

# E DIN EN ISO/IEC 18045:2019-11 (E)

Erscheinungsdatum: 2019-10-18

Information technology - Security techniques - Methodology for IT security evaluation (ISO/IEC 18045:2008); English version prEN ISO/IEC 18045:2019

---

## Contents

Page

Foreword .....	vii
Introduction.....	ix
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	1
4 Symbols and abbreviated terms .....	3
5 Overview .....	3
5.1 Organisation of this International Standard .....	3
6 Document Conventions .....	3
6.1 Terminology .....	3
6.2 Verb usage .....	3
6.3 General evaluation guidance .....	4
6.4 Relationship between ISO/IEC 15408 and ISO/IEC 18045 structures.....	4
7 Evaluation process and related tasks .....	5
7.1 Introduction.....	5
7.2 Evaluation process overview .....	5
7.2.1 Objectives .....	5
7.2.2 Responsibilities of the roles .....	5
7.2.3 Relationship of roles .....	6
7.2.4 General evaluation model.....	6
7.2.5 Evaluator verdicts .....	6
7.3 Evaluation input task .....	8
7.3.1 Objectives .....	8
7.3.2 Application notes .....	8
7.3.3 Management of evaluation evidence sub-task.....	8
7.4 Evaluation sub-activities .....	9
7.5 Evaluation output task.....	9
7.5.1 Objectives .....	9
7.5.2 Management of evaluation outputs.....	9
7.5.3 Application notes .....	10
7.5.4 Write OR sub-task .....	10
7.5.5 Write ETR sub-task.....	10
8 Class APE: Protection Profile evaluation .....	15
8.1 Introduction.....	15
8.2 Application notes .....	16
8.2.1 Re-using the evaluation results of certified PPs.....	16
8.3 PP introduction (APE_INT) .....	16
8.3.1 Evaluation of sub-activity (APE_INT.1) .....	16
8.4 Conformance claims (APE_CCL).....	17
8.4.1 Evaluation of sub-activity (APE_CCL.1).....	17
8.5 Security problem definition (APE_SPD).....	24
8.5.1 Evaluation of sub-activity (APE_SPD.1).....	24
8.6 Security objectives (APE_OBJ) .....	25
8.6.1 Evaluation of sub-activity (APE_OBJ.1).....	25
8.6.2 Evaluation of sub-activity (APE_OBJ.2).....	25
8.7 Extended components definition (APE_ECD) .....	28
8.7.1 Evaluation of sub-activity (APE_ECD.1) .....	28
8.8 Security requirements (APE_REQ).....	31

8.8.1	Evaluation of sub-activity (APE_REQ.1)	31
8.8.2	Evaluation of sub-activity (APE_REQ.2)	35
9	Class ASE: Security Target evaluation	39
9.1	Introduction	39
9.2	Application notes	39
9.2.1	Re-using the evaluation results of certified PPs	39
9.3	ST introduction (ASE_INT)	39
9.3.1	Evaluation of sub-activity (ASE_INT.1)	39
9.4	Conformance claims (ASE_CCL)	42
9.4.1	Evaluation of sub-activity (ASE_CCL.1)	42
9.5	Security problem definition (ASE_SPD)	49
9.5.1	Evaluation of sub-activity (ASE_SPD.1)	49
9.6	Security objectives (ASE_OBJ)	51
9.6.1	Evaluation of sub-activity (ASE_OBJ.1)	51
9.6.2	Evaluation of sub-activity (ASE_OBJ.2)	51
9.7	Extended components definition (ASE_ECD)	53
9.7.1	Evaluation of sub-activity (ASE_ECD.1)	53
9.8	Security requirements (ASE_REQ)	57
9.8.1	Evaluation of sub-activity (ASE_REQ.1)	57
9.8.2	Evaluation of sub-activity (ASE_REQ.2)	60
9.9	TOE summary specification (ASE_TSS)	64
9.9.1	Evaluation of sub-activity (ASE_TSS.1)	64
9.9.2	Evaluation of sub-activity (ASE_TSS.2)	65
10	Class ADV: Development	67
10.1	Introduction	67
10.2	Application notes	67
10.3	Security Architecture (ADV_ARC)	67
10.3.1	Evaluation of sub-activity (ADV_ARC.1)	67
10.4	Functional specification (ADV_FSP)	72
10.4.1	Evaluation of sub-activity (ADV_FSP.1)	72
10.4.2	Evaluation of sub-activity (ADV_FSP.2)	75
10.4.3	Evaluation of sub-activity (ADV_FSP.3)	79
10.4.4	Evaluation of sub-activity (ADV_FSP.4)	84
10.4.5	Evaluation of sub-activity (ADV_FSP.5)	89
10.4.6	Evaluation of sub-activity (ADV_FSP.6)	94
10.5	Implementation representation (ADV_IMP)	95
10.5.1	Evaluation of sub-activity (ADV_IMP.1)	95
10.5.2	Evaluation of sub-activity (ADV_IMP.2)	97
10.6	TSF internals (ADV_INT)	97
10.6.1	Evaluation of sub-activity (ADV_INT.1)	97
10.6.2	Evaluation of sub-activity (ADV_INT.2)	99
10.6.3	Evaluation of sub-activity (ADV_INT.3)	101
10.7	Security policy modelling (ADV_SPM)	101
10.7.1	Evaluation of sub-activity (ADV_SPM.1)	101
10.8	TOE design (ADV_TDS)	101
10.8.1	Evaluation of sub-activity (ADV_TDS.1)	101
10.8.2	Evaluation of sub-activity (ADV_TDS.2)	105
10.8.3	Evaluation of sub-activity (ADV_TDS.3)	109
10.8.4	Evaluation of sub-activity (ADV_TDS.4)	118
10.8.5	Evaluation of sub-activity (ADV_TDS.5)	126
10.8.6	Evaluation of sub-activity (ADV_TDS.6)	126
11	Class AGD: Guidance documents	127
11.1	Introduction	127
11.2	Application notes	127
11.3	Operational user guidance (AGD_OPE)	127
11.3.1	Evaluation of sub-activity (AGD_OPE.1)	127
11.4	Preparative procedures (AGD_PRE)	130
11.4.1	Evaluation of sub-activity (AGD_PRE.1)	130

<b>12</b>	<b>Class ALC: Life-cycle support</b> .....	<b>131</b>
12.1	Introduction.....	131
12.2	CM capabilities (ALC_CMC) .....	132
12.2.1	Evaluation of sub-activity (ALC_CMC.1).....	132
12.2.2	Evaluation of sub-activity (ALC_CMC.2).....	133
12.2.3	Evaluation of sub-activity (ALC_CMC.3).....	135
12.2.4	Evaluation of sub-activity (ALC_CMC.4).....	138
12.2.5	Evaluation of sub-activity (ALC_CMC.5).....	143
12.3	CM scope (ALC_CMS).....	150
12.3.1	Evaluation of sub-activity (ALC_CMS.1).....	150
12.3.2	Evaluation of sub-activity (ALC_CMS.2).....	151
12.3.3	Evaluation of sub-activity (ALC_CMS.3).....	152
12.3.4	Evaluation of sub-activity (ALC_CMS.4).....	153
12.3.5	Evaluation of sub-activity (ALC_CMS.5).....	154
12.4	Delivery (ALC_DEL).....	155
12.4.1	Evaluation of sub-activity (ALC_DEL.1).....	155
12.5	Development security (ALC_DVS).....	156
12.5.1	Evaluation of sub-activity (ALC_DVS.1).....	156
12.5.2	Evaluation of sub-activity (ALC_DVS.2).....	158
12.6	Flaw remediation (ALC_FLR) .....	161
12.6.1	Evaluation of sub-activity (ALC_FLR.1) .....	161
12.6.2	Evaluation of sub-activity (ALC_FLR.2) .....	163
12.6.3	Evaluation of sub-activity (ALC_FLR.3) .....	167
12.7	Life-cycle definition (ALC_LCD) .....	171
12.7.1	Evaluation of sub-activity (ALC_LCD.1).....	171
12.7.2	Evaluation of sub-activity (ALC_LCD.2).....	172
12.8	Tools and techniques (ALC_TAT).....	174
12.8.1	Evaluation of sub-activity (ALC_TAT.1).....	174
12.8.2	Evaluation of sub-activity (ALC_TAT.2).....	176
12.8.3	Evaluation of sub-activity (ALC_TAT.3).....	178
<b>13</b>	<b>Class ATE: Tests</b> .....	<b>181</b>
13.1	Introduction.....	181
13.2	Application notes .....	181
13.2.1	Understanding the expected behaviour of the TOE .....	181
13.2.2	Testing vs. alternate approaches to verify the expected behaviour of functionality.....	182
13.2.3	Verifying the adequacy of tests .....	182
13.3	Coverage (ATE_COV).....	183
13.3.1	Evaluation of sub-activity (ATE_COV.1) .....	183
13.3.2	Evaluation of sub-activity (ATE_COV.2) .....	183
13.3.3	Evaluation of sub-activity (ATE_COV.3) .....	184
13.4	Depth (ATE_DPT).....	185
13.4.1	Evaluation of sub-activity (ATE_DPT.1) .....	185
13.4.2	Evaluation of sub-activity (ATE_DPT.2) .....	187
13.4.3	Evaluation of sub-activity (ATE_DPT.3).....	189
13.4.4	Evaluation of sub-activity (ATE_DPT.4).....	192
13.5	Functional tests (ATE_FUN).....	192
13.5.1	Evaluation of sub-activity (ATE_FUN.1).....	192
13.5.2	Evaluation of sub-activity (ATE_FUN.2).....	195
13.6	Independent testing (ATE_IND) .....	195
13.6.1	Evaluation of sub-activity (ATE_IND.1) .....	195
13.6.2	Evaluation of sub-activity (ATE_IND.2) .....	198
13.6.3	Evaluation of sub-activity (ATE_IND.3).....	203
<b>14</b>	<b>Class AVA: Vulnerability assessment</b> .....	<b>203</b>
14.1	Introduction.....	203
14.2	Vulnerability analysis (AVA_VAN) .....	204
14.2.1	Evaluation of sub-activity (AVA_VAN.1) .....	204
14.2.2	Evaluation of sub-activity (AVA_VAN.2) .....	208
14.2.3	Evaluation of sub-activity (AVA_VAN.3) .....	215
14.2.4	Evaluation of sub-activity (AVA_VAN.4).....	222

14.2.5	Evaluation of sub-activity (AVA_VAN.5) .....	230
15	Class ACO: Composition .....	230
15.1	Introduction .....	230
15.2	Application notes.....	230
15.3	Composition rationale (ACO_COR) .....	231
15.3.1	Evaluation of sub-activity (ACO_COR.1).....	231
15.4	Development evidence (ACO_DEV).....	236
15.4.1	Evaluation of sub-activity (ACO_DEV.1) .....	236
15.4.2	Evaluation of sub-activity (ACO_DEV.2) .....	237
15.4.3	Evaluation of sub-activity (ACO_DEV.3) .....	239
15.5	Reliance of dependent component (ACO_REL) .....	242
15.5.1	Evaluation of sub-activity (ACO_REL.1) .....	242
15.5.2	Evaluation of sub-activity (ACO_REL.2) .....	244
15.6	Composed TOE testing (ACO_CTT).....	246
15.6.1	Evaluation of sub-activity (ACO_CTT.1).....	246
15.6.2	Evaluation of sub-activity (ACO_CTT.2).....	248
15.7	Composition vulnerability analysis (ACO_VUL).....	252
15.7.1	Evaluation of sub-activity (ACO_VUL.1) .....	252
15.7.2	Evaluation of sub-activity (ACO_VUL.2) .....	254
15.7.3	Evaluation of sub-activity (ACO_VUL.3) .....	258
Annex A	(informative) General evaluation guidance .....	262
A.1	Objectives.....	262
A.2	Sampling.....	262
A.3	Dependencies.....	264
A.3.1	Dependencies between activities.....	264
A.3.2	Dependencies between sub-activities .....	264
A.3.3	Dependencies between actions .....	264
A.4	Site Visits.....	264
A.4.1	Introduction .....	264
A.4.2	General Approach.....	265
A.4.3	Orientation Guide for the Preparation of the Check List .....	266
A.4.4	Example of a checklist .....	267
A.5	Scheme Responsibilities .....	269
Annex B	(informative) Vulnerability Assessment (AVA) .....	271
B.1	What is Vulnerability Analysis.....	271
B.2	Evaluator construction of a Vulnerability Analysis.....	271
B.2.1	Generic vulnerability guidance .....	272
B.2.2	Identification of Potential Vulnerabilities .....	279
B.3	When attack potential is used .....	281
B.3.1	Developer.....	281
B.3.2	Evaluator.....	282
B.4	Calculating attack potential .....	283
B.4.1	Application of attack potential .....	283
B.4.2	Characterising attack potential .....	283
B.5	Example calculation for direct attack .....	289