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THINC-API Installation Manual

Document No.: \$5015-007-10

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Revision History

Date	Version	Description	Author
05/10/2007	S5015-007-00	Installation Manual	LHuynh
10/05/2007	\$5015-007-01	Add Installation For Custom Application section	LHuynh
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		- Revise section 3.1 Compatibles	
		- Revise section 4.1.1 Run Setup	
		- Revise section 4.1.2 Setup Type	
		Revise section 4.3 Install License FileRevise section 4.4.1.2 Validation	
		- Remove section 4.4.1.3.2 OSP System software	
		- Revise 5.1.1.1 Setup	
		- Revise section 7.2 License	
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11/17/2016	\$5015-007-08	Revised for public release 1.19.0.0	LHuynh
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		3.1 Compatibles	
		4.2 Desktop Installation	

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	4.5.1.2 Validation	
	4.5.2.4 Logging Service for .NET Framework 4.0 THINC-API libraries	
	6.1 Machine Installation	

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Installation Manual

1. Introduction

1.1 Purpose

The purpose of this document is providing the instruction of how to install THINC-API on machine, NC Master, and desktop PC. It also provides information on how to repair and uninstall THINC-API.

1.2 Scope

This installation will cover installing THINC-API for different machine types, and desktop PC.

1.3 Definitions, Acronyms, and Abbreviations

GAC - Global Assembly Cache Windows folder located in 'C:\WINDOWS\assembly'

1.4 Overview

The THINC-API setup application will automatically detect if this installation is for Machine/NC master or desktop PC.

- The Machine/NC Master installation will install:
 - THINC-API document, and sample application using THINC-API
 - THINC-API libraries to enable building and running THINC-API application to run.
 - Desktop installation will installs all THINC-API libraries, sample application, help file
 - THINC-API document, and sample application using THINC-API
 - THINC-API libraries to enable building THINC-API application.

The THINC-API setup application also detects and installs the correct THINC-API library files for lathe, machining center, and grinder when installing for Machine/NC Master.

For desktop installation, all libraries can be installed altogether if needed

2. References

None

3. Requirements

<u>The THINC-API setup application requires running under Administrator user account only. It also</u> requires to run under Windows mode only (NC is not running). If NC is running, it requires rebooting the machine to Windows mode.

3.1 Compatibles

THINC-API must be installed on the OSP-P100II/P200 or newer OSP-P controls in order to access to machine data. It requires .NET framework 4.0 for Lathe, Machining Center and Grinder.

THINC-API has been tested on the following platforms:

- Microsoft Windows XP Professional Embedded with SP3

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- Microsoft Windows 7 x86 with SP1

THINC-API libraries can be used with Microsoft Visual Studio 2010 or newer Visual Studio version to develop custom Windows application.

4. Installation Instruction

4.1 Machine/NC Master Installation

4.1.1 Run Setup

Run the THINC-API-Setup.exe program from the provided installation disk on Machine/NC Master

InstallShield Wizard	
	Preparing to Install
	THINC-API Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
	Configuring Windows Installer
	Cancel

During this stage, the installation will evaluate OSP system file to ensure that it can support current installation. If not, the setup will generate an error message and terminate the installation.

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Press Next to advance to the next page

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4.1.2 Setup Type

OKUMA THINC-API - InstallShield Wizard	\mathbf{X}
Setup Type Select the setup type that best suits your needs.	A
Setup has detected that this is a NC SDK installation. Please select from the options below:	
Basic - Run THINC applications on this machine.	
O Development - Create, test, debug, and run THINC applications on this machine	
InstallShield	Cancel

Select the appropriate option and click Next to continue with the installation process.

4.1.3 Setup

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THI	NC-API - InstallShield Wizard 🛛 🛛 🔀
TI	HINC API Setup
	Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
	Current Settings:
	NC Installation detected.
	NC Basic machining center installation selected.
	THINC API libraries necessary to run applications on this NC.
	S
Insta	IIShield
	< Back Next > Cancel

In this setup dialog, information on the selected options will be displayed.

Click Next to continue with the installation process or click Back to review/ change any settings.

4.1.4 Installing

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THINC-API - InstallShield Wizard	
Setup Status	N.
THINC-API is configuring your new software installation.	
Publishing product information	
InstallShield	Cancel

At any time, you can press Cancel button to terminate the installation.

4.1.5 Finish

THINC-API - InstallShield Wiz	ard
r V	InstallShield Wizard Complete Setup has finished installing THINC-API on your computer.
	 Yes, I want to restart my computer now. No, I will restart my computer later. Click Finish to complete setup.
	< Back Finish Cancel

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Click Finish to just finish the installation process.

4.2 Desktop Installation

All 3 libraries for Lathe, Machining Center, and Grinder can be installed when desktop installation is detected. The installation will consider desktop installation when there is no OSP-P folder on C drive.

All libraries and applications will be installed for each selection of machine types.

Note: An upgrade installation might not be able to install all 3 libraries if the previous version of THINC-API installed on desktop is 1.18.0.0 or older. D drive is also required for Desktop Installation

4.2.1 Run setup

Run the THINC-API-Setup.exe program from the provided installation disk on desktop PC.



THINC-API	Version:	S5015-007-09
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THINC-API - InstallShield Wizarc	
く	THINC-API Setup
	Welcome to the THINC-API setup program. If this program is being installed on a NC, please stop the NC and restart setup.
	< Back Next > Cancel

Press Next to advance to the next page

4.2.2 Setup Type

THINC-API - InstallShield Wizard
Setup Type Select the setup type that best suits your needs.
Setup has detected that this is a standalone desktop PC SDK installation. Please select from the options below:
Lathe SDK
Machining Center SDK
Crinder SDK
InstallShield
< Back Next > Cancel

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Select the appropriate option and click Next to continue with the installation process.

4.2.3 Setup

THINC-API - InstallShield Wizard	X
THINC-API Setup	
Setup has enough information to start copying the program files. If you want to re change any settings, click Back. If you are satisfied with the settings, click Next to copying files.	view or begin
Current Settings:	
Desktop Installation detected. Lathe installation selected. Machining Center installation selected. Grinder installation selected. THINC-API documentation, test applications and sample code. THINC-API libraries to enable building THINC-API applications on this machine.	•
•	•
InstallShield < Back Next >	Cancel

In this setup dialog, information on the selected options will be displayed.

Click Next to continue with the installation process or click Back to review/ change any settings.

4.2.4 Installing

THINC-API	Version:	S5015-007-09
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THINC-API - InstallShield Wizard	X
Setup Status	
THINC-API is configuring your new software installatio	
Copying new files	
InstallShield	
	Cancel

At any time, you can press Cancel button to terminate the installation.

4.2.5 Finish

THINC-API - InstallShield Wizard			
	InstallShield Wizard Complete Setup has finished installing THINC-API on your computer. • Yes, I want to restart my computer now. • No, I will restart my computer later. Click Finish to complete setup.		
	< Back Finish Cancel		

Click Finish to just finish the installation process.

4.3 Upgrade Installation

If the target machine or PC already has the previous version THINC-API then the installation will enter the

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upgrade installation mode.

4.3.1 Run setup

Run the THINC-API-Setup.exe program from the provided installation disk on Machine/NC Master



Click "Yes" button to perform upgrade THINC-API to the newer version

InstallShield Wizard	
	Preparing to Install
	THINC-API Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
	Configuring Windows Installer
	Cancel

During this stage, the installation will evaluate OSP system file to ensure that it can support current installation. If not, the setup will generate an error message and terminate the installation.

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Press Next to advance to the next page

4.3.2 Installing

< Back

Next >

Cancel

Installation Manual Data: 02/07/2019	THINC-API	Version:	S5015-007-09
Installation Manual Date: 05/07/2018	Installation Manual	Date: 03/07/2018	

THINC-API - InstallShield Wizard	×
Setup Status	
The InstallShield Wizard is updating (1.17.002) of THINC-API to version 1	.18.0
Copying new files	
InstallShield	Cancel

At any time, you can press Cancel button to terminate the installation.

4.3.3 Finish

THINC-API - InstallShield Wizard		
	Maintenance Complete InstallShield Wizard has finished performing maintenance operations on THINC-API. • Yes, I want to restart my computer now. • No, I will restart my computer later. Click Finish to complete setup.	
	K Back Finish Cancel	

Click Finish to just complete the installation process.

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4.4 Install License file

When THINC-API Setup program runs it will install either demo or permanent license version (Okuma.api.lic).

It is best to obtain the license file that supports the latest release of THINC-API libraries version although your application only requires an older THINC-API version.

License file can also manually copy to the D:\Program files\Okuma\License folder.

By default, the current version of installation will always copy the license file included with the Setup to the destination folder.

Note: Each Public Release of THINC-API always has a license file that supports the latest version of all THINC libraries. All applications developed with THINC-API use the same license file as long as THINC-API library version that your application compiled with is less than or equal to library version in the license file.

4.5 Validate Installation

4.5.1 THINC-API Libraries

For machine/NC Master installation, the test sample application can be run to ensure that THINC-API libraries can be supported under current machine configuration. By design, THINC-API libraries are tightly integrated with NC OSP System software. Therefore, a certain file version of NC OSP System files must be met in order to support all functions in the libraries.

Note: Per function call in the libraries also depends on machine options, spec. code, NC Control software version etc...

4.5.1.1 Run THINC sample application

Based on OSP Software System files, the Setup program will only install the appropriate libraries. It will install either Lathe/Machining Center/Grinder libraries.

Using Windows Explore to navigate to D drive and subfolder: Lathe: D:\Program Files\Okuma\THINC API\ThincLathe\bin MC: D:\Program Files\Okuma\THINC API\ThincMC\bin Grinder: D:\Program Files\Okuma\THINC API\ThincMC\bin

Run THINC sample application by double clicking on ThincLathe.exe, ThincMC.exe, and ThincGrinderApp.exe for Lathe/Machining Center/Grinder, respectively.

4.5.1.2 Validation

4.5.1.2.1 THINC-API Sample Applications

If current OSP System software can support current version of THINC-API libraries installed on machine, a Windows Form should be displayed without any error message as shown: <u>Note: Per function call in the libraries also depends on machine options, spec. code, NC Control software version etc...</u>

Machining Center Test application

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Sample THINC-API (Machining Centers)				
P300 Tools ATC P300 ATC ATC Sub Panel Machi	ne Workpiece Optional Param	eter Spec Tools 2 -1	Coolant Macman Operating	History MacMan I
Group No. 1 Tool/Station 1	Compensation No	→ Data Unit :	•	SET
P300 S(MP) / M Tool Offset	Tool Wear Offset	Tool	Life - SET	
Get Set Ad Cal 1 0	Get Set Ad 1	0 Get	Set 1 0	
Cutter Radius Wear Offset	Cutter Radius Offset	Tool	Life - LEFT	
Get Set Ad Cal 1 0	Get Set Ad 1	0 Get	Set 1 0	
Tool Life STATUS Tool Group	No. Tool	Max Speed		
Get Set 1 Get Set	1 0 Get	Set 1 0		
Tool Type Tool Name Get 1 Get 1	0	Get Registered Tool List (P300S/L)		
Update	^	(P300S/L)		
		(P300S/L)		
	~			-
				A Closer
				-

Lathe Test application:

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ase P300 Tools I/O Program - 2 Machi	e Tool (For B-Axis Control) Program Ma	cMan Operating Report MacMan Machining Re	eports MacMan Alarr
ub System 🗸	Set Data Unit :	▼ SET	······
Troup No. Entry No. Tool/Station	xis Tool Cutting Position	Edge No. Tool Life Conditi	ion
	• •	, –	•
Tool Offset	Tool Gauge - STATUS	Tool Wear Offset	
Get Set Add Cal 1 0	Get Set 1 ComboE 🗸	Get Set Add 1 0	
Tool Adjustment	Tool Life STATUS	Nose-Radius Compensation	
Get Set Add Cal 1 0	Get Set 1 ComboE 🗸	Get Set Add 1 0	
Tool Life - SET Tool Life	- ACTUAL Nose-Ra	dius Compensation Pattern Group Tool L	ife Status
Get Set Add 1 0 Get	Set Add 1 0 Get	Set 1 0 Get Set	
P100/P200/P300			
Set Life Status Set Tool Life (SET	Update (P100/P200/P300)		
Set Gauge Add Tool Life (SET) Update (P300S TD/TL Mode		
TD Mode ON Set Tool Life Actual (SE	T) Update (P300S/L)		
TD Mode OFF Add Tool Life Actual			
			A
			Clear L

Grinder Test application:

xis	Machine	PLC I/O	Program	Spec	Spindle	Tools	Variables	Wheel Workpie	ce MacMan	- Alarm History	MacMan - M	Machining Re	port MacMan
Up	pdate							Data Unit		Unit_mm		•	
Axis					X_Axis		•		Wheel Axis			U_Axis	•
Actu	al Positior	n Progran	n Coordina	te					Actual Positi	ion Wheel Coord	dinate		
Actua	al Position	n Machine	Coordinat	e									
Axis	Load												
Path	Feedrate												
Actu	ual Feedra	ate Per Ax	is										
Feed	drate Typ	e											
Feed	drate Ove	rride											
Com	mand Fee	edrate											
													Clear
													Messag

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4.5.1.2.2 THINC-API Notifier

There is a Windows Service called 'Okuma API Notifier' which will be installed on machine, NC Master, and desktop PC. It indicates the status of THINC-API as an icon in the system taskbar.

There are 4 states of THINC-API Notifier as shown below:

1/Waiting State (API white-background icon) – NC is not running yet. THINC-API is not initialized yet.

	Okuma API Notifier Waiting for NC	My Computer
EN AP:		🗞 🏷 😓 🔛 🛄 🛷 🔽 🛛 9:26 AM

2/ Initializing state (API Yellow-background icon) – NC is started and THINC-API is initializing.

Okuma API Notifier NC Running		
E 👷 🖉 🛄 🖭 🗘 🗘 😫 💭 🚳	ً୭ೡ๖ởً⊉₿⊙Щ	8:27 AM

3/ Initialized (API Green-background icon) – THINC-API is successfully initialized with NC and is ready for exchanging data.

	Okuma API Notifier API Initialized	46.8 MB	S My Computer	
EN A	9 🗖 Û Û Û 🛄 Û	Û.	<mark>ё</mark> © 15 % % % <u>8</u> Щ % 1 2	1:51 PM

4/ Failed to initialize (API red-background icon) – NC is started and THINC-API cannot communicate with NC due to some reasons.



By clicking on the icon, it will bring up a dialog and shows status of THINC-API with message, for example:

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4.5.1.3 Errors

4.5.1.3.1 NC Not Running

4.5.1.3.1.1 DATA-API

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Message Form	_ 🗆 🗙
THINC Lathe Sample Application version 1.3.0.0.	
E01000178013 Failed to Init - NC is not running yet	
Please contact OKUMA Software department to resolve problem.	
Please send the entire error message to api@okuma.com for futher investigate	

Problem: THINC-API libraries fail to initialize due to NC running condition.

Solution: Start application developed with THINC-API libraries after NC is running. Custom applications can utilize 'Startup Service' developed by OKUMA to ensure that your custom application starts after NC started.

4.5.1.3.1.2 Command API



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🖶 Message Form	_ 🗆 🗙
THINC Lathe Sample Application version 1.3.0.0.	
Server execution failed	
Please contact OKUMA Software department to resolve problem.	
Please send the entire error message to api@okuma.com for futher investigate	
n reace containte entre entre intecenge te aprejekanta contri fer fanter intecengate.	

Problem: THINC-API libraries fail to initialize due to NC running condition.

Solution: Start application developed with THINC-API libraries after NC is running. Custom applications can utilize 'Startup Service' developed by OKUMA to ensure that your custom application starts after NC started.

4.5.1.3.2 THINC-API dependency library files

THINC-API will check the following files in NC OSP system software for the same or greater file version.

For Lathe:

LDATAPI.dll LCMDAPI.exe Softswitch.exe For MC: MDATAPI.dll MCMDAPI.exe Softswitch.exe For Grinder: GDATAPI.dll GCMDAPI.exe Softswitch.exe

And PIODLIB.dll library

4.5.1.3.2.1 Incorrect file version

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For any reason if the above files listed for Lathe/MC have incorrect file version, a dialog box will display and show the error message of what causing THINC-API sample application fails to run correctly.

📙 Message Form	. 🗆 🗙
THINC Machining Center Sample Application version 1.3.0.0.	
E0102008201 Failed to Validate dependency files version - Okuma.CMDATAPI.dll requie C:\OSP-P\Shareddll\MDATAPI.dll version 1.0.2.1 or above	ires
Please contact OKUMA Software department to resolve problem.	
Please send the entire error message to api@okuma.com for futher investigate.	

The error message shows an incorrect file version:

- Operation: Failed to Validate dependency files version
- Problem: Okuma.CMDATAPI.dll requires C:\OSP-P\SharedDll\MDATAPI.dll version 1.0.2.1 or above.

Solution: Re-Install/Install THINC-API again if any of the above file listed for Lathe/MC has incorrect file version.

4.5.1.3.2.2 Missing Dependency files

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- Message Form	N.	
THINC Machining Center Sample Applicati	on version 1.3.0.0.	
E0102008203 Failed to Validate dependen C:\OSP-P\Shareddll\MDATAPI.dll file.	cy files version - Okum	a.CMDATAPI.dll requires
Please contact OKUMA Software departmer	nt to resolve problem.	
Please send the entire error message to api	⊘okuma.com for futher	investigate.

The error message shows a missing file:

- Operation: Failed to Validate dependency files version
- Problem: Okuma.CMDATAPI.dll requires C:\OSP-P\SharedDll\MDATAPI.dll file.

Solution: If any of the above files listed for Lathe/MC are missing, then an installation of THINC-API to the latest version is needed.

4.5.1.3.3 THINC-API library files

4.5.1.3.3.1 Missing library file

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licrosoft	.NET Framework			د ا
8	An unhandled excep Continue, the applic If you click Quit, the	ation has occurred ation will ignore t application will b	d in your applicati his error and atte be shut down imm	on. If you click mpt to continue. ediately.
	File or assembly na was not found.	me Okuma.CLDA	TAPI, or one of it	s dependencies,
▲ Det	tails		Continue	Quit
System IC System IC File name at thincl at Syste at Syste	(JIT) debugging instea Exception Text Exception Text FileNotFoundExceptio 'Okuma.CLDATAPI'' Lathe.fmMain.Form1_L m.Windows.Forms.For m.Windows.Forms.For	ad of this dialog bo 	y name Okuma.CL r, EventArgs e) rgs e) 10	DATAPI, or one

All applications developed with .NET THINC-API libraries are required to include an exact version of THINC-API libraries with the custom installation. THINC-API libraries compiled with application should be installed with your application folder.

The above error message shows that THINC-API library named Okuma.CLDATAPI.dll cannot be found at the folder where the application runs from.

Solution: Include THINC-API libraries compiled in your application with your custom setup and re-install your application with new setup.

4.5.1.3.3.2 Incorrect library file version

Problem: THINC-API libraries fail to load due to incorrect library version.

Solution: All custom applications developed with THINC-API libraries must install THINC-API libraries in the application's installation folder and must have the same file version as the libraries version compiled with.

4.5.1.3.4 License file

At first run, THINC-API will validate its license file named Okuma.api.lic located in D:\Program Files\Okuma\Licenses folder for correct version per THINC-API library file.

4.5.1.3.4.1 Missing license file

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Message Form	
THINC Machining Center Sam	ple Application version 1.3.0.0.
E01080013001 Failed to check version '1.3' at location 'D:\Pro icense file. (-1,359:2 "No such	c out license feature name 'Okuma.CMDATAPI.All', feature gram files\Okuma\Licenses\okuma.api.lic' - Cannot find file or directory")
Please contact OKUMA Softwa	are department to resolve problem. essage to api@okuma.com for futher investigate.

The error message shows a missing file:

- Operation: Failed to check out license feature name 'Okuma.CMDATAPI.All feature version '1.3' at location 'D:\Program files\Okuma\Licenses\okuma.api.lic'
- Problem: Cannot find license file (-1, 359:2 "No such file or directory")

Solution: If the license is missing, then an installation of THINC-API to the latest version is needed.

4.5.1.3.4.2 Incorrect license file version

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Message Form	
THINC Machining Center Sample Application	version 1.3.0.0.
E01080013001 Failed to check out license feat version '1.3' at location 'D:\Program files\Okun not support this version. (-21,126)	ture name 'Okuma.CMDATAPI.All', feature na\Licenses\okuma.api.lic' - License file does
Please contact OKUMA Software department to	o resolve problem.
Please send the entire error message to api@o	kuma.com for futher investigate.

The error message shows an incorrect license version for a particular THINC-API library:

- Operation: Failed to check out license feature name 'Okuma.CMDATAPI.All feature version '1.3' at location 'D:\Program files\Okuma\Licenses\okuma.api.lic'
- Problem: License file does not support this version. (-21, 126)

Solution: Installation of THINC-API to the latest version is needed.

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2018	

4.5.1.3.4.3 Invalid license file

Message Form
THINC Machining Center Sample Application version 1.3.0.0.
E01080013001 Failed to check out license feature name 'Okuma.CMDATAPI.All', feature version '1.3' at location 'D:\Program files\Okuma\Licenses\okuma.api.lic' - Invalid (inconsistent) license key. (-8,523)
Please contact OKUMA Software department to resolve problem.
Please send the entire error message to api@okuma.com for futher investigate.

The error message shows an invalid license file for a particular THINC-API library:

- Operation: E01080013001 Failed to check out license feature name 'Okuma.CMDATAPI.All', feature version '1.3' at location 'D:\Program files\Okuma\Licenses\okuma.api.lic'
- Problem: Invalid (inconsistent) license key. (-8,523). Probably, the license file has been modified.

Solution: Un-install current version and install THINC-API to the latest version.

4.5.1.3.4.4 Expired license file

Installation Manual Date: 03/07/2018	THINC-API	Version:	S5015-007-09
	Installation Manual	Date: 03/07/2018	

Message Form		
THINC Lathe Sample	Application version 1.3.0.0.	
E01080013006 Failed version '1.3' at location expired. <mark>(</mark> -10,32)	to check out license feature name 'Okuma.CLI n 'D:\Program files\Okuma\Licenses\okuma.a	DATAPI.All', feature pi.lic' - Feature has
Please contact OKUM/	A Software department to resolve problem.	
Please send the entire	error message to api@okuma.com for futher in	ivestigate.

The error message shows an expired license file for a particular THINC-API library:

- Operation: E01080013001 Failed to check out license feature name 'Okuma.CLDATAPI.All', feature version '1.3' at location 'D:\Program files\Okuma\Licenses\okuma.api.lic'
- Problem: Feature has expired (-10,32)

Solution: Install THINC-API to the latest version with permanent license file. <u>Please see section '4.3</u> <u>Install External License file' for installing external license file.</u>

4.5.1.3.4.5 Flexnet License library

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2018	

Message Form	_ 🗆 🗙
THINC Machining Center Sample Application version 1.3.0.0.	
File or assembly name Okuma.FlexNet, or one of its dependencies, was not found.	
Please contact OKUMA Software department to resolve problem.	
Please send the entire error message to api@okuma.com for futher investigate.	

The error message shows that a dependency library for THINC-API library cannot find in GAC (Global Assembly Cached (\Windows\assembly) folder:

- Problem: File or assembly name Okuma.FlexNet, or one of its dependencies, was not found.

Solution: Install THINC-API to the latest version.

4.5.2 Logging Service & Logging Service Client Application

4.5.2.1 Logging Service

At first run, THINC-API libraries will connect with Logging Service utility.

The Logging Service could fail to load correctly as indicated below:

THINC-API	Version:	\$5015-007-09
Installation Manual	Date: 03/07/2018	

- Message Form	_ 🗆 🗙
THINC Machining Center Sample Application version 1.3.0.0.	
E010200821 Failed to load Logging Service - ApiLog.initConnection: Failed to locate database file at D:\Program Files\Okuma\LoggingService\log.fdb -	
Please contact OKUMA Software department to resolve problem.	
Please send the entire error message to api@okuma.com for futher investigate.	

The error message shows a missing file:

- Operation: Failed to load Logging Service
- Problem: Failed to locate database file at D:\Program Files\Okuma\LoggingService\log.fdb

Solution: Re-install or install THINC-API libraries to the latest version.

Installation Manual Date: 03/07/2018	THINC-API	Version:	S5015-007-09
	Installation Manual	Date: 03/07/2018	

Message Form		
THINC Machining Center	Sample Application version 1.3.0.0.	
E010200821 Failed to loa network request to host "l -	d Logging Service - ApiLog.initConnection: Unable ocalhost".	to complete
Please contact OKUMA S	oftware department to resolve problem.	e
	or message to apre orania, com for ranier investigat	

The error message shows that the Logging Service server is not running on the local machine (localhost):

- Operation: Failed to load Logging Service
- Problem: ApiLog.initConnection: Unable to complete network request to host "localhost"

Solution:

Make sure that FireBird server status is running. If not, start the FireBird server from Service



Or

Re-install or install THINC-API libraries to the latest version.

Installation Manual Date: 03/07/2018	THINC-API	Version:	\$5015-007-09
	Installation Manual	Date: 03/07/2018	

4.5.2.2 Logging Library

Message Form	_ 🗆 🗙
THINC Machining Center Sample Application version 1.3.0.0.	
File or assembly name Okuma.Apilog, or one of its dependencies, was not found.	
Please contact OKUMA Software department to resolve problem.	
Please send the entire error message to api@okuma.com for futher investigate.	

The error message shows that a dependency library for THINC-API library cannot find in GAC (Global Assembly Cached \Windows\assembly) folder:

- Problem: File or assembly name Okuma. ApiLog or one of its dependencies, was not found.

Solution: Install THINC-API to the latest version.

4.5.2.3 Logging Service Client Application

The Logging Client application is a utility that allows one to view all logging records logged by THINC-API libraries at different logging level.

A successful loading of LoggingServiceClient application is shown below:

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2018	

	01/24/2008 11:47:28	AM To Date 01/25/2008 11:47:28 AM	Administration
Application		▼ Search	Logging level 🛛 🔻
Class		Clear	
lethod		Export to text	2 - Set Functions 3 - Get Functions 4 - Log All Events
.ogging level		•	Logging level will reset to level 2 upon exiting this application.

LoggingServiceClient application could fail to load up correctly if the logging database file is missing or Logging Service does not start yet.

Please refer to section 4.4.2.1 and 4.4.2.2 for correcting the problems.

4.5.2.4 Logging Service for .NET Framework 4.0 THINC-API libraries

THINC-API libraries compiled with .NET Framework will not use Okuma.ApiLog.dll library any more. It will use Okuma.ApiLog2.dll instead. The following libraries and application are used for logging service and installed in D:\Program files\Okuma\LoggingService2 folder: Okuma.Api.LogService.WinHost.exe Okuma.Api.LogService.dll System.Data.SQLite.dll ApiLog2

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2018	

	🔍 O2FLASH		Started	Automatic (Local Syst
	Generation Source Engine	Saves install		Manual	Local Syst
	Gffice Software Protection Platform	Enables the	Started	Manual	Network S.
	GfficeScan Common Client Solution Frame	Manages a	Started	Manual	Local Syst
	GfficeScan NT Listener	Receives co	Started	Automatic	Local Syst
-	OfficeScan NT Proxy Service	Scans netw		Manual	Local Syst
	🔍 OfficeScan NT RealTime Scan	Performs Re	Started	Automatic	Local Syst
	🔍 Offline Files	The Offline		Disabled	Local Syst
	🛸 OKUMA API Logging Service Win Host	Logging Ser		Automatic	Local Syst
	🔍 Okuma API Notifier	Detects that		Automatic	Local Syst
	OkumaWinSvcHostedCalcService	OKUMA WC		Disabled	Local Syst

The logging service client application is part of Lathe, Machining Center, and Grinder Test application as shown below:

THINC-API For Grinder				
MacMan - Machining Report MacMan - Operating	History MacMan - Operation History	MacMan - Operating Repo	ort API Logging Service	e 🔸
Log Information				
Starting Date	Ending Date			Display Log Records
11/14/2016 15:15:41	11/14/2016 15:15:41			
Application Name Like:	Class Name Like:	and the second s	Logging Level <=:	logException -
Function Name Like:	I/O Parameters Like:		Message Like:	
Date Application Class Logged Name Name	Method I/O Name Parameters	Logging Level Messa	ge	
				Clear Message
				-

5. Repair/Uninstall THINC-API

5.1 Repair/Un-install

If THINC-API already installed, the setup will ask for either Repair or Remove the current THINC-API installation.

THINC-API	Version:	\$5015-007-09
Installation Manual	Date: 03/07/2018	

5.1.1 Repair

The setup will try to re-install all files current being installed on machine.

5.1.1.1 Run Setup

Run the THINC-API from Add or Remove Programs or source of media Note: The original source of THINC-API setup must be available and accessible from Windows drive.

🐞 Add or Re	move Programs			
	Currently installed programs:	Sort by: Name		~
Change or	Rational XDE Developer Plus for .NE I	Size	647.00MB	~
Remove Programs	🗯 SnagIt 6	Size	13.09MB	
	🚀 TestDriven.NET 2.2 Beta Personal	Size	5.98MB	
	15 THINC-API	Size	<u>15.84MB</u>	
Add New	Click here for support information.	Used	<u>rarely</u>	
Programs		Last Used On	5/11/2007	
-	To change this program or remove it from your computer, click Change/Remove.	Chang	ge/Remove	
	🔂 ToolIDWS	Size	0.75MB	
<u>Windows</u>	💯 Trend Micro OfficeScan Client	Size	57.86MB	
Components	🔂 Trouble Information Viewer	Size	0.91MB	
	🔀 Update for Windows XP (KB898461)	Size	4.89MB	=
Cab Duaguage	🔀 Update for Windows XP (KB931836)			_
Access and	🗞 VBCommenter	Size	0.43MB	
Defaults	R VBDocAddin	Siza	0.41MB	Y

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2018	



THINC-API - I	nstallShield Wizard 🛛 🛛 🔀
Welcome Modify, repair	r, or remove the program.
Welcome to current instal	the THINC-API Setup Maintenance program. This program lets you modify the lation. Click one of the options below.
🚫 Repair	
F	Reinstall all program features installed by the previous setup.
◯ Remove	
8	Remove all installed features.
InstallShield ——	
	< Back Next > Cancel

Select the "Repair' option and press Next to continue the process

THINC-API	Version:	\$5015-007-09
Installation Manual	Date: 03/07/2018	

If you select 'Remove' and press Next, the installation will ask for your confirmation to remove current THINC-API installation.

THINC-API - InstallShield Wizard	
Welcome Modify, repair, or remove the program.	4
Welcome to the THINC-API Setup Maintenance program. This program lets you modify the current installation. Click one of the options below.	
THINC-API - InstallShield Wizard	
Do you want to completely remove the selected application and all of its features?	
Yes No	
⊙ Remove	
Remove all installed features.	
InstallShield	
< Back Next > Canc	el

Click Yes to continue with the installation process or click No to review/change any settings.

THINC-API	Version:	\$5015-007-09
Installation Manual	Date: 03/07/2018	

5.1.1.2 Setup

THINC-API - InstallShield Wizard	×
Setup Status	
THINC-API is configuring your new software installation.	
Publishing assembly information	
	Cancel

At any time, you can press Cancel button to terminate the installation.

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2	2018

5.1.1.3 Finish

THINC-API - InstallShield Wizard		
	Maintenance Complete InstallShield Wizard has finished performing maintenance operations on THINC-API. • Yes, I want to restart my computer now. • No, I will restart my computer later. Click Finish to complete setup.	
	< Back Finish Cancel	

Click Finish to just finish the installation process.

5.1.2 Uninstall

5.1.2.1 Run setup

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2	2018

-			0-5		_
	Currently installed programs:	Sort by:	Name		-
nange or	Rational XDE Developer Plus for .NET		Size	647.00MB	
emove ograms	🛱 SnagIt 6		Size	13.09MB	
	🖋 TestDriven.NET 2.2 Beta Personal		Size	5.98MB	
	🔂 THINC-API		Size	<u>15.84MB</u>	ſ
id <u>N</u> ew	Click here for support information.		Used	<u>rarely</u>	
ograms		Last Us	ed On	5/11/2007	
-	To change this program or remove it from your computer, click Change/Remove.		Chang	je/Remove	
	🔂 ToolIDWS		Size	0.75MB	ľ
ndows	🗽 Trend Micro OfficeScan Client		Size	57.86MB	
ponents	B Trouble Information Viewer		Size	0.91MB	
	🔀 Update for Windows XP (KB898461)		Size	4.89MB	
	🔂 Update for Windows XP (KB931836)				1
ess and	🗞 VBCommenter		Size	0.43MB	
efaults			Size	0.41MB	



THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2018	

THINC-API - I	nstallShield Wizard 🛛 🔀
Welcome Modify, repai	r, or remove the program.
Welcome to current instal	the THINC-API Setup Maintenance program. This program lets you modify the lation. Click one of the options below.
🚫 Repair	
F	Reinstall all program features installed by the previous setup.
◯ Remove	
8	Remove all installed features.
InstallShield —	

Select 'Remove' and press Next.

The installation will ask for your confirmation to remove current THINC-API installation.

Installation Manual Date: 03/07/2018	THINC-API	Version:	S5015-007-09
	Installation Manual	Date: 03/07/2018	

THINC-API - InstallShield Wizard	X
Welcome Modify, repair, or remove the program.	X
Welcome to the THINC-API Setup Maintenance program. This program lets you modify current installation. Click one of the options below.	the
THINC-API - InstallShield Wizard	
Do you want to completely remove the selected application and all of its features?	
Yes No	
 Remove 	-
Remove all installed features.	
InstallShield	
< Back Next > 0	Cancel

Click Yes to continue with the installation process or click No to review/change any settings.

5.1.2.2 Setup Status

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/2018	

THINC-API - InstallShield Wizard	X
Setup Status	
THINC-API is configuring your new software installation.	
Publishing assembly information	
InstallShield	Cancel

At any time, you can press Cancel button to terminate the installation.

5.1.2.3 Finish

THINC-API	Version:	S5015-007-09
Installation Manual	Date: 03/07/	/2018

THINC-API - InstallShield V	Vizar d
	Uninstall Complete InstallShield Wizard has finished uninstalling THINC-API.
	K Back Finish Cancel

Click Finish to just finish the installation process.

6. Installation Files

The following files are considered *THINC-API libraries* which are included in the subfolder *program files\Okuma\THINC API\Bin:*

-	Okuma.CLDATAPI.dll	
-	Okuma.CLCMDAPI.dll	
-	Okuma.CLDATAPI.xml	(Visual Studio Brower Help files)
-	Okuma.CLCMDAPI.xml	(Visual Studio Brower Help files)
-	Okuma.CMDATAPI.dll	
-	Okuma.CMCMDAPI.dll	
-	Okuma.CMDATAPI.xml	(Visual Studio Brower Help files)
-	Okuma.CMCMDAPI.xml	(Visual Studio Brower Help files)
-	Okuma.CGDATAPI.dll	
-	Okuma.CGCMDAPI.dll	
-	Okuma.CGDATAPI.xml	(Visual Studio Brower Help files)
-	Okuma.CGCMDAPI.xml	(Visual Studio Brower Help files)

THINC-API	Version: \$5015-007-09		
Installation Manual	Date: 03/07/2018		

6.1 Machine Installation

- 6.1.1 Lathe
- 6.1.1.1 GAC Folder

THINC-API libraries:

- Okuma.CLDATAPI.dll
- Okuma.CLCMDAPI.dll

Logging Service library:

- Okuma.Apilog2.dll
- · Okuma.Api.LogService.dll
- Okuma.Api.LogService.Data.dll

Dependency library files for THINC-API:

Okuma.Interop.LCMDAPI.dll

6.1.1.2 Okuma Folders

THINC-API Release notes: D:\Program files\Okuma\THINC API \ LatheReleaseNote.pdf

THINC-API Installation Manual: D:\Program files\Okuma\THINC API \InstallationManual.pdf

THINC-API license file: D:\Program files\Okuma\Licenses\Okuma.api.lic

THINC-API Help file:

D:\Program files\Okuma\THINC API\Help\THINLathe.chm

THINC-API Sample application folder: D:\Program files\Okuma\THINC API \THINCLathe

THINC-API libraries and Visual Studio Brower Help files:

- D:\Program files\Okuma\THINC API \bin
 - Okuma.CLDATAPI.dll
 - Okuma.CLCMDAPI.dllOkuma.CLDATAPI.xml
 - Okuma.CLDATAPI.xml (Visual Studio Brower Help files)
 - Okuma.CLCMDAPI.xml (Visual Studio Brower Help files)

Logging Service folder:

D:\Program Files\Okuma\LoggingService2

- ApiLog2
- Okuma.Api.LogService.dll
- Okuma.Api.LogService.WinHost.exe
- Okuma.Api.LogService.WinHost.exe.config
- System.DataSQLite.dll

THINC-API	Version: S5015-007-0		
Installation Manual	Date: 03/07/2018		

6.1.2 Machining Center

6.1.2.1 GAC Folder

THINC-API libraries:

- Okuma.CMDATAPI.dll
- Okuma.CMCMDAPI.dll

Logging Service library:

- · Okuma.Apilog2.dll
- Okuma.Api.LogService.dll
- Okuma.Api.LogService.Data.dll

Dependency library files for THINC-API:

Okuma.Interop.MCMDAPI.dll

6.1.2.2 Okuma Folders

_

THINC-API Release notes: D:\Program files\Okuma\THINC API \MCReleaseNote.pdf

THINC-API Installation Manual: D:\Program files\Okuma\THINC API \InstallationManual.pdf THINC-API license file for both Lathe & MC:

D:\Program files\Okuma\Licenses\Okuma.api.lic

THINC-API Help file:

D:\Program files\Okuma\THINC API\Help\THINCMC.chm

THINC-API Sample application folder: D:\Program files\Okuma\THINC API \THINCMC

THINC-API libraries and Visual Studio Brower Help files:

D:\Program files\Okuma\THINC API \bin

- Okuma.CMDATAPI.dll
- Okuma.CMCMDAPI.dll
- Okuma.CMDATAPI.xml (Visual Studio Brower Help files)
- Okuma.CMCMDAPI.xml (Visual Studio Brower Help files)

Logging Service folder:

D:\Program Files\Okuma\LoggingService2

- ApiLog2
- Okuma.Api.LogService.dll
- Okuma.Api.LogService.WinHost.exe
- Okuma.Api.LogService.WinHost.exe.config
- System.DataSQLite.dll

6.1.3 Grinder

6.1.3.1 GAC Folder

THINC-API libraries: - Okuma.GGDATAPI.dll Okuma.CGCMDAPI.dll

Logging Service library:

- Okuma.Apilog2.dll
- Okuma.Api.LogService.dll
- Okuma.Api.LogService.Data.dll

Dependency library files for THINC-API:

Okuma.Interop.GCMDAPI.dll

6.1.3.2 Okuma Folders

THINC-API Release notes: D:\Program files\Okuma\THINC API \ReleaseNote.pdf

THINC-API Installation Manual: D:\Program files\Okuma\THINC API \InstallationManual.pdf

THINC-API license file for Lathe, MC, and Grinder: D:\Program files\Okuma\Licenses\Okuma.api.lic

THINC-API Help file: D:\Program files\Okuma\THINC API\Help\THINCGrinder.chm

THINC-API Sample application folder: D:\Program files\Okuma\THINC API \THINCGrinder

THINC-API libraries and Visual Studio Brower Help files:

D:\Program files\Okuma\THINC API \bin

- Okuma.CGDATAPI.dll
- Okuma.CGCMDAPI.dll
- Okuma.CGDATAPI.xml (Visual Studio Brower Help files)
- Okuma.CGCMDAPI.xml (Visual Studio Brower Help files)

Logging Service folder:

D:\Program Files\Okuma\LoggingService2

- ApiLog2
- Okuma.Api.LogService.dll
- Okuma.Api.LogService.WinHost.exe
- Okuma.Api.LogService.WinHost.exe.config
- System.DataSQLite.dll

6.2 Desktop Installation

All 3 libraries for Lathe, Machining Center, and Grinder can be installed when desktop installation is detected. The installation will consider desktop installation when there is no OSP-P folder on C drive.

All libraries and applications will be installed for each selection of machine types.

THINC-API	Version: \$5015-007			
Installation Manual	Date: 03/07/2018			

7. Installation for Custom Application

This section describes the process of installing custom applications developed with THINC API libraries. This process allows custom applications developed with any version of THINC-API to run on machine without affecting other custom applications running with different versions of THINC-API libraries.

In order for a custom application to run on machine, the following steps need to be done as listed below:

7.1 THINC-API Spec. Code

In order for THINC-API to function, a spec. code for THINC-API must be enabled on the machine. To enable THINC-API, it must be requested through distributor or Okuma Software Group. Currently, this process is done by installing the OSP System Software on the machine.

On Machining Center, THINC-API spec. code, CAPI on No 32, can be verified visually on the NC HMI screen as shown below:

			S.T.M	ţo,	禄	回認			?	Caps Lock	2007/10/05 09:50:55
AUTO	OPERATION			Lcs1	5cpx.min	A-M	ITD	FMS O	FF(OFF-L	.INE)	
4102	ATTN CAS	softw	are pro	ocess wa	iting 4						<u>ey</u>
SPEC	CODE				1inc	h (PROGR	AM)	01234	Ν		3
NO	. DATA BIN	HEX	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BITO	
2	1 00001011	0 B	TPRB	TSNS	ATRT	DRME	DNCE	PRNT	TLLF	TLCH	
2	2 11101010	EA	CV10	CV2	DNT1		DNT3		DNDT	OHSP	
2	3 0000000	00	YAEC	NSRC	2TOF	DYNZ	DYNY	DYNX	ITPG	TRNC	
2	4 0000000	00	MSB7	MSB6	MSB 5	MSB4	MSB3	MSB2	MSB1	MSB0	
2	5 11100000	EO	LSVP	MOPB	LNRP			SHNC	NBS	SHSI	
2	6 10000011	83	TWRC	STRC	PHDG	MSKP	SATM	SAMS	MNMS	SPAE	
2	7 01000001	41	ANCR	EXIO	PHAR		SRAC	NACF		SYTP	
2	8 10101001	A9	CLM	Z100	G68S	CLDC	CHMF	BITL		PB12	
2	9 00001000	08	PHD6	PHD5	PHD4	THSB	Z200	F1FD	IGFD	THCM	-
3	0 00100010	22	FSPB	DPDI	NRSP	TNDM	WIOP	NTHC	HELP	PHD7	
3	1 11000000	C 0	OACS	EXMC	IGFA	2SLT	MSUS	PE10	PER5		-
3	2 10000101	85	NOPN				BRLT	CAPI		KKMN	
									1		
			[DISPI	AY
È										CHAN	GE

On Grinder, THINC-API spec. code, CAPI on No 22 bit 0, can be verified visually on the NC HMI screen as shown below:

Installation Manual Date: 03/07/2018	THINC-API	Version:	S5015-007-09	
Instantion Manual Date: 05/07/2010	Installation Manual	Date: 03/07/2018		

EC C	ODE 2				1inch		0920	N		2
										-
NO.	DATA	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0	
13	00001001				BAPR	ANSA		EMR2	EMRN	
14	00000000				VLMC	SDBK	WKWT	FEDRT	ASTF	
15	00000011						SDFP	SDFS	SDFN	
16	00100010			GPGA	GI			EXUN	INUN	
17	00001101					UTSK3	MSG	IOVE	CSHT	
18	00000010				LDRS			WAID		
19	00000011				MDRS			IGAP2	IGAP	
20	00000000							1	·	
21	00011000		EOFS		EOPL	BOPS	OBFX	MAMD		
22	00000001						TALM	OAPI	CAPI	
23	00000001							CEMSC	MFU	
24	00000000									
			1	11						

Note: There is no NC-HMI screen for verifying spec code on Lathe machine.

7.2 License

All *THINC-API libraries* require a valid license file to run on machine. There is only a single license file, Okuma.api.lic, for all THINC-API libraries version. The setup itself includes a time-out version of license file and is installed in D:\Program Files\Okuma\Licenses folder. Your custom application or demo application can be run in this trial period.

Currently, the trial period is fixed to certain date in the license file.

For example:

This license file will be expired in Oct 1, 2008 for Okuma.CLDATAPI.All version 1.2. This license file can be used on any machine.

FEATURE Okuma.CLDATAPI.All okumausa 1.2 01-oct-2008 uncounted \ HOSTID=ANY TS_OK SIGN="00EB B55A 56DD A45F 75D6 F491 231F CD00 \ 2BA2 A406 AE0F 932B C574 7230 959C"

FEATURE Okuma.CMDATAPI.All okumausa 1.2 01-oct-2008 uncounted \backslash HOSTID=ANY TS_OK SIGN="00D7 1F45 6055 FEBE 8654 2089 A431 B100 \backslash EE6E 0E40 BAED 4AA3 B350 78DA 8955"

		_
Installation Manual Date: 03/07/	7/2018	

FEATURE Okuma.CLCMDAPI.All okumausa 1.0 01-oct-2008 uncounted \ HOSTID=ANY TS_OK SIGN="00D6 079F E750 1E50 F866 794A 9058 3900 \ 7BA4 97FD 199B 9809 7F19 DD09 41FD"

FEATURE Okuma.CMCMDAPI.All okumausa 1.0 01-oct-2008 uncounted \ HOSTID=ANY TS_OK SIGN="00B3 3BC6 ED99 A792 24E0 A99C B6D5 9000 \ CCF9 B436 0BDA 7283 CCAA 5BE6 E6FC"

FEATURE Okuma.ControlType.P200 okumausa 1.0 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="006A 4D47 5A17 E95C 4AC1 1494 852F DB00 A98 F8BE 5366 B02E 10E4 1220 2FCF"

The non-expired license file must be obtained through Okuma Software Group if you are a customer only. Each THINC-API library will check this license for correct version. The library version should be equal or less than the version in the license file to run.

Sample valid license file per machine serial number:

FEATURE Okuma.CLDATAPI.All okumausa 1.1 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="00C3 4CCD E2DB 439D 0F83 4805 \ 9C14 DF00 291B D46A 71BD A96A 61A0 5A54 D18B"

FEATURE Okuma.CLCMDAPI.All okumausa 1.0 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="00A3 F5EF 4872 1C12 27C9 8E5B \ C5B9 4D00 5300 1FF5 D0B4 1371 DC59 4FB9 CEDD"

FEATURE Okuma.CMDATAPI.All okumausa 1.1 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="00B8 7E90 2B05 9535 94E4 92CB \ C8BB B100 89C1 3E47 820D E045 931C EC07 68A9"

FEATURE Okuma.CMCMDAPI.All okumausa 1.0 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="00B2 0B95 F2BC 0E10 D351 D60A \ 60F8 E100 1904 FC87 685A 09D0 A1BC 1C45 8B52"

FEATURE Okuma.CGDATAPI.All okumausa 1.0 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="00B8 7E90 2B05 9535 94E4 92CB \ C8BB B100 89C1 3E47 820D E045 931C EC07 68A9"

FEATURE Okuma.CGCMDAPI.All okumausa 1.0 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="00B2 0B95 F2BC 0E10 D351 D60A \ 60F8 E100 1904 FC87 685A 09D0 A1BC 1C45 8B52"

FEATURE Okuma.ControlType.P200 okumausa 1.0 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="006A 4D47 5A17 E95C 4AC1 1494 852F DB00 A98 F8BE 5366 B02E 10E4 1220 2FCF"

This license file is for machine having serial number 105330 only. It will not work on other machines having different serial number. It will support Okuma.CLDATAPI.dll library having a version that equals to or less than 1.1, and so for. This license file can support function calls for P200 or newer control types.

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Installation Manual	Date: 03/07/2018		

7.3 Installation

As normal case for all Windows installation program, THINC-API Setup will run through the installation if:

- THINC-API is not installed on the target machine.
- If existing version of THINC-API on machine is less than the installing version

For custom application developed with THINC-API:

All and **ONLY** THINC-API libraries referenced by your application such as

Okuma.CLDATAPI.dll, Okuma.CMDATAPI.dll, and Okuma.CGATAPI.dll must be included in your setup and installed in the same folder of your custom application.

- The libraries version referenced in your application must match (exact match since this library is signed with strong name) the libraries installed in your application folder.

- The THINC-API license file, Okuma.api.lic, installed on machine must support the THINC-API libraries version that your application are compiled with.

For example:

The machine has installed THINC-API and the version of Okuma.CLDATAPI is 1.1 as shown below

FEATURE Okuma.CLDATAPI.All okumausa 1.1 permanent uncounted \ HOSTID=SERIAL=105330 TS_OK SIGN="00C3 4CCD E2DB 439D 0F83 4805 \ 9C14 DF00 291B D46A 71BD A96A 61A0 5A54 D18B"

Your custom application is compiled with Okuma.CLDATAPI version 1.2. In this case, the customer needs to obtain the latest THINC-API release and install on the machine.

For all cases, the latest release of THINC-API will cover all custom applications running on the machine and compiled with different version of THINC-API. The latest release of THINC-API always has the latest version of THINC-API libraries and the license file supports latest THINC-API libraries versions, also.

In all cases, the following files must not be included with the installation of custom applications developed with THINC-API libraries:

- LCMDAPI.exe
- MCDMAPI.exe
- GCMDAPI.exe

7.4 Public Release

All custom applications developed with THINC-API must use the public release 1.0.0.0 or above. Any version before public release version will have compatibility issues with public release version and will not run correctly.

7.5 Best Practice

An application should verify all dependency libraries during run-time and encourages using the latest version of THINC-API release if possible. A re-compile of your application is a must to leverage new version of THINC-API features or bugs/defects fixes.

An application must install .NET framework version that it is compiled with.

The installation process comprises 2 steps:

- 1. Install THINC-API (.NET Framework 1.1/4.0 will also be installed if needed)
- 2. Install custom application (requires installing .NET Framework that application compiled with. It could be .NET Framework version 2.0. 3.0, and so on)

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3. All exceptions generated by API and all set/add/cal functions will be logged. Therefore, the application must be designed to minimize unnecessary log by utilizing Object-Oriented Programming practices or preventing perform set/add/cal functions in a loop.

```
Example of bad practice:
```

Dim m_objTools As CTools Dim intValue As Integer

m_objTools = New CTools

•••

Private Sub UpdateThread()

While (blnRunning)

m_objTools.SetSubSystem(SubSystemEnum: NC_AL)
intValue = m_objTools. GetCurrentToolNumber ()
.
.
.
m_objTools.SetSubSystem(SubSystemEnum: NC_BL)
intValue = m_objTools. GetCurrentToolNumber ()

End While End Sub

Example of good practice:

Dim m_objATurretTools As CTools Dim m_objBTurretTools As CTools Dim intValue As Integer

m_objATurretTools = New CTools
m_objATurretTools .SetSubSystem(SubSystemEnum: NC_AL)

m_objBTurretTools = New CTools
m_objBTurretTools .SetSubSystem(SubSystemEnum: NC_BL)

•••

Private Sub UpdateThread()

While (blnRunning)
 intValue = m_objATurretTools . GetCurrentToolNumber ()
 .
 intValue = m_objBTurretTools. GetCurrentToolNumber ()
 .
 End While

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End Sub

All custom applications also need to install into D:\Program Files folder only.