

Fast Track to SySAM 2.0

WHITE PAPER REVISION 2

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INTRODUCTION

According to industry analysts, IT asset management will rank as one of the top five priorities for CIOs in 2006. Historically, tools for managing IT assets and the IT organizational infrastructure have lacked the sophistication required to manage business challenges such as consolidation and compliance. Tracking database usage electronically has become one of the most requested features to meet these challenges. Given that IT assets account for the largest proportion of overall IT spending, organizations are seeking ways to ensure these assets are properly managed and maintained.

The new version of the licensing system, SySAM 2.0 allows you to monitor license usage, use reporting tools to obtain metrics, and automate software delivery and deployment.

This white paper explains the basics of the SySAM 2.0 licensing system and outlines the benefits for users and license administrators. Based on Macrovision's FLEXnet Licensing, SySAM 2.0 allows software licenses to be available (or float) anywhere on a network—as opposed to assigning them to specific machines. This enables users to make more efficient use of fewer licenses by sharing them on the network; and this feature allows license administrators to control both application use as well as the machines where the licenses are available.

QUICK START GUIDE

IMPORTANT:

For users with a high number of server licenses to administer, **Served License** should be used. **Served License** can be set up by activating a block of licenses from Sybase SPDC (<https://sybase.subscribe.net.com>), installing the license file on %SYSAM2% directory on system with network license server installed, and configure/point to the network license server during ASE installations. Served license would also allow easy license deployment/usage through SAMReport.

Un-served License can be used 1) with a small number of servers' licenses to administer; or 2) with servers deployed on laptops or in standalone configuration; or 3) if you would like to statically bind licenses to specific servers. *Note – SAMReport will not be able to report on usage of Un-Served Licenses.*

SERVED LICENSE SETUP

1. Install SySAM network server software (Installation Guide Ch 2 SySAM installation step 1).
2. Obtain host information for the network server (Installation Guide Ch 2 SySAM Installation step 2).

The following chart shows an example of host ids:

Platform	HOST-ID Choices	Example	OS Native Command
Windows	1) Ethernet 2) Disk Serial Number	1) 00B0A9DF9A32 2) DISK_SERIAL_NUM= 3e2e17fd	1) ipconfig/all (use physical address 2) dir/c (Use Vol SN)
Solaris	HOST ID	170a3472	hostid
Linux	Ethernet	00400516E525	ifconfig eth0 (use HW addr)
IBM AIX	HOST ID	02765131	uname -m (returns 000276513100), then remove last two digits, and use remaining last eight digits
HP-UXPA-RISC	HOST ID	778DA450 or #2005771344	uname -i and convert to hex, or prepend with #

3. Create a software license from SPDC (Installation Guide Ch 2 SySAM Installation step 3-4) e.g. create license file with 100 server licenses

Previous Steps	
Step 1 - License Model	Served License

Step 2 - License Quantity	
How many licenses do you want to generate? <i>(How many licenses should I generate for a Served License?)</i>	
Quantity: <input type="text" value="100"/>	(Licenses Available : 100)
How many Overdraft Licenses do you want to reserve? <i>(What is an Overdraft License?)</i>	
Overdraft: <input type="text" value="0"/>	(Maximum 10% of the Quantity rounded up to the next whole number)
<input type="button" value=" << Back"/> <input type="button" value=" Next >> "/>	

The following is an example of a served License file with 100 SR licenses

```
# Sybase Software Asset Management License File
SERVER TAD0 000FLFC3F92F      <=< Server Name and hostid
VENDOR SYBASE
USE_SERVER
PACKAGE ASE_EE SYBASE COMPONENTS=ASE_CORE OPTIONS=SUITE SUPERSEDE
ISSUED=27-sep-2005 SIGN2="18A2 9A83 B526 D0EC CD9F 8E88 32E3 \
0BA5 DD91 339F 04E3 73E2 01FD 53C2 53D9 051A F001 A672 0C69 \
7989 1A78 D627 F8EB 5C61 CA53 3AC0 B1E9 9EFF 57A4 F1F6"
INCREMENT ASE_EE SYBASE 2005.09270 permanent 100 \
VENDOR_STRING=SORT=100;PE=EE;LT=SR PLATFORMS=B6_n
DUP_GROUP=H \
ISSUER="CO=Sybase, Inc ,V=150;AS=A;MP=0" ISSUED=27-sep-2005 \
BORROW=720 NOTICE=SYBASE SN=3818096-349 TS_OK SIGN2="0281 4C1E \
0813 FFC1 2084 C466 A6EC C869 8E58 78BD 2167 36AD 8038 1EAC \
0657 0CEB FB7F 4994 DDE1 0719 D7C1 14DA E21C FD 13 4E34 8CD0 \
5BDD 4D75 E4FC E1AD"
```

4. Install the license file, created from SPDC, to license directory (Installation Guide Ch2 SySAM installation step 5)
5. Start SySAMnetwork server (Installation Guide Ch2 SySAM Installation step). *Caution – SySAM will not start if no valid Served license has been installed from step 4. Note – HostName and port number of SySAM server (to be used in step 6), can be found in \$SYBASE\SYSAM-2_o\log\SYBASE.log:*

```
15:38:00 (lmgrd) Done rereading
15:38:00 (lmgrd) FLEXnet Licensing (v10.8.0 build 1886g) started on PKWAN-XP (IBM PC) (9/29/2005)
15:38:00 (lmgrd) Copyright (c) 1988-2005 Macrovision Europe Ltd. and/or Macrovision Corporation. All
Rights Reserved.
15:38:00 (lmgrd) US Patents 5,390,297 and 5,671,412.
15:38:00 (lmgrd) World Wide Web: http://www.macrovision.com
15:38:00 (lmgrd) License file(s): C:\sybase\SYSAM-2_o\licenses\DemoLicense.lic C:\sybase\SYSAM-2_o \
licenses\SYBASE.lic C:\sybase\SYSAM-2_o\licenses\SYBASE_ASE_EE.lic
15:38:00 (lmgrd) lmgrd tcp-port 27000
15:38:00 (lmgrd) Starting vendor daemons ...
```

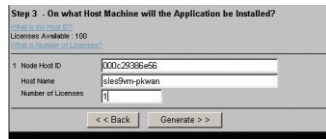
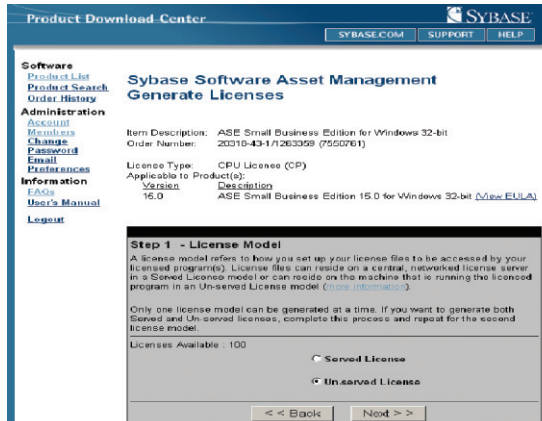
This is the error message if there is no served license (served license is obtained from SPDC with Served License - License Model.)

```
C:\sybase\SYSAM-2_o\bin>sysam start
Starting the SYSAM service
The SYSAM service is starting.
The SYSAM service could not be started.
The service did not report an error.
More help is available by typing NET HELPMSG 3534.
```

6. Install ASE (Installation Guide Ch2 Installing Server Components). *Note – Select licenses will be obtained from a license server and enter hostname and port number – info from step 5.*
7. Repeat step 6 for subsequent ASE installations (note- no additional license activation is required)

UN-SERVED LICENSE SETUP

1. Install ASE (Installation Guide Ch2 Installing Server Components). *Note – Select licenses will not be obtained from a license server.*
2. Obtain host information of machine (Installation Guide Ch 2 SySAM installation step 2). *Note – this is required before starting ASE server, otherwise, ASE will start in grace period mode.*
3. Create software license from SPDC (Installation Guide Ch 2 SySAM Installation step 3-4). *Note. select un-served license mode, the following is a Linux license generation example:*



```
> ifconfig eth0
Link encap:Ethernet HWaddr 00:0C:29:38:6E:56
```

License for Quantity: 1 Expiration Date: September 27, 2006
 Host ID: 000c2938e56 (sles9vm-pkwan)
 Generated By: Peter Kwan on Sep 29, 2005

```
# Sybase Software Asset Management License File
PACKAGE ASE EE SYBASE COMPONENTS=ASE_CORE OPTIONS=SUITE SUPERSEDI \
ISSUED=29-sep-2005 SIGWZ="179A A026 959E C1D0 9354 11BA FF17 \
40E1 A691 9890 B291 7382 DF05 EE56 A803 1781 705B 0814 4E3B \
A670 6FBA B400 3766 300C 7696 CF9C E22D ED37 6B0A 680E"
# License for 000c2938e56 sles9vm-pkwan
INCREMENT ASE EE SYBASE 2005.09270 27-sep-2006 uncounted \
VENDOR_STRING=SOFT=200;PK=EE;LT=CP HOSTID=000c2938e56 \
PLATFORMS="i86_g i86_r i86_re i86_s" ISSUER="CO=Sybase, \
Inc.;V=15.0;AS=A;HP=0;CP=1" ISSUED=29-sep-2005 NOTICE=SYBASE \
SN=3818108-371 SIGWZ="0966 9492 D8DB 8A8B 465A 2D48 8D17 EDD7 \
0A31 4794 792D EBF0 0D3A FDB1 D55E 0756 A1B1 AC35 2FCC 649A \
E14C 8764 2288 A773 3459 E871 B6C 7E32 9B6D CDF7"
```

4. Download and install license file from step 3 and install in license directory. (Installation Guide Ch 2 SySAM installation step 5). Note please ensure that file has extension .lic.
5. Start ASE server

UPGRADING FROM SySAM 1.0 TO SySAM 2.0

Adaptive Server version 15.0 uses a newer version of the underlying licensing technology and an updated license format. On a given machine, there can be only one instance of a license server running. Some changes are needed if you are using older Sybase products along with Adaptive Server 15.0

Case 1:

If you are using a central network server for Sybase products, served SySAM licenses for older Sybase products.

To migrate to Adaptive Server version 15.0, update the network license software with the version provided in Adaptive Server 15.0. Then copy your old license files (typically a single file called *license.dat*) into the new licenses directory:

```
%SYBASE%\%SYBASE_SYSAM%\licenses
```

and rename is as:

```
license.lic (change extension from .dat to .lic).
```

Shutdown the old license server and start the new license server. Copy any new licenses into this new directory. Old and new Sybase software now uses this license server.

Case 2:

If you are using individual license servers for earlier Sybase products, each machine running earlier Sybase software hosts a local license server.

To migrate to Adaptive Server version 15.0, Sybase recommends that you move to a single network license server model.

Using a central license server only for your new licenses

1. Select the machine for your new network license server and install the SySAM network license server supplied with Adaptive Server version 15.0 on that machine. If this machine is already running an older license server, use instructions in above to migrate the local licenses. All new licenses are installed on this machine now.

2. Point new Adaptive Server version 15.0 installations to this license server.

Migrating old licenses to a new central license server

1. Setup the new SySAM network license server.

2. Collect licenses from all old local license servers to deploy on the new network license server. To do this, create a new license file that includes the contents from all of the individual licenses on each old local license servers. Discard the license header from each file when creating this collection. The license header is the first three lines that start with "SERVER", "VENDOR" and "USE_SERVER." Create one license header with the above three lines in the merged file to match the requirements on the new network license server and save this file as *license.lic* in licenses directory.

3. Shutdown the older individual license servers on each machine and point the software to the new license server. You can use the supplied tool to do this or you can edit the *license.dat* file on each of these installation and adding the following lines at the beginning:

4. SERVER <network license server hostname> ANY <license server port>

5. VENDOR SYBASE

6. USE_SERVER

SySAM BASICS

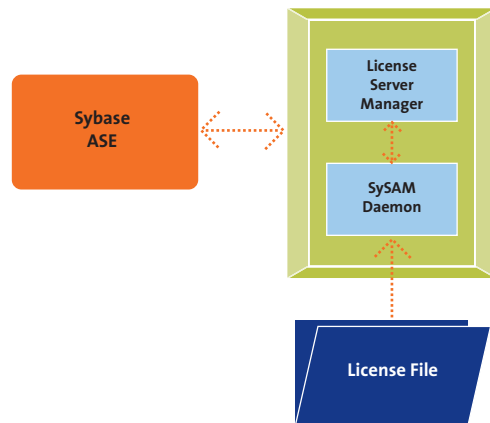
Licensing Components: Licensing components are organized based on the license model used. There are two types of License models, Served licenses and Un-served Licenses.

Served Licenses (Network License): When licenses are served by a license server system it is referred to as a served license model. For served licenses, there are four required licensing components:

- Adaptive Server® Enterprise (ASE), linked with SySAM libraries.
- License Server Manager (Imgrd)
- The Sybase SySAM Daemon, which along with the license server manager, Imgrd, enables the license server system.
- The License File

There are three optional components

- Debug Log File – created and written by Imgrd
- Report Log File – created & written by the Sybase daemon
- End-user Administration Options File



Un-served Licenses (Server-less Licenses): When licenses are served by local file, it is referred to as an un-served license model. It consists of only two components:

- Adaptive Server linked with SySAM libraries
- The License File

Most enterprise customers are recommended to use Networked (Served) license model licenses since these licenses can be made available anywhere on the network.

COMPONENT OVERVIEW

The License Server Manager

The license server manager (Imgrd) handles the initial contact with ASE, passing the connection on to the daemon. It also starts and restarts the Sybase daemons.

The Sybase SySAM Daemon

The counted licenses are granted by processes running on the system. The Sybase SySAM Daemon keeps track of how many licenses are checked out, and who has them. ASE Server communicates with the daemon, through TCP/IP network communications. ASE and the daemon processes can run on separate machines on your network, and across any size wide-area network. Also, the format of the traffic between ASE and the daemon is machine independent, allowing for heterogeneous networks. This means the Sybase SySAM daemon and the computer running ASE can be different hardware platforms or even different operating systems.

The License File

Licensing data is stored in a text file called the license file. The license file will be created by Sybase through SPDC. License files specify floating (concurrent) usage, node-locked (both counted & uncounted), or any combination of floating, counted, and uncounted.

Floating (Concurrent) licenses: A floating license means anyone on the network can use ASE, up to the limit specified in the license file (also referred to as concurrent usage or network licensing). Floating licenses require an Imgrd and a Sybase SySAM daemon to be running to count the concurrent usage of the licenses.

Node-Locked Licenses: Node-locking means ASE can only be used on one machine or a set of machines. There are two types of node-locked licenses; uncounted and counted. If the number of licenses is set to 0 (or uncounted), then the license is uncounted and unlimited use is permitted on the specified machine. This configuration does not require an Imgrd or a SySAM daemon because it is not going to count the concurrent usage. Uncounted for the quantity field means unlimited use. All file-based licenses must be uncounted. Served licenses should not be uncounted, though they can be for free use or demo licenses.

THE LICENSE REQUEST PROCESS

When you run an ASE application, the following occurs:

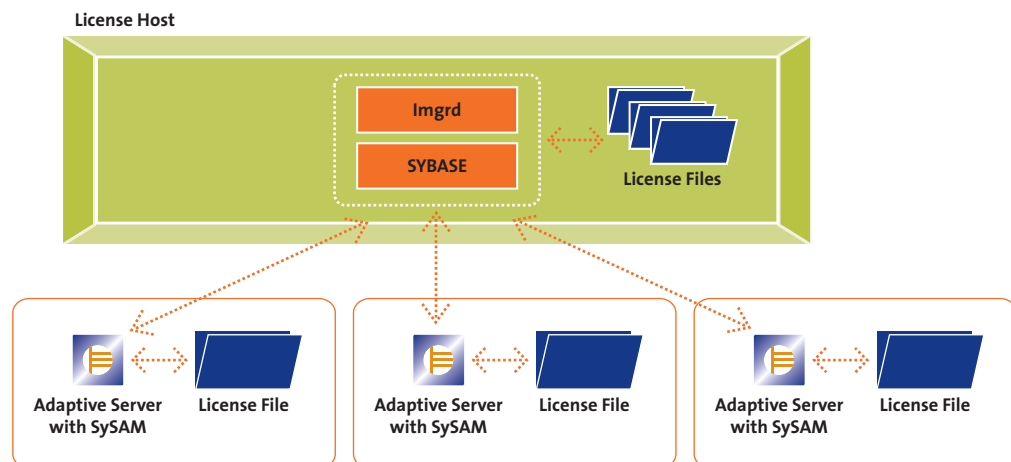
1. The license module in ASE finds the license file, which includes the host name of the license server machine and TCP/IP port number of the license server manager, Imgrd.
2. ASE server establishes a connection with the license server manager (Imgrd) and tells it what vendor daemon it needs to talk to.
3. Imgrd determines which machine and TCP/IP port correspond to the master Sybase SySAM daemon and sends that information back to ASE Server.
4. ASE establishes a connection with the SySAM daemon and sends its request for a license.
5. SySAM daemon checks in its memory to see if any licenses are available and sends a grant or denial back to ASE.
6. The license module grants or denies use of the feature, as appropriate.

Uncounted features (where the license count is 0) do not require a license server system, and licensing client library routines in ASE grant or deny usage based solely upon the contents of the license file.

Network license server configuration

In a network license server configuration, the license server host runs the network license server. Multiple Adaptive Servers connect to this network license server to obtain the required licenses. The local license file on these Adaptive Servers must contain a pointer to the network license server.

Network system



A network license server can be installed on the same host with Adaptive Server or as a standalone system. The number of free cycles on the machine with Adaptive Server and the total expected license server activity should dictate whether a standalone system is needed.

The license file for servers running Adaptive Server only need to contain the host name and port number. Adaptive Server connects to the remote license servers and requests licenses using this information.

Multiple network servers

As part of a failover plan or a load-balancing system, you can have multiple SySAM servers running a subset of the total licenses. These SySAM servers can be connected by a local area network (LAN) or by a wide area network (WAN).

Such a configuration is an excellent load balancing mechanism for physically distant locations. You can specify the local servers ahead of the remote servers in the license location list. Adaptive server will attempt to checkout licenses first from the servers in the list starting from the first server. If that fails for any reason, the second server in the list is used, and so on.

This configuration provides some level of fail-over protection, but when one or more license servers in the list are down, the licenses served by these servers are no longer available, so this will reduce the total number of licenses available until the servers come back up.

To specify multiple License Servers, setup SYBASE_LICENSE_FILE or LM_LICENSE_FILE environment variable to a list of license files, where each license file refers to one of the license server systems.

REDUNDANT LICENSE SERVER SYSTEM FOR FAIL-OVER PROTECTION

True high availability can be achieved via a set of three redundant license server systems. In this setup, you can obtain a license that is setup to be used in a three-server redundant configuration. The same license is served by all three license servers. With three-server redundancy, if any two of the three license server systems are running (two out of three license server systems is referred to as a quorum), the system is functional and serves its total complement of licenses.

The machines that comprise a three-server redundant configuration must:

- Run the same operating system
- Have excellent communications
- Reside on the same subnet

The three servers must be located physically close to each other. This form of redundancy requires that the servers exchange heartbeats periodically, and poor communications can cause poor performance. Avoid configuring redundant servers with slow communications or dial-up links.

Three-server redundancy is designed to provide hardware failover protection only and does not provide load-balancing. Use SYBASE_LICENSE_FILE list, instead, if load-balancing is desired. This is because with three-server redundancy, only one of the three servers is “master” and capable of issuing licenses. Since all clients must contact the “master,” all clients must have reliable networking to a single machine.

Using a clustered or high availability environment

Adaptive Servers can be deployed in a clustered environment to achieve fail-over and high availability. In this environment, when the host running Adaptive Server fails for any reason, the cluster software will fail-over the Adaptive Server to a stand-by host. The clients connected to Adaptive Server are re-directed to the server running on the standby host.

Following are some guidelines for deploying SySAM in such clustered environment:

- **Serverless Configuration** – In a Server-less configuration, the un-served licenses are locked to the host-id of the machine where Adaptive Server will run. When fail-over happens, the host-id of the underlying machine changes, so the un-served license for the primary host cannot be used by the stand-by host.

To support such a configuration, generate un-served licenses for both the Active host (using your active license entitlement) and the Standby host (using the Standby license entitlement). Deploy both the active and standby licenses in the `$SYBASE/$SYBASE_SYSAM/licenses` directory, if the `SYBASE` installation directory is installed on a shared resource and part of the resource group that fails over. If the `SYBASE` installation directory is on a local resource and does not fail over, then copy the Active and Standby licenses in their respective machines licenses directory.

- **Network License Server Configuration** – In a Network license server configuration, activate licenses for both the Active and Standby entitlements and deploy them to the License Server's licenses directory.

The network license server is not designed to be failed over to a stand-by host similar to how Adaptive Server fails-over. So, Network license servers should ideally be deployed on a machine that is not part of a cluster. If this is not possible, then configure the network license server as a local resource, such that it does not fail-over to the standby host as part of the fail-over process. Although this would mean that License Server will no longer be up and running, it will not immediately impact any Adaptive Servers using this license server as the grace period will kick in. You will need to bring the license server back up before the end of the grace period. If you wish to deploy the network license server in the high availability mode, then this needs to be done as described in SySAM Configuration Options section. Such a configuration is based on native FLEXlm functionality and does not need separate clustering hardware or software.

Sybase Product Download Center

The Sybase Product Download Center is an online kiosk where you can obtain license keys to enable Sybase software.

If you purchased software from Sybase, go to <https://sybase.subscribenet.com/webkey>. When your order is processed, you will receive an E-mail with the above URL, your login, and your password for the Sybase Product Download Center.

If you purchased your software from a Sybase reseller, go to <https://sybase.subscribenet.com/webkey>. Use the certificate you received in your software package to enter the activation string.

When you renew your Software support with Sybase, you will update and download your SySAM licenses from SPDC. The support date is checked when you attempt to install ASE updates to check if your support was current when the update was posted.

If you are unable to access SPDC or have problems generating your license keys, contact Sybase Customer Services and Support. They can generate the license keys on your behalf and provide the keys to you.

The Sybase Product Download Center keeps a record of the license keys you have activated, as well as a record of what software you are licensed.

If you do not want to use the network license server for Adaptive Server

If you do not want to use the network license server for Adaptive Server, no changes are required to the previous software. When fulfilling Adaptive Server 15.0 licenses, pick the un-served license model and copy licenses locally on each installation. You will lose the asset management functionality in this approach.

LICENSE USAGE AND ENFORCEMENT

The following section describes the licenses used by Adaptive Server and other enforcement mechanisms.

- **License features used** – When Adaptive Server starts, it first checks out a license for the base Adaptive Server, which is ASE_CORE. If this succeeds, it then checks licenses for any optional licensable features such as High Availability (ASE_HA), Distributed Transaction Management (ASE_DTM) and so on.

When checking out the license, SySAM looks for a license with compatible Product Edition (Enterprise, Small Business) and License Type (CP, SR and so on). A license with matching feature name, but incompatible Edition or License type cannot be used. The Edition and License type used by Adaptive Server can be configured using `sp_lmconfig`.

- **Number of licenses used** — The number of licenses used for a given feature depends on the License type under which Adaptive Server was licensed and the maximum engines configured on the Adaptive Server.

For Adaptive Server and features licensed under any of the “Server” License types such as SR, SV, and so on, one license is checked out per Adaptive Server. Starting additional Adaptive Server instances on the same machine does not checkout additional licenses.

For Adaptive Server and features licensed under any of the “CPU” license types such as CP, SF, and so on, the number of licenses used is the lesser of **maximum online engine** configuration value and the number of physical CPUs.

Some Windows and Linux machines use technologies such as “Hyper Threading,” which presents one physical CPU as two logical CPUs. This is still considered one CPU for counting licenses.

If you are starting multiple instances of Adaptive Server on the same machine and total number of engines between all of these instances exceed the physical CPUs, Adaptive Server may checkout more licenses than the physical CPU count. If this is a problem, use un-served license for this machine.

LICENSE UNAVAILABILITY

If Adaptive Server cannot obtain a suitable license, it will not enable that feature. A license is considered unavailable if the license cannot be checked out and cannot be issued under grace either. Licenses can be unavailable during:

- **Startup** – Adaptive Server does not start if the ASE_CORE license is not available. If licenses for optional features are not available, that feature is not enabled.
- **Runtime heartbeat** – If the license that becomes unavailable is for an optional feature, that feature is disabled. If the ASE_CORE license becomes unavailable, then Adaptive Server begins to shutdown.

Whenever SySAM detects a checkout failure, this event is logged in the Adaptive Server errorlog. E-mail notification is performed if configured. After that periodic notifications are done during the grace period.

GRACE PERIODS

If a suitable license cannot be found when requested, Adaptive Server will evaluate if the license can be issued under grace. There are three types of grace periods:

- **Install time grace period** – when you configure a new Adaptive Server (or upgrade an older Adaptive Server to 15.0), you have 30 days to activate and configure the appropriate licenses.
- **Runtime grace period** – a run-time grace period is evaluated when one of the following conditions occurs:
 - Licenses are not checked out at startup, but you have a history of successfully checking the requested licenses on this machine.
 - A license that was successfully checked out at startup becomes unavailable at a later time.

If Adaptive Server encounters any of these situations, it will enter into a 30 day run time grace period. If the problem is not resolved within 30 days, Adaptive Server disables the feature or shuts down if the ASE_CORE license becomes unavailable. If the problem causing the license to be unavailable is fixed during this runtime grace. Adaptive Server automatically picks up the license and no longer operates in the grace period.

- **Support renewal time grace period** – A support renewal time grace period is designed to allow you enough time to update your licenses after renewing your support. The support grace period for Adaptive Server is one year.

This means that you are able to install and use EBFs and updates that are released up to one year past the end-of-support date recorded in the license.

FREQUENTLY ASKED QUESTIONS

Do I have to use SySAM?

Using SySAM 2.0 is mandatory with ASE 15. SySAM helps customer's track license usage to manage compliance. SySAM 2.0 is the updated version of Sybase's asset management tool.. This new version provides effective license management and additional features such as usage reporting, asset management, support for multiple products and automated handling of evaluation.

What happens if a customer has 1000s of machines? Do they each need SySAM running?

Not on each machine. Customers can setup one or more SySAM Network License servers that will dispense licenses to the individual machines running Sybase software. For large installations, such a network license server (where 1 or more SySAM license servers are serving up large number of ASE licenses) configuration is the recommended setup.

What is a common cause of SySAM network server not starting?

SySAM server will not start if there is no valid Served License(s), obtained from SPDC, in the License Directory (e.g. on windows - %SYBASE%\SYSAM-2_o\licenses). SySAM will not start if only Un-served License, obtained from SPDC, are in the license directory. To tell if a license is served vs un-served, examine the content of files with extension .lic, and see if file contains line with keyword SERVER. e.g. SERVER <hostname>.

On Windows system, the error message in this case is

From a DOS prompt:

```
C:\Sybase\ase150\SYSAM-2_o\bin>sysam start
```

Starting the SYSAM service

The SYSAM service is starting.

The SYSAM service could not be started.

The service did not report an error.

More help is available by typing NET HELPMMSG 3534.

On some install scenarios when SySAM 2.0 is installed on a machine which had SySAM 1.0, and you did not do a clean uninstall, there may be some data files that prevent SySAM server from starting. In these cases you can cleanup SySAM, by performing a sSySAM reinstall:

```
C:\sybase\SYSAM-2_o\bin>sysam reinstall
```

Removing the SYSAM service

The SYSAM service has been removed.

Creating the SYSAM service

FLEXlm License Manager is successfully installed

What are the different methods for handling machine identification?

The only method used for identification in SySAM 2.0 is by host ID. The Host ID value depends on the operating system in use. Typically it's one of embedded Host ID, Ethernet Mac address, Disk Serial number etc. See online help at SPDC for Host ID information.

What if I have multiple networking cards in a system?

For systems that use Ethernet MAC address as host identification, if system has multiple networking ports, Imutil hosted can return multiple MAC addresses. Users only need to submit 1 of the hostid (recommendation to use MAC address from non-removable Ethernet port) in the SPDC registration step.

Does the machine running Sybase software need Internet connectivity?

The machine running Sybase software does not need any internet connection. The licenses can be obtained using any machine with Internet connectivity (or from Sybase CS&S) and transferred to the machine running Sybase software. Because the license strings are long, transferring licenses using removable media may be preferred over typing it in.

Note: No portion of SySAM will initiate a network connection outside of the customer's network, such as back to Sybase.

Does every license instance need to go through activation?

No, using Served License model, a batch of license can be obtained and installed.

Is user privacy sacrificed during the license activation process?

No personal information is required for activating licenses. Only SPDC login and Host ID (Host id or Network card address) are needed to complete activation. The license activation steps are distinct from user registration. License activation does not require user registration.

Can license infrastructure issues cause downtime of the production environment?

Great emphasis has been placed on balancing customer convenience vs. enforcement. Sybase software will not immediately stop working because of License infrastructure issues. Administrators will be notified about License issues via error logs and optional email alert mechanism. Software will continue to run for a specified grace period (7 to 30 days depending on the product).

Product functionality will not be crippled during this grace period. Software will get out of grace mode to normal operation, if issues are fixed before the end of the grace period.

Network License Server can be deployed with redundancy if desired. Software will shutdown at end of grace period, if the problem is not fixed.

Is it possible to over-deploy software to meet emergency needs?

Licenses can be issued with controlled overdraft numbers. Customers can start software beyond the licensed capacity using this overdraft. Overdraft usage needs to be reconciled with Sybase. Customers can pro-actively lockout accidental overdraft usage.

Can users deploy software without the Sybase provided Installer?

Cases where installation is replicated from a master tar/zip image, customers need to have an activated license available to use. Since in most cases such installs may not get the 30-day time to obtain activated licenses, use of network license server is recommended.

Can I use one key for all of my License servers?

Starting with SySAM 2.0, the license keys are encoded with information about the machine where it will be deployed. Therefore a license key issued for one machine cannot be used by another.

When a user builds and starts a new server without a license key, what messages does the user see? What is the message in the error log for the missing license?

Adaptive Server and other products adopting SySAM 2.0 allow customers to install and run the products for an initial period without license keys. The period varies based on the product. For ASE, it is 30 days.

When user starts ASE without license keys, the following message will be displayed in the ASE errorlog:

```
00:00000:00000:2005/07/05 15:46:08.84 kernel Sybase Licensing: Using licenses from: /opt/sybase/SYSAM-2_o/licenses
00:00000:00000:2005/07/05 15:46:08.91 kernel Sybase Licensing: Checked out graced license for 1 ASE_CORE (2005.0703) will expire Tue Jul 5 15:47:02 2005.
00:00000:00000:2005/07/05 15:46:08.91 kernel Sybase Licensing: Failed to obtain 1 license(s) for ASE_CORE feature from license file(s) or server(s).
```

The message indicates the time when the grace period expires. Optionally, the customer is able to setup email notifications during product installation, in which case, an email will also be sent about the situation.

This notification is repeated through the grace period with increasing frequency.

If the license is provided during the grace period, ASE automatically picks up the license (does not need to be restarted). If a license is not found at the end of the grace period, then ASE shuts down. Subsequent restart of ASE will not be successful. The following entry in errorlog indicates no license available and grace period expired:

```
00:00000:00000:2005/07/05 16:09:12.96 kernel Sybase Licensing: Using licenses from: /usr/u/sybase/SYSAM-2_o/licenses
00:00000:00000:2005/07/05 16:09:13.06 kernel Sybase Licensing: Failed to obtain 1 license(s) for ASE_CORE feature from license file(s) or server(s).
```

How do I select who gets the warning emails regarding license issues?

During the ASE installation process, there is a dialog where this information can be provided. After installation, use the `sp_lmconfig` stored procedure to modify this configuration. See ASE Installation Guide, ASE Configuration Guide, and ASE Reference Manual for more details.

What happens if my license server goes down?

If the license server goes down or ASE cannot communicate with it for any reason, ASE will fall into a “grace period”. This grace period is for 30 days. The ASE errorlog will be updated with this information. If email alerts are setup, an email message will be sent. ASE is fully functional during this grace period. ASE will go back to normal mode, when the issue causing the failure is fixed. If the issue is not fixed, ASE may shutdown at the end of the grace period. The final action depends on the features whose license was lost – if the license is for an optional feature, that feature is disabled. If the license was for the base ASE, then ASE itself is shutdown. ASE errorlog is updated with an increasing frequency during the course of the grace period.

Current ASE license status can be examined anytime by using the “`sp_lmconfig`” command.

Does ASE do a heartbeat check on the license info?

Yes, ASE will periodically perform a heartbeat task with the license server to synchronize license usage information.

How fast does ASE detect that the license info is not available?

ASE can detect lack of a license at startup or during a heartbeat cycle. ASE performs heartbeat checks approximately once every 4 hours.

Will SySAM Licenses expire?

This depends on the type of license purchased. For traditional perpetual licenses, the SySAM license issued is a permanent license. For software purchased under “SybaseFLEX” licensing terms, the license issued is with an expiration date that corresponds to the end of the lease term. Evaluation licenses expire at the end of the evaluation period.

Do SySAM Licenses need to be renewed?

While the SySAM licenses issued may be permanent, the license also embeds the date when Customer's current support contract ends. When customers renew support, they should renew the SySAM licenses, so that the support end date is updated. When customer's install updates/EBFs for ASE, the install checks for the support end date. If the update/EBF was released after the end of their support, Sybase will warn users not to install the update / EBF. If installed, the update may not work. Customers will need to renew support or revert to a release that was released while they were in support.

Customers renew their SySAM licenses from SPDC. We provide a one year grace period for customers to renew such licenses.

What happens if the customer can't give out machine names, Host-ID or IP address?

We do not require customers to provide the hostname / machine name. The value is needed in the license file, customers can provide it during license activation or add it to the license after license it is acquired from Sybase. An IP address is never requested.

Can machines be deployed with the licenses on them in a standalone configuration? Does SySAM need to be running?

SySAM can be deployed in standalone server-less mode or in network license server mode. In a stand-alone server-less mode, there is no need for a license server. Sybase products obtain the license by directly reading the license file. Licenses need to be individually activated for each machine in server-less mode. Therefore this approach is not scalable for large installations. This configuration also does not provide any license usage reporting.

What happens when hardware needs to be replaced? Motherboards fail and need to be replaced? Network cards fail and need to be replaced?

Customers can re-activate the license(s) on new hardware by re-hosting the license from SPDC. The limit of rehost is 200% the number of the licenses per year. If you pass this limit, please call SYBASE CUSTOMER SUPPORT & SERVICES (CS&S).

What is the longest grace period allowed?

This depends on the Product in question. For ASE, the longest grace period allowed is 30 days.

What happens once grace period expires?

ASE server will stop running. In case more time is required, please contact SYBASE CUSTOMER SUPPORT & SERVICES (CS&S).

How do we handle multiple versions of SySAM running on the same machine?

The network license server from SySAM 2.0 can serve licenses for both SySAM 2.0 (ASE 15.0) and SySAM 1.0 (ASE 12.x, ASE 12.5.x and other Sybase products). Refer to the ASE Configuration Guide for details on upgrade and co-existence options.

Can SySAM count individual users? Will it have this capability in the future?

The current implementation of SySAM for ASE does not enforce Concurrent User or Network Seat licenses. Such usage information is however printed in the ASE errorlog for customer's information. We may perform such enforcement in the future releases.

How are legacy licenses handled?

All currently active license types are handled by SySAM. There is no change to the license terms associated with these licenses. SySAM will attempt to enforce the closest approximation of the license terms associated with these license types.

How does SySAM work in a high-availability environment?

The network license server can be deployed in a high-availability configuration. But because of the grace periods provided by SySAM to account for license outages, we feel that the overhead to deploy a high-availability license server is not justified.

Note that the high-availability configuration for License server is a proprietary FLEXlm implementation. See FLEXnet Publisher End User Guide for details. There are some restrictions when Network license server is deployed on machines that use operating system or third party clustering solutions (such as Sun Cluster, Veritas to name a few). See ASE Configuration Guide for details.

Where do I get my license key?

License key is available from SPDC. <https://sybase.subscribenet.com>.

References

1. FLEXnet Licensing End-User Guide. Version 10.1, FLEXnet Publisher
2. Adaptive Server Enterprise ASE 15: Configuration Guide for UNIX

