



CLOUDESCK VIRTUALIZATION SYSTEM  
31 JULAI 2019  
MARRIOT PUTRAJAYA

# AGENDA



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# INTRODUCTION



## LEGACY PC

**Legacy PC** at computer lab does not support for teaching & learning (T&L) environment

**Operation cost** on maintaining computer lab is quite high



## SOFTWARE COMPATIBILITY

**Operating system (OS)** upgrading does not support teaching & learning (T&L) software

T&L software that works with **many different client computers** to load institutionally licensed applications on **student-owned machines.**

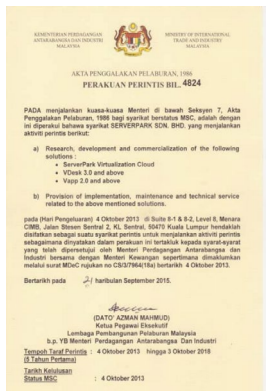


## SOFTWARE UTILIZATION

No central management system to monitor and audit the teaching & learning (T&L) **software utilization**



# PRODUCT COMPARISON (POC)



- CURRENCY
- LOWER INITIAL COST

**BUDGET**

- R&D
- TECHNICAL

**SUPPORT**

- OFFLINE MODE

**FEATURES**

## 15 CRITERIA





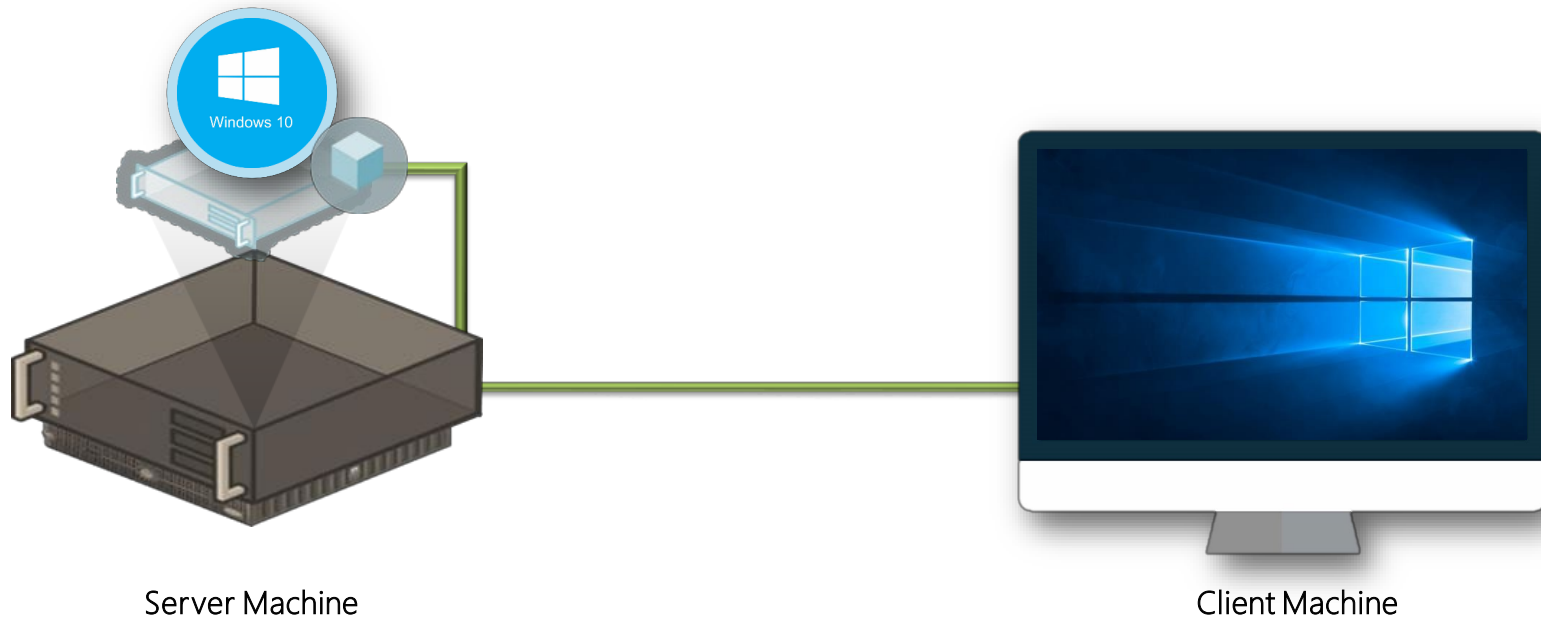


# CLOUDDesk VIRTUALIZATION SYSTEM

  
Next-Gen Virtual Workspaces

# VDI

Virtual desktop infrastructure (VDI) is the practice of hosting the OS + APP within a virtual machine (VM) running on a centralized server.



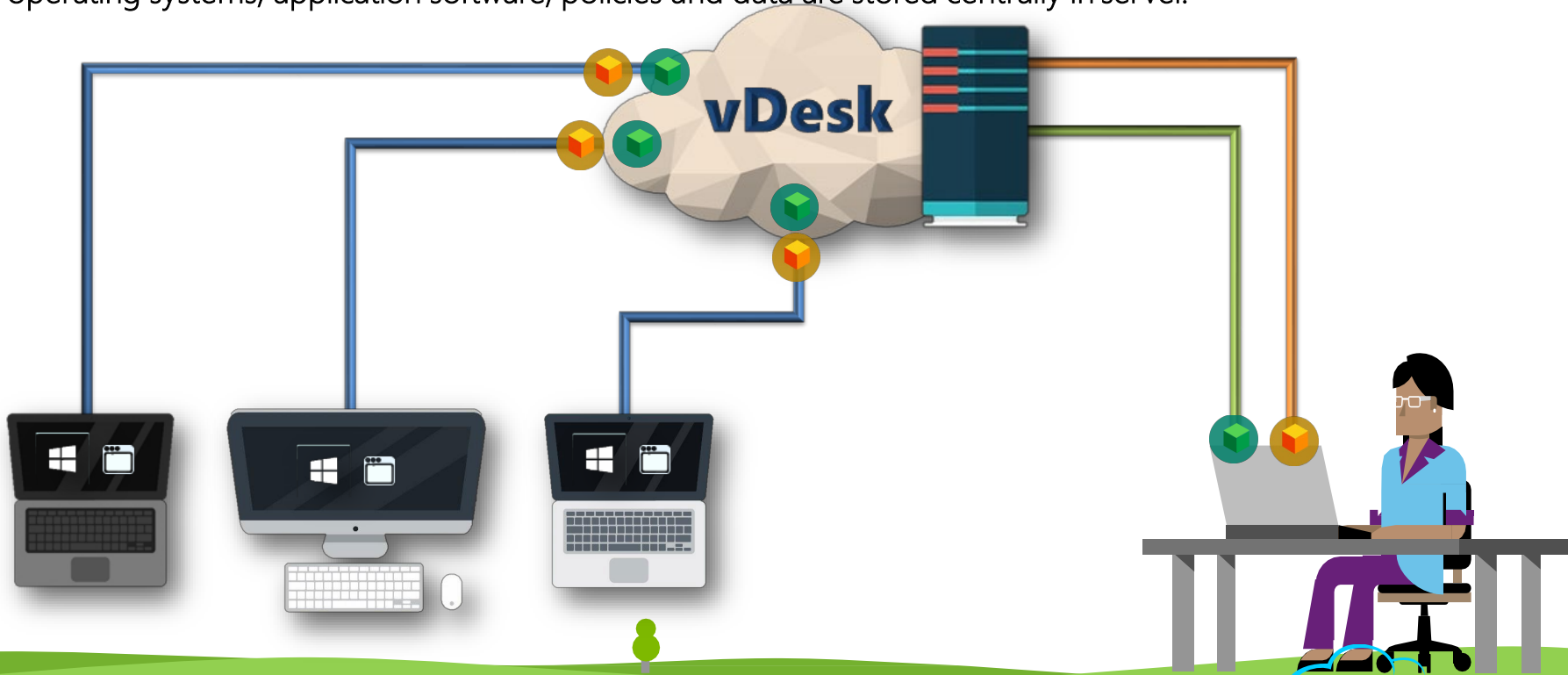
Server Machine

Client Machine

# vDesk

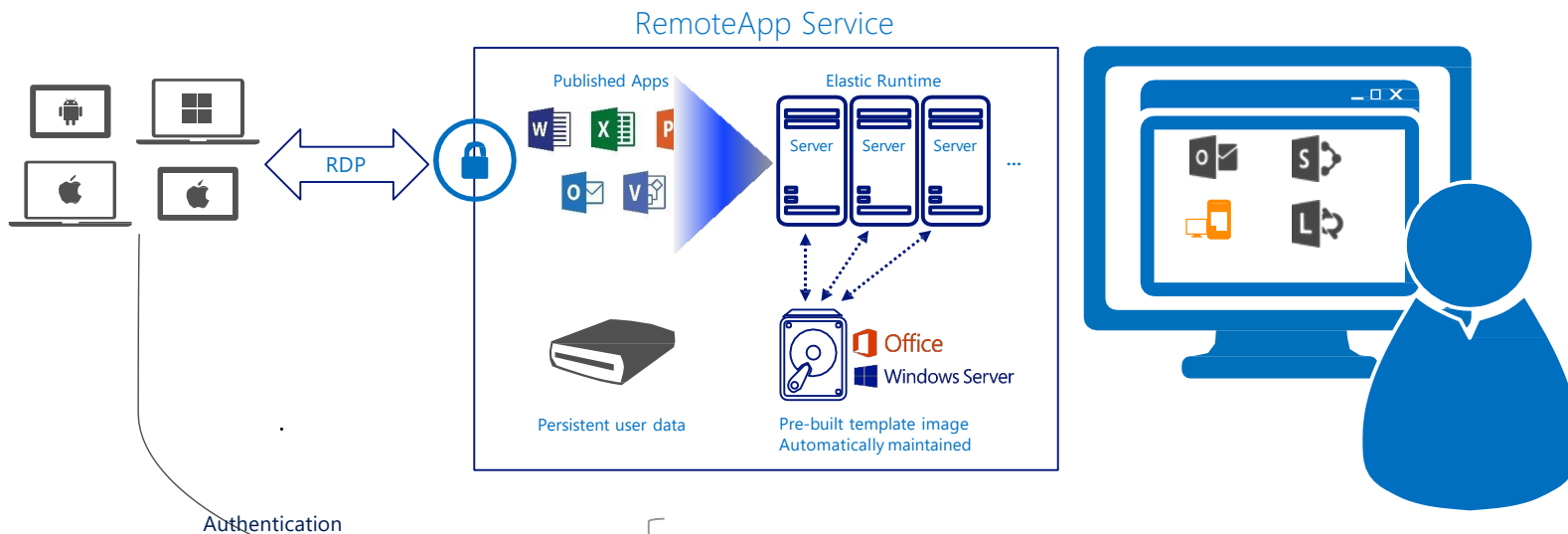


vDesk is a desktop management whereby the client can be managed through a single application. All operating systems, application software, policies and data are stored centrally in server.





# vApp



Identity Options



AD/LDAP



# Scenario: Flexibility of Computer Lab in Campus (Vdesk)



SPSS Lab



Mathlab Lab



AutoDesk Lab

**Traditional  
Computer Lab**

- **Increase software utilization** : Easily switch to different OS image with different software
- Stream the lab image to any other lab for any event easily : exam, seminar
- **Computer lab Consolidation:** Maintain/Reduce No. of Computer Lab while no. of student increase
- **Easy to deploy/maintain computer lab** : Lesser time to operate computer lab beyond normal working hours  
= Reduces electricity bills  
= Reduces repair and replacement of M&E parts/system
- **PC is clean from virus.** Everyday reboot
- Student can access T&L software online/offline mode from BYOD which support **virtual lab**

- SPSS
- Mathlab
- AutoDesk



Open Lab1

- SPSS
- AutoCAD
- AutoDesk



Open Lab 2

- Eviews
- Matematica



Open Lab3

**Open Lab/Virtual Lab**



Virtual Lab  
via VApps

# Scenario: Flexibility of Computer Lab between Branch (Vapps)



Branch A :  
RM 320,000



Branch B :  
RM 320,000



Branch C : **TOTAL COST:**  
RM 320,000 **RM 960,000**

- Increase software utilization
- No more static OS + Apps; **transferable**
- **Lessen the number** of T&L software to be purchased
- T&L software ready to be used **anywhere & anytime**
- Record & report leads to wise **decision making**
- Student can access T&L software online/offline mode from BYOD which support **virtual lab**



Branch A



Branch B

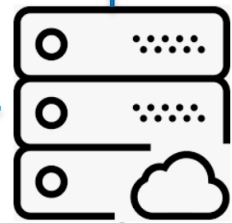


Branch C

Shared License : 30



Shared License : 30



Cloud:  
RM 320,000

Shared License : 40

Shared License : 30



Shared License : 10

**COST SAVING :**  
**RM 640,000**

## Traditional Computer Lab





# USIM CLOUDDesk INITIATIVE

  
Next-Gen Virtual Workspaces

# USIM CLOUDESCK INITIATIVE – COMPUTER LAB MANAGEMENT (2015)



500 Licenses

293 legacy PC : Save  
RM 586,000

vDesk

\* Legacy PC : since year 2009 up to 2018 (prolong until year 2020)



# USIM CLOUDESCK INITIATIVE – VOTING SYSTEM (e-UNDI) 2016



5 Labs with 39 terminals

Save RM 13,650

Less operation works





# USIM CLOUDDESK INITIATIVE – SMART CLASSROOM (2017)

Vapps in smart classroom  
Support BYOD



# USIM CLOUDDESK INITIATIVE – VIRTUAL LAB (2017)



## VIRTUAL LAB by CLOUD DESK



Untuk makluman para penyelidik USIM, Pusat Pengurusan Penyelidikan (PPP) dengan kerjasama GOAL-Itqan telah mewujudkan satu makmal maya 'virtual lab' yang menempatkan beberapa perisian penyelidikan di 'CLOUD DESK' GOAL-Itqan untuk kegunaan kerja-kerja penyelidikan.

Perisian penyelidikan yang dimaksudkan adalah seperti senarai dan capaian dalam masa yang sama adalah terhad kepada bilangan berikut:-

Bil.	Jenis Software Penyelidikan	Bilangan Pengguna Dalam Satu Masa
1	SPSS	10 pengguna
2	StataSE	3 pengguna
3	ATLAsTi	5 pengguna
4	AMOS	2 pengguna

Semua penyelidik USIM dipelawa untuk menguji lari 'trial run' perisian-perisian tersebut dan memberikan maklumbalas untuk penambahbaikan kepada pihak GOAL-ITQAN sehingga 31 OGOS 2017 melalui emel kepada :

- Pn Khadijah Chamili ([khadijah@usim.edu.my](mailto:khadijah@usim.edu.my))
- Pn Thuraiya Udah@Budah ([thuraiya@usim.edu.my](mailto:thuraiya@usim.edu.my))

Penyelidik boleh menjalankan ujilari ini dengan menggunakan browser 'Mozilla Firefox' atau 'Google Chrome' atau 'Internet Explorer' bergantung kepada kesesuaian capaian komputer masing-masing.

Perisian boleh dicapai melalui <http://vdi.usim.edu.my>



## COLLABORATION with RIMC

## Launch 16 August 2017

## Self-installation

# NEXT USIM CLOUDESCK INITIATIVE – BYOD LAB

2019

- 36 makmal  
4 BYOD
- MPG.MSC05
  - MPG.MSC06
  - FST.MSK10
  - FST.MSK11

2020

- 34 makmal  
6 BYOD
- FKP.MK01
  - FSU.MK03
  - MPG.MSC05
  - MPG.MSC06
  - FST.MSK10
  - FST.MSK11

2021

- 32 makmal  
8 BYOD
- FPQS.MH01
  - FPQS.MH02
  - FKP.MK01
  - FSU.MK03
  - MPG.MSC05
  - MPG.MSC06
  - FST.MSK10
  - FST.MSK11

2022

- 30 makmal  
10 BYOD
- FST.MSK5.1
  - FST.MSK5.2
  - FPQS.MH01
  - FPQS.MH02
  - FKP.MK01
  - FSU.MK03
  - MPG.MSC05
  - MPG.MSC06
  - FST.MSK10
  - FST.MSK11

2023

- 28 makmal  
11 BYOD
- FEM.MB1.1
  - FST.MSK5.1
  - FST.MSK5.2
  - FPQS.MH01
  - FPQS.MH02
  - FKP.MK01
  - FSU.MK03
  - MPG.MSC05
  - MPG.MSC06
  - FST.MSK10
  - FST.MSK11



**Estimated Saving RM 990,000 on hardware acquisition**

# NEXT USIM CLOUDDesk INITIATIVE COMPUTER LAB MAINTENANCE : LEASING VS ONE-OFF

ONE-OFF Purchase with CloudDesk  
for 5 years ROI: 36%

PC Prolong up to 10  
years

Extra no of Unit : 50%

\* Study based on 300 unit@ R5,8GB RAM



# NEXT USIM CLOUDESCK INITIATIVE NO COMPUTER TECHNICIAN@ FACULTY

STRENGTHEN SECURITY  
PARAMETER @ COMPUTER LAB

SCHEDULING

FOCUS ON IMPORTANT  
JOB

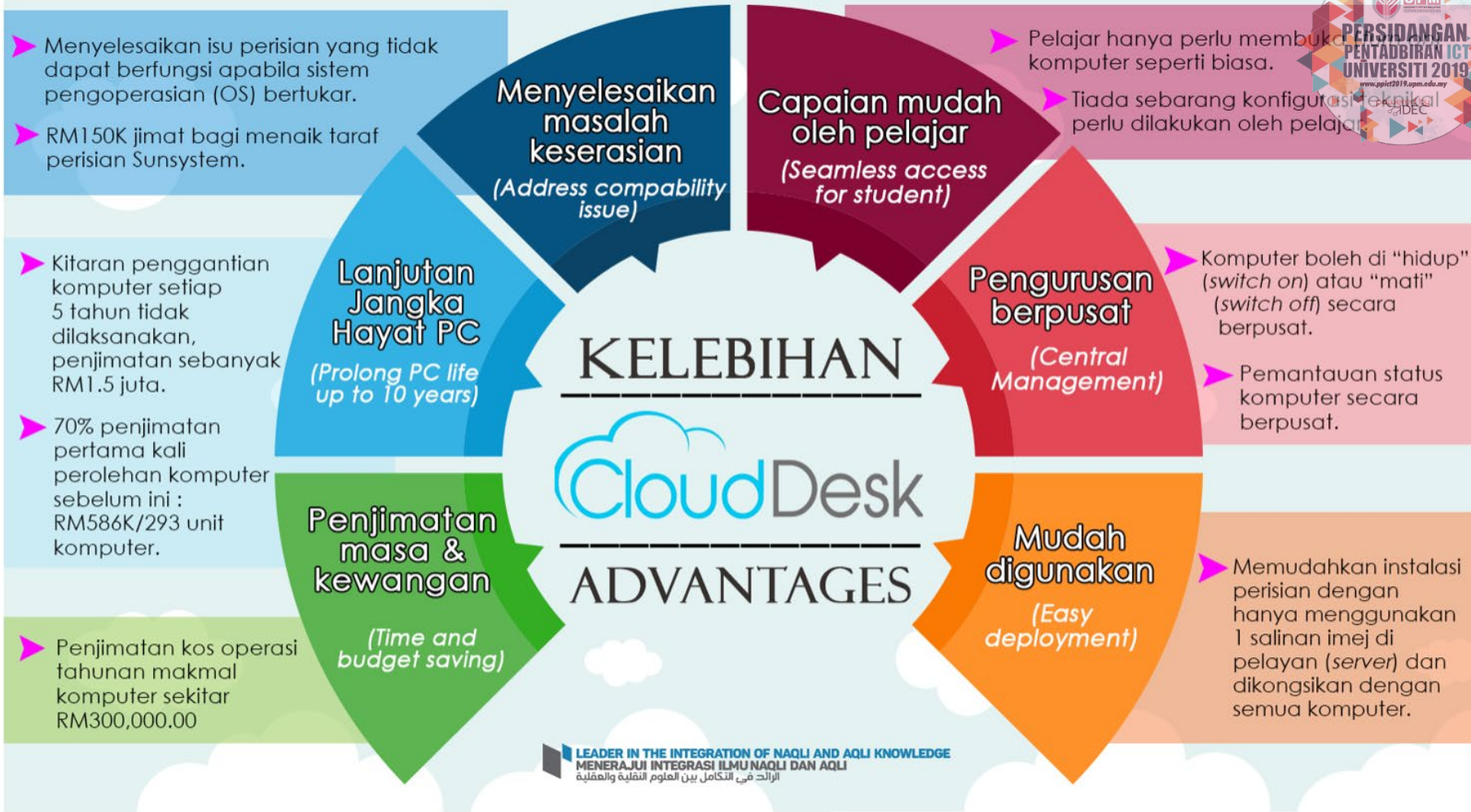




# USIM CLOUDDESK BENEFIT



CloudDesk  
Next-Gen Virtual Workspaces



LEADER IN THE INTEGRATION OF NAQLI AND AQLI KNOWLEDGE  
MENERAJUI INTEGRASI ILMU NAQLI DAN AQLI  
الرائد في التكامل بين العلوم النقلية والعقلية



## USIM YEARLY ESTIMATED SAVING IN CLOUDDesk

  
Next-Gen Virtual Workspaces



# YEARLY ESTIMATED SAVING IN CLOUDDESK

	Item	Amount (RM)
1	Estimated cost for computer's maintenance work	15,000.00
2	Estimated cost for T&L software installation	15,000.00
3	Estimated cost for utility (M&E)	50,400.00
4	Estimated cost for purchase and renewal T&L software	210,000.00
5	*Estimated cost for special event : e-Undi	13,650.00
	<b>Yearly Saving</b>	<b>304,050.00</b>

*\* Real time and high impact services*



# CONCLUSION



CloudDesk@VDI helps Smart Campus Digital successful



Helps in yearly cost saving and support teaching & learning environment



Improve Productivity

# Thank You Q&A CLOUDDesk USIM



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- Universiti Sains Islam Malaysia
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- Mobile : 0196249294
- Email address : [khadijah@usim.edu.my](mailto:khadijah@usim.edu.my)
- Website : <http://goalitqan.usim.edu.my/>

# CLIENTS – EDUCATION SECTOR



MALAYSIA



SINGAPORE & PHILIPPINES



National University of Singapore



NANYANG THE INNOVATIVE POLYTECHNIC



National University Hospital



SINGAPORE MANAGEMENT UNIVERSITY



SINGAPORE





# CloudDesk

## # Details #

## Bulk Deployment & Maintenance

- Eliminates individual PC maintenance
- Refresh & restart features – prolongs PC lifespan

## Mix & Match Features

- End clients could access all permitted OS + App
- mix & match OS + App can be planned + scheduled

## Remote Control - Prolong PCs Lifespan

- Shutdown + Wakeup
- Reboot + Refresh
- Replace & Redeploy PCs according to need



## Seamless & Accessible Friendly

- Access standardized Apps - requires NO configuration
- Access anywhere anytime as permitted

## Resolves Compatibility Issue + Assets Unlocking

- No more exclusive Lab
- No more sleeping Labs, PCs, OS & Apps

## Conducive Learning & Teaching

- Offline Mode = Uninterrupted L&T Session
- Latest material could be shared timely



## Dynamic Campus Life

- BYOD
- Allow users to work on the devices of their choice; and
- + on their managed time
- Diversifies T& L techniques + venues = Open Lab / Site Lab

## Report & Record

- Simplify planning, monitoring & controlling
- Mitigate resources wastage

## Environment + Emotion Friendly

- Paperless Examination
- Lab's operation hours is scale-down
- Responsive to timely preparation
- Motivates staff to pursue fresh + non-routine challenge

# YEARLY SAVING IN CLOUDDESK



	Item	Amount (RM)
1	Estimated cost for computer's maintenance work	15,000.00
2	Estimated cost for T&L software installation	15,000.00
3	Estimated cost for utility (M&E)	50,400.00
4	Estimated cost for new revenue and license renewal for T&L software	210,000.00
5	*Estimated cost for special event : e-Undi	13,650.00
	<b>Yearly Saving</b>	<b>304,050.00</b>

*\* Real time and high impact services*

# Opportunity Cost To Be Saved (1)



	Estimated cost for computer's maintenance work	Detail	Amount (RM)
a.	Total Number of computer in Lab	500	
b.	Yearly Average Computer being Operated Beyond Normal Working Hours for Maintenance Purposes	3 hour / unit	
c.	Total Hours Computers being Operated Beyond Normal Working Hours for Maintenance Purposes in a Year : (a) x (b)	1,500hour	
d.	Hourly Maintenance Cost for a Unit of Computer	RM 10.00/ hour	(c) * (d) <b>=15,000.00</b>



# Opportunity Cost To Be Saved (2)



	Estimated cost for T&L software installation	Detail	Amount (RM)
a.	Total Number of computer in Lab	500	
b.	Yearly Average Computer being Operated Beyond Normal Working Hours for New Software Installation Purposes ( 1 unit : 5 software)	3 hour / unit	
c.	Total Hours Computers being Operated Beyond Normal Working Hours for New Software Installation Purposes in a Year : (a) x (b)	1,500 hour	
d.	Hourly Maintenance Cost for a Unit of Computer	RM 10.00/ hour	(c) * (d) <b>=15,000.00</b>

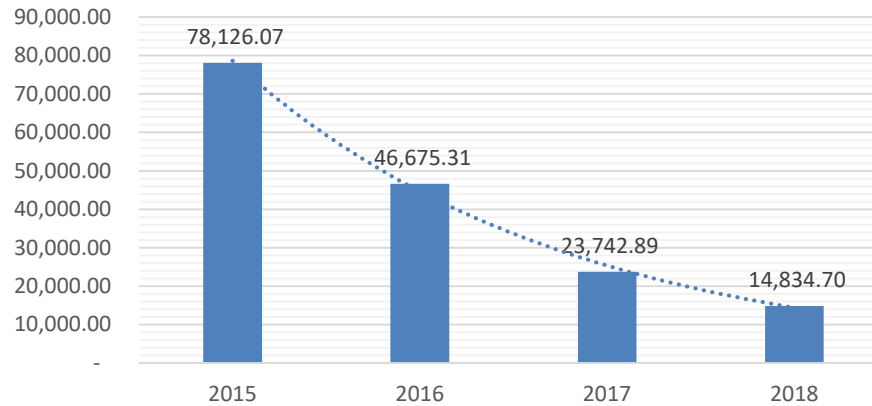




# Opportunity Cost To Be Saved (2)



Overtime By Year (RM)



\* Overtime starting 2015 until August 2018



# Opportunity Cost To Be Saved (3)



	Estimated cost for utility (M&E)	Detail	Amount (RM)
a.	Total Hours Computers being Operated Beyond Normal Working Hours for Maintenance Purposes in a Year (1) + New Software Installation Purposes in a Year	3,000	
b.	Estimated area for 1 computer lab	1,200 sqf	
c.	Total number of computer lab with CloudDesk	14	
d.	Estimated utility cost per sqf/hour	RM 0.001/ sqf/hour	(a)* (b) *(c) * (d) = <b>50,400.00</b>



# Opportunity Cost To Be Saved (4)



	Estimated cost for purchase and renewal T&L software	Detail	Amount (RM)
a.	Total number of computer lab with CloudDesk	14 Labs	
b.	Estimated annual cost of specific software for each computer lab (new revenue + license renewal)	RM 30,000/ Lab	
c.	Elimination of Non-Performing App as a Result of App Sharing Among Labs	50%	(a)*(b)*(c) =210,000
	Saving		<b>210,000</b>



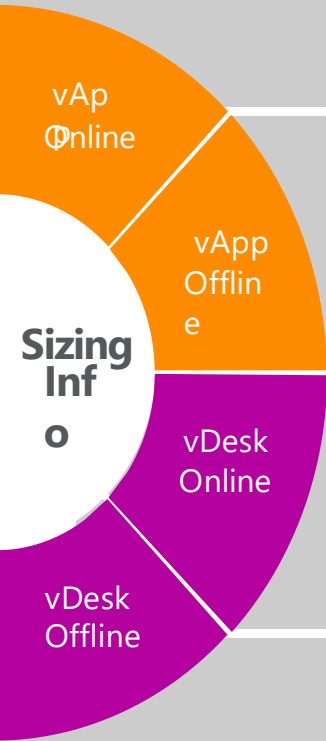
# Opportunity Cost To Be Saved (5)



	Estimated cost for special event : e-Undi	Detail	Amount (RM)
a.	Total number of e-Undi terminal	39	
b.	Estimated leasing cost for 2 days	RM 350/ terminal	(a)*(b) <b>=13,650</b>
	Saving		<b>13,650</b>



# Specification Details



Server Specification	Client Specification	No of Client PCs
1x CPU Intel E5 256GB RAM (upgrade up to 1TB) 1x 480GB SSD 2x1GB Uplink Port Dual Power Supply	RDP 7 to RDP 8.1 support HTML5 compatible browser 30 to 50Kbps downlink bandwidth per user	200 User Session or 200 App Session
1x CPU Dual Core Server 4GB RAM 1x 300GB SATA 1x1GB UplinkPort	Any CPU architecture(x86 or x64) Any amount of RAM* 100GB HDD* 1x100MB Uplink Network Port	UNLIMITED*
2x CPU Intel E5 512GB RAM (upgrade up to 1TB) 2x 1TB SSD & 2x 2TB SATA 4x1GB Uplink Port Dual Power Supply	RDP 7 to RDP 8.1 support HTML5 compatible browser 50 to 70 Kbps downlink bandwidth per user	200 POOL & 50 SESSION
1x CPU Quad Core Server 8GB RAM 1x 480GB SSD & 1x 1TB SATA 2x1GB UplinkPort 1x USB Port (for license dongle)	Any CPU architecture(x86 or x64) Any amount of RAM Diskless or 100 GB HDD* 1x1GB Uplink Network Port PXE boot capable (bios setting)	500 OFFLINE or 30 HYBRID or 20 DISKLESS



Custom sizing will be provided based on request



SSD is recommended for High IOPS giving 10 times throughput



Clouddesk Licensing will be based on number of users OR devices



Future license expansion is covered during hardware sizing



# Product Comparison (2014-2015)



No.	Item	Clouddesk	VM Horizon	Phantosys
1	VDI Concept	Need to supply normal hardware with minimum resource to client	Need to supply zero client with no resource to client	Intelligent Desktop Virtualization
2.	License	Concurrent	Concurrent	Concurrent
3.	RAM Required	Both (Client/Server)	Server Only	Client
4.	Harddisk Required	Yes	No	Yes
5.	Work with existing device	Yes	Yes	Yes
6.	OS Installation/ configuration	VDesk (image download at client site (first time user)- cache memory) VApp (image access from server)	No OS / No configuration at client site	Image need to be installed at client site (cache memory) -no image at server site
7.	Hardware / Software Maintenance (eg : patches)	Need maintenance	Less maintenance	Need maintenance
8.	Virus Attack	Less virus attack (reboot)	Less virus attack (no OS – zero client)	Less virus attack (reboot)
9.	Support multiplatform	MAC, Android, IOS, Windows	MAC, Android, IOS, Windows	Windows only
10.	Support Compatibility Issues (e.g : SPSS v 14 not compatible with Windows 7)	Support	Support	Support



# Product Comparison (2014-2015)

No.	Item	Clouddesk	VM Horizon	Phantosys
11	Support offline mode	Yes	No	Yes
12	Network Dependency	No	Yes	No
13	Server Dependency	Partial	Full dependency (100%)	Partially
14	Pricing	Mid range	Expensive	Mid range
15	R&D / Support team	Malaysia	USA	Taiwan



## USIM VDI

Please choose your category





## Apps



AI - Maalyah



Munazzim



Kamus Elektronik



AMV2



Outlook 2013



AI - Ulyaa



SAP



VTLS Virtua



Ekinikal Sihat



Adobe Photoshop CS6



AI - Bahthiyah



Tullabyyah



Tell Me More



Ekinikal Pakar



Microsoft Office Visio 2007



AI - Aalyah



Sunsystem 5



ARKIB AI - Maalyah



Ekinikal Pandan



Microsoft Office Project 2007

# VAPPS@USIM-PENYELIDIKAN



vdi.usim.edu.my/staff/apps.html



MALAYSIA

## Apps



IBM SPSS Statistics 24



NVIVO 11



EViews 8



SPSS AMOS 24



Atlas.ti 8



Atlas.ti 8 (windows 10)



StataSE





# SAMPLE SCREENSHOT VDASH



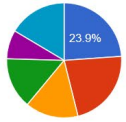
## Dashboard

 **511**  
Total no. of machines

 **225**  
Total no. of apps

 **524**  
Total no. of users

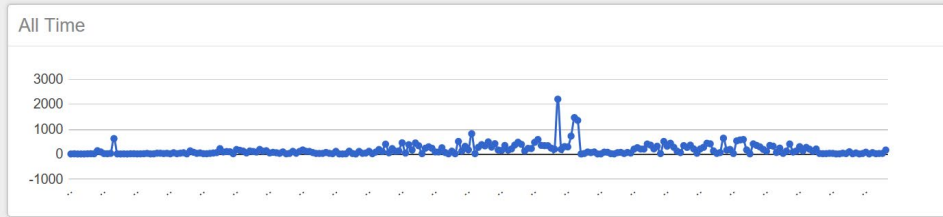
User statistic by machine group






- FKP - MK01 (23.9%)
- FEM - MB11
- FEM - MB12
- FEM - MKP12
- FSU - MK01
- Others

## Application Usage Statistic

All Time	40106
Today	159
This Week	159
This Month	212
This Year	14860

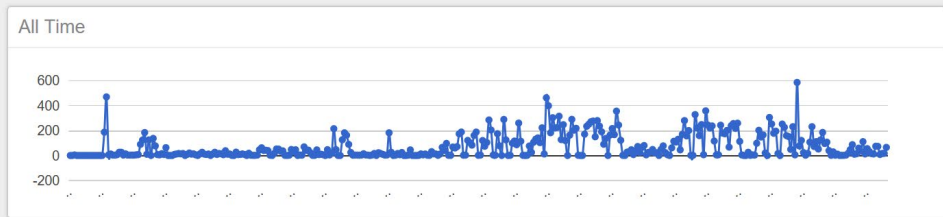


### Top Applications




 <b>Microsoft Word</b> Launch count: 11566
 <b>Microsoft Excel</b> Launch count: 6560
 <b>Microsoft PowerPoint</b> Launch count: 5801

## Machine Usage Statistic

All Time	27571
Today	66
This Week	66
This Month	110
This Year	11591



### Top Machines

 <b>MK01-25</b> Session Count: 389
 <b>MK01-31</b> Session Count: 373
 <b>MK01-24</b> Session Count: 347

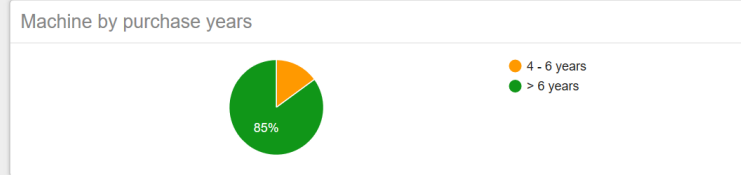
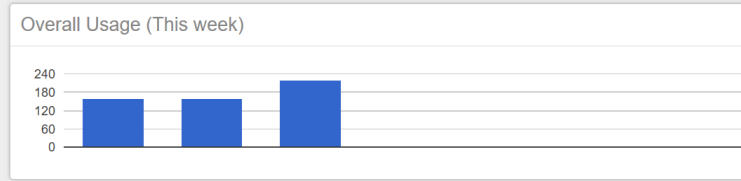
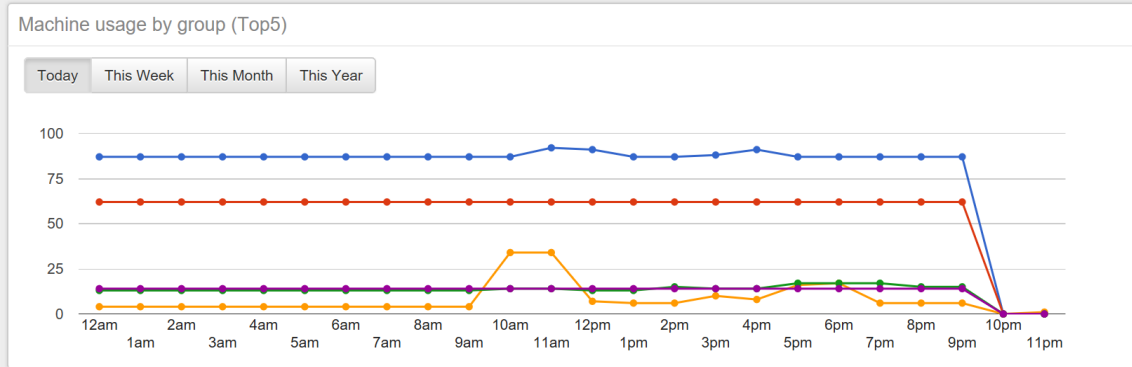
# SAMPLE SCREENSHOT VDASH



27571  
Machine Usage (Total logon sessions)

511  
Total machines

31 480  
Activities



### Total no. of machines (machine group)

FPQS - MK01	25
FPQS - MK02	25
FPQS - MQ01	30
FPQS - MQ02	28

### Machine Usage Statistics

Today	261
This Week	261
This Month	309
This Year	11699

### Most Used Machines

<b>MK01-25 (389 sessions)</b>
FKP - MK01
Last login MKP01
<b>MK01-31 (373 sessions)</b>
FKP - MK01
Last login MKP01



## Machine Inventory

 Import from CSV

Search all columns

Submit

Showing 1 to 10 of 511 entries.

Machine Name	Serial Number	MAC Address	Model	OS	Machine Group	Year Bought
<b>MB11-00</b> (Default name: MB11-00)	SGH945PRFW	18A905167B28	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-01</b> (Default name: MB11-01)	SGH945PRCV	18A905167B82	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-02</b> (Default name: MB11-02)	SGH945PRFS	18A90519867C	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-03</b> (Default name: MB11-03)	SGH945PRFQ	18A905198673	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-04</b> (Default name: MB11-04)	SGH945PRFK	0026554921F0	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-05</b> (Default name: MB11-05)	SGH945PRCM	18A905198698	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-06</b> (Default name: MB11-06)	SGH945PRF8	0026554921F5	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-07</b> (Default name: MB11-07)	SGH945PRDM	18A9051986B4	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-08</b> (Default name: MB11-08)	SGH945PRDJ	18A90519AB25	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009
<b>MB11-09</b> (Default name: MB11-09)	SGH945PRC9	0026554921E8	HP Compaq dc7900 Small Form Factor	Microsoft Windows 7 Professional	FEM - MB11	2009



# App List

Apps Inventory Name CSV PDF

Search all columns:  Status:   Show  entries

Showing 1 to 3 of 3 entries.

Application Name	App License	Max Concurrent	This week instances	This month instances	Utilization	Blacklist
<a href="#">IBM SPSS Statistic 22</a>	100	80	0	0	80%	<input type="button" value="No"/>
<a href="#">spssengine.exe</a>	n/a	39	0	0	n/a	<input type="button" value="Blacklist"/>
<a href="#">SPSS_Statistics_Diagnostics.exe</a>	n/a	1	0	0	n/a	<input type="button" value="Blacklist"/>

# CLOUDESK CERTIFIED APPLICATION

## ServerPark VApp Application Virtualization Certified Applications



Publisher	Application
Adobe	Acrobat Reader 5, 6, 7 and 8
Adobe	Illustrator CS2 and CS3
Adobe	Photoshop CS2 and CS3
Adobe/Macromedia	Dreamweaver 8 and CS3
Adobe/Macromedia	Flash Professional 8 and CS3
Adobe/Macromedia	FreeHand MX
Apache Foundation	HTTP Server 2
Apple	iTunes
Autodesk	Maya 7 and 8
Axialis	IconWorkshop 6
AxoSoft	OnTime Client 5
Business Objects	Crystal Reports 9 Pro
Cerulean Studios	Trillian 3
Citrix	Program Neighbourhood 9
Citrix	Access Gateway Admin Client
Corel	CorelDRAW 12
Corel	Paint Shop Pro 7
Corel	Painter IX
EZB Systems	UltraISO Premium 8.6
FileZilla	FileZilla 3
The GIMP Team	GIMP 2
Google	Google Earch
Google	Google Picasa
Google	Google SketchUp
Gretech	GOM Player 2
Mathworks	MATLAB
Microsoft	Internet Explorer 6 and 7
Microsoft	Visual Basic 6
Micorosoft	.NET Framework 1.1, 2.0, 3.0 and 3.5
Microsoft	Remote Desktop Client
Microsoft	Windows Media Player
Mozilla	Firefox 2 and 3
MySQL	MySQL 5
Nullsoft	Winamp 5
Opera Software	Opera 9
Oracle	Oracle 9 Client
Parametric Technology	Mathcad 13 and 14
PGP	PGP Desktop
Quark	Xpress 5

Roxio	Creator Plus
SAP	SAP GUI 6
Siemens	Unigraphics NX
Sykpe	Skype 2
SolidWorks 2008	Solid Works
Sun Microsystems 2	Open Office.org
System Tools	Hyena 6.7
Ulead	DVD Player 1.1
VanDyke	SecureCRT 5
WinRAR	WinRAR 3.6
WinZip	WinZip 11
Wolfram Research	Mathematica 5
X-Ways	WinHex 13