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Building desktops in the clouds: Virtualising the Investment Studio

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Building Desktops in the Clouds: Virtualising the Investment Studio

LAS-NLB Professional Sharing Session

30 Sep 2022



Singapore Management University

Established in 2000, SMU's mission is to generate **leading-edge research with global impact** and to produce **broad-based, creative, and entrepreneurial leaders** for the knowledge-based economy.

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- **College of Graduate Research Studies**
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- **School of Economics**
- **School of Computing and Information Systems**
- **Yong Pung How School of Law**
- **School of Social Sciences**

SMU Libraries



**Li Ka Shing
Library**



**Kwa Geok Choo
Law Library**

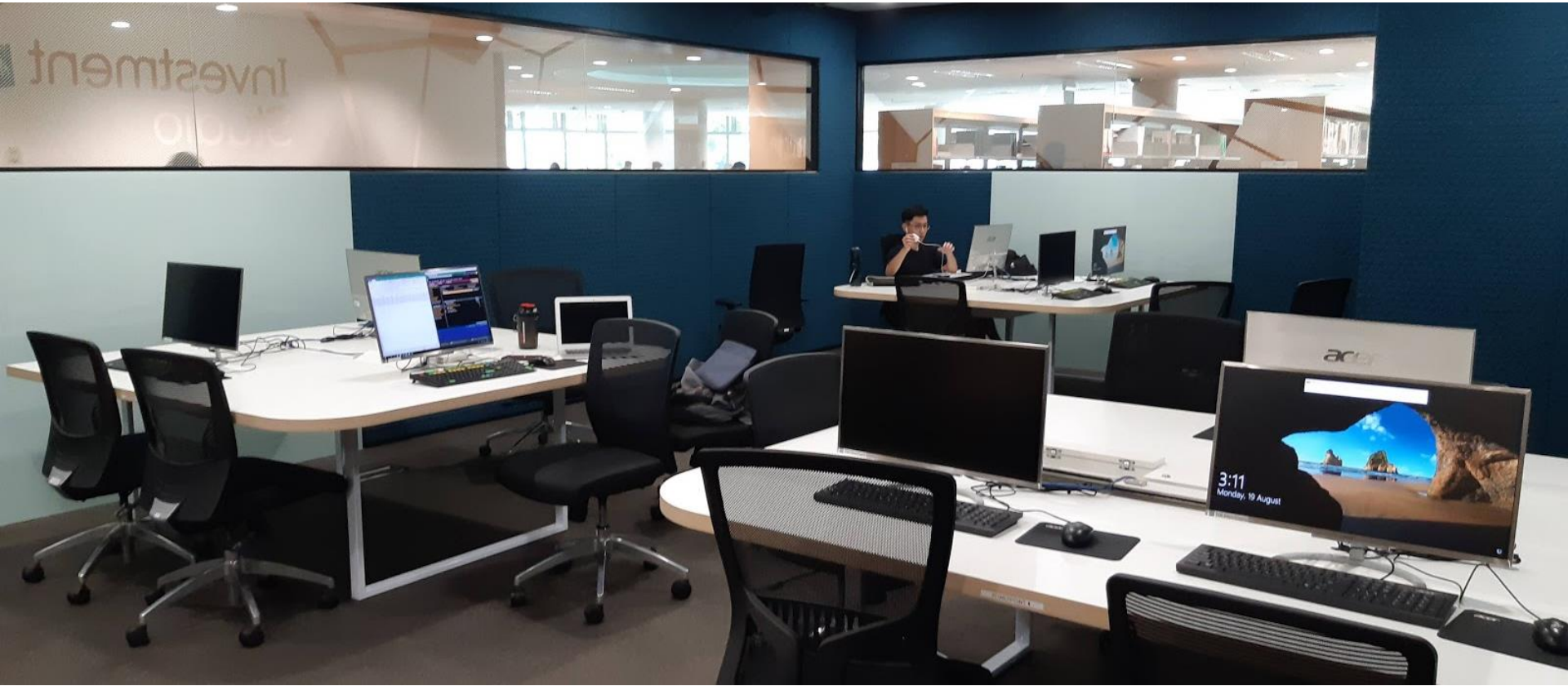
Collections by Type

480,000+ e-Books

85,000+ e-Journals

70,000+ Print Books

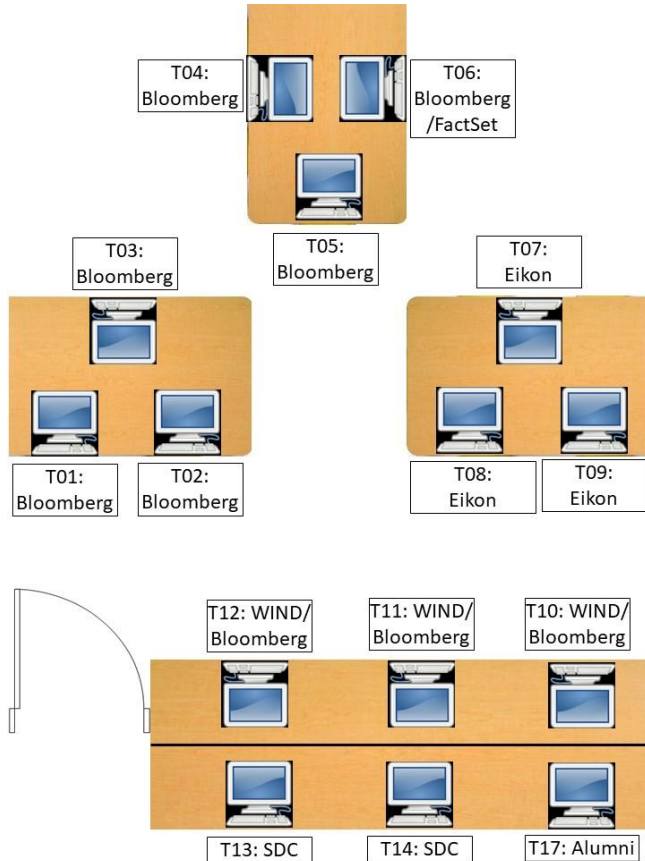
Investment Studio @ Li Ka Shing Library



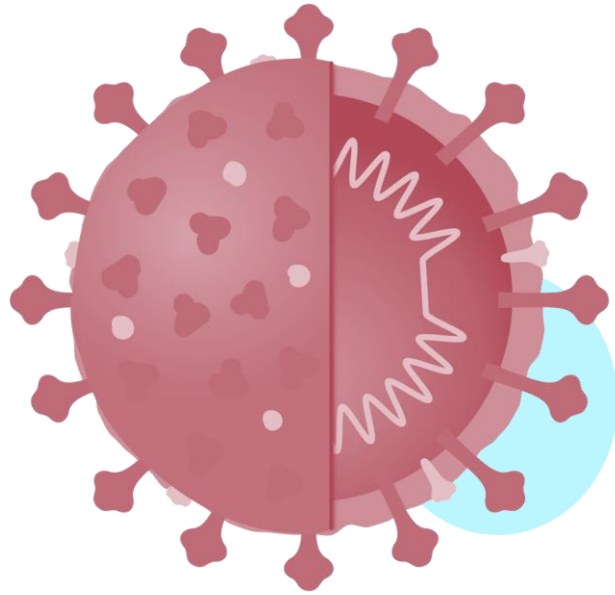
Investment Studio @ Li Ka Shing Library



Investment Studio @ Li Ka Shing Library

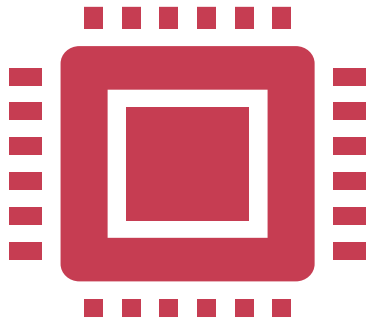


- 15 Physical AIO Computer Terminals
- Financial Databases include:
 - Bloomberg
 - Eikon
 - FactSet
 - SDC Platinum
 - WIND



Then along came...
... COVID19

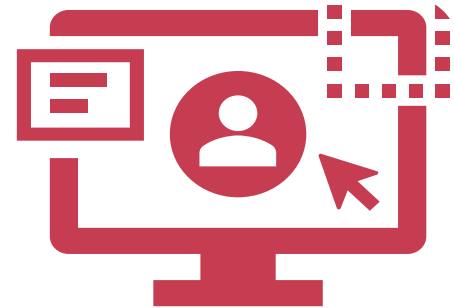
Virtualising the Investment Studio...



Technology offerings



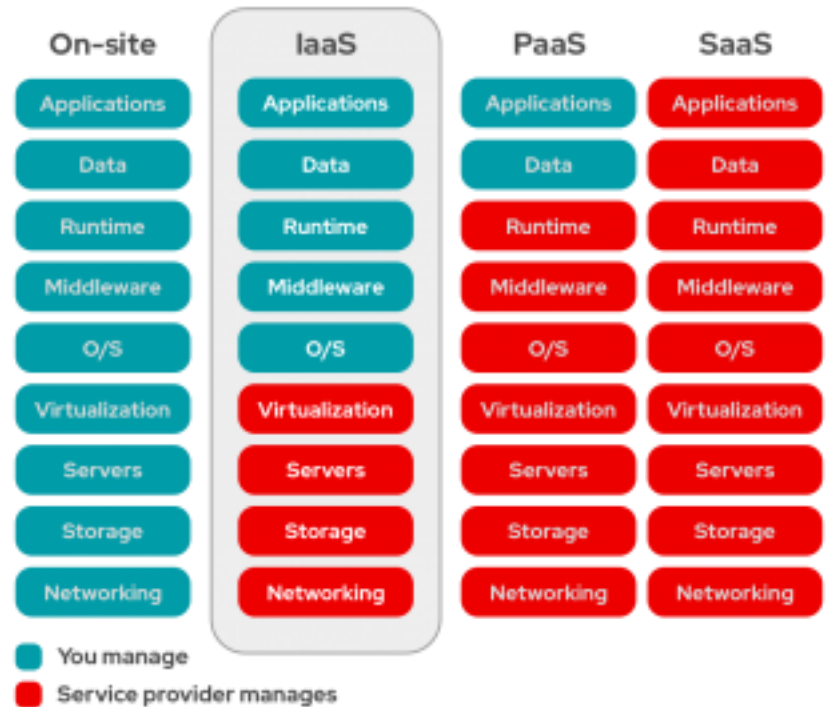
Vendor agreements



Service delivery

Collaborating with campus IT folks...

- Cloud computing technology
- Desktop virtualisation
- Technical support
- IT Security



Virtual machines

Default Directory

[+ Create](#) [↔ Switch to classic](#) [🕒 Reservations](#) [⚙️ Manage view](#) [🔄 Refresh](#) [⬇️ Export to CSV](#) [🔗 Open query](#) | [🏷️ Assign tags](#) [▶ Start](#) [↺ Restart](#) [☐ Stop](#) [🗑️ Del](#)

Filter for any field...












Subscription equals all

Type equals all

Resource group equals all

Location equals all

+ Add filter

<input type="checkbox"/> Name ↑↓	Type ↑↓	Subscription ↑↓	Operating system ↑↓	Size ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓
<input type="checkbox"/>  WVD-LIBRARY-01	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Running
<input type="checkbox"/>  WVD-LIBRARY-02	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Running
<input type="checkbox"/>  WVD-LIBRARY-03	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	m-rg-mwvd-vm-librar...	Southeast Asia	Running
<input type="checkbox"/>  WVD-LIBRARY-04	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	m-rg-mwvd-vm-librar...	Southeast Asia	Running
<input type="checkbox"/>  WVD-LIBRARY-05	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Running
<input type="checkbox"/>  WVD-LIBRARY-06	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Stopped (de
<input type="checkbox"/>  WVD-LIBRARY-07	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Stopped (de
<input type="checkbox"/>  WVD-LIBRARY-08	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Stopped (de
<input type="checkbox"/>  WVD-LIBRARY-09	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Stopped (de
<input type="checkbox"/>  WVD-LIBRARY-10	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Stopped (de
<input type="checkbox"/>  WVD-LIBRARY-11	Virtual machine	Microsoft Azure Enter...	Windows	Standard_D2s_v3	M-RG-MWVD-VM-LIB...	Southeast Asia	Running

Create a virtual machine

[Basics](#) [Disks](#) [Networking](#) [Management](#) [Monitoring](#) [Advanced](#) [Tags](#) [Review + create](#)

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ

Resource group * ⓘ

[Create new](#)

Instance details

Virtual machine name * ⓘ

Region * ⓘ

Availability options ⓘ

Availability zone * ⓘ

You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type ⓘ

Negotiating with database vendors...



Vendor agreements

- Technically possible to run all the software on Microsoft Azure Virtual Desktop
- But after negotiations,

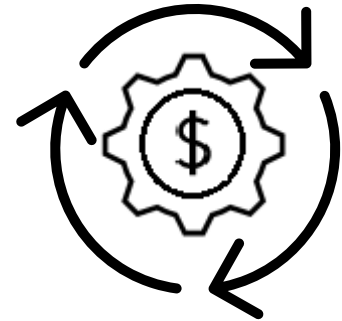
-  Bloomberg
-  Eikon
-  FactSet
-  SDC Platinum
-  WIND

Authentication



Confirms users are who they say they are.

Business Models

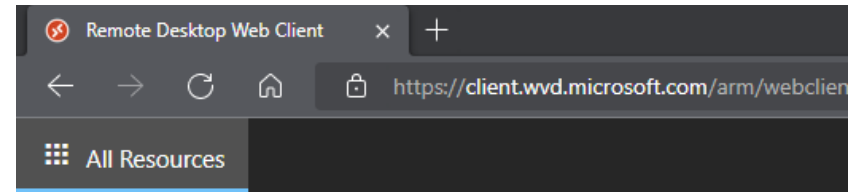


User testing with students and faculty...

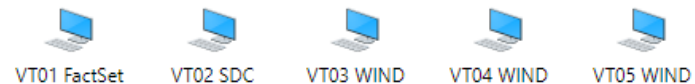
- Tried with faculty and students
 - Excel plugins
 - Cut-and-paste
 - Desktop sizing
- Ensure equitable access
 - Access 24/7
 - Managed by existing PC booking system



Service
delivery



▼ SMU Libraries - Investment Studio - Virtual



Where: Site: **Li Ka Shing Library** Location: **Custom**

What: Resource Type: **All** Resource State: **All**

When: Today: **29/09/2022**

Investment Studio - Level 3

There are no bookings in the queue!

	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
T01 Bloomberg																
T02 Bloomberg																
T03 Bloomberg																
T04 Bloomberg																
T05 Bloomberg																
T06 FactSet / Bloomberg																
T07 Eikon																
T08 Eikon																
T09 Eikon																
T10 WIND / Bloomberg																
T11 WIND / Bloomberg																
T12 WIND / Bloomberg																
T13 SDC																
T14 SDC																

Investment Studio - Virtual

There are no bookings in the queue!

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00
VT01 FactSet																
VT02 SDC																
VT03 WIND																
VT04 WIND																
VT05 WIND																

My Booking Reserved Block Booking Queued Available Elapsed In Use Faulty Closed Preparation

∨ SMU Libraries - Investment Studio - Virtual



VT01 FactSet



VT02 SDC



VT03 WIND



VT04 WIND



VT05 WIND

∨ SMU_Libraries-Data_Lab



UCINET




Recycle Bin


FactSet
Workstation


Firefox


Google
Chrome


Microsoft
Edge

VIEW BY: Region Sector Asia

Markets

Asia Market Synopsis sa

Asian equities rebounding Thursday: Nikkei +0.94%, Hang Seng +1.93%, Shanghai Comp +0.88%

- Asian equities advancing Thursday. Regional benchmarks logging gains of 1-2% with Hong Kong, Australia and Korean markets outperforming. US futures steady after S&P 500 snapped a run of six losses overnight. Asian bonds rallying with JGB, Aussie and New Zealand yields down sharply. Treasury rates turning higher with curve bear flattening. Commodities advancing alongside equities with WTI crude erasing earlier losses and base metals inching higher. Dollar reversing higher against other currencies, strongest against sterling.
 - Market rebound attributed to ROE Glit buying operation which exerted
- 10:22:19 AM +08 on 29 Sep '22

Economic Calendar

	Time (+08)	Period	Actual	Cons	Prior
BoE Mortgage Approvals SA (Number)	29 Sep, 16:30	AUG			63.8K
BoE Net Mortgage Lending SA (GBP)	29 Sep, 16:30	AUG			£5.1B
M4 Money Supply SA					

Launch Full Economic Calendar Source: FactSet Economics

Asia Reads

Asia Top Stories sa

South Korea monetary authorities buy back \$3.5B in bonds, may ban equity short selling:

- Seoul moved to support its ailing won and bolster its stock market late Wednesday, **pledging to buy back government bonds worth KRW5T (\$3.5B)** this week to curb local yields rising to match US Treasuries (MaeilBusiness). **BOK is to buy KRW3T of 3Y, FY and 10Y maturities** while **Ministry of Finance will return payments on KRW2T ahead of maturity**. Earlier this week, 3Y government bond yield reached near-record high 4.548% with yields in other maturities also rising sharply. Moves seen as indicative of won support which reached fresh 14-year low against dollar Wednesday, equity market also sharply lower on read across. In second move, MaeilBusiness reported **Financial Services Commission is moving to reactivate stock stabilization fund** last used during early days of pandemic selloff, and may **ban short selling** used by institutions and overseas investors.

PBOC issues stern warning to yuan speculators:

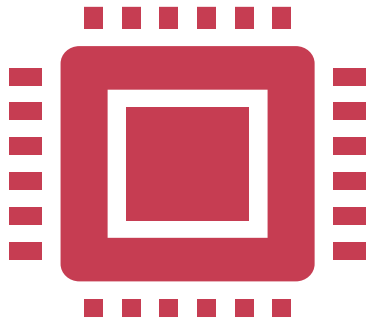
- Bloomberg reported **PBOC issued a strongly-worded statement** Wednesday to warn against speculation after yuan fell to its lowest versus dollar since 2008. Said **"do not bet on one-way appreciation or depreciation of the yuan, as losses will definitely be incurred in the long term."** Key market participants need to "voluntarily safeguard the stability of the market, and be firm when they need to iron out big rallies or declines in the exchange rate." Added that it has "plenty of experience" to fend off external shocks and effectively guide market expectations. Reuters takeaways attributed latest **yuan weakness to broad dollar strength** buoyed by safe-haven demand and a hawkish Fed. However, **corporate demand for dollars said to have been very**

Portfolio News

Signals Positive

At this time, FactSet only supports Signals. Additional portfolio types will be a

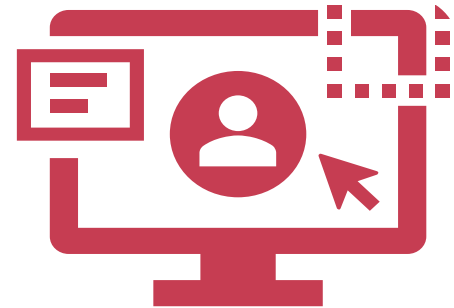
Virtualising the Investment Studio



Technology offerings



Vendor agreements



Service delivery

<https://researchguides.smu.edu.sg/istudio>

Thank you!



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