Progress®
Kemp® LoadMaster®

Feature Description Consumption based Billing Models

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Introduction

In addition to individual LoadMaster licenses, Progress Kemp offer three consumption-based billing models for LoadMaster licensing:

- **Service Provider Licensing Agreement (SPLA):** Progress Kemp's Service Provider Licensing Agreement (SPLA) program enables the creation of innovative services for subscribers of all sizes using the LoadMaster family of load balancers. With SPLA, service providers can enhance their service catalog with innovative products that drive Average Revenue Per Unit (ARPU) and are profitable from day one. SPLA licenses are flexible and are designed to support service provider business models including evaluation versions, downgrades, and custom billing schedules.

- **Metered licensing:** Metered Licensing offers enterprises and service providers a flexible way to license their application delivery resources. Metered Licensing meets the demands for flexible application capacity and the requirements of environments such as cloud for multiple LoadMaster instances. By using this model, an organization subscribes to a defined monthly capacity that can be distributed across unlimited on-demand LoadMaster instances deployed between multiple cloud and on-premises environments. Metered Licensing is a subscription service and enables organizations to pay-as-you-grow with an application delivery infrastructure that is flexible, cost-effective, scalable, and always right-sized.

- **Pooled licensing:** Pooled licensing from Progress Kemp simplifies the challenge of managing the LoadMaster license lifecycle with a cost effective and flexible approach to enabling load balancing capacity where and when needed. When coupled with Kemp automation capabilities, pooled licensing provides the platform to scale application delivery on-demand.

SPLA builds are used where the LoadMaster is being deployed using a consumption-based billing model. SPLA builds will only license successfully against a Progress ID that has been explicitly enabled by Progress Kemp for a consumption-based billing model.

Contents

- Document Purpose
- Intended Audience

Document Purpose

There are some differences between consumption-based LoadMasters and regular LoadMasters. This document describes these differences.

Intended Audience

This document is intended to be read by anyone who is interested in learning more about consumption-based LoadMasters.

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Differences with Consumption-based Licenses

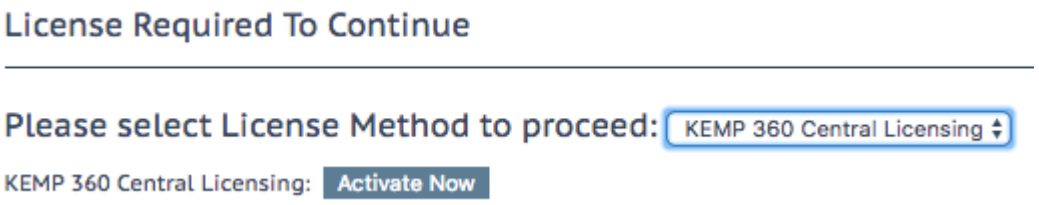
Because consumption-based customers already have a contract with Progress Kemp, they can use a simplified method of licensing. Some differences that the consumption-based process has to the regular one are listed below:

- There is a specific build for consumption-based customers. If you are a consumption-based customer, contact Progress Kemp for access to your build. Only consumption-based Progress IDs can be used to license consumption-based LoadMaster builds.

Note: To get a Progress ID changed to a consumption-based Progress ID, contact a Progress Kemp representative.

- Features specific to customers who enroll past 20th March 2017 and are using LoadMaster firmware version 7.2.36 or above are:
- Any consumption-based license type can be chosen when entering into a contract agreement.
- A single consumption-based Progress ID can license unlimited consumption-based instances.
- The same consumption-based Progress ID can be used to license any other Progress Kemp products, such as a trial/permanent Virtual LoadMaster, hardware LoadMaster, bare metal instance, and/or cloud instance.
- For SPLA licenses provisioned before 20th March 2017 - the SPLA Progress ID for a LoadMaster can be changed to another SPLA Progress ID (and therefore one SPLA license type can be changed to another SPLA license type), if needed, by using the **License Management** feature and using the “new” SPLA Progress ID. We recommend rebooting after updating the license.

- Consumption-based downloads are sent to the associated Progress IDs.



- Online licensing, LoadMaster 360 licensing, and Kemp 360 Central Licensing are the only available options to license a consumption-based LoadMaster. Offline and legacy licensing is not available. After initially installing a consumption-based LoadMaster, you are asked to select the license method to proceed. For step-by-step instructions on how to license initially, refer to the relevant document, depending on the chosen licensing method:
  - Online Licensing: Licensing, Feature Description. However, keep in mind that online licensing is the only available licensing method in this document which is relevant for a consumption-based LoadMaster.
  - LoadMaster 360 Licensing: LoadMaster Licensing in LoadMaster 360 Technical Note

    Note: LoadMaster 360 supports LoadMasters with firmware version 7.2.48.2 or above). The Application Programming Interface (API) must be enabled on the LoadMaster so that LoadMaster 360 can communicate with it. For further details on LoadMaster 360 requirements, refer to the following document: LoadMaster 360.
  - Local licensing: Kemp 360 Central Feature Description
- The screen asking to enable the LoadMaster to check for firmware updates is not displayed and this function is enabled automatically. It is not possible to disable these checks in a consumption-based LoadMaster.
- Details such as the license type, support type, licenses allocated, and maximum licenses allowed can vary. To check or change these details, contact a Progress Kemp representative.
- A LoadMaster automatically receives a permanent license if licensed with a consumption-based Progress ID.
- A licensed consumption-based unit can be killed when it is no longer required. This can be done in the **System Configuration > System Administration > License Management** or **System Configuration > Miscellaneous Options > Activation Server** screen of the LoadMaster Web User Interface (WUI), depending on the initial licensing method.

Note: The LoadMaster automatically reboots after the license is killed.

Note: Progress Kemp can remotely kill a licensed consumption-based LoadMaster for various reasons. The consumption-based LoadMaster will stop functioning within 24 hours of the kill being initiated by Progress Kemp.

- On a regular basis, Progress Kemp will count the active units per SPLA Progress ID. This is the number of licenses that Progress Kemp will use for invoicing.
- The support for consumption-based LoadMasters is available as long as the agreement remains active with Progress Kemp.
- The RESTful API is enabled from the start with consumption-based LoadMasters. There are some

RESTful API commands that are available only to consumption-based customers. Refer to the RESTful API Commands for SPLA LoadMasters section for more information.

- Consumption-based LoadMasters have a mandatory feature called Kemp Analytics. With this feature, the LoadMaster connects to the Progress Kemp licensing server to get available license updates and to provide system status information to Progress Kemp. This data is strictly about product usage, enabled capabilities, and statistics. No sensitive user data, or traffic of any kind is either collected or communicated. For more information, visit https://kemptechnologies.com/policies/kemp-analytics.

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- SPLA
- Metered Licensing - Data Collection and Measuring
- Pooled Licensing
- API Commands for Consumption-based LoadMasters
- PowerShell API Commands

SPLA

SPLA subscriptions are available on a number of platforms depending on the end-customer and service provider environments. Virtual appliances are available on all the major virtualization platforms and the Azure and AWS clouds. Virtual appliances offer the maximum flexibility to adjust licenses to match varying subscriber demands. SPLA subscriptions may also be delivered as a bare-metal solution where a dedicated hardware host is used to host load balancer services.

The LoadMaster can scale to meet the requirements of any end-customer while maintaining profitability and offering a consistent experience for both the customer and the service provider. Features and functionality remain the same while performance capacity can be upgraded or downgraded in-situ using a simple license key change process. This consistency makes it easy for customers to not only scale as their business grows, but to also dynamically scale up and down around extreme events without having to change their application delivery environment and without any service provider provisioning or configuration change.

The Progress Kemp SPLA program includes a dedicated support and account management team and offers a customized support package to match service provider requirements. Progress Kemp also provides go-to-market assistance and on-site professional services and training to ensure successful and painless adoption. The default LoadMaster product set offered via SPLA ranges from 200Mbps through 10Gbps.

You can license SPLA LoadMasters using Kemp 360 Central - but Kemp 360 Central is not required to license an SPLA LoadMaster.

Metered Licensing - Data Collection and Measuring

Metered licensing data collection and measuring is performed in various stages. These stages are outlined in the sections below.

Data Collection Stage

In the data collection stage:

- Every 60 seconds, starting from a random time (depending on when the collection process starts), Kemp 360 Central checks the VirtualService **TotalBytes** value for each LoadMaster under management. This is done in a serial nature to avoid congestion and performance issues.
- This is an 'absolute' value of how many bytes have passed through the Virtual Services on the LoadMaster, not throughput rates. It does not include other traffic such as routed traffic, administrative connections, backups, syslogs, and so on.

Data Processing Stage

In the data processing stage:

- Kemp 360 Central calculates an average throughput rate for each minute for each LoadMaster using the difference in the **TotalBytes** values recorded. For example, if **TotalBytes** was 600 MB at time1 and 1200 MB at time2, then the average throughput rate is 12000 MB - 600 MB / 60 seconds = 10 Mbps.
- If a polling value is missing (for example, due to connectivity issues between Kemp 360 Central and the LoadMaster), Kemp 360 Central will use the next value up to a maximum of 5 minutes to create a 2 minute, 3 minute, or 4 minute average and assume that rate was constant for the missing time period. After 5 minutes, Kemp 360 Central ignores the missing data during that time period and starts again from the next polling value to create 1 minute average throughput values.

Data Reporting Stage

Every 24 hours (at a random time) Kemp 360 Central reports the average throughput values calculated for that day back to Progress Kemp.

Billing Stage

In the billing stage:

- At the end of each month, Progress Kemp's Metered Enterprise Licensing Agreement (MELA) billing system selects the highest average Bps Throughput Rate reported for each day in the month for each LoadMaster to create a 'Daily Maximum Average Bps Rate' table of 28 to 31 values (depending on the month) for each LoadMaster.
- The billing system then calculates the 95th percentile value for each LoadMaster based on its Daily Maximum Average Bps Rate values for that month.
- The billing system then sums the 95th percentile Average Bps Rate values for each LoadMaster in the environment and converts the total value from Bytes per Second to Gigabits per Second to get the MELA billing usage.

Note: Gigabits are a decimal value and not a binary value (the binary value is a Gibabit - https://en.wikipedia.org/wiki/Gigabit) as many people commonly use it. The correct conversion from Bps to Gbps is Bps / 125,000,000.

- The MELA billing usage is used to compare against your agreed billing tier to calculate your monthly rate and any overage you might have incurred.

95th Percentile Explained

The 95th percentile is a billing method that is calculated when a customer's monthly usage has been reported over their contracted limits.

How is the 95th Percentile Calculated?

Progress Kemp uses a well-agreed upon way of calculating percentile values. Progress Kemp captures and uses the Daily Max values reported for each day, then sorts them from lowest to highest values using the measured data.

Using a data set of: 50, 120, 325, 330, 340, 345, 500, 351, 402, 405 , 800, 480, 498, 501, 260, 265, 280, 335, 400, 425, 455, 890, 950, 1000, 1200, 1500, 1700, 3500 as an example, 30 values. (Typical month)

The first step is to find the index value (location) of the percentile value. Using the following formula:

```
Location of a Percentile = (total number of observations + 1) * (target
percentile / 100)

Location of P95 = (30+1)*(95/100)

= 29.45 = Index value
```

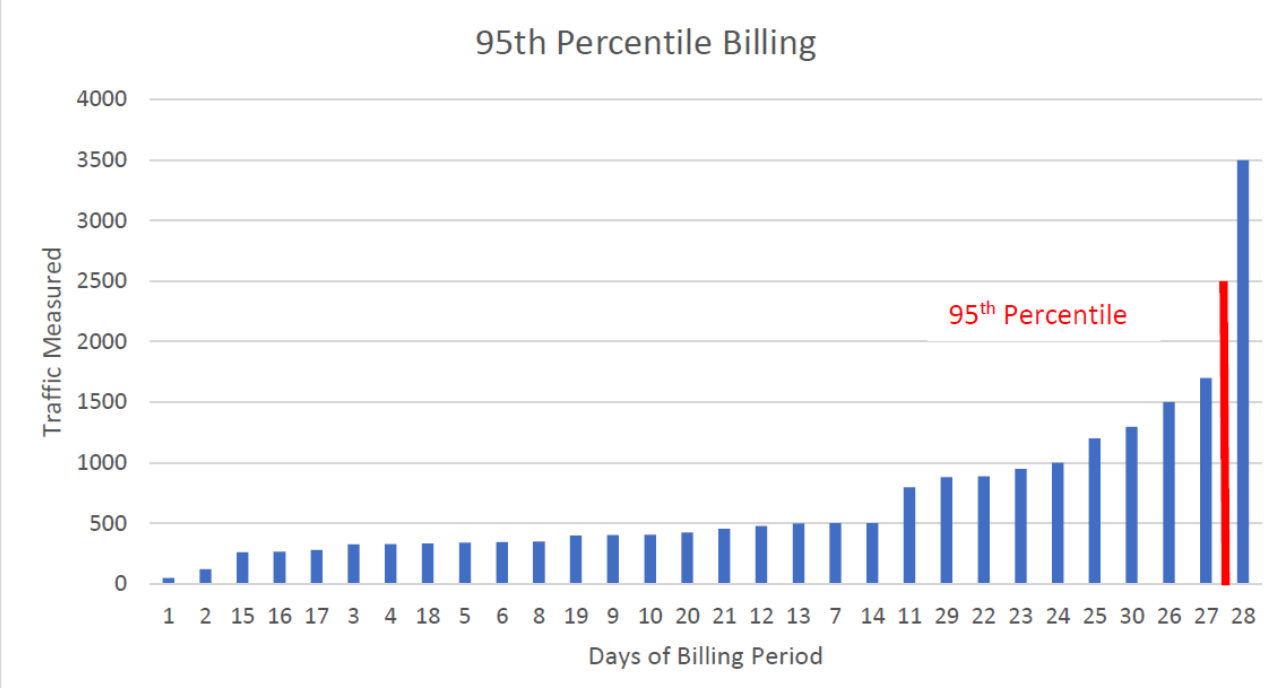
Next we must calculate the value of the 95th percentile.

```
29th observation + (30th observation -29th observation) * (decimal reminder of
index)

1700 + (3500-1700) * 0.45
```

95th percentile = 2510

Actual Peak Usage: 3500



How Can I Reproduce or Validate the Usage Requirements?

Because Kemp 360 Central is polling the devices based on its own internal clock and processes it may be difficult to get an exact representation of the collection data unless you are collecting at the same interval. In general, you will need to do the following:

Create a script that performs an Application Programming Interface (API) call to all LoadMasters being monitored:

```
https://<LoadMasterIPAddress>/access/stats
```

The values for Virtual Service Total Bytes must be captured every 60 seconds and stored. Then take those values and divide by 60. For example, (Time2 value –Time1 value)/60. That will give you the 1 minute averages stored. Save those values over time and take the maximum value for the day being recorded. That value should match up with the Kemp 360 Central reported value for that day.

Note: Values might be off depending on whether the time sampling lines up with the sampling being done by Kemp 360 Central.

Pooled Licensing

Kemp 360 Central acts as the licensing server for pooled licensing and can issue individual LoadMaster licenses at capacities ranging from 50 Mbit to 10 Gbit. Issued licenses deplete the pool but can be recovered and added back into the pool at any time for re-issue. This provides flexibility to issue licenses on-demand for a range of use cases ranging from short-term projects such as testing through to long term licenses for

customers or departments in the organization.

If you have a pooled license, you are allocated a specific amount of LoadMaster bandwidth and you can add or delete LoadMasters while staying within this limit. Each LoadMaster license has a defined bandwidth. The Kemp 360 Central User Interface (UI) displays how much of your license pool you are using out of your limit.

Note: If you have SMTP configured, you are notified by email if you exceed the allowed limit. This email is generated at midnight every day until the issue is fixed.

You can return a license to the license pool in Kemp 360 Central by going to the **Actions** column and clicking **Recover License**. This kills the device and returns the capacity to the license pool.

To access the **LoadMaster Licensing** section in Kemp 360 Central, click the **Settings and Configuration** icon then click **LoadMaster Licensing**.

Note: You can have a pooled license or a metered license but not both.

The information you obtain from running a report depends on whether you have a metered or pooled license.

The **Pool Usage** report displays the details that are displayed in the table in report format. However, you can filter on IP address or device name to make the report more specific. The report is downloaded as a .CSV file. The CSV file contains a history of all pooled device license actions for all devices.

API Commands for Consumption-based LoadMasters

There are some API commands relating to consumption-based LoadMasters. These are described in the sections below. Refer to the relevant section depending on whether you want to use the RESTful API or PowerShell API.

Contents

- RESTful API Commands
- License a Consumption-based LoadMaster Using Kemp 360 Central

RESTful API Commands

The following sections contain details about the RESTful API commands for consumption-based licensing. Refer to the relevant section below depending on whether or not you are licensing using Kemp 360 Central.

For further information on RESTful API in general, refer to the **RESTful API Interface Description** on the Documentation page.

Contents

- License a Consumption-based LoadMaster Without Using Kemp 360 Central

License a Consumption-based LoadMaster Without Using Kemp 360 Central

Follow the steps in the following sections to license a consumption-based LoadMaster without using Kemp 360 Central.

Contents

- Retrieve the List of Available Consumption-based Licenses
- License the LoadMaster using a Specific License
- Set the 'bal' User Password
- Kill a Consumption-based License
- Retrieve the List of Available Consumption-based Licenses
- License the LoadMaster using a Specific License (PowerShell)
- Set the 'bal' User Password (PowerShell)
- Kill a Consumption-based License

Retrieve the List of Available Consumption-based Licenses

To retrieve the list of available consumption-based licenses for the specified Progress ID, run the following command:

```
curl -k -v "https://<LoadMasterIPAddress>/access/
alsilicensetypes?kempid=<ProgressID>&password=<KempIDPassword>"
```

Name	Type	Description	Mandatory
kempid	String	The email address used when registering for a Progress ID.	Yes
password	String	The Progress ID account password.	Yes

This command returns a list of available licenses. The ID of the desired license is needed when running the command to license the LoadMaster.

License the LoadMaster using a Specific License

To license the LoadMaster using a specific license, run the following command:

```
curl -k -v "https://<LoadMasterIPAddress>/access/
alsilicense?kempid=<ProgressID>&password=<ProgressIDPassword>&lic_type_id=<Lice
nseTypeID>"
```

Name	Type	Description	Mandatory
kempid	String	The email address used when registering for a Progress ID (formerly Kemp ID).	Yes
password	String	The Progress ID account password.	Yes
licensetypeid	String	The ID of the license you want to apply to the LoadMaster. You would have retrieved this in the previous section by running the **alsilicensetypes** command.	Yes

Set the 'bal' User Password

You can set the password for the default admin user (**bal**) for a LoadMaster using a RESTful API command if the password has not yet been set. Run the following command if setting the password for the first time:

```
curl -k -v "https://<LoadMasterIPAddress>/access/
set_initial_passwd?passwd=<NewPassword>"
```

Name	Type	Description	Mandatory
passwd	String	The new password for the **bal** user.	Yes

Kill a Consumption-based License

You can kill a consumption-based license using a RESTful API command. The LoadMaster must be able to communicate with the Kemp Licensing Server for this to be successful.

Note: Progress Kemp can remotely kill a licensed consumption-based LoadMaster for various reasons. The consumption-based LoadMaster stops functioning within 24 hours of the kill being initiated by Progress Kemp.

To kill a consumption-based license, run the following command:

```
curl -k -v -u "bal":"<BalPassword>" "https://<LoadMasterIPAddress>/access/
kill_spla_instance?name=<ProgressID>&passwd=<ProgressIDPassword>&kill=1"
```

Name	Type	Description	Mandatory
kempid	String	The email address used when registering for a Progress ID.	Yes

Name	Type	Description	Mandatory
password	String	The Progress ID account password.	Yes
kill	Boolean	Set this parameter to **1** to kill the license.	Yes

Note: Killing, relicensing, and killing again is not recommended - this leads to unexpected behavior.

License a Consumption-based LoadMaster Using Kemp 360 Central

Follow the steps in the following sections to license a consumption-based LoadMaster using Kemp 360 Central.

Contents

- Retrieve the List of Available Consumption-based Licenses from Kemp 360 Central
- License the LoadMaster using a Specific License
- Set the 'bal' User Password
- Kill a Consumption-based License

Retrieve the List of Available Consumption-based Licenses from Kemp 360 Central

To retrieve the list of available consumption-based licenses from Kemp 360 Central, run the following command:

```
curl -k "https://<LoadMasterIPAddress>/access/
aslgetlicensetypes?aslhost=<Kemp360CentralIPAddress>&aslport=<Kemp360CentralPor
t>"
```

This command returns a list of available licenses. The ID of the desired license is needed when running the command to license the LoadMaster.

Name	Type	Description	Mandatory
aslhost	String	The IP address of the Kemp 360 Central machine being used for licensing.	Yes
aslport	Integer	The port of the Kemp 360 Central machine being used for licensing.	Yes

License the LoadMaster using a Specific License

To license the LoadMaster using a specific license, run the following command:

```
curl -k "https://<LoadMasterIPAddress>/access/access/
aslactivate?lic_type_id=<LicenseTypeID>&aslhost=<Kemp360CentralIPAddress>&aslpo
rt=<Kemp360CentralPort>"
```

Name	Type	Description	Mandatory
licensetypeid	String	The ID of the license you want to apply to the LoadMaster. You would have retrieved this in the previous section by running the **alsilicensetypes** command.	Yes
aslhost	String	The IP address of the Kemp 360 Central machine being used for licensing.	Yes
aslport	Integer	The port of the Kemp 360 Central machine being used for licensing.	Yes

Set the 'bal' User Password

You can set the password for the default admin user (**bal**) for a LoadMaster using a RESTful API command if the password has not yet been set. Run the following command if setting the password for the first time:

```
curl -k -v "https://<LoadMasterIPAddress>/access/
set_initial_passwd?passwd=<NewPassword>"
```

Name	Type	Description	Mandatory
passwd	String	The new password for the **bal** user.	Yes

Kill a Consumption-based License

You can kill a consumption-based license using a RESTful API command. The LoadMaster must be able to communicate with the Progress Kemp Licensing Server for this to be successful.

Note: Progress Kemp can remotely kill a licensed consumption-based LoadMaster for various reasons. The consumption-based LoadMaster stops functioning within 24 hours of the kill being initiated by Progress Kemp.

To kill a consumption-based license, run the following command:

```
curl -k "https://<LoadMasterIPAddress>/access/
kill_spla_instance?name=<ProgressID>&passwd=<ProgressIDPassword>&kill=1"
```

Note: Killing, relicensing, and killing again is not recommended - this leads to unexpected behavior.

PowerShell API Commands

The following sections contain details about the PowerShell API commands for consumption-based licensing. Refer to the relevant section below depending on whether or not you are licensing using Kemp 360 Central.

For further information on PowerShell API in general, refer to the **PowerShell Interface Description** on the Documentation page.

Contents

- Import the Progress Kemp PowerShell Module and Initialize the Connection
- License a Consumption-based LoadMaster Without Using Kemp 360 Central
- License a Consumption-based LoadMaster Using Kemp 360 Central

Import the Progress Kemp PowerShell Module and Initialize the Connection

To import the Progress Kemp PowerShell module, run the following command:

```
Import-Module -Name .\Kemp.LoadBalancer.Powershell.psd1 -Verbose
```

It may be easier to run the following command to initialize against the relevant LoadMaster once, rather than providing credentials for every command. The password to enter is the default **bal** user password.

```
Initialize-LmConnectionParameters -Address <LoadMasterIPAddress> -LBPort <Port>
-Credential "bal" -Verbose
```

Name	Type	Description	Mandatory
Address	String	The IP address of the LoadMaster.	Yes
LBPort	Integer	The port of the LoadMaster.	Yes
Credential	String	The LoadMaster username.	Yes

License a Consumption-based LoadMaster Without Using Kemp 360 Central

Follow the steps in the following sections to license a consumption-based LoadMaster without using Kemp 360 Central.

Contents

- Retrieve the List of Available Consumption-based Licenses
- License the LoadMaster using a Specific License
- Set the 'bal' User Password
- Kill a Consumption-based License
- Retrieve the List of Available Consumption-based Licenses
- License the LoadMaster using a Specific License (PowerShell)
- Set the 'bal' User Password (PowerShell)
- Kill a Consumption-based License

Retrieve the List of Available Consumption-based Licenses

To retrieve the list of available consumption-based licenses for the specified Progress ID, run the following command:

```
$lictype = Get-LicenseType -KempId <ProgressID> -Password <ProgressIDPassword>
-LoadBalancer <LoadMasterIPAddress>
```

Name	Type	Description	Mandatory
KempId	String	The email address used when registering for a Progress ID.	Yes
Password	String	The Progress ID account password.	Yes
LoadBalancer	String	The IP address of the LoadMaster.	Yes

License the LoadMaster using a Specific License (PowerShell)

To license the LoadMaster using a specific license, run the following command:

```
$lic = Request-LicenseOnline -KempId <ProgressID> -Password
<ProgressIDPassword> -LicenseTypeId $lictype.Data.License[0].id -LoadBalancer
<LoadMasterIPAddress>
```

Name	Type	Description	Mandatory
KempId	String	The email address used when registering for a Progress ID.	Yes

Name	Type	Description	Mandatory
Password	String	The Progress ID account password.	Yes
LicensetypeId	String	The ID of the license you want to apply to the LoadMaster. You would have retrieved this in the previous section by running the **Get-LicenseType** command.	Yes

Set the 'bal' User Password (PowerShell)

You can set the password for the default admin user (**bal**) for a LoadMaster using a PowerShell API command if the password has not yet been set. Run the following command if setting the password for the first time:

```
$setp = Set-LicenseInitialPassword -Passwd <BalPassword> -LoadBalancer
<LoadMasterIPAddress>
```

Name	Type	Description	Mandatory
Passwd	String	The new password for the **bal** user.	Yes
LoadBalancer	String	IP address of the LoadMaster.	Yes

Kill a Consumption-based License

You can kill a consumption-based license using a PowerShell API command. When you kill a license, the **Current Licenses Allocated** value is decremented by one, freeing up a license to be used elsewhere.

Note: Progress Kemp can remotely kill a licensed consumption-based LoadMaster for various reasons. The consumption-based LoadMaster stops functioning within 24 hours of the kill being initiated by Progress Kemp.

To kill a consumption-based license, run the following command:

```
$remove = Remove-SplaInstance -KempId <ProgressID> -Password
<ProgressIDPassword> -LoadBalancer <LoadMasterIPAddress> -Credential bal
```

Name	Type	Description	Mandatory
KempId	String	The email address used when registering for a Progress ID.	Yes

Name	Type	Description	Mandatory
Password	String	The Progress ID account password.	Yes
LoadBalancer	String	The IP address of the LoadMaster.	Yes

Note: Killing, relicensing, and killing again is not recommended - this leads to unexpected behavior.

License a Consumption-based LoadMaster Using Kemp 360 Central

Follow the steps in the following sections to license a consumption-based LoadMaster using Kemp 360 Central.

Contents

- Retrieve the List of Available Consumption-based Licenses from Kemp 360 Central
- License the LoadMaster using a Specific License
- Set the 'bal' User Password (PowerShell)
- Kill a Consumption-based License (PowerShell)

Retrieve the List of Available Consumption-based Licenses from Kemp 360 Central

To retrieve the list of available consumption-based licenses from Kemp 360 Central, run the following command:

```
Get-AslLicenseType -aslhost <Kemp360CentralIPAddress> -aslport
<Kemp360CentralPort> -LoadBalancer <LoadBalancerIPAddress>
```

Note: If you already know what license ID to use, there is no need to execute this command. You can simply run the **Request-LicenseOnPremise** command.

This command returns a list of available licenses. The ID of the desired license is needed when running the command to license the LoadMaster.

Name	Type	Description	Mandatory
aslhost	String	The IP address of the Kemp 360 Central machine being used for licensing.	Yes
aslport	Integer	The port of the Kemp 360 Central machine being used for licensing.	Yes
LoadBalancer	String	The IP address of the LoadMaster.	Yes

License the LoadMaster using a Specific License

To license the LoadMaster using a specific license, run the following command:

```
Request-LicenseOnPremise -aslhost <Kemp360CentralIPAddress> -aslport
<Kemp360CentralPort> -LoadBalancer <LoadBalancerIPAddress> -LicenseTypeId
<LicenseTypeID>
```

Name	Type	Description	Mandatory
licensetypeid	String	The ID of the license you want to apply to the LoadMaster. You would have retrieved this in the previous section by running the **Get-AslLicenseType** command.	Yes
aslhost	String	The IP address of the Kemp 360 Central machine being used for licensing.	Yes
aslport	Integer	The port of the Kemp 360 Central machine being used for licensing.	Yes
LoadBalancer	String	The IP address of the LoadMaster.	No

Set the 'bal' User Password (PowerShell)

You can set the password for the default admin user (**bal**) for a LoadMaster using a PowerShell API command if the password has not yet been set. Run the following command if setting the password for the first time:

```
$setp = Set-LicenseInitialPassword -Passwd <BalPassword> -LoadBalancer
<LoadMasterIPAddress>
```

Name	Type	Description	Mandatory
Passwd	String	The new password for the **bal** user.	Yes
LoadBalancer	String	IP address of the LoadMaster.	Yes

Kill a Consumption-based License (PowerShell)

You can kill a consumption-based license using a PowerShell API command. When you kill a license, the **Current Licenses Allocated** value is decremented by one, freeing up a license to be used elsewhere.

Note: Progress Kemp can remotely kill a licensed consumption-based LoadMaster for various reasons. The consumption-basedLoadMaster stops functioning within 24 hours of the kill being initiated by Progress Kemp.

To kill a consumption-based license, run the following command:

```
Stop-AslInstance -LoadBalancer <LoadMasterIPAddress> -Credential bal
```

Name	Type	Description	Mandatory
Credential	String	The LoadMaster username..	Yes
LoadBalancer	String	IP address of the LoadMaster.	Yes

Note: Killing, relicensing, and killing again is not recommended - this leads to unexpected behavior.

3

License a Consumption-based LoadMaster Using LoadMaster 360

You can quickly license a newly-deployed, unlicensed LoadMaster and manage it through LoadMaster 360.

For details on how to license a newly-deployed, unlicensed LoadMaster using LoadMaster 360, refer to the Technical Note - LoadMaster Licensing in LoadMaster 360 document.

4

How to Terminate a Consumption-based License

For consumption-based licenses, terminating a LoadMaster can free up that license so that it can be reused. To terminate a consumption-based license, follow these steps in the LoadMaster:

1. In the main menu, go to **System Configuration > System Administration > License Management**.
2. Enter the consumption-based Progress ID credentials that were used to license this consumption-based LoadMaster.
3. Click **Kill License**.
4. Click **OK** to confirm.

The LoadMaster contacts the licensing server (or Kemp 360 Central for pooled licenses) and terminates the license. The associated license is returned to the license pool for future use. You can reuse the LoadMaster on which the license is terminated.

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References

Unless otherwise specified, the following documents can be found at https://docs.progress.com/.

RESTful API, Interface Description

Licensing, Feature Description

Kemp 360 Central Feature Description