

# Contents

<b>About This Document.....</b>	<b>ii</b>
<b>1 Hardware Installation and Usage Precautions.....</b>	<b>1</b>
<b>2 Installation Procedure.....</b>	<b>5</b>
<b>3 Installation Preparation.....</b>	<b>7</b>
3.1 Reading Carefully the Safety Precautions.....	7
3.2 Checking the Installation Site.....	10
3.3 Checking the Cabinet or Rack.....	11
3.4 Checking the Power Distribution System.....	15
3.4.1 Introduction to the Power Distribution System.....	15
3.4.2 CloudEngine 16804 Power Distribution Guide.....	20
3.4.2.1 Connecting the CloudEngine 16804 to a PDF Directly (AC).....	20
3.4.2.2 Connecting the CloudEngine 16804 to a PDF Directly (DC).....	21
3.4.2.3 Connecting the CloudEngine 16804 to a PDF Directly (High-Voltage DC).....	23
3.4.2.4 Connecting the CloudEngine 16804 to a PDF Through a Single-Phase PDU.....	24
3.4.2.5 Connecting the CloudEngine 16804 to a PDF Through a Three-Phase AC PDU (PDU2000-32-3PH-6-B1).....	26
3.4.2.6 Connecting a CloudEngine 16804 to a PDF Through a Three-Phase PDU (PDU2000-32-3PH-1).....	28
3.4.2.7 Connecting the CloudEngine 16804 to a PDF Through a High-Voltage DC PDU (PDU2000-63-380VDC-8-B1).....	30
3.4.2.8 Connecting the CloudEngine 16804 to a PDF Through a 240 V DC PDU.....	32
3.4.3 CloudEngine 16808 Power Distribution Guide.....	34
3.4.3.1 Connecting the CloudEngine 16808 to a PDF Directly (AC).....	34
3.4.3.2 Connecting the CloudEngine 16808 to a PDF Directly (DC).....	36
3.4.3.3 Connecting the CloudEngine 16808 to a PDF Directly (High-Voltage DC).....	37
3.4.3.4 Connecting the CloudEngine 16808 to a PDF Through a Single-Phase PDU.....	38
3.4.3.5 Connecting the CloudEngine 16808 to a PDF Through a Three-Phase PDU (PDU2000-32-3PH-6- B1).....	41
3.4.3.6 Connecting a CloudEngine 16808 to a PDF Through a Three-Phase PDU (PDU2000-32-3PH-1).....	43
3.4.3.7 Connecting the CloudEngine 16808 to a PDF Through a High-Voltage DC PDU.....	45
3.4.3.8 Connecting the CloudEngine 16808 to a PDF Through a 240 V DC PDU.....	47
3.4.4 CloudEngine 16816 Power Distribution Guide.....	49
3.4.4.1 Connecting the CloudEngine 16816 to a PDF Directly (AC).....	50
3.4.4.2 Connecting a CloudEngine 16816 to a PDF Directly (DC).....	52

3.4.4.3 Connecting a CloudEngine 16816 to a PDF Directly (HVDC).....	54
3.4.4.4 Connecting a CloudEngine 16816 to a PDF Through a Three-Phase PDU (PDU2000-32-3PH-6-B1) .....	56
3.4.4.5 Connecting a CloudEngine 16816 to a PDF Through a Three-Phase PDU (PDU2000-32-3PH-1).....	58
3.4.4.6 Connecting the CloudEngine 16816 to a PDF Through a High-Voltage DC PDU.....	61
3.4.4.7 Connecting the CloudEngine 16816 to a PDF Through a 240 V DC PDU.....	64
3.5 Preparing Installation Tools and Accessories.....	67
<b>4 Unpacking a Device.....</b>	<b>77</b>
4.1 Unpacking a Carton.....	77
4.2 Unpacking a Card.....	84
<b>5 Installing a Switch.....</b>	<b>87</b>
5.1 (Optional) Adjusting Mounting Brackets.....	87
5.2 Installing the CloudEngine 16804.....	88
5.3 Installing the CloudEngine 16808.....	94
5.4 Installing the CloudEngine 16816.....	99
<b>6 Installing Modules.....</b>	<b>105</b>
6.1 Installing Cable Management Frames.....	105
6.2 Installing Power Modules.....	106
6.3 Installing Filler Panels in a Cabinet or Rack.....	107
6.4 Installing SFUs.....	109
6.5 Installing Fan Modules.....	113
6.6 Installing MPUs and LPUs.....	115
6.7 Installing an Optical Module.....	116
6.8 (Optional) Installing a Chassis Door.....	117
<b>7 Connecting a Switch.....</b>	<b>120</b>
7.1 Connecting the Switch.....	120
7.1.1 AC & High-Voltage DC Power Cable Routing Planning of the CloudEngine 16804.....	120
7.1.2 DC Power Cable Routing Planning of a CloudEngine 16804.....	123
7.1.3 AC & High-Voltage DC Power Cable Routing Planning of the CloudEngine 16808.....	125
7.1.4 DC Power Cable Routing Planning of a CloudEngine 16808.....	128
7.1.5 AC & High-Voltage DC Power Cable Routing Planning of a CloudEngine 16816.....	131
7.1.6 DC Power Cable Routing Planning of a CloudEngine 16816.....	134
7.2 Connecting the Ground Cable.....	137
7.3 Connecting AC Power Cables.....	138
7.4 Connecting DC Power Cables.....	141
7.5 Connecting High-Voltage DC Power Cables.....	144
7.6 Connecting Signal Cables.....	147
<b>8 Post-Installation Check.....</b>	<b>154</b>
<b>9 Powering on a Device for the First Time.....</b>	<b>157</b>
<b>10 Maintaining a Device.....</b>	<b>164</b>

10.1 Replacing a Power Module.....	164
10.2 Replacing a Fan Module.....	166
10.3 Replacing an Optical Module.....	168
10.4 Replacing an LPU.....	171
10.5 Replacing the Only MPU on a Device (Services Have Been Interrupted).....	173
10.6 Replacing the Only MPU on a Device (Services Are Not Interrupted).....	175
10.7 Replacing One of MPUs on a Device.....	177
10.8 Replacing an SFU.....	179
10.9 Replacing and Clearing Air Filters.....	182
<b>11 Appendix.....</b>	<b>185</b>
11.1 Appendix A Indicators.....	185
11.2 Appendix B On-site Cable Assembly and Installation.....	190
11.2.1 Cable Assembly Precautions.....	190
11.2.2 Assembling Power Cables.....	191
11.2.2.1 Assembling the OT Terminal and Power Cable.....	191
11.2.2.2 Assembling the JG2 Terminal and Power Cable.....	195
11.2.3 Assembling Ethernet Cables.....	197
11.2.3.1 Assembling the Shielded RJ45 Connector and Ethernet Cable.....	197
11.2.3.2 Assembling an Unshielded RJ45 Connector and Ethernet Cable.....	203
11.2.3.3 Checking the Appearance of Contact Strips.....	206
11.2.3.4 Testing the Connection of Assembled Cables.....	208
11.2.4 Installing Cable Accessories.....	212
11.2.4.1 Precautions for Installing Cable Accessories.....	212
11.2.4.2 Installing Power Adapters.....	213
11.2.4.2.1 Installing the OT Terminal.....	213
11.2.4.3 Installing Ethernet Adapters.....	216
11.2.4.3.1 Installing a Shielded Ethernet Connector.....	216
11.2.4.3.2 Installing an Unshielded Ethernet Connector.....	218
11.2.4.4 Installing Fiber Connectors.....	220
11.2.4.4.1 Cleaning Fiber Connectors.....	220
11.2.4.4.2 Installing an FC Fiber Connector.....	220
11.2.4.4.3 Installing an LC Fiber Connector.....	222
11.2.4.4.4 Installing the SC Fiber Connector.....	224
11.2.4.4.5 Installing an MPO Connector.....	225
11.2.5 Replacing the Mold of the Crimping Tool.....	227
11.3 Appendix C Environmental Requirements for Device Operation.....	230
11.3.1 Environmental Requirements for an Equipment Room.....	230
11.3.1.1 Requirements for Selecting a Site for an Equipment Room.....	230
11.3.1.2 Equipment Room Layout.....	232
11.3.1.3 Construction Requirements for the Equipment Room.....	232
11.3.1.4 Equipment Room Environment.....	234
11.3.1.5 Requirements for Corrosive Gases.....	235

11.3.1.6 Requirements for ESD Prevention.....	236
11.3.1.7 Electromagnetism Requirements for the Equipment Room.....	236
11.3.1.8 Requirements for Lightning Proof Grounding.....	236
11.3.2 Requirements for Power Supply.....	238
11.3.2.1 Requirements for AC Power Supply.....	238
11.3.2.2 Recommendations for AC Power Supply.....	239
11.3.2.3 Requirements for DC Power Supply.....	240
11.3.2.4 Recommendations for DC Power Supply.....	241
11.4 Appendix D Equipment Grounding Specifications.....	241
11.4.1 General Grounding Specifications.....	241
11.4.2 Grounding Specifications for an Equipment Room.....	242
11.4.3 Grounding Specifications for Devices.....	242
11.4.4 Grounding Specifications for Communications Power Supply.....	243
11.4.5 Grounding Specifications for Signal Cables.....	244
11.4.6 Specifications for Laying Out Grounding Cables.....	244
11.5 Appendix E Engineering Labels for Cables.....	245
11.5.1 Introduction to Labels.....	245
11.5.1.1 Label Materials.....	245
11.5.1.2 Type and Structure.....	245
11.5.1.3 Label Printing.....	247
11.5.1.4 Writing Labels.....	249
11.5.1.5 Attaching Labels.....	250
11.5.1.6 Contents of Engineering Labels.....	252
11.5.1.7 Precautions for Using Engineering Labels.....	253
11.5.2 Engineering Labels for Optical Fibers.....	253
11.5.2.1 Labels for the Optical Fibers Connecting Devices.....	253
11.5.2.2 Labels for the Optical Fibers Connecting the Device and an ODF.....	254
11.5.3 Engineering Labels for Network Cables.....	256
11.5.4 Engineering Labels for User Cables.....	258
11.5.5 Engineering Labels for Power Cables.....	259
11.5.5.1 Engineering Labels for DC Power Cables.....	259
11.5.5.2 Engineering Labels for AC Power Cables.....	260
11.6 Appendix F Guide to Using Optical Modules.....	262
11.7 Appendix G Fault Tag.....	265