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# IT AUTOMATION

# Lectures 1, 2, 3


Developed by

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Powered by

**Kaseya & IT Scholars**


Last updated on August, 2012

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# IT AUTOMATION

## Why?

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# Motivation

- Computer systems are becoming pervasive
  - They are part of our everyday life & business
- Cost of dedicate in-house IT managers is high
  - They may be idle for most of the time
  - They may not be as effective in the time of crisis
- Solution
  - Out-sourcing the IT to IT management companies
  - IT automation

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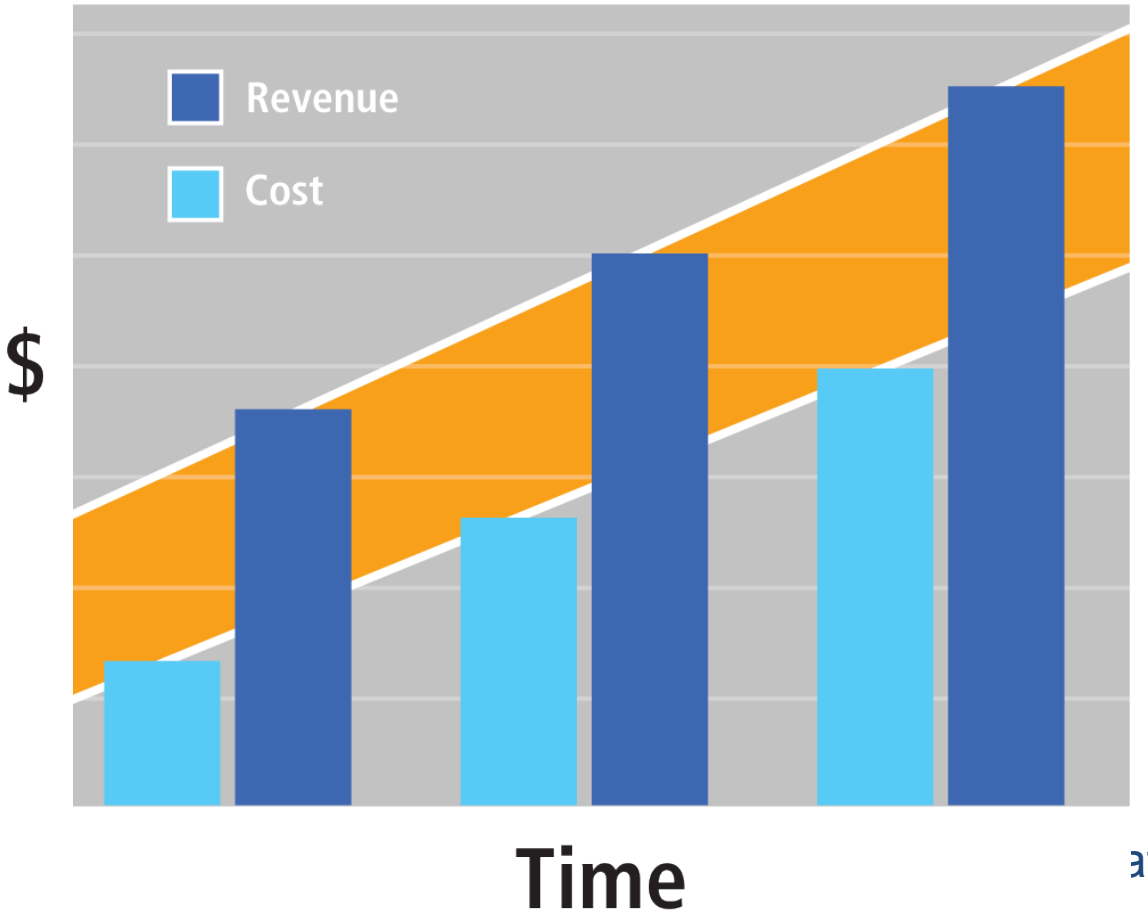
# Why IT Automation?

- More staff increase revenue and costs, making it impossible to get ahead.




Kaseya

ation Sciences

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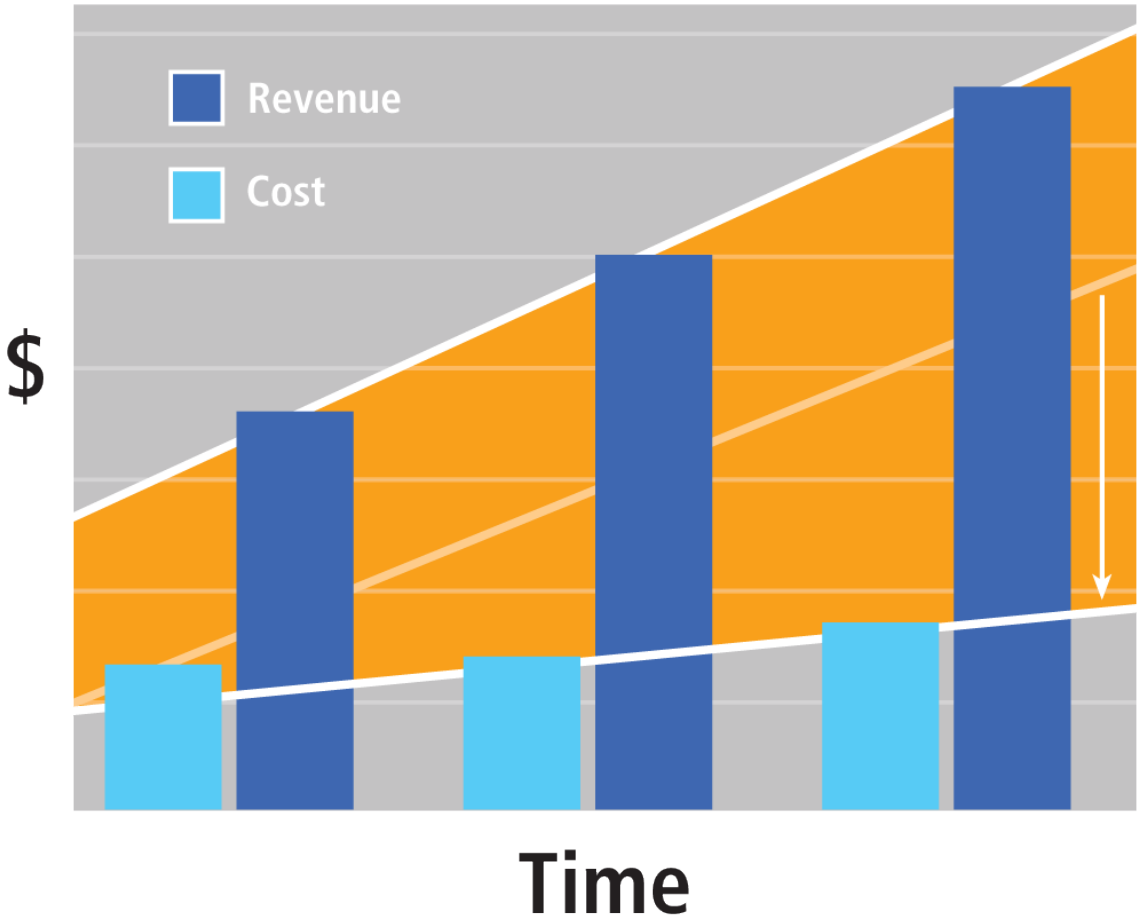
# Scale with IT Automation

- It allows service providers to keep costs the same while increasing revenue.

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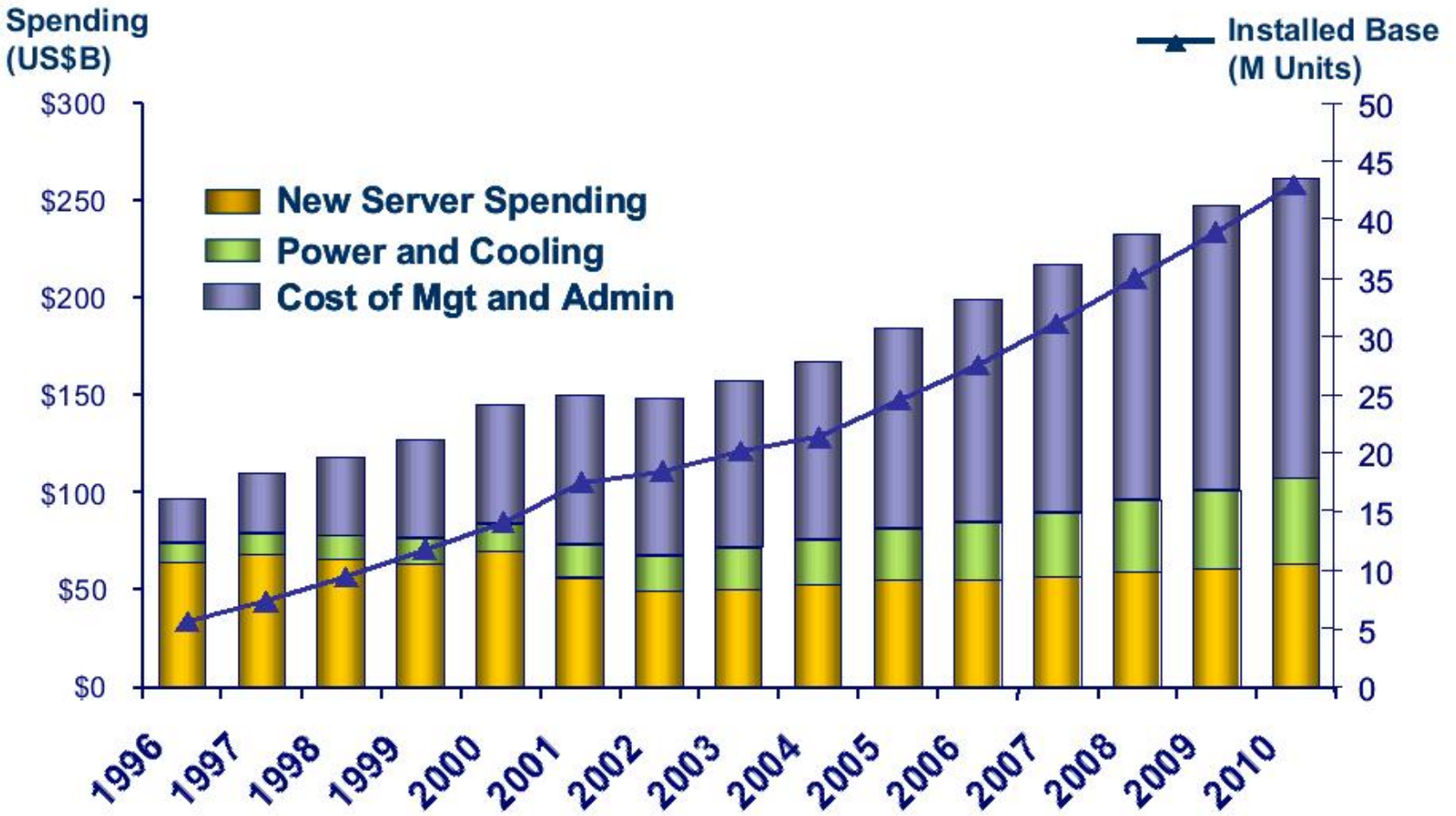
# Worldwide Server Market: Cost of Management




*Source & Copyright : IDC 2007*

# State of Infrastructure Today

IDC
Analyze the Future

## Server Sprawl

- 41 m physical servers by 2010 - 700% increase in 15 years
- Ave UT <10% = $140 bn in excess server capacity - a 3-year supply

## Power & Cooling

- 50c for every $1 spent on servers
- $29 bn in power and cooling industry wide

## Space Crunch

- $1,000 /sqft
- $2,400 / server
- $40,000 / rack

## Operating Cost

- $8 in maintenance for every $1 spent on new infrastructure
- 20-30 : 1 server-to-admin ratio

*Source & Copyright : IDC 2007*

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# Why Transition Now?

- According to Gartner (*January 3rd, 2005)*
  - ***"the fastest growing part of the IT Management Market is the Remote Operation and Management of Networks and IT Infrastructure"***
  - ***"the Remote Monitoring and Management market is expected to grow at a compound annual growth rate of 36 percent through 2008".***

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# Why Transition Now? (cont.)

- Rising acceptance of the paradigm shift to Proactive Service Delivery, the traditional "break-fix" model will become increasingly less appealing to the end-user Client.

- Commoditization of these Services is inevitable, and price wars will follow soon afterwards.

*The Guide to a Successful Managed Services Practice by Erick Simpson*

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# Automating Common IT Tasks

- Auditing
- Monitoring
- Patch Management
- Backup
- Endpoint Security
- User State Management
- Help Desk

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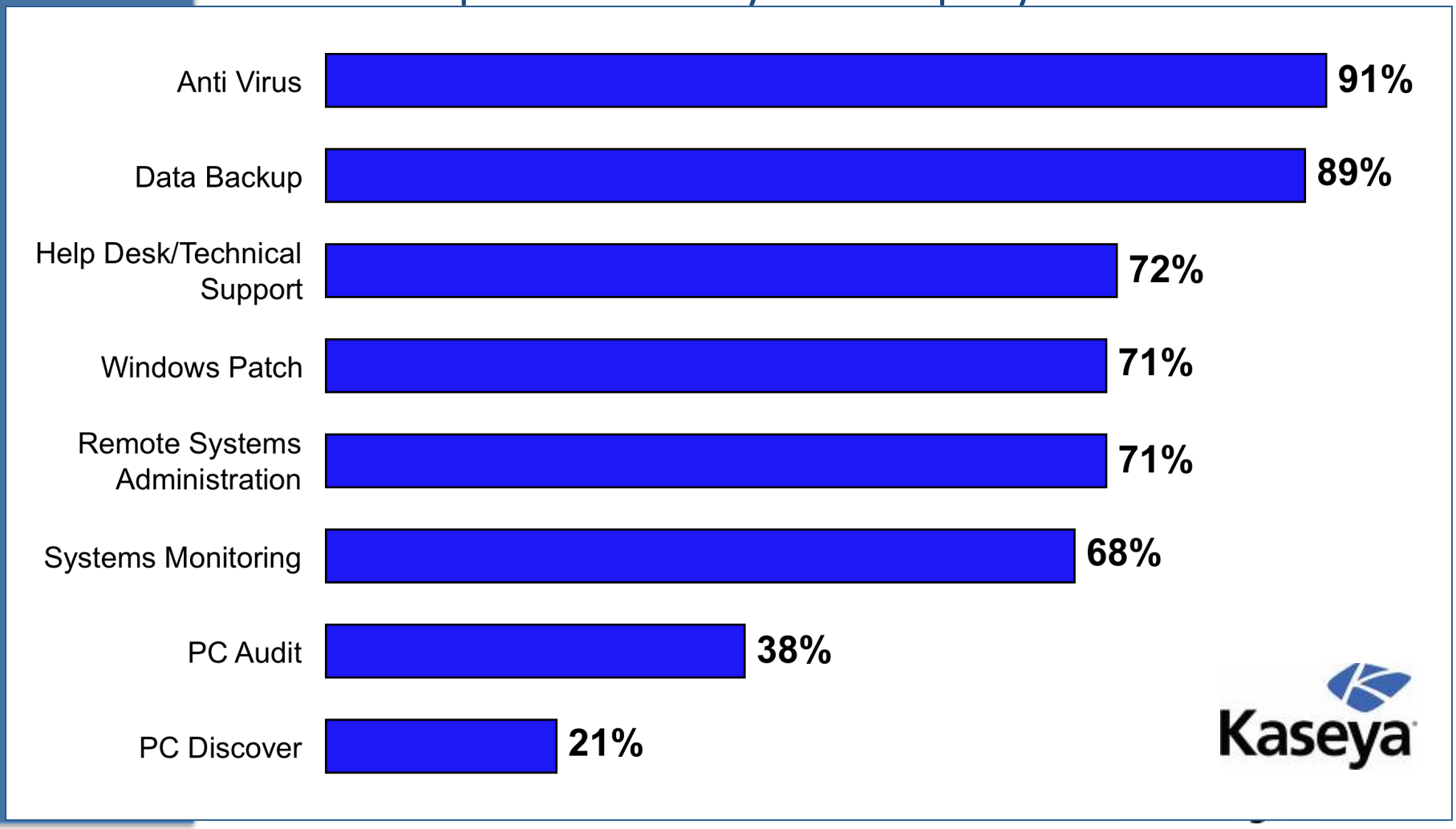
# What Services to Include in SLAs

- Q: Which of the following computer systems management tasks are performed at your company?



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# Some Popular Network Monitoring Tools

- Altiris, http://www.altiris.com/
- LANdesk, http://www.landesk.com/
- TrakIT, http://www.numarasoftware.com/Track-It.asp?
- Handsfree Networks: www.handsfreenetworks.com
- HyBlue: www.hyblue.com
- Kaseya: www.kaseya.com
- Level Platforms: www.levelplatforms.com
- N-able: www.n-able.com
- Nagios: www.nagios.org
- Silverback Technologies: www.silverbacktech.com
- Zenith Infotech: www.zenithinfotech

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# Help Desk Software Vendors

- Autotask: www.autotask.com
- ConnectWise: www.connectwise.com
- Frontrange Solutions: www.frontrange.com
- Kemma Software: www.kemma.com
- GWI Software: www.gwi.com
- Helpstar: www.helpstar.com
- NetHelpDesk: www.nethelpdesk.com
- Novo Solutions: www.novosolutions.com
- Shockey Monkey: www.shockeymonkey.com

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# Why Kaseya was Selected to be Used for This Class?

- Kaseya is a GLUE, integrating many IT automation tools.
- Kaseya provided us with a free use of their tools for educational purposes.
- Comprehensive IT Automation Framework (not a tool vendor).
- Web Based – remotely accessible from anywhere anytime.
- Extensible Automation – as easy to work with 500 machines as it is to work with one.
- Unattended – virtually no end user input required
- Easy to Deploy
- No infrastructure reconfiguration required

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# Kaseya Green Initiative

- Kaseya 2008 with the KUSM and Intel® Core™2 Processor with vPro™ Technology increases productivity while contributing to energy conservation.
- Remotely power off computers and promote energy efficiency during non productive hours then power on to conduct routine off hour IT tasks.
- Use of remote IT management  contributes to an overall reduction in the carbon footprint through fewer “truck rolls”...


Kaseya

# What Kaseya's Framework Provides

**Seamless and Consistent Integration Customizable Reporting**

*24x7x365 Automated System Management*

*Patch Management and Updates*

*Monitoring*

*Remote Management*

*Application Deployment*

*Asset Management*

*Ticketing, / Service Desk*

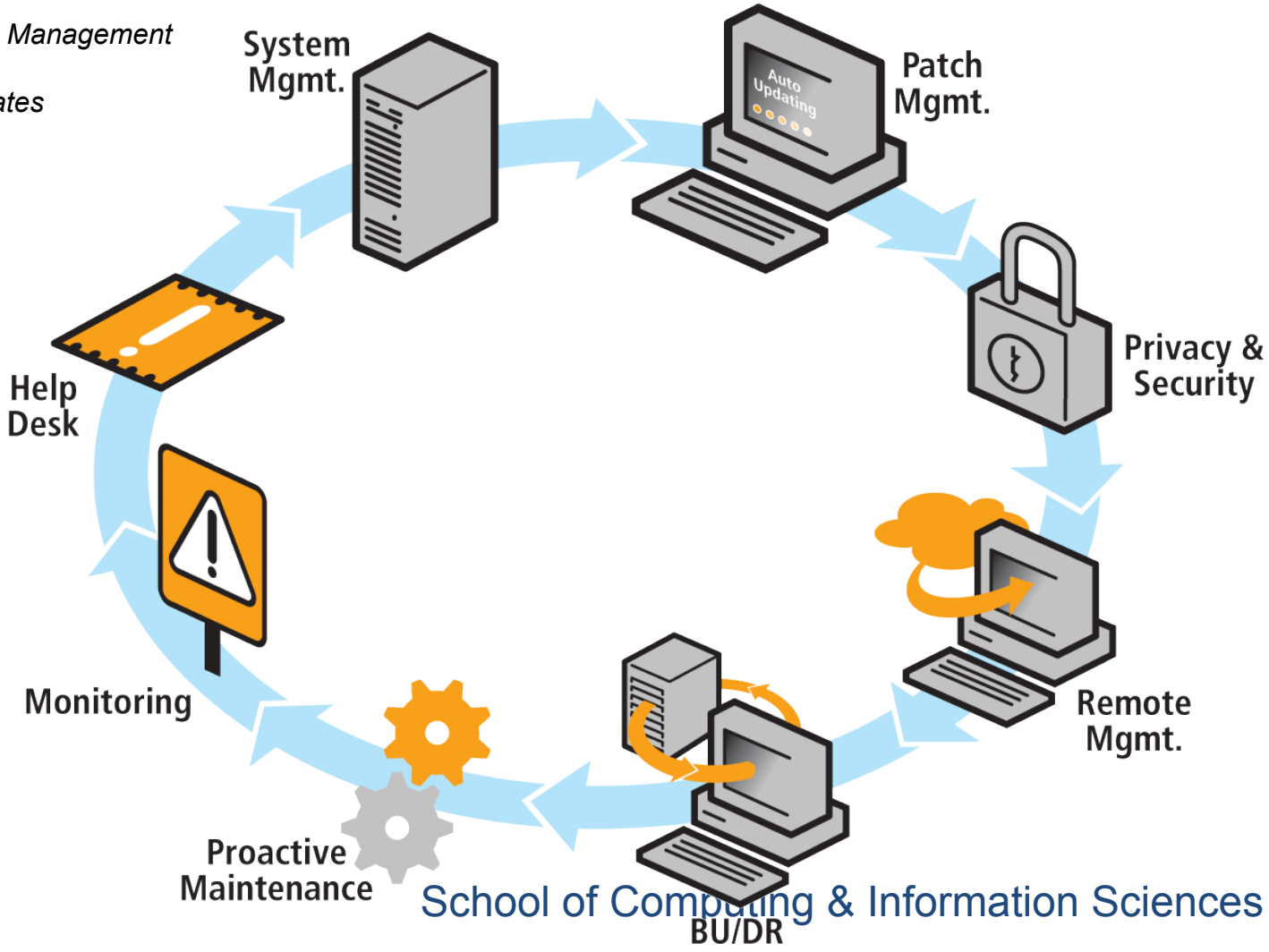
*Data Protection,*

*Privacy – Anti-Spy,*

*Anti-Virus*

*User State Management*

*More….*



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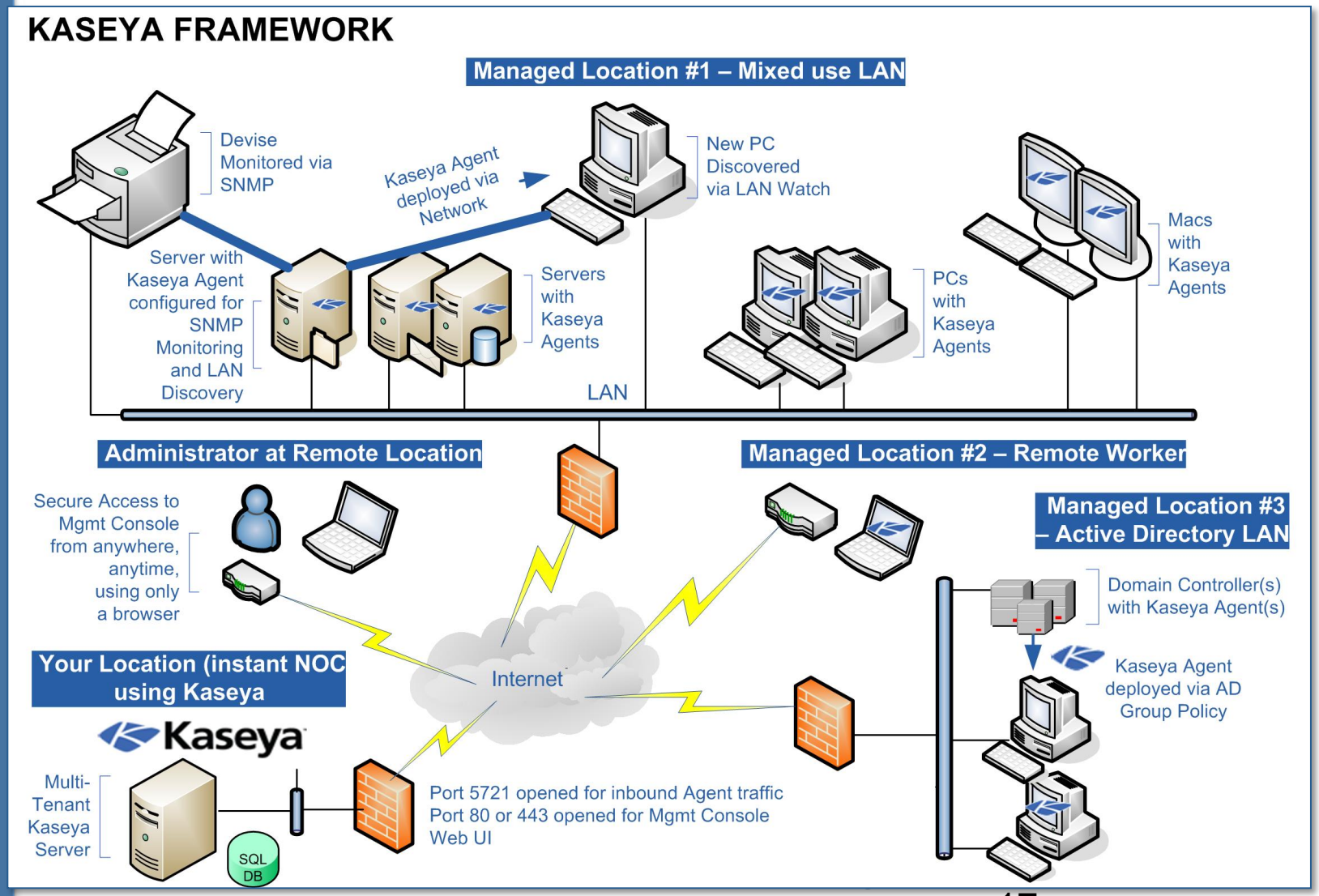
# Flexible Deployment

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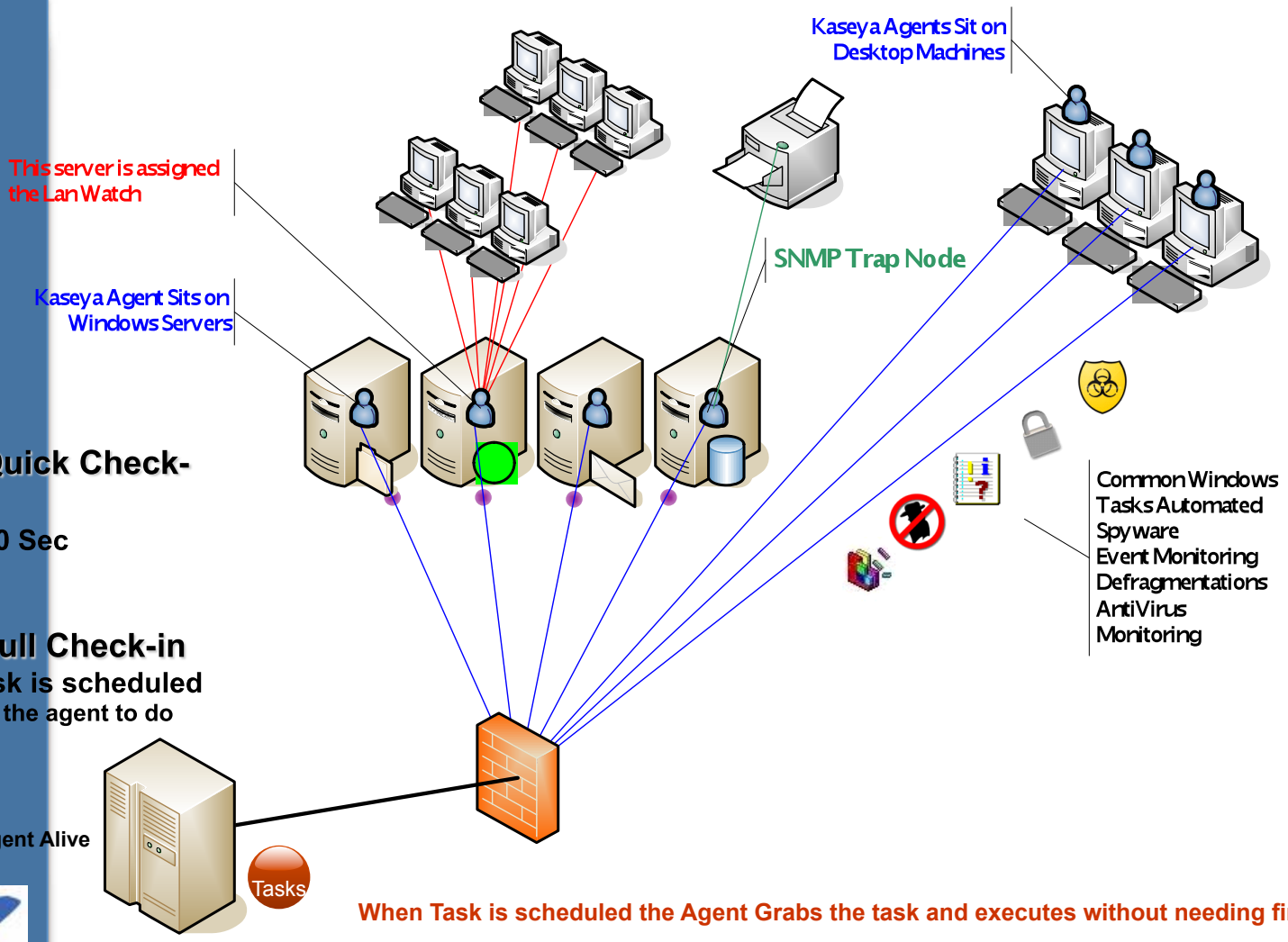
# Kaseya Agent Topography Simulation




**Agent Quick Check-in**
**Default 30 Sec**
**Like a Ping**

**Agent Full Check-in**
**When Task is scheduled**
**Instructing the agent to do something**

**When Task is scheduled the Agent Grabs the task and executes without needing firewall ports open**

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# IT AUTOMATION

# COURSE OVERVIEW

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# Course Web Site

- Go to Lenny Simon's Home Page: *http://users.cis.fiu.edu/~lsimo001/*
- At the bottom of this page, find the link to the CIS 4431 IT Automation course for this semester.

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# 100% Success Rate! How?

**Four-Step Reinforcement Learning**

- Step 1: Being Exposed!
  - A new concept is introduced.
- Step 2: Getting Involved! *(Optional)*
  - You practice using an interactive video.
- Step 3: Practice Makes Perfect!
  - You practice using a dedicated virtual lab.
- Step 4: Mastering the Concepts!
  - You will read more and do self-assessment.

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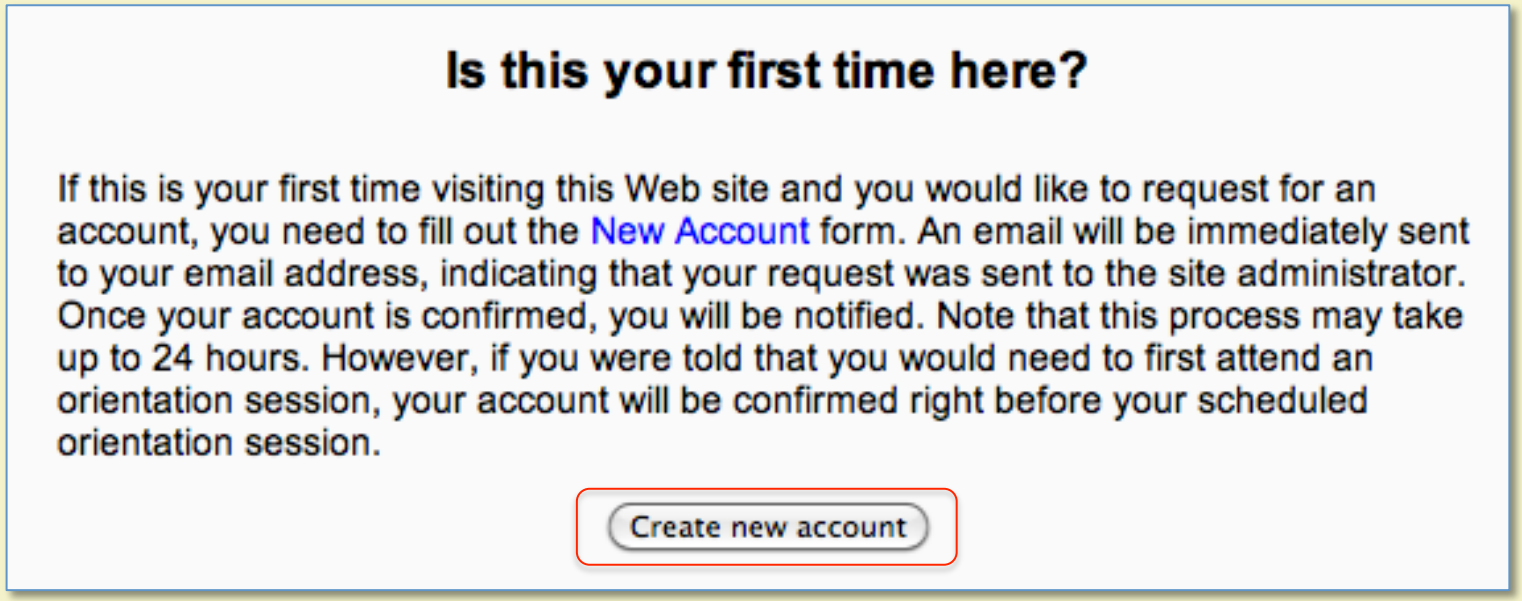
It Is Your Turn!

# Let's Start!

- Go to http://ita-portal.cis.fiu.edu/
- Create a new account



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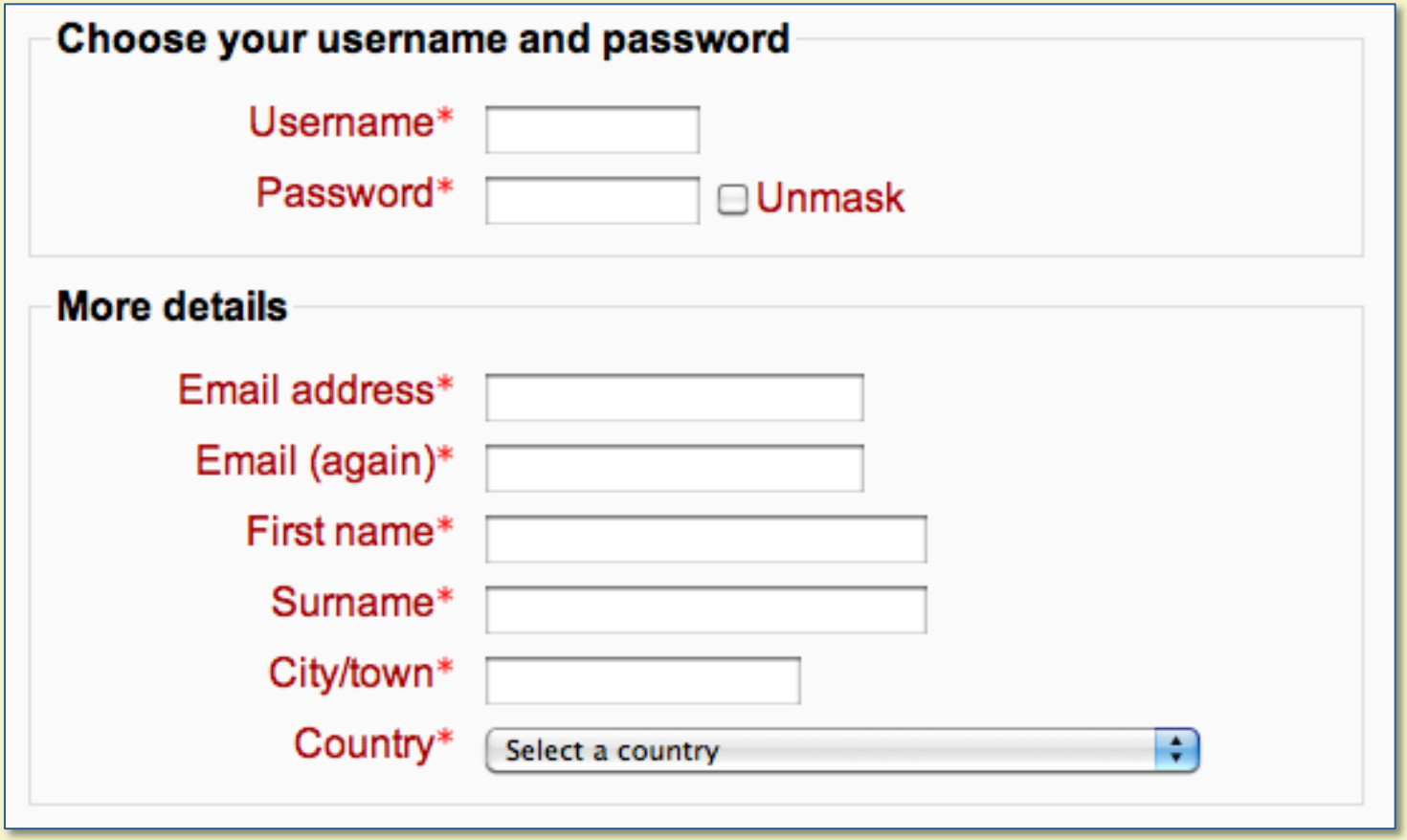
It is your Turn!

# Create a New Account

- The required fields are marked by *




- **Username must be your FIU username!**
- **Email must be your FIU email!**

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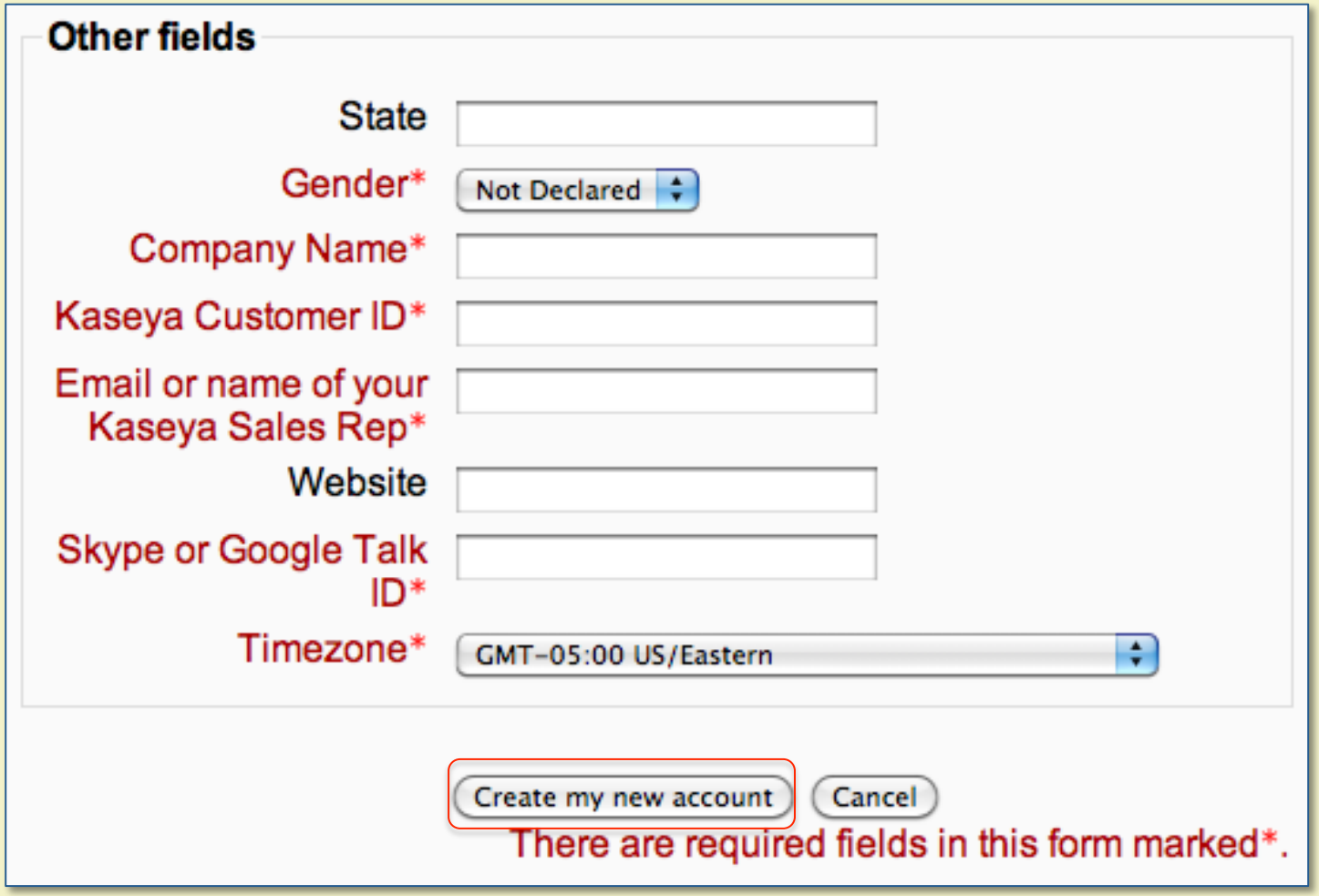
It Is Your Turn!

# Create a New Account

- Please enter N/A, if not applicable.



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It Is Your Turn!

# Create New Account

- Once successfully submitted, you will receive an email confirmation.
- click on the confirmation link in the email
  - If no link, then you need to wait until the admin of the portal approves your request.
- Upon the approval, you will receive a notification email.
- You can now open a browser (Chrome is preferred) and login to the portal
  - http://ita-portal.cis.fiu.edu/

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It Is Your Turn!

# Enroll In the Basics Course

- Once successfully logged in, click on the IT Automation course for this semester, for example:

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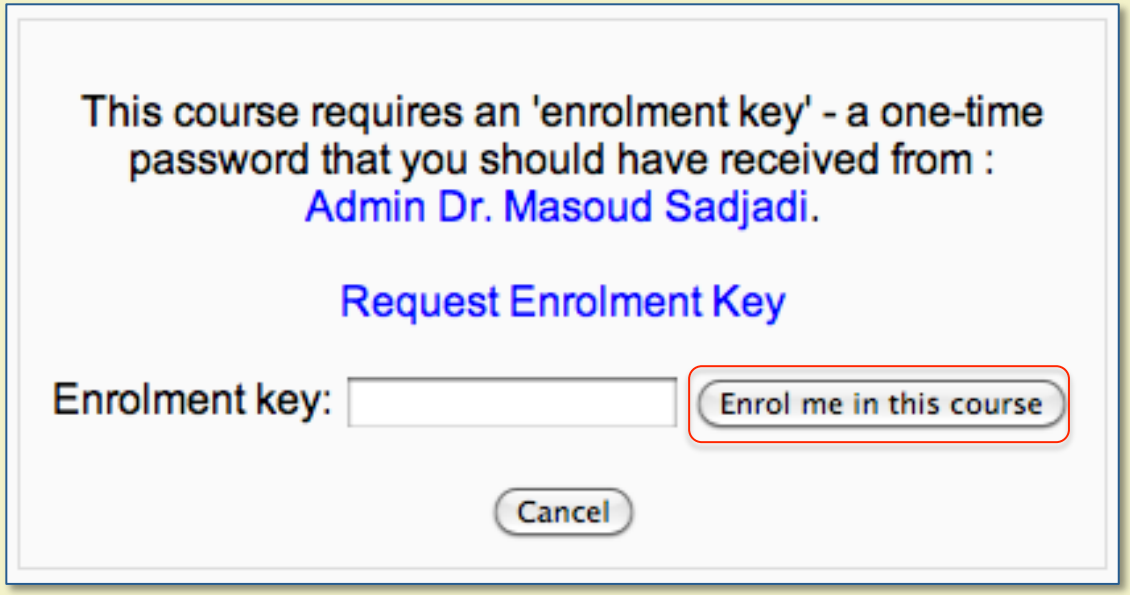
It Is Your Turn!

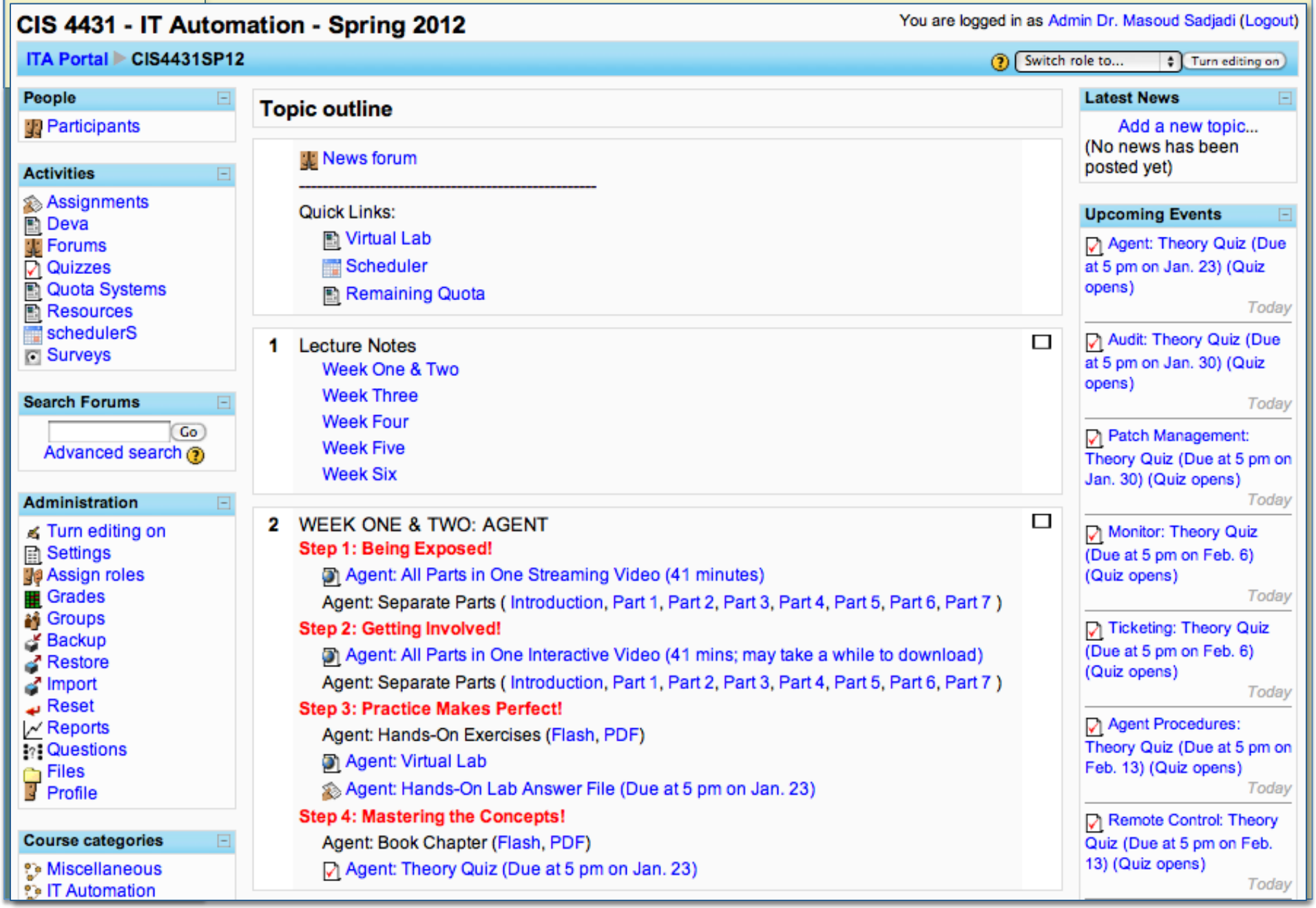
# Enroll In the Kaseya Fundamentals Course

- The enrollment key is *cis4431*




- Or the instructor provides the key

# LMS OVERVIEW



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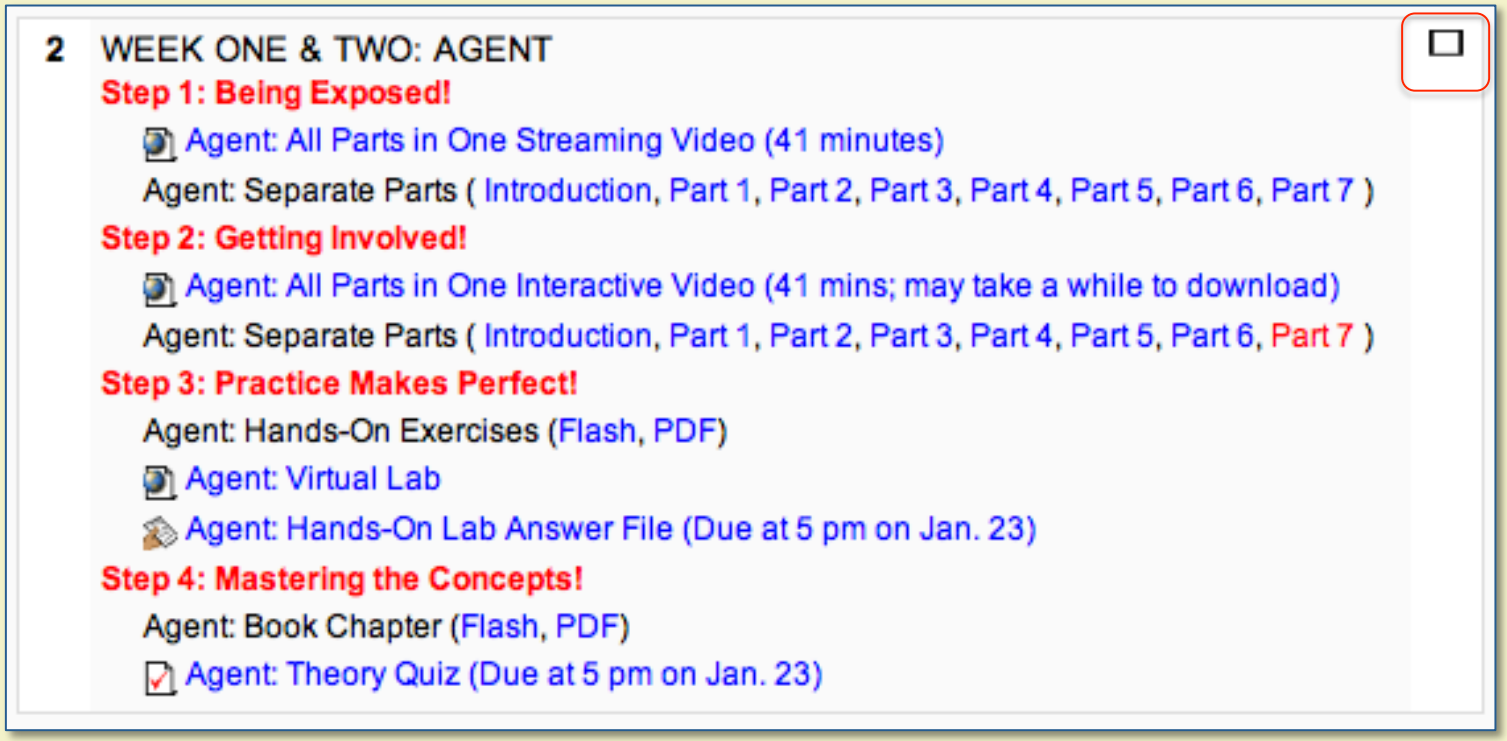
# 4-Step Reinforcement Learning

- All modules follow the 4-step approach
- For example, the Agent Module



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# Kaseya Fundamentals Workshop

# Virtual Labs Overview

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# Background Story

- Imagine that you were just hired by Florida International University (**FIU**) as the lead IT Administrator to manage 500 computers.
- Obviously, we cannot provide each one of you with 500 computers to play with!
- Instead, we provide each one of you with a virtual environment that has
  - **One shared SaaS Kaseya Server**
  - **5 dedicated virtual machines**
  - **One NAT router**

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# Background Story

- The virtual machines are distributed in four buildings
  - School of Computing & Info. Sciences (**SCIS**)
  - Machine Room (**MR**)
  - Green Library (**GL**)
  - College of Engineering & Computing (**CEC**)
- More information about your environment
  - 1 x **KServer** (a SaaS Account with System Role)
  - 1 x **Windows 2003 Server** (Domain Controller)
  - 4 x **Windows XP** (only 2 in the domain)
  - 1 x **Linux** (playing as a NAT router)

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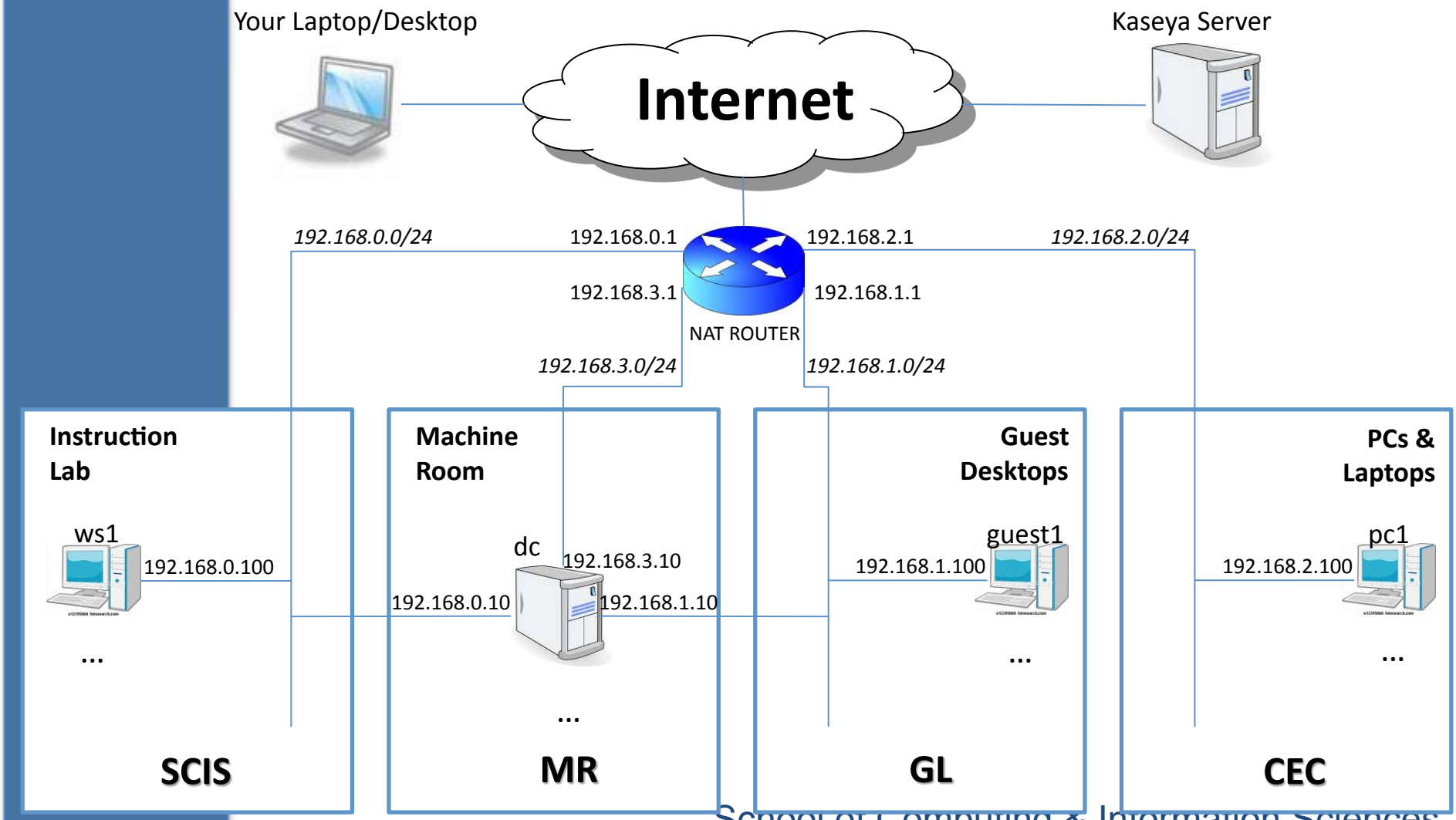
# FIU's Network Diagram



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# Technical Information

- KServer: **saas12.kaseya.net**
- NAT Router has 4 network cards:
  - 192.168.0.1, 1.1, 2.1 and 3.1
- SCIS hosts workstation 1 (**ws1**) with one card:
  - ws1.scis.fiu.edu - 192.168.0.100
- MR hosts domain controller (**dc**) with 3 cards:
  - dc.mr.fiu.edu - 192.168.0.10, 1.10, and 3.10
- GL hosts guest 1 (**guest1**) with one card:
  - guest1.gl.fiu.edu - 192.168.1.100
- CEC hosts personal computer 1 (**pc1**) and laptop 1 (**laptop1**), each with one card:
  - pc1.cec.fiu.edu - 192.168.2.100
  - laptop1.ced.fiu.edu – 192.168.2.200

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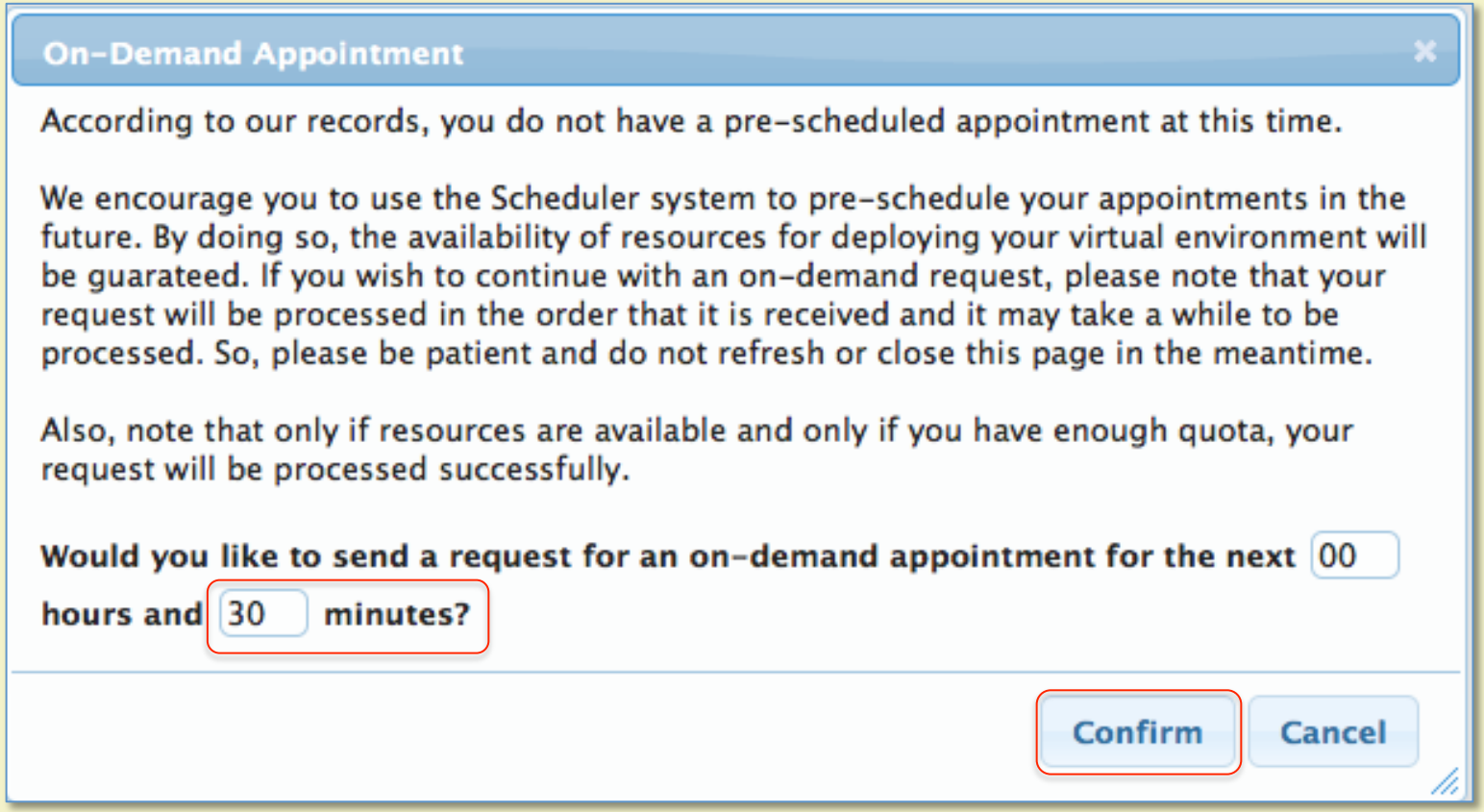
It Is Your Turn!

# Let's Start Our Virtual Labs

- Find the link to *Virtual Lab* and clink it.
- Simply enter *hours/minutes* and *Confirm*.
- Three hours may be sufficient for today.



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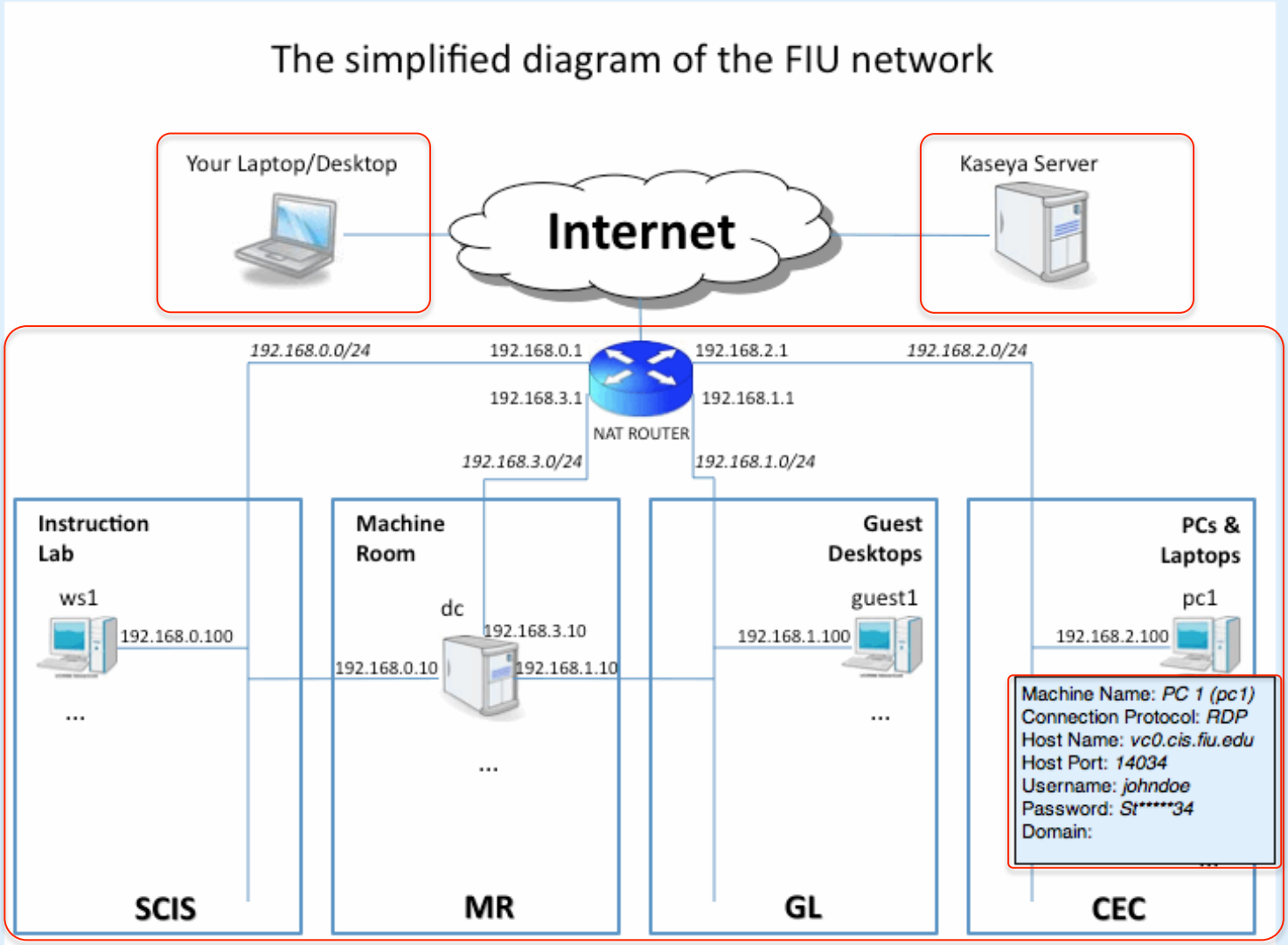
*Virtual Labs Portal*

# Network Diagram

Network Diagram | Data Sheet | Connection Info | Domain Controller (dc) | Workstation 1 (ws1) | Guest 1 (guest1) | PC 1 (pc1) | Laptop 1 (laptop1)



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*Virtual Labs Portal*

# Data Sheet

Network Diagram | Data Sheet | Connection Info | Domain Controller (dc) | Workstation 1 (ws1) | Guest 1 (guest1) | PC 1 (pc1) | Laptop 1 (laptop1)

| Variables | Values |
|---|---|
| <USERNAME> | johndoe |
| <PASSWORD> | St*****34 Note: This is the same password you used to login to Moodle. |
| <DOMAIN_ADMIN_CREDENTIALS> | (johndoe, St*****34, FIU) |
| <LOGIN_CREDENTIALS> | (johndoe, St*****34, FIU) or just (johndoe, St*****34) |
| <LOGIN_CREDENTIALS> for user Student | (Student, St*****34, FIU) or just (Student, St*****34) Note: The Student password is same as yours. |
| <NAT_ROUTER_IP> | vc0.cis.fiu.edu |
| <DC_RDP_PORT> | 14031 |
| <WS_RDP_PORT> | 14032 |
| <GUEST_RDP_PORT> | 14033 |
| <PC_RDP_PORT> | 14034 |
| <LAPTOP_RDP_PORT> | 14035 |

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*Virtual Labs Portal*

# Connection Info

- Link to the KServer
- RDP connection information to your five dedicated virtual machines
  - HostName:PortName

Network Diagram | Data Sheet | Connection Info | Domain Controller (dc) | Workstation 1 (ws1) | Guest 1 (guest1) | PC 1 (pc1) | Laptop 1 (laptop1)

| # | Machine Name | Connection Protocol | Host Name | Host Port | Username | Password | Domain |
|---|---|---|---|---|---|---|---|
| 1 | Kaseya Server | http | http://kaseya2.cis.fiu.edu:80 | 80 | johndoe | St*****34 | |
| 2 | Domain Controller (dc) | RDP | vc0.cis.fiu.edu | 14031 | johndoe | St*****34 | FIU |
| 3 | Workstation 1 (ws1) | RDP | vc0.cis.fiu.edu | 14032 | johndoe | St*****34 | FIU |
| 4 | Guest 1 (guest1) | RDP | vc0.cis.fiu.edu | 14033 | johndoe | St*****34 | FIU |
| 5 | PC 1 (pc1) | RDP | vc0.cis.fiu.edu | 14034 | johndoe | St*****34 | |
| 6 | Laptop 1 (laptop1) | RDP | vc0.cis.fiu.edu | 14035 | johndoe | St*****34 | |

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# Alternative Ways to RDP to Your Virtual Machines

- You can use any RDP client of your choice
  - Windows
    - Microsoft Terminal Server Console (mstsc.exe)
  - MAC
    - Remote Desktop Connection
    - CoRD
  - Linux
    - Rdesktop
  - Web Browser
    - webRDP, an applet embedded in the Virtual Lab Portal
  - …

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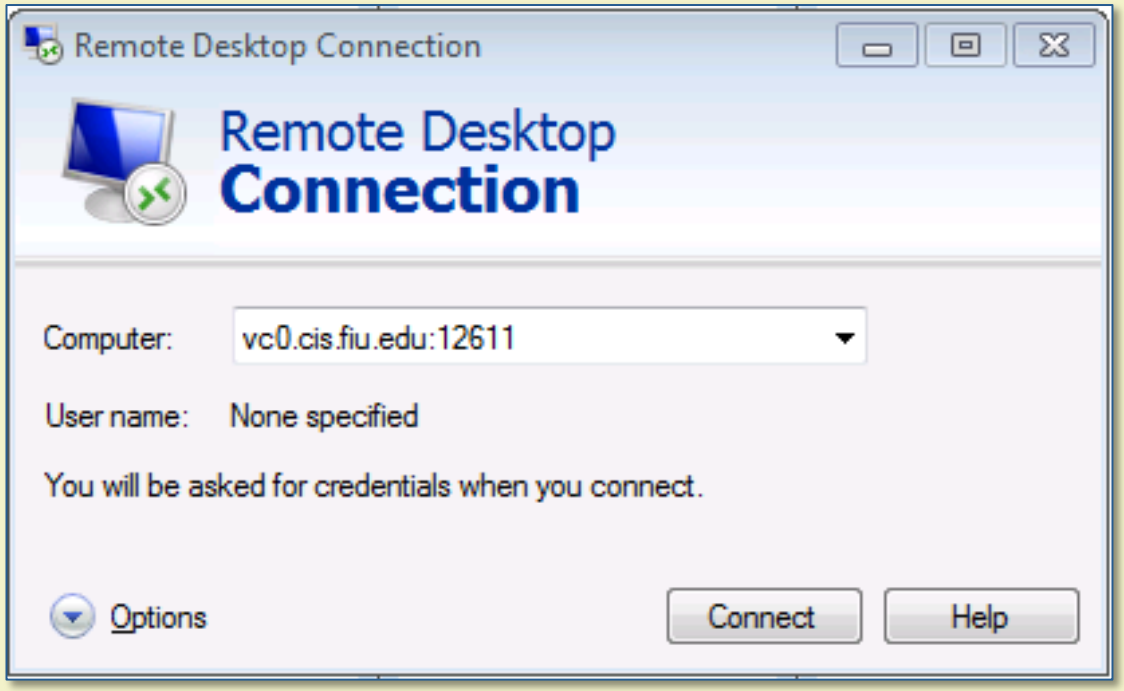
It Is Your Turn!

# Connecting to Your Virtual Machines Using mstsc.exe

- On your local Windows Machine
  - Go to *Start > Run*
  - Type *mstsc.exe*



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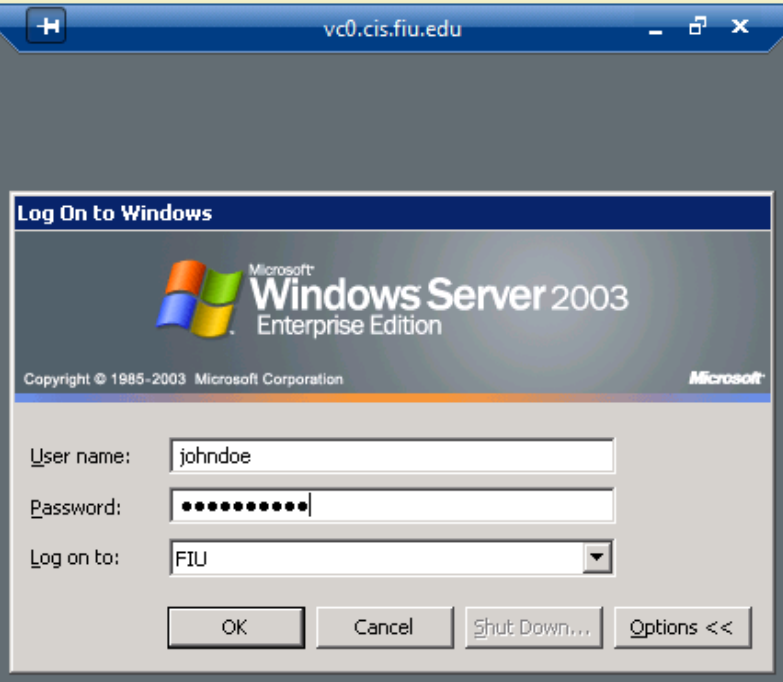
# Use mstsc.exe to connect to dc

- Enter *Host:Port* for *Computer*; see Data Sheet
- Enter your own *username* and *password*
- Domain is *FIU*



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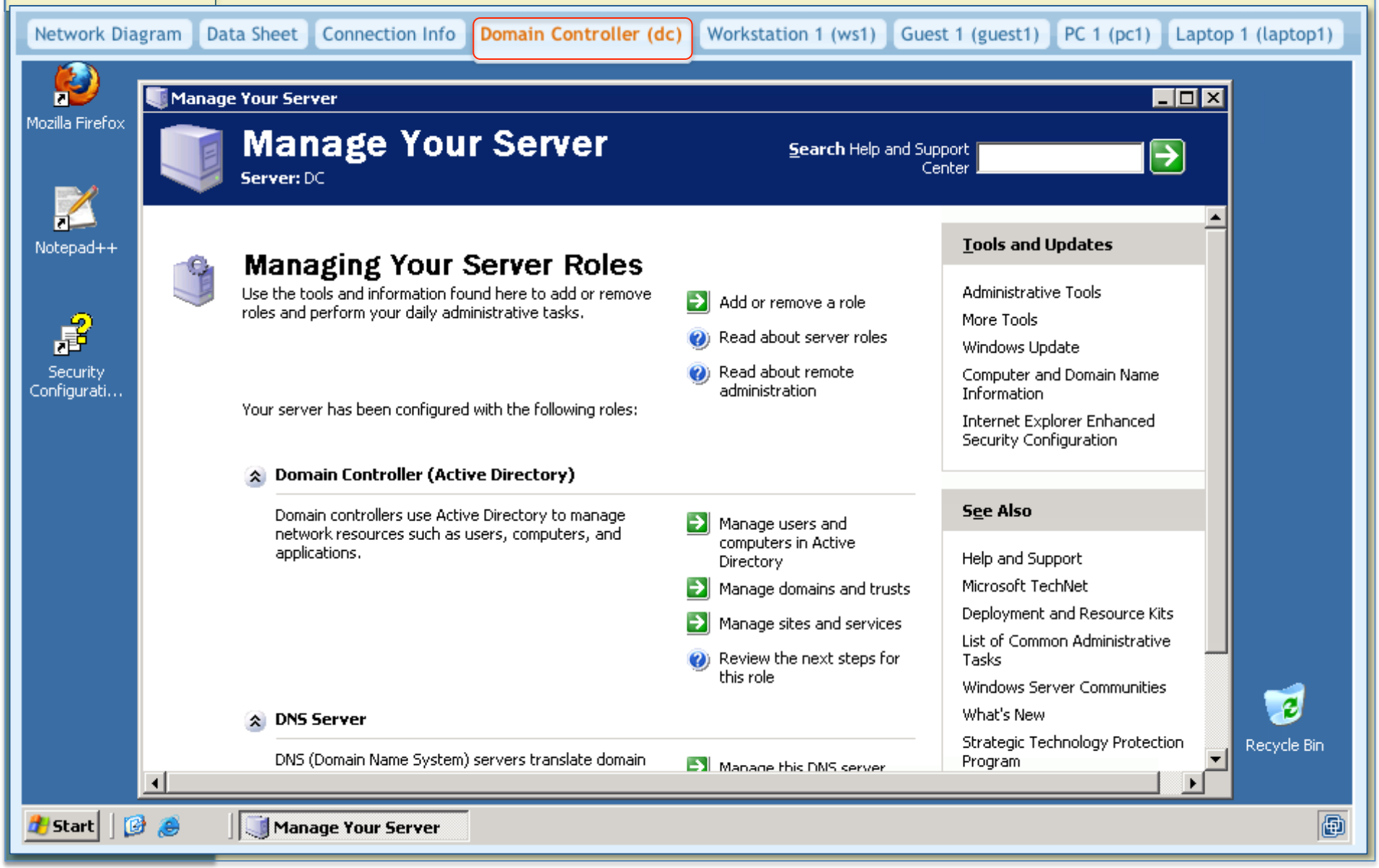
# Use webRDP to connect to dc



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# Note on RDP Connections

- Sometimes when using webRDP, you may experience that the keyboard and/or mouse do not work. Simply reconnect to resolve the issue (click on the tab).
- To improve the performance of your RDP sessions, you should get rid of the background wallpaper in the XP machines.
- For slow connections, you may choose to use 5 instances of mstsc.exe rather than webRDP.

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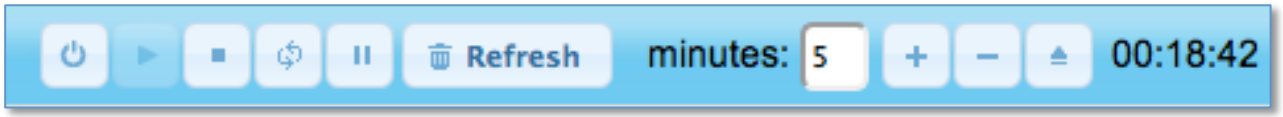
# Control Buttons and Timer

- You do not need these buttons for any of the exercises, but just in case you want full control over your dedicated machines, they are provided to you.




- **Note:** Refresh provides you with a fresh copy of the virtual machine!
- Using + or – you can adjust the remaining time of your virtual lab.
- Use the eject button to cancel your lab.

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# Your Account on KServer

- After scheduling your virtual lab for the first time, a tenant account on our SaaS KServer will be automatically created for you and your username and password will be synced with your account at IT Scholars.
- **Note:** Your account on VSA is only active during a scheduled virtual lab.
  - If it complains that your account is disabled, it simply means that your virtual lab ran out of time or you forgot to schedule one.

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# Final Notes on Virtual Labs

- Before working on the labs, make sure that you are completely familiar with
  - the background story
  - the network diagram
  - the building names
  - the name of the virtual machines
- Sometimes we refer to your virtual machines as servers and workstations
  - **Servers**: dc
  - **Workstations**: ws1, guest1, pc1, and laptop1

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# Final Notes on Virtual Labs
(cont.)

- Please Follow the Presentation
  - Don't worry if you can't complete the LABs.
  - You can finish the labs as homework.
- Review Steps
  - Watch the streaming videos (Step 1)
  - Work with the Interactive Videos (Step 2)
  - Practice in Your Virtual Lab (Step 3)
    - Check the correctness of your work by looking at the screenshots included lab review slides at the beginning of the next slide set.
  - Scan the Book Chapter & Take the Quiz (Step 4)

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It Is Your Turn!

# Progress Check

- Were you able to start your virtual lab?
- Were you able to logon to the Kaseya VSA?
- Were you able to logon to your virtual machines (i.e., dc, ws1, guest1, pc1, and laptop1)?
- Hint: Your username/password is the same everywhere (see Data Sheet)

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# Supported Browsers

- Internet Explorer ver. 8.0 & above
- Firefox v3.6 & above
- Google Chrome 6.x & above
- Limitations/Requirements:
  - KLC Active-X for IE
  - KLC add-on module for Firefox
  - KLC add-on for Google Chrome
  - Remote Control – requires Active-X for remote sessions.

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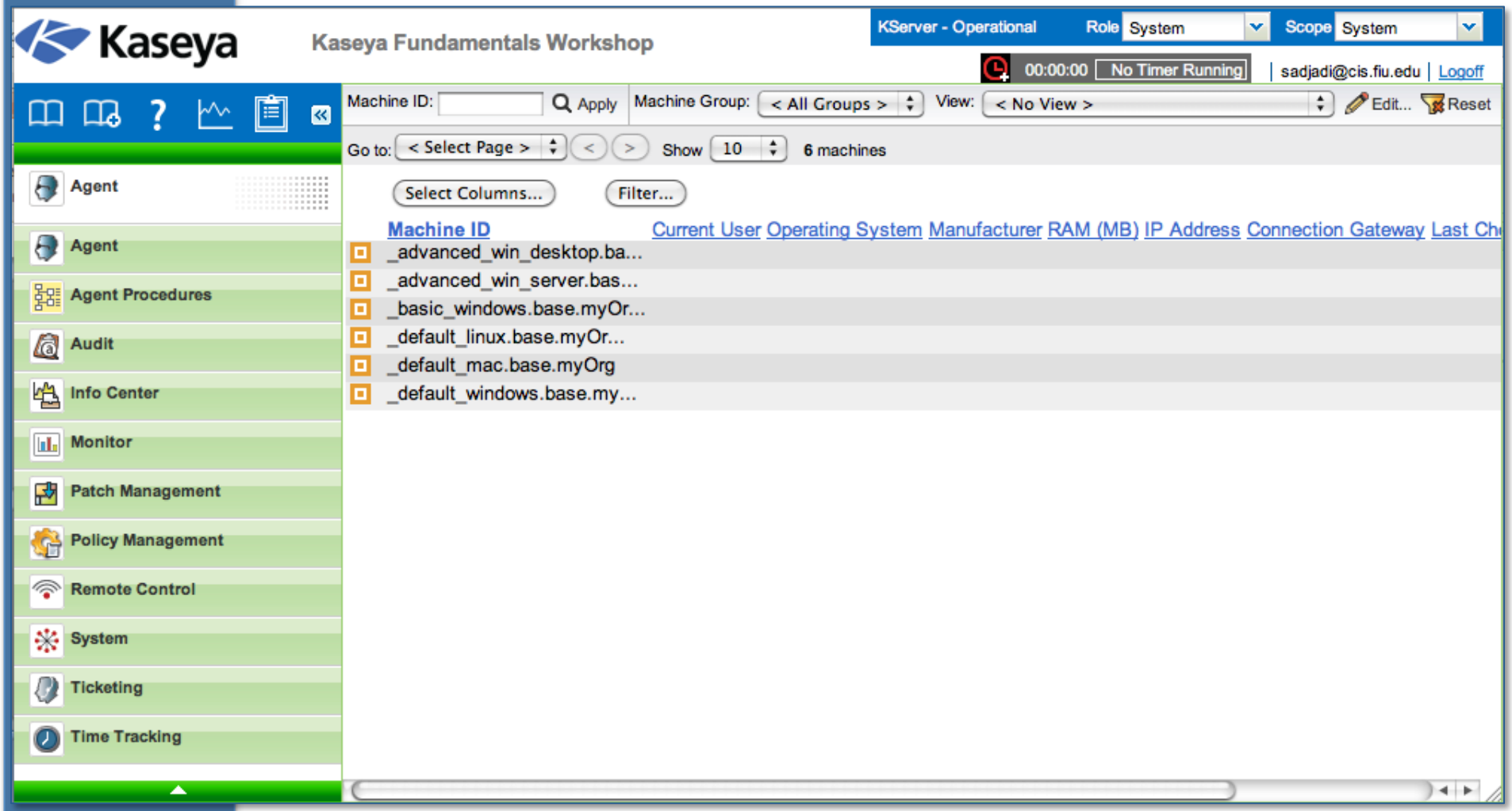
# Kaseya VSA Overview

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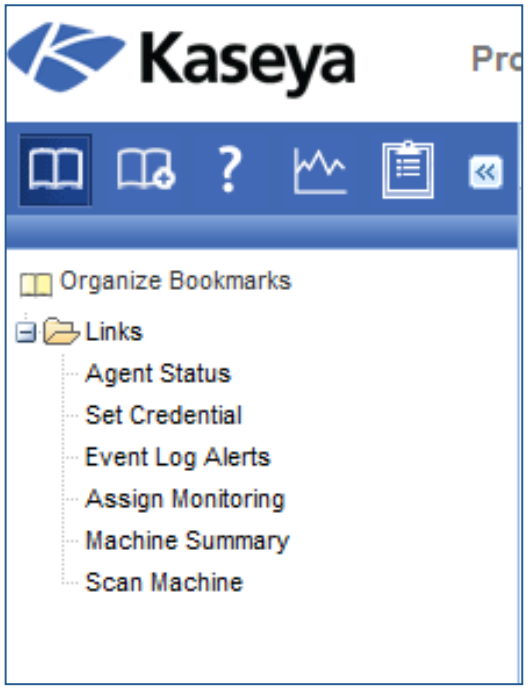
# VSA Navigation

- Bookmarks

  – Create a list of most visited function




- Online Help

  – Content Sensitive Help

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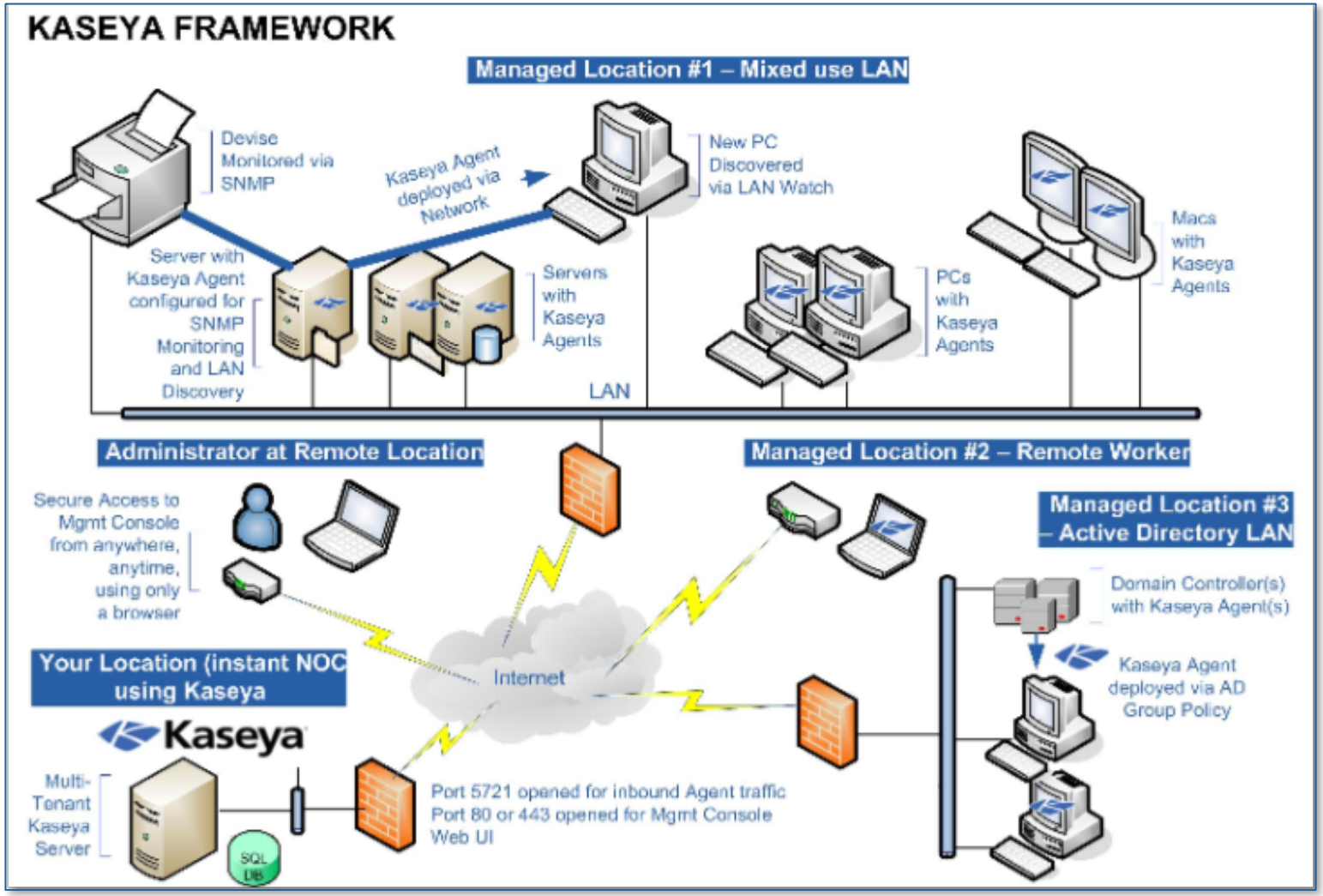
# Agent and Server Framework



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# Preparing the Network

- Setup your Internet host name (Internal vs. External DNS)
- Setup port forwarding
- Kaseya Server must be able to access
  - http://vsaupdate.kaseya.net and
  - http://license.kaseya.net
- Web UI: Typically TCP port 80 or 443 inbound & outbound
- Email Notifications: typically TCP port 25 outbound
- Agent connections: default TCP and UDP port 5721 inbound and outbound
- Kaseya Live Connect P2P connection
  - STUN server UDP port 5721 stun.kaseya.net (212.54.132.36)
  - Router/ Firewall must allow endpoint-independent-mapping (EIM)
    - UPNP support and enabled
    - Permit EIM or Full Cone NAT connections

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# Additional Sources

- Kaseya Community
  - http://community.kaseya.com
  - Access Forums, Knowledgebase, and other Resources
- Customer Portal
- IT Service Delivery Kit
  - Additional Views, Monitor Sets, Event Sets, and Agent Procedures

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# Import Center

- Import or Export VSA Content
  - Agent Procedures
  - Agent Templates
  - Event Sets
  - Monitor Sets
  - SNMP Monitor Sets
  - Patch Policy
  - Views
- Export multiple content at once.
  - Download xml file to share
- Import will parse xml file

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# IT Service Delivery Kit

- Download IT Service Delivery Kit
  http://demo1.kaseya.com/handouts/ProServITSDK_v2.zip
- Information on IT Service Delivery Kit on Kaseya's Community
  http://community.kaseya.com/resources/m/knowexch/53077.aspx
- Note that IT SDK has already been imported in your virtual labs.

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It Is Your Turn!

# Progress Check

- Do you know what browsers are supported?
- Were you able to logon to the Kaseya VSA and explore the functions available to you?
- Do you know how to download and import the IT SDK?

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It Is Your Turn!

# Questions?

- Please type your questions in the chat section of your GoToMeeting window.
- Remember that you can always send your questions to training@kaseya.com too.
- If you are falling behind the steps in the lab, please just watch the presentation, take some notes, and perform your labs after the lecture.

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# Kaseya Fundamentals Workshop

# AGENT

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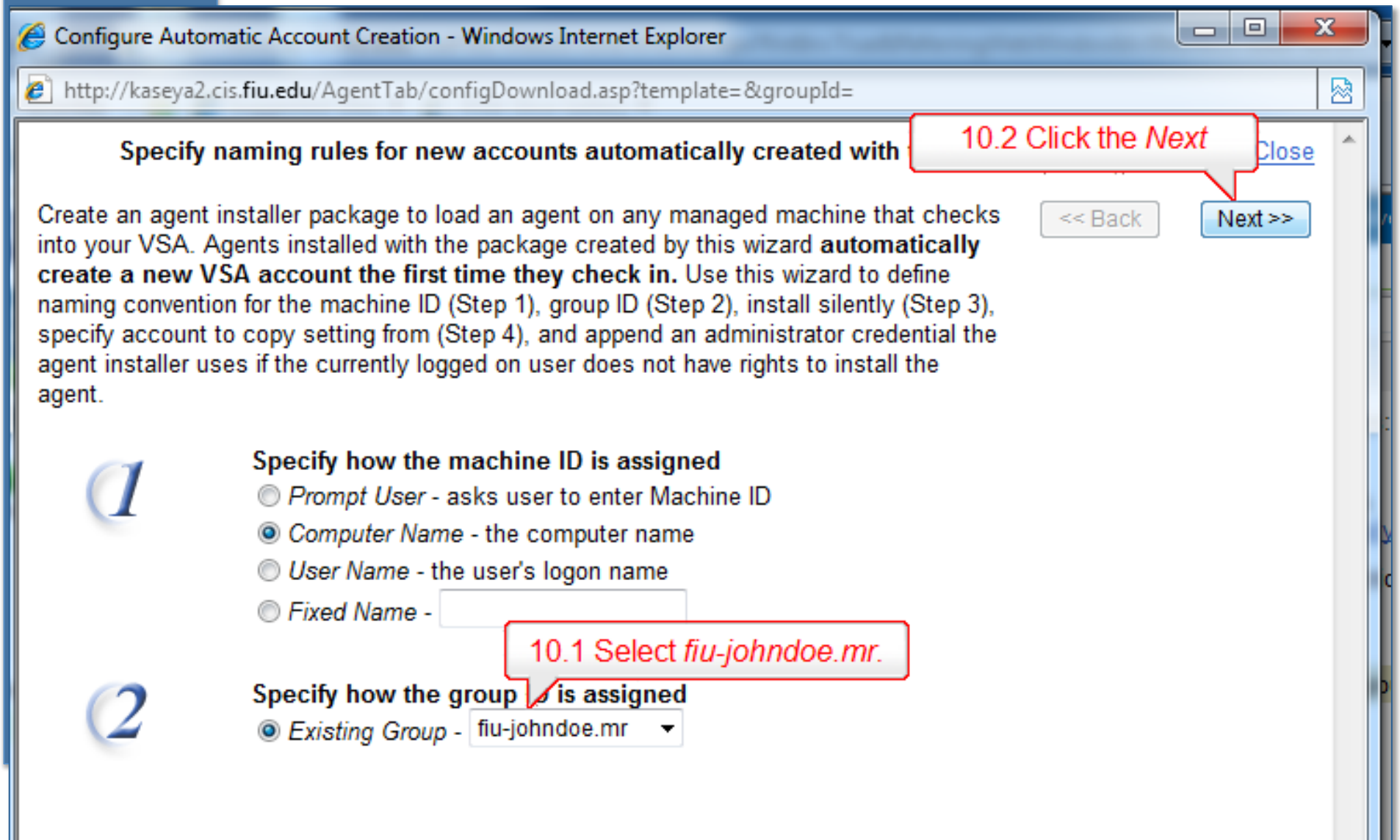
# LAB

- Assumptions
  - Kaseya server is operational
  - Logical network layout is known
- Tasks
  - Define Organization Structure
  - Deploying Kaseya Agents
  - Customizing Kaseya Agent Menus

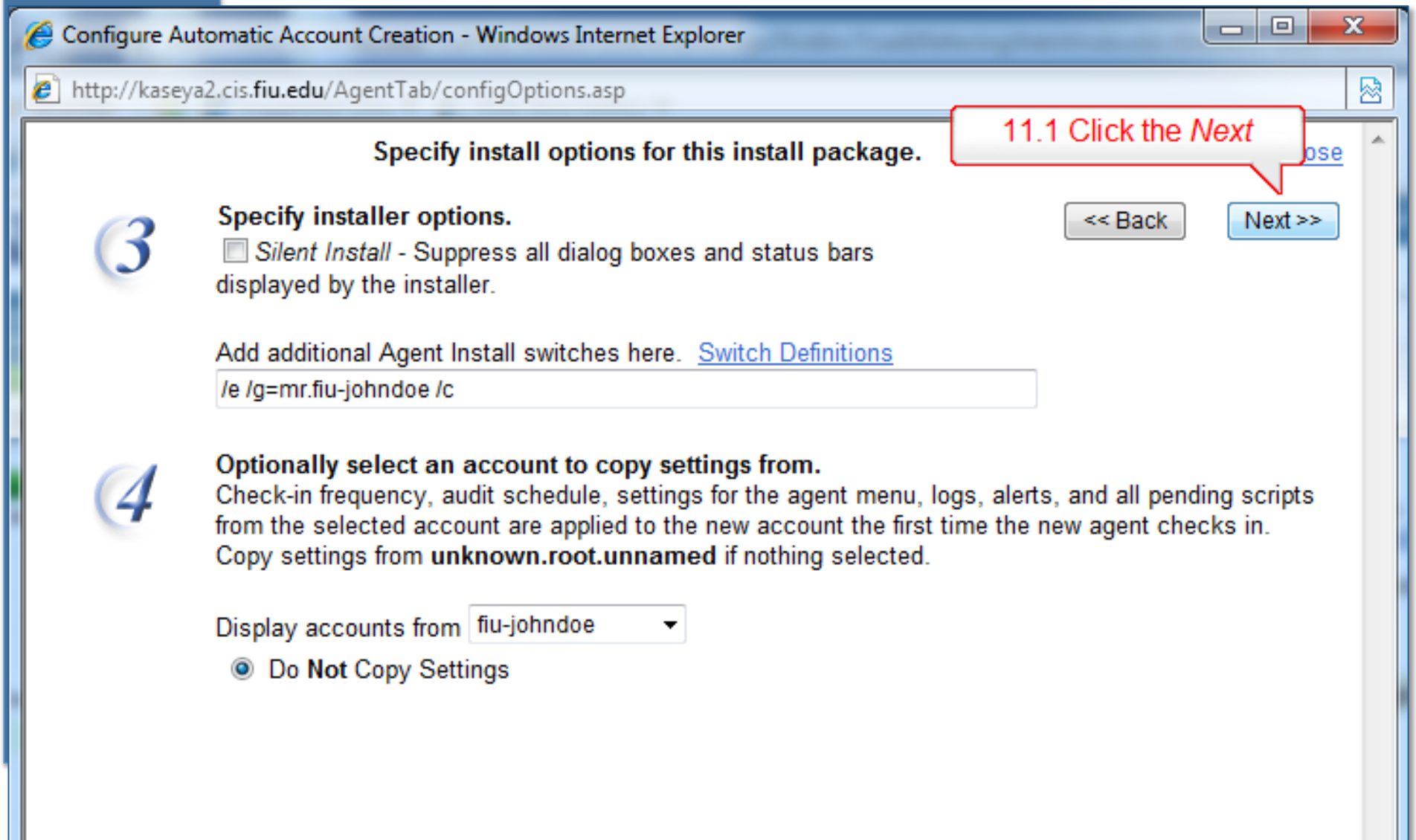
# Create Agent Package

10. Choose *Computer Name - the computer name* and *Existing Group - FIU-**<USERNAME>**.MR* ", then Click next.



# Create Agent Package

11. On the next screen, make sure to leave everything at its default values and click next.



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# Create Agent Package

12. In the *Select agent type* drop down box choose *Windows* as the operating system.
13. Make sure *Securely bind administrator credentials to the install package?* is checked and enter the ***<DOMAIN_ADMIN_CREDENTIALS>*** (which you can find in your assigned dedicated virtual environment data sheet) under this selection box.
14. Next, under *Package Name* type "package4MR-***<USERNAME>***" and under *Package Description* type "MR".
15. Click on "Save".

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It Is Your Turn!

# Progress Check

- Were you able to block solitaire?

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It Is Your Turn!

# Questions?

- Please type your questions in the chat section of your GoToMeeting window.
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# HOMEWORK

- Complete the labs (follow the instructions in the hands-on documents)
  - Create 4 Agent Deployment packages
  - Install agents on all 5 virtual machines
  - Create views
  - …
- Review the VLAB environment and familiarize yourself with the network layout.
- Review the different methods of deploying an agent

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# THE END!

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