

工业互联网产业联盟





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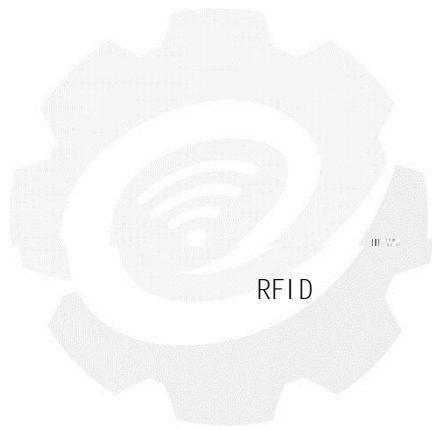
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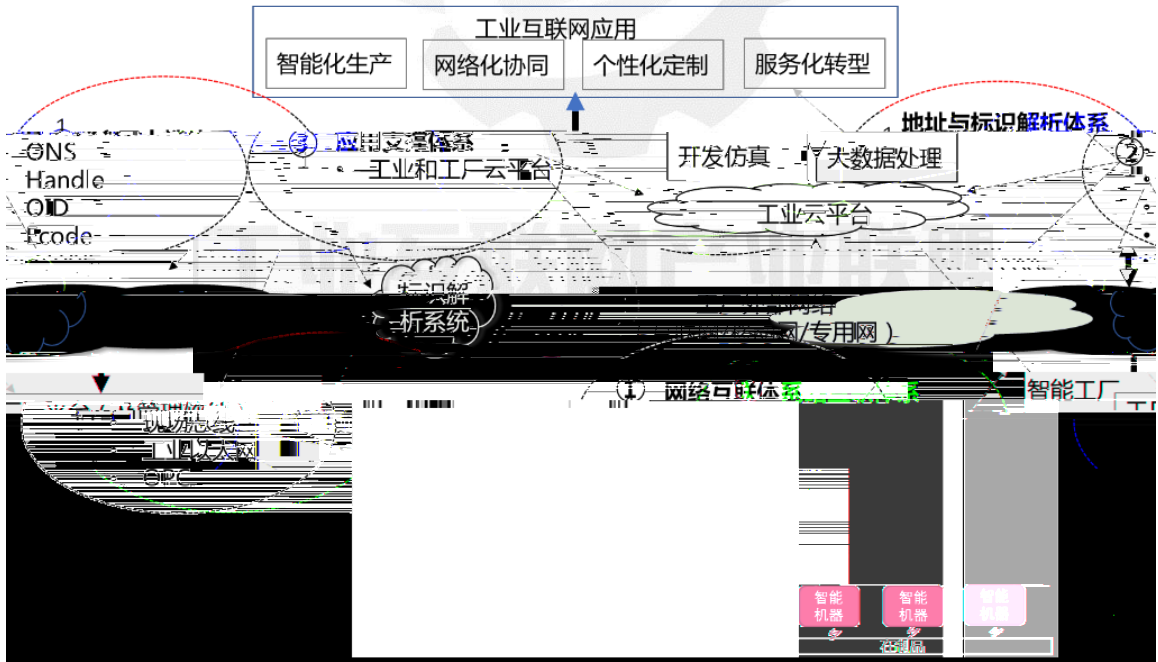




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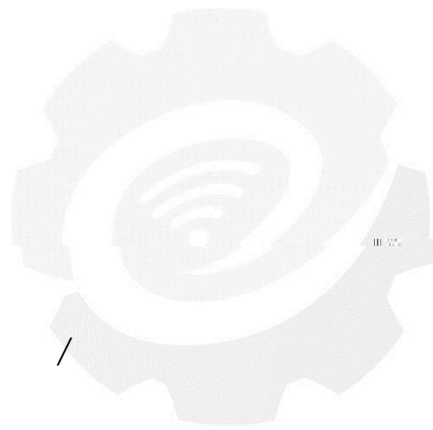


工业互联网整体网络体系目标框架



IT

OT



TI

OT

/

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PatentStrategies

2016

1

PROFINET Ethernet/IP



2015

2016

OPC/OPCUA

Handle

ONS

ONS Handle

OID Ecode



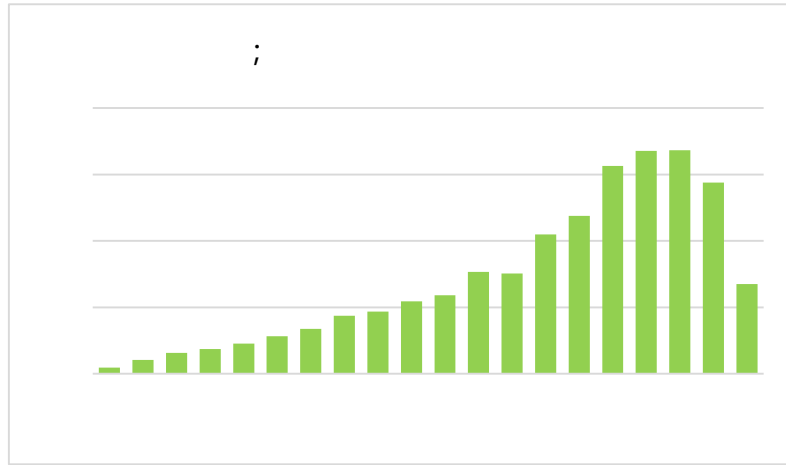
1.

5671

1997

2010

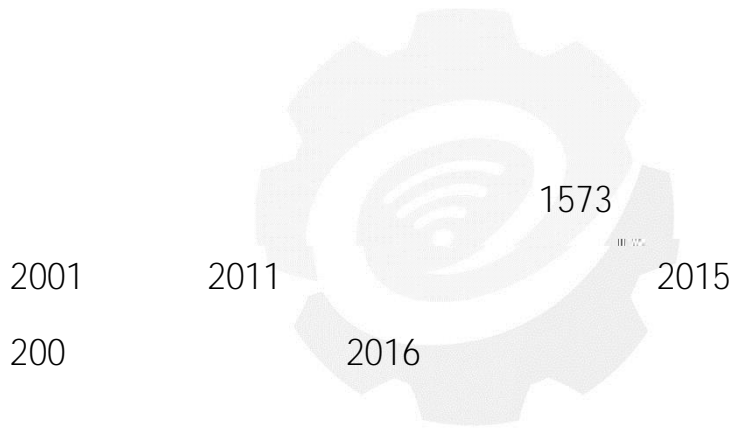
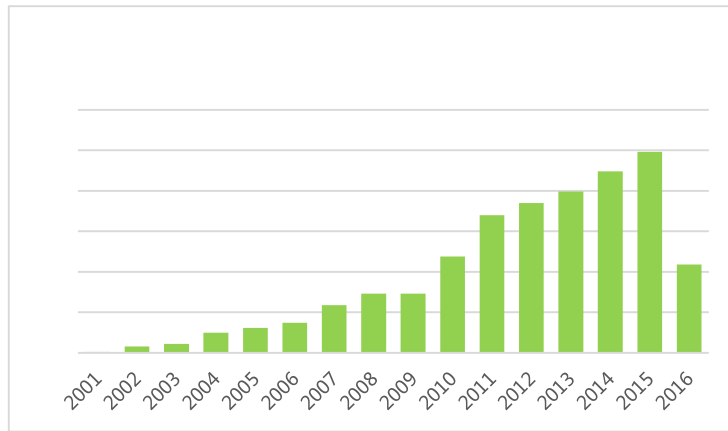
600



45%

21%

PROFINET

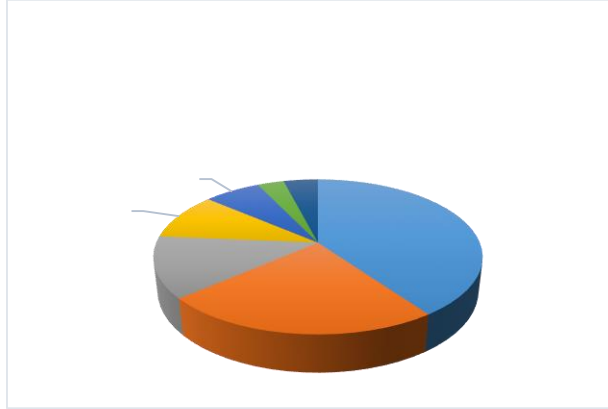


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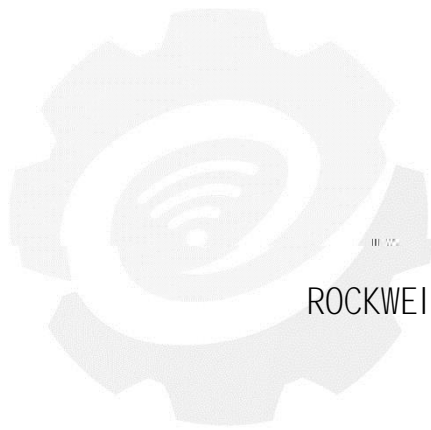


40%

23%



Siemens



ROCKWELL ABB BOSCH PHOENIX



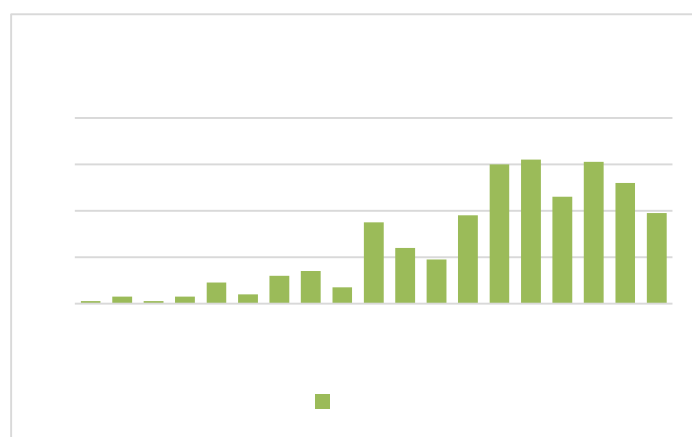
FIELDNET Modbus-RTS FF HSE

Ethernet powerlink

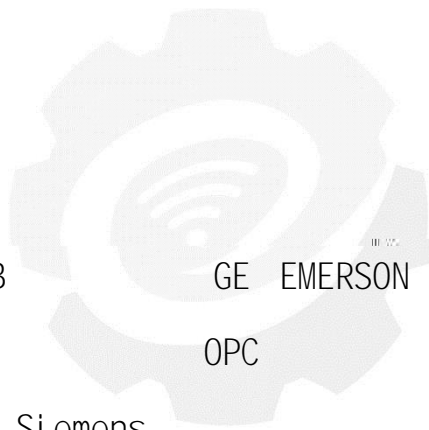
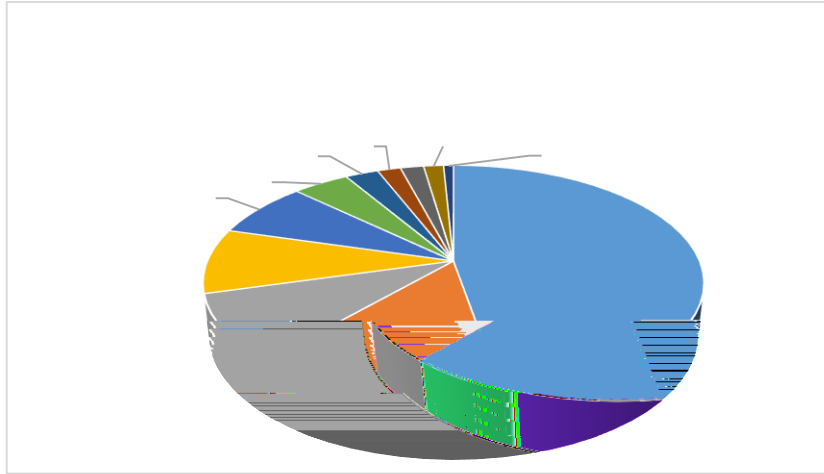
TCnet sercos3

3. OPC/OPC UA

OPC
Windows
1998
OPC
1998-2007
OPC UA
2007



14%
47% OPC
WIPO
OPC
OPC UA
2008
OPC

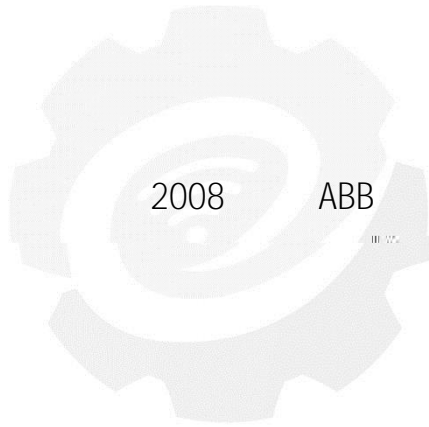
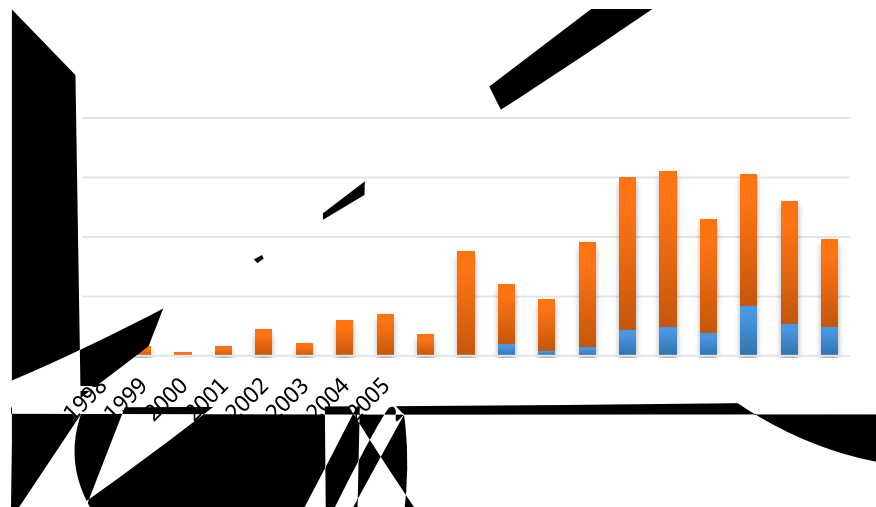


Siemens ABB GE EMERSON FISHER-ROSEMOUNT
 BOSCH ROCKWELL OPC ABB
 Siemens OPC

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Siemens ABB



OPC UA

2008

ABB

OPC UA

OPC

OPC UA

Siemens

ABB



OPC UA

OPC UA

OPC UA

OPC UA

1. ONS

ONS

DNS

ONS

532

257

2005

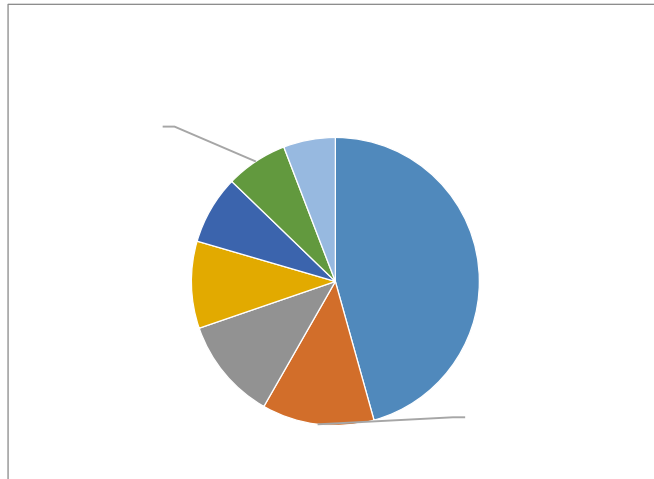


ONS

2012

2013

ONS



GE
(IIC)

Ci sco

ONS

80

I BM

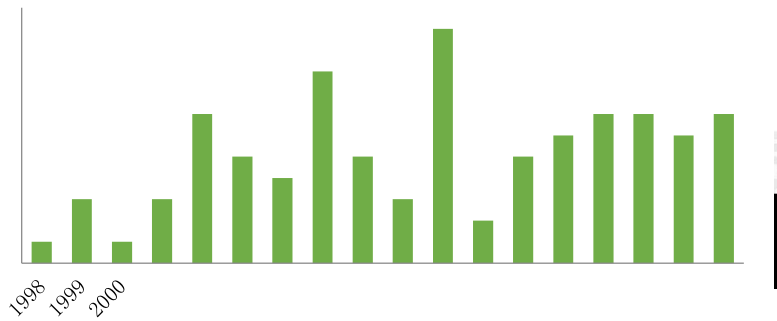
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ONS

ONS

2. Handle



Handle

170

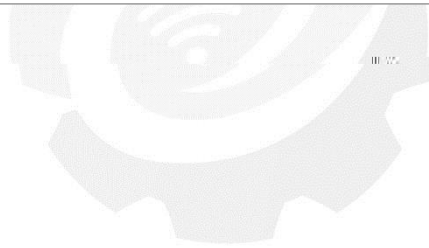
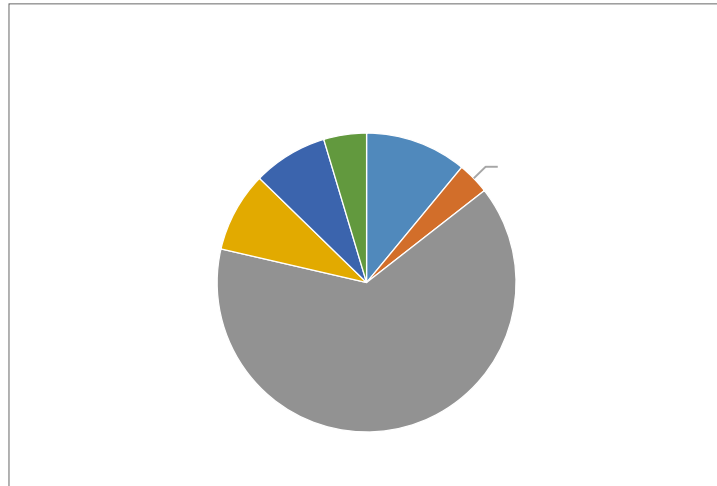
90

1998

2008

Handle

Handle



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CNRI



NATIONAL

RESEARCH INITIATIVES

Handle

Robert

Kahn

Handle

17

Handle

Handle

IT

IBM Microsoft

AMERICAN EXPRESS

TRAVEL RELATE

IBM

CONTENT DIRECTIONS

AMERICAN EXPRESS TRAVEL RELATE

Handle

3.0 ID



Object identifier, 01D
01D

ISO/IEC ITU

2016 5 , 01D

954393

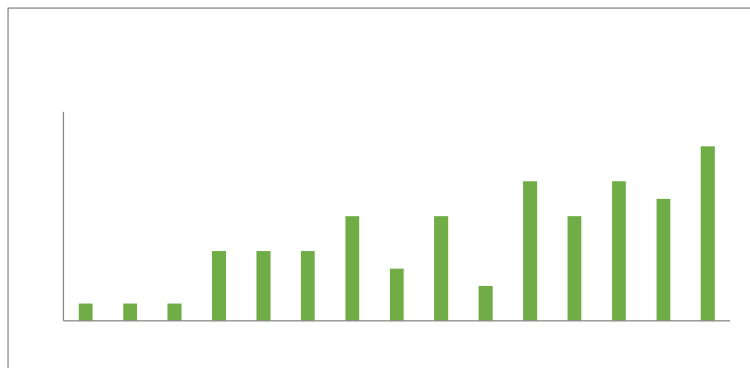
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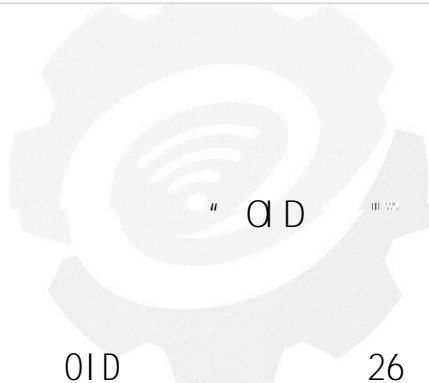
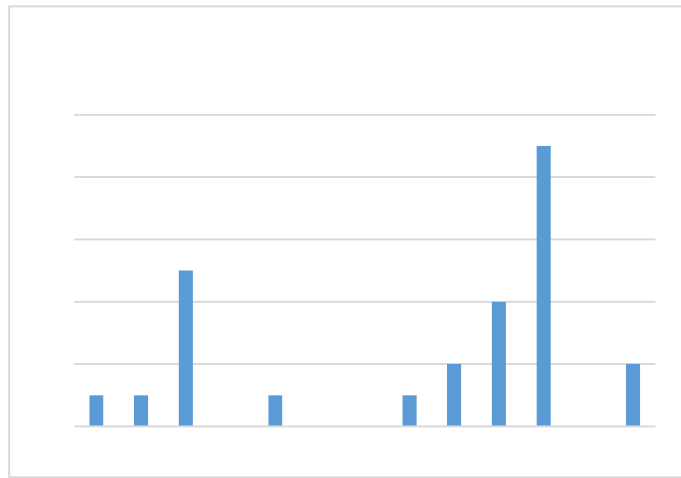


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01D

1998





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ITU-T

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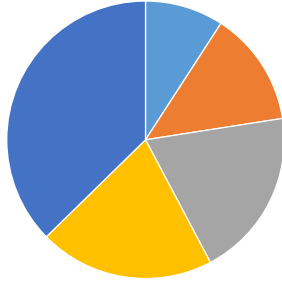


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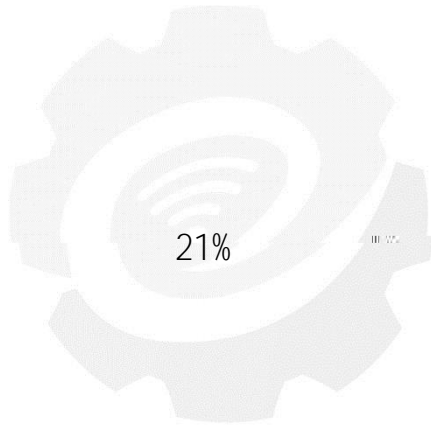
(JOINT-ISO-ITU-T) ITU-T ISO ISO-ITU

ISO ISO-ITU

OID



OID



37%

OID

OID



ETRI

14

ULTRATA

12

IBM

10

OID

RFID

OID

RFID

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4. Ecode

Ecode

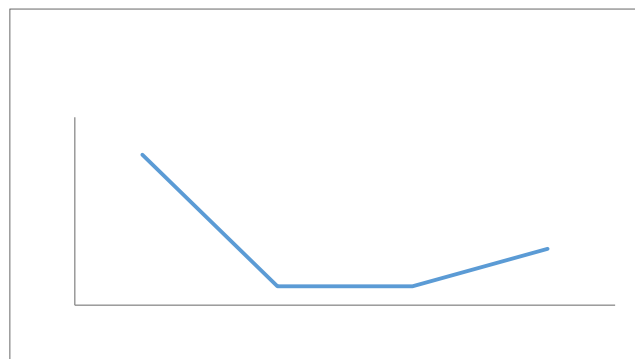
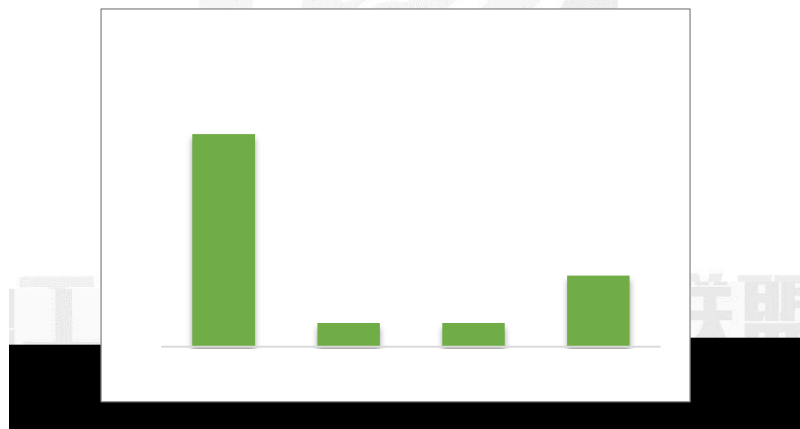
Ecode

22

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Ecode

2013



Ecode

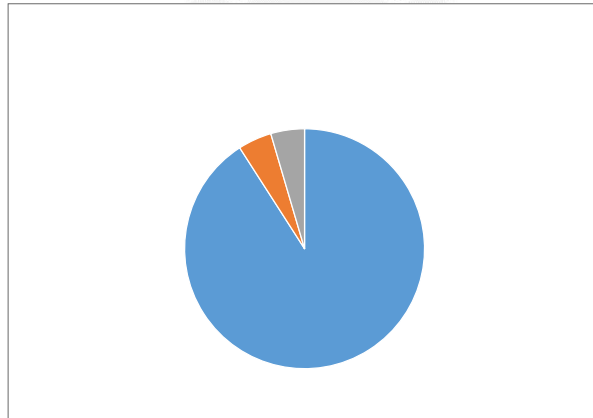
20

13

Ecode

Ecode

Ecode



Ecode

10

Ecode

7 Ecode

2 Ecode



1.

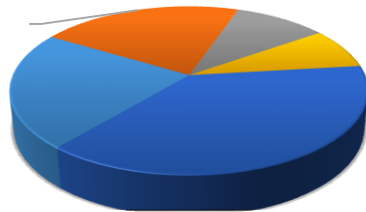


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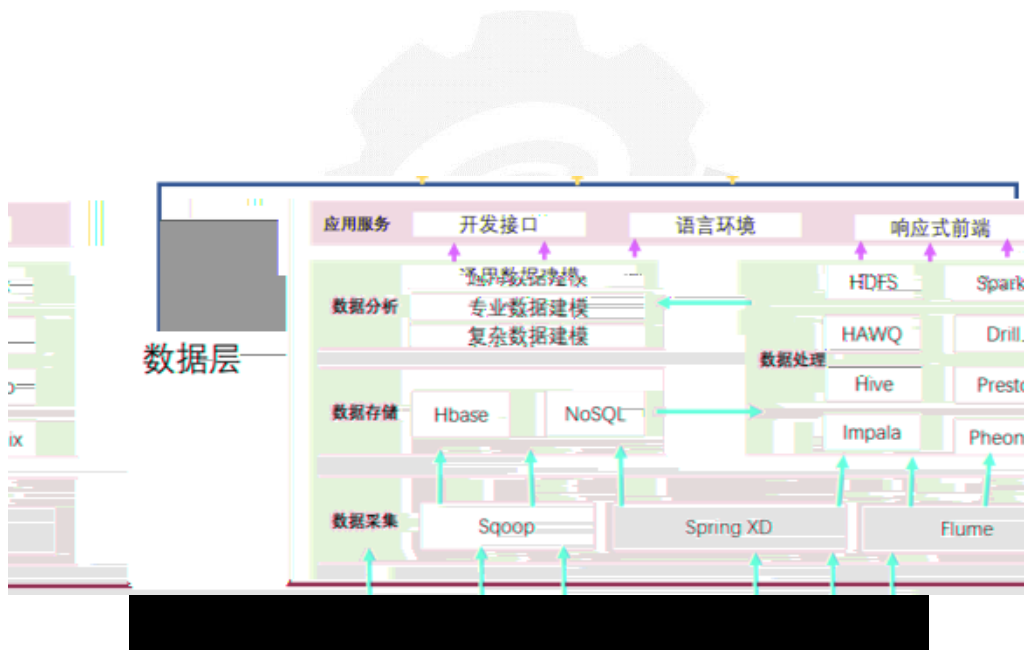


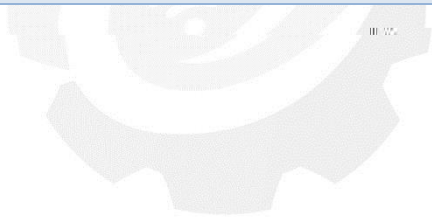


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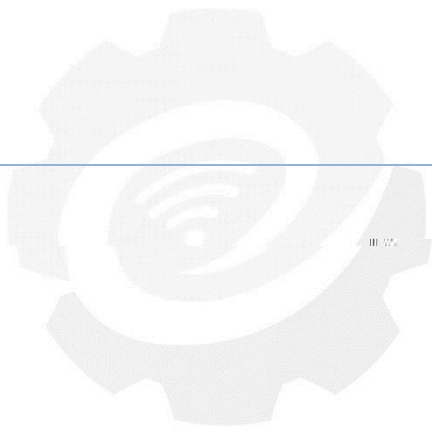
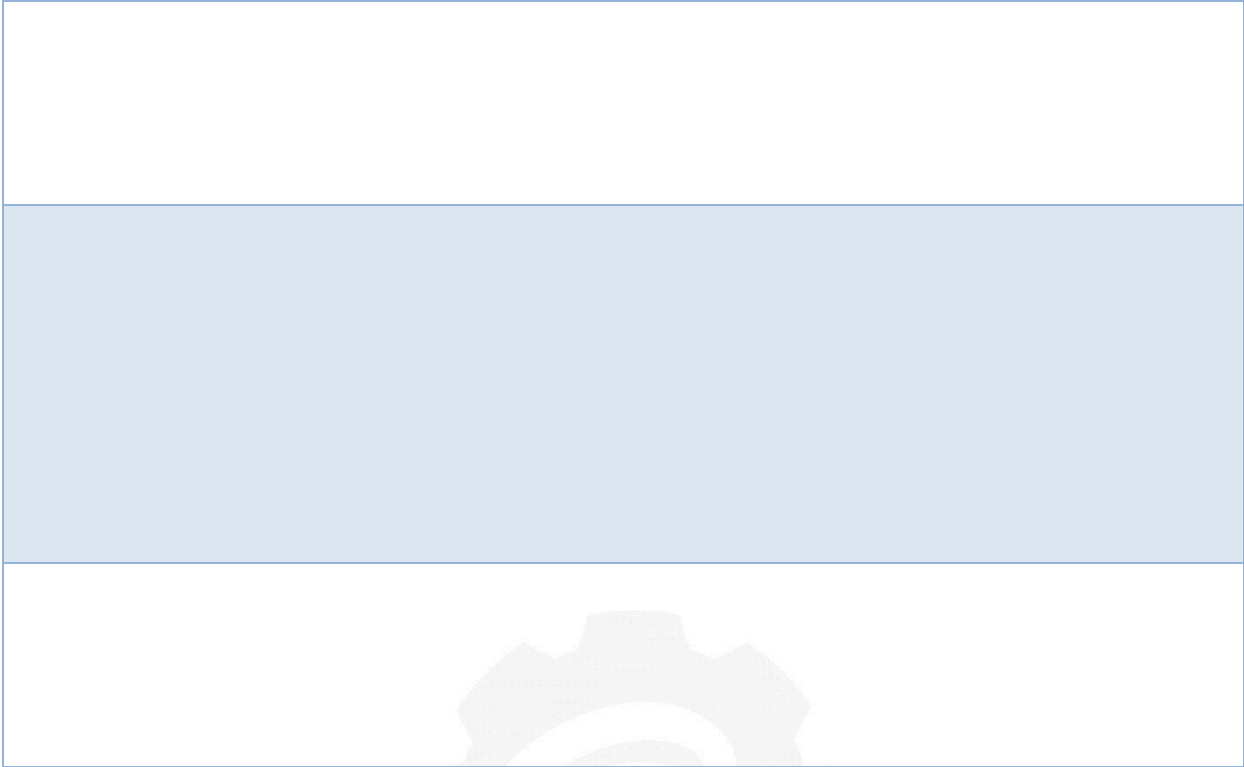
2.





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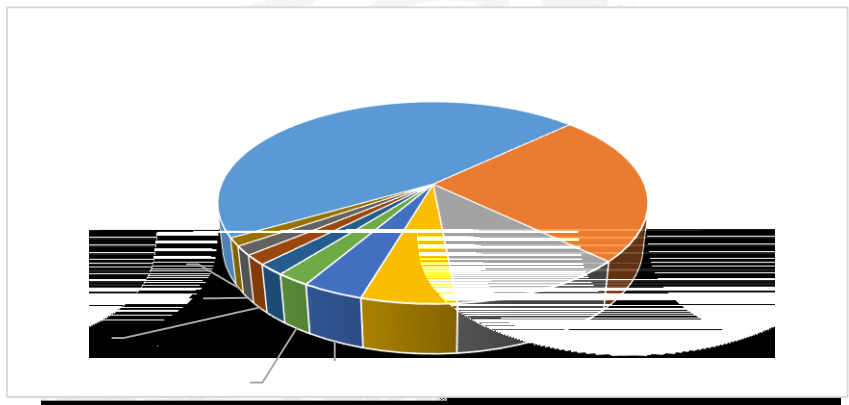
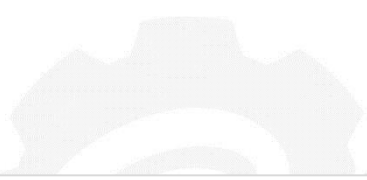




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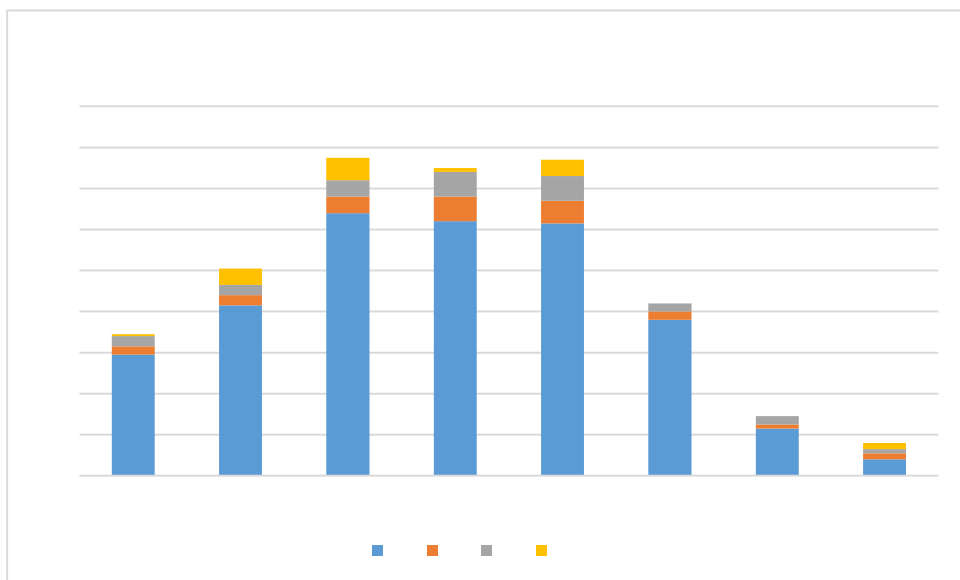


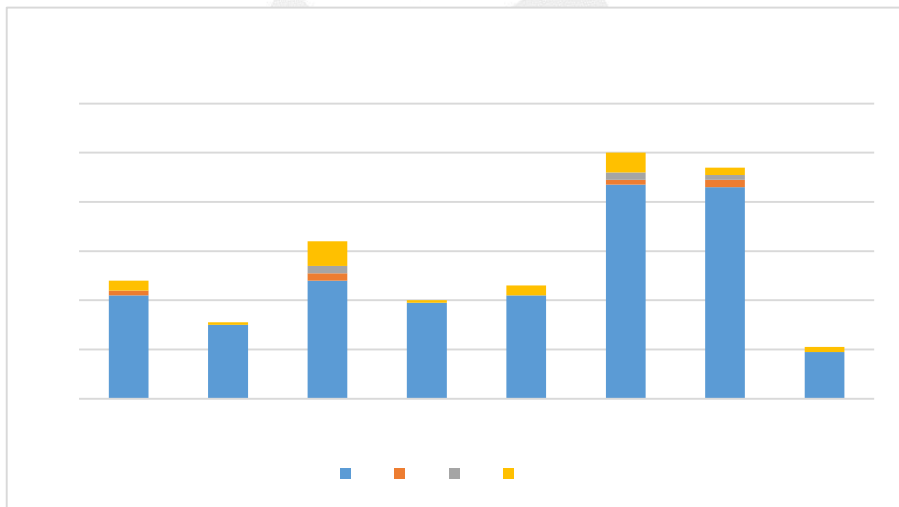
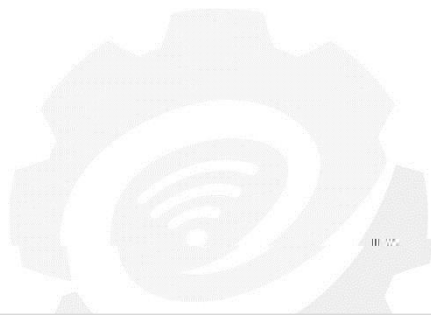
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3.

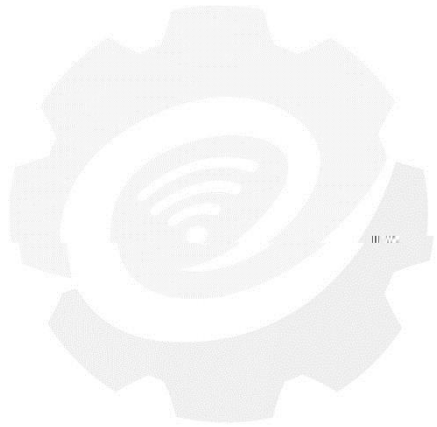
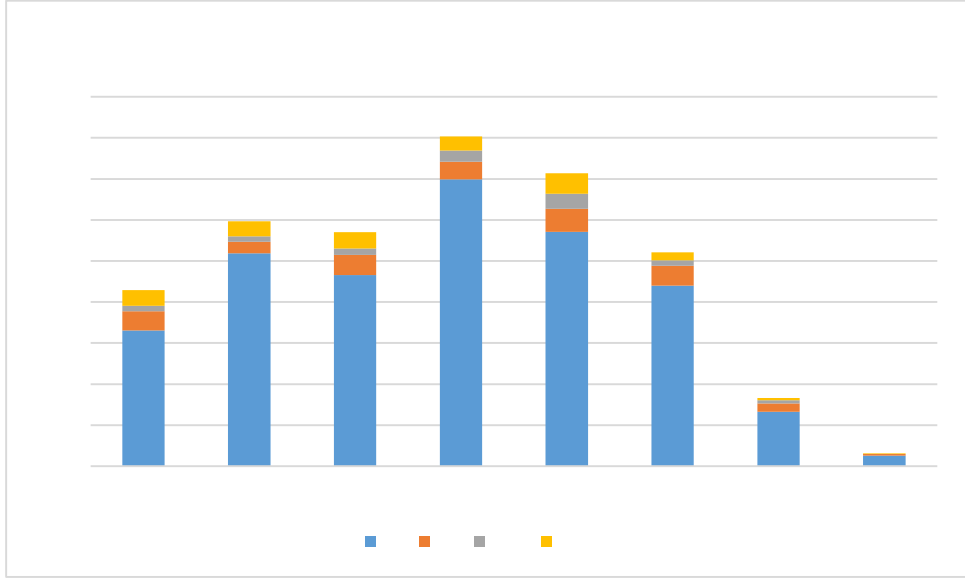






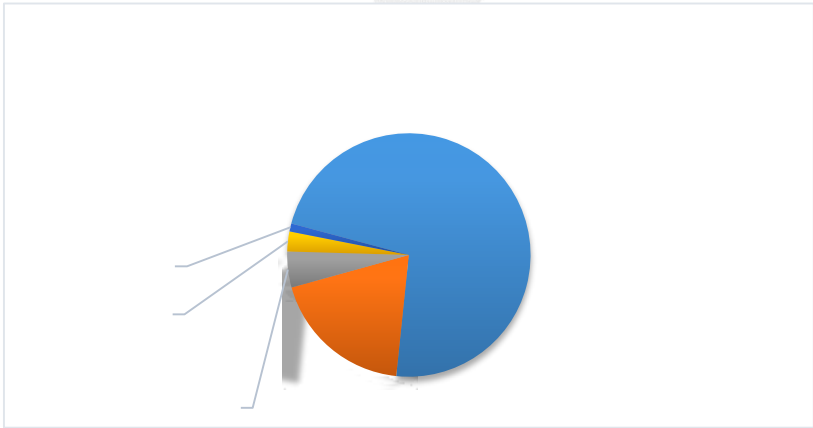
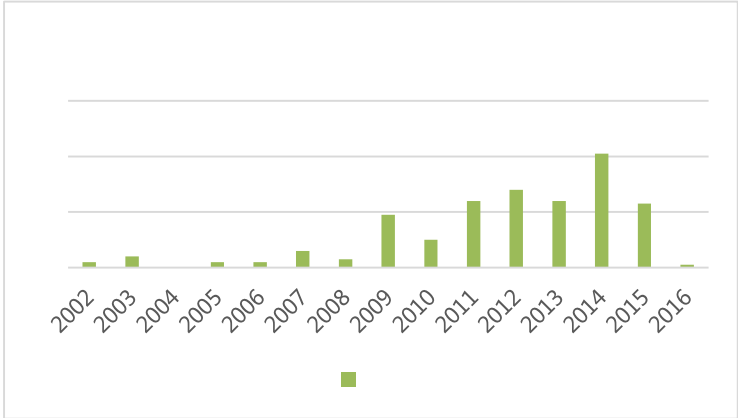
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4. [Redacted]



189

2013

EMC VMware

2013

Pi votal

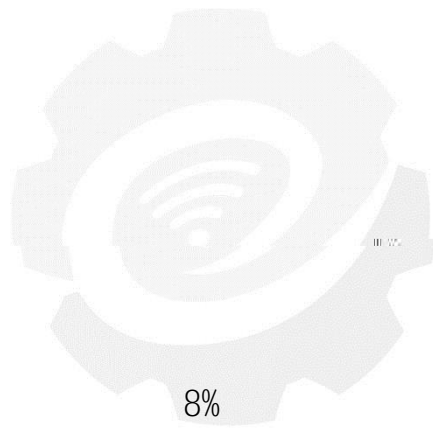
2014

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85%

1%

Pi votal



Pi votal

35%

8%

8%

7%

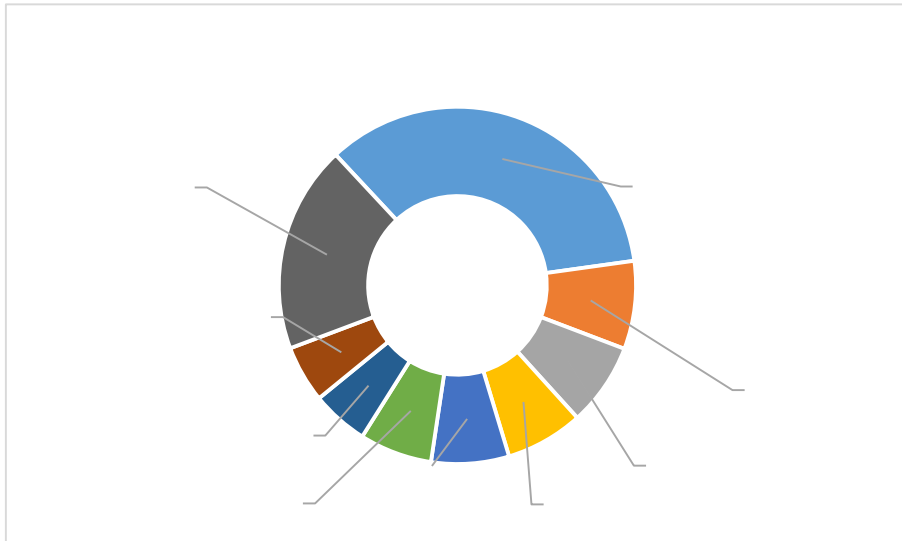
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GreenPI um

Hadoop

GemFi re



VMware

PaaS

Cloud Foundry 1.0

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VMware

1032

2001

VMware

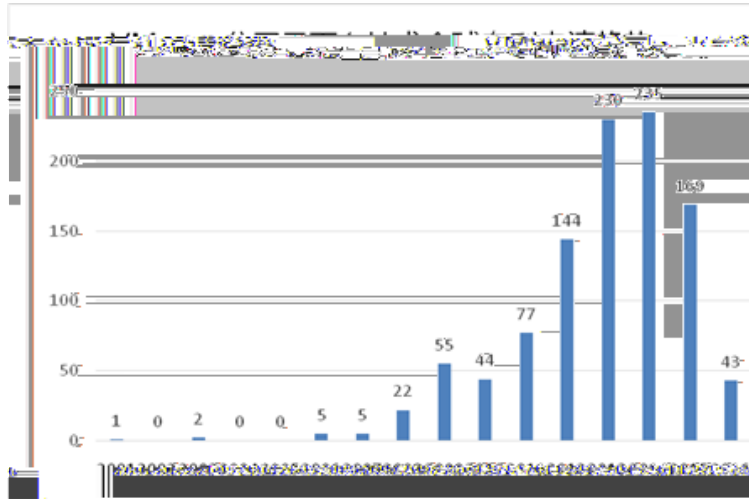
2008

VMware

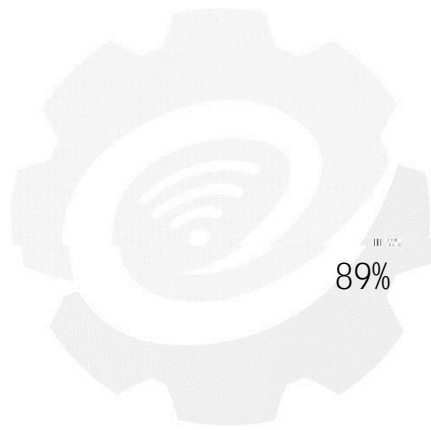
2014

235

VMware



VMware



89%

VMware



VMware



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