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GCP Assessment Report

239 VMs Analyzed

Evaluations and Opportunities for your Data Center

Executive Summary

This assessment was created by **Offis** exclusively for **Dango Pty. Ltd.** on **February 27, 2019**. It analyzed **239** VMs, currently running in VMware vSphere on-premises, and compared those costs to Google Cloud Platform's Google Compute Engine.

High-Level Results:

- We have found that migrating these workloads to GCP will save your organization approximately **$304,573** per year, for a possible three year savings of up to **$913,719** in hardware infrastructure, hypervisor licensing, and management costs.
- Of the **163** powered on VMs in scope for this assessment, **24** were running Operating Systems that were incompatible with GCP
  - **2** VMs running Windows 7
  - **22** VMs running other Operating Systems unsupported by GCP
- **17** hosts will need to be replaced prior to a vSphere 6.5 upgrade; these hosts are fine now, but they are incompatible with vSphere 6.5.
- You have VMs with Operating System risk in your environment. **10** VMs are running Operating Systems that are no longer supported by platform vendors.

Every data center environment has opportunities for improvement, through optimization and transformation. CloudPhysics uses data extracted from running data centers to run assessments geared to identify and highlight optimization and transformation opportunities, lowering the risk of IT projects.

This report output – culminating from one such assessment, brought to you by Google and powered by CloudPhysics – compares the costs of running workloads in the current virtual data center to the simulated costs of running those workloads in Google Cloud Platform, identifying possible cost savings opportunities and providing a clear financial analysis of the opportunity to your organization.

GCP Settings

GCP Location: **Sydney, Australia**	Term Length: **1 Year**
Storage Type: **Persistent Disk**	Instance Class: **Regular**
Match to standard instances only: **No**	Average VM Uptime/Day: **N/A**
Discount Rate: **0%**	

Scope of Assessement

The CloudPhysics Observer discovered **244** VMs in your data centers. This report analyzes **239** of those VMs identified through the following set of environment filters, which were defined during the running of the assessment:

Infrastructure Scope
vCenters: **All**
Datacenter: **All**
Compute Cluster: **All**
Storage Cluster: **All**
Keyword: **None**
Any of Tags: None

VM Filters
VM State: **All**
Guest OS Family: **All**
Guest OS Name: **All**
Guest OS Bits: **All**

These **239** VMs were analyzed, generating cost estimates for both current On-Premises costs and Google Cloud Platform costs, using the following configuration inputs for each:

On-Prem Settings

Physical Host System Cost: **$16,300**	Hypervisor/ELA Discount: **0%**
Hardware/ Software Depreciation Term: **4 years**	License Cost/ VM: **$250**
Shared Storage Cost/ GB: **$6.00**	License Cost/ Host: **$0**
Average Host RAM Cost/ GB: **$24.00**	Average Watts/ Host: **450**
vSphere Suppport Level: **Production**	Cost/ kWh Electricity: **$0.230**

Cooling to Power Ratio: **1.8**

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Discount Rate: **0%**

Non-defaults are marked in blue

NOTE: This analysis does not include ingress or egress of data since the relationship of on premise resources and bandwidth dependencies of applications cannot be known. In guest backups, remote terminal sessions, and inclusion or exclusion of dependent workloads in the cloud must be considered to estimate the network traffic requirements of the environment.

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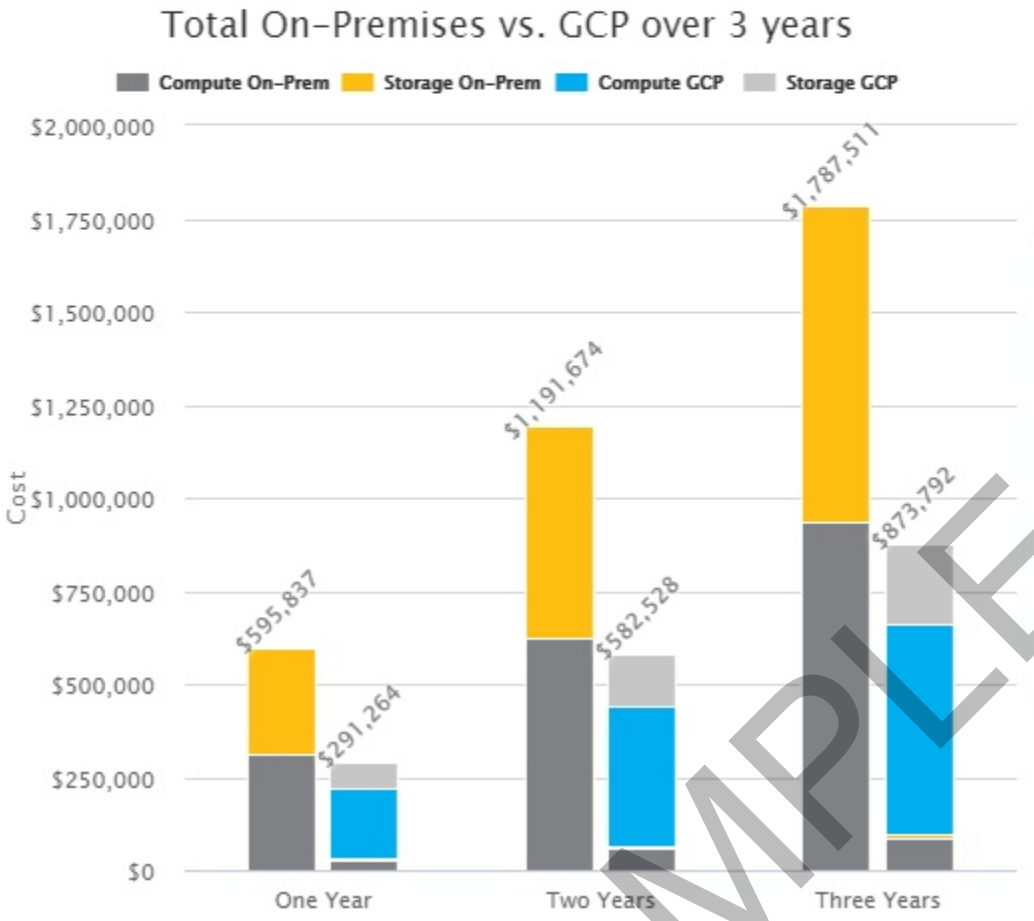
Assessment Report for 239 VMs in your environment
GCP Rightsizing: 95th %-ile vCPU and Peak vRAM Usage (163 powered on VMs only)

Cost Comparison Summary



3-Year Cost Comparison

On-Premises costs:
$1,787,511

GCP Costs w/Rightsizing:
$873,792

3-Year Savings:
$913,719 (51%)

	vmware vSphere (239 VMs On-Prem)	Google Cloud Platform (24 powered on VMs On-Prem, 139 powered on VMs on GCP)	
Compute	$311,773/year	$215,180/year	$96,593 /year
Storage	$284,064/year	$76,084/year	$207,980 /year

Note: Powered off and suspended VMs are excluded from GCP cost calculations.

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Cost Comparison Summary (cont'd)

Total Cost:

	Resource cost as Configured		Rightsize GCP using: 95th %-ile vCPU and Peak vRAM Usage	
On-Prem IT 239 VMs	On-Prem IT Public Cloud Total	$595,837 $0 **$595,837** /year	On-Prem IT Public Cloud Total	$595,837 $0 **$595,837** /year
GCP 163 Powered On VMs 139 Supported	On-Prem IT Public Cloud Total	$32,847 $300,056 **$332,903** /year	On-Prem IT Public Cloud Total	$32,847 $258,417 **$291,264** /year

Average Cost per VM:

	Resource cost as Configured		Rightsize GCP using: 95th %-ile vCPU and Peak vRAM Usage	
On-Prem IT 239 VMs	On-Prem IT Public Cloud Overall	$2,493 $0 **$2,493** /year	On-Prem IT Public Cloud Overall	$2,493 $0 **$2,493** /year
GCP 163 Powered On VMs 139 Supported	On-Prem IT Public Cloud Overall	$1,369 $2,159 **$2,042** /year	On-Prem IT Public Cloud Overall	$1,369 $1,859 **$1,787** /year

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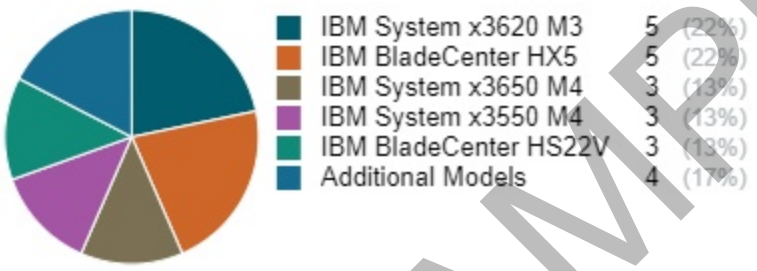
Host Inventory Summary and vSphere 6.5 EOL Considerations

As part of the public cloud migration analysis, CloudPhysics also looked for other issues in the data center that might indicate that the time is right to consider public cloud migration. For instance, **Dango Pty. Ltd.** may need, or may soon need, to upgrade some of its hardware infrastructure.

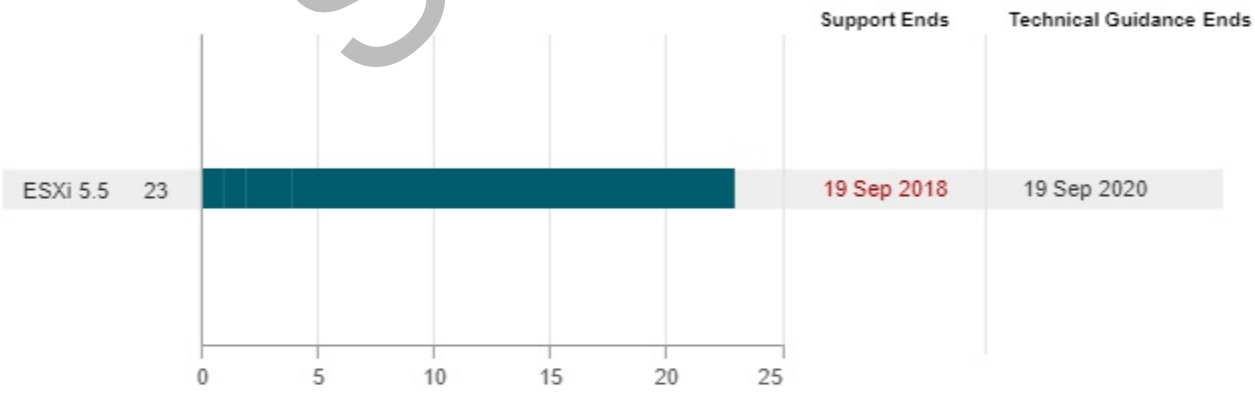
In total, across the entire vSphere environment, **Dango Pty. Ltd.** currently has:

- **0** hosts that are not in VMware's hardware compatibility list (HCL) at all; non-HCL hosts should be replaced/retired immediately, or their workloads should be ported to another environment.
- **10** hosts that are in the current HCL, but are running versions of vSphere that they do not support; hosts running vSphere versions that they do not support should be replaced/retired immediately, or their workloads should be ported to another environment.
- **17** hosts that will need to be replaced prior to a vSphere 6.5 upgrade; these hosts are fine now, but they are incompatible with vSphere 6.5.

Server Models (23 Hosts)



Hypervisor Releases (23 Hosts)



Tip: hover each colored bar to view details by build.

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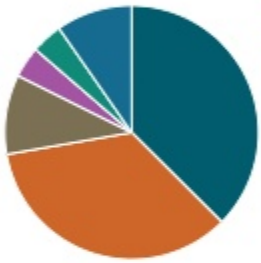
Operating System Summary

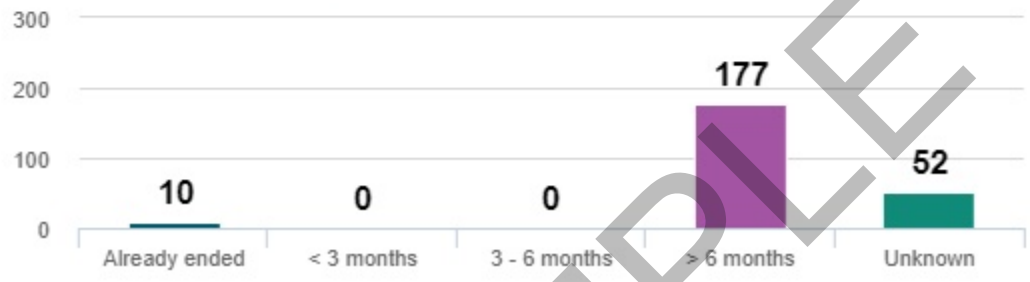
Guest OS Breakdown (239* VMs)



Windows Server 2008	85	(37%)
Windows Server 2012	79	(35%)
Other	23	(10%)
Windows Server 2003	9	(4%)
Windows Server 2016	9	(4%)
Additional OSes	22	(10%)

*12 VMs excluded due to incomplete data.

End of Support (239 VMs)



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Appendix A: vCenter Summary for entire environment

vCenters
1

Datacenters
2

Clusters
6

Storage Clusters
5

Networks
170

Datastores

18 Clustered	29 Standalone

VMFS	47
NFS	0
Total Storage	145.33 TB
Free Storage	66.49 TB

Hosts

20 Clustered	3 Standalone

On	21
Off	0
Maintenance	2

Avg. Consolidation Ratio
7.8:1 VMs (on) : Hosts (on)

Memory

Virtual	1.33 TB
Physical	3.17 TB

CPUs

Virtual	358
Physical	308

Virtual Machines
244

On	163
Off	75
Suspended	1
Templates	5