



Enterprise Wide Licensing for the Avaya Application Enablement Services

The purpose of this document is to familiarize the Sales, Pre-Sales Design, Integration, Support teams and even end users with the functionality of WebLM in an Enterprise License configuration, and allow these teams to plan the appropriate strategy for designing, ordering, configuring and maintaining the license environment.

Please see the complete document for additional information.

Version	Date	Author	Summary
2.0	03/16/2009	R. Bowers, G. Boxell, K. Van Schoyck	Final
2.1	05/18/2009	K. Van Schoyck	Update
2.2	6/2/2009	C. Smyth	Update

Application Enablement Services (AES) License Overview

Application Enablement Services (AES) utilizes the standard Avaya license solution. SAP orders with the purchased entitlements are used to create RFA license files. The RFA file is then installed under the WebLM module. All AES 4.x RFA licenses are generated by default with the Enterprise License capabilities of WebLM. Enterprise licensing allows a license to be installed on a Master WebLM server and the licenses to be distributed amongst multiple AES servers. In order to take advantage of the Enterprise Wide Licensing (EWL), AES 4.2 is required.

Prior to Release 4.2, AE Services supported Remote Feature Activation (RFA)-based Standard Licensing only. In a Standard Licensing configuration, the Standard license file (SLF) is installed on the AES server and is controlled by the WebLM server running on the AES server. For example, prior to AE Services 4.2, if you had purchased three (3) AE Servers with different licensing capacities, you could not move capacities purchased for one AE Server to another AE Server. With EWL, you can move capacities or features from one server to another by using a master WebLM server to allocate license features to a different AE Server. To note, AE Services 4.2, does not require WebLM to be co-resident with the AE Services application.

The recommended model for AE Services enterprise configurations is the 'ELF/ALF' model.

Each ASD design and SAP order will generate a single RFA license record. It is important to consider the license when designing and ordering AES systems to ensure the license has the entitlements required to deploy in a manner that meets the customer's needs.

There are rules in RFA that are critical to keep in mind when designing an AES solution. RFA will be able to create only one AES license record from a given SAP order. **Orders with more than one AES "Activation" material code will be rejected by RFA.**

For the AES, a code with RFA Activation in the description creates license records, never manually adjust quotes to add multiple Activation codes. RFA does not allow you to split entitlements on an SAP order to more than one RFA record. So, don't purchase all your RTU's in a single order, then expect to be able to apply the individual RTU's to more than one license record (SID).

The purpose of this document is to familiarize the Sales, Pre-Sales Design, Integration, Support teams and even end users with the functionality of WebLM in an Enterprise License configuration, and allow these teams to plan the appropriate strategy for designing, ordering, configuring and maintaining the license environment.

In the following diagrams, some concepts are introduced that help illustrate options for the AES Application. Different approaches are used to illustrate some options, but either illustration could be used for the AES with similar results.

This document does not attempt to describe every possible configuration. It merely uses an illustration to communicate the concepts. Each customer's unique needs should be considered when designing the solution that is right for them.

The AES software itself does not currently have any automatic failover or high availability capabilities. The AES 4.2 has an offer in which a Disaster Recovery or backup offer can be purchased at the time of a primary AES. This allows one to buy a second AES server with duplicated licenses. In a failover situation in which an active AES goes offline, it is up to the client application to point over to the secondary AES server. Additional Communication Manager programming must be considered.

Terminology

SID System Identifier used to locate and manage RFA license records. The SID also appears in

the XML license file installed on WebLM and in the banner on the WebLM Admin page on the license server.

EWL Enterprise Wide License is a term that refers to a feature of WebLM licensing that is used by the AE Services product. The feature allows multiple systems to be licensed from a single license

ELF Enterprise License File is used to describe the license that RFA delivers and is tied to the MAC address on the Master WebLM server. RFA can only generate one ELF per license record (SID).

ALF Allocation License File is used to describe the license that the Master WebLM creates and installs on the administered Local WebLM servers. The ALF is a file that is automatically created by the Master WebLM server and copied to the Local WebLM.

SLF Standard License File. Prior to AE Services 4.2, the SLF is installed on the AES server and is controlled by the WebLM server running on the AES server.

Master WebLM The server that the ELF generated by RFA installs on. This could be an AE Services server or it could be another server capable of hosting the WebLM application. The administration pages on the Master WebLM are where an end user administrator can create Local WebLM servers and allocate entitlements. Also referred to as the Enterprise WebLM.

Local WebLM The server that receives the ALF from the Master WebLM. The Local WebLM will typically be used to provide entitlements to the application server(s) based on the administered allocations. The local WebLM is typically the WebLM installed on the AES server.

Allocate When the Master WebLM is administered to allow one or more of the defined Local WebLM servers to use the available entitlements in the ELF, the administrator Allocates the entitlements.

Unallocated Any entitlements on the Master WebLM that have not been allocated to Local WebLM servers. These are also referred to as Floating entitlements in some documentation.

Primary WebLM When the AES server is administered to identify which WebLM server to use for entitlements, the first administered WebLM is referred to as the Primary WebLM. When the application starts, it will contact the Primary WebLM first to obtain license entitlements. The primary WebLM could be a Master WebLM or a Local WebLM.

Overview of WebLM in an Enterprise Configuration

A Master WebLM is the server that an ELF license is installed on. This is the license generated by RFA and installed on the Master WebLM server. The MAC address of the Master WebLM is entered in RFA to generate the license. This license cannot be installed on any other server. If the administrator is comfortable using a single WebLM server, nothing more needs to be done. However, since a failure of the sole WebLM will also bring the application down, some additional strategies for deploying licenses are worth considering.

An important item to note which often leads to confusion is that the WebLM software on the Enterprise WebLM and the Local WebLM is the same. The only difference is the license file installed on the Enterprise WebLM and the use of the server.

When a Local WebLM is created by the user, the IP Address and MAC address of the server that will act as a Local WebLM are added to the screens on the Master WebLM. Then, entitlements can be allocated to the Local WebLM server(s). When the allocation is performed, the Master WebLM will push a license file to the server administered as a Local WebLM. The Master WebLM will 'Push' these ALF files to the Local WebLM server(s) every 7 days, or when changes are made to the allocations. The ALF license files will expire 30 days after the Master WebLM 'pushes' the file to the Local WebLM. If network connectivity remains persistent, the Local WebLM ALF will never expire as the 7 day update will provide a new 30 day timer. When a Local WebLM starts, it uses the last license that was pushed to it. So if the Master is not available when a Local starts, as long as the last push from the Master WebLM was within 30 days, the application will start properly. When the 30 days has expired, the Local WebLM will no longer be able to provide entitlements and the application will stop or fail to start.

If a Master WebLM is replaced due to hardware failure for instance, the user must contact Avaya Technical Support to have the RFA record "re-hosted" so that it can run on a different server. The old license SID or server MAC address will be needed as well as the new server MAC address. This process takes a little time, so as soon as your customer knows the MAC for the new server, the process should be started to avoid outages.

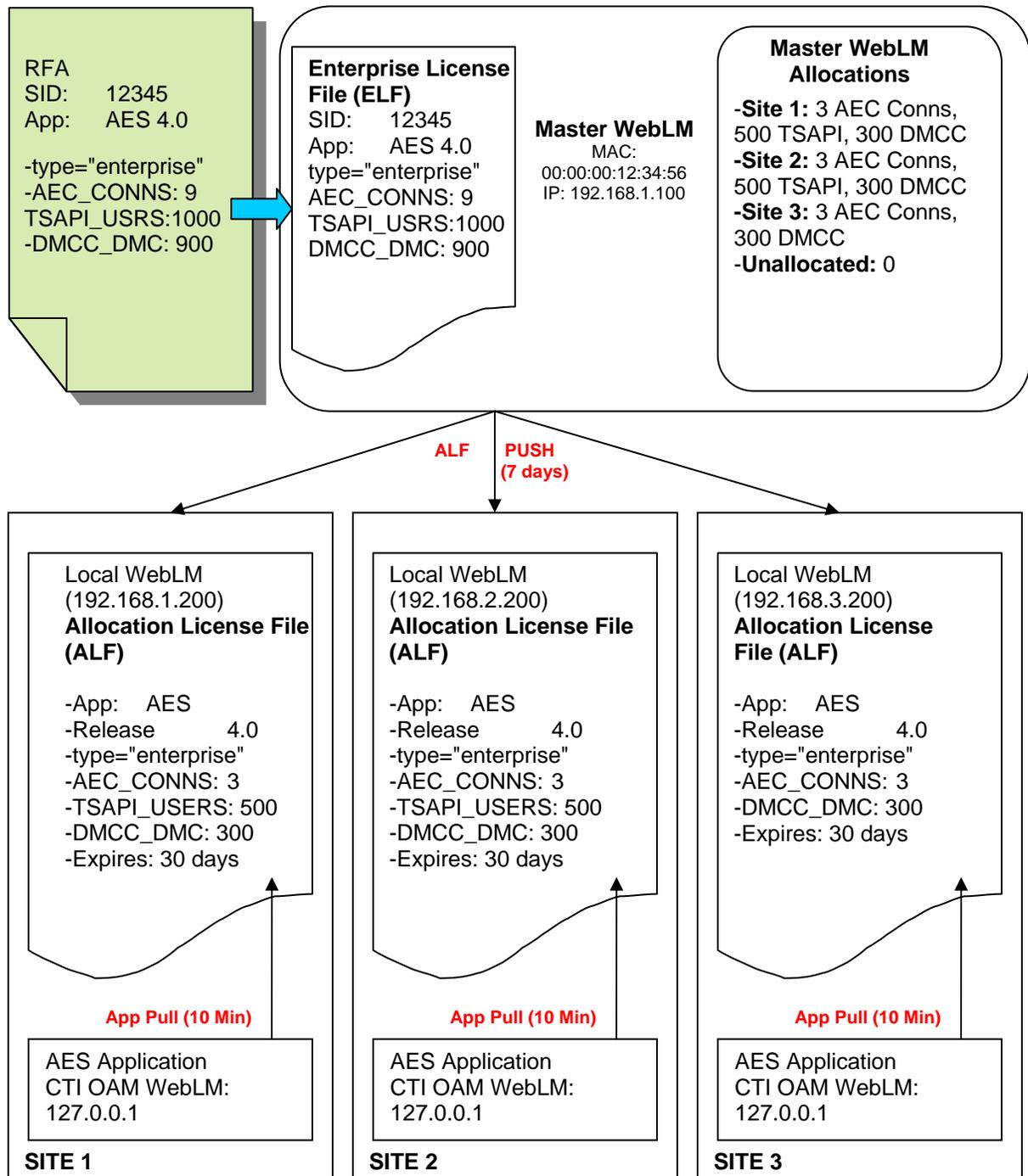
When entitlements are allocated from the Master to Local WebLM server(s), they are no longer available to be used or allocated from the Master WebLM server and can only be used by applications using the Local WebLM as their Primary or Secondary WebLM server. If some of the entitlements are not allocated to Local WebLM servers, the Master WebLM can keep these unallocated entitlements to either be allocated to additional Local WebLM servers, or to be available for application servers configured to use the Master WebLM server as their Primary or Secondary WebLM.

If entitlements that have been allocated to a Local WebLM are de-allocated, the Master WebLM will push the new license with fewer (or none) entitlements to the Local WebLM immediately. The application is designed to renew all licenses every 10 minutes, so the next time the application renews licenses, if the used licenses are more than the new allocated entitlements, the application will start shutting down entitlements until the number of entitlements in use do not exceed the number of allocated entitlements available to the application.

In the event of a planned shutdown of the production server with a Local WebLM running on it, the administrator could de-allocate all ports from the Local WebLM and leave them unallocated on the Master WebLM. A backup server could then be put into production and use the de-allocated entitlements from the Master WebLM. If this is timed properly, the production server will not attempt to renew and fail its licenses before the backup is online and active.

Following is a diagram that describes the functionality of a dedicated Master WebLM server with administered remote Local WebLM's. The Local WebLM's are co-resident with the AE Services application. This is considered an 'ELF/ALF' mode for the AES. All entitlements of the ELF file are used & there are no additional entitlements for

DR.



In this design, the WebLM admin creates the three Local WebLM servers and allocates features and capacities to each Local WebLM. The Local WebLM at Site 1 and Site 2 receive 3 AEC

connections, 500 TSAPI Basic Users and 300 DMCC Users each. Site 3 receives 3 AEC connections and 300 DMCC Users.

The Master WebLM then creates an Allocation License File (ALF) for each Local WebLM and pushes the license to the Local WebLM servers. Upon receipt of these ALF files, the AE Services application will obtain the required entitlements from the Local WebLM.

The Local WebLM ALF will expire 30 days after receipt, but the Master WebLM will push the ALF every 7 days so the Local WebLM always has a current license.

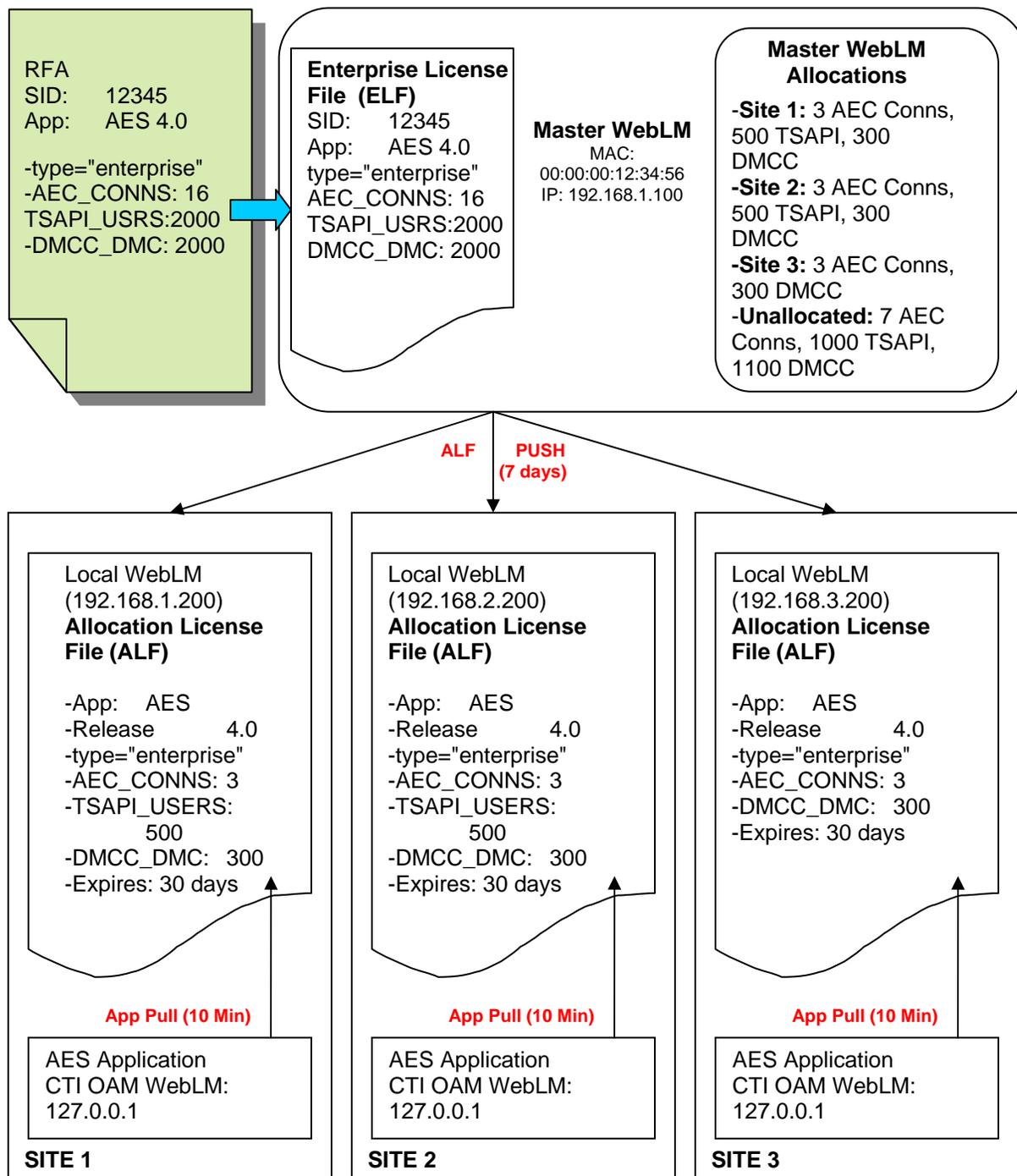
In the event of a failure of the Master WebLM, the Local servers can operate for up to 30 days before the ALF will expire. Upon expiration of the ALF, the AE Services application will be taken out of service. Upon restoration of the Master WebLM, the ALF will be pushed to the Local servers again and will re-start the 30 day timer on the Local WebLM servers.

In the event of a failure at one of the sites, a DR system at one of the 3 locations, or at a 4th location could be made operational in a matter of a few minutes by logging in to the Master WebLM and de-allocating features and capacities that were allocated to a failed site, leaving the features and capacities unallocated on the Master WebLM. At that point, an administrator would allocate the available entitlements to the DR server. The DR server would already be configured as a Local WebLM for the enterprise. Once the new allocations have been submitted, the DR AE Services application will receive the updated ALF file allowing the AE Services application to become active.

If the DR site is required to be operational sooner than this can be done, additional features and capacities could be purchased and added to the Master WebLM which would make them available at all times to the DR system. The following configuration illustrates this concept of having additional capacities and features available for the DR system.

Following is a diagram that describes the functionality of WebLM with additional features and capacities that have been purchased for DR. This deployment also follows the 'ELF/ALF' mode for the AE Services application. Note, the 'ELF Only' mode is used for the DR AE Services

application. The dedicated Master WebLM server has Local WebLM's administered for the enterprise. The Local WebLM's are co-resident with the AE Services application server.



In this design, the WebLM admin creates the three Local WebLM servers and allocates features and capacities to each Local WebLM. The Local WebLM at Site 1 and Site 2 receive 3 AEC

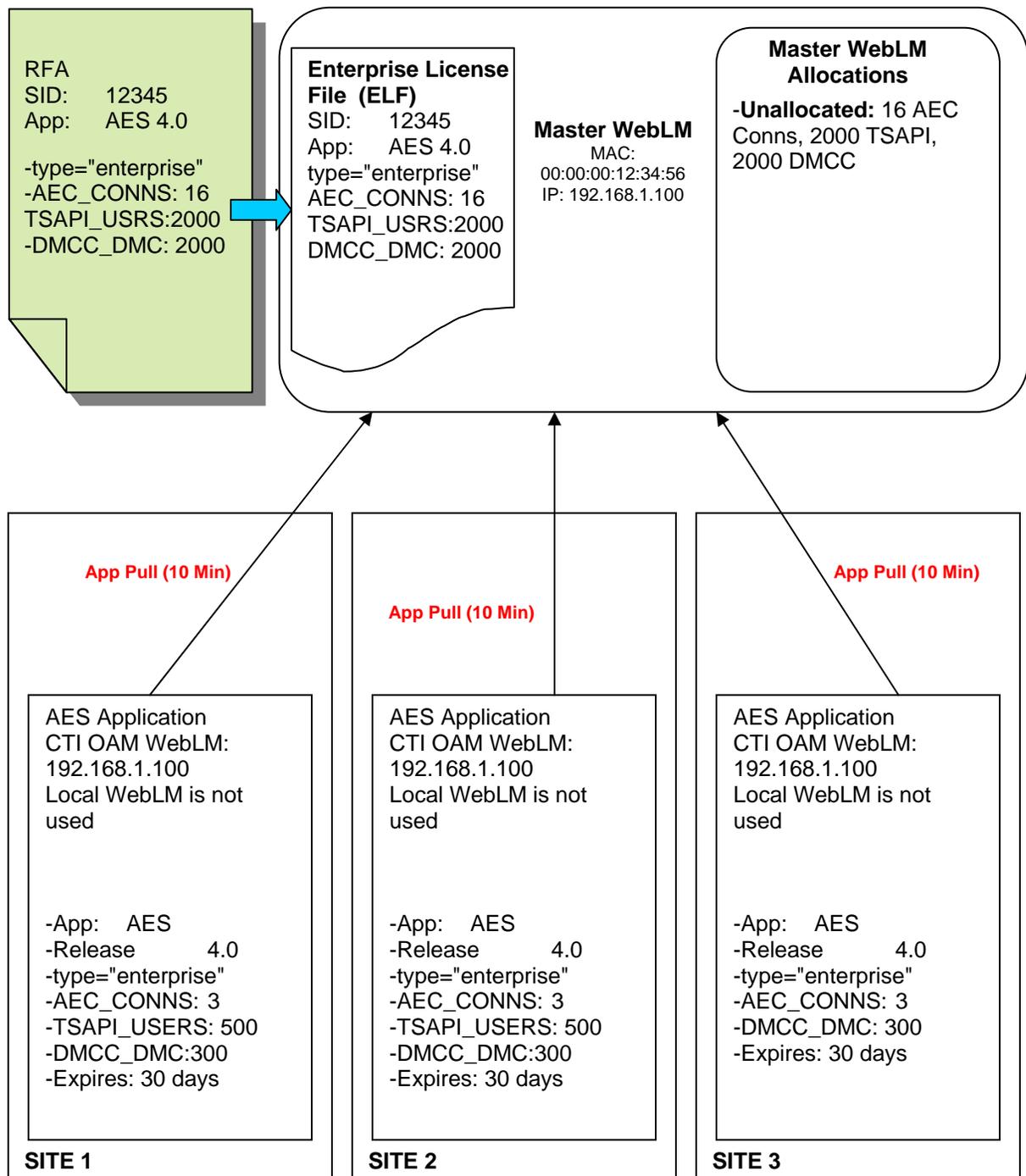
connections, 500 TSAPI Basic Users and 300 DMCC Users each. Site 3 receives 3 AEC connections and 300 DMCC Users. An additional 7 AES Connections, 1000 TSAPI Basic Users and 1100 DMCC Users remain available on the Master WebLM as Un-allocated ports. The Master WebLM then creates an Allocation License File (ALF) for each Local WebLM and pushes the license to the Local servers. Upon receipt of these ALF files, the AE Services servers will obtain the required entitlements from the Local WebLM.

The Local WebLM ALF will expire 30 days after receipt, but the Master WebLM will push the ALF every 7 days so the Local always has a current license.

In the event of a failure of the Master WebLM, the Local servers can operate for up to 30 days before the ALF will expire. Upon expiration of the ALF, the entitlements will be taken out of service. Upon restoration of the Master WebLM, the ALF will be pushed to the Local servers again and will re-start the 30 day timer on the Local WebLM servers.

In the event of a failure at one of the production sites, a backup system at a 4th location could be made operational instantaneously without having to make WebLM changes. The DR system would be administered with the WebLM address of Master WebLM as opposed to the Local WebLM. This is done within the AE Services CTI OAM. The AE Services application would obtain the required entitlements from the Un-allocated pool on the Master WebLM at startup.

Following is a diagram that describes the functionality of the WebLM 'ELF Only' mode for the AE Services application.



In this design, the WebLM admin just installs the ELF file on the dedicated Master WebLM server. No additional administration on the Master WebLM server is needed. The three AE Services

servers would be administered with the address of Master WebLM as opposed to the address of the Local WebLM. The AE Services application would then traverse the network to obtain the needed entitlements.

Site 1 and Site 2 would each pull 3 AEC connections, 500 TSAPI Basic Users and 300 DMCC Users each. Site 3 pulls 3 AEC connections and 300 DMCC Users. An additional 7 AES Connections, 1000 TSAPI Basic Users and 1100 DMCC Users remain available on the Master WebLM.

In the event of a failure of the AE Services application at one of the production sites, a backup system at a 4th location could be made operational instantaneously without having to make WebLM changes. The DR system would be administered with the address of Master WebLM as opposed to the address of the Local WebLM.

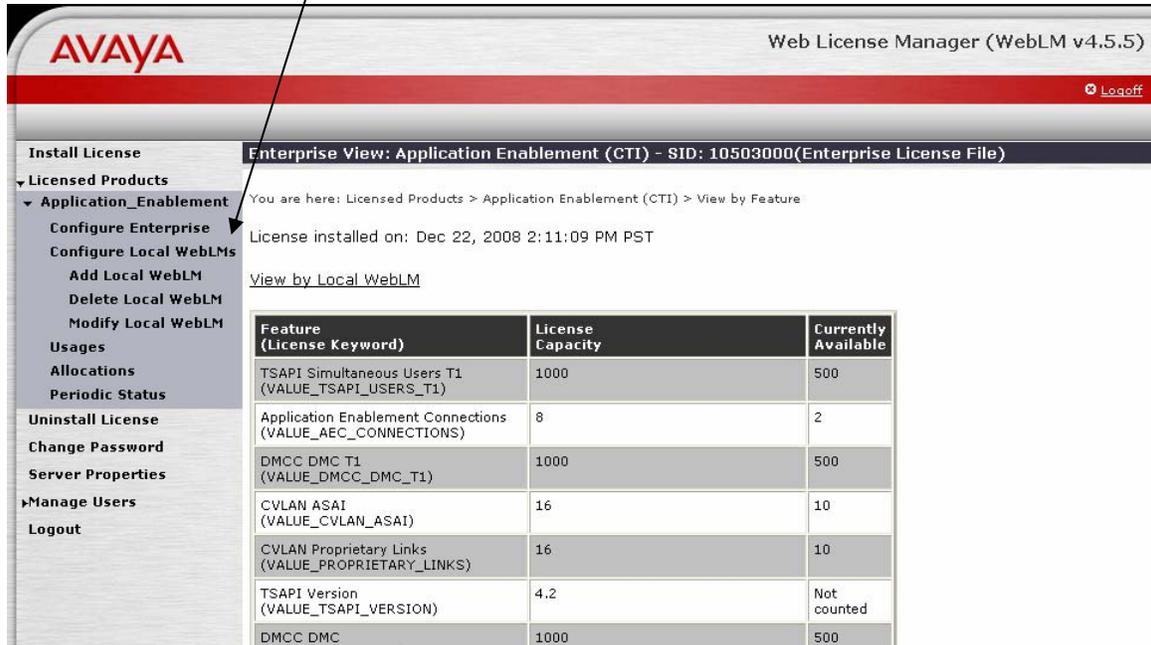
In the event of a failure of the Master WebLM, the AE Services servers would go offline at the next attempt to 'pull' or 'renew' the entitlement. The AE Services application would need to be manually administered to point to another Master WebLM or remain offline until the original Master WebLM server is available.

Using the ELF-only configuration is not recommended because network latency and outages can impact the AE Server's ability to acquire licenses, and it creates a single point of failure for licensing.

This discussion is not intended to be complete documentation of administration for WebLM in an enterprise. This is to provide some visual job aids to help illustrate the concepts described above.

Enterprise Wide Licensing for Avaya Application Enablement Services

When RFA delivers an ELF to be installed on the Master WebLM, the links on the navigation toolbar on the left will include Enterprise configuration links. A Standard license file would not include these links.



AVAYA Web License Manager (WebLM v4.5.5) [Logoff](#)

Enterprise View: Application Enablement (CTI) - SID: 10503000(Enterprise License File)

You are here: Licensed Products > Application Enablement (CTI) > View by Feature

License installed on: Dec 22, 2008 2:11:09 PM PST

[View by Local WebLM](#)

Feature (License Keyword)	License Capacity	Currently Available
TSAPI Simultaneous Users T1 (VALUE_TSAPI_USERS_T1)	1000	500
Application Enablement Connections (VALUE_AEC_CONNECTIONS)	8	2
DMCC DMC T1 (VALUE_DMCC_DMC_T1)	1000	500
CVLAN ASAI (VALUE_CVLAN_ASAI)	16	10
CVLAN Proprietary Links (VALUE_PROPRIETARY_LINKS)	16	10
TSAPI Version (VALUE_TSAPI_VERSION)	4.2	Not counted
DMCC DMC	1000	500

On the Configure Enterprise page, the admin will be asked to setup the Master WebLM server Information - Periodic Operation settings and email notification settings. This is where the weekly push of an ALF from the Master to the Local WebLM servers is configured as well. The user is able to specify the day of the week and time of day to push ALF files to the Local WebLMs. Notice, the interval cannot be changed, just the day and time to meet the company's maintenance or bandwidth requirements.

Configure Enterprise	
You are here: Licensed Products > Application Enablement (CTI) > Configure Enterprise	
Note: You must click the "Submit" button to save data or changes will be lost. * - Required Field.	
Master WebLM Configuration	
Name: <input type="text" value="Master WebLM Server"/> *	Settings for Master WebLM for supporting floating licenses.
Description: <input type="text" value="denpsswr21"/>	
IP Address: <input type="text" value="127"/> . <input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="1"/> *	
MAC ID: <input type="text"/>	
Default Periodic Operation Settings	
Retry Count: <input type="text" value="0"/> *	The default settings for periodic operations such as license allocation and usage query. The retry count is the number of retry attempts in the given interval. These settings will apply to all Local WebLMs and Master WebLM Server in the enterprise.
Retry Interval: <input type="text" value="0"/> (minutes) *	

SMTP Server Settings	
Server Name: <input type="text"/>	The authentication settings for the SMTP server that sends email notifications for periodic operation failures.
Admin Account: <input type="text"/>	
Admin Password: <input type="text"/>	

Email Notification Settings for Periodic Operation	
Email notification: <input type="radio"/> On <input checked="" type="radio"/> Off	The email addresses of the administrators who will receive failure notifications.
Email Address: <input type="text"/> <input type="button" value="Add To List"/>	
Email Addresses: <input type="text"/>	
<input type="button" value="Remove Selected"/>	

Default Periodic License Allocation Schedule	
Interval: Weekly	The default setting for periodic license allocation for all Local WebLMs in the enterprise. This can be changed on a per-WebLM basis.
Day: <input type="text" value="Sunday"/>	
Time: <input type="text" value="1"/> <input type="text" value="PM"/>	Please note that the schedule time is based on the time on Master WebLM.

Default Periodic Usage Query Schedule	
Interval: Weekly	The default setting for periodic usage query for all Local WebLMs and the Master WebLM in the enterprise. This can be changed on a per-WebLM basis.
Day: <input type="text" value="Sunday"/>	
Time: <input type="text" value="1"/> <input type="text" value="PM"/>	Please note that the schedule time is based on the time on Master WebLM.

The next step would be to create Local WebLM servers. The IP address of the server that will act as a Local WebLM, and the name and description are added as well as Periodic schedules. When the Configure and Validate button is pressed, the Master WebLM will query the Local WebLM and obtain the MAC address of the server.

The screenshot displays the Avaya Web License Manager (WebLM v1.5.5) interface. The top navigation bar includes the Avaya logo and a 'Logout' link. The left sidebar contains a menu with options such as 'Install License', 'Licensed Products', 'Application Enablement', 'Configure Enterprise', 'Configure Local WebLMs', 'Add Local WebLM', 'Delete Local WebLM', 'Modify Local WebLM', 'Usages', 'Allocations', 'Periodic Status', 'Uninstall License', 'Change Password', 'Server Properties', 'Manage Users', and 'Logout'. The main content area is titled 'Configure Local WebLMs: Add Local WebLM' and shows a breadcrumb trail: 'You are here: Licensed Products > Application Enablement (CTI) > Configure Local WebLMs > Add Local WebLM'. A note states: 'Note: You must click the "Configure and Validate" button to save data or changes will be lost. * - Required Field.' The 'Local WebLM Configuration' form includes the following fields and instructions:

- Name:** [Text input field] *
- Description:** [Text input field]
- IP Address:** [Four dotted text input fields] *
- Protocol:** HTTPS (dropdown menu)
- Port:** 8443 [Text input field] *
- MAC ID:** [Text input field]

Instructions for the form fields:

- Ensure that Local WebLM server you are trying to add is listening over the selected protocol scheme.
- Ensure that Local WebLM server you are trying to add is listening over http/https on the specified port.
- MAC ID field gets populated after hitting the "Configure and Validate" button.

At this point, the user can now allocate entitlements from the Master WebLM to the Local WebLM server(s). To do this, click the Allocate link. This is also where allocations could be removed from a Local server, moved to another Local server, and view availability.

Install License
Allocations by Features

- ▼ Licensed Products
- ▼ Application Enablement
 - Configure Enterprise
 - Configure Local WebLMs
 - Add Local WebLM
 - Delete Local WebLM
 - Modify Local WebLM
- Usages
 - Allocations
 - Periodic Status
- Uninstall License
- Change Password
- Server Properties
- ▶ Manage Users
- Logout

You are here: Licensed Products > Application Enablement (CTI) > Allocation > View by Feature

View by Local Web_M Change Allocations

Feature (License Keyword)	Local WebLM Name	IP Address	License Capacity	Currently Allocated	Available
▶ TSAPI Simultaneous Users T1 (VALUE_TSAPI_USERS_T1)			1000	500	500
▼ Application Enablement Connections (VALUE_AEC_CONNECTIONS)			8	6	2
	cerpssvr22	135.122.61.231		3	
	cerpst1	135.122.61.76		3	
▶ DMCC DMC T1 (VALUE_DMCC_DMC_T1)			1000	500	500
▶ CVLAN ASAI (VALUE_CVLAN_ASAI)			16	6	10
▶ CVLAN Proprietary Links (VALUE_PROPRIETARY_LINKS)			16	6	10
▶ DMCC DMC (VALUE_DMCC_DMC)			1000	500	500
▶ TSAPI Simultaneous Users T2 (VALUE_TSAPI_USERS_T2)			1000	500	500
▶ CVLAN Switch Connections (VALUE_SWITCH_CONNECTIONS)			16	6	10
▶ DLG (VALUE_DLG)			16	6	10

For additional information on EWL for the AE Services see the AES 4.2 Overview Guide and AES 4.2 Administration and Maintenance Guide. These can be found at <http://support.avaya.com>. See product documentation for 4.2 Application Enablement Services.