Mitel MiContact Center Enterprise

OPEN APPLICATION SERVER - LICENSING USER GUIDE

Release 9.5 SP2

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TRADEMARKS

Open Application Server Licensing User Guide
Release 9.5 SP2 – October 2021

INTRODUCTION

OAS requires four types of licenses:

- Call Control licenses
- Media Port licenses
- ASR licenses
- TTS license

OAS uses Enterprise License Manager (ELM) for licensing. Enterprise License Manager provides a convenient way of administering and controlling the license on a network containing the Call Control servers and the Media servers. In addition to the system-wide licensing, OAS may be installed with multi-tenanting; allowing licenses to be divided among users.

To start using OAS with the supplied licenses, Enterprise License Manager Server has to be installed on your network. For more information regarding installation and license handling with Enterprise License Manager refer to Enterprise License Manager (23/1553-LXA 119 154).

ADDING LICENSES

The procedure for adding OAS licenses is described in this section.

ADDING ADDITIONAL LICENSES

To add new OAS licenses, click the Start menu, point to Programs, point to Enterprise License Manager, and then click License Administration. If you open the URL on the machine other than where ELM is running, the following dialog may appear as shown in Figure 1 below. Enter the user name, password, and domain information and click OK.

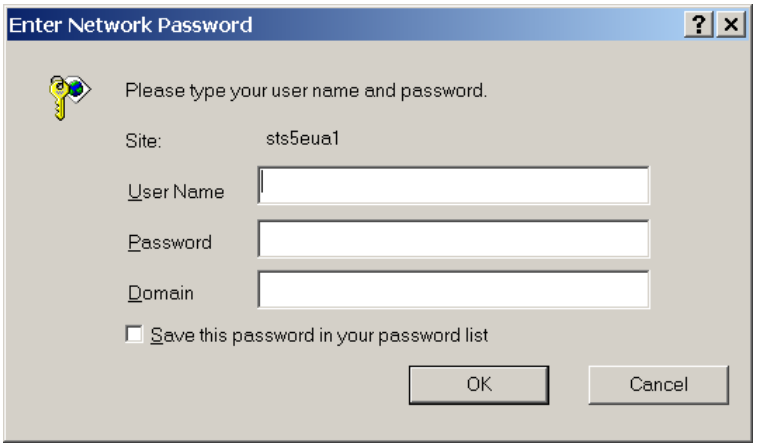

Figure 1: Login Dialog

In the Enterprise License Manager window, click **Install Licenses**.

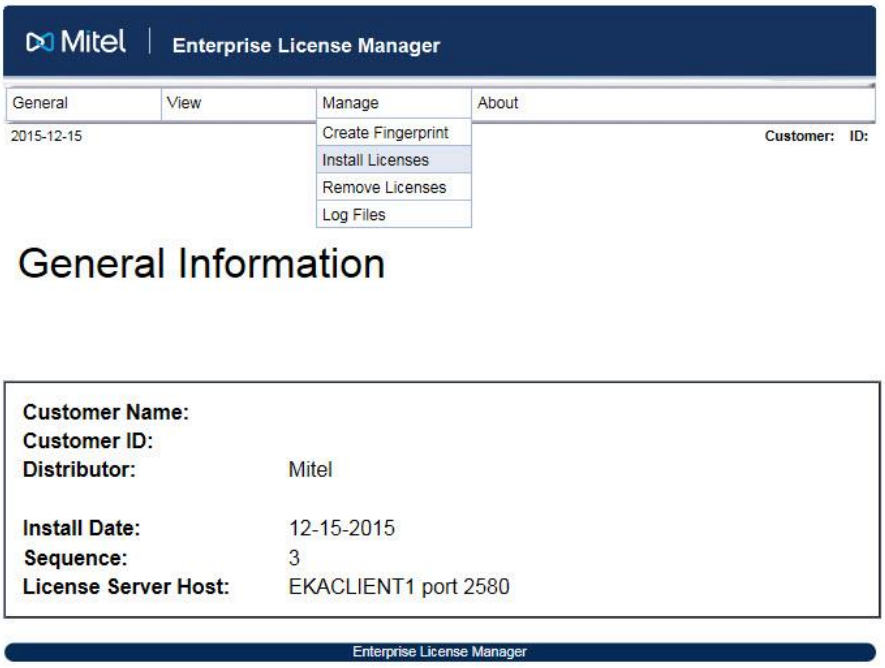

Figure 3: Install Licenses

On the Install Licenses page, enter the full path and file name of the license key file, or click **Browse...**, then select the license key file. Click **Install** to install the license.

The script “InstallLicenses.wsf" that comes with Enterprise License Manager Server installation can also be used to install new OAS licenses. To run this script, open a Window’s console, go to the directory where ELM Server is installed, and type InstallLicenses followed by the license key file. The following is an example:

C:\>cd C:\Program Files\Mitel\License Manager

...\Enterprise\License Manager>installlicenses

...\newlicenses\oas_cc_1user.keys

CONFIGURING LICENSES ON OAS

Every OAS host, by default, will try to reserve all the licenses that are available on the configured ELM Server.

If an OAS system does not share licenses with other OAS Systems (using a single ELM server), then this OAS system alone by default can make use of all the Licenses that are available on the ELM Server. But in an environment served by multiple OAS Servers, each individual OAS has to be configured manually for the number of Licenses that are going to be requested from the ELM Server.

To configure licenses for each OAS, refer to document OAS Software Configuration.

TENANT LICENSES

If OAS is installed with Multi-tenanting, then licenses acquired from Enterprise License Manager are shared among the tenants of the OAS system. Once a tenant is configured, license types can be added for that tenant. Each license type forms a Shared License Pool from which each tenant draws their own licenses. Media ports are treated slightly different for tenant configuration. Tenants allocate generic Media Port licenses, not simply Analog, Digital or IP media licenses. However as actual media is allocated, the appropriate license is used.

Tenant licensing introduces the following new concepts:

- Dedicated Licenses - Licenses that a tenant should be guaranteed
- Maximum Licenses - Licenses that a tenant can ever use (cannot be less than the dedicated licenses)
- Acquired Licenses - Licenses that the tenant actually holds currently
- Consumed Licenses - Licenses that are actually in-use

Tenants are configured with the license types that they will use. They may dedicate 0 or more of each license. When setting the dedicated licenses, the tenant reserves that amount of licenses from the Shared License Pool, thereby making that amount unavailable to any other tenant. Dedicated licenses guarantee that a tenant will always have that number of licenses available when needed. Acquired licenses are the number of dedicated (or more) licenses that the tenant has reserved from the Shared License Pool. The amount of acquired licenses can be larger or smaller than the dedicated amount due to the following conditions:

- Acquired less than Dedicated - Over allocation or dedication of licenses (most likely due to reduction in ELM licenses). When OAS updated its licenses from ELM, it received less that it should. An alarm event will be generated when this condition occurs.

- Acquired more than Dedicated - This is a normal case where the maximum number of licenses is configured to be larger than the dedicated. The consumed licenses for that tenant matches the acquired. As resources are de-allocated, the consumed and acquired licenses will drop until the acquired number of licenses matches the dedicated. Consumed licenses can still drop as resources are de-allocated. However the tenant will still hold onto licenses it acquired so that it can guarantee their use later.

  It is also possible for tenants to consume more than their dedicated licenses as long as the following two conditions are met:

- The tenant has not exceeded the maximum license allocation amount.
- There are remaining licenses of the required type in the Share License Pool.

When a tenant releases an acquired license that was outside the dedicated licenses, this license is returned to the Share License Pool. Each tenant can be configured with some or all types of licenses. Allocation of resources that require licenses will fail for a tenant if the particular license or set of licenses required is not configured or is not available for the tenant.

As a tenant actually consumes licenses, then the appropriate ELM license is consumed. The following diagrams help illustrate how a particular license is controlled under Multi-tenanting.

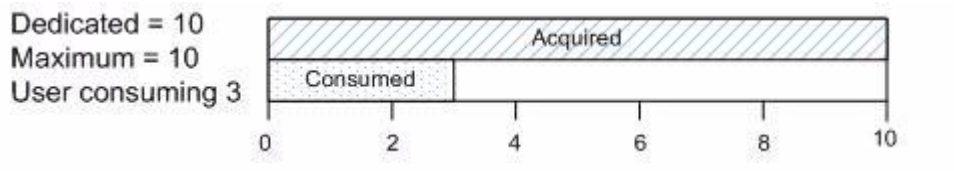

Figure 4: License Graph illustrating Dedicated, Acquired & Consumed

In the sample above, the first graph shows a license where the dedicated amount is 10 and the tenant acquired all 10 of those licenses. The lower bar shows that the tenant is currently consuming 3 licenses.

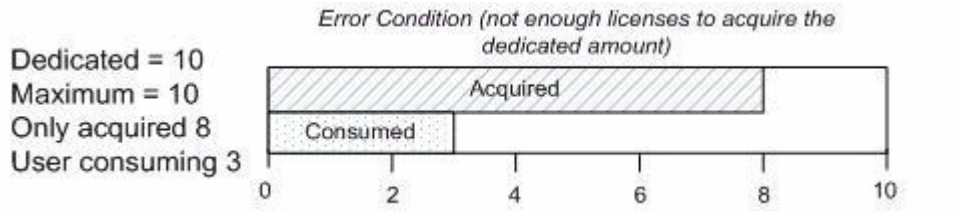

Figure 5: License Graph illustrating license acquisition problem

The second graph, in Figure 5 above shows that only 8 licenses were acquired. Since 10 should have been acquired, this is an error condition and an alarm will be raised. A possible reason for this condition may be that the OAS came up with less licenses than what was originally available when the tenant's licenses were configured leading to the deficit.

Tenant licenses can be configured to have a maximum larger than dedicated. In Figure 6 below a tenant license where the user is consuming less than both the dedicated and maximum is shown.

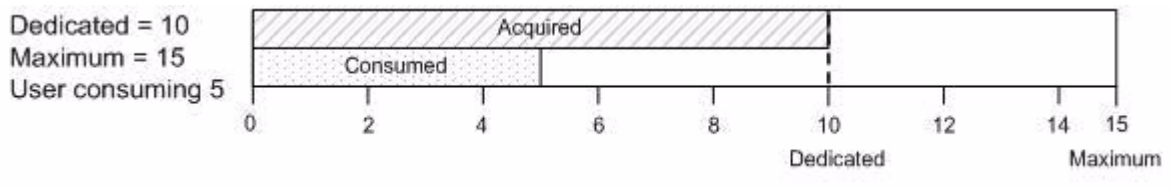

Figure 6: License Graph illustrating maximum versus dedicated licenses

The maximum value represents the amount that tenant is allowed to acquire and consume. Whether the user may acquire up to their maximum depends on the number of licenses available in the Shared Pool at the point in time the request is made.

As shown in Figure 7 below 9 the tenant is consuming 14 licenses.

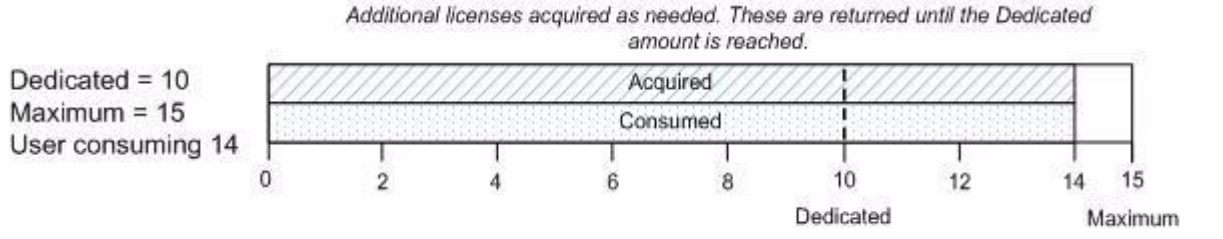

Figure 7: License Graph showing license usage above the dedicated amount

The acquired licenses match the consumed licenses. As licenses are released, the consumed and acquired drop until the dedicated amount is reached. At that point only the consumed level drops.

Note: Deleting a tenant will not automatically drop calls or consumed licenses allocated by that tenant. However, as callers disconnect those licenses are released. Upon deletion, licenses acquired but not used by the tenant are also released. For more information regarding deletion of Tenants, see the *OAS Software Configuration* document.

VIEWING LICENSES ON OAS

To view existing OAS licenses, open OAS Management Console. Double click **Open Application Server**, double click on **OAS Maintenance Tool**, right click **Network Resource Manager**, and click **License**.

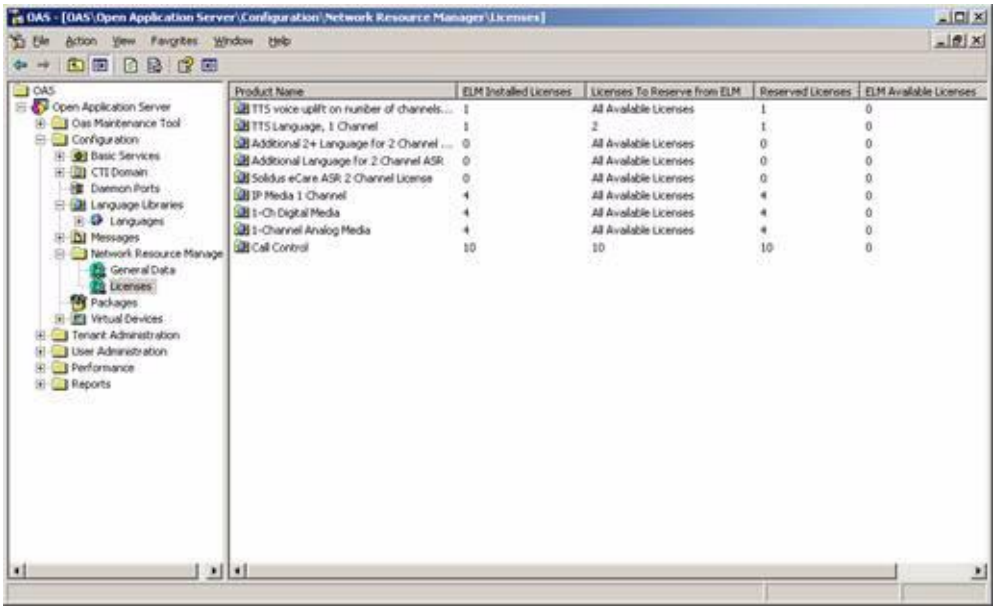

Figure 8: OAS Maintenance Tool, Licenses

From the License Information dialog box, the license information related to OAS will be listed.

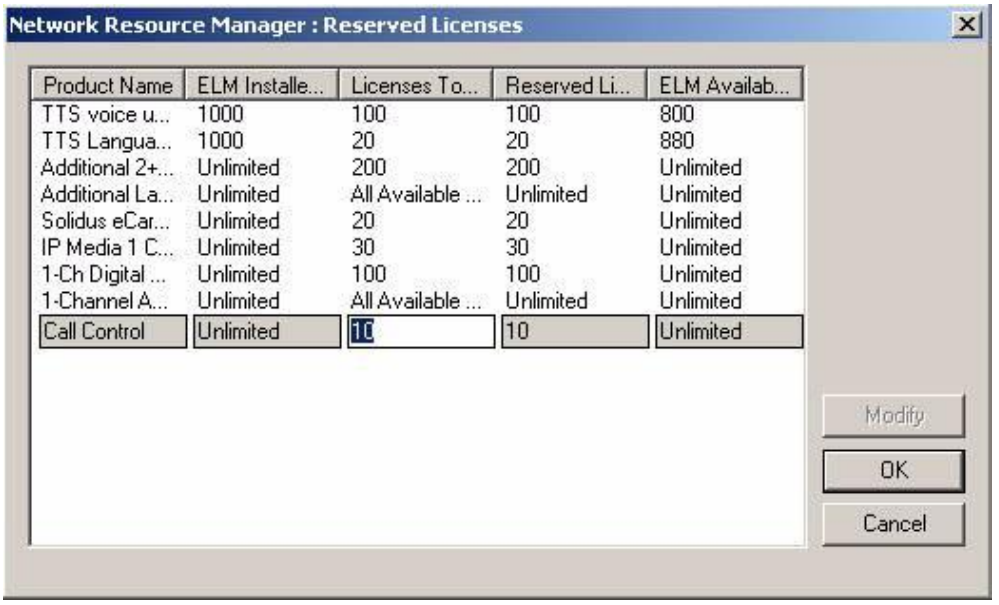

Figure 9: License Information

When you view license information directly from ELM by using a web browser or by using the ViewReservedLicenses.wsf command, the information you get can differ from the information displayed in the OAS scree. The difference is due to licenses being updated at periodic intervals.

If there are no licenses reserved on an OAS system, the license information will be updated or refreshed every 2 minutes until at least one license is reserved. If at least one license is available then the license information will be updated or refreshed every 30 minutes. This is to reduce the network traffic between ELM and the client (OCS). Please use the OAS Maintenance Tool and follow the above-mentioned steps to view OAS license status.

Note: If a "**" appears in the License Available column for 1-Channel ASR Additional Language or 1-Channel ASR Additional 2+ Languages, these licenses are not usable. For these licenses to be usable, the number of reserved licenses must be equal to, or greater than, the total number of reserved ASR licenses.

OAS LICENSE TYPES

OAS supports four types of licenses:

- Call Control license
- Media Port license
- ASR license
- TTS license

Each of these is described in detail in the following sections.

CALL CONTROL LICENSE

Call Control license is used by OAS to monitor the physical devices. See Table 1 Device Types and Call Control Licenses below for a description on whether an MX-ONE device type reserves a Call Control license.

Table 1 Device Types and Call Control Licenses

DEVICE TYPE	CALL CONTROL LICENSE
Analogue Telephone Set (ATS)	Yes
Automatic Call Distribution (ACD) group	No
Basic Virtual Device (BVD)	No
Channel Associated Signaling (CAS) extension	Yes
Computer Telephony Integration (CTI) group	No
Cordless eXtensioN (CXN)	Yes
Digital Telephone Set (DTS)	Yes
IP Extension (IP)	Yes
Remote eXtensioN (RXN)	Yes
Free Seating - Virtual Extension (VE)	Yes

TENANT DEVICE RANGE ASSIGNMENTS

Device ranges configured for Applink or x-link have tenant assignments. Tenant call control licenses are consumed based on those assignments. A blank or unassigned device range is owned by the system. Figure 10 shows several device ranges assigned to the system and several tenants.

USING CALL CONTROL LICENSES IN STATIC MONITORING MODE

When the OAS monitoring type is set to Static Monitoring (Dynamic Monitoring mode is disabled), NRM starts to monitor physical devices in the same order as defined in the Monitored Devices dialog box of OAS Configuration Manager. A sample Monitored Devices dialog box is shown in Figure 10 below.

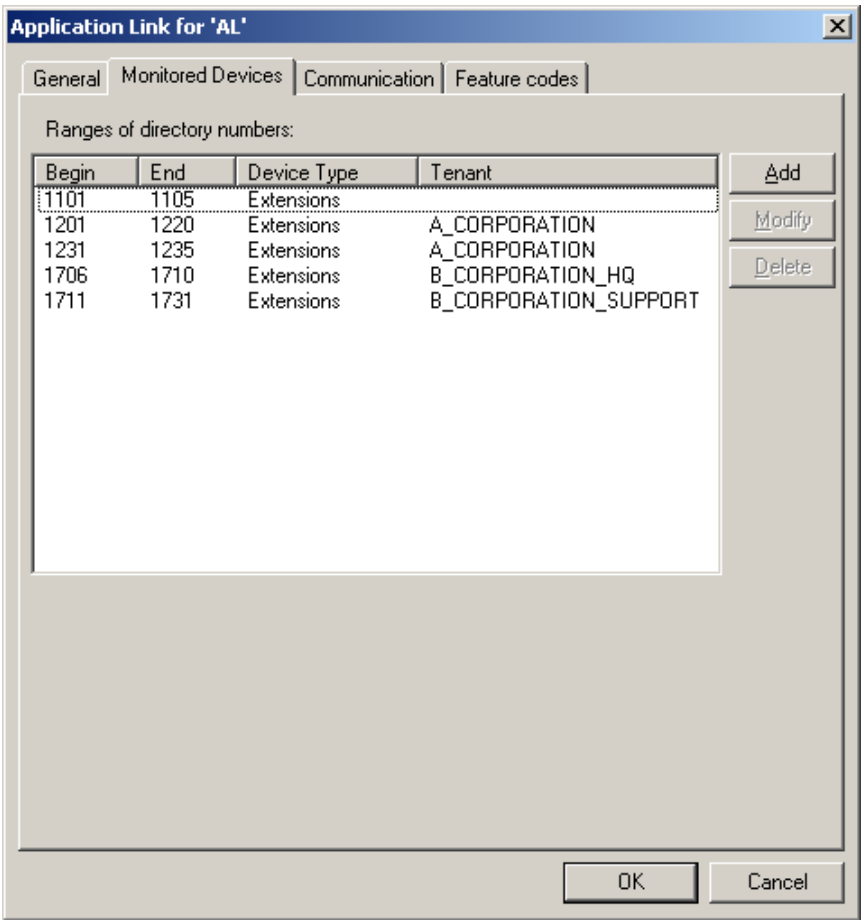

Figure 10: Sample Monitored Devices dialog box

Call Control licenses are assigned in the following ways in Static Monitoring mode, where:

1. m is the number of devices configured in OAS
2. n is the number of purchased Call Control licenses
3. o is the number of assigned Tenant Call Control licenses

Case 1: m > n

When NRM starts monitoring the devices, it begins with the first device in the configuration list. The process continues until it successfully monitors the n devices.

Case 2: m <= n

When NRM starts monitoring the devices, it begins with the first device in the configuration list. The process continues until it successfully monitors the m device. The unused Call Control licenses, n - m, will be issued when new physical devices are added into the OAS configuration database. NRM begins monitoring from the first newly added devices until all Call Control licenses have been used.

When the monitoring attempt on a specific device has failed, OAS will skip to the next successive device until it has successfully monitored a total of n devices.

Following is an example that show how call control licenses in general work. Let us assume the following license configuration and apply it to the device configuration in Figure 10 above:

#1

This example will show how call control licenses in general work.

1. Number of purchased Call Control licenses for NRM (n) = 4
2. Number of physical devices owned by system (m) = 5
3. Assume no tenant has Call Control licenses assigned

NRM will start monitoring devices in the following sequence until it has exhausted all four Call Control licenses: (1) 1101, (2) 1102, (3) 1103, (4) 1104.

The last system owned device 1105 would not be monitored nor would any of the remaining tenant owned devices (since they did not reserve any licenses).

#2

In this example, we'll use the directory numbers assigned to tenant "A_CORPORATION" in the order shown in Figure 10 above. For this example:

1. Number of purchased Call Control licenses for NRM (n) = 20
2. Number of Call Control Licenses assigned to A_CORPORATION (o) = 10
3. Number of physical devices configured in OAS (m) = 25

NRM starts monitoring devices in the following sequence until it reaches the eighth device: (1)1201, (2)1202, (3)1203, (4)1204, (5)1205, (6)1206, (7)1207, (8)1208.

If the monitoring attempts on devices 1104 and 1203 fail, the devices that will be monitored are: (1)1101, (2)1102, (3)1103, (4)1105, (5)1201, (6)1202, (7)1204, (8)1205.

RELEASING CALL CONTROL LICENSE IN STATIC MONITORING MODE

NRM releases Call Control licenses when any of the following events occur:

1. NRM releases Call Control licenses that are issued for those devices that are deleted from the OAS Configuration Manager.
2. If NRM detects that the communication link with the Call Control Server (ApplicationLink) is broken or deleted from the OAS configuration database, all Call Control licenses that are issued for those devices pertinent to that Call Control Server will be released.
3. NRM releases Call Control licenses that are issued for those devices for which the Call Control Server sends Monitor Ended events. These events are sent under two conditions: the Call Control Server is disconnected from MX-ONE, or the LIM is isolated.

USING CALL CONTROL LICENSES IN DYNAMIC MONITORING MODE

When the OAS monitoring type is set to Dynamic Monitoring, NRM starts monitoring devices and issues Call Control licenses ONLY when the client application requests the Start Monitoring service and if the request is processed successfully. If a client requests to start monitoring a physical device that is already being monitored, no new Call Control license is issued.

Call Control licenses are assigned in the following ways in Dynamic Monitoring mode, where:

1. m is the number of devices configured in OAS
2. n is the total number of purchased Call Control licenses

Case 1: m > n

Only the first n devices that receive the Start Monitoring service requests from client applications will be monitored.

Case 2: m <= n

A device will be monitored and the Call Control license will be issued when the Start Monitoring service request is received from a client application. The unused Call Control licenses, n □ m, will be used later as new physical devices are added into OAS Configuration Manager and Start Monitoring service requests are received for the devices from a client application.

In the following example, the directory numbers shown in Figure 7 on page 9 are used.

1. Number of purchased Call Control licenses (n) = 8
2. Number of physical devices configured in OAS (m) = 15
3. Number of Start Monitor service requests received = 5

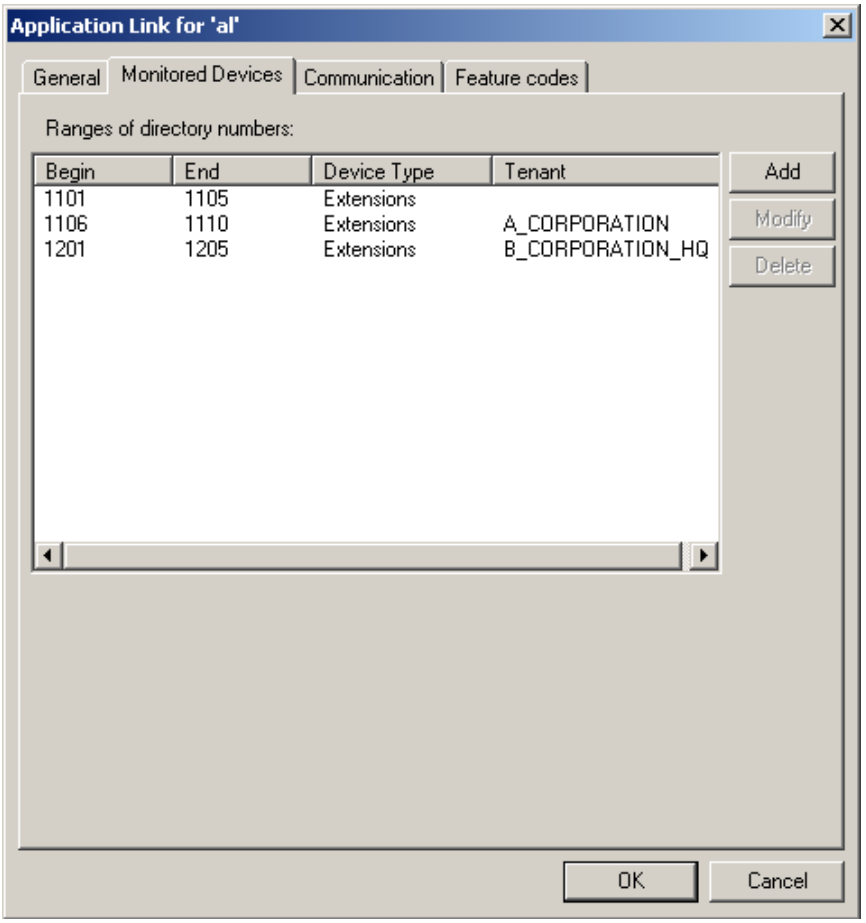

Figure 11: Sample Monitored Devices dialog box

If NRM receives Start Monitor service requests from the client application in the sequence: (1)1101, (2)1205, (3)1103, (4)1110, (5)1105; then five (5) Call Control licenses are issued for the five (5) devices.

RELEASING CALL CONTROL LICENSE IN DYNAMIC MONITORING MODE

NRM releases Call Control licenses when any of the following events occur:

1. NRM releases a Call Control license whenever the last client application requests NRM to Stop Monitoring a device that is being monitored.
2. NRM releases Call Control licenses that are issued for those devices that are deleted from the OAS Configuration Manager.
3. If NRM detects that the communication link with the Call Control Server (ApplicationLink) is broken or deleted from the OAS configuration database, all Call Control licenses that are issued for those devices pertinent to that Call Control Server will be released.
4. NRM releases Call Control licenses that are issued for those devices for which the Call Control Server sends Monitor Ended events. These events are sent under two conditions: the Call Control Server is disconnected from MX-ONE, or the LIM and/or NIU is isolated.

MEDIA PORT LICENSE

NRM issues a Media Port license when the client application requests an Allocate Resources service and the service is processed success- fully. The client application will request this service for two reasons:

- To answer inbound calls to BVDs
- To make outbound calls from BVDs

A Media Port license is required when any of the media cards listed in Table 2 Media ports and channels on page 17 is installed in the Media Server:

Table 2 Media ports and channels

	NUMBER OF				
MEDIA PORTS	MEDIA CHANNELS	SOUND PLAYER	SIGNAL DETECTOR	SIGNAL GENERATOR	RECORDER
IP (when installed on OAS server)	60	60	60	60	60
IP (when installed on own server)	100	100	100	100	100

USING MEDIA PORT LICENSES

Whenever NRM successfully processes an Allocate Resource service request, it issues one Media Port license. Media Port licenses are assigned in the following ways:

Case 1: n <= m

Only a maximum n number of calls with allocated media ports can exist simultaneously.

Case 2: n > m

Only a maximum m number of calls with allocated media ports can exist simultaneously.

Where:

- m is the number of media channels supported by the configured digital/analog card(s)
- n is the total number of purchased Media Port licenses

RELEASING MEDIA PORT LICENSES

NRM releases a Media Port license when any of the following events occur:

1. The call for which the license has been issued is cleared.
2. An outbound call attempt has exceeded the predefined time-out threshold.
3. Allocated resources have been successfully de-allocated.

ASR LICENSE

NRM issues an ASR license when it successfully processes the request to allocate ASR media resource from the client application. The following ASR licenses are issued on a per port basis:

- ASR license

- ASR Additional Languages license

ASR licenses automatically include the right to use one language.

ASR LICENSE FOR THIRD PARTY APPLICATIONS

This ASR license supports all types of recognition including natural language. Previous versions of OAS provided a 3-tier grammar limitation.

ASR LANGUAGE LICENSE

The ASR Language license supports the following three options:

- 1 Language - All calls in the system at one time must use the same ASR language. This option is always included with the purchase of any ASR license. For example, if UK English is the ASR language that has been requested and allocated for all current calls in the system, a request for a different language for a new call will fail until the UK English ASR resource is released for all current calls.
- 1+ Additional Languages - All calls in the system at one time can use two different ASR languages concurrently. For example, if German and Spanish are the ASR languages that have been requested and allocated for all current calls in the system, a request for a third language will fail until the resource for either German or Spanish is released.
- 2+ Additional Languages - All ASR languages are allowed at any time. For example, calls using Swedish, Spanish, US English, and Dutch can occur concurrently.

USING ASR AND ASR LANGUAGE LICENSES

When an ASR license is purchased, the right to use one (1) ASR language is enabled by default. The number of ASR Language licenses needed must be the same as the total number of ASR licenses. It is important to keep in mind that those ASR Language licenses must be purchased with the same language option. OAS does not allow mixing ASR Language options in the same system.

In the example, the following ASR licenses are needed if the customer is planning to have 20 concurrent calls that use two languages in the ASR application.

- 20 ASR licenses
- 20 ASR 1+ Language licenses

In the future, if this customer plans to add 15 concurrent calls and continue to speak with two languages for all those added ASR licenses, the customer must purchase the following additional licenses:

- 15 ASR licenses
- 15 ASR 1+ Language licenses

Note: OAS will revoke the right to use the 1+ Language if the customer does not purchase the additional 15 1+ Language licenses. As a result, OAS will allow all 35 concurrent calls to use only one language.

RELEASING ASR LICENSES

NRM releases an ASR license when any of the following events occur:

1. The call for which the ASR license has been issued is cleared
2. An outbound call attempt has exceeded the predefined time out threshold

3. The ASR resource is released successfully during a call

TEXT TO SPEECH LICENSE

NRM issues a TTS license when it successfully processes the request to allocate TTS media resource from the client application. The TTS licenses are issued on a per port basis.

There are two language independent license types for TTS:

- TTS Language, 1 Channel

  Contains the number of active TTS calls at a given time.

- TTS voice uplift on number of channels, 1 Channel

  Used to derive the number of voices supported for the active calls. Allocation of voices and languages is done in the OAS management console tool, allocation of channels is done during runtime.

A TTS license is composed of the following TTS language objects:

- Australian English
- Basque Spanish
- Brazilian Portuguese
- Danish
- Dutch
- Flemish
- French
- French Canada
- German
- Greek
- Hong Kong Cantonese
- Indian English
- Irish English
- Italian
- Japanese
- Korean
- Latin American Spanish
- Mandarin
- Norwegian
- Polish
- Portugal Portuguese
- Russian

- Scottish
- English
- Spanish
- Swedish
- UK_English
- US_English

USING TTS LICENSES

In an OAS system at a given time, total active calls with different TTS voices allocated will be less than, or equal to, the m number of TTS Language, 1 Channel. For example, if three licenses of type TTS Language, 1 Channel is purchased, then OAS system allocates maximum three calls with TTS resources. If the system has allocated three calls, the allocation for fourth call fails.

In an OAS system at a given time, the total number of voices allocated is less than or equal to (1 + n/m), where m is the number of TTS Language, 1 Channel. For example, if three licenses of type TTS

Language, 1 Channel, and 9 licenses of TTS voice uplift on number of channels, 1 Channel are purchased then OAS allocates a maximum of four different voices with TTS resources (1 + 9/3). If the system has allocated four voices, then allocation of fifth voice for a TTS resource fails.

RELEASING TTS LICENSES

OAS releases a TTS license when any of the following events occurs:

1. The call for which the TTS license has been issued is cleared
2. An outbound call attempt has exceeded the predefined time-out threshold
3. The TTS resource is de-allocated successfully during a call flow