

FREE COURSE

# CHARIOT

by  CHIPKIN

If you work at automation, integration or instruments **you need skills** to connect foreign or legacy devices. Enhance those skills with this course. What happens when you have a device such as an Energy meter that supports Modbus and you want to use it in a BACnet system? You need a protocol to protocol gateway.

## PROTOCOL GATEWAYS

- Connect foreign devices together
- Allow systems from different vendors to exchange information
- Extend the life of legacy devices

This course provides you with a thorough understanding of how protocol to protocol gateways work. On completion you will be able to understand a device's Modbus points, map them onto BACnet and implement a gateway which exposes the Modbus data as BACnet data allowing read and write operations. **The Chariot gateway by Chipkin** is a virtual gateway that runs on any Windows computer. It can be used for training and as well as deployed as an operational device at a site.

## COURSE OUTLINE

- 1. Mastering Modbus:** Addressing, Flavors of Modbus, 232, 485, Ethernet, Points Lists, Data Types, Scaling, Converting, Advanced Topics
- 2. Mastering BACnet:** Intro, Objects, Properties, Writing, Commanding, Points Lists, Flavors of BACnet, 485, Ethernet, Routers, BBMD, Advanced Topics
- 3. Gateways:** Master, Slaves, Passive Clients, Active Servers, Sharing Data, COV
- 4. Configuring the Chariot Gateway:** Dashboard, Configure Modbus, Configure BACnet, Data Manipulation and Scaling, Real Time Monitoring, Testing, COSM interface. Integrating a sensor directly. Advanced Topics.
- 5. Installing the Chariot Gateway:** On Windows PC, On Single Board Computer, Deploy in real world.
- 6. Troubleshooting, Tools, Diagnostics:** RS232 Tools, RS485 Tools, Ethernet Tools, Modbus Tools, BACnet Tools, Security Issues

## WHAT YOU WILL: *LEARN*

Real world skills – focus on practical non theoretical issues.

Modbus – Learn Jargon, Addressing, Scaling, Conversions, RTU and TCP, learn how to troubleshoot, perform diagnostics and use Modbus tools.

BACnet – Learn jargon, discovery, Exploring, Objects and Properties, Flavors of BACnet, Troubleshooting and tool use.

Gateways – Learn concepts, scaling, monitoring, diagnostics, how protocols share data, conversions, bit extraction, packing, arithmetic operations. Configuration, monitoring and troubleshooting.

Security, networking, 7 layer OSI Model, RS485, RS232, Ethernet, TCP/IP and UDP

## WHAT YOU WILL: *EARN*

Credential from a Company with a big reputation in protocols and automation.

LinkedIn Endorsement of skills.

Certificate from Chipkin on passing the exam.

Additional certifications and letters of reference for students with top marks.

**There are no prerequisites to participate and you do not need previous experience.**



## WHO SHOULD ATTEND

People with the following job titles will benefit:

- System Integrator
- Automation Engineer
- PLC / Scada / DCS / ICS Engineers and technicians
- Data Communications engineers. Instrument engineers and techs
- Controls Engineers.
- Fire Alarm, HVAC, Lighting technicians will benefit if they also are responsible for integrating this equipment into a building or factory system.

**This course is suggested for anyone who works at building or industrial automation.**



## COST AND FEES

**The course and the exam are free.** There is no fee of any kind except for those who require a paper copy of the certificate mailed to them. You may keep, copy and use the virtual gateway we provide. You may use it for training, learning and you may also deploy it (and copies) in real world situations doing real world work. **The Chariot gateway is not a toy.** We will show you how to install it on an inexpensive single board computer (lattePanda). Free 2 year license to the CAS BACnet Explorer.

## DURATION

You can complete the training in a day. Or take as long as you like. The Exam can be completed in a couple of hours. Its multiple choice. The challenge/advanced exercises will take several hours each.

## EMPLOYMENT OPPORTUNITY

**Chipkin** will make job offers to outstanding candidates. Your location is not important as long as you have a good internet connection and can communicate well in English. **We have employed several people outside Canada and the US.**

## JUMP THE JOB QUEUE

With a certification from **Chipkin**, a Canadian company with fortune 100 clients, you are arming yourself with a useful and practical skill set – **this is what employers want** – people with hands on skills and experience that are job ready.

**SIGN UP AT [STORE.CHIPKIN.COM/CHARIOT-GATEWAY-COURSE](https://store.chipkin.com/chariot-gateway-course)  
AND EMAIL [CHARIOT@CHIPKIN.COM](mailto:CHARIOT@CHIPKIN.COM) FOR MORE INFO**