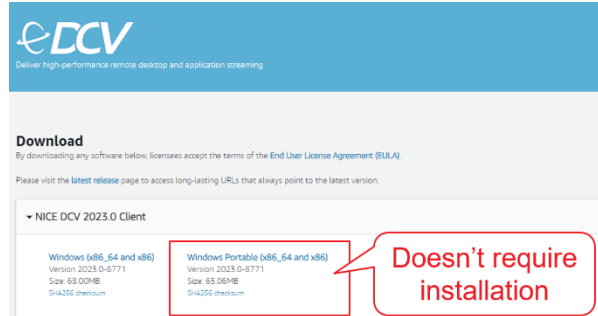


# ICCAD 2023 Hands-on Tutorial

## RapidWright: Unleashing the Full Power of FPGA Technology with Domain-Specific Tooling

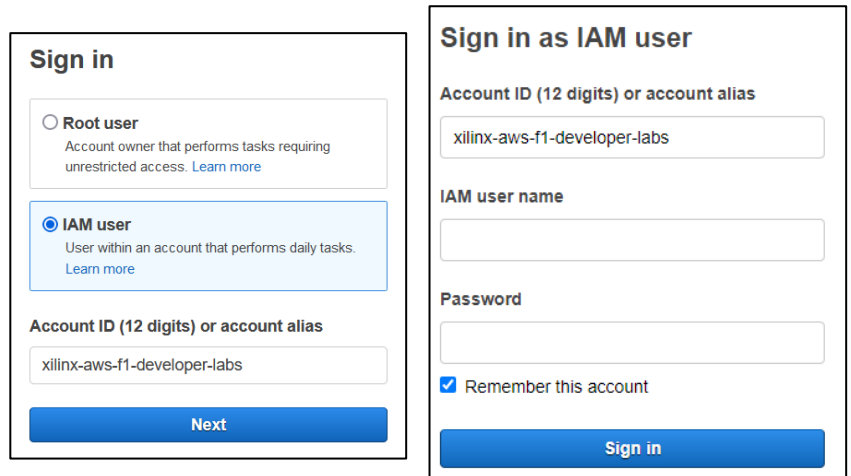
### 1. Download & Extract/Install NICE Desktop Cloud Visualization Client (to access AWS instance)

<https://download.nice-dcv.com>



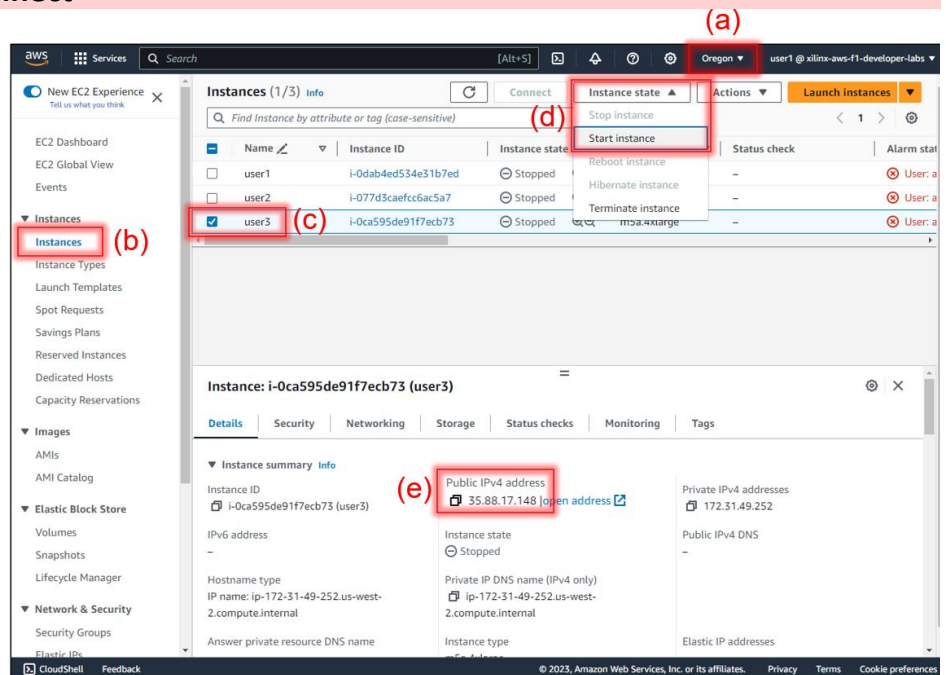
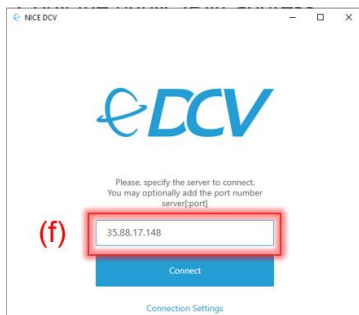
### 2. Log in to the AWS EC2 Console

<https://console.aws.amazon.com/ec2>




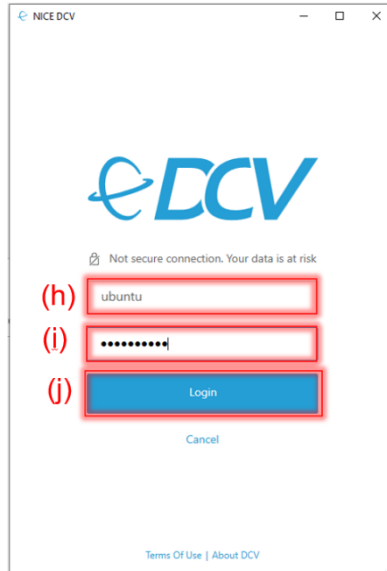
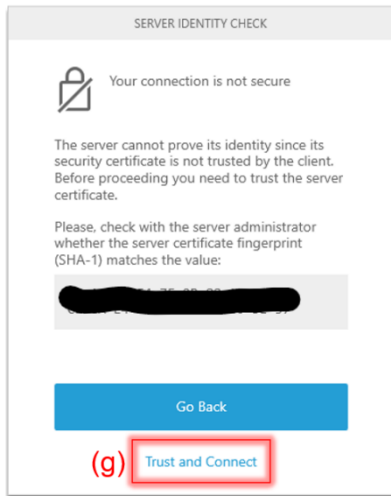
### 3. Start AWS EC2 Instance and Connect

- Ensure "Oregon" region
- Click on "Instances"
- Select your named user instance (e.g., 'user3')
- Select "Start instance" from the "Instance state" menu
- Copy the public IPv4 address (click the icon)
- Open NICE DCV Client, Paste IP address in window, click Connect



### 3. Log into NICE DCV (cont.)

- g) Choose "Trust and Connect"
- h) Enter username: "ubuntu"
- i) Enter Password: <same as AWS Console>
- j) Click "Login"
- k) Click on  to launch the Tutorial Page



### 4. Choose Tutorials That Best Match Your Interests





Docs » [RapidWright Tutorials](#) » [RapidWright ICCAD 2023 Hands-on Tutorial](#) [View page source](#)

#### RapidWright ICCAD 2023 Hands-on Tutorial

Title: RapidWright: Unleashing the Full Power of FPGA Technology with Domain-Specific Tooling  
 Organizers: Chris Lavin and Eddie Hung  
 Where: Artisan Room, Hyatt Regency San Francisco Downtown SOMA, ICCAD 2023  
 When: Wednesday, November 1st, 2023, 11:00am PDT

- 11:00am - 11:05am : Machine Allocation
- 11:05am - 11:15am : Introduction and Overview
- 11:15am - 1:00pm : Hands-on, self-guided tutorials

Featured Tutorial Segments	Time	Description
<a href="#">Reuse Timing-closed Logic As A Shell</a>	30 mins	Create a pre-implemented shell from an existing design without pblocks
<a href="#">Using DREAMPlaceFPGA to Place</a>	25 mins	Use a 3rd party placer with the FPGA Interchange Format
<a href="#">Polynomial Generator</a>	15 mins	Create placed and routed circuits from scratch in seconds
<a href="#">ECO Debug Core Insertion</a>	35 mins	Add debug logic without changing existing placement and routing

Additional Tutorial Segments	Time	Description
<a href="#">Hello, World</a> 	5 mins	Intro to RapidWright in Jupyter Notebooks
<a href="#">Create Netlist from Scratch</a> 	10 mins	How to build a netlist from scratch
<a href="#">Pre-implemented Modules: Part I</a>	15 mins	How to create a pre-implemented module
<a href="#">Pre-implemented Modules: Part II</a>	15 mins	Use & relocate pre-implemented modules
<a href="#">SAT Router</a> 	15 mins	Use SAT to solve hard routing congestion
<a href="#">Create and Use an SLR Bridge</a>	20 mins	Combine Vivado & RapidWright circuits
<a href="#">Basic Routing</a> 	20 mins	How to build a basic router in RapidWright

 = Jupyter Notebook Tutorial

### 5. Go Forth and use RapidWright for Your Own Domain-Specific Projects! - <https://rapidwright.io>