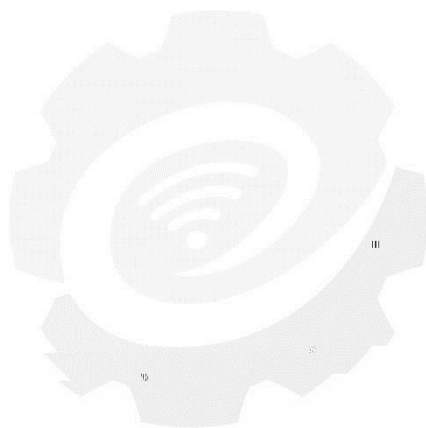


2016

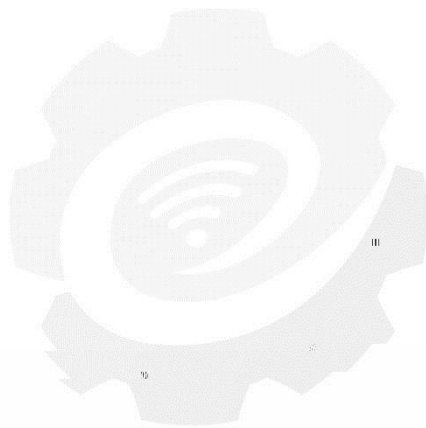


工业互联网产业联盟



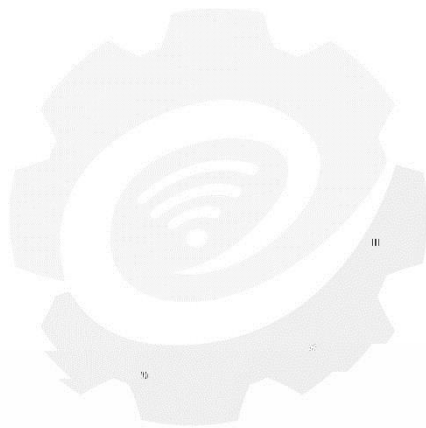
AII

2017 7



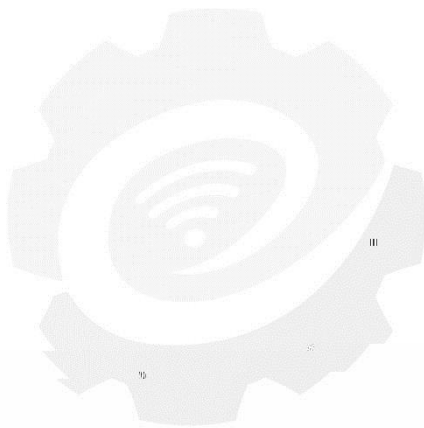
工业互联网产业联盟





工业互联网产业联盟





工业互联网产业联盟



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工业互联网产业联盟



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工业互联网产业联盟

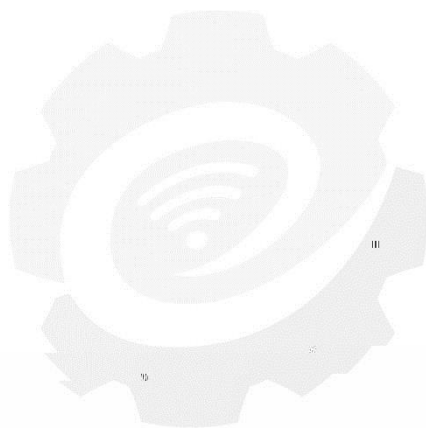


1		1
2-1-1		4
2-1-2		4
2-1-3		6
2-1-4		7
2-1-5 OPC		8
2-1-6 OPC		9
2-1-7 OPC OPC UA		10
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2-2-6 OID		16
2-2-7 OID		16
2-2-8 OID		17
2-2-9 Ecode		18

2-2-10

Ecode

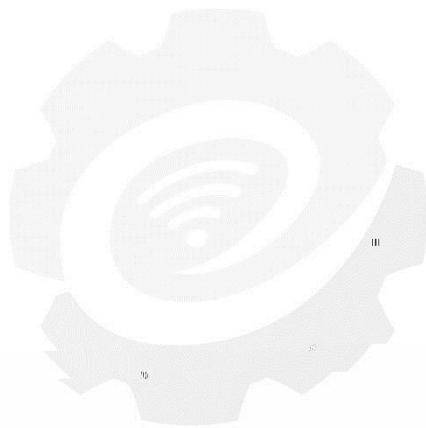
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工业互联网产业联盟







工业互联网产业联盟



OPC/OPCUA

-

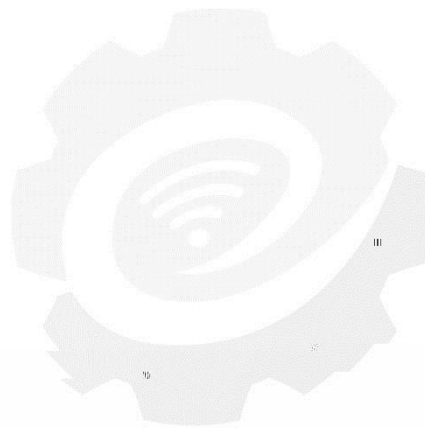
Handle

ONS

ONS Handle

OID Ecode

-



工业互联网产业联盟



1.

1.1

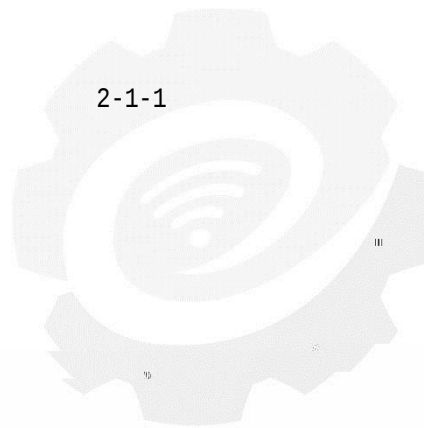
5671

1997

2010

600

1.2



工业互联网产业联盟

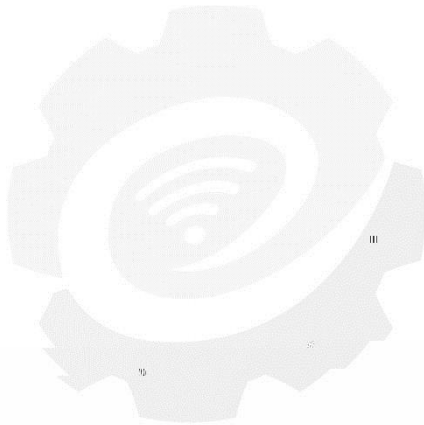
2-1-2

45%

21%

1.3 Siemens ABB ROCKWELL GE

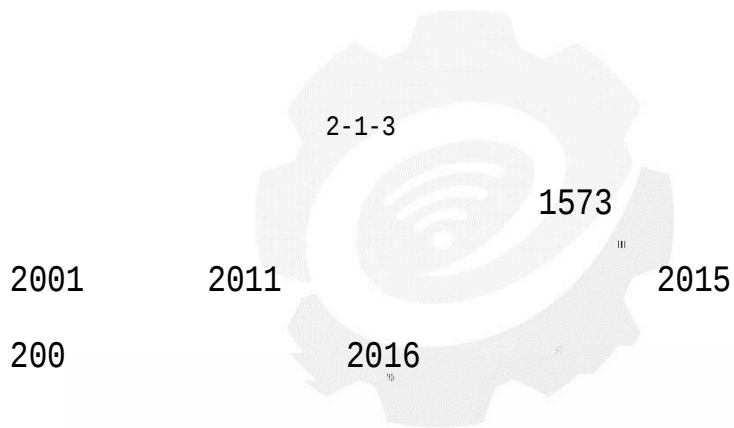
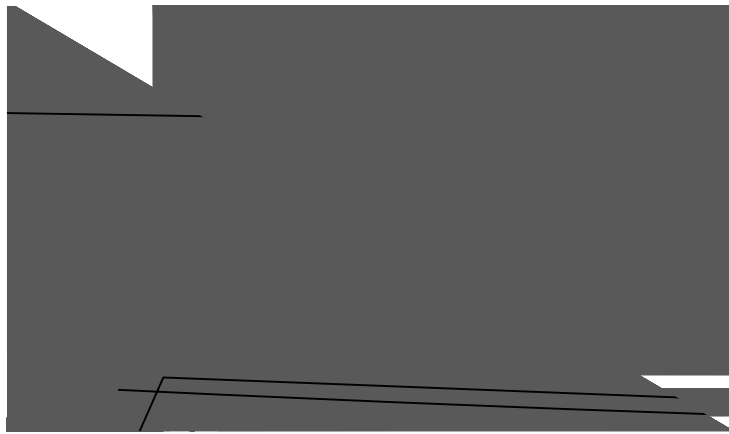
Siemens	PROFIBUS			
PROFINET	ROCKWELL	Devicenet	Ethernet/Ip	Siemens
ROCKWELL				



工业互联网产业联盟



PROFINET



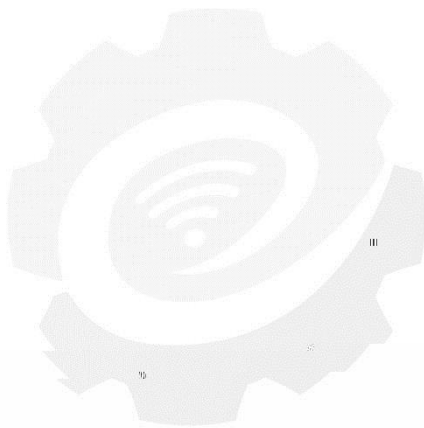
2.2

工业互联网产业联盟



40%

23%

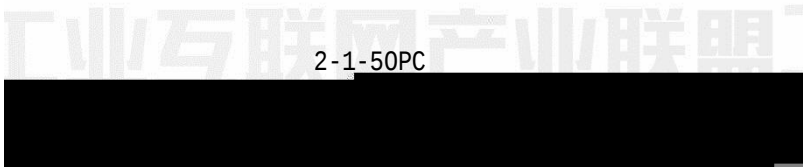
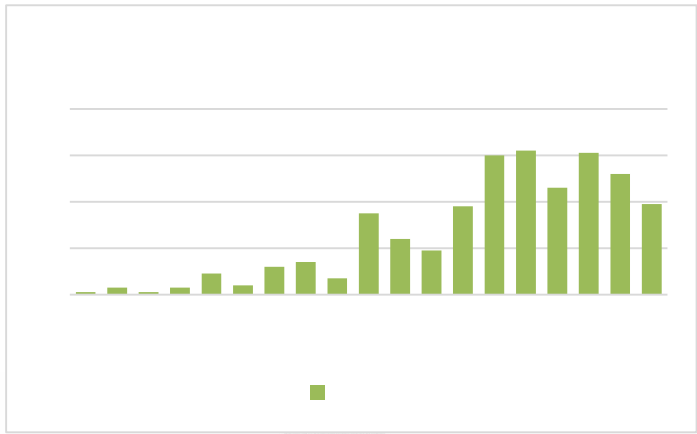
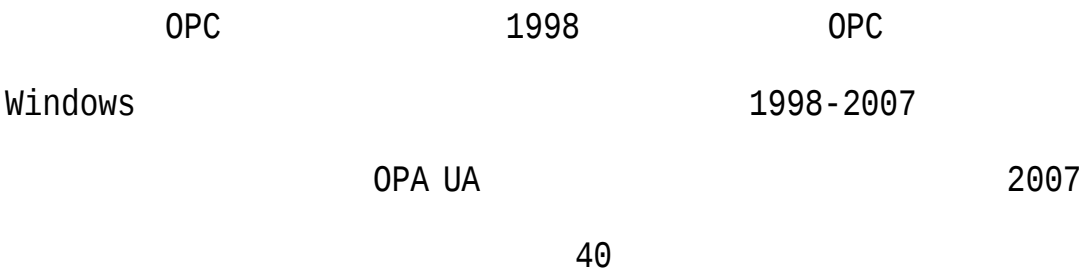


工业互联网产业联盟

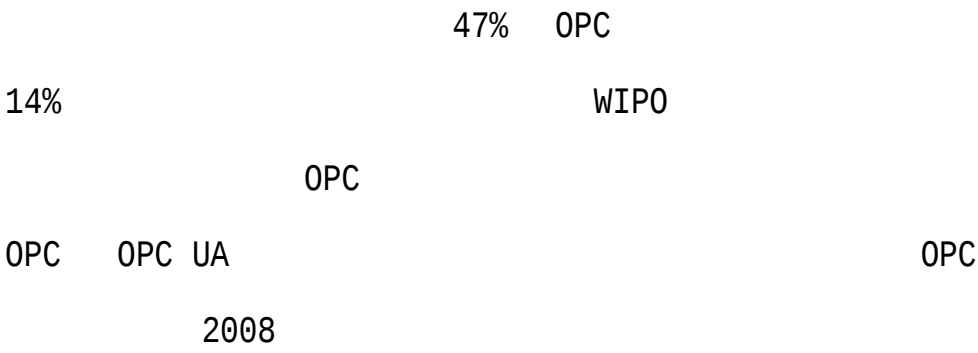


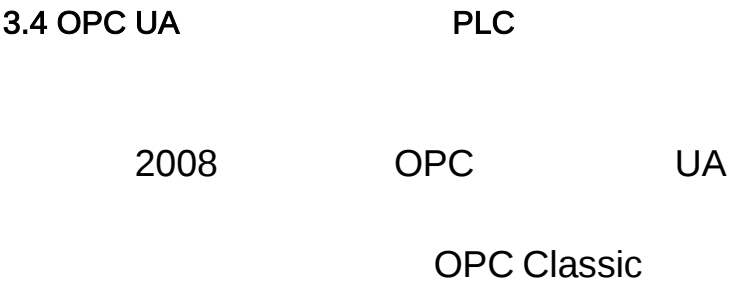
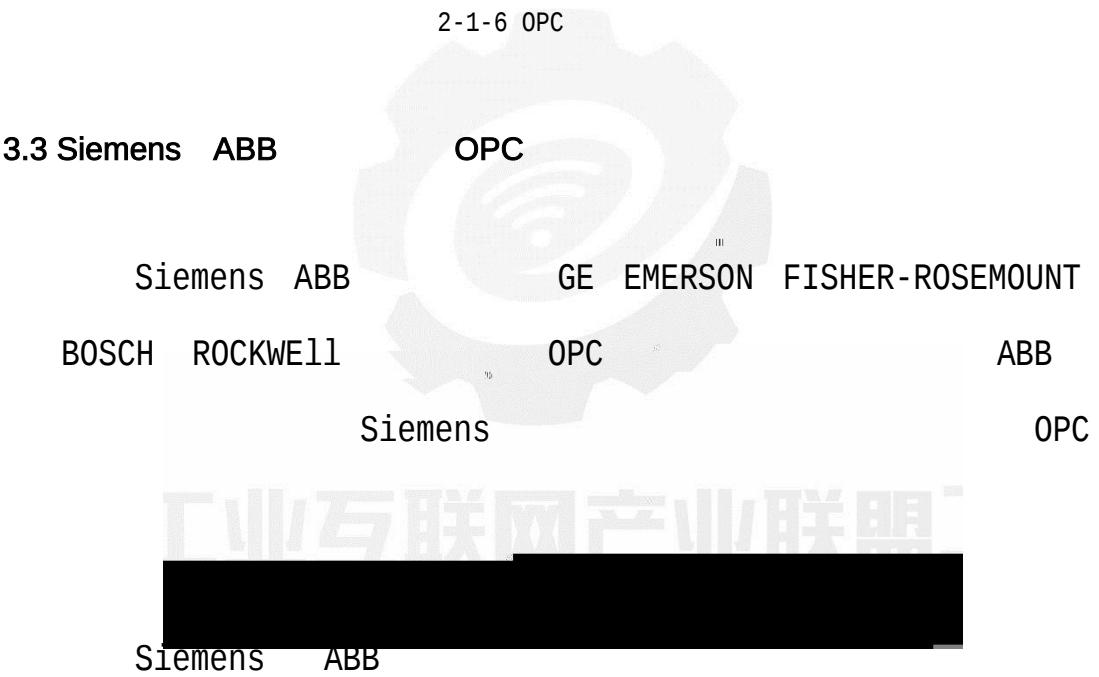
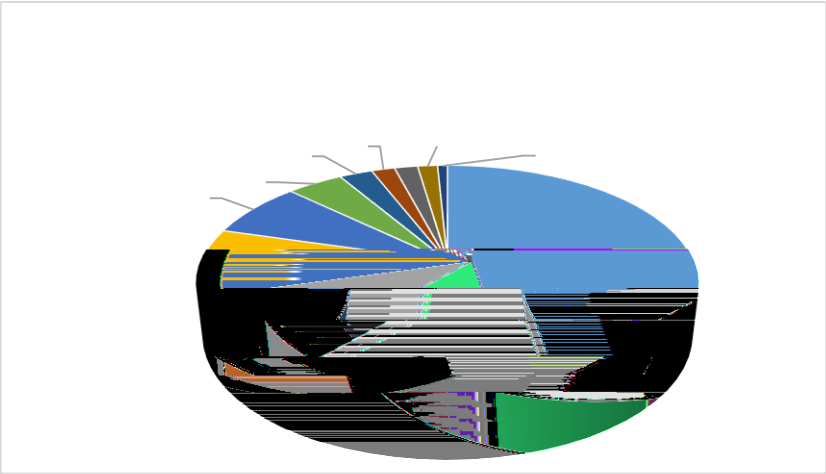
3.OPC/OPC UA

3.1 OPC/OPC UA 2012



3.2 OPC

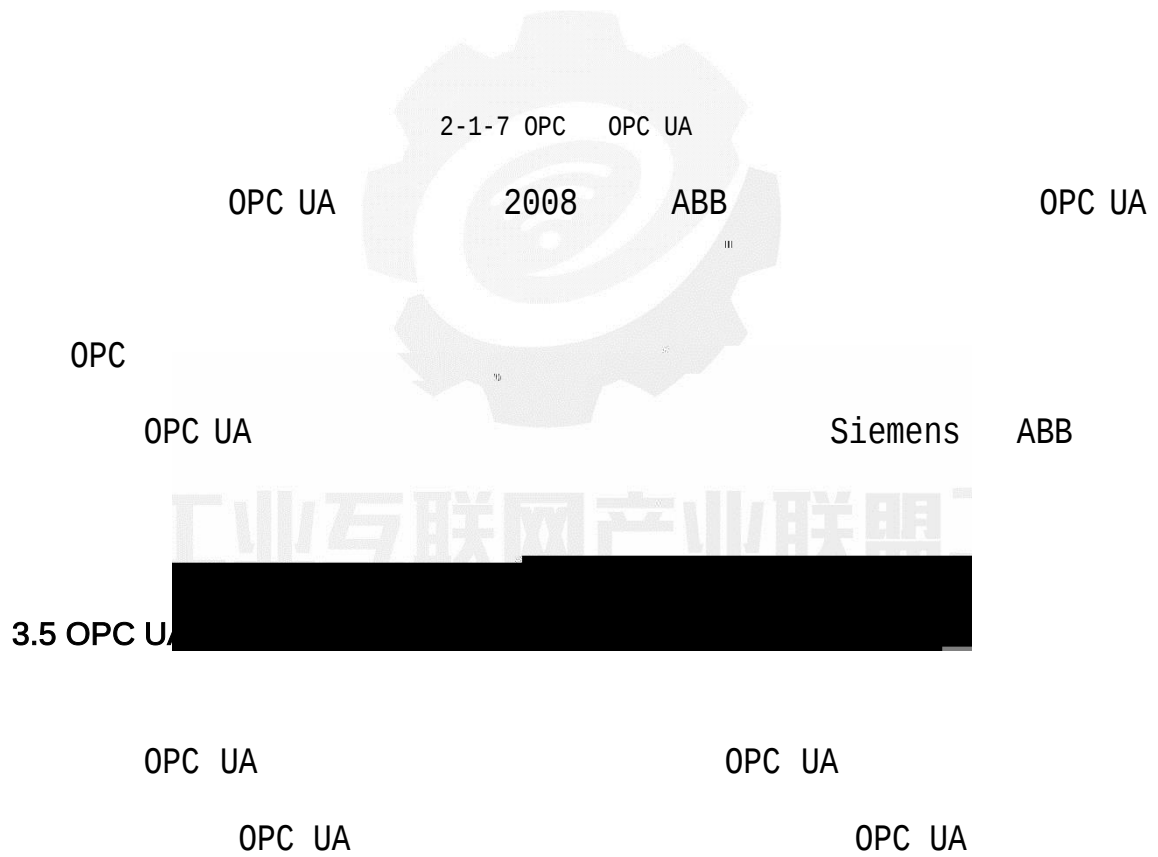




OPC

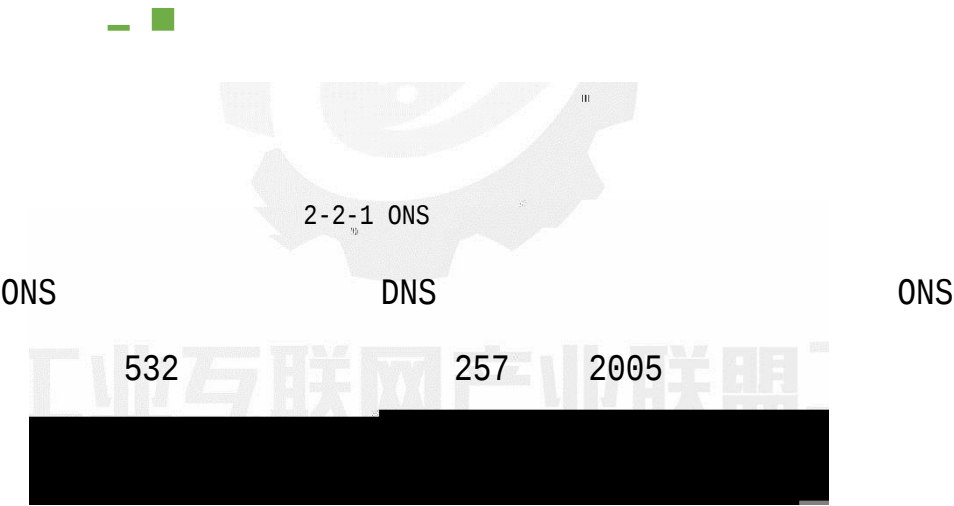
30%

OPC UA



1.0NS

1.1 ONS



2-2-2 ONS

ONS

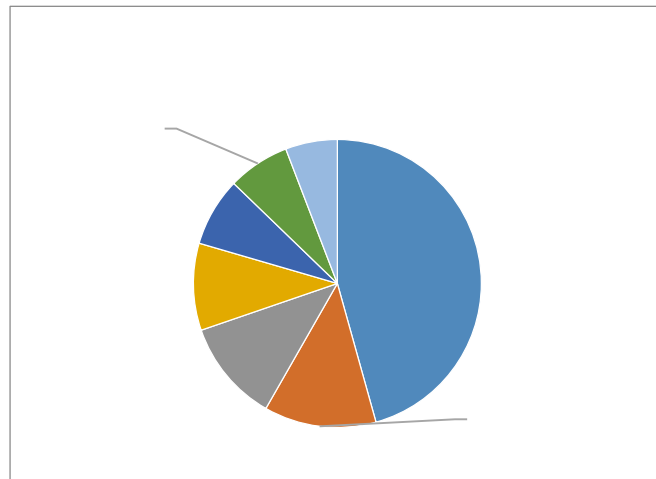
2012

2013

1.2

ONS

ONS



2-2-3 ONS



GE
(IIC)

1.3 ONS

Cisco

ONS

80

IBM

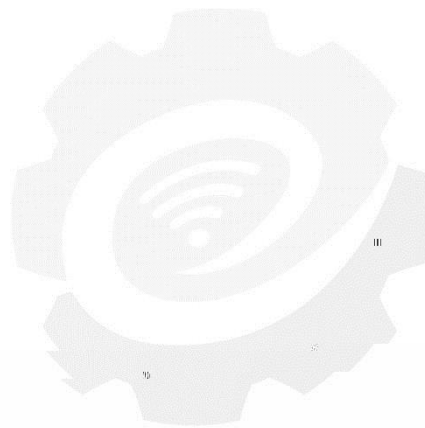
ONS

70

ONS

1.4 ONS

ONS



工业互联网产业联盟



2.2 Handle

Handle

Handle



2-2-5 Handle

工业互联网产业联盟

CONTENT DIRECTIONS

AMERICAN EXPRESS TRAVEL RELATE

2.4 Handle

Handle

3.OID

3.1 OID

Object identifier, OID

ISO/IEC ITU

OID

2016 5 , OID

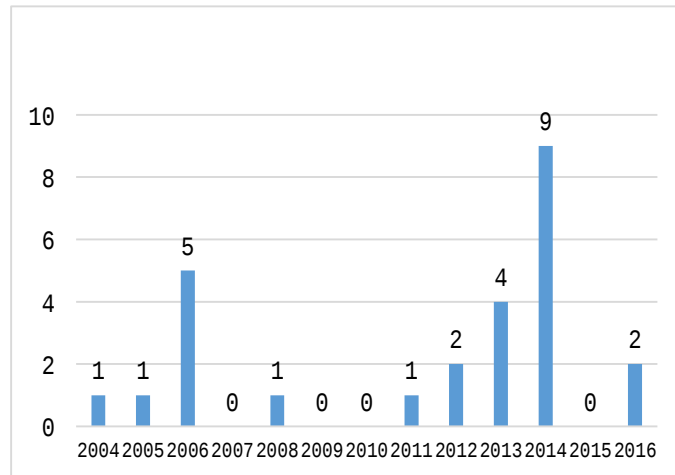
954393

OID

RFID 3GPP

56

2-2-6 OID



2-2-7 OID

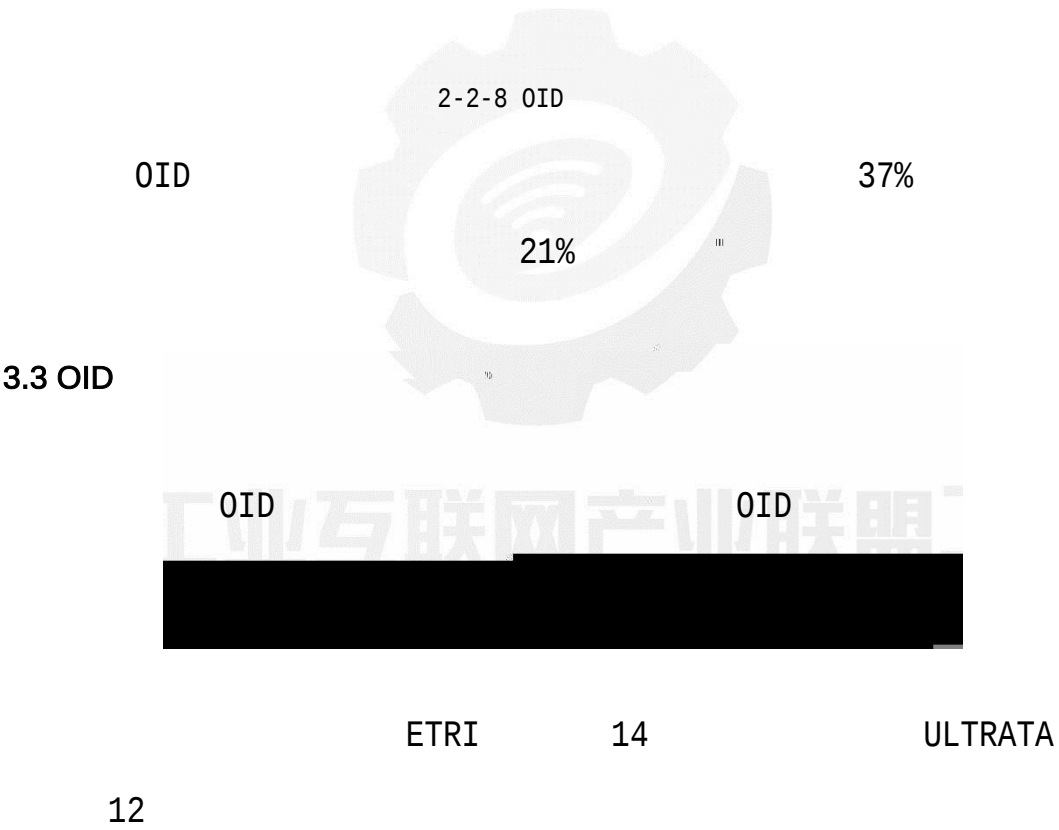
2015
ITU-T
OID
2004
OID
26
24
OID
OID

3.2 OID

OID

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

OID



3.4 OID

RFID

OID

RFID

OID

4.Ecode

4.1 Ecode

2013

Ecode

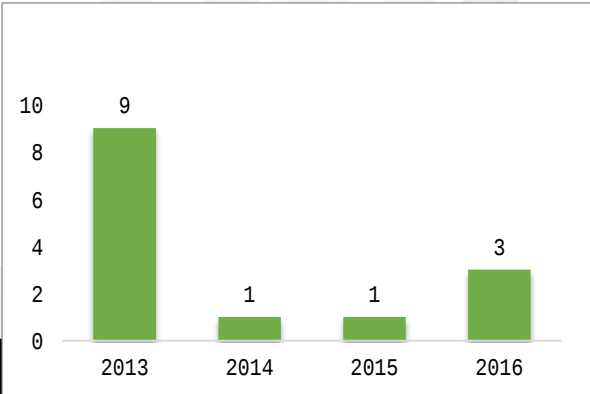
Ecode

22

14

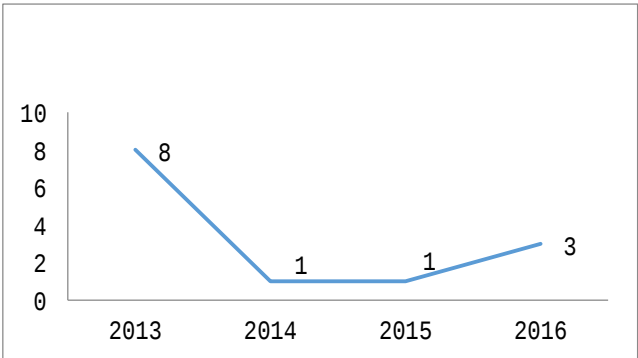
Ecode

2013



2-2-9

Ecode



2-2-10 Ecode

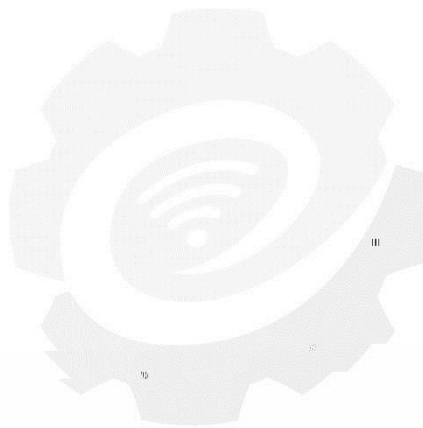
Ecode 20 13

Ecode

4.2. Ecode 4. 4.

Ecode

Ecode



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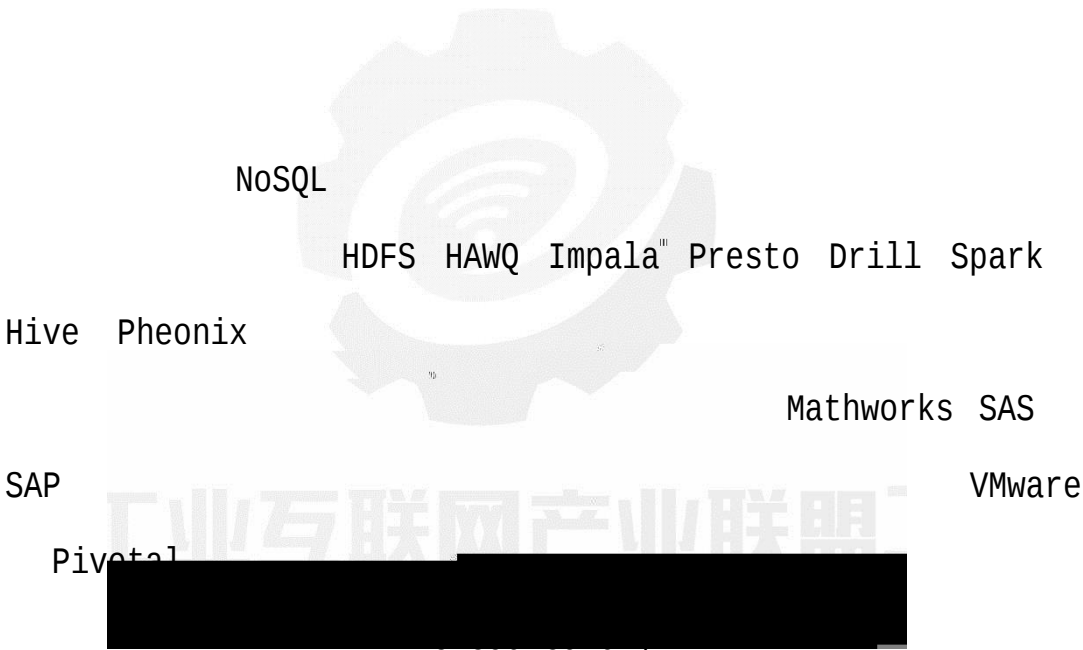


Ecode

2 Ecode

4.4 Ecode

Ecode



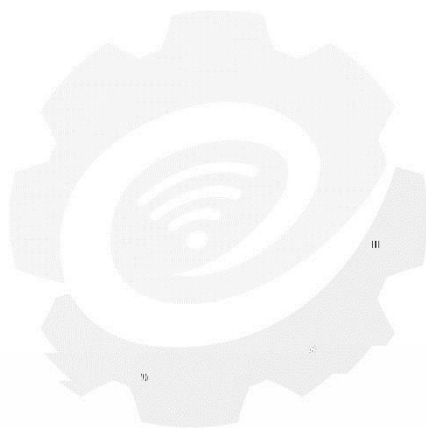
1.

1.1 NoSQL

NoSQL

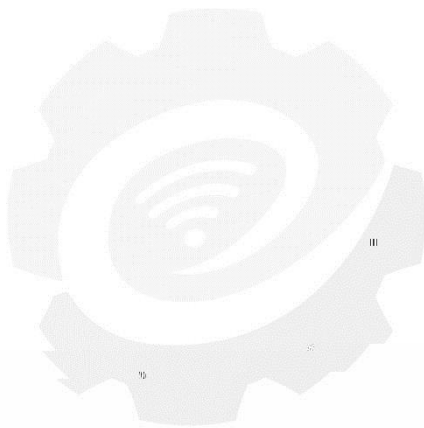
NoSQL

IBM



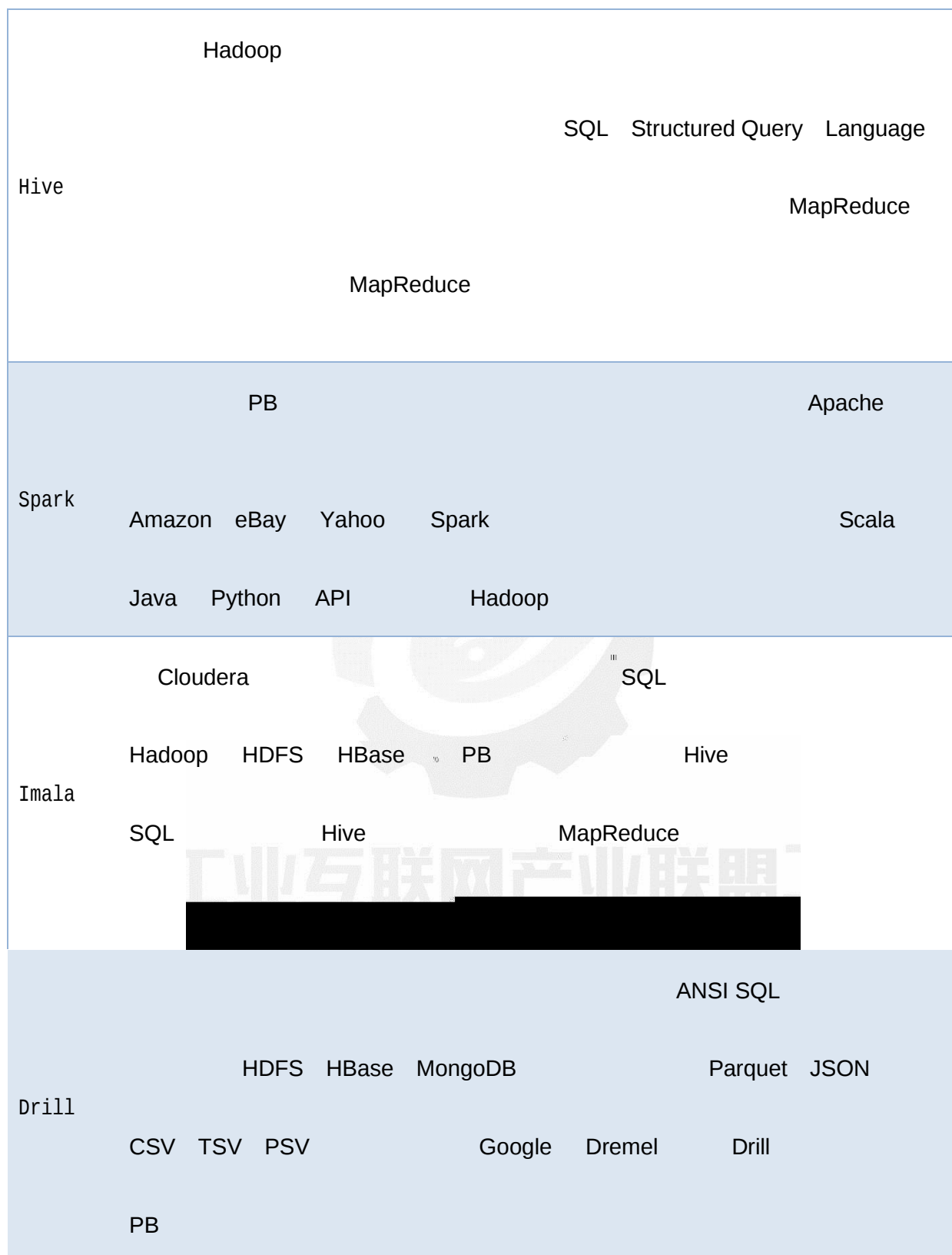
工业互联网产业联盟

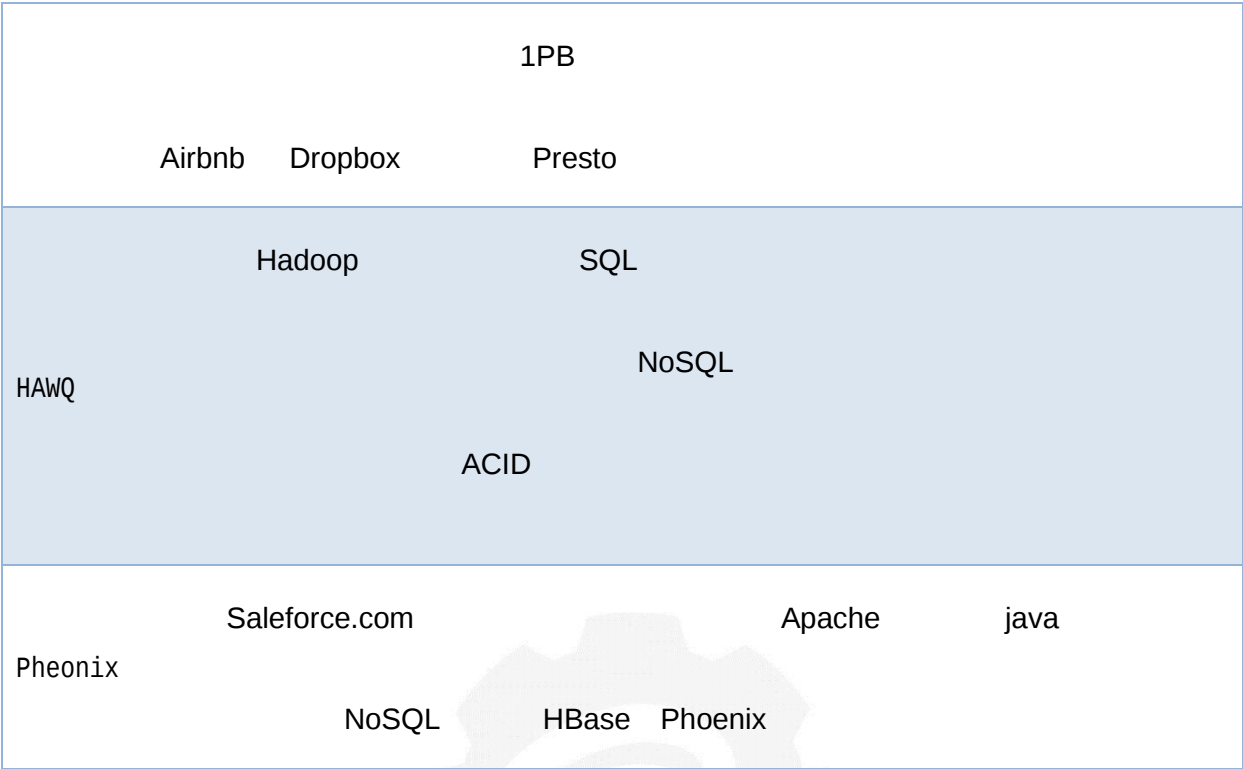




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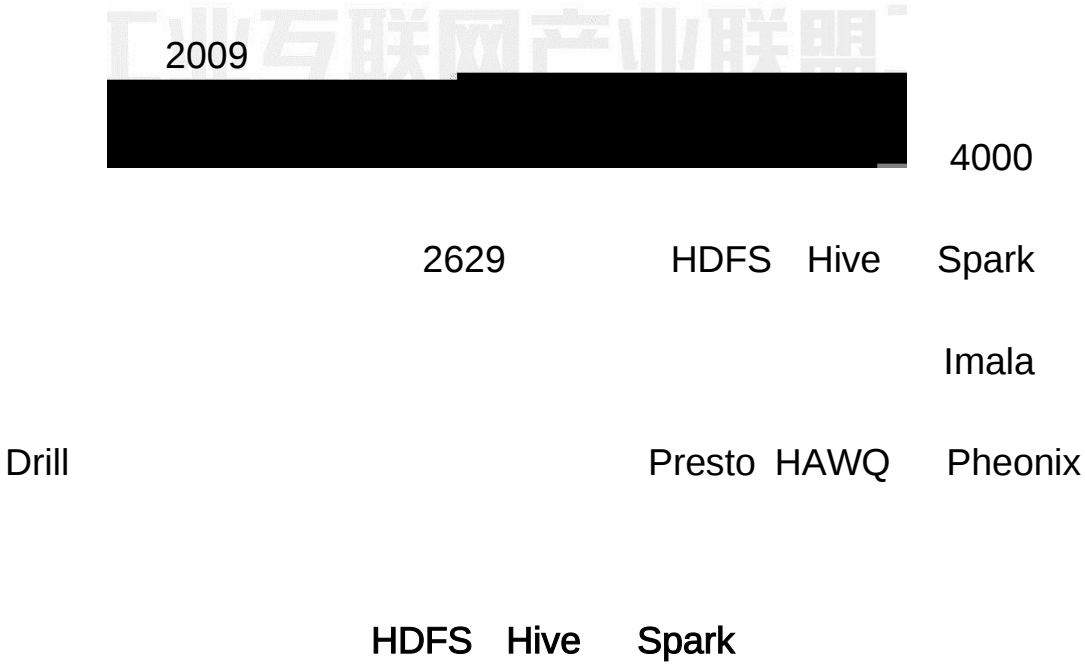


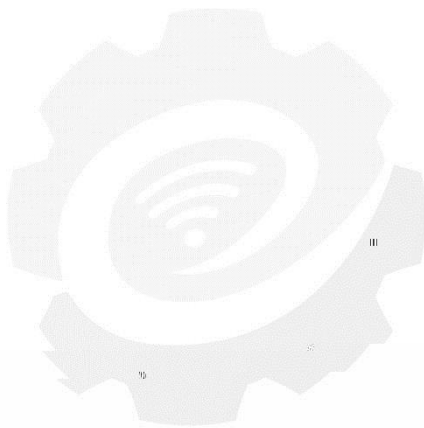




2.2

2.2.1 HDFS Hive Spark





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Spark

2009

2016

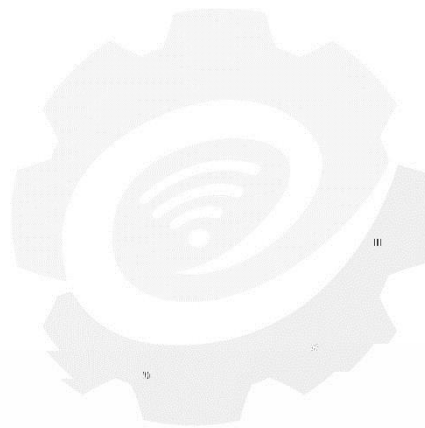
910

579

Spark

Hive

MapReduce



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HAWQ

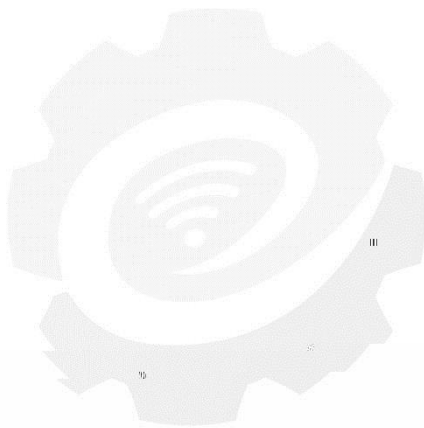
2.2.2

24%



2-3-6

2.2.3 IBM FACEBOOKD 57BDC BT1 0 0 1 399.7 2850 1 4240BDC B/F16 14.04



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Hive

Hive

Hadoop

Spark

Spark

Spark



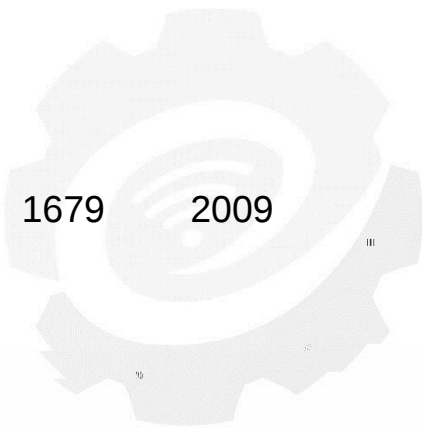
Pheonix

Pheonix

3.

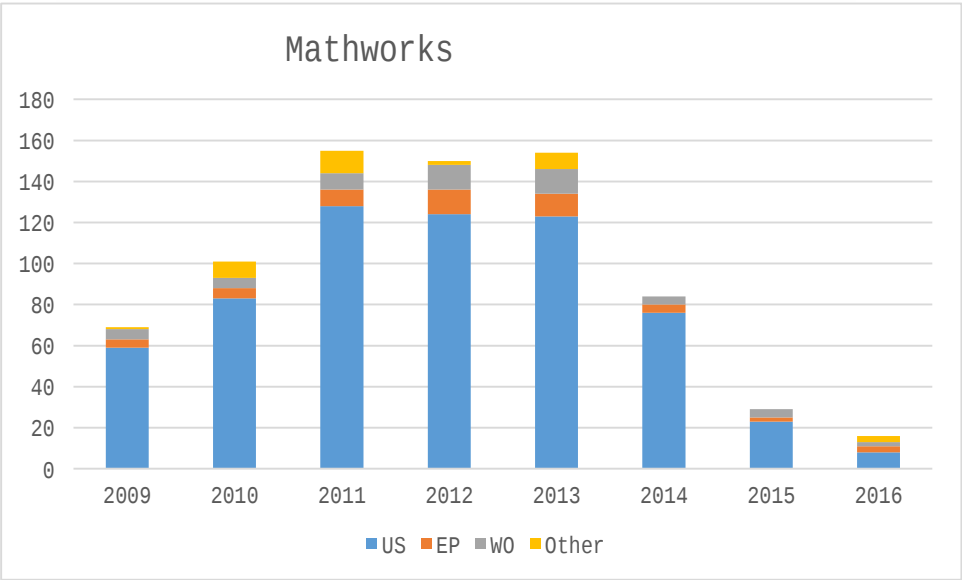
3.1 Mathworks

Mathworks



2011

2013



2-3-7 Mathworks

Mathworks

Mathworks

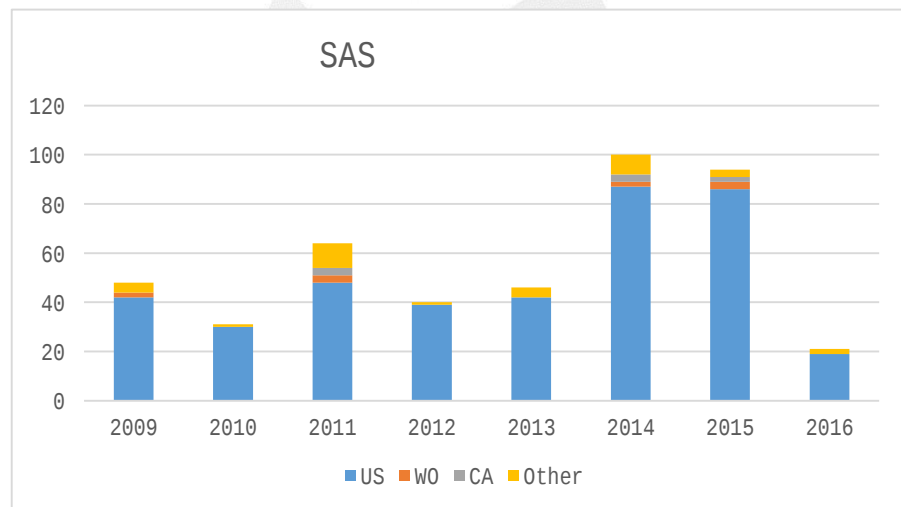
3.2 SAS

SAS

1976 SAS

SAS INSTITUTE INC

SAS



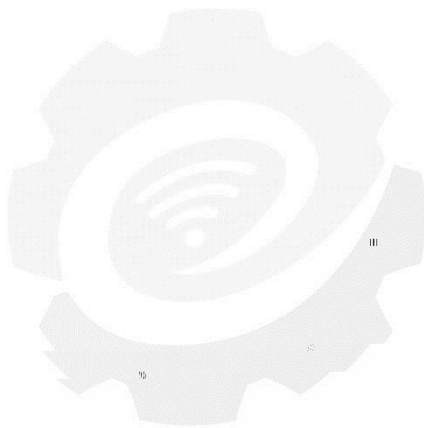
2-3-8 SAS

SAP

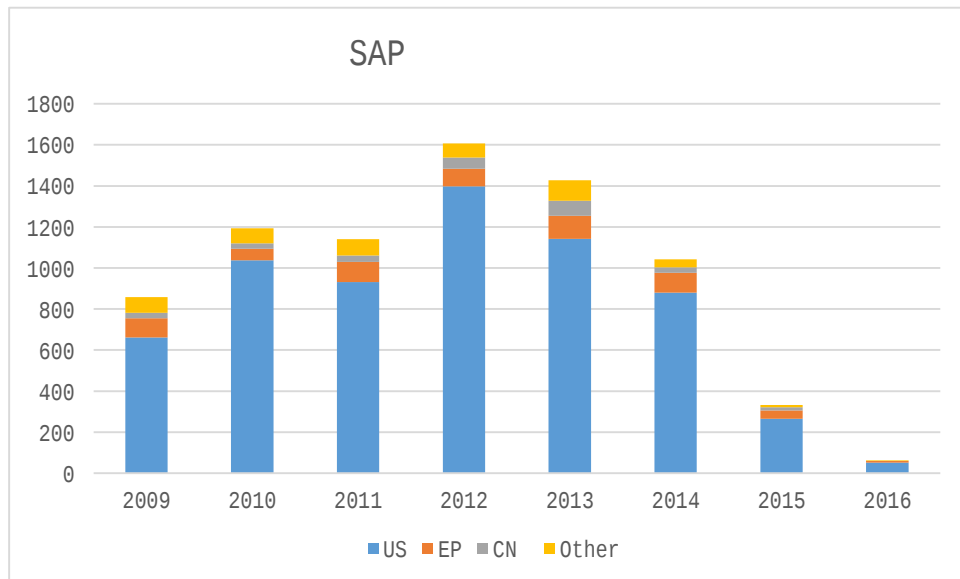
SAS INSTITUTE INC

694

2009



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SAP

2-3-9 SAP

SAP

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4.

4.1 Pivotal software

Cloud Foundry

GreenPlum

Pivotal software

Pivotal

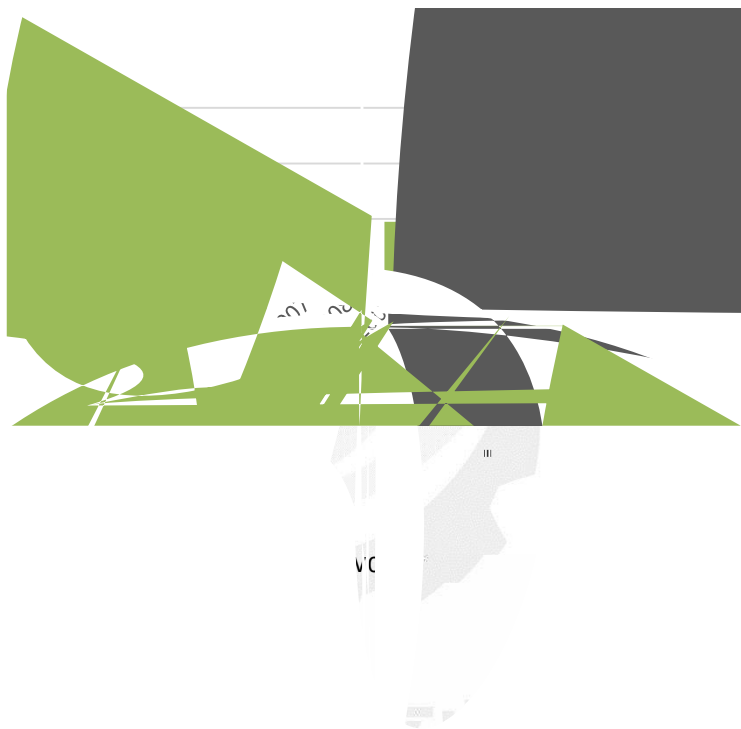
Pivotal One

Pivotal

Pivotal

4.1.1 Pivotal

VMware EMC



l P.

18.

ware

Pivotal

2014

40

Pivotal

85%

1%

Pivotal

12306

4.1.3 Pivotal

Cloud

Foundry GreenPlum

Pivotal

35%

8%

8%

7%

Pivotal

stream

ase

GreenPlum

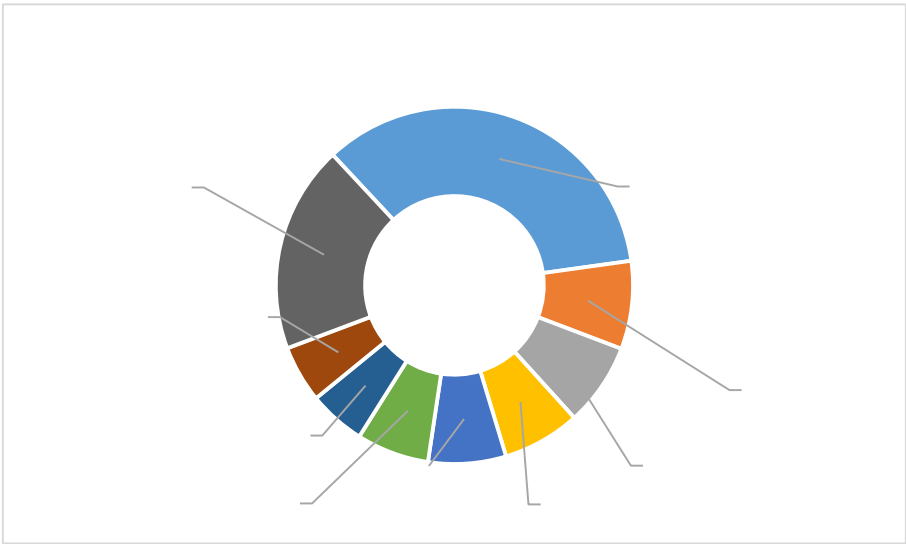
Hadoop

GemFire

Spring

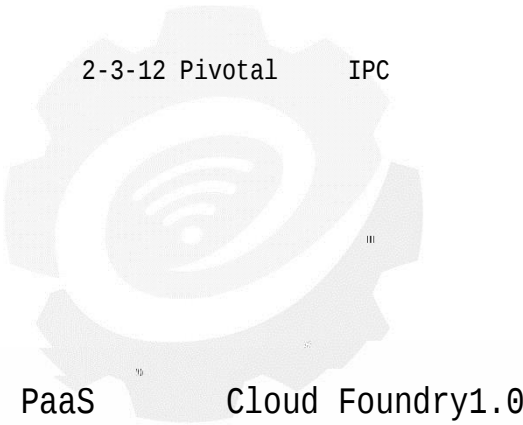
MySQL Dev

Cloud Foundry



4.2 VMware

VMware



4.2.1 VMware



VMware

1032

2001

VMware

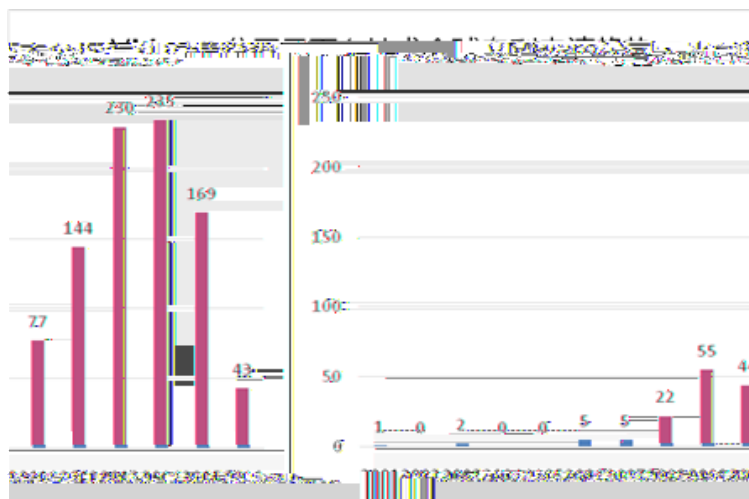
2008

VMware

2014

235

VMware



2-3-13 VMware

4.2.2 VMware

VMware

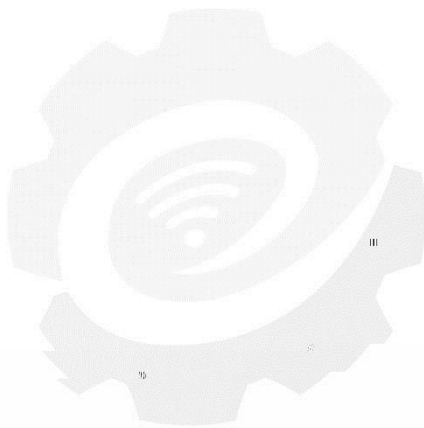
89%

VMware



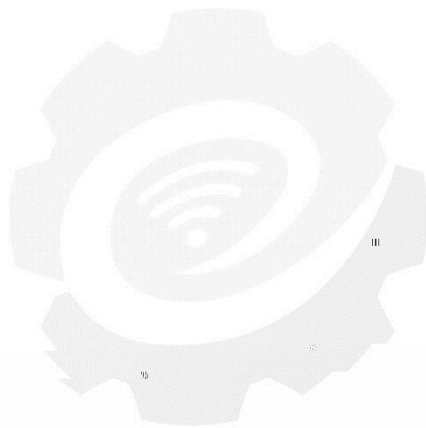
2-3-14 VMware

VMware



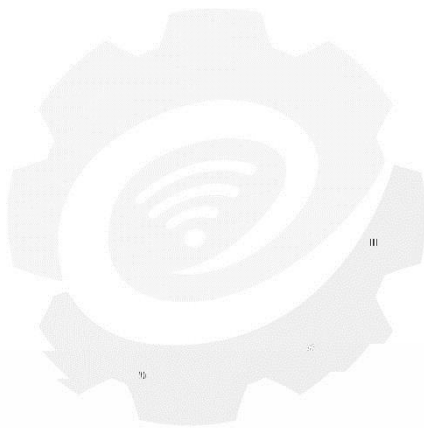
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