

# Installing Platform Product Suite for SAS™ (Windows)

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Your comments should pertain only to Platform LSF documentation. For product support, contact [support@platform.com](mailto:support@platform.com).

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## Introduction

This document describes how to install the software required to run the **Platform Product Suite for SAS™** software (“Product Suite for SAS”) on Windows® machines. The Product Suite for SAS software includes the Process Manager Server and Client. Each of these components is required to run jobs using Product Suite for SAS.

The Process Manager Server controls the submission of jobs to LSF, managing any dependencies between the jobs.

The Process Manager Client allows you to monitor and control your workload as it runs.

For an overview of the Process Manager components, see the introductory chapter in *Administering Process Manager*.

## Assumptions

This document assumes the following:

- ◆ You will install Process Manager Server and Client on a single Windows host. This host will act as the central point of control for a cluster of LSF hosts that actually run the jobs.
- ◆ Your cluster will be composed of only Windows hosts. There will be no UNIX hosts in the cluster.

## Technical Support

Should you encounter problems or have questions regarding the use of LSF and scheduling jobs from SAS Management Console, please contact SAS directly. You can use one of the following methods to contact the SAS Technical Support staff.

- 1 Online problem/question submission:  
[http://support.sas.com/techsup/contact/track\\_intro.html](http://support.sas.com/techsup/contact/track_intro.html)  
Choose SAS Management Console as the 'Product' value.
- 2 E-mail problem/question submission via EMITS facility:  
<http://support.sas.com/techsup/contact/emits.html>  
Choose SAS Management Console as the 'Product' value.
- 3 Telephone Support Information for North America:  
[http://support.sas.com/techsup/contact/telephone\\_support.html](http://support.sas.com/techsup/contact/telephone_support.html)
- 4 If you are not based in North America, use the links in the following URL for information on how to contact other SAS Technical Support offices around the world:  
<http://support.sas.com/techsup/contact/index.html>

While any SAS software user may contact Technical Support, priority is given to designated SAS support personnel at your site. (Note, you can use web-based forms to find out who the SAS support personnel are at your site or re-designate SAS support personnel at your site using links from this URL:

<http://support.sas.com/techsup/contact/index.html>

# Supported Versions and Requirements

## Versions

SAS Management Console version SAS 9.2

LSF version LSF version 6.2

## Product Suite for SAS Version 3.1 requirements

The Process Manager software must be installed on an LSF server host, but it is recommended that it not be an LSF master host.

J2RE (Java Runtime Environment) 1.4 is installed with the Process Manager.

The Process Manager Server requires:

- ◆ Approximately 135 MB free disk space for installation, and an additional 2 KB per job to handle jobs running simultaneously
- ◆ 256 MB RAM for processing purposes
- ◆ Pentium III or equivalent processor

## Prerequisites

### Accounts

**Installation account** The user account that is used to install Process Manager and LSF is called the installation account. It does not need to be an LSF user. It must be a local administrator on all the hosts you are installing (a Windows domain administrator account is normally a local administrator on every host in the domain).

The installation account must be able to read and write to the installation directory (also called the LSF top directory) on the network share where the LSF configuration files are located.

The installation account must have the following privilege:

- ◆ Act as part of the operating system

By default, the installation account is created as a cluster administrator when you create a new cluster.

**Process Manager administrators** Process Manager administrators must have permission to modify all files.

For more information about LSF administrators (known as cluster administrators), refer to *Using Platform LSF on Windows*.

**Process Manager service account** The Process Manager service runs under a Process Manager service account. This is similar to the Process Manager primary administrator account on UNIX.

The account name cannot include spaces. This account must have read and write permissions on the installation directory.

Process Manager automatically assigns the following privileges to this account. In Windows 2000, make sure domain-level policy settings do not remove these privileges:

- ◆ Act as part of the operating system
- ◆ Debug programs
- ◆ Increase quotas
- ◆ Log on as a service
- ◆ Replace a process-level token
- ◆ Back up files and directories
- ◆ Restore files and directories
- ◆ Bypass traverse checking

We recommend that you use the same account for both the LSF and Process Manager service accounts. The default is `lsfadmin`.

For more information about the LSF service account, refer to *Using Platform LSF on Windows*.

If you are installing just Process Manager alone or you install both PM and LSF, this account must be created before installation if it does not already exist.

### Shared configuration

You have set up a network share for storing the configuration and state files. This share can be one of the hosts in the cluster, or a centralized storage server that is not part of the cluster.

## License file

You need the license file provided to you by SAS which licenses both LSF and Process Manager.

# Install the Software

## Get the software

Place a copy of `pm3.1_pinstall_sas_win.exe` where it is accessible from the setup host.

## Run the installer

| Step | Procedure  | What to choose...  | Notes   |
|------|--|--|---|
| 1    | Log on to the setup host using the user ID created as the installation account |  | You must have local administrative privileges on this host.   |
| 2    | Run the installation program   | Double-click <b>pm3.1_pinstall_sas_win.exe</b>   |   |
| 3    | Welcome  | Click <b>Next</b> .  | You do not need to enter any information.   |
| 4    | Software License Notice  | Click <b>Agree</b>   | The software license agreement will be displayed. Please read this carefully before proceeding.                           |
| 5    | Choose the destination location  | Unless you need to change the installation location, click <b>Next</b> .<br><br>Caution: Do not install Process Manager and LSF to the same directory.   |   |
| 6    | Select the LSF and Process Manager components to install                       | Select Platform LSF, Platform Process Manager Server and the Platform Process Manager Client to install.<br>Click <b>Next</b> to continue.   | By default, the Platform Process Manager Server, Client, and Platform LSF master are selected to install on this machine. |
| 7    | Configure the Process Manager Server   | <ol style="list-style-type: none"> <li>1 The name you specify in the <b>Administrators</b> field is the primary administrator, usually the installation account user ID.</li> <li>2 Unless there is a conflict, leave the port number in the <b>Port</b> field at the default, 1966.</li> <li>3 For <b>License file</b>, specify the full path to the license file including the file name.</li> <li>4 Click <b>Next</b>.</li> </ol> | Make sure the user name displayed has local administrator privileges.   |

| Step | Procedure                             | What to choose...  | Notes  |
|------|---------------------------------------|--|--|
| 8    | Configure the Process Manager service | <ol style="list-style-type: none"> <li>Specify the domain and user ID under which the Process Manager service will run.</li> <li>Specify the password for that user ID.</li> </ol>   | The user you specify must have read/write access to the LSF <code>passwd.lsfuser</code> password file. Ideally, use a user name and password that does not change.   |
| 9    | Allow sending mail                    | <ol style="list-style-type: none"> <li>If you want users to receive email notifications about their jobs, check Allow sending mail</li> <li>Specify the type of mail server.</li> <li>Specify the name of the mail server host.</li> <li>Click <b>Next</b>.</li> </ol>   | Files install.   |
| 10   | Start copying files                   | Click <b>Next</b> .  |  |
| 11   | Host Selection                        | <p>In addition to the host you are currently installing on, you can install LSF on additional hosts to create your cluster.</p> <p>Tip: We recommend that you install on one host only to begin with and then add hosts to your cluster once you have tested your cluster is working.</p> <p>Type or select the hosts on which you want to install LSF. Click -&gt; to move the host to the <b>Install LSF on hosts</b> column.</p> <p>Click <b>Next</b></p> | In a domain environment, the list of available hosts includes all of the hosts in your current domain.   |
| 12   | Location of LSF Binary Files          | <p>C:\LSF_6.2</p> <p>Click <b>Next</b>.</p>  | By default, LSF binary files are copied to each LSF host selected, and stored in C:\LSF_6.2.   |
| 13   | LSF Installation Directory            | <p>\\<i>hostname</i>\LSF_6.2<br/>where <i>hostname</i> is the name of your LSF file server.</p> <p>Caution: Do not install Process Manager and LSF to the same directory.</p> <p>Click <b>Next</b>.</p>  | <p>LSF binaries are installed on every LSF host. The directory you specify is created if it does not already exist.</p> <p>LSF hosts in the cluster need to access files on this host. If you use per server licensing, make sure you have enough connections. Windows 2000 Professional is not recommended because it only supports a limited number of shared connections.</p> |

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| Step | Procedure             | What to choose...  | Notes  |
|------|-----------------------|--|--|
| 14   | Information Summary   | Click <b>Next</b> .  |  |
| 15   | Summary               | Click <b>Next</b> .  |  |
| 16   | LSF Setup             | Deselect the check box for "I would like to view the "LSF Get Started" File" and click <b>Finish</b> . | The procedures described in the Getting Started document are also described later in this document.  |
| 17   | LSF Setup             | Click <b>OK</b> .  | Do <b>not</b> restart your machine at this time. Complete the post-installation steps first on " <a href="#">Post-Installation Steps</a> " on page 10. |
| 18   | Process Manager setup | Click <b>Finish</b> .  |  |

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## Post-Installation Steps

- 1 “Set file permissions: LSF” on page 10.
- 2 “Set file permissions: Process Manager” on page 10.
- 3 “Set ports in lsf.conf” on page 10.
- 4 “For more information” on page 11.
- 5 Add additional clients as required. See *Administering Process Manager* for instructions.

### Set file permissions: LSF

Set the permissions for LSF files as shown on your directory structure.

The files are located by default in `C:\LSF_6.2`.

- work, logs**
  - ◆ LSF service accounts: Full Control
  - ◆ LSF administrators: Full Control
  - ◆ Everyone: Read
- bin, lib, etc**
  - ◆ LSF service accounts: Full Control
  - ◆ LSF administrators: Full Control
  - ◆ Everyone: Read & Execute
- conf**
  - ◆ LSF service accounts: Full Control
  - ◆ LSF administrators: Full Control
  - ◆ Everyone: Read
- passwd.lsfuser**

If you have multiple service accounts, the `passwd.lsfuser` file is owned by the first one, and you must give any additional service accounts permission to modify the file.

  - ◆ LSF service accounts: Full Control

### Set file permissions: Process Manager

Set the permissions for Process Manager files as shown on your directory structure.

The files are located by default in `C:\Program Files\Platform Computing\Platform Process Manager`.

- work, log**
  - ◆ Process Manager service accounts: Full Control
  - ◆ Process Manager administrators: Full Control
  - ◆ Everyone: Read
- lib, etc**
  - ◆ Process Manager service accounts: Full Control
  - ◆ Process Manager administrators: Full Control
  - ◆ Everyone: Read & Execute
- conf**
  - ◆ Process Manager service accounts: Full Control
  - ◆ Process Manager administrators: Full Control
  - ◆ Everyone: Read

### Set ports in lsf.conf

If you have conflicts with the default ports used by LSF services and daemons, you will have to edit the settings manually. Different clusters should use different ports.

To make a change, edit the following parameters in  
\\fileservers\LSF\_6.2\etc\lsf.conf:

- ◆ LSB\_MBD\_PORT
- ◆ LSB\_SBD\_PORT
- ◆ LSF\_RES\_PORT
- ◆ LSF\_LIM\_PORT

Make sure the port you specify is not already in use.

## For more information

For more information about LSF commands, refer to the *LSF Administrator's Guide* and the *LSF Reference Guide*.

For more information about Process Manager, refer to *Administering Process Manager*.

## Start the Cluster

After installing LSF on Windows, restart each machine.

This is required so that system environment variables LSF\_ENVDIR and PATH become effective for all users, and LSF services LSF LIM, LSF RES, and LSF SBD are started.

LSF services are set to start automatically when the machine is restarted.

## Check the Cluster

- ◆ “The `lsadmin` command” on page 13
- ◆ “The `lsid` command” on page 13
- ◆ “The `lsload` command” on page 14
- ◆ “The `badmin` command” on page 14
- ◆ “The `bhosts` command” on page 14

**The `lsadmin` command** The `lsadmin` command controls the operation of an LSF cluster and administers the LSF services, LIM and RES. Use the `lsadmin ckconfig` command to check the LSF configuration files. The `-v` option displays detailed information about the LSF configuration:

```
C:\LSF_6.2\bin>lsadmin ckconfig -v
```

```
LSF 6.2, May 31 2006
Copyright 1992-2006 Platform Computing Corporation
Reading configuration from \\hostA\lsf\etc\lsf.conf
Jul 10 10:54:14 2006 24854 5 6.2 C:\lsf\etc\lim.exe -C
Jul 10 10:54:14 2006 24854 7 6.2 setMyClusterName: searching cluster files ...
Jul 10 10:54:14 2006 24854 7 6.2 setMyClusterName: local host hostA belongs to cluster
sas_cluster
Jul 10 10:54:14 2006 24854 3 6.2 domanager():
\\hostA\lsf\conf\lsf.cluster.sas_cluster(13): The cluster manager is the invoker
<lsfadmin> in debug mode
Jul 10 10:54:14 2006 24854 6 6.2 Checking Done.
-----
No errors found.
```

You may see the message "License file not specified". You can ignore this message. It is displayed because a SAS license is used instead of regular LSF licenses.

**The `lsid` command** The `lsid` command displays the cluster name and master host name.

The master name displayed by `lsid` may vary, but it is usually the first host configured in the Hosts section of the `LSF_CONFDIR\lsf.cluster.cluster_name` file.

```
C:\LSF_6.2\bin>lsid
LSF 6.2, May 31 2006
Copyright 1992-2006 Platform Computing Corporation
My cluster name is sas_cluster
My master name is hostA.platform.com
Cluster in ISV mode: SAS
```

**The lsload command** The `lsload` command displays the current load levels of the cluster. The output contains one line for each host in the cluster. The status should be `ok` for all hosts in your cluster.

```
C:\LSF_6.2\bin>lsload
HOST_NAME      status  r15s  r1m  r15m  ut   pg  ls   it   tmp   swp   mem
HostA          ok     0.0  0.0  0.0  6%  0.2  2  1365  97M  65M  29M
HostB          ok     0.1  0.1  0.2  9%  0.0  4   1  130M 319M  12M
HostC          ok     2.5  2.2  1.9 64% 56.7 50   0  929M 931M 4000M
```

**The badmin command** The `badmin` command controls and monitors the operation of the LSF Batch system. Use the `badmin ckconfig` command to check the LSF Batch configuration files. The `-v` option displays detailed information about the configuration:

```
C:\LSF_6.2\bin>badmin ckconfig -v

Checking configuration files ...

Jul 10 17:39:57 2006 20246 6 6.2 minit: Trying to call LIM to get cluster name ...
Jul 10 17:39:58 2006 20246 6 6.2 Batch is enabled
Jul 10 17:39:58 2006 20246 6 6.2 Process Manager Server is enabled
Jul 10 17:39:58 2006 20246 6 6.2 autoAdjustInit: Auto-adjustment is disabled
Jul 10 17:39:58 2006 4433 6 6.2 Checking Done
-----
No errors found.
```

The messages shown above are the normal output from `badmin ckconfig -v`. Other messages may indicate problems with the Platform LSF Batch configuration. Refer to the *LSF Reference Guide* for help with some common configuration errors.

**The bhosts command** The `bhosts` command displays the status of batch server hosts in the cluster. The status should be `ok` for all hosts in your cluster.

```
C:\LSF_51\bin>bhosts
HOST_NAME      STATUS      JL/U   MAX  NJOBS   RUN  SSUSP  USUSP  RSV
hostA          ok          -     -     0       0     0     0     0
hostB          ok          -     -     0       0     0     0     0
hostC          ok          -     -     0       0     0     0     0
```

## For more information

For more information about LSF commands, refer to the *LSF Administrator's Guide* and the *LSF Reference Guide*.

For more information about Process Manager, refer to *Administering Process Manager*.

**Where to go next** To install **Platform Grid Management Service**, see *README for Platform LSF Grid Management Service - Version 6.2 (README.gms)*.

## Uninstall the Software

You can uninstall the Process Manager and LSF software by running the installation software (`pm3.1_pininstall_sas_win.exe`) again.