



# The Future of Storage

Software Defined Storage

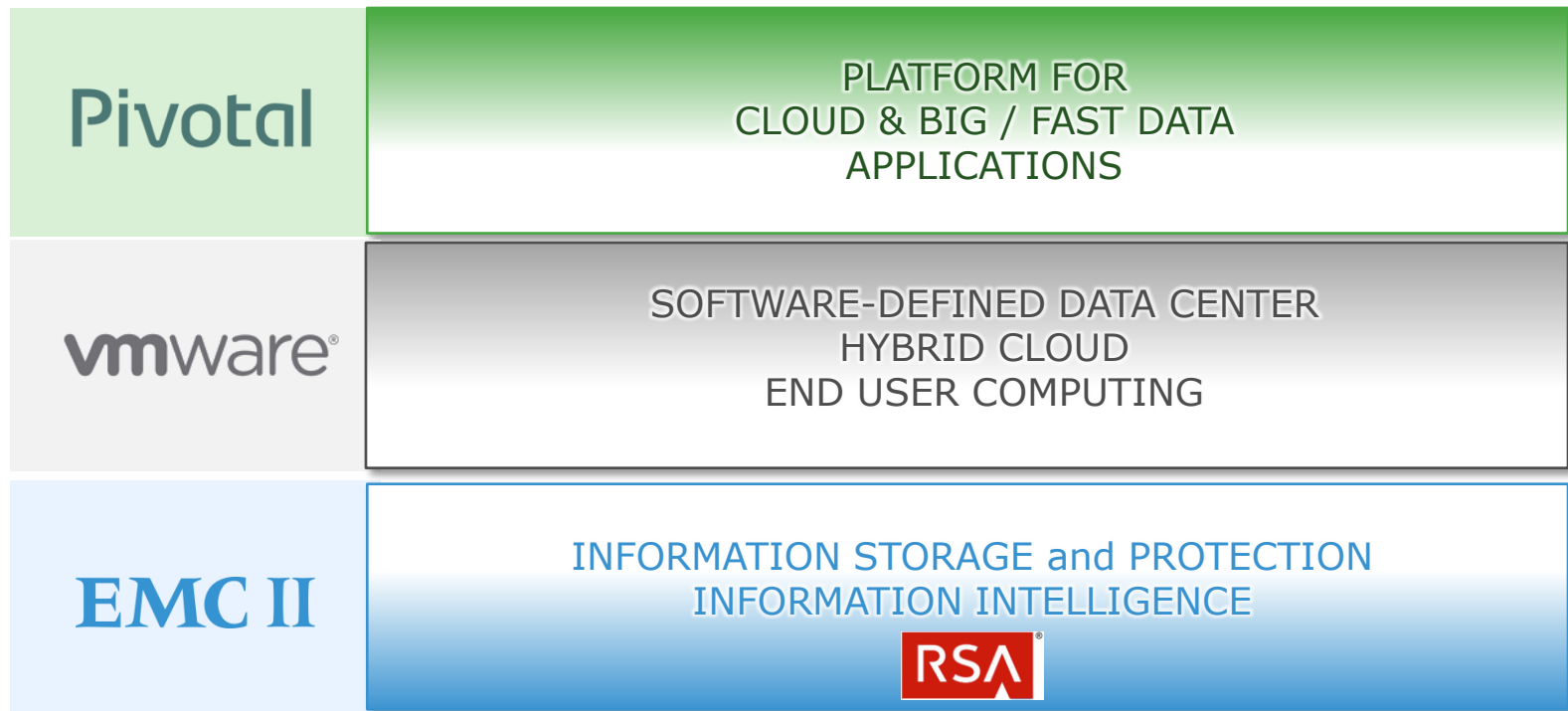
Echo Li

**LEAD YOUR  
TRANSFORMATION**

**EMC<sup>2</sup>**

# EMC<sup>2</sup>: A Unique Federation Of Businesses

Focused & Free To Execute On Their Mission, Strategically Aligned



# Our Brands

EMC<sup>2</sup>

vmware<sup>®</sup>

RSA<sup>®</sup>

Pivotal

EMC<sup>2</sup>

# Our Portfolio Has Never Been Stronger

## Our Portfolio Has Never Been Stronger



**66.6% SHARE**  
PURPOSE BUILT  
**BACKUP**  
APPLIANCES

"still the leader among  
IT-GRC Solutions."  
**Gartner**



Analyze the Future  
#1 IN REPLICATION





**NUMBER ONE IN BACKUP**



**LEADERS QUADRANT**  
CONTENT-AWARE  
DATA LOSS PREVENTION

**EMC<sup>2</sup>**







Oracle SAP Exchange Sharepoint






**#1 #1 #1 #1**



2012 WINNER  
SMB NETWORK STORAGE  
ENTERPRISE NETWORK STORAGE  
BACKUP & RECOVERY SOFTWARE



MAGIC QUADRANT LEADER  
GENERAL-PURPOSE DISK ARRAY

source : IDC, June 2012, September 2011

**EMC<sup>2</sup>**

## Our Portfolio Has Never Been Stronger




Analyze the Future  
#1 IN SCALE-OUT  
FILE STORAGE

EMC Isilon: "Outstanding" in critical capabilities of Scale-out File.  
**Gartner**

**1,000,000,000**  
DOLLAR RUN RATE IN  
BIG DATA STORAGE




"EMC is a rising strategic  
provider of next generation  
solutions with the potential  
to deliver long-term."  
**BARCLAYS**

"Just as Google reinvented the  
search experience and Amazon  
reinvented the shopping  
experience, Pivotal is  
determined to reinvent the  
business experience."  
**CRN**


**EMC<sup>2</sup>**

## Our Portfolio Has Never Been Stronger






Analyze the Future  
#1 IN STORAGE



"The only vendor to offer a complete  
portfolio of flash storage options."  
**IT-TNA**  
IT Think & Analyze

#1 IN STORAGE FOR  
VIRTUALIZED SERVER  
ENVIRONMENTS



**EMC VSPEX**  
FASTEST GROWING  
REFERENCE  
ARCHITECTURE

"EMC continues to pull  
away from the storage pack."  
**CRN**

"The combination of Synclplicity and  
Documentum creates a powerful  
collaboration platform designed for  
the new mobile world."  
**EMC**



**57% SHARE**  
INTEGRATED  
INFRASTRUCTURE  
SYSTEMS



**EMC<sup>2</sup>**

# Our Strategy: Best Of Breed Storage & Backup



# Our Dual Innovation Strategy



Research &  
Development

12%  
Investment

# Our Dual Innovation Strategy



Research &  
Development

12%  
Investment



Technology  
Acquisitions

10%  
Investment

*"String Of Pearls"*



Mobile Cloud Big Data Social  
**Mobile Devices**



LAN/Internet Client/Server  
**PC**



Mainframe, Mini Computer  
**Terminals**

Source: IDC, 2013





# 3<sup>RD</sup> PLATFORM

Mobile Cloud Big Data Social  
**Mobile Devices**



# 2<sup>ND</sup> PLATFORM

LAN/Internet Client/Server  
**PC**

**MILLIONS  
OF USERS**



# 1<sup>ST</sup> PLATFORM

Mainframe, Mini Computer  
**Terminals**

**THOUSANDS  
OF APPS**



Source: IDC, 2013



# 3<sup>RD</sup> PLATFORM

Mobile Cloud Big Data Social  
**Mobile Devices**

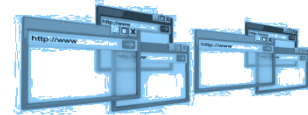
**HUNDREDS OF MILLIONS OF USERS**



# 2<sup>ND</sup> PLATFORM

LAN/Internet Client/Server  
**PC**

**TENS OF THOUSANDS OF APPS**



**MILLIONS OF USERS**



# 1<sup>ST</sup> PLATFORM

Mainframe, Mini Computer  
**Terminals**

**THOUSANDS OF APPS**



Source: IDC, 2013

**BILLIONS  
OF USERS**



Mobile Cloud Big Data Social  
**Mobile Devices**

**MILLIONS  
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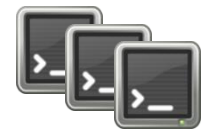


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OF USERS**



Mainframe, Mini Computer  
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**THOUSANDS  
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Source: IDC, 2013

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Source: IDC, 2013



Exponential  
Data Growth



New Access  
Methods



High Demands for  
Availability & Agility



**STOP. LOOK. LISTEN.**

How Should Storage Be Delivered And Managed?

EMC<sup>2</sup>

# Software-Defined Storage Requirements



## Abstract, Pool & Automate Storage

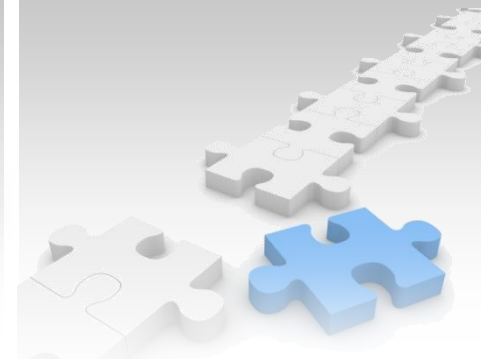
### Leverage Underlying Platforms



### Minimize Data Movement



### Make Extensible



# EMC Software-Defined Storage



VIRTUALIZE EVERYTHING  
COMPROMISE NOTHING

# EMC ViPR, Software-Defined Storage

Software Control Plane AND Data Plane

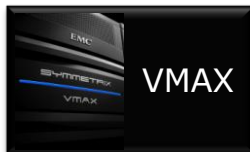
EMC ViPR Platform



## ViPR Data Services



## ViPR Controller

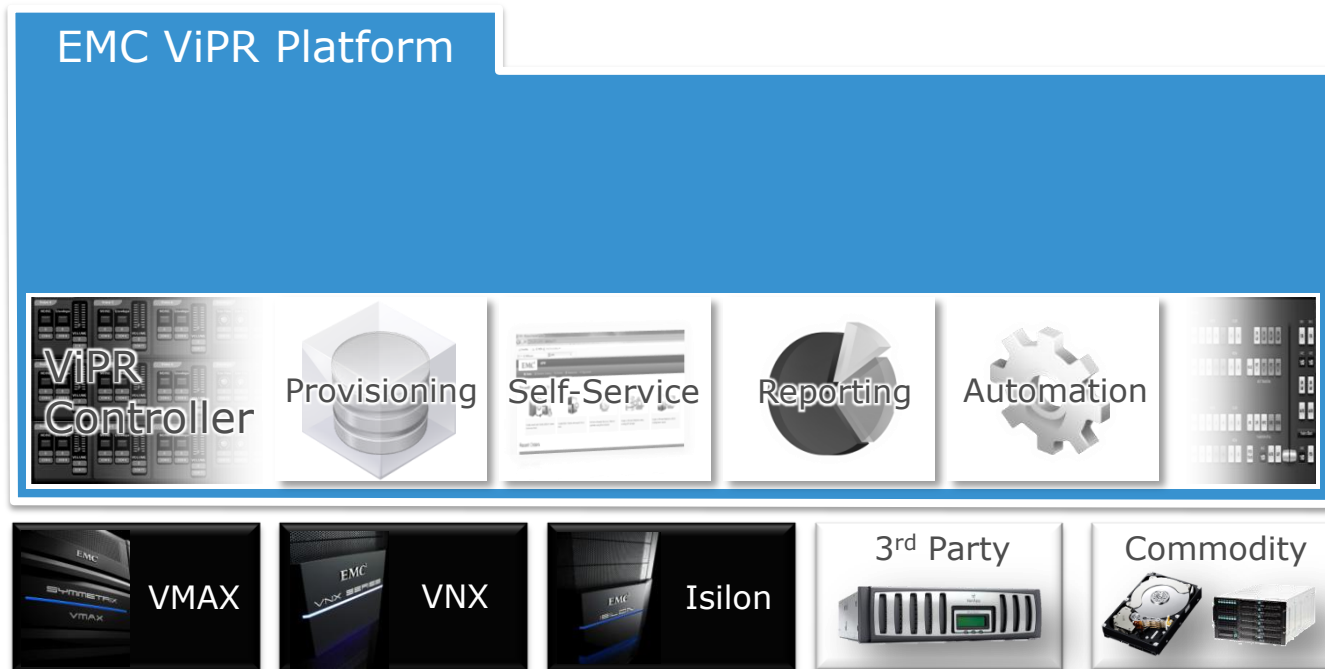


EMC<sup>2</sup>



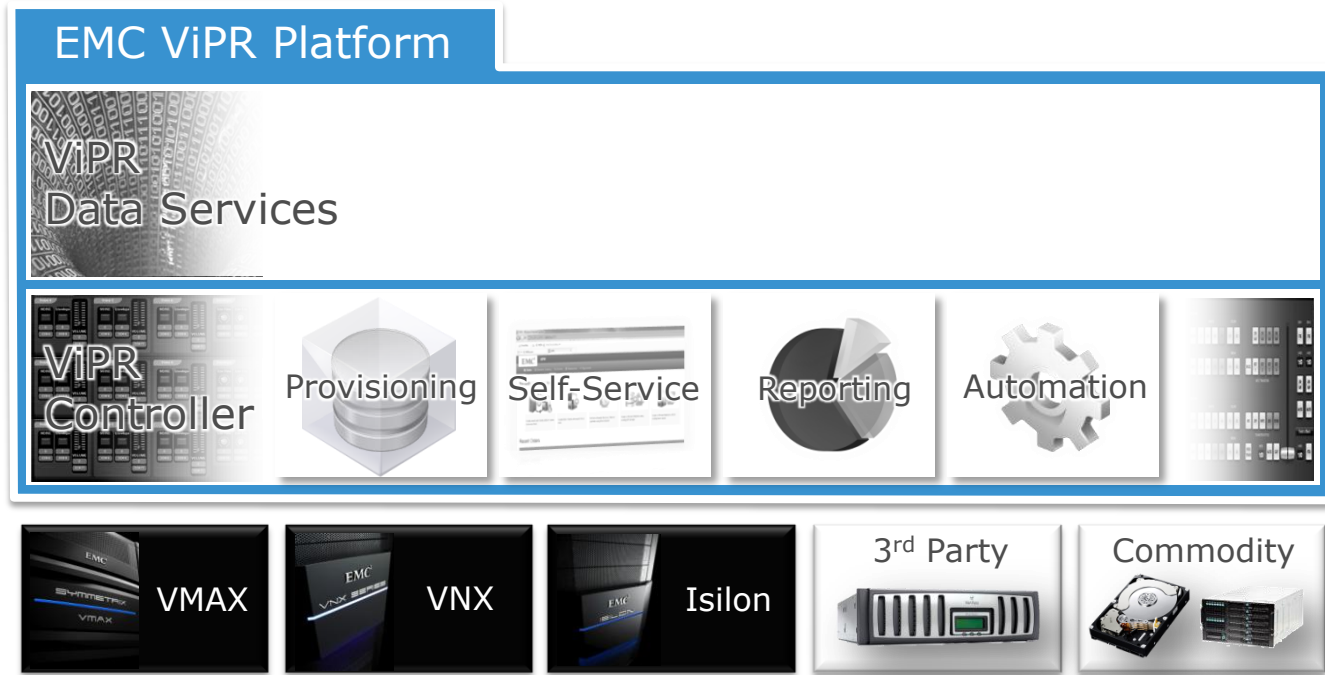
# EMC ViPR, Software-Defined Storage

Control Plane : The EMC ViPR Controller

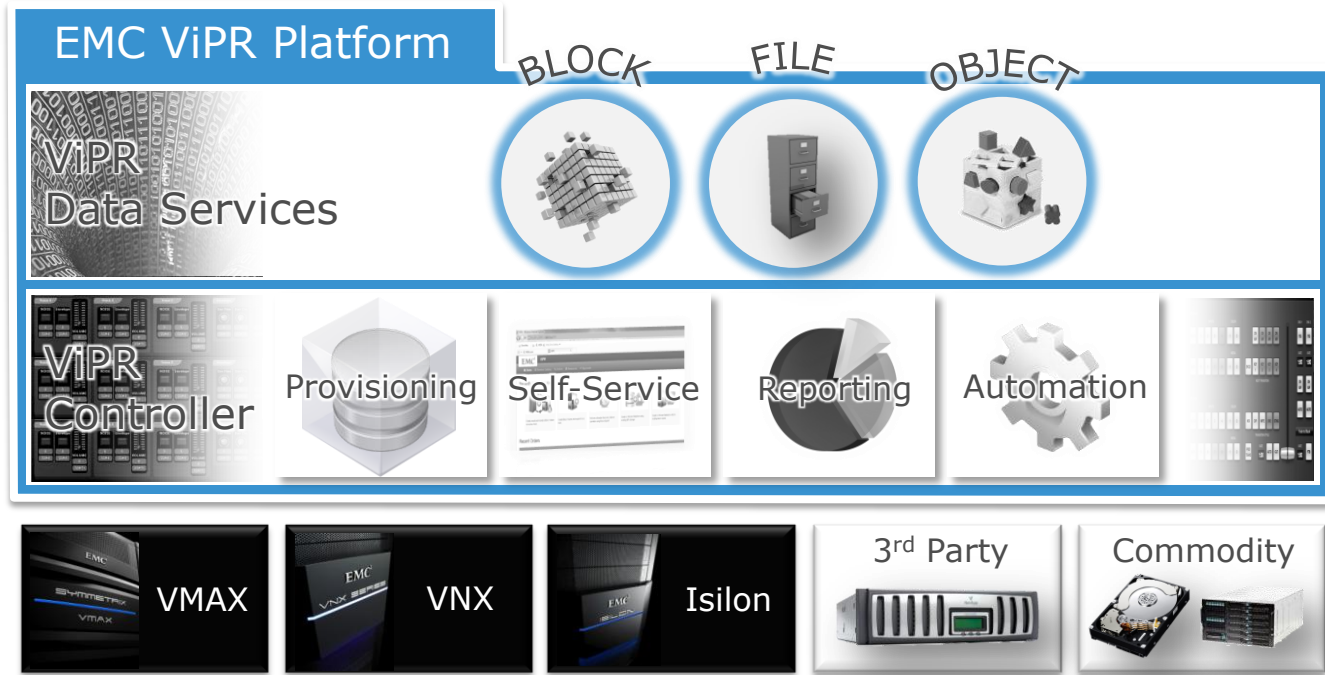


# EMC ViPR, Software-Defined Storage

## ViPR Data Services



# EMC ViPR - Software-Defined Storage



# Traditional Traditional Emerging Emerging



BLOCK FILBLOCK FILE

OBJECT  
ON FILE



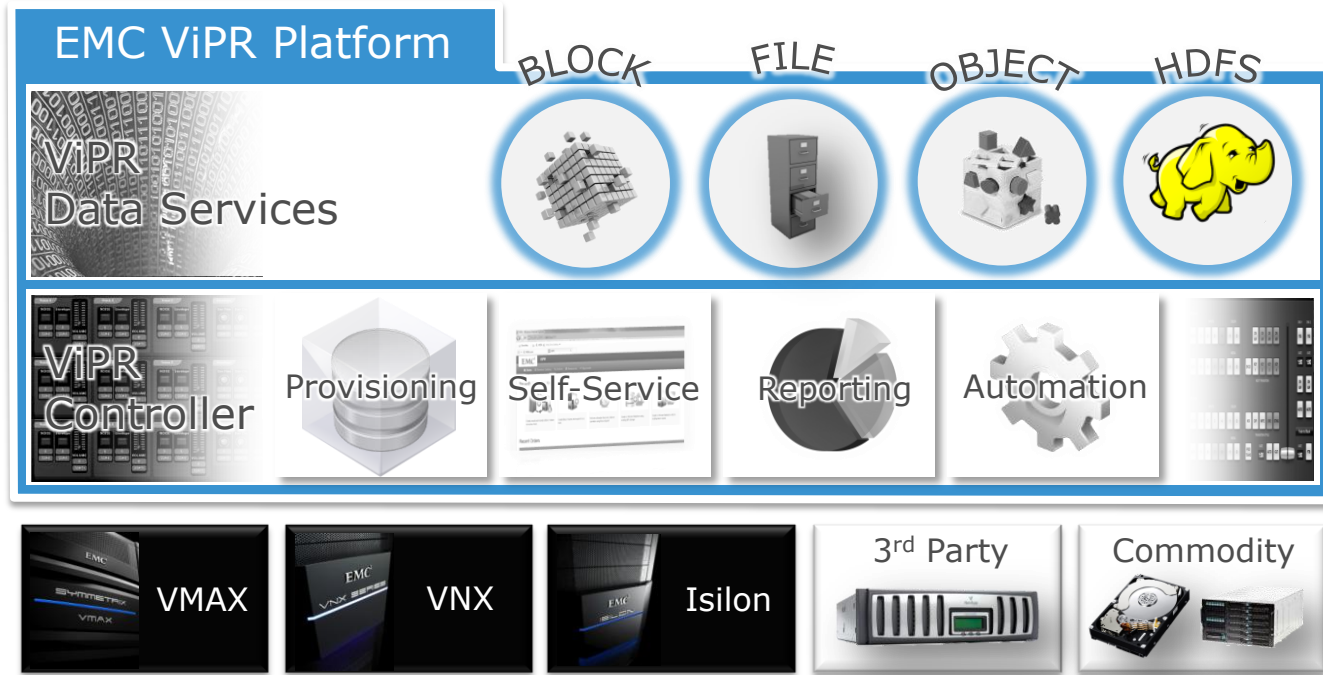
OBJECT OBJECT

ViPR



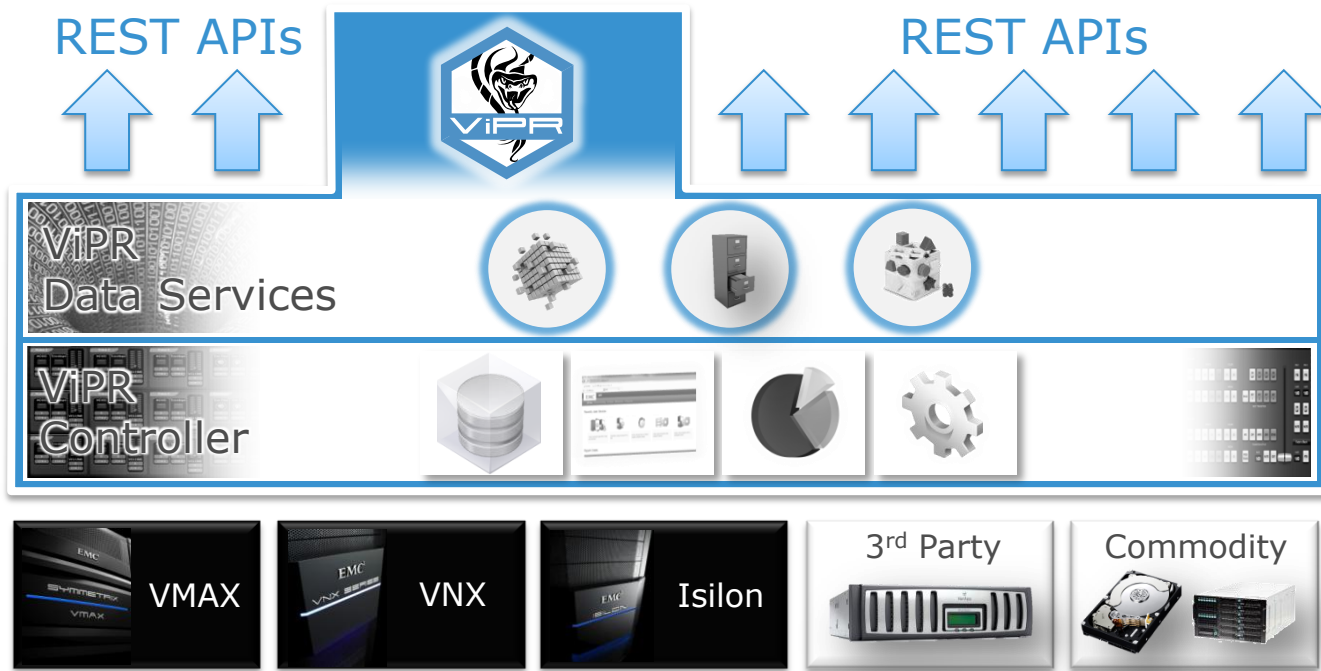
EMC<sup>2</sup>

# EMC ViPR - Software-Defined Storage



# This Is A Programmable Platform

REST APIs Enable IT Organizations, SPs & ISVs To Extend ViPR



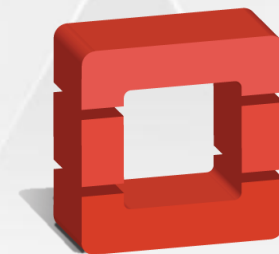
# Add Support For New Arrays



Enable third-party development of adapters for **non-EMC** arrays

**Open all** APIs and necessary code





openstack™

## SUPPORT FOR EXISTING STANDARDS

# Open Development Community

Extensible, API-driven storage  
Global Data Services  
Global Automation Services

SIMPLE

SOFT **DEFINED**

**ViPR**

EXTENSIBLE

OPEN

EMC<sup>2</sup>



VIRTUALIZE  
EVERYTHING  
COMPROMISE NOTHING

EMC<sup>2</sup>®