



# Pay As You Grow Licensing

The Pay As You Grow (PAYG) licensing enables you to implement a cost effective solution when the wavelength requirements are comparatively less than the maximum capacity of the network.

For more information about the Pay As You Grow feature, see the [Understanding the Pay As You Grow Feature](#).

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- [PAYG for Client Cards, on page 2](#)

## Pay As You Grow

On enabling the Pay As You Grow licensing, the CTP algorithm decides on whether to use a PAYG instead of a standard capacity card based on the lower implementation cost.

[Table 1: PAYG Licenses, on page 1](#) lists PAYG licenses.

## PAYG Licenses

Each PAYG license consists of cards or units, and a base license as listed in the following table.

**Table 1: PAYG Licenses**

PAYG Licenses	Description
15454-SMR1-LIC	License restricted to the 40-SMR1-C card.
15454-SMR2-LIC	License restricted to the 40-SMR2-C card
15216-MD-ODD-LIC	License restricted to the Cisco ONS 15216 MD-40-ODD unit.
15454-WXC-LIC	License restricted to the 80-WXC-C card.
15454-LIC-CH-10	Capacity Expansion—License for ten additional add/drop or express channels.
15216-EF-ODD-LIC	License for 10 channel exposed faceplate mux/demux ODD patch panel.

<b>PAYG Licenses</b>	<b>Description</b>
L-NCS2K-CH-10	NCS 2K/MSTP LIC ROADM add/drop or express 10 channel e-Delivery.
<b>SMR-9</b>	
NCS-2K-9-SMR17FS-L=	Three licensable HW PIDs are provided (one for each PRE gain range).
NCS-2K-9-SMR24FS-L=	
NCS-2K-9-SMR34FS-L=	
L-NCS2K-SMR-2P=	Number of ports EXP-TX/RX can be expanded in steps of 2 using this license.
<b>20-SMR-FS</b>	
NCS-2K-20SMRFS-L=	License restricted to 20-SMR-FS card. Four ports are enabled (Entry configuration) and no Flex Spectrum capability.
L-NCS2K-SMR-4P=	Number of ports EXP-TX/RX can be expanded in steps of 4 using this license.

## PAYG for Client Cards

The following table lists PAYG licenses for AR-MXP, AR-XP, 100G-LC-C, 10X10G-LC, WSE, and 400G-XP-LC cards.

**Table 2: PAYG for Client Cards**

<b>PAYG Licenses</b>	<b>Description</b>
15454-AR-MXP-LIC=	ONS 15454 Any-Rate Muxponder—Software license, upgradeable.
15454-AR-XP-LIC=	License restricted to the 40-SMR2-C card ONS 15454 Any-Rate Xponder—Software license, upgradeable.
15454-LIC-TXP-8G=	ONS 15454 Any-Rate Muxponder—8G FC TXP software license.
15454-LIC-MXP-4x2.5=	ONS 15454 Any-Rate Muxponder—4xOC48 or 4xSTM16 software license.
15454-LIC-10G-DM=	ONS 15454 Any-Rate Muxponder—Data Muxponder software license.
15454-LIC-MXP-AR=	ONS 15454 Any-Rate Muxponder—Any Rate Muxponder software license.

PAYG Licenses	Description
15454-LIC-REG-10G=	ONS 15454 Any-Rate Muxponder—10GE over OTN Regen software license..
15454-M-100GC-LIC=	ONS 15454 100G-LC-C—Muxponder license.
15454-M-LIC-100G=	ONS 15454 100G-LC-C—Transponder and Regeneration license.
15454-M-10X10-LIC=	ONS 15454 10X10G-LC—Muxponder license.
15454-M-LIC-10G=	ONS 15454 10X10G-LC—Muxponder license.
15454-M-WSE-L-K9=	ONS 15454 WSE—Transponder license for one encryption stream and Regeneration license.
L-NCS2K-WSE-1=	ONS 15454 WSE—Upgrade license for additional encryption streams.
L-NCS2K-100G-FFU=	NCS 2K / MSTP License 100G LC—Full Feature Upgrade e-Delivery.
L-NCS2K-100G-10G=	NCS 2K / MSTP License 100G MXP—1x10G MR Port e-Delivery.
L-NCS2K-CK-CL=	Enables the CPAK client and allows to configure the TXP-100G operating mode
L-NCS2K-SFEC-16Q	Enables 20% SD-FEC and 200G 16-QAM on the trunk port allowing the MXP_10x10G_100G, MXP_CK_100G and MXP_200G operating modes. This licence also enables CD range for the 200G application (+/-20000 ps/nm).  <b>Note</b> Two licenses, L-NCS2K-CK-CL=and L-NCS2K-SFEC-16Q, are required to configure the MXP_CK_100G operating mode.
L-NCS2K-FS=	Enables Flex Spectrum tunability on the trunk port. NCS Flex package is required to use this license.
L-NCS2K-SD-FEC=	Enables wide CD range (+/- 70000 ps/nm) on standard FEC or enables20% SD-FEC and wide CD range (+/- 92000 ps/nm) for 100G operating modes.
L-NCS2K-MRE100GK9=	The High Speed Encryption license supports encryption in 100G-B2B and TXP-100G operating modes. This license is used when the 100G CPAK ports are used as clients.

<b>PAYG Licenses</b>	<b>Description</b>
L-NCS2K-MRELRGK9=	The Low Speed Encryption license supports encryption in MXP-200G, MXP-100G, 100G-B2B, and MXP_10x10G_100G operating modes. This license is used when the 10G SFP and QSFP+ ports are used as the client ports.
NCS2K-400G-XP-L-K9	NCS2K-400G-XP base license with one 100G client and one 100G trunk.
L-NCS2K-16QAM	NCS2K-400G-XP license with 200G trunk.
L-NCS2K-100G-LIC	NCS2K-400G-XP license with 100G client.
L-NCS2K-WDM-LIC	NCS2K-400G-XP license with 100G trunk.
L-NCS2K-100GCRPK9	License for Encryption on 100G Client for NCS2K-400G-XP-LC. This license is used when encryption is enabled.