

МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
Федеральное государственное бюджетное образовательное учреждение
высшего образования

«Тамбовский государственный технический университет»
(ФГБОУ ВО «ТГТУ»)



УТВЕРЖДАЮ

Директор института автоматизации и
информационных технологий

Ю.Ю. Громов

« 21 » января 20 20 г.

АННОТАЦИИ К РАБОЧИМ ПРОГРАММАМ ДИСЦИПЛИН

Направление

09.04.02 - Информационные системы и технологии

(шифр и наименование)

Программа магистратуры

Анализ и синтез информационных систем

(наименование профиля образовательной программы)

Кафедра: Информационные системы и защита информации

(наименование кафедры)

Заведующий кафедрой


подпись

В.В. Алексеев

инициалы, фамилия

Тамбов 2020

1. .01 « **»**

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| -1 (-4) : ; ; . | - - , - , - |
| -2 (-4) : , | - - , , - |
| -3 (-4) : , , . | - - - , , - |

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| <p>3 (-1) :</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> | <p>-</p> <p>-</p> <p>-</p> |
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| <p>-1 (-6) :</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> | <p>-</p> <p>-</p> <p>AS-IS TO-BE</p> |
| <p>-2 (-6) :</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> | <p>SADT (IDEF0), (IDEF3) DFD, -</p> |
| <p>-3 (-6) :</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> | |
| <p>-8</p> | |
| <p>-1 (-8) :</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> | <p>-</p> <p>-</p> <p>-</p> |
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2. «

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3. «

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4. «

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01.

5. «

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RAD:

RAD-

02.

6. «

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7. «

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SADT (IDEF0):

AS-IS TO-BE.

IDEF.

DFD:

((IDEF3):

03.

8. «

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IDEF1X,

(ERD):

04.

9. «

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05.

10. «CASE-

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CASE-
CASE- :

CASE-
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CASE-

CASE-

CASE-

06. CASE-

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11. «

Modeling Language (UML)»

UML.

Unified

12. «

UML-

UML»

UML

07.

UML.

13. «

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08.

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07-2017.

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« » 07-2017 « ».

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1. .04 « »

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1. 1.
 2. « » , « »
 3. () : ,
 4.
 5. 2.
 6. () ,
 7. , , , ,
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3.
8.

9.

1. .05 « - Web- »

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| -2 (-2) : | - |
| - | (API), |
| - | REST, |
| - | - |
| - | - |
| - | REST API - |
| - | - |
| -3 (-2) : | thon Flask Py- |
| - | - |
| - | man REST API - Post- |
| - | vaScript React Ja- |
| - | - |
| - | vaScript Redux Ja- |
| - | - |
| - | - Jest WebPack |
| - | - |
| - | REST , |
| - | - |
| - | REST API |
| -5 | |

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| -1 (-5) : | - | - | - | Python, Flask, Postgres, React, Redux, Docker |
| -2 (-5) : | - | - | - | |
| -3 (-5) : | - | - | - | |
| | - | - | - | (TDD) |
| | - | - | - | API |
| | - | - | - | |

6

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- 1. Python Python. Python. Python.
- 2. Python. Python. Python @classmethod @staticmethod.
- 3. Flask. Flask. HTTP- REST. Postman API.
- 4. RESTful- Rest. Flask-RESTful. API. Flask-RESTful.
- 5. *args **kwargs. Python.

Python.

Flask-JWT.

6. ORM-

Postman

SQLAlchemy.

SQLAlchemy.

API

SQLAlchemy.

2.

7. ECMAScript 2019

JavaScript.

let const. Arrow-

REST-

. Spread-

(template strings).
(class properties).

Object Spread.

JavaScript.

8. React

React-

. React-

. JSX.

React-

CSS.

9.

React

10.

HTTP API
API.

. Fetch API.
StarDB.

API.

Fetch API.

API.

11.

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12.

React

React.

. Render-

Children.

(HOC).

Context API.

HOC

props

13. React Router

react-router. Link.

Route.

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»

14. Redux

Redux. Reducer. Redux Store.

. UI Redux.

. Action Creator.

React Redux

15.

Redux-

c React-Redux
Redux Store.

. Redux
Redux Store.

Redux.

1. .06 «

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ER-

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ER-

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SQL.

5.

SQL.

SQL:

SQL,

6.

SQL.

(create table)

(drop table).

7.

(Primary, Foreign Key, Unique, Index).

8.

(alter table).

(create/drop alias).

(create/drop index).

9.

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| 08. | | | | | | | | | SQL, | - |
| 09. | | | | | | | | | , | , |
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| <p>-3 (-6)</p> <p>:</p> <p>—</p> <p>—</p> <p>,</p> <p>,</p> <p>,</p> <p>—</p> <p>.</p> | <p>—</p> <p>—</p> <p>,</p> <p>,</p> <p>,</p> <p>—</p> |

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| -3 (-7) : - - - - | - - - |

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21. : , -
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22. : -
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23. .
24. : , , , .

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02.

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- 03. :
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17.

4.

(DocumentationControl).

(HumanResource).

04. :

1.

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3.

()

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GPSS.

9.

10.

TERMINATE (

11.

QUEUE (

ADVANCE (

), DEPART (

GPSS

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| | | TRANSFER () | - |
| 12. | | GPSS. | - |
| | | ASSIGN, MARK, LOOP. | - |
| | | PRIORITY () | - |
| | | PREEMPT () RETURN () | - |
| 13. | | ARENA. | - |
| 14. | | - : (Great), | - |
| | | (Dispose), (Process), (Queue). | - |
| 15. | | Flowchart. Data. Basic Process (| - |
| | |), Advansed Process () Advanced Transfer (| - |
| | |). | - |
| 16. | | | - |
| | | () | 12 |
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| 17. | | | - |
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| 18. | | (, ,) | - |
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| 19. | | - | - |
| | | Crystal | - |
| Reports, | | ARENA Visual Basic for Application | - |
| (VBA). | | Visio. | - |
| 20. | | HPSim | - |
| 21. | | | - |
| 22. | | | - |
| 23. | | | - |
| | | | - |
| 24. | | | - |
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| 01. | | GPSS | - |
| 02. | | ARENA | - |
| | | | - |
| 5. | | | - |
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()

05. :

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NetCracker.

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03.

04.

6.

Case-

()

NetCracker.

NetCracker.

NetCracker.

HPSim

NetCracker.

06. :

1.

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3. Case-

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1. .09 « »

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1. IT- IT- .
2. IT- . -
3. IT - , IT. , - .
4. IT- IT. IT- IT- -
5. **Product development.**
IT- . y IT- . -
IT- IT- .
6. **Customer development.**
Customer developmen IT- . -
IT- .
7. IT- IT- IT-
- 8.

IT- IT- IT- . -
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 16. IT- (-).
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01

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02

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- 4. ?
- 5. ?

03

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- 3. (;
- 4.); - (,
- 5. , - 3 .

04

«Product Development. »

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«Customer Development. »

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IP-

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11. -

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12.

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1. .02 « IT- »

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| -1 (-2) : , IT- , - | IT- - |
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| -2 (-2) : - | IT- , - - - |
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| -3 (-2) : - - | IT- - |
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7 .

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| | 3 | 3 | 2 |

1.

54869-2011. -
/ 12207-2010. -

34.601-90.

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| | 10007:2003. | - |
| | / 90003—2014 | |
| | 9001:2008 | |
| 34.603-92. | | |
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| 2. | : [1] . 11-54, [1] . 21-162, [2] . 8-183, | |
| | [4] . 26-467,. | |
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| - | 54869-2011. | |
| - | : | / 12207-2010. |
| - | : | 34.601-90. |
| - | : | 10007:2003. |
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| | 9001:2008 | |
| - | : | 34.603-92. |
| 4. | | |
| 2. | - | |
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| | ITIL (IT Infrastructure Library). | |
| - | ITIL. | |
| | (Service Support). | Service Desk: |
| . Help Desk – | | , |
| | : | , |
| | | Incident |
| Management. | Problem Management. | Configuration Management. |
| Change Management. | Release Management. | |
| | (Service Delivery). | Service Level |
| Management. | Financial Management for IT Services. | Availability Manage- |
| ment. | Capacity Management. | IT Service Continuity Management. |
| ITSM - IT Service Management - | | |

02.

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: [2] . 35-443.

:

ITIL (IT Infrastructure Library).

ITIL.

(Service Support).

Service Desk:

- Help Desk -

Incident Management.

Problem Management.

Configuration Management.

Change Management.

Release Management.

(Service Delivery).

Service Level Management.

Financial Management for IT Services.

Availability Management.

Capacity Management.

IT Service Continuity Management.

- ITSM - IT Service Management -

3.

MOF - Microsoft Operations Framework.

ITIL,

MOF.

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ITIL.

MOF

ITIL. MOF —

(Service Management Functions — SMFs). MOF —

. MOF — .
 - Hewlett-Packard (IT Service
 Management Reference Model - ITSM). ; -

01. Microsoft Operations Framework (MOF).

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2. : [1] . 35-443

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 -
 - MOF - Microsoft Operations Framework.
 -

, ITIL,
 - MOF. MOF - MOF.
 - MOF — , MOF.
 - ITIL.
 - MOF — MOF ITIL.
 - MOF — (Service Management

Functions — SMFs).
 - MOF —
 - MOF —

- Hewlett-Packard (IT Service Manage-
 ment Reference Model - ITSM).
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4.

4.

(Presale). (Communica-
 tionManagement). (BusinessProcessModeling).
 (RequirementsProcess). (Development Proc-
 ess). / (deployment, implementation)
 (ChangeManagement). (SecurityManagement).
 (QualityManagement). (Purchasing).
 (ConfigurationManagement). (Con-
 tractManagement). (CustomerSupport).
 (DocumentationControl). (HumanResource).

04. :

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2. : [2] . 55-183

3.

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- (Presale).
- (CommunicationManagement).
- (BusinessProcessModeling).
- (RequirementsProcess).
- (Development Process).
- / (deployment, implementation) .
- (ChangeManagement).
- (SecurityManagement).
- (QualityManagement).
- (Purchasing).
- (ConfigurationManagement).
- (ContractManagement).
- (CustomerSupport).
- (DocumentationControl).
- (HumanResource).

4.

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- COCOMO .

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- 19.101-77 51189-98, — 19.301-79.
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1. . .01.02 « Data Mining»

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1. 1 « Data mining» Data mining.
- 2 « Data mining» (Data mining). Data mining. Data mining.
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| -1 (-3) : - - | , - - - |
| -2 (-3) : - - | VTPv3 - |
| | STP, - |
| | IPv4 IPv6 - |
| | EIGRP, - , |
| | , OSPF - - |
| | Cisco IOS - , |
| | Cisco IOS - 3 |
| | BGP - 3 |
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802.1Q. VLAN. VLAN. VLAN. VLAN. native VLAN
 DTP. VLAN. VTP. VTP. VTP Pruning.
 VTP. EtherChannel VTP. EtherChannel.
 LACP. PAgP. EtherChannel 2.

3.

Spanning Tree

STP. STP. BPDU. Per-VLAN STP Plus (PVST
 STP. Rapid Spanning Tree. RSTP.
 RSTP. STP. RSTP. STP.
 UplinkFast. BackboneFast. PortFast. PortFast
 BPDU Guard. Root Guard. Loop Guard.
 UDLD. UDLD. FlexLinks.
 STP MST. STP. MST. MST.
 MST. STP.

4.

VLAN VLAN. VLAN
 VLAN SVI:
 EtherChannel L2 L3.
 DHCP.

5.

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|--|----------------|----------------------------|---------------------------|-------------------|-----------|
| | | FHRP. | HSRP. | | - |
| | HSRP. | HSRP | STP. | | - |
| | HSRP. | HSRP. HSRP | | | VRRP. |
| | | VRRP. | | GLBP. | GLPB |
| | HSRP. | GLBP. | | GLBP. | |
| | GLBP. | STP. | GLBP. | | |
| | 6. | | | | |
| | AAA. | | | RADIUS | TACACS+. |
| | | RADIUS. | | TACACS +. | |
| | AAA. | TACACS + | RADIUS. | | |
| | | | IEEE.802.1X. | | |
| | | IEEE.802.1X. | | NTP. | - |
| | NTP. | NTP. | NTP. SNTP. PTP/IEEE-1588. | | SNMP. |
| | SNMP. | SNMP. | | SNMP. | |
| | 7. | | | | |
| | | | LLDP. | | |
| | LLDP. | | (UDLD). | | UDLD. |
| | | UDLD STP Loop Guard. | Ethernet. | | PoE. - |
| | PoE. | PoE. | SDM. | | SDM. |
| | SDM. | | SPAN RSPAN. | | IP SLA. - |
| | | IP SLA. | IP SLA | | SLA. - |
| | IP SLA. | | | | |
| | 8. | | | | |
| | Flooding. | | | | MAC |
| | Control. | | | | Storm |
| | | DHCP. | DHCP Snooping. | DHCP. | |
| | DHCP Snooping. | IP Source Guard. | IPSG. ARP Spoofing. | | - |
| | ARP. | DAI. | VLAN. VLAN Hopping. | | |
| | VLAN. | VLAN. | VACL ACL PACL. | | - |
| | VACL. | VLAN. | PVLAN. | PVLAN. | - |
| | PVLAN. | PVLAN. PVLAN | | | |
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| | 2. | | | | |
| | 1. | | | | |
| | | | | IGP | EGP. |
| | | | | | |
| | IPv6. | ICMPv6 Neighbor Discovery. | | NBMA. | - |
| | | | | PPP. PPPoE. | |
| | | VPN. VPN | MPLS. | VPN. | - |
| | VPN. | MPLS VPN. | | GRE. | - |
| | | | | GRE. NHRP. IPsec. | - |
| | | TCP/IP. MSS, | PMTUD. | | IPv6 |
| | PMTUD. | TCP Starvation. | | ICMP. | |

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| RIPng. | RIP. RIPng. | RIPv6. | | | | | | | |
| | 2. | EIGRP | | | | | | | |
| | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | - |
| | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | - |
| | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | EIGRP. | - |
| | | Stuck in Active. | | | | | EIGRP. | | - |
| | EIGRP. | | EIGRP. | | | | EIGRP | | - |
| | | EIGRP | IPv6. | | | | IPv6. | | - |
| | | EIGRP. | | EIGRP. | | | EIGRP | EIGRP | - |
| | | IPv4. EIGRP | | | | | IPv6. | | - |
| | EIGRP. | | | | | | | | - |
| | 3. | OSPF | | | | | | | |
| | OSPF. | | OSPF. | | | | OSPF. | | - |
| DR/BDR. | OSPF. | | OSPF. | Hub-and-Spoke | NBMA. | | OSPF | MTU. | - |
| | OSPF. | | OSPF. | LSA | OSPF. | | | | - |
| LSDB. | | LSDB | | | | | | | - |
| SPF. | OSPF. | | OSPF. | | | | | | - |
| | | | | OSPF. | | | ASBR. | OSPF Vir- | - |
| tual Links. | | | OSPF. | | | | OSPF Stub. | | - |
| | | OSPFv3. | | OSPFv3. | OSPFv3 | OSPFv3 | IPv4 | IPv6. | - |
| | | OSPFv3. | | | | | | | - |
| | 4. | | | | | | | | |
| | | | IP- | | | | | | - |
| | | | | | | | OSPFv3 | | - |
| EIGRP | EIGRP. | | | | OSPFv3 | | | | - |
| | IPv6. | | | EIGRP | | | | OSPFv3. | - |
| | EIGRP | | IPv6 | | | | OSPFv3. | | - |
| | | | | | | | | | - |
| | | | | | | | | | - |
| | | ACL. | | | | | | | - |
| | | | ACL, | | | | | | - |
| | | | | | | | | | - |
| | 5. | | | | | | | | |
| Forwarding. | | Cisco Express Forwarding. | | | | | | Cisco Express | - |
| | | | | | | | | CEF. | - |

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|---------------------|-------------------------------|----------------------------|---------------------------|--------------------------------|-------------------------|-------------|
| PBR. | PBR. IP SLA. | IP SLA. | IP SLA. | PBR. IP SLA. PBR IP SLA. | IP SLA. | |
| | 6. | | ISP. | ISP. | | - |
| | DHCP. DHCP. NAT. PAT. | NAT. | NAT. | DHCP NAT. | NAT Virtual | |
| Interface. IPv6. | NAT- SLAAC. DHCPv6. NAT | DHCPv6. Stateless IPv6. | DHCPv6. Stateful IPv6. | DHCPv6. | | - |
| ACL IPv6. | | - | IPv6. Dual-Homed. | ACL IPv6. | | - |
| | 7. | BGP | | | | |
| | | | BGP. | BGP | | - |
| | BGP. | BGP. | BGP. | BGP. | BGP. | BGP. |
| iBGP. | BGP. | BGP- BGP. | BGP- BGP. | BGP- BGP | BGP- Next-Hop-Self. | - |
| | BGP- BGP. | eBGP Multihop. | BGP | | | - |
| Hop. | Origin. | BGP. | Local-Preference. BGP. | Community. | AS-Path. MED. | Next- - |
| BGP. | Weight. | | BGP. | BGP | AS-Path. | - |
| BGP | BGP IPv6. | BGP IPv6. | BGP IPv4. | BGP | AS-Path. IPv6 | MP- - |
| | 8. | | | | | |
| TACACS +. AAA | | | | TACACS + | RADIUS RADIUS. | - |
| | SSH. | | uRPF | | uRPF. | - |
| NTP. NTP SNMPv3. | IPv6. | | SNMP. SNMPv3. | NTP. | NTP. SNMPv3. SCP. | - - - |
| | OSPF. | | OSPFv3. | BGP. VRF | EIGRP. VRF-Lite. | - - |

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| - | VTPv3 |
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| - | STP, |
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| - | IPv4 IPv6 |
| - | - |
| - | EIGRP, |
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| - | OSPF |
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| - | Cisco IOS |
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L2 L3 L3. L2. -

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VLAN. VLAN. VLAN. VLAN. -
 802.1Q. VLAN. VLAN. native VLAN
 DTP. VLAN. VTP. VTP. VTP Pruning.
 VTP. EtherChannel VTP. EtherChannel.
 LACP. PAgP. EtherChannel 2. -

3.

Spanning Tree

STP. STP. BPDU. -
 +). STP. Rapid Spanning Tree. Per-VLAN STP Plus (PVST) RSTP. -
 RSTP STP. RSTP. RSTP. -
 STP. STP. STP. -
 UplinkFast. BackboneFast. PortFast. PortFast
 BPDU Guard. Root Guard. Loop Guard.
 UDLD. UDLD. FlexLinks.
 STP. MST. MST. -
 STP MST. MST. MST. -
 MST. STP. -

4.

VLAN VLAN. VLAN -
 VLAN SVI: -
 EtherChannel L2 L3. -
 DHCP. -

5.

FHRP. HSRP. HSRP. -
 HSRP. HSRP STP. -
 HSRP. HSRP. HSRP. VRRP.

| HSRP. GLBP. GLBP | VRRP. GLBP. STP. | GLBP. | VRRP. | GLBP. GLBP. | GLPB |
|---|------------------------|---------------------------------|--|-----------------------|---------------------|
| 6. | AAA. | | | RADIUS TACACS +. | TACACS+. |
| AAA. | | RADIUS. TACACS + | RADIUS. | | |
| | IEEE.802.1X. | | IEEE.802.1X. | | |
| NTP. SNMP. | NTP. SNMP. | | NTP. SNTP. PTP/IEEE-1588. | NTP. SNMP. | SNMP. - |
| 7. | | | LLDP. | | |
| LLDP. | | | (UDLD). | | UDLD. - |
| PoE. SDM. | UDLD | STP Loop Guard. | | Ethernet. SDM. | PoE. - SDM. - |
| | IP SLA. | IP SLA | | SPAN RSPAN. | IP SLA. - SLA. - |
| 8. | | | | | |
| CAM flooding (MAC Flooding). | | | | MAC address spoofing. | |
| DHCP: DHCP starvation, ARP spoofing. flooding. IP spoofing. | | | CDP VTP. | | |
| | | | DHCP server spoofing. | | ARP: - |
| | | | STP: STP spoofing, | | , BPDU - |
| | | | IPv6: ND spoofing, RA spoofing, DHCP spoofing. | | HSRP. - |
| HSRP: DoS- HSRP. | | « | ». | | - |
| ». | VRRP. | | VRRP: DoS- VRRP. | | « - |
| 2. | | | | | |
| 1. | | | | | |
| | | | | | IGP EGP. - |
| IPv6. | | ICMPv6 Neighbor Discovery. | | | NBMA. - |
| | | | | | PPP. PPPoE. - |
| VPN. | | VPN. VPN MPLS VPN. | MPLS. | | VPN. - GRE. - |
| | | | | | GRE. NHRP. IPsec. - |
| PMTUD. RIPng. | | TCP/IP. MSS, TCP Starvation. | | PMTUD. | IPv6 - ICMP. - |
| | RIP. RIPng. | RIPv6. | | | |
| 2. | | EIGRP | | | |

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|-------------|---------------------------|---------------------|------------|--------------------|
| EIGRP. | EIGRP. | EIGRP. | EIGRP. | - |
| EIGRP. | EIGRP. | EIGRP. | EIGRP. | - |
| EIGRP. | EIGRP. | EIGRP. | EIGRP. | - |
| | Stuck in Active. | | EIGRP. | - |
| EIGRP. | | EIGRP. | EIGRP | - |
| | EIGRP IPv6. | | IPv6. | - |
| | EIGRP IPv4. | EIGRP. | EIGRP | - |
| | EIGRP. | | IPv6. | - |
| 3. | OSPF | | | |
| | OSPF. | OSPF. | OSPF. | - |
| DR/BDR. | OSPF. | OSPF. | OSPF | - |
| | OSPF | Hub-and-Spoke NBMA. | MTU. | - |
| LSDB. | OSPF. | OSPF. | LSA | - |
| SPF. | LSDB | OSPF. | | - |
| | OSPF. | | | - |
| tual Links. | | OSPF. | ASBR. | OSPF Vir- |
| | | OSPF. | OSPF Stub. | |
| | OSPFv3. | OSPFv3. | OSPFv3 | IPv4 IPv6. |
| | OSPFv3. | | | - |
| 4. | | IP- | | |
| | | | OSPFv3 | - |
| EIGRP | EIGRP. | | OSPFv3 | |
| | IPv6. | EIGRP | | OSPFv3. |
| | EIGRP | IPv6 | | OSPFv3. |
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| | ACL. | | | - |
| | | ACL, | | - |
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| 5. | | | | |
| Forwarding. | Cisco Express Forwarding. | | | Cisco Express CEF. |
| PBR. | PBR. | | PBR. | |
| | IP SLA. | IP SLA. | IP SLA. | IP SLA. |
| | | | IP SLA. | |

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| 6. | | | | ISP. | | ISP. | | - |
| | DHCP. | | | | | | DHCP | |
| | DHCP. NAT. | | | NAT. | | | NAT. | |
| Interface. | PAT. | | NAT. | | | NAT. | NAT Virtual | |
| IPv6. | NAT-SLAAC. | | | DHCPv6. Stateless | | DCHPv6. Stateful | DHCPv6. | - |
| ACL IPv6. | DHCPv6. NAT | | | IPv6. | | ACL IPv6. | | - |
| | | | | Dual-Homed. | | | | - |
| | | | | | | | | |
| 7. | | BGP | | | | | | |
| | | | | BGP. | | BGP | | - |
| | | | | | | | | |
| iBGP. | BGP. | | BGP. | | | BGP. | BGP. | - |
| | | BGP. | | BGP- | | BGP- | | |
| | BGP. | | BGP. | BGP. | | | Next-Hop-Self. | - |
| | BGP- | | eBGP Multihop. | | | BGP | | - |
| | BGP. | | | | | | | |
| Hop. | Origin. | | BGP. | | | AS-Path. | Next- | - |
| | Weight. | | Local-Preference. | | | Community. | MED. | - |
| BGP. | | | BGP. | | | | | |
| | | | BGP | | | BGP | AS-Path. | - |
| BGP | BGP | | | | | | MP- | - |
| | IPv6. | | IPv6 | | | IPv4. | IPv6 | |
| | IPv6. | | | | | | | |
| 8. | | | | | | | | |
| « | : | « | | ». | | : | | TCP. |
| | UDP. | « | | ». Spoofing- | | | | - |
| | | | | | | | | Unicast |
| Reverse Path Forwarding: | | | | | | | | - |
| (Flexible Packet Matching). | | | | QoS: | | | | - |
| | | | | | | | IP. | - |
| Control Plane Policing. | | | | | | | | - |
| | | | TCP Intercept. | | | | | - |
| | | | | | | (Intrusion Detection Prevention System). | | - |
| Packet Inspection). | | | (Traffic Scrubbing). | | | | (Deep | - |

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| <p>-3 (-1)</p> <p>:</p> <p>,</p> <p>,</p> <p>.</p> | <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>,</p> <p>,</p> <p>-</p> |

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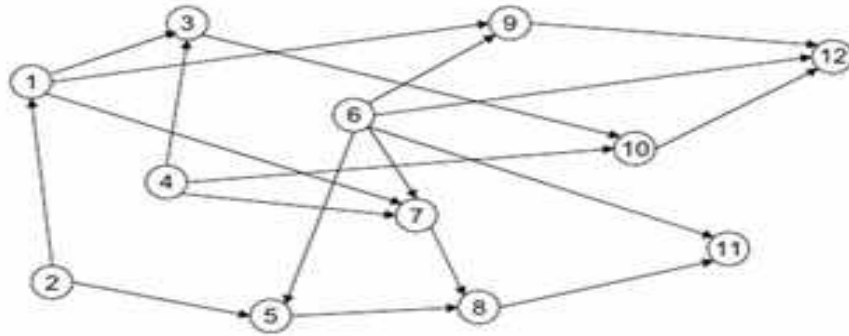
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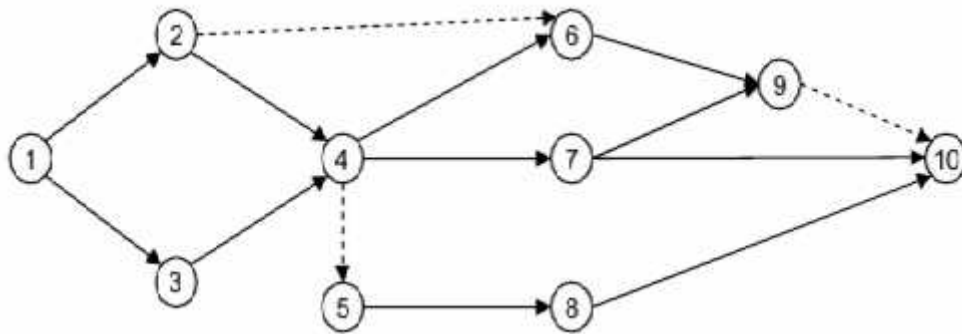
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