THOROUGHBRED®
SOFTWARE INTERNATIONAL, INC.

THOROUGHBRED WEB LICENSE MANAGER™

Install/Reference Manual

Version 8.9.1

Thoroughbred Software International, Inc.

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INTRODUCTION

The Thoroughbred WEB License Manager is available on Linux and some UNIX distribution starting with version 8.8.3. It allows for the physical separation between the Tbredserv executable and the security file. Simply put, this allows for the Tbredserv executable and what was stored in the tbredweb.88 file to reside on different physical systems. This provides flexibility with your configuration, especially when deploying your application on Virtual Machines or using Containers. When using the WEB License Manager, Tbredserv is no longer installed or branded. Tbredserv can be moved or copied to a new virtual instance and/or Container image without disrupting the security file. The only new caveat is that the WEB License Manager Tbredserv will only start when it can successfully connect to a WEB License Manger.

Installation

The WEB License Manager install consist of just a cpio file – TSI_LICW. It includes everything you need to install a Tbredserv License. The WEB License Manager does not need to be installed on the same server where you plan on running your Tbredserv application. The WEB License Manager should be installed on a static stand-alone server that is accessible to the Tbredserv application server. Login as root and follow these steps:

```
# cd /usr/lib/basic
# cpio -ivdumB <TSI_LICW
```

The cpio file includes:

install, tslicmgrw.uni, tslicactw, tslicadm, service files and a default LICENSE.INI file.

```
# ./install
```

This will prompt for the software serial number (license).

If this server can access the Thoroughbred Activation Server, you will be prompted:

Internet Activation is available. Have you read and do you accept the License Agreement?

Enter **Y** if Yes, or **S** to Skip Internet Activation:

If your server does not display the above prompt, or you enter **S** to Skip the activation, you can complete it later using the ‘tslicactw’ executable. Just note: unlike Tbredserv, you will not be able to start the WEB License Manager without a valid activation.

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Installing the WEB License Manager Service

To install the WEB License Manager service, the *loadservice.sh* script will copy service file from the TSLICMGRW directory to the appropriate system directory or the service files can be loaded manually.

To install the WEB License Manager service via the script, run the following as root:

```
# cd /usr/lib/basic/TSLICMGRW
# ./loadservice.sh
```

To manually install the WEB License Manager service:

```
# cp /usr/lib/basic/TSLICMGRW/tslicmgrw.systemd /etc/systemd/system/ tslicmgrw.service
# systemctl daemon-reload
```

The service file defaults to running the WEB License Manager from the /usr/lib/basic directory, listening on port 5620. If the WEB License Manager has been installed into a different directory or needs to listen on a different port, change the tslicmgrw.systemd file before installing the service.

These service files are available starting with release level 8.9.0.

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Starting the WEB License Manager

If you did not activate the license during the install, you will need to run:

./tslicactw.

You can have an Activation key emailed to you by visiting www.tbred.com/activate.html .

Once the WEB License Manager is installed and activated, it can be started as a service or it can be started manually by:

./tslicmgrw

By default, the WEB License Manager will listen for Tbredserv connections on port 5620. You need to ensure all systems running Tbredserv have access to this server and port. It may require a firewall setting.

You can also start the WEB License Manager on a different port if necessary.

./tslicmgrw -p5400 (notice no space between -p and the port numbers).

When the manager successfully starts, you will see the following message in the LICENSE.LOG file:

06/26 13:30:00 (W) Starting UC=0 UL=64 GC=0 GL=62 242000002

The values for above:

UC – current number of users connected to this manager

UL – total user count for this license

GC – current number of ghost tasks connection to this manager

GL – total number of ghosts allowed with this license

Thoroughbred also recommends creating a LICENSE.LOG file to help reconcile which users (and servers) are starting and releasing Basic. More details on the LICENSE.LOG contents can be found below. To create a LICENSE.LOG file:

umask 0; touch /usr/lib/basic/LICENSE.LOG

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Setting up the Application Server

Note: Tbredserv and the WEB License Manager are meant to be run on different servers, but they can also run on the same server.

Follow the standard Tbredserv installation by unbundling the cpio file TSI_TWEB. You do not have to install Tbredserv (so do not execute/install). Your cpio file will include 2 new files: tbredserv.lic and tslicuhbw.

tbredserv.lic is a License Manager Tbredserv. It can be copied/renamed to Tbredserv. It can be copied to other Virtual machines (make sure you have the correct Linux kernel compile).

This Tbredserv executable will not start without a /usr/lib/basic/LICENSE.INI file. If you try to start Tbredserv without that file, you will get a simple error message preventing you from starting Tbredserv.

The TBREDSERV section of the LICENSE.INI will tell Tbredserv where to find a WEB License Manager. The entry can be either an IP address or host name. If the WEB License Manager startup is using a different port than the default (5620), you need to include that in LICENSE.INI. This file must be in /usr/lib/basic.

```
[TBREDSERV]
192.168.24.29
192.168.25.41:5400
tally
```

These are all valid entries assuming ‘tally’ is a valid host name on your network.

To confirm that the Tbredserv will be able to connect to a WEB License Manager, perform a reverse name lookup of the system running the WEB License Manager from the system running Tbredserv:

```
$ nslookup 192.168.24.29
$ nslookup 192.168.24.41
$ nslookup tally
```

If the nslookup command returns a “** server can't find” message, the system running the WEB License Manager will need to be added to the DNS or the /etc/hosts file on the system running Tbredserv.

Tbredserv does not require a persistent connection to the WEB License Manager. Tbredserv will communicate with the WEB License Manager when it starts and when it releases.

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Multiple Application Servers

You can configure multiple application servers to share the same WEB License Manager. Follow the steps above to setup a second, third, etc. application server.

Note: each Tbredserv server will get its SSN from the WEB License Manager. Everything else is done local including determining task ids. So, it is possible (and likely) that if you have more than one application server, both systems could have a T0 task.

If you have multiple application servers sharing one WEB License Manager, they will share the user count. If the WEB License Manager is 64-users, that is 64 Tbredserv tasks shared between the application servers.

Multiple License Managers

You can also define more than one License Manager. This is useful when the License Manager is not accessible or if user-count is maxed out.

The TBREDSERV section of the WEB LICENSE.INI can have multiple entries. Tbredserv will always attempt to connect to the WEB License Manager defined by the first entry. If it is not responding or if it returns too many users already running, Tbredserv will then use the next entry in LICENSE.INI.

[TBREDSERV]
192.168.24.29
192.168.25.47

If the TBREDSERV section of the LICENSE.INI had these two entries, Tbredserv will first try to connect to 192.168.24.29. If that failed for any reason, it would then try to connect o 192.168.25.47.

These two WEB License Managers would likely have different licenses (i.e. one could be 64-users and the other 32-users). So, it is possible that different Tbredserv processes on the same server could have different SSN's.

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LICENSE.LOG

As noted earlier, if this file exists on the WEB License Manager server in /usr/lib/basic, the manager will record statistics for every session that starts and stops. Below is an example:

06/26 17:54:14 (W) Activate UC=14 GC=0 192.168.24.29 49859 16998

06/26 17:54:22 (W) Activate UC=15 GC=0 192.168.24.129 34086 29393

06/26 18:11:31 (W) Release UC=14 GC=0 192.168.24.129 34086 29393

06/26 19:02:58 (W) Release UC=13 GC=0 192.168.24.29 49859 16998

The first two entries are users starting Tbredserv (Activate). The first entry is the 14th user running Tbredserv. It connected from ip address 192.168.24.29. Since multiple Virtual Machines and Containers can have the same IP address, the WEB License Manager captures a node name CRC value. This node name CRC value is a new string function in the 8.8.3 Tbredserv: INF(2,3). The first entry above has a node name value of 49859. The last value 16998 is the Linux process id.

The second entry is another Tbredserv connection coming from another IP address (with a different node name value).

The third and fourth entries (Release) are Tbredserv sessions releasing. Notice the UC count drops 1 each time.

Other values not as common include: Vanished, *Version, and *Denied*. See Recovering User Counts for Vanished.

06/26 18:31:58 (W) *Denied* UC=64 GC=0 192.168.24.29 49859 31306

This indicates the Basic connection was denied access. This is usually because the user count is maxed out. Notice the UC count is 64.

06/26 19:23:08 (W) *Version UC=12 GC=0 192.168.24.129 00000 28997

This indicates there was a Version mismatch between Basic and the License Manager.

Starting with release level 8.9.0, the WEB License Manager will log the Heartbeat process if the WEB License Manager was started with the -l argument.

02/02 17:10:33 (W) Heartbeat UC=0 GC=0 192.168.24.129 34086

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Restarting the WEB License Manager

If for some reason the WEB License Manager needs to be restarted (i.e. after a reboot), it will inherit its last state of known connections. Instead of seeing a Starting message, you will see a Recovery message.

./tslicmgrw

06/26 17:15:33 (W) Recovery UC=13 UL=64 GC=2 GL=62 242000002

Notice the UC and GC values (number of users and ghosts in use) are not 0.

Recovering User Counts

It is possible while the WEB License Manager was not accessible, a Tbredserv task released and could not update the WEB License Manager. When the WEB License Manager recovers, the count of active users will be off.

It is also possible that a Tbredserv process goes away without going through RELEASE (i.e. kill). That also will not be counted.

The Tbredserv cpio file includes a heartbeat monitor. You can control how often it sends a heartbeat to the WEB License Manager (i.e. every 5 minutes). The heartbeat monitor will prompt the WEB License Manager for a list of Tbredserv process ids from that IP address and node name. The heartbeat monitor will then verify each of those process ids are still running Tbredserv. If any process is not still active, the heartbeat monitor will send a Vanished record to the WEB License Manager. The heartbeat monitor runs on the Tbredserv application server. To start it:

./tslicuhbw -d 5

In this example the heartbeat monitor will check every 5 minutes. The heartbeat monitor will send a Vanished status for any process that is not running. You will see the following entry in LICENSE.LOG on the WEB License Manager server.

06/26 18:31:58 (W) Vanished UC=4 GC=0 192.168.24.29 49859 31306

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Installing the WEB License Manager Heartbeat Service

Starting with release level 8.8.4, the Tbredserv cpio file will include files for installing the WEB License Manager Heartbeat as a service.

To install the WEB License Manager Heartbeat service, the *loadservice.sh* script will copy the service file from the TSLICUHBW directory to the appropriate system directory or the service files can be loaded manually.

To install the WEB License Manager Heartbeat service via the script, run the following as root:

```
# cd /opt/tbred/tbwse/TSLICUHBW
# cp tslicuhbw /usr/lib/basic
# ./loadservice.sh
```

To manually install the WEB License Manager Heartbeat service:

```
# cp /opt/tbred/tbwse/TSLICUHBW/tslicuhbw.systemd /etc/systemd/system/ tslicuhbw.service
# systemctl daemon-reload
```

The service file defaults to running the WEB License Manager Heartbeat program from the /usr/lib/basic directory with a 5-minute heartbeat interval. If the WEB License Manager Heartbeat program has been installed into a different directory or needs to run with a different interval, change the tslicuhbw.systemd file before installing the service.

Ghost Tasks

The WEB License Manager by default can support up to 62 ghost tasks just like a standard Tbredserv license. If you have multiple application servers, they will share the 62 ghosts. Their combined total number of ghost task will be 62. Since the application server controls the task ids, it is possible for multiple application servers to have G0, G1, G2, G3, etc.

It is possible to increase the number of total supported ghost tasks across multiple application servers. Each application server will still be limited to 62 (G0-G9, GA-GZ, Ga-Gz).

To increase the number of supported ghosts you will need to contact your Thoroughbred Sales Rep to license additional Ghost Licenses and receive a new Activation Code. You will use the WEB License Manager Activation program to add additional ghosts.

```
./tslicactw -g
```

You will be prompted to enter the new number of ghost tasks and an Activation Code supplied by Thoroughbred.

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