

AII

2017 7








RFID







1



IT OT

TI OT /



PatentStrategies

2016 [1]

- PROFINET Ethernet/IP

2015 2016

OPC/OPCUA

- Handle ONS

  ONS Handle

  OID Ecode

- 

1.

5671

1997

2010

600

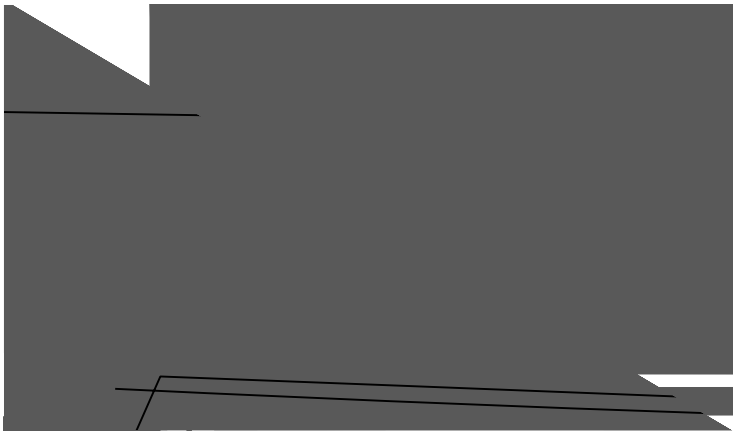
2-1-1



2-1-2

45% 21%

# PROFINET



2-1-3

1573

2001 2011 2015

200 2016

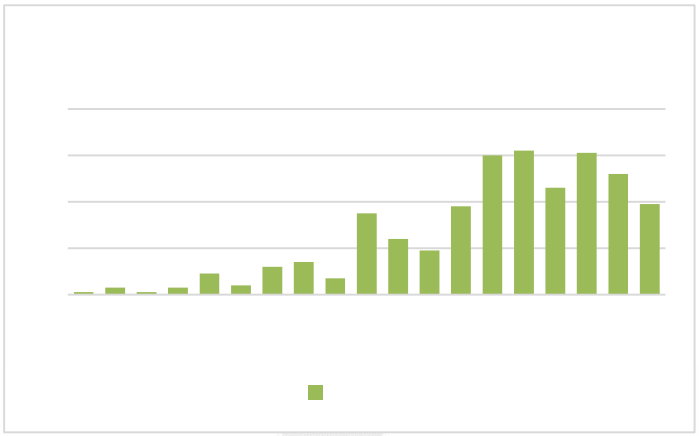


40% 23%



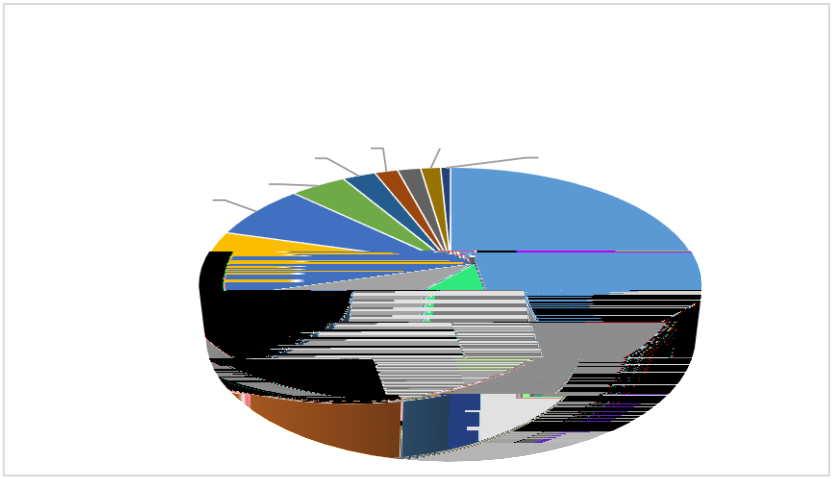
## 3.OPC/OPC UA

OPC 1998 OPC Windows 1998-2007 OPA UA 2007 40



2-1-50PC

47% OPC 14% WIPO OPC OPC OPC UA OPC 2008



2-1-6 OPC

Siemens ABB GE EMERSON FISHER-ROSEMOUNT BOSCH ROCKWEll OPC ABB Siemens OPC

[redacted]

Siemens ABB

2-1-7 OPC OPC UA

OPC UA 2008 ABB OPC UA

OPC

OPC UA Siemens ABB



OPC UA OPC UA

OPC UA OPC UA

## 1.ONS

2-2-1 ONS

ONS DNS ONS

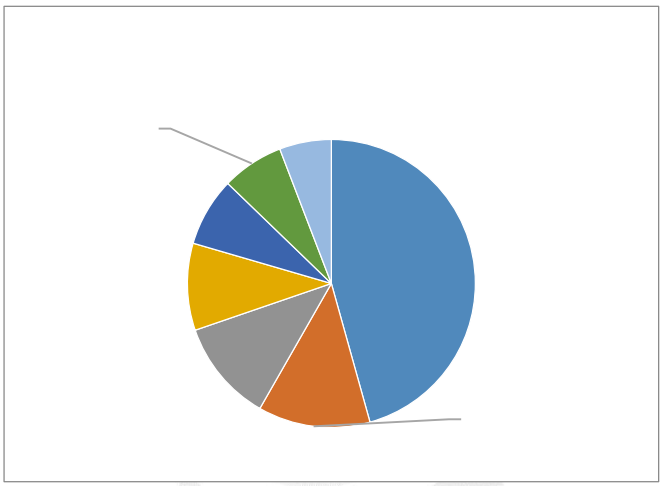
532 257 2005

[redacted]

2-2-2 ONS

ONS 2012 2013

ONS



2-2-3 ONS

GE

(IIC)

Cisco

ONS 80 IBM

ONS 70

ONS

ONS



Handle

Handle



2-2-5 Handle

CONTENT DIRECTIONS

AMERICAN EXPRESS TRAVEL RELATE

Handle

**3.OID**

Object identifier, OID ISO/IEC ITU

OID

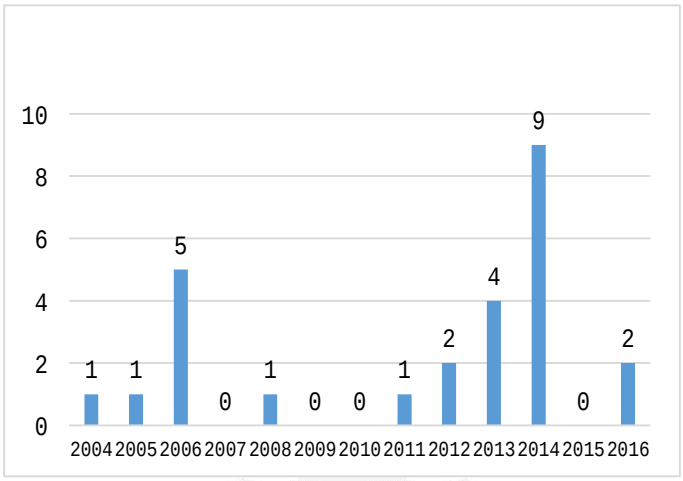
2016 5 , OID 954393 OID

RFID 3GPP

[redacted]

56

2-2-6 OID




2-2-7 OID

2015 “ OID ”

ITU-T

OID 26 24

OID 2004 OID

OID

ISO ISO-ITU

(JOINT-ISO-ITU-T) ITU-T ISO ISO-ITU

OID

2-2-8 OID

OID 37%

21%

OID OID



ETRI 14 ULTRATA

12

RFID

OID RFID

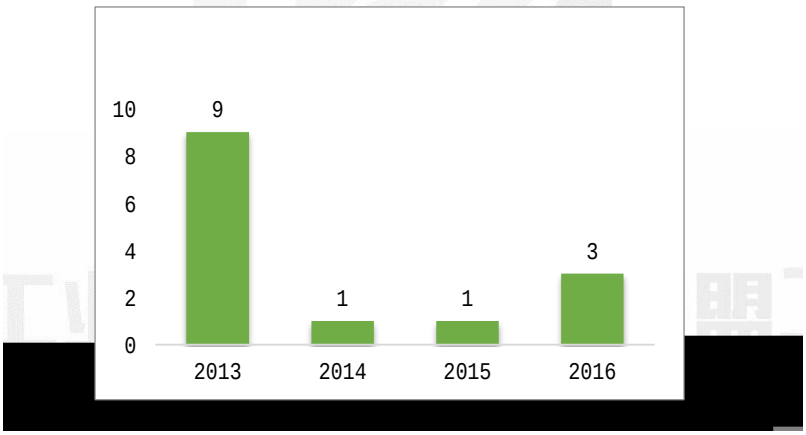
OID

## 4.Ecode

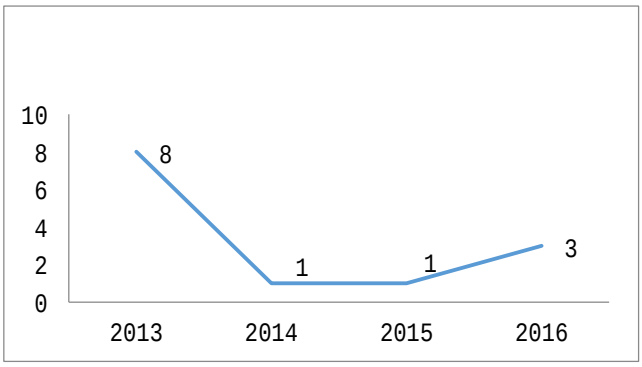
Ecode

Ecode 22 14 Ecode

2013




2-2-9 Ecode



2-2-10 Ecode

Ecode 20 13

Ecode

**4.**

Ecode Ecode



Ecode

2 Ecode

NoSQL

HDFS HAWQ Impala Presto Drill Spark Hive Pheonix

Mathworks SAS

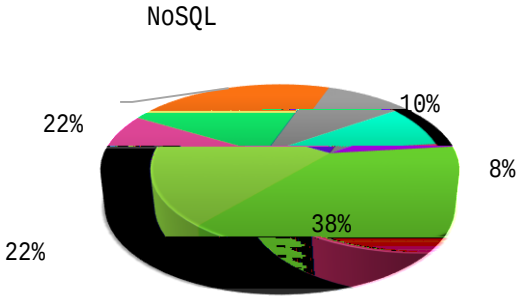
SAP VMware

Pivotal



1.




NoSQL
10%
22%
8%
38%
22%



| |
|---|
| Hive |
| Spark |
| Imala |
| Drill |

| |
|---|
| HAWQ |
| Pheonix |

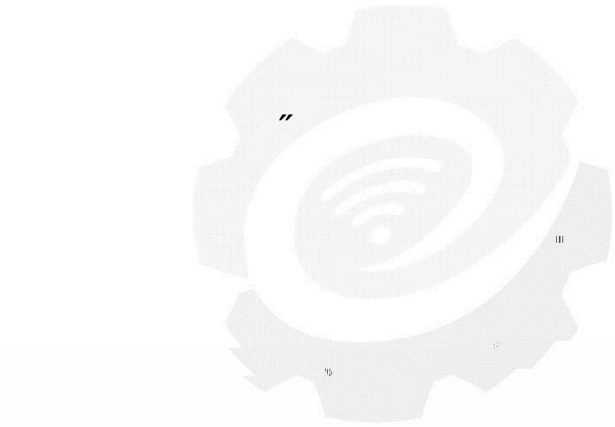




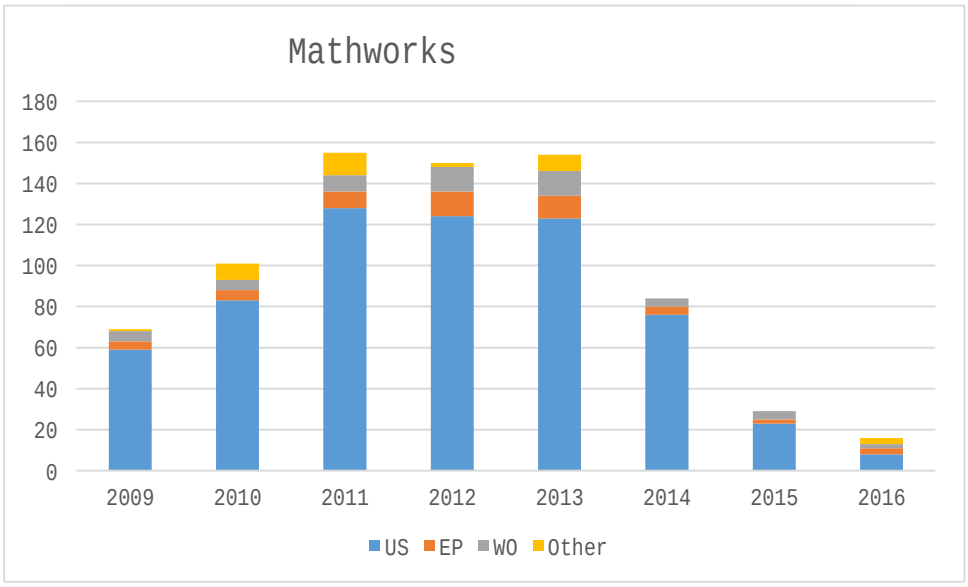




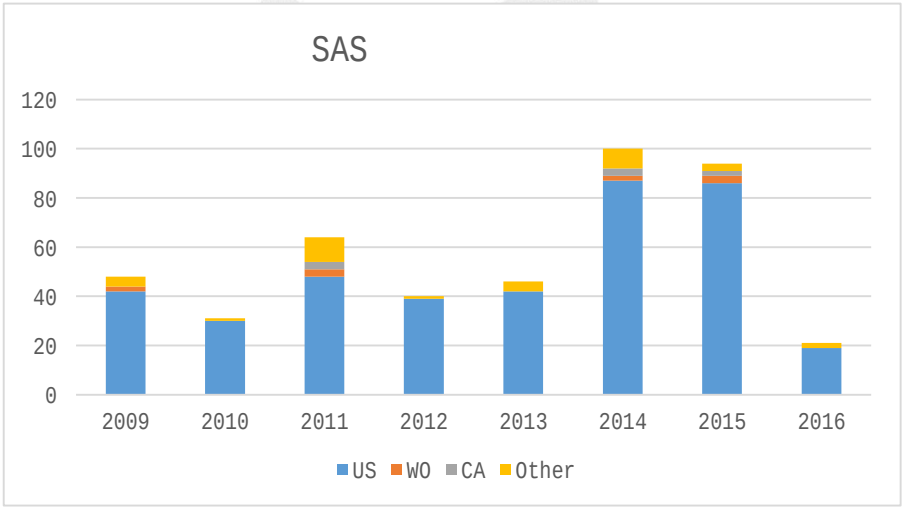




3.

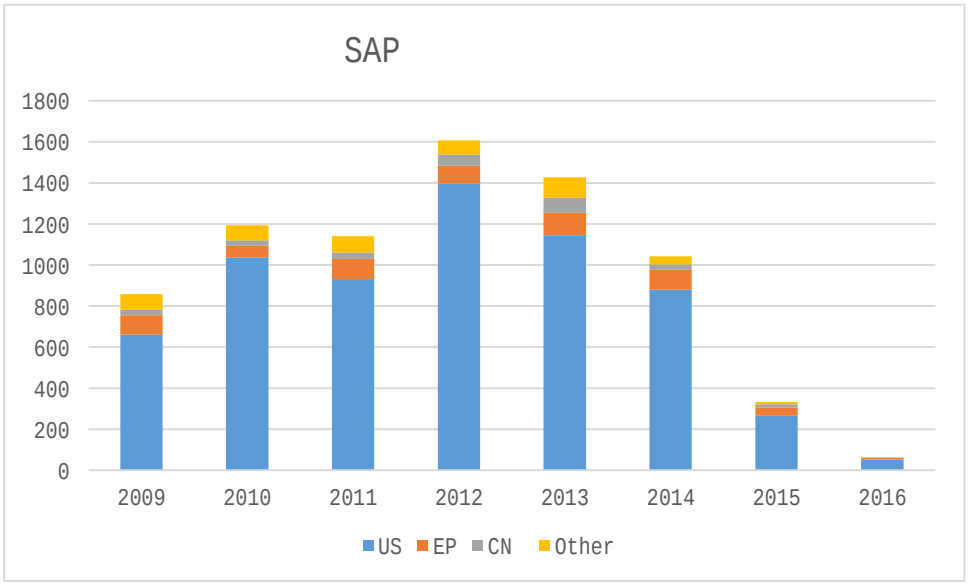



2-3-7 Mathworks


SAS
120
100
80
60
40
20
0
2009
2010
2011
2012
2013
2014
2015
2016
US
WO
CA
Other

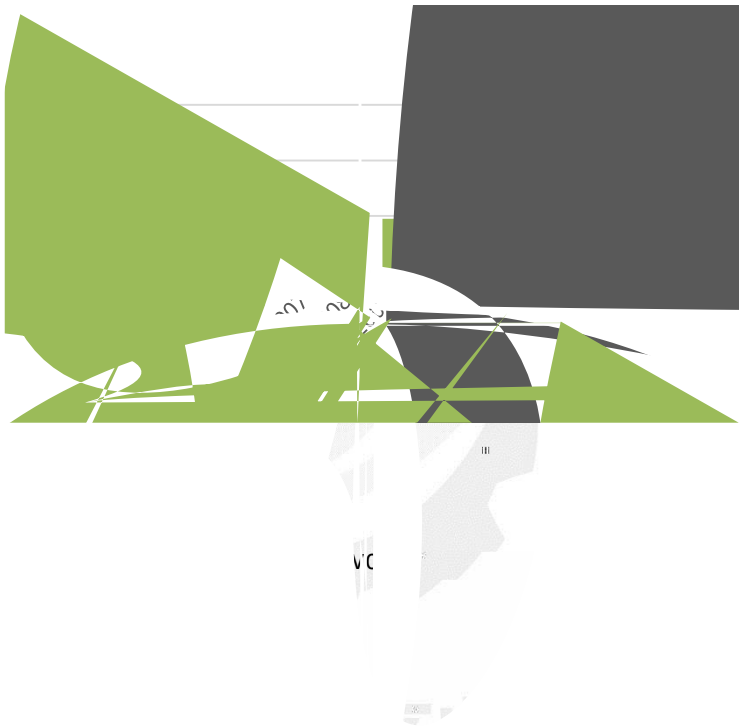
2-3-8 SAS






2-3-9 SAP

4. [redacted]





ware

2014

40

85% 1%

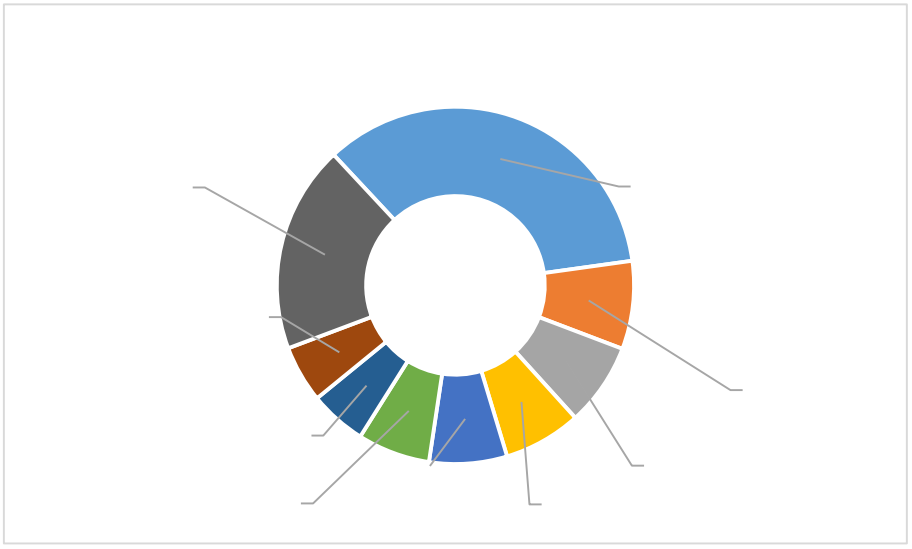
Pivotal

Pivotal 35%

8% 8% 7%



GreenPlum Hadoop GemFire



2-3-12 Pivotal IPC

VMware

PaaS Cloud Foundry1.0



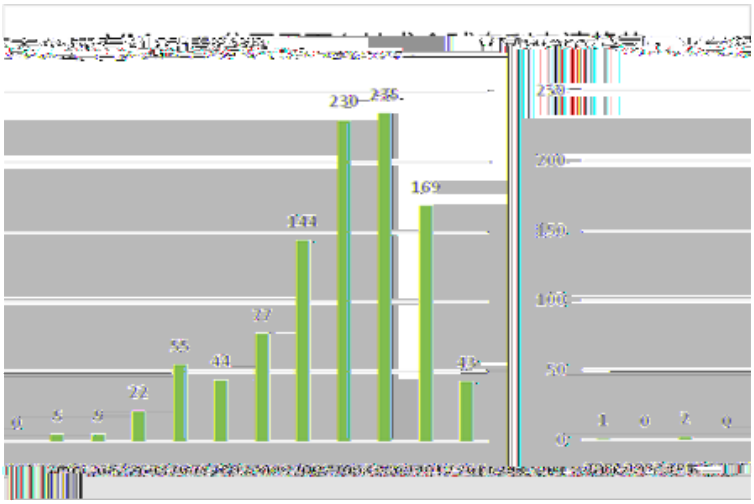
VMware 1032

2001 VMware 2008

VMware

2014 235

VMware




2-3-13 VMware

VMware 89%

VMware

2-3-14 VMware

VMware





