Time Period Definitions

Frequency Definitions

To define synchronization frequencies in *up.time* , you input a string that represents the amount of time between actions. These units of time can be days, hours, minutes, seconds, or a combination. Frequency definitions are used when configuring user detail synchronization, when configuring up.time to use an Active Directory or LDAP listing for user authentication and management. (See Changing How Users Are Authenticated for more information.)

All time units are represented by a one-letter abbreviation:

- days: *d*
- hours: *h*
- minutes: m
- seconds: *s*

Frequency definitions can be a combination of any of these time units and their values, in descending order, without spaces:

- 1d
- 1d12h
- 1h30m
- 30s

Time Period Definitions

When defining new, or editing existing, Maintenance Profiles and Monitoring Periods, you need to use precise definitions that *up.time* can correctly interpret. Time period definitions use a controlled vocabulary that allow you to precisely define, combine, and exclude time periods. The following sections provide you with information on accurately defining time period definitions:

Note - Although all examples listed in the following sections are written in mixed case (e.g., "Every Oct 28"), none of the terms used in time period definitions is case sensitive.

Building Blocks

The following tables outline the basic components of all time period definitions.

Time Units

- Units of time that act as building blocks in definitions include times of day, days of the week, months, years, and exact dates.

Times		
Required	• hour of day • 12-hour clock suffix, inputted as " *AM* " or " *PM* "	correct: *8:00 PM*
Optional	• minutes of the hour • spaces	correct: *8 PM* , *8:00PM* , *8PM*
Not Accepted	• missing 12-hour clock suffix • 24-hour clock convention	incorrect: *8:00* *20:00* , *20:00 PM*
Days		
Required	three-letter abbreviation	correct: *Sun* , *Mon* , *Tue* *Wed* , *Thu* *Fri* , *Sat*
Not Accepted	• full spellings • other abbreviation styles	incorrect: *S* , *M* , *T* *We* , *Th* *Friday* , *Saturday*
Dates		
Required	single- or two-digit number	correct: *8* , *09* , *10*

Not Accepted	• ordinal suffixes • full spellings	incorrect: *8th* , *9th* , *tenth*
Months		
Required	three-letter abbreviation	correct: *Jan* , *Feb* , *Mar* , *Apr* *May* , *Jun* , *Jul* , *Aug* *Sep* , *Oct* , *Nov* , *Dec*
Not Accepted	other abbreviation styles	incorrect: *J* , *F* , *M* , *A* *June* , *July* , *August* *Se* , *Oc* , *No* , *De*
Years		
Required	full year	correct: *2008*
Not Accepted	any abbreviation of the year	incorrect: *08* , *'08* , *Y2K+8*

Lists and Ranges

Days can be inputted as a list:

- each day is separated by a comma (e.g., " *mon, tue, wed* ")
- spaces are optional (e.g., " *mon,tue,wed* ")

Times and days can be inputted as ranges:

- Elements in the range must be separated by hyphens
- spaces are optional; the following examples are correct:
- *8AM-8PM*
- *8:00 AM - 8:00 PM*
- *Fri - Mon*
- *Fri-Mon*
- ranges wrap around day and week boundaries:
- " *10PM - 2AM* " is interpreted as 10:00 p.m to 11:59 p.m. on one day, and 12:00 a.m. to 2:00 a.m. the following calendar day
- " *Fri-Mon* " is interpreted as Friday through Saturday on one week, then Sunday through Monday the following week
- *up.time* converts day ranges to lists (e.g., " *Fri-Mon* " becomes " *Fri, Sat, Sun, Mon* ")
- day ranges and lists can be mixed; the following examples are correct:
- *Fri - Sun, Mon*
- *Fri-Sun,Mon*

Basic Expressions

Use the following templates to create basic expressions that are used to define time periods in *up.time* . Note that underlined components of a template are optional.

Fixed Dates

<month>	*<date>*	,	*<year>*	*<time range>*

Basic example:

Oct 28, 2008

Spaces are optional:

Oct28,2008

Time ranges are optional:

Oct 28, 2008 7 PM - 11 PM

Oct28,20087PM-11PM

Note: Fixed dates that do not include a time range are interpreted to include the entire day (i.e., 12:00 a.m. through 11:59 p.m.), although this will not automatically appear in the defined time period.

Fixed Date Ranges

from	*<month>*	*<date>*	*<year>*	*<time range>*
to	*<month>*	*<date>*	*<year>*	*<time range>*

Basic example:
From Oct 28, 2008 to Oct 29, 2008

Spaces are optional:
FromOct28,2008toOct29,2008

Time ranges are optional:
From Oct 28, 2008 7 PM to Oct 29, 2008 2 AM

Note: A fixed date without a time that is at the end of a date range is interpreted to include the first minute of the next day (e.g., up.time converts " *From Oct 28, 2008 to Oct 29, 2008* " into " *From Oct 28, 2008 12:00AM to Oct 30, 2008 12:00AM* ").

Note: The time range in a fixed date range merely acts as a more precise start point and end point; a fixed date range is a contiguous block of time that has no gaps.

Weekly Recurrence

every	*<day> / <day range / list>*	*<time range>*

Basic example:

Sun

Sun - Tue

Every Sun, Mon, Tue

Spaces are optional:

Sun-Tue

EverySun,Mon,Tue

Time ranges are optional:

Sun 9 AM - 5 PM

Sun - Tue 9AM - 5PM

EverySun,Mon,Tue9AM-5PM

Note: Recurring days that do not include a time range are interpreted to include the entire day (i.e., 12:00 a.m. through 11:59 p.m.), although this will not automatically appear in the defined time period.

Yearly Recurrence

every	*<month>*	*<date>*	*<time range>*

Basic example:

Every Oct 28

Ordinal suffixes are optional:

Every Oct 28th

Time ranges are optional:

Every Oct 28 7PM - 11PM

Note: You cannot define a date range within a yearly recurrence; instead, combine a separate yearly recurrences for each date in the date range.

Monthly Recurrence

every month on the	*<date>*	*<time range>*

Basic example:

Every month on the 28

Ordinal suffixes are optional:

Every month on the 28th

Time ranges are optional:

Every month on the 28 6 PM - 11 PM

Every month on the 28th 6PM-11PM

Monthly Ordinal Recurrence

every month on the	*<ordinal_as_word>*	*<day>*	*<time range>*

Basic example:

Every month on the last Fri

Time ranges are optional:

Every month on the last Fri 6 PM - 11 PM

Every month on the last Fri 6PM-11PM

Note: The ordinal must be stated as a word: *first* , *second* , *third* , *fourth* , and *last* .

Combining Expressions and Excluding Time Periods

Elaborate time period defintions are built from a combination of the basic expressions defined in the previous section:

- fixed dates
- fixed date ranges
- weekly recurrences
- monthly recurrences
- monthly ordinal recurrences
- yearly recurrences

Combinations

Combine basic expressions by writing each one on a new line in the *Definition* box when defining a Maintenance Profile or Monitoring Period. The following examples demonstrate combinations of different basic expressions used to define a maintenance window:

Combining fixed dates:

Dec 25, 2008 12AM - 12PM
Jan 1, 2009 12AM - 12PM

Combining a fixed date and a fixed date range:

Dec 25, 2008 12AM - 12PM
From Dec 31, 2008 11PM to Jan 1, 2009 12PM

Combining weekly recurrences:

Mon-Fri 1AM-3AM
Sat 1AM-5:30AM
Sun

Combining yearly recurrences:

Every Dec 25 12AM-12PM
Every Dec 31 11PM-11:59PM
Every Jan 1st 12AM-12PM

Combining monthly recurrences:

Every month on the 2
Every month on the 16th

Combining monthly ordinal recurrences:

Every month on the first Fri
Every month on the third Fri
Every month on the last Fri

Note that when a time period consists of more than one component time period expression, a condition met within any of those component time periods applies to the entire time period. For example, if a Monitoring Period named “Open Hours” is defined as:

Mon-Fri 9AM-5PM
Sat 10AM-5PM
Sun 12PM-5PM

An alert-worthy event that occurs on Sunday at 1:00 p.m. means the entire time period definition has been fulfilled.

Exclusions

Time periods can be excluded from greater time period definitions by using the term “ *exclude* ” as a prefix to the exclusionary expression. The following examples demonstrate the use of exclusions in time periods:

Excluding a monthly recurrence from a weekly recurrence:

Sun 3PM-5PM
Exclude every month on the last Sunday

Defining two yearly recurrences to exclude from a weekly recurrence:

Mon-Fri 2AM-3AM
Exclude every Jan 1
Exclude every Jan 2