of the log.

## Using the Management Console



You can use the Management Console to configure clients and storage pools.  
**Using the console for server initialization is *not* the preferred method.**

You can configure clients and storage pools using the Management Console. Using the console to configure and initialize the server is *not* the preferred method.

## Configuring a server instance

You have several options for configuring and initializing a server instance:

- ▶ Use the new instance wizard in the Administration Center
- ▶ Use the new instance wizard on your local system (dsmicfgx.exe)
- ▶ Manually configure the new instance

Several options are available for configuring and initializing the server. In this module the method for configuring the server instance is the instance wizard on the local system. Double-click the **dsmicfgx.exe** file in the server directory to begin the configuration.

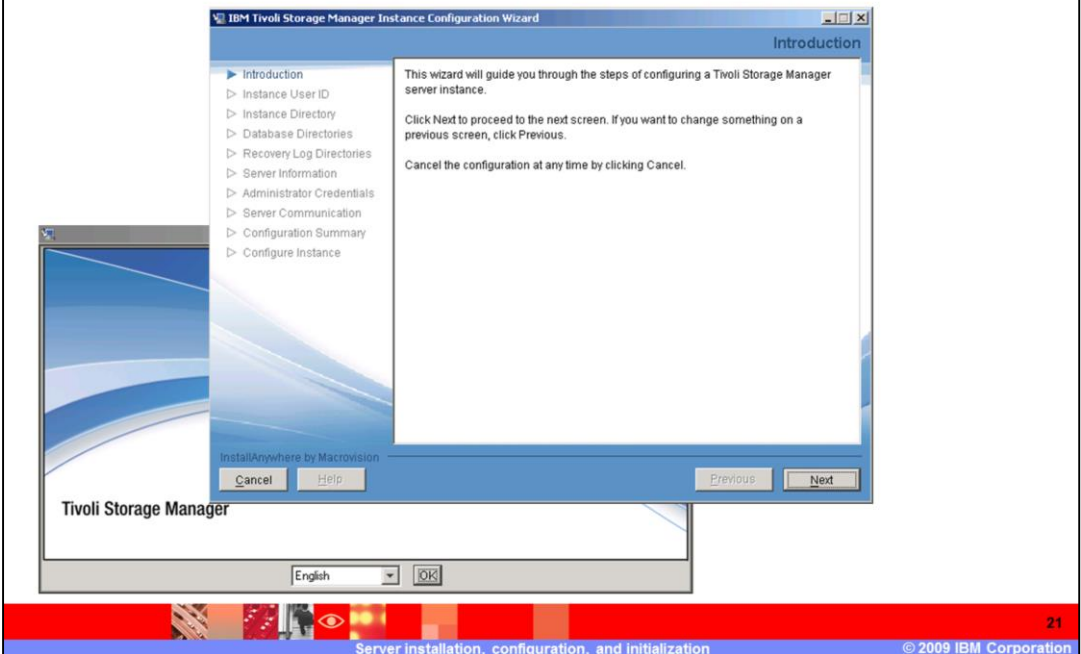
## Creating directories for the database and logs

Create directories for the Tivoli Storage Manager database and recovery log information

- ▶ e:\tsmdata\server1\dbdir
- ▶ f:\tsmdata\server1\active\_log
- ▶ f:\tsmdata\server1\archive\_log
- ▶ g:\tsmdata\server1\active\_log\_mirror
- ▶ g:\tsmdata\server1\archive\_log\_failover

Create the directories before you configure the server. When creating these directories, ensure that they are empty and accessible to you. Put the **dbdir** on a reliable disk that has enough space for the database and sufficient space for growth. Separate the active log from the active log mirror and from the database. You will specify these directories later during the configuration process.

## Configuring Tivoli Storage Manager



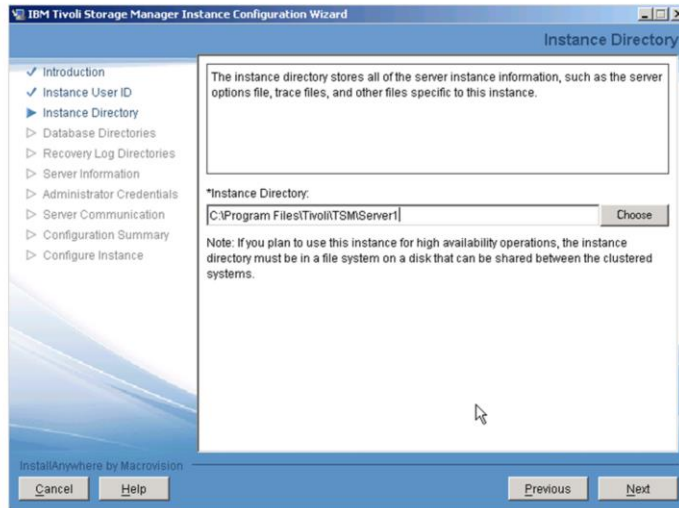
Selecting the **dsmicfgx.exe** file in the server directory launches the Instance Configuration Wizard. A list of tasks is displayed.

## Specifying an instance user ID

The screenshot shows the 'Instance User ID' step of the IBM Tivoli Storage Manager Instance Configuration Wizard. The window title is 'IBM Tivoli Storage Manager Instance Configuration Wizard' and the current step is 'Instance User ID'. The left sidebar contains a tree view with the following items: Introduction (checked), Instance User ID (selected), Instance Directory, Database Directories, Recovery Log Directories, Server Information, Administrator Credentials, Server Communication, Configuration Summary, and Configure Instance. The main area contains the following text: 'Specify the instance name of the new instance. Also, specify the user ID and password under which the database manager for this instance will run.' Below this text are three input fields: 'Instance:' with the value 'Server1', 'User ID:' with the value 'db2user1', and 'Password:' with the value '\*\*\*\*\*'. A note below the fields reads: 'Note: When you click Next, the wizard will attempt to establish a connection to the local machine. You must ensure File and Print Sharing is enabled and that your firewall allows connections to port 445.' At the bottom of the window are buttons for 'Cancel', 'Help', 'Previous', and 'Next'. The bottom of the slide features a red banner with the text 'Server installation, configuration, and initialization' and '© 2009 IBM Corporation'.

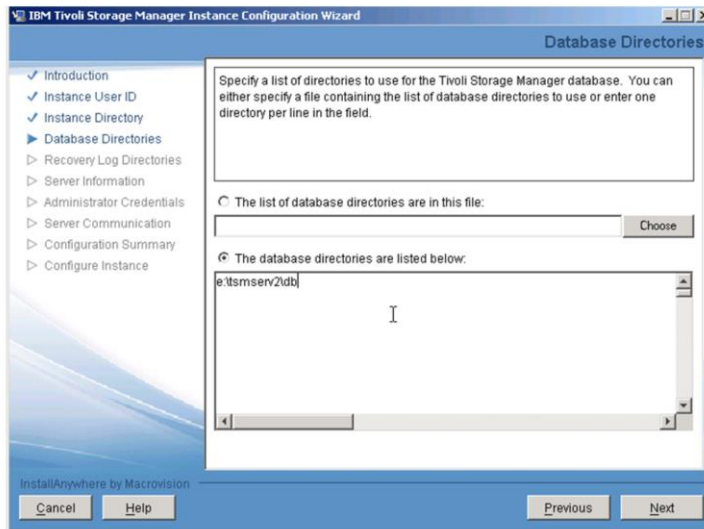
Next, provide the same DB2 User ID and password that you specified during installation.

## Choosing a location for the instance directory



Use the default Instance Directory or click **Choose** to browse and specify another location. The option to choose another directory is helpful when you are configuring more than one server instance.

## Specifying database directories



Select the first radio button to specify a list of database directories in a file. Select the second radio button to type the database directories in the field provided. Consider putting the database directory on a separate disk.



## Specifying the recovery log directories

The screenshot shows the 'Recovery Log Directories' step of the IBM Tivoli Storage Manager Instance Configuration Wizard. The window title is 'IBM Tivoli Storage Manager Instance Configuration Wizard' and the subtitle is 'Recovery Log Directories'. On the left, a navigation pane lists the following steps: Introduction, Instance User ID, Instance Directory, Database Directories, Recovery Log Directories (highlighted), Server Information, Administrator Credentials, Server Communication, Configuration Summary, and Configure Instance. The main area contains a text box with the instruction 'Specify the directories for the database recovery logs.' Below this, there are several fields and buttons: 'Active log size (GB):' with a spinner set to '2', '\*Active log directory:' with a text box and a 'Choose' button, '\*Primary archive log directory:' with a text box and a 'Choose' button, 'Active log mirror directory:' with a text box and a 'Choose' button, and 'Secondary archive log directory:' with a text box and a 'Choose' button. At the bottom of the wizard, there are 'Cancel', 'Help', 'Previous', and 'Next' buttons. The footer of the wizard window includes 'InstallAnywhere by Macrovision' and '© 2009 IBM Corporation'.

Type the path of each log directory or click the **Choose** button beside each field to browse and select the directory.

## Specifying server information

The screenshot shows the 'Server Information' step of the IBM Tivoli Storage Manager Instance Configuration Wizard. The window title is 'IBM Tivoli Storage Manager Instance Configuration Wizard'. The left sidebar contains a list of steps: Introduction, Instance User ID, Instance Directory, Database Directories, Recovery Log Directories, Server Information (selected), Administrator Credentials, Server Communication, Configuration Summary, and Configure Instance. The main area is titled 'Server Information' and contains the text 'Specify configuration information for the server.' Below this, there are two input fields: '\*Server Name:' with the text 'TSM\_SERVER1' and 'Server Language:' with a dropdown menu set to 'English'. At the bottom of the window, there are buttons for 'Cancel', 'Help', 'Previous', and 'Next'. The footer of the window includes the text 'InstallAnywhere by Macrovision' and '© 2009 IBM Corporation'.

Accept the default server name or change it to something more meaningful for you.

## Specifying administrator credentials

The screenshot shows the 'Administrator Credentials' step of the IBM Tivoli Storage Manager Instance Configuration Wizard. The window title is 'IBM Tivoli Storage Manager Instance Configuration Wizard' and the subtitle is 'Administrator Credentials'. On the left, a navigation pane lists the following steps: Introduction, Instance User ID, Instance Directory, Database Directories, Recovery Log Directories, Server Information, Administrator Credentials (selected), Server Communication, Configuration Summary, and Configure Instance. The main area contains a text box with the instruction: 'Specify a Tivoli Storage Manager Administrator to create when setting up the new instance. You can change the administrator information at any time in the server properties notebook.' Below this are three input fields: '\*Administrator Name:' with the value 'admin1', '\*Administrator Password:' with masked characters '\*\*\*\*\*', and '\*Verify Administrator Password:' with masked characters '\*\*\*\*\*'. At the bottom, there are 'Cancel', 'Help', 'Previous', and 'Next' buttons. The footer of the wizard window includes 'InstallAnywhere by Macrovision' and a mouse cursor pointing at the bottom center.

Fill in the administrator name and password fields to create an administrator ID with system authority.

## Setting up server and client communications

\* This file was created by the TSM Instance Configuration Utility \*

```

COHMethod    TCPIP
TCPPort 1500

DEVCONFIG    devconf.dat
VOLUMEHISTORY volhist.dat
TCPADMINPort 1500

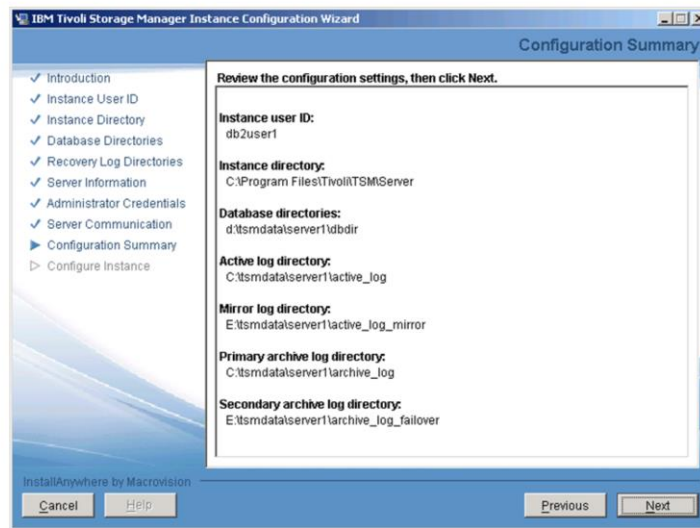
MIRRORLOGDirectory C:\tsmdata\server1\active_log_mirror
ARCHFAILOVERLOGDirectory C:\tsmdata\server1\archive_log_failover
ACTIVELOGDirectory C:\tsmdata\server1\active_log
ARCHLOGDirectory C:\tsmdata\server1\archive_log

```

The default settings for the client port and administrator port are provided.

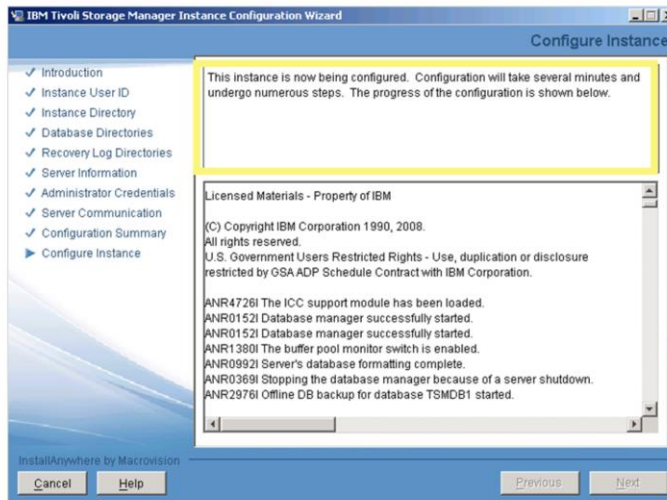
A **dsmserv.opt** file is required to hold the server options. The server options file is in the **C:\Program Files\tivoli\tsm\server** directory. You can copy the **dsmserv.opt.smp** file and save it as **dsmserv.opt** to have a more complete set of options to work with. Or, you can have the server instance configuration wizard create a **dsmserv.opt** file for you. An example is shown in the slide.

## Reviewing the configuration summary



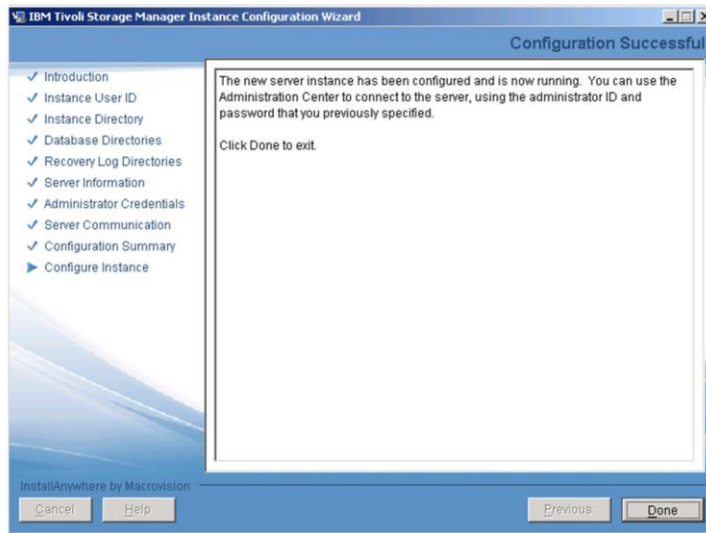
Read the summary page to verify all the configuration settings are correct before continuing.

## Monitoring the instance configuration process



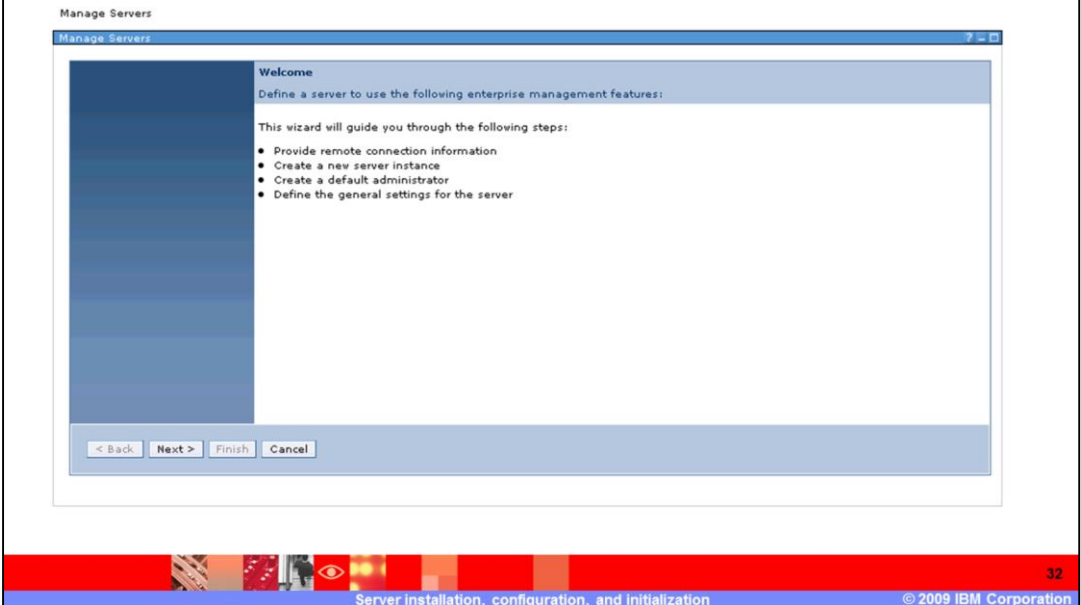
You can monitor the instance configuration process. On this progress page an entry is displayed indicating an offline DB backup for database TSMDB1 started. This database backup does not write to the recovery log and is not used to restore the Tivoli Storage Manager database. Perform the initial full backup of the database after the server is running. Proceed with the configuration process until you see that the configuration was successful.

## Completing a successful configuration



Click **Done** to exit the wizard.

## Creating a new server instance in the Administration Center



A new wizard found in the Manage Servers page guides you through the steps required to create additional new server instances. This wizard will help you:

- Provide remote connection information
- Create a new server instance
- Create a default administrator
- Define the general settings for the server



## Configuring a Tivoli Storage Manager server manually

- To manually configure and start the Tivoli Storage Manager server, use the following steps as a guide:
  1. Before you start the server for the first time, create a new server options file by copying the sample file. This step sets up communications between client and server.
  2. Issue the **dsmserv format** command to format the database and recovery log.
  3. Start the server.
  4. Register your Tivoli Storage Manager license.
- Register administrative node admin1, grant system authority, and configure storage pools and volumes.

If you decide to manually configure the Tivoli Storage Manager server, create the server options file, **dsmserv.opt**, before you start the server for the first time.

## Configuring an additional server instance

To configure an additional server instance, set up an instance directory using the **db2icrt** command. For example:

```
db2icrt -u administrator server2  
object00
```

Issue the **DSMSERV FORMAT** command, with the **-k** parameter from that directory. That directory becomes the location of the server. The registry tracks the installed servers.

```
dsmserv -k server2 format dbdir=e:\tmserv2\dbdir  
activelogsize=4096 activelogdir=f:\tmserv2\active_log  
archlogdir=g:\tmserv2\archive_log  
archfailoverlogdir=h:\tmserv2\archive_log_failover  
mirrorlogdir=i:\tmserv2\active_log_mirror
```

To manually configure an additional server instance, set up an instance directory using the **db2icrt** command. Use the **-u** parameter to specify the current user account and password for the instance. An example is on the slide. Issue the **DSMSERV FORMAT** command, with the **-k** parameter from that directory. That directory becomes the location of the server. The registry tracks the installed servers. An example of the full command with parameters is shown on the slide.

Use the instance directory to start the server. Complete instructions are available in the Tivoli Storage Manager 6.1 Installation Guide for your platform.

# Client installation

IBM Tivoli Storage Manager Client  
Version 6.1.0.0

**Main Menu**

- [Install Products](#)
- [View Release No](#)
- [Visit Our Websit](#)
- [Contact Us](#)
- [Exit](#)

**Install Products**

- [TSM Backup-archive Client](#)
- [TSM Language Packs](#)

[Return to Main Menu](#)

**IBM Tivoli Storage Manager Client - InstallShield Wizard**

**Custom Setup**  
Select the program features you want installed.

Click on an icon in the list below to change how a feature is installed.

Feature	Feature Description
Backup-Archive Client	
Backup-Archive Client GUI Files	
Backup-Archive Client Web Files	
Client API Runtime Files	
Client API SDK Files	
Administrative Client Command Line Files	This feature requires 2629KB on local hard drive.
	This feature will be installed on local hard drive.
	This feature, and all subfeatures, will be installed on local hard drive.
	This feature will be installed when required.
	This feature will not be available.

Install to:  
C:\Program Files\

InstallShield

Help Space < Back Next > Cancel

35

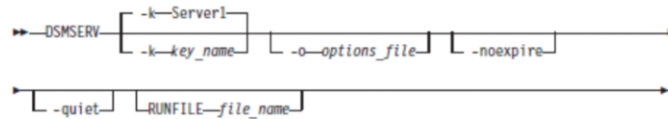
Server installation, configuration, and initialization © 2009 IBM Corporation

The client installation is separate from the server installation. To ensure you have access to the Administrative Client command line, select **Custom Setup**. You cannot exclude the Backup-Archive Client Web Files from the installation process. Copy the **dsm.opt** file from the **c:\Program Files\Tivoli\tsm\console** directory and paste it into the **baclient** directory. Tivoli Storage Manager client uses this copy of the file. When the client installation is complete, restart the computer. The DB2 First Steps interface is displayed. You can close this interface.

## Starting the server instance

For Windows: `dsmserv -k server_key`

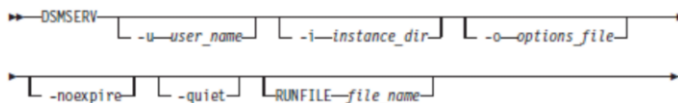
### Syntax



where *server\_key* specifies the name of the Windows registry key from which to retrieve information about the server. The default server instance is Server1.

For AIX® and Linux®: `dsmserv -i instance_dir`

### Syntax



where *instance\_dir* specifies an instance directory. This instance directory becomes the current working directory of the server.

Use the **dsmserv** command to start the server instance. Use the **halt** command to stop the server instance. If you have more than one server instance on a system, use the added parameters shown on the slide.

## Registering the license

On the Tivoli Storage Manager Administrative command line, enter the following command:

```
register license file=license_file_name
```

Choose one of the following license files:

- **tsmbasic.lic**: Registers IBM Tivoli Storage Manager base edition.
- **tsmme.lic**: Registers IBM Tivoli Storage Manager Extended Edition. This license includes the disaster recovery manager, large libraries, and NDMP.
- **dataret.lic**: Registers System Storage Archive Manager. This license is required for Data Retention Protection and Expiration and Deletion Suspension (Deletion Hold).
- **\*.lic**: Registers all IBM Tivoli Storage Manager licenses for server components.

Register the license for your version of Tivoli Storage Manager to ensure that the appropriate functions are enabled.

## Query commands to verify successful server installation

Verify the server has successfully installed by issuing several **QUERY** commands from an administrative client or the server console

- **query status:** The server is enabled
- **query db:** The installation is set up for the default database TSMDB1
- **query log:** Total used and free space for the log
- **query dbspace:** Database space usage
- **query option:** The installation setup options are in dsmserv.opt file

Use the format=detail option for maximum detail



You can verify the server has successfully installed by issuing several **QUERY** commands from an administrative client or from the server console. Use **help query** to see a list of all possible queries. New queries are available. For example, **query dbspace** shows the total database space usage.

## Backing up the database

Suggested initial actions after installation:

- Create a device class for database backups
  - This process has not changed
- Set dbrecovery
  - Set dbrecovery indicates the device class to be used for database backups
  - Example: `set dbrecovery tapeclass`
- Back up the database
  - The backup during the server initialization is not used for recovery. The first backup is a full backup.
  - Example: `backup db devc=tapeclass type=full`

Back up the database after the server is installed, configured, and running. Run the **set dbrecovery** command to specify the device class to be used for server backups.

## Summary

You should now be able to:

- Install and initialize the Tivoli Storage Manager server, license, and device driver
- Configure the server instance
- Install and configure the administrative client command line
- Start the Tivoli Storage Manager server
- Verify the configuration
- Register the license
- Secure the new installation by backing up the database

You should now be able to complete the steps needed to install, configure, and initialize an IBM Tivoli Storage Manager 6.1 server.



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