ThriveDX™

R-T Linux Embedded

# TDXAISD-106

ThriveDX R-T Linux Embedded

Time Commitment	Skill Level	Course Category
4 days (total of 32 hours / 8 hours per day)	Professional Level	AI | Software Development

This intensive hands-on course will teach you about Linux internals, kernel APIs Linux start-up process. Kernel driver structure, Daemons standard and customize, UNIX file system,
UNIX process and threads structure, Inter process communication and synchronization methods and more.

Prerequisites

The student should be an experienced C/C++ programmer, with knowledge on bash commands and working in a UNIX environment.

Target Audience

Experienced web client developers

Objectives

The objectives of this course is a comprehensive overview on Linux internals for both developers and architects, getting familiar with the variety of options available for Software architecture and design considerations. Giving tools to help answer standard questions for example: Should this be a process or a thread? Which communication mechanism is best using here? Should this code run in kernel space or user space? Etc.erequisites

Program Structure

Introduction Module 01

- Unix history
- Unix file system structure
- Unix kernel layers
- UNIX startup and initrd.
- Standard Daemons
- The /etc. scripts

Basic IO Module 02

- Stream
- System calls
- File manipulation
- Links

Signals and interrupts Module 03

- Signal handlers
- Timers
- Signal APIs
- Interrupt APIs
- Standard way to handle interrupts in user space
- The UNIX interrupt service routine

Process and threads Module 04

- Process life cycle
- Fork
- Orphans & zombies
- Exec command
- System command
- Daemons

IPCS Module 05

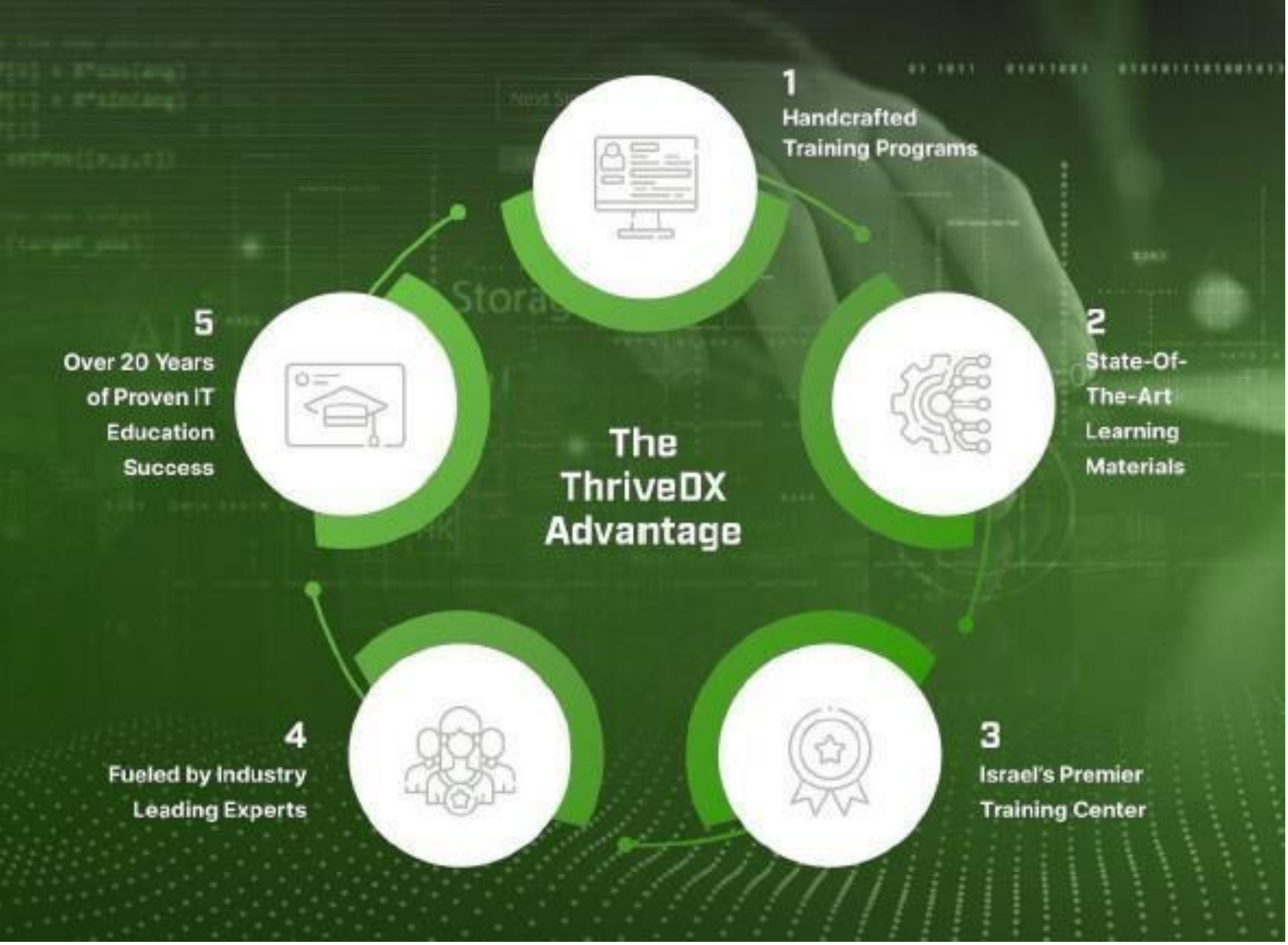
- ipes
- Named pipes
- Message queues
- Sockets
- Shared memories
- Accept/read/wait APIs

Synchronization methods Module 06

- Semaphores
- Semaphore calls
- Mutex

Debugging Linux kernel Module 07

- Working with kernel drivers as file descriptors
- The Linux Scheduler
- Working on a working driver structure and example
- Linux procfs and sysfs



The ThriveDX Advantage

1 Handcrafted Training Programs

2 State-Of-The-Art Learning Materials

3 Israel's Premier Training Center

4 Fueled by Industry Leading Experts

5 Over 20 Years of Proven IT Education Success