Index

Symbols
###IMAGESRC### 434
###URL### 433
$USER1$ 73
$USERx$ macros 79
24x7 64, 68, 74, 270
2d_coords 365
3D display, monitored computer see statuswrl.cgi
3d_coords 365

age monitoring
of a file see check_file_age
of a Windows file 479–480
agent (SNMP) 228
aggregate_status_updates 587, 693
aggressive_host_checks 665
alias 63, 65, 70, 72, 277
reading out via macro 627, 629
Alias (Apache) 48
alternating states see flapping
Amavis, monitoring 113
AND link, for check_multi 200
Apache
configuration 47–48
file 39
for NagVis 396
homepage 51
setting the environment variable 78
single sign-on with mod_auth_kerb 643–644
single sign-on with mod_auth_ntlm_winbind 645–649
Apache 1.3, and Nagios 47
Apache 2.0, and Nagios 47
Apache 2.2, and Nagios 47
APAN 456
APC UPS, monitoring 149, 150, 182–183
apcupsd 149, 182–183
apxs2 646
$ARG1$ 73
$ARG2$ 73
arguments, for check commands 73
ARGx macros 626
$ARG1$ 625
arrow color (NagiosGrapher) 435
AS/400, querying system load 263
ash programming 622

A
accept_passive_service_checks 605
accept_passive_host_checks 586
accept_passive_service_checks 586
access control see authentication
accounts, creating 209
acknowledgement 332, 343
via cellphone 350
as a display criterion for status.cgi 337
display in NagVis 389
displaying in the Web interface 345
in Nagios 3.0 687
reading out via macro 635
setting for EventDB 540
shown in NagVis 400
via WAP 350
action_url 364, 366, 452, 692
action_url_target 608, 692
active host checks see host check, active
additional information, adding to Nagios Web page 61
additional_freshness_latency 586, 692
address 63, 277, 627
access via macro 627
admin_email 586
admin_pager 586

Nagios, 2nd Edition
(C) 2008 by Wolfgang Barth
695
asynchronous events, processing  292
authentication
   configuring the NET-SNMP snmpd  240–242
      in NagiosGrapher  436
      in SNMP  233–234, 240–242
   switching on/off at the Web interface  78
author, of plugins  559
authorized_for_all_host_commands  607
authorized_for_all_hosts  79, 607
authorized_for_all_service_commands  607
authorized_for_all_services  79, 607
authorized_for_configuration_information  351, 607
authorized_for_system_commands  607
authorized_for_system_information  607
auto_reschedule_checks  587
auto_rescheduling_interval  587
auto_rescheduling_window  587
autoupdatefreq (NagVis parameters)  394
avail.cgi  329, 351–353, 360
availability report  see avail.cgi
availability states  96

B
backend (NagVis parameters)  394, 395, 398
backendtype (NagVis parameters)  395
background color
   of NagiosGrapher diagrams  435
   of NagiosGrapher interface  435
background image, for NagVis  389, 397
backup, monitoring  292
base (NagVis parameters)  395
batch processing  see bulk processing
BB  see Big Brother
BEGIN (Perl), and the ePN  671
Big Brother  29
booting  see system start, see system start
broadcast notifications  688
broker_module (nagios.cfg parameters)  377, 386
broker_module (nagios.cfg-Parameter)  587
browser refresh, configuring  78
buffer (NagiosGrapher)  432
buffer size
   adjusting for check_by_ssh  194
   adjusting for NRPE  194
   for check_multi  194
buffer_file (file)  384
bulk mode (PNP)  452, 454, 663
bulk processing
   external commands  687
   of performance data  452–454
business process monitoring
   with addon  203
   with check_multi  199–203
C
cached_host_check_horizon  588, 665, 689
cached_service_check_horizon  588, 665, 689

caching
   of check results  see check caching
   of checks  see check caching
   of the Nagios self-test  see precaching
Cacti  29, 457
allback functions  376
can_submit_commands  71, 682
CCMS  519–530
   plugins  525–530
CD-ROM  see CheckDriveSize
CDEF  441
cell phone
   as a display device for Nagios  350
   number for SMS  see pager
certificate
   testing the lifespan  123
   testing the time span  134
   Web server testing  101
cfg_file  588
cfg_dir  55, 321, 430, 437, 588, 692
cfg_file  55, 692
CGI configuration  77–79
CGI programs
   avail.cgi  see avail.cgi
   calling your own  126  see action_url
   cmd.cgi  see cmd.cgi
   config.cgi  see config.cgi
   extinfo.cgi  see extinfo.cgi
   histogram.cgi  see histogram.cgi
   history.cgi  see history.cgi
   interaction with Nagios  327
   notifications.cgi  see notifications.cgi
   outages.cgi  see outages.cgi
   showlog.cgi  see showlog.cgi
   status.cgi  see status.cgi
   statusmap.cgi  see statusmap.cgi
   statuswml.cgi  see statuswml.cgi
   statuswrl.cgi  see statuswrl.cgi
   summary.cgi  see summary.cgi
   tac.cgi  see tac.cgi
   trends.cgi  see trends.cgi

Nagios, 2nd Edition
(C) 2008 by Wolfgang Barth
Index

working with Nagios 104
CGI scripts  see CGI programs
cgi.cfg  54, 55, 77–79, 329, 347, 351, 606–610
effects of single sign-on  645
cgi_config (NagiosGrapher)  433
change of state, continual  see flapping
check latency  see latency time
check_disk  220
check_http, testing the lifespan of a certificate  123
check_icmp, evaluating performance data with NagiosGrapher  437
check_service_freshness  590
check_snmp_cpfw  260
check_tcp
  for monitoring POP3 and IMAP  113
  warning limit  133
check_ups  150
check_users  177
CheckAlwaysCRITICAL (NSClient+ function)  495, 504
CheckAlwaysOK (NSClient+ function)  495, 504
CheckAlwaysWARNING (NSClient+ function)  495, 504
check_apc  182–183
check_by_ssh  102, 131, 205–208
  adjusting buffer size  194
check_caching  689
check_cluster  189–191
  installation  45
check_command  63, 67
checkcommands.cfg  111, 112, 276
CheckCounter (NSClient+ function)  495, 501
CheckCPU (NSClient+ function)  495, 498
check_dhcp  146–149
check_dig  129–130
check_disk  158–221
  evaluating performance data graphically  414
  evaluating performance data with NagiosGrapher  440–443
CheckDisk.dll  467
check_dns  128–129
CheckDriveSize (NSClient+ function)  495–497
check_du.pl  563–573
check dummy  188, 294, 310
  for Windows  491
check_eventdb.pl  542–543
CheckEventLog (NSClient+ function)  495, 502, 532
check_external_commands  293, 588
check_file_age  181
CheckFileSize (NSClient+ function)  495, 496
check_for_orphaned_hosts  589, 689
check_for_orphaned_services  589
check_freshness  296, 661
  and notification_failure_criteria  287
check_ftp  119
check_iftraffic  257–259
CheckHelpers.dll  467
check_host  111, 665
check-host-alive  63
check_host_freshness  589
check_http  101, 119, 125
  critical limit value  120
  reaction to a Web server redirect  121
  regular expressions in queries  121
  specifying user and password for the test  121
  testing SSL connection  123
  warning limit  120
  for Windows  491
check_icmp  83, 109, 112, 455
  vs. check_ping  109
  critical limit  109
  evaluating performance data with NagiosGrapher  412
  evaluating performance data with NagiosGrapher  440
  as a host check  111–112
  host entry  109
  options  109, 110
  performance data  198
  from a performance perspective  665
  as a service check  111
  test  46–47, 110
  use with negate  188
  warning limit  109
  and Windows  492
check_ifoperstatus  103, 254–255
check_ifstatus  103, 252–253
check_imap  115
check_interval  68, 96, 678, 680
check_latency  660–662
check_ldap  143–146
check_load  162–163
check_log  167–176
check_log2  169
check_logfiles  170–176
check_mailq  180
CheckMem (NSClient+ function)  495, 500
check_mrtg  660

Nagios, 2nd Edition
(C) 2008 by Wolfgang Barth
697
check_multi 191–203
CheckMultiple (NSClient+ function) 495, 504
check_mysql 142–143
check_nagios 183–184
check_ncnet
  vs. check_nt 463
  installation 480–481
check_nrpe 462
  changing the buffer size 194
  for monitoring NRPE 286
  and PNP 455
  running plugins on third-party computers 220, 222–223
check_nt 462, 472–487
  vs. check_ncnet 463
  query of NSClient+ fails 467
  use of internal NSClient+ functions 495
check_ntp 177–178
check_ntp_peer 154–156
check_ntp_time, vs. check_ntp_peer 154
check_oracle 136, 575
check_oracle_writeaccess 575
check_oracle_writeaccess.sh 137
check_pcmeasure2.pl 507–509
check_period 64, 68
  vs. notification_period 64
check_pgs ql 137, 139–140
check_ping
  vs. check_icmp 109
  as performance killer 665
  and Nagiosgrapher 437
  and Windows 492
Checkpoint firewall, monitoring 260
check_pop 115
check_procs 163–167
CheckProcState (NSClient+ function) 495, 500
check_result_path 589, 666
check_result_reaper_frequency 589, 666, 693
checks, on-demand 92, 95
check_sap 514, 526
check_sap.pl 516–518
check_sap.sh 516
check_sap_cons 524, 526–528
check_sap_instance 526
check_sap_instance_cons 526
check_sap_multiple 526
check_sap_mult_no_thr 526–530
check_sap_system 526
check_sap_system_cons 526
check_sensors 185–186
CheckServiceState (NSClient+ function) 495, 499
check_simap 115
check_smtp 101, 113, 115
  critical limit 114
  warning limit 114
  for Windows 491
check_snmp 103, 246–251
check_snmp_cpfw 260
check_snmp_disk 256–257
check_snmp_env 260
check_snmp_int 260
check_snmp_load 260, 262–264
check_snmp_mem 260
check_snmp_proc 256–257
check_snmp_process 260
check_snmp_storage 259–262
check_snmp_vrrp 260
check_snmp_win 260
check_spop 115
check_squid 125–127
check_ssh 131–132
  for Windows 491
check_swap 162
CheckSystem.dll 467
check_tcp 102, 132, 135
  critical limit value 116
  to check SAP 511
  for FTP monitoring 119
  to monitor SAP 516
  for POP and IMAP monitoring 116–118
  using SSL 134
  warning limit 116
  for Windows 491
check_time 178–179
  for Windows 491
check_traffic 257
check_udp 102, 135–136
  for Windows 491
check_ups 149, 151–154
CheckUpTime (NSClient+ function) 495, 499
checkuptime (NSClient+ function) 494
CheckWMI.dll 467
child_process_fork_twice 590
chmod 209
chown 209
Cisco components, querying system load 263
Cisco switches, monitoring 260
CLIENTVERSION (NSClient/NC_Net command)
clock times, restricting actions 74

command buffer slots see external_command_buffer_slots

command object
for e-mail notification see notify-by-email
for evaluating performance data 406, 407

command_check_interval 590

command_file 590

commands
defining to be run in SNMP queries 243
for notification see notification command

commands.cfg 54

comment_file 590, 687, 694

comments
in configuration files 56
deleting on problem hosts 332
looking at for hosts 340
looking at for services 340
maintaining on problem hosts 331, 343
nonpermanent 613, 616

computers
command address, defining see address
computer name, defining see host_name

CONFIG (NC_Net command) 487

cfgi.cfg 329, 351

config.ini.php 393–396
disabling the GD library 392

config.layout 427

config.php 450

collection interval 590

collection file 590, 687, 694

commands
for Nagios 40, 47
for NRPE 215, 220
for NSCA 300

configuring, the NDOUtils 387

contact (object) 60, 70–72, 274

changes in Nagios 3.x 681–682
defining external notification programs 275
defining notification states 272
defining notification times 273
disabling 58
for single sign-on 644–645
self-defined variables 685–686
contact group (object) 60, 72, 271
changes in Nagios 3.x 681
macros see group macros
contact groups 28
contact persons see contact (object)
and user names for the Web interface 50
contact sensor 506
$CONTACTADDRESSn$ 629
$CONTACTALIAS$ 629
$CONTACTEMAIL$ 629
$CONTACTGROUPALIAS$ 629
$CONTACTGROUPMEMBERS$ 629
contactgroup_members 72, 681
$CONTACTGROUPNAME$ 629
$CONTACTGROUPNAMES$ 629
contact_groups 64, 69, 680, 685
contact macros 629
$CONTACTNAME$ 629
contact_name 70
reading out via macro 629
$CONTACTPAGER$ 629
contacts 678
Cortona 349
count (check_multifunction) 201
counter 404
COUNTER (NC_Net command) 483–484
CPU load
caused by a program 164
checking 163, 165
memory duration (NSClient+) 469
monitoring in Windows 483
of an SAP instance 525
testing 102, 162
via SNMP 245, 246, 260, 262–264
in the UCD-SNMP-MIB 239
on Windows computers 475
CPU runtime, of program monitoring 164
CPU temperature, testing via SNMP 250
CPU load
monitoring in Windows 467, 498
resolution of measured values (NSClient+) 469
CPULOAD (NSClient/NC_Net command) 475
crashed computer see DOWN (state)
Cricket 457
CRITICAL (state) 26, 27, 67, 96, 105, 108, 555
as a display criterion for status.cgi 337
displaying in NagVis 389
force/suppress notification 269
macro 278
marking in the Web interface 87
negating return value 188
resetting manually see error states
return value 168, 188, 296, 554
critical limit see threshold
check_apc 182
check_by_ssh 205, 207
check_disk 158
check_file_age 181
check_http 119, 120
check_icmp 109
check_iftraffic 257
check_ldap 143, 145
check_load 162
check_mailq 180
check_nt 472
check_ntp 177
check_pgsq 137
check_procs 163, 164
check_ssmtp 113
check_snmp 246
check_snmp_load 262
check_squid 125, 127
check_swap 162
check_tcp 116
check_ups 152
check_users 177
CPULOAD 475
in performance data 179
specifying 108
critical threshold
check_apc 182–183
check_file_age 181
check_iftraffic 258
check_load 163
check_mailq 180
check_nt 472
check_ntp 178
check_pgsq 139
check_snmp 247, 251
check_snmp_load 263
check_tcp 133
check_time 179
check_users 177
CPULOAD 475
detail of performance data 179
cron
as a performance accelerator 666
for Nagios self-monitoring 183, 184
used to run service checks 104
CSMA/CD 232
CSV, availability data as 351
custom notifications 688
custom templates (PNP) 455
custom macros 633
custom macros 626, 635
Cygwin 461
plugins 490–492
tools 490
D
Daemon Tools 419
data backup see backup
databases
creating for NDOutils 382
monitoring 136–143, 575–582
NDOutils update 383
optimizing NDOutils 667
saving Nagios data in see NDOutils
and service dependencies 289
tables for NDOutils 382
testing 27
$DATE$ 630
date macros 630
date_format 58, 591
  effect on macros 630
dbhost (NagVis parameters) 395
dbinstancename (NagVis parameters) 395
dbname (NagVis parameters) 395
db_name (ndo2db parameters) 385
dbpass (NagVis parameters) 395
dbport (NagVis parameters) 395
db_port (ndo2db parameters) 385
db_prefix (NagVis parameters) 395
db_servertype (ndo2db parameters) 385
dbsizer (NagVis parameters) 395
ddraw 420–426
Debian
  NDOutils installation 380
  NET-SNMP 235
  NRPE installation 214
  smsclient installation 279
debug_file 591
debugging, internal NSClient+ functions 504
debug_level 591
debug_verbosity 592
default.php (PNP) 455
default_statusmap_layout 78, 608
default_statuswrl_layout 78, 347, 608
default_user_name 608
delivery number, for SMS see pager
Department of Defense 229
dependencies
  between computers see hostdependency (object)
  between NSClient/NC_Net and monitored services 474
  between services see servicedependency (object)
circular 83
  implied 288
dependency_period 683
dependend_host_name 683
development packages 38
DHCP, monitoring see check_dhcp
dig, to monitor name servers see check_dig
directory, monitoring size (Windows) 496
display_name 678
distributed monitoring 104, 291, 299, 317–324
DNS, monitoring 127–130
  name servers see check_dig
documentation 53
  linking on hosts in Nagios 364
DOWN (state) 64, 94, 96, 269
  as display criterion for status.cgi 336
  macro 277
  marking in the Web interface 87
  return value 555
downtime
  flexible length 360
  for hosts 361
  in Nagios 3.0 687
  planned see maintenance period
  planning 362
  scheduling 359
  for services 361–362
  taking into account for messages 269
downtime_file 591, 687, 694
drive, checking drive size see CheckDriveSize
drive capacity  see hard drive capacity
draw.conf  421–422
DSL connection, warning limit for ping  106
du  see check Du.pl
dummy plugin  see check Dummy

E

e-mail  71, 276, 277
reading out via macro  629
e-mail address
for notifications  see e-mail
specifying of the admin in NET-SNMP  242
e-mail delivery command  see notify-by-email
e-mail server testing  see SMTP
editor
NagVis  391, 394, 396–400
egrep
excluding comments and empty lines  78
embedded Perl  40, 669–675
and alarm()  571
in Nagios 3.0  673, 688
and timeouts  571
enable_event_handlers  605
enable_flap_detection  617
enable_notifications  592
enable_embedded_perl  592, 673, 688
enable_environment_macros  444, 449, 592, 667, 686
enable_event_handlers  592
enable_flap_detection  592, 605, 613
enable_notifications  268, 605
enable_predictive_host_dependency_checks  593
enable_predictive_service_dependency_checks  593
enable_splunk_integration  609
encryption, NSCA  302
ENUMCONFIG (NC_Net command)  486–487
ENUMCOUNTER (NC_Net command)  481–482
ENUMCOUNTERDESC (NC_Net command)  482
ENUMPROCESS (NC_Net command)  484
ENUMSERVICE (NC_Net command)  484
environment variables  see variables
EPN  see Embedded Perl
ePOCH seconds  479
error messages  83
in NSClient installation  464
interval  see notification interval
restricting number of  95
error states, resetting manually  310–312
escalation management  28, 282–285
for computers  see hostescalation (object)

for services  see serviceescalation (object)
escape_html_tags  609, 692
Ethernet  232
event broker  42, 593
event handler  619–623
vs. OCSP and OCHP  317
event log  see Windows event log
Event Broker  see NEB
API  378
NDOUtil configuration  383–385
event_broker_options  377, 593, 667
EventDB  531–549
event_handler_timeout  593
EVENTLOG (NC_Net command)  485–486
EventLog Agent for Windows  see nagevtlog
Eventlog to Syslog  see evtsys
events
as histogram  353
processing  531–549
showing graphically  see histogram.cgi
evtsys  545
Exchange for Nagios addons  102
addons for managing maintenance times  359
logos and icons  365
NagiosGrapher  427
network plugins  125
NRPE plugins for Windows  490
NSClient  464
Oracle plugin  137
ping plugin for Windows  492
proxy test  125
SNMP plugins  255
Squid test  125
Exchange Server
monitoring  113
and port  1248  469
execute_service_checks  605
execute_host_checks  593
execute_service_checks  593
Exim, monitoring mail queue  180
exit code  see return value
export, of data from Nagios  378
External Command File  292
external_command_buffer_slots  593, 667
extinfo.cgi  193, 329, 331, 339–342, 359, 615, 616
adding additional information  363

F
failed logins, monitoring on  168
Index

failure
  of partial networks 329
  of subnetworks 345
fans, monitoring of switches 260
Fast Ethernet interface, monitoring traffic 258
Fedora, NRPE installation 214
fe_use_browser_all (NagiosGrapher) 435
fe_use_browser_for (NagiosGrapher) 436
fe_use_browser_url (NagiosGrapher) 436
fe_use_timefilter (NagiosGrapher) 436
FHS 41
FIFO 292
fifo_write.pl 432, 444
file
  changing owner see chown
  changing permissions see chmod
  monitoring modification date see check_file_age
  monitoring size (Windows) 467
  monitoring via SNMP 239
  size monitoring see check_file_age
FILE2SOCK 379
FILEAGE (NSClient/NC_Net command) 479–480
FileLogger.dll 467
file_rotation_command (ndomod parameters) 384
file_rotation_interval (ndomod parameters) 384
file_rotation_timeout (ndomod parameters) 384
Filesystem Hierarchy Standard see FHS
Firefox, single sign-on via 650–651
firewall, environments indirect tests in 225, 287
First Level Support, informing of problems 282
first_notification_delay 271, 678
flap detection see flapping
flap_detection_enabled 614, 617
flap_detection_options 679, 680, 687
flapping (state) 64, 269, 278, 611–617, 679, 687
  as a display criterion for status.cgi 337
  host 616–617
  with services 612, 616
font color (NagiosGrapher) 435
fontfile (NagiosGrapher) 433
format, configuration files for plugins 573
Foundry switches, monitoring 260
free_child_process_memory 594
FREEDISKSPACE (NC_Net command) 487
freeWRL 349
frequency, of a state representing graphically see histogram.cgi
freshness mechanism 287, 295–297, 692
  accounting for latency 586
FTP, monitoring 118–119
G
ggettext 557
global_host_event_handler 594
global_service_event_handler 594
graphics
  adding to Nagios Web page 61
  addressing directly in PNP 452
green (state) 26
grid color (NagiosGrapher) 435
group (NagiosGrapher) 432
group macros 628, 629
groupadd 209
groups, creating 209
H
hard drive capacity
  checking 158
  checking with SNMP 248
  displaying graphically 414
  monitoring with SNMP 260
  testing 102, 162
    on Windows computers 476–477, 487
    with SNMP 244–245, 256, 259, 262
  of Windows hosts displaying graphically 414
hard recovery 97
hard state 63, 68, 92, 96, 267, 614
  as evaluation criterion for NagVis 391, 394, 399
  macro 628
header files see development packages
health check see lm-sensors
heartbeat (NagiosGrapher) 432
help, online (plugins) 78, 556–557
Help Desk, informing of problems 282
high_flap_threshold 617
high_host_flap_threshold 594, 617
high_service_flap_threshold 594, 613
histogram.cgi 329, 353–354
history.cgi 329, 354–355
hitlist, problematic hosts 357
host 26
  excluding from notification 681
host (object) 59, 62–65
    changes in Nagios 3.x 678–680
    extended information 362–366
    host-specific variables 471
    self-defined variables 685–686
    host check 26, 46, 63, 94
active 95, 291
beyond reachability tests 112
with check_icmp 111–112
optimizing 664
passive 291–295, 311, 488, 666, 690
vs. ping service 66, 83, 95
resetting error state manually see error states
host dependencies 285
host dependency (object) 289
host group
display in NagVis 390
downtime for all services of 361
inserting into NagVis map 398
macros see group macros
showing in the status display 334
viewing in the NDOUtils database 387
host group (object) 59, 65–66, 77
applying with NRPE 223, 224
changes in Nagios 3.x 681
selecting for status display 334
host macros 628
host MIB 238
host name
defining see host_name
defining (plugin option) 108
host_name 277
$HOSTACKAUTHORS$ 635
$HOSTACKCOMMENT$ 635
$HOSTADDRESS$ 73, 111, 625, 627
$HOSTALIAS$ 627
host_check_timeout 594
hostdependency (object) 61
changes in Nagios 3.x 683
estescalation (object) 61, 283, 284
changes in Nagios 3.x 683–685
$HOSTEVENTIDS 686
hostextinfo (object) 61, 347, 362–366, 677
changes in Nagios 3.x 679
host_freshness_check_interval 594
hostgroup name 67
$HOSTGROUPALIAS$ 629
$HOSTGROUPMEMBERS$ 629
hostgroup_members 681
$HOSTGROUPNAME$ 629
hostgroup_name 65, 77
$HOSTGROUPNAMES$ 629
hostgroups (configuration parameter) 63
host_inter_check_delay_method 594
$HOSTLONGOUTPUT$ 627
host macros 627
$HOSTNAMES$ 627
host_name 63, 67, 76, 363
access via macro 627
host_notification_commands 71
$HOSTNOTIFICATIONID$ 686
$HOSTNOTIFICATIONNUMBER$ 630, 686, 693
host_notification_options 71
host_notification_period 70
host_notifications_enabled 681
host_notifications_options 681
host_notify-by-email 275, 277–278
host_notify-by-sms 275
host objects
host-specific variables 685–686
viewing in the NDOUtils database 387
$HOSTOUTPUT$ 193, 627, 635
$HOSTPERFDATA$ 193, 627, 635
host_perfdata_command 407, 595
host_perfdata_file 595
host_perfdata_file_mode 595
host_perfdata_file_processing_command 595
host_perfdata_file_processing_interval 595
host_perfdata_file_template 596
hosts
availability statistics see avail.cgi
extensive information on individual 339
$HOSTSTATES 626, 627
$HOSTSTATEID:*$ 190
$HOSTSTATEIDS 627
$HOSTSTATETYPE$ 627
htmlbase (NagVis parameters) 395
htmlcgi (NagVis parameters) 395
htpasswd 50, 70
HTTP
header, manipulating 101
monitoring 118–125
testing 101
humidity, monitoring 505–509
I
I2C 185
icon, adding your own in the Web interface see icon_image
icon_image 364
icon_image 364
icon_image_alt 365
icon_image_script (NagiosGrapher) 434
icon_image_src (NagiosGrapher) 434
icon_image_static (NagiosGrapher) 434
icon_image_tag (NagiosGrapher) 433
icons (NagVis parameters) 394
ident daemon see identd
identd 138
    monitoring 491
illegal_macro_output_chars 449, 596
illegal_object_name_chars 596, 635
IMAP
    monitoring 113, 115–118
    via SSL/TLS 115–118
IMAP3S see IMAP via SSL/TLS
imprecision, in SNMP see rounding up
increase in performance see performance optimization
indirect checks 206, 224–225, 287
inetd
    configuration for NRPE 217, 304
    function check for NRPE 218
inheritance 684–685
    of dependencies 287
init script 43, 84
initial_state 679, 680
inject 494–504
installation 37–45, 292
    check_ncnet 480–481
draw 420
isapinfo 512
Nagiosgraph 408
NagVis 391–393
NC_Net 465
NDOUtils 380–383
NRPE 214–216
NRPE_NT 488–489
NSCA 300–301
NSClient 464–465
Perf2rrd 416
PNP 447
RRDtools 421
instance_name (ndomod parameters) 384, 395
INSTANCES (NC_Net command) 482
instant client (Oracle) see Oracle
interface
    between Nagios and NDOUtils see NEB
    for external commands 28, 49, 101, 104, 208, 292–293, 299, 343–345, 661, 687
interface (NagiosGrapher) 431
    and service_perfdata_command 443–445
Internet services, testing 101–102
Internet Standard Management Framework 228
interval
    between error messages see notification_interval
    between error notifications see notification_interval
    between service checks 68
interval check 270, 273
interval_length 596, 678
IP address
    defining see address
    defining (plugin option) 108
IPv4 stipulating 108
    check_http 123
IPv6 stipulating 108
    check_http 123
ISDN
    connection, warning limit for ping 106
    sending SMS via 280
ISO (organization) 229
is_volatile 309, 311, 316, 486
J
    jitter 154, 156
K
    Kerberos 639–644
        configuration for single sign-on 642–643
        and time synchronization 178
L
    language
        of plugin output 557
        setting for NagVis 394
    language (NagVis parameters) 394
    large_installation_tweaks 691
$LASTHOSTEVENTID$ 686
$LASTHOSTSTATE$ 686
$LASTHOSTSTATEID$ 686
$LASTSERVICEEVENTID$ 686
$LASTSERVICESTATE$ 686
$LASTSERVICESTATEID$ 686
latency time 653–662, 666
    for checks 452
    for freshness -checks 586
    for service checks 658
layout
    NagiosGrapher 427
    Nuvola 368–373
LDAP see OpenLDAP
    monitoring see check_LDAP
Index

legend (NagiosGrapher)
  column width 439
  line break 439
libraries, required for compiling 38
license, of plugins 559
limit see critical limit, warning limit
limit value, critical 108
  check_by_ssh 207
lm-sensors 184–186
  information in the UCD-SNMP-MIB 239
  reading out information via SNMP 250
  specifying thresholds 250
  temperature query via SNMP 250
load, of a network interface see check-iftraffic
load distribution 192
load status, of a UPS 182
localhost.cfg 54, 74
localization, of plugins 557
lock_author_names 609, 692
lock_file 596
log file entries
  configuring for NSClient+ 468
  generating 405–407
  graphical overview of see showlog.cgi
  incomplete 351
  for NSCA 302
log files
  evaluating see syslog
  evaluating Windows event log 485–486, 502
  filtering after states see history.cgi
  for NagiosGrapher 434, 445
  importing old to the NDO database 379
  monitoring see check_log
  monitoring the Nagios log file see check_nagios
PIPE entry 446
PRG entry 446
REGEX entry 446
RRD entry 446
seach engine 609
search engine 609
VALUES entry 446
log_file (NagiosGrapher) 434
LOG2NDO 379
log_archive_path 596
logcheck 307
log_event_handlers 597
log_external_commands 597
log_file 597
logger 172
log_host_retries 597
log_initial_state 354
log_initial_states 597
logins, failed see failed logins
log_level (NagiosGrapher) 435, 445
log_notifications 597
log_passive_checks 597
log_rotation_method 355, 597
log_service_retries 598
$LONGDATETIME$ 630
$LONGHOSTOUTPUT$ 193, 635, 686
$LONGSERVICEOUTPUT$ 193, 686
low_service_flap_threshold 598
low_flap_threshold 614, 617
low_host_flap_threshold 598, 617
low_service_flap_threshold 613
lpd, restarting automatically on failure 619–623
M
Mac OS X, monitoring 461
macros 73, 79, 277–278, 625–635, 686
  $ADMINEMAIL$ 586
  $ADMINPAGER$ 587
  $HOSTATTEMPT$ 621
  $HOSTSTATETYPE$ 621
  $HOSTSTATES$ 621
  $SERVICEATTEMPT$ 621
  $SERVICESTATETYPE$ 621
  $SERVICESTATES$ 621
  $USERx$ see $USERx$ macros
  and performance 667
  contact 629
  custom 626, 633–635
  for statistical purposes 631
  group 628–629
  host 627–628
  notification 630
  on-demand 190, 626, 629, 632–633
  service 628
  standard 626–632
  state see state macros
  to specify date 630
  to specify time 630
  used in e-mail delivery 277
mail queue, monitoring see check_mailq, see
  check_mailq
mail server testing see SMTP
mailing lists, nagiosplug-help 45
main configuration file see nagios.cfg
main memory
  in the Host Resources MIB 238
  monitoring with SNMP 259–262
  testing on Windows computers 476
  usage monitoring 164
main_config_file 78, 609
maintenance window
  addons for maintenance 359
  display in the Web interface 337, 342
  for hosts 360
  sending notification 679
  status 65
make options 42, 54
  all 42
  install 42
  install-commandmode 42
  install-config 42
  install-init 43, 84
man page, for plugins 566–568
Management Information Base see MIB
management nodes (SNMP) see nodes
manager (SNMP) 228
manufacturer MIB 251
map 408, 412–415
map (NagVis) 390, 396–400
maplocktime (NagVis parameters) 394
max_check_attempts 63, 67, 68, 97, 267, 614, 620, 689, 690
  in connection with log file monitoring 167
  representation Web interface 87
max_check_result_file_age 598
max_check_result_reaper_time 598, 666
max_concurrent_check 598
max_debug_file_size 599
max_eventhandlers_age (ndo2db parameters) 385
max_hostchecks_age (ndo2db parameters) 385
max_host_check_spread 84, 599
max_servicechecks_age (ndo2db parameters) 385
max_service_check_spread 84, 599
max_systemcommands_age (ndo2db parameters) 385
max_timedevents_age (ndo2db parameters) 385
maxtimewithoutupdate (NagVis parameters) 395
mbrowse 237
measured values, displaying over time 29
measuring temperature, as a host check 112
members 65, 70, 77
memory
  checking for Windows computers 467
  checking for Windows hosts see CheckMem
  monitoring 165
MEMUSE (NSClient/NC_Net command) 476
messages 63
  stopping see notifications_enabled
MIB 228
  of the manufacturer 251
MIB-II 231–233, 238
Microsoft Exchange Server 113
Microsoft Windows see Windows
misccommands.cfg 276, 320
modification date, of a file monitoring see
check_file_age
monitoring temperature, of switches 260
Montibello, Tony 465
movement detector 506
Mozilla Firefox see Firefox
MRTG 29, 259, 658–660
MTA, monitoring see check_smtp
Munin 29
MySQL
  creating a database 141
  monitoring 141–143
  preparing for use with NDOUtils 381–383
  standard port 385
  starting in network mode 141
  version for use with NDOUtils 380

N
nagcmd (group) 38
nagevtlog 545
Nagios
  monitoring see self-monitoring
  reload 417
  restarting see restart
  stopping 340
nagios (group) 38
nagios (program) 81–83
  start via start script 84
nagios (user) 38
read permissions when using check_log 168
Nagios Exchange see Exchange for Nagios addons
Nagios Remote Plugin Executor see NRPE
Nagios Service Check Acceptor see NSCA
nagios-snmp-plugins 256–257
nagios.cfg 54–62, 268, 367, 586–606
  activating freshness checking 295
  allowing passive host checks 294
  configuration for Nagiosgraph 410

Nagios, 2nd Edition
(C) 2008 by Wolfgang Barth

707
Index

defining time unit 62
ePN parameters 673
flap detection 613, 617
integrating NEB modules 377
loading Event Broker module 386
log rotation 355
NDOUtils configuration 383
passive service checks 293
processing performance data 405–407
switching on OCSP/OCHP 318
switching on processing of external commands 293
NAGIOS_CGI_CONFIG (environment variable) 78
nagios_config (NagiosGrapher) 433
Nagiosgraph 404, 408–415
debug level 410
delimiter 407
nagiosgraph.conf 409–410
NagiosGrapher 404, 426–446
configuration 430–446
installation 427–430
nagios_grapher (start script) 429, 437
nagios_group 599
NAGIOS_HOSTNAME 444
NAGIOS_SERVICEDESC 444
NAGIOS_SERVICEOUTPUT 444
NAGIOS_FUNCTIONPERFDATA 444, 449
nagiosstats 654–658
using in plugins 660–662
nagios_user 599
nagtrap 532
NagVis 376, 378, 389–401
configuration 393–396
database permissions 382
installation 391–393
ndo2db configuration 386
obsolete status data 396
problems with Nagios <3.0b1 396
required Broker data 378
without authentication 396
Name server see DNS
named pipe 104, 292, 590
creating a 417
for NagiosGrapher 432
for NSCA 302
problems with Nagios 2.0 beta 420
navigation area 328
customizing 338
NC_Net 462, 465, 472, 488
changing configuration 487
defining the Performance Counter 482
installation 465
listing services 484
monitoring age of a file 479–480
monitoring processes 479
monitoring processor load 483
monitoring uptime 477
monitoring Windows services 478
polling the Performance Counter 481
querying client version 473–474
querying configuration 486–487
querying event log 485–486
querying Performance Counter 483–484
querying process list 484
querying WMI database 487
testing CPU load 475
testing hard drive capacity 476–477, 487
testing main memory 476
ndo2db
configuration file see ndo2db.cfg
starting 386
ndo2db.cfg 383, 385–386
ndo2db daemon 378
ndo2db_group (ndo2db parameters) 385
ndo2db_user (ndo2db parameters) 385
ndomod 378, see Event Broker
ndomod.cfg 383–385
NDOUtils 375–387
distributed databases 396
installation 380–383
optimizing database 667
NEB 376–378
API 378
negate 188–189
for Windows 491
negation, of threshold details 558
.NET, querying configuration data 487
NET-SNMP 234, 246, 312
configuration see snmpd.conf
defining system and local information 242
plugins specialized in ~ 256
special features in the check_snmp_load call 263
NET-SNMPD 103
netstat 218
network, detecting outages 94
network connection, slow warning limits 106
network interfaces
monitoring via SNMP 103, 251
testing load  see check-iftraffic
network outages  94
network segments  93
network services, testing  101–102
network share, checking drive size (Windows)  see CheckDriveSize
network topology
  accounting for  65
  taking into account  27–95
network traffic, observing  see check-iftraffic
Network UPS Tools  149–154
new_mini_epn  674–675
ngraph (object)  437–440
ngraph.ncfg  430–440
nmbd, monitoring  163
nodes  231
nodes (SNMP)  229
Nokia-VRRP cluster, monitoring  260
normal_check_attempts  68
normal_check_interval  68, 96, 341, 614, 678, 680
notes  363
notes_url (Nagios)  364, 366, 434, 692
notes_url (NagiosGrapher)  433
notes_url_target  609, 692
notification
  commands  71
  macros  630
  preventing  65
  self-made  688
notification command  71
  defining  275–282
notification_interval  64, 68, 270, 273, 282, 680, 685
  for escalation  284
$NOTIFICATIONNUMBER$  686, 693
notification_options  64, 69, 679, 680, 687
  in case of escalation  284
  in connection with check_log  168
notification_period  64, 68, 270, 273, 282, 680, 685
  in case of escalation  284
$NOTIFICATIONRECIPIENTS$  630
notifications  28, 265–290
  as a display criterion for status.cgi  337
  commands  71, 275
  globally switching on and off  344
  graphic overview  see notifications.cgi
  looking at sent  see notifications.cgi
  periodic  see interval check
  preventing  340
  stopping in general  see enable_notifications
switching off for hosts of a group  339
time interval  see notification_interval
notifications.cgi  329, 355–356
notifications_enabled  269
notification_timeout  599
$NOTIFICATIONTYPES$  278, 630, 688
notify-by-email  275, 276, 278
notify-by-sms  275, 281–282
NPCD  448, 453
npcd.cfg  448, 453
NRPE  102–103, 213–225
  adjusting buffer size  194
  buffer size adjusting  194
  example of service dependencies  285
  and timeouts  559
  for Windows  see NRPE_NT, 488
    with NSClient+  465, 467
    function test  218, 221–222
    monitoring  286
    with NSClient+  493
    with OpMon Agent  470
nrpe.cfg  215, 218–221
  for Windows  489, 491
NRPEListener.dll  467
NRPE_NT  463, 488
  configuration  489
  installation  488–489
  replacing with NSClient+  467
NSC.ini  466–469, 493–495
NSCA  104, 291, 299–316
  client configuration  304–305
  configuring the Nagios server  301–304
  daemon  299
  encryption  302
  installation  300–301
  processing SNMP traps  312
  testing functionality  306
nsca.cfg  301–303
NSClient  101, 464–465
  installation  464–465
  monitoring the age of a file  479–480
  monitoring processes  479
  monitoring uptime  477
  monitoring Windows services  478
  querying the client version  473–474
  querying performance counters  480
  and service dependencies  289
  testing CPU load  475
  testing hard drive capacity  476–477
Index

testing main memory 476
NSClient+ 465–469, 493–495
  internal functions 495–504
  NRPE 493–504
  querying performance counter 501
NSClientListener.dll 467
nsclientpp 466
nslookup, to check name services see check_dns
NTLM 638
NTP
  for monitoring system time see check_nt
  monitoring server 154–156
ntpq 154
NTsyslog 545
nut 150
Nuvola (layout) 368–373

0
object 59–62
object definitions
  displaying see config.cgi
    for Nagios 2.10 54
    for Nagios 3.0 54
  object identifier see OID
  object types 59–61
  object_cache_file 599
  obsessive commands 317
  obsess_over_hosts 318, 319, 600
  obsess_over_services 318, 319, 323, 600
  OCHP 317–321
  ochp_command 318, 600
  ochp_timeout 318, 600
  OCSP 317–321
  ocsp_command 318, 600
  ocsp_timeout 318, 600
  offset (for NTP) 154
OID 230
  converting to legible text see SNMP
    querying 235–237
OK (state) 27, 67, 96, 105, 555
  displaying in NagVis 389
  macro 278
  negating return value 188
  return value 188, 554, 555
on-demand checks 92, 95
on-demand macros 190, 626, 629, 632, 633
onlyhardstates (NagVis parameters) 394, 399
OpenLDAP
  monitoring 164
  restart by event handler 623
OpenNMS 312
OpenSSH 206
OpenVRML 349
operating status, of a network interface testing 254
OpMon Agent 469–470
opmonagent.ini 470
OR link, for check_multi 200
Oracle
  instant client 576–577
    monitoring 136, 137, 575–582
  orphaned service 589
  outages, detecting in network 94
  outages.cgi 329, 350
  output (ndomod parameters) 384
  output_buffer_items (ndomod parameters) 384
  output_type (ndomod parameters) 384
P
p1.pl 674
pager 276
parallelize_check 680
parents 65, 83, 93, 289, 361
passive mode
  check_by_ssh 208
  passive_host_checks_are_soft 600, 690
password
  in SNMP 234
    obscuring (NSClient+) 468
    setting for check_nt (NSClient+) 468
    specification in plugins 557
password file, for logging in to the Web front end see htpasswd
PCAnywhere, monitoring 134
PCmeasure (sensor query program) 507
PCmeasure4linux.cfg 506
PDH error message, during NSClient installation 464
PENDING (state) 610
  as criterion for service dependencies 287
  as display criterion for status.cgi 336–337
Perf2rrd 415–420
perfd_data_timeout 601
perfdfile_path (NagiosGrapher) 432
Performance Counter 481
  defining 481–482
  querying 482–484
Performance Counter instances 482
performance data 107, 118, 403–457, 559
  displaying with Nagios::Plugin 572

Nagios, 2nd Edition
(C) 2008 by Wolfgang Barth
format 404
for overall system 346
processing intelligently 663
processing through an external command 407
separating string 572
processing via template 405–407
performance data processing, switching on see process_performance_data
performance problems, of Nagios revealing 341
performance counter
determining 480
querying 501
performance optimization 653–668, 691
PerfParse 446
periodic notification see interval check
Perl 669
developing plugins in 553–573, 670–672
Embedded see Embedded Perl
ICP::Open2 module 578
modules, installing 45
plugins for Windows 492–493
searching in ~ 412
for Windows 492
Perl script, as a plugin 27, 553–573, 670–672
permissions, changing on file see chmod
PerParse 456
PHP, disabling the GD library 392
physical_html_path 78, 609
pidfile (NagiosGrapher) 432
ping 46, 63, 66, 83, 108
check for Windows 492–493
warning limits 106
PIPE (log entry) 446
pipe (NagiosGrapher) 432
plugin 99, 101–103, 107
collection files 572–573
developing as shell script 660–662
developing in Perl 553–573, 672
executing via SSH 102
generic 102, 132–136
help 556–557
local 102
multi-line output 692
multiple-line output 193
Oracle 578–582
return value 554–555
running via NRPE see NRPE
running via SSH 102, 205–211
service-specific vs. generic 101–102
timeout 558–559, 571–572
wrapper 578–582
writing your own 553, 660–662
plugins 27
check_icmp see check_icmp
developing in Perl 670
directory 73
documentation 107
downwards compatibility 30
echo, getting return value 168, 188, 256, 477, 480, 490
help 107
installation 43–45
manipulating output 189
negating output see negate
for network services 108–154
path to 79
performance data 107
return status 105
return value 96, 188
running through SSH 488
for special tasks 187
specifying host name 108
specifying IP address 108
standard options 108, 185
states 27, 96
testing 45–47
timeout 106, 108
version information 108
writing your own 575
PNP 446–456, 662
addressing graphic directly 452
batch processing of performance data 452–454
defining time period 451
and extended performance output 198–199
pNSClient.exe 464
POD 566–568
POP3
monitoring 113, 115–118
via SSL/TLS 115–118
POP3S see POP3 via SSL/TLS
port
MySQL 385
problems with NSClient & Co. 471, 634
specification in plugins 557
port (NagiosGrapher) 432
port scan, as a host check 112
Postfix, monitoring mail queue 180
PostgreSQL
creating a database  137
creating a database user  137
monitoring  137–140
starting in network mode  137
testing database  27
postponing, tests  342
power failure, shutdown computer  182
power supply, monitoring for switches  260
precached_object_file  601, 691
precaching, of the Nagios self-test  691
PRG (log entry)  446
printer service, restarting automatically on failure  619–623
priority, of states in NagVis  390
problem, taking on  332
PROCESS_HOST_CHECK_RESULT  305
process_performance_data  407
PROCESS_SERVICE_CHECK_RESULT  305
processes
   information in the host MIB  238
   listing in Windows  484
   monitoring see check_procs
      in Windows  479
      via SNMP  256, 260
   specifying, to be monitored via SNMP  243
PROCESS_FILE  687
PROCESS_HOST_CHECK_RESULT  292, 295
processor load see CPU load
process_perfdata.cfg  448
process_perfdata.pl  447–449, 453
process_perfdata_command  407
process_performance_data  405, 410, 448, 601
PROCESS_SERVICE_CHECK_RESULT  104, 292, 294, 661
PROCSTATE (NSClient/NC_Net command)  479
programming
   plugins in Perl  553, 573, 670
   plugins as shell scripts  660–662
proxy, monitoring see Squid
pseudo-tests, for freshness checks  296
public-key login  208

Q
QMail, monitoring mail queue  180
questionable status see WARNING (state)
queues, on mail server see mail queue

R
RAM see memory
ranking list see hitlist
Reaper  666
reboot see restart
recognizeservices (NagVis parameters)  394, 399
reconnect_interval (ndomod parameters)  384
reconnect_warning_interval (ndomod parameters)  385
recovery
   after error  97
   notification  168
   state  64, 269
red (state)  26
redirect, reaction of the check_http plugin  121
redundant systems, testing  189–191
refresh_rate  78, 609
refreshtime (NagVis parameters)  394
REGEX (log entry)  446
regexps see regular expressions
registry
   changing NSClient parameters  465
   managing NSClient+ parameters  468
regular expressions
   allowing + in nagios.cfg  606
   in check_http  121
   in check_logs.pl  170
   in check_snmp  247, 248, 250
   with egrep  219
   in event log  485
   in Nagiosgraph  412
   in NagiosGrapher  438, 441
   in Perl  412
reload, of the system  84
repeat see test repeat
replay attacks, on NSCA  302
rescheduling, automatic  270, 274, 275
resource.cfg  54, 55, 73, 79, 249, 626
resource_file  601
response.php (PNP template)  455
responsible person see contact (object)
restart
   failed services  619
   of Nagios server  340, 367
   retain_nonstatus_information  368
   retain_state_information  354, 367, 601
   retain_status_information  368
   retention  367–368
   retention_file  694
   retention_update_interval  183, 601
   retry_check_interval  68, 97, 614, 620, 680
retry_interval 68, 96, 679, 680
return status, of plugins 105
return value
  forcing the defined see check_dummy
  of plugins determining with echo 168, 188, 256, 477, 480
return value
  of Perl plugins 671
  of plugins 554–555
reverse Polish notation see RPN
RFCs
  1065–1067 (SNMP) 233
  1155 (Internet namespace) 231
  1155–1157 (SNMP) 233
  1212 (format of an MIB) 231
  1213 (MIB-II) 238
  1901–1908 (SNMPv2c) 233
  1905 (SNMPv2) 233
  2790 (Host-MIB) 238
  3410 (SNMP) 229
  3411 (SNMP) 229
  3411–3418 (SNMPv3) 233
  3414 (USM) 234
  3415 (VACM) 234
root property 573
round-robin archive 423
round-robin database 408
  to assess network traffic 257
  creating with Perf2rrd see Perf2rrd
  evaluating graphically see ddraw
  for sensor data 508
rounding up, in SNMP 249
router, monitoring network interfaces 251
RRD 441
RRA see round-robin archive
rra.cfg 448
RRD see round-robin database
RRD (log entry) 446
rrd_color_* (NagiosGrapher) 435
rrdpath (NagiosGrapher) 433
RRDs (Perl module), using with PNP 448
RRDtools 420, 447
  CDEF see CDEF
  configuration for PNP 455
  installation 421
RSH 102
same host dependency 289, 683
SAP
  CCMS plugins see CCMS plugins
  detecting application server 515, 526
  interface for Nagios server 523–525
  monitoring 511–530
  monitoring system see CCMS
  querying application server 513–515
  querying message server 513–515
SAP instance 524, 527
SAPCAR 512
sapinfo 511–518
scheduled downtime (status) 65
scheduling 84, 453, 559
ScriptAlias (Apache) 47
search, in the Web interface 87
search engine, for log files 609
Second Level Support, informing of problems 282
Secure Shell see SSH, see SSH
segment limits, defining for a network 93
self-healing, through event handlers 619
self-monitoring 164, 183
SELinux 48–49
SEND_CUSTOM_HOST_NOTIFICATION 688
SEND_CUSTOM_SVC_NOTIFICATION 688
Sendmail, monitoring mail queue 180
send_nsca 104, 299, 304–306, 319
  using with syslog-ng 309
send_nsca.cfg 304–305
sensors, monitoring see lm-sensors
service (object) 60, 66–69, 76–77
  changes in Nagios 3.x 680–681
  extended information 362, 366
  self-defined variables 685–686
service check 26, 99–104
  active 291
  active preventing 293
  active switching 343
  command used 67
  direct 101–102
  vs. host check 612
  via NRPE see NRPE
  passive 291–294, 311, 488
  passive as a display criterion for status.cgi 337
  reachability 111
  resetting error state manually see error states
  via SSH 102
service checks
  active 100
Samba, monitoring 163
Index

via cronjobs 104
passive 101, 104
via NSCA 104
via SMTP 103–104
service dependencies 285–289
service dependency (object) 285–289
service group
display in NagVis 390
macros see group macros
showing, in the status display 334
viewing in the NDOUtils database 387
service group (object) 60, 69–70
changes in Nagios 3.x 681
selecting for status display 334
service groups 67
service objects, viewing in the NDOUtils database
387
service check
via cron jobs 666
frequency 662
passive 660, 666
service_check_timeout 602
servicedependency (object) 61
changes in Nagios 3.x 683
in NSClient/NC_Net 474
$SERVICEDESC$ 628
service_description 67, 680
access via macro 628
servicесescalation (object) 61, 283–285
changes in Nagios 3.x 683–685
$SERVICEEVENTIDS$ 686
serviceextinfo (object) 61, 362, 366, 452, 677
changes in Nagios 3.x 679
generating with NagiosGrapher 426, 433
integrating ddraw graphics into Nagios 425
for Nagiosgraph 411
serviceext_type (NagiosGrapher) 433
service_freshness_check_interval 602
$SERVICEGROUPALIAS$ 629
$SERVICEGROUPMEMBERS$ 629
servicegroup_members 70, 681
$SERVICEGROUPNAMES$ 629
servicegroup_name 70
$SERVICEGROUPNAMES$ 629
service_inter_check_delay_method 602
service_interleave_factor 602
$SERVICELONGOUTPUT$ 628
service macros 628
service_notification_commands 71
$SERVICEGROUPALIASS$ 628
$SERVICEGROUPMEMBERS$ 629
$SERVICEGROUPNAMES$ 629
servicegroup_name 70
$SERVICEGROUPNAMES$ 629
service_inter_check_delay_method 602
service_interleave_factor 602
$SERVICEGROUPMEMBERS$ 629
service macros 628
service_notification_commands 71
$SERVICEGROUPALIASS$ 628
$SERVICEGROUPMEMBERS$ 629
$SERVICEGROUPNAMES$ 629
servicegroup_name 70
$SERVICEGROUPNAMES$ 629
service_inter_check_delay_method 602
service_interleave_factor 602
$SERVICELONGOUTPUT$ 628
service macros 628
service_notification_commands 71
$SERVICENOTIFICATIONIDS$ 686
$SERVICENOTIFICATIONNUMBER$ 630, 686, 693
service_notification_options 71
service_notification_period 71
service_notifications_enabled 681
service_notifications_options 681
$SERVICEOUTPUT$ 193, 626, 628
$SERVICEPERFDATA$ 193, 628
service_perfdatalcommand 410, 449, 602
dependent on the Nagios interface 443
independency of the Nagios interface 445
service_perfdatalfile 603
service_perfdatalfile_mode 453, 603
service_perfdatalfile_processing_command 418,
453, 603
service_perfdatalfile_processing_interval 453, 603
service_perfdatalfile_template 453, 603
service-perfdata-pnp (command) 448
service_reaper_frequency 604, 666, 693
services
availability statistics see avail.cgi
defining dependences see servicedependency
(object)
defining NRPE in /etc/ 216
detailed information on individual 339
excluding from notification 270, 681
grouping see service group (object)
including in status calculation (NagVis) 390, 394
including status calculation (NagVis) 399
listing in Windows 484
monitor all of a user 79
overview of all 87
overview of defective 87
overview of faulty 86
password definitions in 79
recommended configuration file 56
test commands see service check
test interval 68
to be monitored see service (object)
volatile see volatile services
Windows see Windows services
$SERVICESTATE$ 628
SERVICESTATE (NSClient/NC_Net command) 478
$SERVICESTATEID:$ 190
$SERVICESTATEID$ 628
$SERVICESTATETYPE$ 628
shell script
as a plugin 27
developing plugins in the form of 660, 662
shell scripting see bash programming
$SHORTDATETIME$ 630
show_context_help 78
showlog.cgi 329, 356
signal handler, in plugins 571
single sign-on 637–652
size
of a file monitoring see check_file_age
monitoring for a directory (Windows) 496
monitoring for a file (Windows) 467, 496
sleep_time 604
slurpd, monitoring 164
SMBus 185
smoke alarm 506
SMS
delivery address see pager
as a notification medium 278–282
notification program 278
smsclient 278–282
installation 279–280
smssend 278
SMTP 26, 103–104, 113–115
test of mail server restrictions 115
testing 101
SNMP 227–264
authentication see authentication
converting OIDs to legible text see SNMPTT
defining protocol version for check_snmp 248
generic Nagios plugin see check_snmp
and precision see rounding up
Nagios plugins 246–264
querying OIDs 235–237
RFCs 229, 231, 233–234, 238
and service dependencies 289
testing several network interfaces simultaneously
252
in Windows 462
SNMP management systems, in comparison to Nagios 312
SNMP traps 228
processing 292
processing with Nagios 312–316
snmpd 238–246
configuration see snmpd.conf
traps sent by default 313
snmpd.conf 240–246, 313
snmpget 235
as a utility for check_snmp 247
snmpgetnext 235
snmprapid 312–313, 532, 546
snmprapid.conf 312
integrating SNMPTT 546
SNMP traps 532
SNMPTT 532, 534, 546–549
Web front end 532
snmptt.ini 547–548
SNMPv1 233
as security model in the snmpd configuration 240
SNMPv2c 233
as security model in the snmpd configuration 240
SNMPv3 233
security model in the snmpd configuration 240
snmpwalk 235–236, 239
socket_name (ndo2db parameters) 385
socket_type (ndo2db parameters) 385
soft recovery 97
soft state 63, 68, 92, 96, 267
accounting for, in frequency statistics 354
after RECOVERY 354
ignoring in NagVis 391, 394, 399
macro 628
source code, download 39
Splunk 609
splunk_url 609
SPNEGO 639, 640
spreading 84
sqlplus (Oracle) 576–577
Squid
cache manager 125, 126
configuring to use check_squid 126
monitoring 123–127
SSH
compatibility problems in heterogeneous environments 205
generating key pairs 208
monitoring see check_ssh
running plugins through 102, 205–211, 488
using in event handler scripts 622
SSL
capabilities, Web server testing 101
check_pop, check_imap 117
SSL connection, Web server testing 123
via STARTTLS see STARTTLS
using for the test (check_tcp) 134
SSO see single sign-on
standard macros 627–632

Nagios, 2nd Edition
(C) 2008 by Wolfgang Barth
start script 84
STARTTLS 117
and check_tcp 134
testing, in POP And IMAP connections 117
STARTTLS (check_smtp) 114
state, confirm see acknowledgement
state flapping see flapping
state macros 686
state type 621
state_retention_file 367, 604
states
hard and soft 92
of hosts and services 96–98
statistical macros 631
statistics, availability of hosts and services see avail.cgi
status, oscillating see flapping
status display, in the Web interface see status.cgi
status flags, monitoring processes with specific 165
status macros 621
status values
of host checks 190
of service checks 190
status.cgi 328, 334–338, 615, 692
Nuvola style 368
output style 334
status.dat 591
status_file 604
statusmap.cgi 328, 346–348
user defined map layout 365
using individual icons 365
statusmap_background_image 609
statusmap_image 365
status_update_interval 604
statuswml.cgi 328, 350
statuswr.cgi 328, 348–350, 365, 608
statuswr.include 610
step (NagiosGrapher) 432
stop light states 26
storage space see hard drive capacity
stratum 154
style, Nuvola see Nuvola
sudo 622
summary.cgi 329, 357–358
summary macros 667
SuSE
NET-SNMP 234
NRPE installation 214
smsclient installation 279
swap area, usage in Unix vs. Windows 476
swap partition, testing 206
swap space
in the Host Resources MIB 238
monitoring with SNMP 259–262
testing 102, 162
in the UCD-SNMP-MIB 239
switched-off computer see DOWN (state)
switches, monitoring 227
symlinks, for the start script 84
syslog
integrating into Nagios 306–312
logging of NSCA 302
logging Windows events in 545–546
sending events to database 536, 538
syslog-ng see syslog
documentation 307
syslog-ng.conf 307
system information, storing in SNMP 242
system load see CPU load
system start 43, 84
system time
checking with NTP see check_ntp
checking with the time protocol see check_time
monitoring 177–179
SysTray.dll 467
Systray icon, for NSClient+ 467
T
tac.cgi 329, 345–346, 615
TCP wrapper, using with NRPE 217, 220
tcp_port (ndomod parameters) 384
television number, for SMS see pager
temperature
monitoring 505–509
testing via SNMP 250
temp_file 604, 693
templates 75–76, 684
for distributed monitoring 321–324
for draw 426
for hosts 471
for PNP 454–456
for processing performance data 405–407
self-defined variables 471
to retrieve SAP monitoring data 523–525
temp_path 604, 693
test
NSClient+ module 467
of Perl plugins 674–675
of the NSCA 306

test plugin see check_dummy
test repeat, defining number see max_check_attempts
tests, postponing 342
threshold 557, 572
critical (check_dig) 128
critical (check_disk) 158
critical (check_eventdb.pl) 543
critical (check_ntp_peer) 155, 156
critical (check_pcmeasure) 508
negating 558
parsing details of 570–571
value, critical (check_ntp_peer) 156

$TIME$ 630
time, system see system time
time axis, of states that have occurred see trends.cgi
time details 62
time macros 630
time object see timeperiod (object)
time period
defining 74–75
defining for display (PNP) 451
for messages 270
for monitoring see check_period
for notification 60, 64, 70–71, 273
time protocol
for monitoring system time see check_time
time unit 62
timeout
implementing 571–572
plugin 106, 108, 558–559
return value 555
timeperiod (object) 60, 64, 74–75
changes in Nagios 3.x 682
timeperiods.cfg 74
$TIMET$ 630
time zone, defining 692

TLS see SSL
tmppath (NagiosGrapher) 433
Token Ring, vs. CSMA/CD (Ethernet) 232
topology see network topology

$TOTALHOSTSDOWN$ 631
$TOTALHOSTSUNREACHABLE$ 631
$TOTALHOSTSUP$ 631
$TOTALSERVICEPROBLEMS$ 631
$TOTALSERVICESCRITICAL$ 631
$TOTALSERVICESSOK$ 631
$TOTALSERVICESUNKNOWN$ 631
$TOTALSERVICESWARNING$ 631

traffic see network traffic
traffic light states 67
translate_passive_host_checks 604, 690
traps see SNMP traps
trends.cgi 329, 358–359

U
UCD-SNMP-MIB 238
UCD-SNMP 234
UDP services, monitoring see check_udp
udpecho 444
uninterruptible power supply see UPS
Unix socket, as NDOUtils interface 378
UNKNOWN (state) 27, 96, 106, 555
color in the Web interface 351
as a display criterion for status.cgi 337
displaying in NagVis 389
displaying in the Web interface 346
force/suppress notification 269
macro 278
return value 188, 555
UNREACHABLE (state) 27, 64, 65, 94, 269
as display criterion for status.cgi 336
macro 277
return value 555
UP (state) 94, 96
as a display criterion for status.cgi 336–337
macro 277
upgrade, to Nagios 3.0 693–694
UPS 149
check load 182
checking load status 182
monitoring 149–154, 182–183, 531
SNMP capability 227
upsd 150
upsmon 150
uptime 162

checking for Windows computers 467
checking for Windows hosts 499
testing for Windows computers 477
testing for Windows hosts 494, 495

UPTIME (NSClient/NC_Net command) 477
URL, adding to Nagios Web page 61
url (NagiosGrapher) 433
url_html_path 78, 610
urlize 189

for Windows 491
use_retained_scheduling_info 606
use_aggressive_host_checking 555, 605
use_authentication (Nagios) 78, 606
use_authentication (NagiosGrapher) 436
USEDDISKSPACE (NSClient/NC_Net command) 476–477
usedgdlibs (NagVis parameters) 392
use_embedded_perl_implicitly 605, 673, 688
use_large_installation_tweaks 605, 667
use_pending_states 610
users
  creating 209
  logged in, monitoring number of 177
  NagiosGrapher 432
user account, creating see creating user
user permissions, changing on file see chmod
useradd 209
use_regexp_matching 605
use_retained_program_state 605
$USERx$ macros 601, 625, 631
$USER1$ 625
use_syslog 606
use_timezone 606, 692
use_true_regexp_matching 606
USV, monitoring 666

V
VALUES (log entry) 446
variables
  for NagiosGrapher 444
  macros as environment 592, 631
  self-defined 471, 685–686
  switching off environment 449, 686
  as a performance brake 667
  user-defined 626, 633–635
volatile services 167, 309–310
voltage detector 506
VRML display, monitored computer see statuswrl.cgi
VRML-capable browser 348
vrml_image 365
VRRP 260

W
WAP
  access to Nagios see statuswml.cgi
  Nagios via 350
WARNING (state) 26, 27, 96, 105, 555
  as a display criterion for status.cgi 337
  displaying in NagVis 389
  force/suppress notification 269
  macro 278
marking in the Web interface 87
resetting manually see error states
return value 188
warning limit
  check_apc 182–183
  check_by_ssh 207
  check_dig 128, 130
  check_disk 158
  check_file_age 181
  check_http 120
  check_icmp 109
  check_iftraffic 258
  check ldap 144
  check_load 163
  check_mailq 180
  check_nt 472
  check_ntp 178
  check_psql 139
  check_procs 164
  check_smtp 114
  check_snmp 247, 251
  check_snmp in lm-sensors query 250
  check_snmp_load 263
  check_squid 127
  check_swap 162
  check_tcp 116, 133
  check_time 179
  check_ups 152
  check_users 177
  CPULOAD 475
  in performance data 179
  in plugin output 107
  for slow network connections 106
  specifying 108
warning threshold
  check_disk 158
  check_eventdb.pl 543
  check_ntp_peer 155, 156
  check_ntp_peers 508
water alarm 506
Web front end see Web interface
  adding NagVis maps 401
  adding PNP 452
  configuration 47–51
  context-dependent help 78
  displaying host groups 59
  general overview 85, 329
  granting a user access to everything 79
of Nagios 3.0  692
overview of all hosts and services  87
overview of defective services  87
overview of faulty services  86
for PNP  449
representation of flapping services  615–616
representing service groups  60
search options  87
showing a single host  87
showing virtual hosts as links  120
single sign-on  637–652
starting  48
switching authentication on/off  78
welcome screen  85
Web proxy, monitoring  see Squid
Web server
  specifying user and password for the test  121
  testing  see HTTP
  testing the lifespan of a certificate  123
Web users, determining  393
weekdays, restricting actions  74
Windows
  event log  461
  listing processes  484
  listing services  484
  monitoring  461–504
  monitoring processes  500
NRPE  see NRPE_NT, 488
Performance Counter  see Performance Counter
querying event log  485–486
querying WMI database  487
server, monitoring  101
services, monitoring  478
SNMP  260, 462
Windows events
  monitoring  532
  sending to Syslog  545–546
WMI  463
WMI database, querying  467, 487
WMICOUNTER (NC_Net command)  488
WMIQUERY (NC_Net command)  487
WML  see statuswml.cgi
worker, in NagVis  389
WUI (NagVis)  391, 396–400
  settings  394
X
xinetd
  configuration for NRPE  216
  configuration for NSCA  303
Y
yaps  278
yellow (state)  26
Z
zombies, checking system for  165
zoom (NagiosGrapher)  440