

General Specifications

GS 36J04A10-01E

NTPP001, NTPP002, NTPP003, NTPP004, NTPP005, NTPP006, NTPP007, NTPP008, NTPP009



Exaquantum Plant Information Management System

■ GENERAL

Exaquantum is a Plant Information Management System (PIMS) product that provides business benefits to users in the Hydrocarbons, Chemicals, Power & Utilities, Pulp & Paper and many other industries. The main function of Exaquantum is the acquisition of data from all facets of a business and the subsequent transformation of that data into easily usable, high-value, widely-distributed information. The data then becomes an integral part of the set of tools used by the business in vital decision-making processes.

Exaquantum supports rapid plant-related deployment, making the software easy to implement within plant-specific operational environments. This allows information to be structured sensibly around the production calendars and shift patterns in the plant.

Exaquantum is the business intelligent gateway between the operational Process Control System (PCS) and the business Enterprise Resource Planning (ERP) system. It uses the latest, proven, Microsoft based open technology sets, designed to have low administration costs, and be robust to future IT trends.

Exaquantum comprises the following features:

- Process Control Systems Interface
- Data processing and storage
- Role Based View of Exaquantum resources
- Visualization – Exaquantum/Explorer and Web UI
- Multiple server support
- Data exposure via APIs/ODBC/OLE DB/OPC.

■ KEY FEATURES

● Process Control Systems Interface

Exaquantum primarily uses embedded OPC clients to access PCS data with the following OPC servers.

Data Access – OPC DA 2.05a Compliant

- Yokogawa Exaopc for CENTUM VP, CS 3000, CENTUM CS, STARDOM and DARWIN.
- Yokogawa Exaopc-RD Redundancy package (*1)
- Yokogawa FAST/TOOLS SCADA
- OPC servers for Honeywell TDC 3000, Honeywell PHD, Foxboro I/A series, Emerson DeltaV and Modbus, etc, from other suppliers.

Alarms and Events Access – OPC A&E 1.1 Compliant

- Yokogawa Exaopc for CENTUM VP, CS 3000, CENTUM CS.
- Yokogawa Exaopc-RD Redundancy package. (*1)
- OPC A&E Servers from other suppliers.

Historical Data Access – OPC HDA 1.1 Compliant

- Yokogawa Exaopc for CENTUM VP, CS 3000, CENTUM CS.
- Yokogawa Exaopc-RD Redundancy package. (*1)
- OPC HDA Servers from other suppliers.

Text Files

Import and export data using, an Exaquantum defined ASCII format.

*1: For the combination of Exaquantum with Exaopc-RD, please contact Yokogawa representatives.

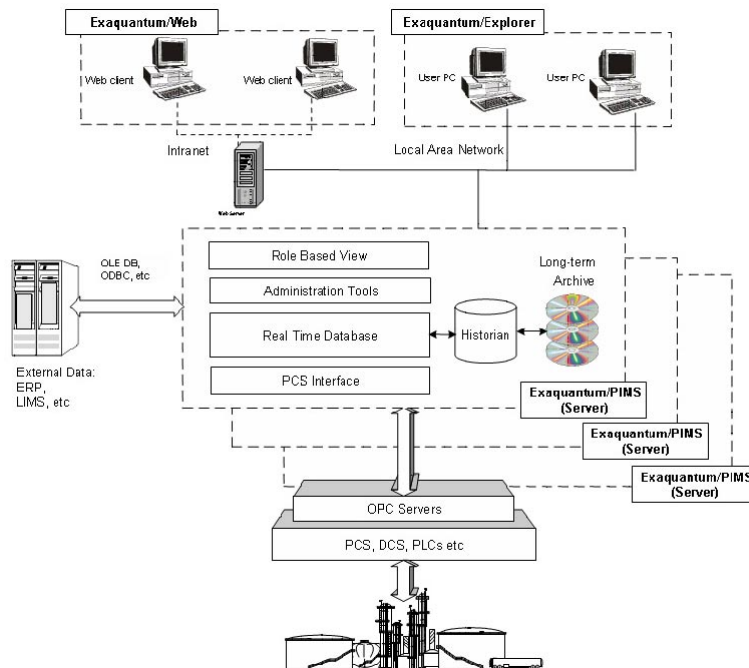


Figure: Exaquantum Overview

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● Data Processing and Storage

The Exaquantum Real Time Data Base (RTDB) is a business aware, tag-based environment that provides the first level for intelligent handling of process data, ensuring optimized data enhancement. This is achieved through:

- **Quality Codes.** Users can judge the validity and reliability of data at a glance. Exaquantum assigns quality codes to data that is transparent to data users. Quality Codes do not count as licensed tags.
- **Aggregations.** Basic statistical functions (minimum, maximum, mean, standard deviation, summations, differential summation and spot value) are calculated and stored using tag values over defined (hour, day, month or user-defined) time periods. Aggregations do not count as licensed tags.
- **Custom Aggregations.** Users can specify custom aggregation periods using the Exaquantum Excel Add-In or API.
- **Function Block.** Users can configure relational complex data processing groups as function blocks allowing easy and repeated use of data.
- **KPI Calculations.** Users can script simple or complex logic to create raw or aggregated values using calculated tags.
- **Exaopc HDA.** Following an Exaquantum shutdown period, Exaquantum can access Exaopc's (R2.10 or later) HDA server to retrieve missing process data (allowing aggregated and calculated values to also be generated) and Alarms & Events. For a LAN interruption, Exaquantum can access Exaopc's (R3.10 or later) HDA server to retrieve missing process data.
To enable Exaopc History Catch-Up functionality, it is necessary to install Exaopc on a separate server to that used by Exaquantum. The specification of the Exaopc server must be suitable for History Catch-Up to perform properly.

Exaquantum also contains a Historian that securely stores large amounts of process data. It's powerful and fast storage and retrieval capabilities means there is virtually no limit to the amount of historical data that can be available online. Automatic archiving and deletion permits older data to be removed from the system.

● Role Based Name Space (RBNS)

Exaquantum can be configured to provide each user with their own Microsoft Windows group-personalized folder hierarchy and naming convention view of Exaquantum process data when using the Exaquantum Data Selector within Exaquantum/Explorer, Exaquantum/Web or the Exaquantum Excel add-in across all Exaquantum servers.

The Exaquantum administrator controls read and write access to Windows defined user groups. Read-only access allows process data to be viewed on displays by users. Write access allows users to write data to Exaquantum on a function block or tag basis.

● Multiple Servers Support

Multiple Exaquantum servers can seamlessly integrate their process data together to allow visualization on a single display screen or report. For example, a display screen may consist of a textual tag field showing data from one Exaquantum server and a trend showing data from another Exaquantum server.

A Primary and Standby Exaquantum server is designated to contain the Role Based View information accessed by the users.

If Exaquantum calculation tags require inputs from tags located on other Exaquantum servers then this functionality (cross server calculations) is available by purchasing the Exaquantum Open Interface (NTPP007).

All Exaquantum servers must contain the same software revision.

● User Interfaces

Exaquantum provides the following user interfaces.

Exaquantum/Explorer

For users who need to create standard, pre-configured, fixed or ad-hoc display screens, the following Exaquantum/Explorer design tools are available:

- Graphics configuration and runtime support, with components such as Trends, X-Y Plots, Tubular Trends, Data Entry Grid, Data Write Back, Alarms and Events viewing, Excel Viewer and Web Browser.
- Advanced features such as Report Times, Scripting, Navigation and Data Parameterization.
- Excel Add-In for reporting and analysis of Exaquantum data.

Exaquantum/Explorer can be installed on a CENTUM HIS station.

Exaquantum/Web

For users who want to take advantage of the latest Web technology with Microsoft Internet Explorer deployed on their PCs. Exaquantum/Web is a functionally equivalent sub-set of Exaquantum/Explorer and supports the following features:

- Plant graphics containing dynamic plant views created with the Exaquantum Web Graphics Editor.
- Pre-configured Trends and Alarms & Events views.
- Role Based Name Space display of function blocks and tags where a user can view and update (if authorized) function blocks and tags.
- Excel Add-In for reporting and analysis of Exaquantum data in the Web environment and is compatible with Exaquantum/Explorer Excel Add-In.

Exaquantum/Web can be installed on a CENTUM HIS station.

Exaquantum Display Conversion Tool

This tool converts CENTUM VP, CS 1000 and CS 3000 displays into Exaquantum/Explorer and Exaquantum/Web displays.

● Data Availability via ODBC & OLE DB

Exaquantum raw, aggregated and calculated values, along with Alarms & Events, can provide valuable information to 3rd party application packages. The Exaquantum ODBC and OLE DB interfaces can be used to access this information.

These two interfaces allow users to view a 'snapshot' of Exaquantum data using minimal programming.

● Data Access through OPC

Application packages can access Exaquantum data via the Exaquantum OPC server, which supports OPC DA 2.05a and HDA 1.1.

● PI OPC Open Interface

Exaquantum process data and alarms & events data can be read by a PI System. Tag definition data can be exported from Exaquantum, using Excel or text files to enable effective engineering of the PI System. PI must have an equal number of tags to map Exaquantum data.

Note: The number of tags required for PI is the total of Exaquantum's instantaneous values and all the aggregation items.

Note: If the PI connection feature is required, please contact your local Yokogawa representative in advance of implementation as some configuration is required.

■ BUSINESS BENEFITS

The business benefits of making information available are both diverse, and industry-specific. Some of the typical benefits are described below.

● Information Distribution

The availability of large amounts of data available on the desktops of many users increases efficiency. This increase is a result of fast and easy access to many different types of data. Role Based Name Space further increases efficiency, by presenting users with just the data that is pertinent to them. When Internet access to data is also taken into account, the benefits are even more apparent.

● Enhancing PCS Data

Many data sources have limited scope for enhancing their own data. Exaquantum can enhance PCS data with a set of built-in aggregations. For example, users in some hydrocarbon industries will find one hour averages more useful than raw data. Exaquantum can further enhance the raw and aggregated data with custom calculations.

● Enhancing Data from Multiple PCSs

Exaquantum is able to refine the data from disparate data sources into high-value business information, often known as Key Performance Indicators (KPIs). For example, tonnage of a product can be calculated from a flow measured by a PCS and a density measurement provided by a Laboratory Management Information System (LIMS).

● Long Term History

Long-term historization of plant data by Exaquantum creates the opportunity for further analysis to take place.

Example 1: A system can be set to automatic or manual mode. Analysis of plant history can prove the success of the control settings and monitor their ongoing usage.

Example 2: A LIMS value may indicate a trend leading towards an out-of-spec product. Operators and engineers have the opportunity to implement a correction before waste products are created.

Example 3: The flow meter on a main product stream may be inaccurate by several percent indicating leaks or measurement errors. The measurements from other flow meters on connected streams can be used to identify an alternative, accurate measurement for the main product stream.

● Event Triggered Batch Processing

Batch applications can be notified automatically if any steps or changes occur in the process. These changes may originate from direct process measurements but they can also be the result of Exaquantum aggregations or calculations. Exaquantum is the standard route for any application that requires event notification from any PCS, thus minimizing development costs.

● Time Resolved Event History

Exaquantum can read and historize events received from any compliant OPC Alarm and Event interface. Events from all data sources can also be presented in time order. For industries where un-planned shutdowns follow a complex series of consequential events, this facility can be very valuable in identifying the original cause of the shutdown.

● An Integrated Platform

The Exaquantum philosophy of open access to data and information enables easy configuration and integration of application software.

Typical data flows between applications are the passing of:

- Sample results transferred from LIMS to Exaquantum enabling calculation of KPIs.
- Inventory and QA data from Exaquantum to ERP to optimize planning and scheduling campaigns.
- Condition monitoring data from Exaquantum to maintenance software to automatically initiate repairs and optimize Planned Maintenance Management schedules.

● **IT Security (R2.60 or later)**

Three levels of IT security levels are available allowing a compliance with system security requirements. These are:

- Legacy
- Standard
- Strengthened.

For the set up of the Strengthened model, please contact your local Yokogawa representative for more details.

● **Microsoft SQL Server 2008**

Exaquantum installation includes Microsoft SQL Server 2008 as an Integrated Value Added Solution.

■ **SYSTEM SPECIFICATION**

Item	Specification (*1)
Maximum number of tags	100,000 tags installed on a 2.8 GHz dual core CPU server with 4 Gbytes RAM 50,000 tags installed on a 2.8 GHz single core CPU server with 4 Gbytes RAM 200,000 tags/multi-servers (*2)
Throughput of Exaquantum (Maximum data acquisition)	100,000 data/minute on a 2.8 GHz dual core CPU server 50,000 data/minute on a 2.8 GHz single core CPU server
Data item gathering interval (minimum)	1 second (*4)
Data item data historization interval (minimum)	1 second (*4)
Number of concurrent users (Exaquantum/Explorer)	Up to 32/server
Number of concurrent users (Exaquantum/Web)	Subject to the configuration of the Exaquantum Web Server(s)
Number of connected OPC servers per Exaquantum server	16/server (*3)

- *1 A suitable hardware platform and infrastructure (network) must be chosen to support the required sizing.
- *2 For a maximum of five (5) Exaquantum servers. For systems larger than 200,000 tags, contact your Yokogawa representative.
- *3 When using tags from other Exaquantum servers in calculations, then the Exaquantum servers are included in the number of connected OPC servers.
- *4 Depends on OPC server performance.

■ OPERATING ENVIRONMENT

● Hardware Operating Environment

The minimum requirements for hardware and software operating environments are described in the tables below. Please contact your Yokogawa representative for large or non-standard system requirement.

Exaquantum Server (real-time database)

CPU: Intel x64 or x86 architecture as shown below

No. of tags	Supported OS	CPU
Less than 20,000 tags	Windows Server 2008, Windows Server 2008 R2	Equivalent to Core2 Duo 2.13 GHz or Xeon dual core 2 GHz or higher
	Other OS that the Exaquantum server supports	Equivalent to Intel Pentium 1GHz or higher
20,000 - 50,000 tags	Windows Server 2008, Windows Server 2008 R2	Equivalent to Xeon dual core 3 GHz or higher
	Other OS that the Exaquantum server supports	Equivalent to Intel Pentium 2.8 GHz or higher
More than 50,000	Windows Server 2008, Windows Server 2008 R2	Equivalent to Xeon quad-core 3 GHz or higher A server with multi-processor of 2CPU or more
	Other OS that the Exaquantum server supports	Equivalent to Intel Pentium 2.8GHz multiple core CPU or higher

Main memory

No. of tags	Supported OS	Main RAM Memory Capacity
500 - 10,000 tags	Windows Server 2008, Windows Server 2008 R2	2 GB or more
	Other OS that the Exaquantum server supports	1 GB or more
10,001 - 20,000 tags	All the OS that the Exaquantum server supports	2 GB or more
20,000 tags or more	All the OS that the Exaquantum server supports	4 GB or more

Disk capacity: Depends on the process data scan rate and retention period.

Disk free space required for installation.

- System drive: minimum 2GB
- SQL server installed drive: minimum 2 GB

It is possible to adopt SMT processor hyper-threading or a SMP-2CPU configuration.

Web Server

CPU: intel x64 or x86 architecture as shown below

Supported OS	CPU	Main memory capacity
Windows Server 2008, Windows Server 2008 R2	Equivalent to Core2 Duo 2.13 GHz or Xeon dual core 2 GHz or higher	2 GB or more
Other OS that Web server supports	Equivalent to Intel Pentium 1GHz or higher	1 GB or more

Disk capacity: 1.8 GB or more

The above hardware environment is for the case each server function is used independently. In case both server functions are resided in one PC, please add together the required memory capacities for both, however, when the number of tags exceeds 20000 on Windows Server 2008 OS, 4 GB Main RAM Memory is applicable.

User PCs (for Exaquantum)

CPU: Equivalent to Intel Pentium 2GHz or higher
Main memory:

Supported OS	Main RAM Memory Capacity
Windows 7, Windows Server 2008, Windows Server 2008 R2	2 GB or more
Other OS that User PC supports	512 MB or more

Disk capacity: 2 GB or more
CRT resolution: 1024×768 or better
Display colors: 65,536 or more

Note: In case the Exaquantum client is installed in a HIS, follow the operation environment specified by the standard operation and monitoring function (LHS1100, LHM1101).

PI OPC Interface PC

Please provide a dedicated PC for PI OPC when Exaquantum is connected to an OSIsoft PI plant information system interface (it must be independent of Exaquantum).

CPU: Equivalent to Intel Pentium 2.8GHz multiple core CPU or more
Main memory: 2GB or more
Disk capacity: Requires following free space for installation.
System drive: Minimum 2 GB required (40 GB recommended)

● Software operating Environment

Software marked with “64-bit” supports 64-bit version only. Others support only “32-bit” versions.

Hardware	Software Specification
Exaquantum Server	<Operating System> • Windows Server 2008 R2 Standard 64Bit (*1) • Windows Server 2008 Standard (SP2) • Windows Server 2003 Standard (SP2) • Windows Server 2003 R2 Standard (SP2) • Windows XP Professional (SP3) (*2) <Other Software> • Microsoft SQL Server 2008 (SP1) (*3) • Microsoft Excel or Office 2003/2007/2010 • Microsoft Internet Explorer 6.0 (SP3) • Microsoft Internet Explorer 7.0 • Microsoft Internet Explorer 8.0 • Microsoft SharePoint Designer 2007 (for designing Web page) • Microsoft Expression Web 4 (for designing Web page) • Adobe Reader 7/8.0/9.3 (*4)
Exaquantum Web Server	< Operating System > • Windows Server 2008 R2 Standard 64Bit (*1) • Windows Server 2008 Standard (SP2) • Windows Server 2003 Standard (SP2) • Windows Server 2003 R2 Standard (SP2) < Other Software > • Microsoft SQL Server 2008 (SP1) • Microsoft Internet Explorer 6.0 (SP3) • Microsoft Internet Explorer 7.0 • Microsoft Internet Explorer 8.0 • Internet Information Services (IIS) • Adobe Reader 7/8.0/9.3 (*4)
User PCs for Exaquantum/Explorer	<Operating System> • Windows Server 2008 R2 Standard 64Bit (*1) • Windows Server 2008 Standard (SP2) • Windows Server 2003 Standard (SP2) • Windows Server 2003 R2 Standard (SP2) • Windows XP Professional (SP3) • Windows Vista Business Edition (SP2) • Windows 7 Professional 64Bit (*1) <Other Software> • Microsoft Excel or Office 2003/2007/2010 • Microsoft Internet Explorer 6.0 (SP3) • Microsoft Internet Explorer 7.0 • Microsoft Internet Explorer 8.0 • Microsoft SharePoint Designer 2007 (for designing Web page) • Microsoft Expression Web 4 (for designing Web page) • Adobe Reader 7/8.0/9.3 (*4)
PI OPC Interface PC (*5)	<Operating System> • Windows Server 2008 Standard 32Bit • Windows 7 Professional 32Bit • OPC Interface to the PI System 2.3.11.0 • OPC HDA Interface to the PI System 1.4.1.28

- *1: Exaquantum is a 32-bit application that can be installed with the WOW64 emulation environment provide with the 64-bit OS.
- *2: It is recommended to use with less than 3,000 tags and 4 clients of Exaquantum/Explorer. Exaquantum/Web is not available due to the OS limitations.
- *3: SQL server runtime version is bundled with Exaquantum.
- *4: Adobe Reader 7/8.0/9.3 is required to browse instruction manual for Exaquantum (for R2.50 or later).
- *5: PI server’s revision must be 3.4.370.x or higher.

● **Co-existence or combination of Exaquantum and other Exa software packages (*1)**

The definition of terms 'co-existence' and 'combination' is as follows:

Co-existence: Exaquantum and other Exa software packages reside on the same PC.

Combination: Exaquantum communicates with Exaopc or HIS OPC over a LAN network.

*1: Other Exa packages include Exaopc, Exapilot, Exaquantum/Batch, Exaplog, Exasmoc and Exarqe.

● **Combination of Exaquantum and Exaopc OPC interface package via network**

- Exaquantum can be connected with Exaopc OPC interface package R3.10 or later.
- Exaquantum can be connected with Exaopc OPC interface package (for HIS) R3.05 or later.

Note: For detailed information, refer to GS 36J02A10-01E NTPF100 Exaopc OPC interface package. For the combination of Exaquantum with Exaopc-RD, please contact Yokogawa representatives.

● **Restrictions in Co-existence of Exaquantum and other Exa packages**

Exaquantum \ Other Exa Packages	Server	Client
Server (PIMS or Web servers)	Pattern 1	Pattern 1
Client	Pattern 1	Pattern 2

Note: IT security model for Exaquantum and other Exa packages must be set to the same level when these packages are installed on the same PC.

Note: For a 64bit OS, PI and other Exa packages can not co-exist on the same PC.

The combination of co-existence patterns for Exaquantum with other Exa packages are as shown below:

Pattern 1:

	Exaopc (R3.60)	Exapilot (R3.80)	Exaquantum /Batch (R2.50)	Exaplog (R3.30)	Exasmoc	Exarqe
Exaquantum (R2.60)	OK(*1)	OK	N/A	OK	N/A	N/A

Pattern 2:

	Exaopc (R3.60)	Exapilot (R3.80)	Exaquantum /Batch (R2.50)	Exaplog (R3.30)	Exasmoc (R4.02)	Exarqe (R4.02)
Exaquantum (R2.60)	OK	OK	N/A	OK	OK	OK

Note: Ensure the variety of packages, their revisions and other operating environments such as OS are identical.

*1: In the case of PIMS server and Web server combined, Exaopc can be also installed.

● **Restrictions in co-existence with HIS**

Exaquantum(R2.60)	CENTUM VP HIS	CENTUM CS 3000 HIS
Server	Not Supported	Not Supported
Client	R4.01 or later	R3.05 or later

Note: IT security model for Exaquantum and other Exa packages must be set to the same model when these packages are installed the same server.

Note: Ensure the variety of packages, their revisions and other operating environments such as the OS are identical.

Note: For a 64bit OS, PI and another Exa package can not co-exist on the same server.

MODELS AND SUFFIX CODES

Exaquantum/PIMS

An Exaquantum license authorizes tags up to the number specified by each suffix code. The number of Exaquantum servers varies depending on the number of tags. Each Exaquantum server supports a maximum of 100,000 tags with a maximum supported configuration of 5 Exaquantum servers (for up to 200,000 tags). Only one CD set is provided regardless of the number of servers, unless otherwise requested. Every client PC connected to Exaquantum/PIMS must be licensed.

		Description
Model	NTPP001	Exaquantum Data Server Package
Suffix Codes	-S	Basic Software License
	1	New Order (with Media)
	1	English version
	-00A5	500 Tags / 1 client
	-0001	1,000 Tags / 2 clients
	-0002	2,000 Tags / 4 clients
	-0003	3,000 Tags / 4 clients
	-0005	5,000 Tags / 4 clients
	-0007	7,500 Tags / 4 clients
	-0010	10,000 Tags / 10 clients
	-0020	20,000 Tags / 10 clients
	-0040	40,000 Tags / 10 clients
	-0060	60,000 Tags / 10 clients
	-0080	80,000 Tags / 10 clients
	-0099	100,000 Tags / 10 clients
-00B2	200,000 Tags / 10 clients	

Exaquantum/Explorer (Per-Seat Licensing)

This is an optional package for adding additional per-seat users to the NTPP001 package.

All Exaquantum/Explorer client PCs must be licensed even if Microsoft Terminal Server is used.

		Description
Model	NTPP002	Exaquantum Client Per-Seat Licensing Interface Package
Suffix Codes	-S	Basic Software License
	1	Always 1
	1	English version
	-□□	Enter additional clients license in □□ (01-99)

Exaquantum/Web Server (*1)

This is an optional package for the NTPP001 package. The number of Web servers required should be based upon the number of concurrent users because more than one Web server may be required to prevent overloading. Please contact your Yokogawa representative for assistance.

		Description
Model	NTPP003	Exaquantum Web Server Package
Suffix Codes	-S	Basic Software License
	1	Always 1
	1	English version
	-□□	Enter number of Web servers required in □□ (01-99)

*1: Requires Exaquantum R2.01 or later.

Exaquantum/Web Client (*1) (Named User Licensing)

This is an optional package for adding additional web users, requiring both NTPP001 and NTPP003. Each Exaquantum/Web client PC connected to Exaquantum must be licensed. However, web clients are not bound to any one PC and therefore user profiles are used to control access to Exaquantum.

		Description
Model	NTPP004	Exaquantum Web Client Package
Suffix Codes	-S	Basic Software License
	1	Always 1
	1	English version
	-□□	Enter number of named user thin Web clients required in □□ (01-99)

*1: Requires Exaquantum R2.01 or later.

Exaquantum GUI Conversion Tool (*1)

This is an optional package that requires the NTPP001 package. It provides conversion of graphics files from one format to another.

		Description
Model	NTPP005	Exaquantum GUI Conversion Tool
Suffix Codes	-S	Basic Software License
	1	Always 1
	1	English version
	E	CENTUM VP/CENTUM CS 3000 Graphics to Exaquantum/Explorer format
	W	CENTUM VP/CENTUM CS 3000 Graphics to Exaquantum/Web format

*1: Requires Exaquantum R2.01 or later.

● Exaquantum/Explorer (2:1 Concurrent Licensing)

This is an optional package for adding additional concurrent users to the NTPP001 package.

Each license will allow Exaquantum/Explorer to be installed to two clients PCs however only one PC can be active at the same time.

All Exaquantum/Explorer client PCs must be licensed even if Microsoft Terminal Server is used.

		Description
Model	NTPP006	Exaquantum User 2:1 Concurrent Licensing Interface Package
Suffix Codes	- S	Basic Software License
	1	Always 1
	1	English version
	-□□	Enter additional concurrent client licenses in □□ (01-99)

● Exaquantum Open Interface

This is an optional package for the NTPP001 package to allow access to Exaquantum process data via OPC DA 2.05a and HDA 1.1. This package is also required for each Exaquantum server providing tag data to Exaquantum calculated tags located in another Exaquantum server.

		Description
Model	NTPP007	Exaquantum Open Interface function
Suffix Codes	- S	Basic Software License
	1	Always 1
	1	English version
	-□□	Enter number of Exaquantum Open Interface function licenses in □□ (01-05)

● Additional Exaquantum Server License

This is an optional package to license Exaquantum servers within an Exaquantum multi-server environment.

		Description
Model	NTPP008	Additional Exaquantum Servers
Suffix Codes	- S	Basic Software License
	1	Always 1
	1	English version
	-□□	Enter number of additional Exaquantum server Licenses in □□ (01-04)

● Exaquantum Additional Tags

This is an optional for adding additional Exaquantum tags to the NTPP001 package.

		Description
Model	NTPP009	Exaquantum/PIMS Tags for Upgrade
Suffix Codes	- S	Basic Software License
	2	For Upgrade o 100,000 or less Exaquantum tags
	1	English version
Option Codes	/S□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 10,000 tags are reached.
	/M□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 20,000 tags are reached. This can only be ordered when the previous tier has been reached.
	/L□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 100,000 tags are reached. This can only be ordered when the previous tier has been reached.
	/X□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 200,000 tags are reached. This can only be ordered when the previous tier has been reached.

● Exaquantum Maintenance Service

		Description
Model	NTMP001	Exaquantum Maintenance Service
Suffix Codes	-S	Annual Contract
	1	Always 1
	1	Always 1
	-A5	500 Tags / 1 client
	-01	1,000 Tags / 2 clients
	-02	2,000 Tags / 4 clients
	-03	3,000 Tags / 4 clients
	-05	5,000 Tags / 4 clients
	-07	7,500 Tags / 4 clients
	-10	10,000 Tags / 10 clients
	-20	20,000 Tags / 10 clients
	-40	40,000 Tags / 10 clients
	-60	60,000 Tags / 10 clients
	-80	80,000 Tags / 10 clients
-99	100,000 Tags / 10 clients	
-YY	When ordering using the Option Code (below)	
Option Codes	/S□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 10,000 tags are reached.
	/M□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 20,000 tags are reached. This can only be ordered when the previous tier has been reached.
	/L□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 100,000 tags are reached. This can only be ordered when the previous tier has been reached.
	/X□□□	Enter number of additional Exaquantum tags in groups of 1,000 until a maximum total of 200,000 tags are reached. This can only be ordered when the previous tier has been reached.
	/UI□□	Enter number of Exaquantum/Explorer Licenses in □□ (01-99)
	/UC□□	Enter number of Exaquantum/Explorer 2:1 Concurrent Licenses in □□ (01-99).
	/WS□□	Enter number of Exaquantum Web server in □□ (01-99)
	/WC□□	Enter the number of Exaquantum/Web named user Licenses in □□ (01-99)
	/GE	Exaquantum GUI Conversion Tool (Exaquantum/Explorer format).
	/GW	Exaquantum GUI Conversion Tool (Exaquantum/Web format).
	/OP□□	Enter number of Exaquantum Open Interface in □□ (01-05)
	/ML□□	Enter number of Exaquantum multi-server Licenses in □□ (01-04)

■ TRADEMARKS

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