

## Niagara Framework Technical Certification Program (TCP)

Tridium Systems Integrators are provided valuable education, consulting, and technical support services designed to ensure high quality service and support for integration solutions built upon the Niagara Framework.

### Course Description

The goal of the Technical Certification Program (TCP) training course is to help a broad range of distribution partners in the building automation, energy services, power/utility, and industrial sectors gain the level of technical expertise necessary to effectively and efficiently design, engineer, and program projects using the Niagara Framework.

Successful completion of TCP attests to the ability of the candidate to plan, develop, and maintain Niagara Framework control applications.

The course length is five days and can be offered at your site. Participants are required to attend with their laptop PC pre-loaded with the current version of Vykon software installed and licensed.

### Audience

This course is intended for Tridium Systems Integrators, OEM and other business partners, distributors, and advanced end-users. The course is specifically targeted at Application Engineers and Field Engineers responsible for building station databases.

### Prerequisites

TCP candidates should have a strong foundation in the areas of BAS control applications, installing digital control equipment, configuring and operating Windows workstations, networking techniques, LonWorks system integration techniques, Internet technologies, and general system programming.

It is assumed that the candidate has a general familiarity with WorkPlace Pro (JDE) – forty hours of seat time – and has completed the *Niagara Concepts Guide*.

### Student Workstation

This session does not require any hardware other than a sufficient PC loaded with Niagara Release 2.x. Specific platform requirements are available (in writing) should you need to rent machines locally.

**Important:** Each laptop must have a local administrative level (Windows) user account established with a known user name and password. A temporary license is assumed, as we run a virtual station on the machine, which requires coreRuntime licensed.



## Certification

Certification requirements include passing a written proficiency exam and successfully completing a hands-on certification lab. The written exam is designed to test the candidate's knowledge of the Niagara Framework technology and system architecture. The certification lab is designed to give candidates real-world experience in application development, engineering, and implementing control solutions.

Employees and business partners of Tridium that successfully complete TCP certification requirements receive certification from Tridium.

## Training Paths

This course provides advanced-level training. It is oftentimes preceded by three days of level-one (end-user) training.

## Major Topic Areas

Major topic areas included in the Niagara Framework TCP session:

- **Networking and Internet Basics.** An overview of general networking technologies and Internet connectivity as it applies to Niagara Framework solutions.
- **Niagara Framework Technology Overview and System Architecture.** An overview of the Niagara Framework and Tridium's design philosophy.
- **Installation and Start-Up.** A discussion of the details associated with job planning, construction, installation, and start-up. Software licensing.
- **The Niagara Object Model and Configuring Standard Control Objects.** A discussion of Niagara's standard objects, their configuration, and simple applications.
- **Application Development on a New Site.** Effective approaches for engineering control solutions using WorkPlace Pro to integrate devices on a newly configured LonWorks network.
- **Application Development on an Existing Site.** Effective approaches for engineering control solutions using WorkPlace Pro to learn an existing network of LonWorks devices.
- **Global Control Functions.** A discussion of global control features including global data passing in multi-controller configurations, alarm processing, timed operations, and data collection.
- **Designing and Building Web Interface Solutions.** GxPages are the objects used to expose control system data to the Internet. Practical Web page design considerations and practice building Web pages to interface with the station database.
- **Database Services.** An overview of Database Services and accessing data in the station's relational database.
- **Managing Security.** A discussion of security groups and privileges, which can be used to manage user access to control nodes and their properties.
- **Engineering Views.** A discussion of how data comes to be stored in the Niagara station, using Niagara servlets to access that data, and using various engineering views to debug station operation.

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